



PAKISTAN
International Airlines
Great People to Fly With

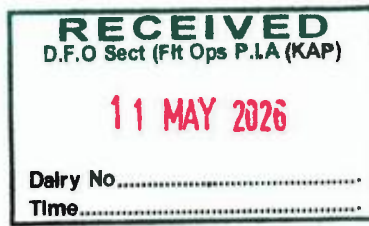
OPERATION MANUAL PART D



DOCUMENT	Document # F/TRG/01-D01
EDITION	06
REVISION	02
REVISION DATE	Apr 30, 2026

ISSUED BY
DIRECTORATE OF
FLIGHT OPERATIONS

**OPERATIONS MANUAL, PART-D
FLIGHT OPERATIONS DEPARTMENT**



HEADQUARTERS
Pakistan Civil Aviation Authority
Flight Standards Directorate
Terminal-I, Jinnah Int'l. Airport
Karachi-75200, Pakistan
Tel # (92-21) 99242766, 99072630-31
Fax # (92-21) 99242767
E-mail: FlightStandard.Director@caapakistan.com.pk
Website: www.caapakistan.com.pk

Ref: HQCAA / 1076 / 021 / FSAC

Dated: 11th May, 2026

Dear Sir,

AMENDMENT IN OM-D EDITION-VI REVISION-02 DATED 30TH APRIL, 2026
M/S PAKISTAN INTERNATIONAL AIRLINES CORPORATION LIMITED

Reference your letter DFO / M-80/2026 dated 11th May, 2026.

2. Enclosed please find duly approved and stamped **Operations Manual Part-D Edition-VI Revision-02**.
3. You are being advised to ensure that in case of any contradiction between the **Operations Manual Part-D Edition-VI Revision-02** and Civil Aviation Rules, Air Navigation Orders, Air Safety Circulars or any other Instructions/ Directives issued by Pakistan Civil Aviation Authority from time to time the later shall have precedence.

Encl: As Stated


(CAPT. AMIR AFTAB)
Flight Inspector (Pilot)/ POI – PIACL
Director Flight Standards
Telephone (021) 9907 2620

for

To,

Director Flight Operations,
M/s Pakistan International Airlines,
JIAP, Karachi

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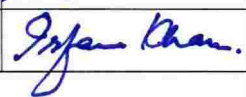

11/5/2026
J mcpa

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APPROVAL RECORD

STEP	NAME AND DESIGNATION	SIGNATURE
Prepared by	FO Mohsin Abbasi SAG Member	
Reviewed by	FO Shamsheer Razzak DCP QC Flt. Ops	
Vetted by	Capt. Omar Akhtar CP Crew Training	
Internally Approved by	Capt. Irfan Khan Director Flt. Ops/CoFO	
PCAA Approval#		
Effective date	30/06/2026	



1 JUN 2026
SIGNATURE AND STAMP OF
APPROVING AUTHORITY

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CHAPTER 0:

0.1 DISTRIBUTION:

Chief Pilot Crew Training is the custodian of the Master Copy of this Manual (OM Part-D).

Note: Cockpit crew will access this Manual through Corporate Manuals [Link](#) , AIMS and Digital Crew App.

0.2 HOW TO FILE REVISIONS:

This Manual is a controlled document and is audited to ensure that it is properly maintained. When a revision is issued to this manual, following instructions shall be followed as a guideline for the manual update process:

Step 1:

Ensure that the revision received is the continuation of the last revision record.

Step 2:

Before updating this manual with the new revision, make sure the manual has the previous revision inserted.

- a) Revision record of this manual are shown on the following page.
- b) Compare the last revision signed off in the manual to the new revision.
- c) The new revision will be the next number in sequence.
- d) Insert the new revision and remove the old pages.

Step 3:

When new revision is inserted, turn to the revision record page. Insert date and sign on the appropriate revision line.

Note 1: When the revisions are received and entered in this manual, complete the revision record boxes to maintain an accurate history of revision, keep revision records sheet in this manual. If a new revision record page is required, place the new page on top of the previous page.

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Note 2: All amendments to this manual will become effective from the date of revisions, unless a different date has been specified in the respective Letter of Revision.

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0.3 LIST OF ISSUES/ AMENDMENTS RECORD OF REVISIONS

Edition	Revision	Issue/Revision Date	Insertion Date	Issue/ Revision Type
Edition 1	Rev.12	Sept 07, 2010		
Edition 2	Rev.04	Sept 12, 2012	Sep 9,2012	
Edition 3	Rev.00	Nov 16, 2012		
	Rev.01	Mar 28, 2013		
	Rev.02	Apr 15, 2013		
	Rev.03	May 19, 2014		
Edition 4	Rev.00	Jan 20, 2015		
	Rev.01	Apr 08, 2015		
	Rev.02	June 17, 2015		
	Rev.03	July 25, 2016		
Edition 5	Rev.00	Jan18, 2019		
	Rev.01	July 01, 2019		
	Rev.02	July 11, 2019		
	Rev.03	Aug.25, 2020		
	Rev.04	Oct. 12, 2020		
	Rev.05	April 20, 2022		
	Rev.06	Oct 12, 2022		
	Rev.07	Dec 14, 2022		
	Rev.08	May 25, 2023		
Edition 6	Rev.00	March 25, 2024		Initial Issue
Edition 6	Rev.01	Feb. 10,2025	Feb 10, 2025	CBTA/ EBT
Edition 6	Rev.02	Apr 30, 2026	Apr 30, 2026	AOC/IOSA



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1	1.4 THE EVALUATION BOARD (SCOPE)	01	Feb 10, 2025
1	1.5 TRAINING & TESTING (GENERAL REQUIREMENTS)	01	Feb 10, 2025
1	1.8 RE-ASSESSMENT OF TRAINING POLICIES	00	March 25, 2024
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1	1.13 ZERO-FLIGHT TIME SIMULATOR TRAINING	00	March 25, 2024
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2	2.0 CATEGORIES OF TRAINING AND CHECK FLIGHT CREW:	00	March 25, 2024
2	2.1 BASIC QUALIFICATION CRITERIA – TRAIN THE TRAINER COURSE:	00	March 25, 2024
2	2.2 SYNTHETIC FLIGHT INSTRUCTOR– ISSUE REQUIREMENTS:	00	March 25, 2024



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0.5 LIST OF ABBREVIATIONS:

ABBREVIATION	DEFINITION
AB-INITIO	Initial Training
ACAS	Airborne Collision Avoidance System
AIMS	Aeronautical Information Management System
ANO	Air Navigation Order
AOC	Air Operator Certificate
AOM	Aircraft Operating Manual
AP	Approved Person
ATC	Air Traffic Control
ATPL	Airline Transport Pilot License
ATS	Air Traffic Services
BOX A	Performance Limited Takeoff Gross Weight
BOX B	ZFW limited Takeoff Gross Weight
BOX C	Landing Weight Limited Takeoff Gross Weight
BOX D	Enroute Obstacle Limited Takeoff Gross Weight
CAA	Civil Aviation Authority
Cat	Category
CBTA	Competency Based Training and Assessment
CP	Chief Pilot
CPCT	Chief Pilot Crew Training
CPSI	Chief Pilot Standards Inspection
CPL	Commercial Pilot License
CRC	Central Reservation Control
CFIT	Controlled Flight Into Terrain
CG	Centre of Gravity
COM	Communication
CRM	Crew Resource Management

CSS	Cockpit System Simulator
DC	Direct Current
DE	Designated Examiner
DFO	Director Flight Operations
DFS	Director Flight Standards, PCAA
DGM	Deputy General Manager
DGR	Dangerous Goods Regulations
DME	Distance Measuring Equipment
DRM	Dispatch Resource Management
EBT	Evidence Based Training
EDTO	Extended Diversion Time Operations
EFB	Electronic Flight Bag
E-LEARNING	Delivery of learning and training through digital resources
EMF	Electromotive Force
ERP	Enterprise Resource Planning
ETOPS	Extended Range Twin Engine Operations
FAA	Federal Aviation Administration
FBS	Fixed Base Simulation
FCOM	Flight Crew Operating Manual
FDM	Flight Data Monitoring
FFS	Full Flight Simulator
FI	Flight Inspector
FMS	Flight Management System
FO	First Officer
FOO	Flight Operations Officer
GPS	Global Positioning System
GPWS	Ground Proximity Warning System
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System

IOSA	IATA Operational Safety Audit
IR	Instrument Rating
ISA	International Standard Atmosphere
IT	Information Technology/Instructional Techniques
LFE	Learning from Experience
LMS	Learning Management System
LOFT	Line Oriented Flight Training
LOS	Line Operation Simulation
LVO	Low Visibility Operations
LVP	Low Visibility Procedures
MDA	Minimum Descent Altitude
MDH	Minimum Descent Height
MNPS	Minimum Navigation Performance Specification
MOFT	Maneuver Oriented Flight Training
MPA	Multi Pilot Aero Plane
NAT HLA	North Atlantic High-Level Airspace
NDB	Non-Directional Beacon
NTS	National Testing System
OEIB	Operations Engineering Information Bulletin
OETB	Operations Engineering Technical Bulletin
OM	Operations Manual
OPC	Operator Proficiency Check
P1	Pilot on Left Seat
P2	Pilot on Right Seat
PBN	Performance Based Navigation
PCAA	Pakistan Civil Aviation Authority
PF	Pilot Flying
PIC	Pilot in Command
PLO	Personnel Licensing Office (PCAA)
PM	Pilot Monitoring

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PNF	Pilot Not Flying
POI	Principal Operations Inspector
PPC	Pilot Proficiency Check
PTC	PIA Training Centre
QA	Quality Assurance
RC	Route Check
RHS	Right Hand Seat
RNP	Required Navigation Performance
RT	Radio Telephony
RVR	Runway Visual Range
RTO	Rejected Takeoff
RVSM	Reduced Vertical Separation Minima
S	Satisfactory
SFI	Synthetic Flight Instructor
SFE	Synthetic Flight Examiner
SMS	Safety Management System
SOP	Standard Operating Procedures
SB	Satisfactory with Briefing
SID	Standard Instrument Departure
SPOT	Special Purpose Operational Training
STAR	Standard Terminal Arrival Route
STP	Security Training Program
TCAS	Traffic Advisory & Collision Avoidance System
TPM	Training Policy Manual
TRI	Type Rating Instructor
TRE	Type Rating Examiner
U	Unsatisfactory
US	Under Supervision
V1	Decision Speed
V2	Takeoff Safety Speed

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VACBI	Video and Audio Computer Based Instructions		
VASI	Visual Approach Slope Indicator		
VHF	Very High Frequency		
VMCA	Minimum Controllable Speed in Air		
VMCG	Minimum Controllable Speed on Ground		
VOR	VHF Omni-Directional Radio Range		
VR	Takeoff Rotation Speed		
VS	Vertical Speed		
WX	Weather		
ZFTT	Zero Flight Time Training		

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CHAPTER 1: FLIGHT CREW TRAINING PROGRAM:

1.1 TRAINING POLICY:

1.1.1 GENERAL TRAINING POLICY:

- a) The **OM Part-D** has been designed to clearly establish principles governing the entire oversight and supervision of the PIA flight training activities and the training of flight crew. This policy is directed towards achieving, at all times, the highest standards in the operation of PIA aeroplanes.
- b) The OM Part-D for flight crew is based on the requirements of the Pakistan Civil Aviation Authority as promulgated in the Civil Aviation Rules and Air Navigation Orders. However, there are additional PIA requirements, which cover simulator and aircraft endorsements, recurrent cyclic training, technical courses, examinations and evaluations. PIA will ensure that Operations Ground Instructors, TRI/SFI/TRE/SFE as well as simulators are duly approved/endorsed by the PCAA and their approvals are valid at the time of conducting training/check of flight crew. These specific Company training programs, policies, guidelines, procedures and requirements are contained in this document. The OM Part-D is a controlled, PCAA approved document and is subject to regular review and may be altered at any time as authorized by the Chief of Flight Operations/Director Flight Operations and/or Chief Pilot Crew Training. OM Part-D shall be posted on Digital Crew App, intranet & AIMS for easy access to all flight crew members. The master copy shall be retained in the office of CP Crew Training along with other controlled documents.
- c) It is PIA policy that the training and evaluation of flight crew shall take place whenever possible in PCAA approved flight simulators or during normal route operations. However, flight crew are not authorized to carry out manoeuvres involving asymmetric flight or any other departure from normal operating procedures during en-route training on revenue flights.
- d) Because of statutory requirement, OM Part-D contains all such information and instructions which are necessary to enable persons

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appointed or authorized by PCAA/PIA to conduct or supervise the training, evaluations and periodic checks towards the performance of their duties.

- e) It is the responsibility of Chief Pilot Crew Training to ensure all Training Division personnel are qualified for their respective duties and are familiar and current with the layout and contents of the OM Part-D. These personnel shall include training schedulers, crew licensing and administrative support personnel.
- f) OM Part-D is regarded by the PCAA as the primary indication of the standards of training and testing to be achieved by PIA. However, administrative matters like promotion, evaluation board etc will be changed/amended by PIA and there would be no requirement to obtain waiver from PCAA, and changes will be incorporated in next revision/edition.
- g) Only the documents and material authorized and/or published by PIA shall be used by the flight crew, and by the training and check Flight Crew for all operating, training and evaluation activities.
- h) Where training is outsourced, the external training provider shall ensure reporting of all identified hazards, safety concerns and occurrences to PIA through the established reporting channels.

1.1.1.1 LMS Policy

a. Purpose

The purpose of this policy is to establish a standardized process for monitoring, assigning, evaluating, tracking, and updating mandatory training courses for all crew members through the Dashboard Online Monitoring System and Learning Management System (LMS).

This policy ensures timely completion of mandatory training (initial + transition + recurrent), proper examination scheduling, continuous monitoring of course validity, effective communication with concerned personnel, and accurate updating of training records across all operational systems.

b. Scope

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This policy applies to all crew members, LMS personnel, Training Department staff, and Schedulers responsible for training compliance and record management.

c. Course Expiry Monitoring

The Dashboard Online Monitoring System shall continuously monitor the validity status of all mandatory courses.

If any mandatory course is due to expire within the next sixty (60) days, the system shall automatically generate notification emails every Monday.

These emails shall be sent to the concerned personnel, including:

- LMS Manager
- Relevant Scheduler(s)
- Training Department staff (where applicable)

The purpose of these notifications is to ensure proactive planning and uninterrupted training compliance.

d. Advance Assignment of Courses

The LMS Manager shall assign all mandatory recurrent courses two (2) months prior to expiry.

Upon assignment of the course:

- An automated email shall be generated through the LMS and sent to the concerned crew member informing them about the assigned training requirements.

e. Courses Requiring Evaluation or Examination

The following courses require evaluation and/or examination:

- DGR Refresher
- Technical Transition
- Technical Refreshers
- LVO/AWOC

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For such courses, the following procedure shall apply:

1. The LMS Manager and relevant Scheduler shall plan the required examination dates within the crew roster during the expiry month.
2. Once the monthly roster has been published, the LMS Manager shall verify the roster to ensure that the planned examination dates remain unchanged.
3. If the planned dates are affected due to operational requirements or roster changes, the LMS Manager shall coordinate with the Scheduler and reassign the examinations accordingly.
4. The relevant examinations shall then be assigned to the crew for the revised planned dates.
5. An automated email shall again be generated through the LMS and sent to the concerned crew member informing them that their examination shall be active on the specified planned date.

Note: Assigned examinations shall remain active only on the planned examination dates.

f. Failure to Complete Examination Due to Operational or Personal Reasons

If a crew member is unable to complete an assigned examination due to:

- Operational requirements
- Personal reasons
- Medical reasons
- Leave obligations
- Any other justified circumstances

the LMS Manager shall monitor such cases through the HIT-IT Report, which is generated on a daily basis.

Upon verification:

1. The LMS Manager shall coordinate with the relevant Scheduler to identify a new suitable examination slot.
2. The examination shall be reassigned accordingly.
3. The crew member shall again be informed through an LMS-generated automated email.

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This process shall continue until the required examination is successfully completed.

g. Courses Without Evaluation Requirements

For courses that do not require examinations or evaluations, crew members shall complete the assigned training within the provided validity.

However, if a crew member is unable to complete such courses within the available two-month period due to:

- Privilege Leave (PL)
- Sick Leave
- Operational commitments
- Any other justified reason

the Dashboard Monitoring System shall generate an expiry report highlighting overdue or expired courses.

h. Expired Course Management

Upon detailed review of the expiry report, the LMS Manager shall:

1. Verify the reason for non-completion of the course.
2. Extend the duration or validity of the expired course in the LMS, where operationally and regulatorily permissible.
3. Inform the concerned crew member regarding the extension and revised completion timeline through:
 - Official Email
 - Telephone Call
 - WhatsApp Communication

i. Completion Notification and Record Updating — Courses Without Evaluation

Upon successful completion of any course that does not require evaluation or examination:

1. An automated email shall be generated through the LMS.

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2. The email shall be sent to:
 - Concerned Crew Member
 - LMS Manager
 - Training Manager
3. Upon receipt of the completion notification, the relevant training records shall be updated in:
 - Dashboard
 - AIMS
 - HIT-IT
 - Digital CrewApp
4. A hard copy of the completed training record shall also be attached to the respective crew member's training file.

j. Completion Notification and Record Updating — Courses Requiring Evaluation

For courses requiring examinations or evaluations:

- DGR
- LVO/AWOC
- Technical Refreshers

the following procedure shall apply:

1. Upon successful completion of the examination, an automated email shall be generated through the LMS.
2. The email shall be sent to:
 - Concerned Crew Member
 - LMS Manager
 - Training Manager
3. Upon receiving the examination completion notification, the Training Manager shall verify whether:

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- The crew member has successfully completed the required course/training module; and
- The crew member has successfully passed the required examination.

K. Successful Completion of Both Course and Examination

If both the following conditions are satisfied:

- Course completed successfully; and
- Examination passed successfully

then the Training Manager shall update the crew member's records in:

- Dashboard
- AIMS
- HIT-IT
- Digital CrewApp

Additionally:

- A hard copy of the updated training record shall be attached to the crew member's file.

I. Examination Passed but Course Pending

If a crew member has successfully passed the examination but has not completed the required course/training module:

- No training records shall be updated in any system.
- The crew member shall remain non-compliant until both requirements are completed successfully.

This requirement shall be strictly enforced to ensure complete regulatory and operational compliance.

m. Responsibilities

1 LMS Manager

The LMS Manager shall be responsible for:

- Monitoring course expiry status
- Assigning recurrent training in advance (2 months)
- Verifying examination schedules against published rosters
- Managing examination activation dates
- Reviewing HIT-IT and expiry reports daily
- Coordinating with schedulers for rescheduling
- Extending course validity where permissible
- Communicating with crew members regarding assignments and expiries
- Ensuring completion notifications are properly generated

2 Scheduler

The Scheduler shall be responsible for:

- Planning examination/evaluation slots within crew rosters
- Coordinating revised schedules in case of operational changes
- Supporting LMS compliance and examination planning activities

3 Training Manager

The Training Manager shall be responsible for:

- Verifying completion of both course and examination requirements
- Updating crew training records across all relevant systems
- Ensuring regulatory compliance of all training records
- Maintaining hard copy documentation within crew files

4 Crew Members

Crew members shall be responsible for:

- Monitoring LMS emails and notifications
- Completing assigned training and examinations within stipulated timelines
- Informing concerned departments in case of inability to complete assigned requirements

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o. Compliance

Failure to complete mandatory recurrent training and examinations within the prescribed validity period may affect crew qualification, operational authorization, and regulatory compliance status.

All concerned personnel shall ensure strict adherence to this policy to maintain continuous operational readiness and training compliance.

1.1.2 OBJECTIVES:

- a) The Flight Operations training system objective is to assist the trainees, trainers, evaluators and the training section to achieve the safe operations standards required by the Airline, the Regulator and the External Auditors to maintain a level of proficiency beyond the statutory requirements of the various flight crew licenses.
- b) Care has been taken that the OM Part-D does not contain technical and operating information for general instructional purposes. Rather, it remains concise in its purpose of giving formal expression to PIA training policy and requirements, together with guidance on these matters to instructors and check airmen.
- c) A strict requirement of PCAA is that training and checking duties conducted by instructors and examiners shall never be subject to inappropriate interference by any internal or external personnel or agency. This requirement shall be ensured through the application of the following policies:
 - (i) Except for the trainee(s) and the conducting instructor or examiner, or persons authorized by PCAA, no additional personnel may be present in the simulator during a training or check session, or in the cockpit during a training or check flight, unless have been specifically authorized by PCAA.
 - (ii) Any instructor or examiner who considers that he/she has been subject to inappropriate instructions or interference, from any source (including Company management), concerning the conduct or

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outcome of a training or checking session they have conducted, shall provide a full written report of the circumstances to the Flight Standards Department of PCAA and/or CPCT-DFO as soon as possible.

- d) PIA shall ensure that all training and check flight crew, flight crew members themselves, the training facilities, devices, equipment and course materials have the required certification and approval from PCAA, and that they meet the required qualification and performance standards of the Airline.
- e) The recurrent training and evaluation programs shall ensure that these qualifications and certifications are maintained for continued performance standards.

1.1.3 GENERAL RESPONSIBILITIES:

- a) Based on feedback from trainees, training and check Flight Crew, and from the line flight crew members, the respective Deputy Equipment Chief Pilots shall keep the CP Crew Training advised and aware of equipment specific needs to improvements/amendments/changes in the syllabi, procedures or training programs.
- b) The CP Crew Training shall be responsible for approving these changes, and authorizing necessary revisions to the OM Part-D after approval of the PCAA.
- c) The training program shall there by ensure that the training given to flight crew members incorporates all recent policy and procedural changes, and the instructions cover the recent modifications and/or system upgrades.
- d) To achieve this end, coordination will be maintained with Corporate Safety, Engineering & Maintenance, Flight Services, HR, IT Operations, Ramp and Ground Handling and with other Division of Flight Operations (For AOM and Regulatory inputs).

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1.1.4 CP CREW TRAINING'S RESPONSIBILITIES:

The Chief Pilot Training is responsible to Chief of Flight Operations/Director Flight Operations for the following:

- a) Supervision and Control of relevant flight operation functions & other associated activities and Management of Safety & Security of Flight Operations
- b) Compliance with company policies & procedures, regulatory requirements, condition & restrictions of AOC and other statutory requirements.
- c) Approve specific curricula/syllabi for all cockpit crew on all equipment, covering qualification training, continued training, currency and evaluation requirements.
- d) Approve PIA Training Centre Flight Crew training and flight crew Instructor's related documents/manuals, for all equipment.
- e) To ensure that Training and check Flight Crew and evaluators, use only approved Documents for the conduct of training/evaluation.
- f) Liaise with Flight Technical (ops) to ensure that Operation Manuals are up-to-date and consistent with training materials.
- g) Ensure that cockpit crew understands and comply with approved Aircraft Operating Manuals.
- h) Remain abreast of industry developments by studying other carrier's and manufacturer's training and standards practices and adopting them as appropriate to PIA's needs.
- i) Maintain high morale of cockpit crew by facilitating the Deputy Chief Pilots (Equipment) in their administrative role of representing cockpit crew's interests. Resolving their legitimate concerns and grievance vis-à-vis other sections in Flight Operations Department or other Company Departments.
- j) Approve the selection of new training and check flight crew.
- k) Establish minimum flight standards requirements for initial issue, type rating endorsements and renewal of flight crew licenses, before flight crew is assigned for duty.

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- l) Endorse/Analyse periodic reports prepared by Equipment Chief Pilots via Trend Monitoring analysis on cockpit crew proficiency and propose specific or additional training, as the need arises to improve proficiency or safety.
- m) Resolve any conflict between training and inspection functions so as to preserve the independence and objectivity of proficiency inspection.
- n) To ensure continual improvement of the flight crew training and evaluation programme for which they shall devise a system to monitor, record and evaluate the results of successful as well as unsuccessful evaluations (Data available through Training Division Dashboard-Trend Analysis).
- o) Establish procedures to ensure that all relevant information is communicated to Planning and Scheduling, regarding the timing of each crew member's non-productive requirements for license renewal, up-grading, license lapses, Instructor and Inspection duties etc.
- p) To ensure dissemination of policies, rules, instructions and procedures to equipment CPs, CPSI, CP-Tech (Ops), all Supervisory Pilots and Chief Instructor PTC or designated representative.
- q) Ensure that the Dashboard data is regularly updated, coherent and easily reflected on Digital Crew App which contains all Licensing and medical information of each crew members.
- r) Undertake, or direct other subordinates in undertaking any special studies that may be assigned from time to time.
- s) Exercise effective human resource management in terms of selecting, training, motivating, evaluating and disciplining staff subordinates.
- t) To ensure that ground technical training/evaluation through E-Learning/LMS is as per PCAA requirement.

1.1.5 CBTA AND EBT TRANSITION PLAN

For Competency Based Training and Assessment (CBTA) and Evidence Based Training (EBT) details and implementation refer to Pakistan International Airlines CBTA and EBT Transition Plan OM-D (annexture A).

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1.2 TRAINING QUALIFICATIONS (SUPERVISORY ASSIGNMENT):

1.2.1 CRITERIA:

- a) Appointment or elevation to the executive professional position of CP Crew Training, CP Standards Inspection or Equipment Deputy Chief Pilots shall be strictly on high moral values, sound character and professional merit. Competence may have precedence over seniority.
- b) Due to the nature of their positions, Chief of Flight Operations/Director Flight Operations CP Crew Training and CP Standards Inspection are exempted from any condition of seniority regarding their eligibility for supervisory assignment. However, if seniority was by-passed, their supervisory assignment shall not be utilised as soon as they relinquish their positions and their supervisory allowances will be withdrawn from the date of relinquishment. They will be reconsidered for the same on their seniority/suitability. Chief of Flight Operations/DFO has authority to grant permission to utilize the above instructor(s) on Corporation/operational requirements to a maximum period of six months.
- c) An internal interview (in person or online) shall be a mandatory requirement before a Pilot is considered for processing his/her case to PCAA for the supervisory assignment. However, Chief of Flight Operations/DFO, CP Crew Training, CP Standards Inspection may be waived off this requirement due to nature of their management positions and remaining requirements are equally applicable as per OM Part-D.
- d) Crew who have successfully held a supervisory assignment on the previous equipment and have had an exemplary record may be exempted from the interview stage at the discretion of CP Crew Training through recommendation from Equipment Deputy CPs.
- e) Crew with marginal professional record (as per training file) and/or for lack of temperament for a supervisory assignment according to their professional/personal reputation may be disregarded after due scrutiny by the Selection Board and so informed thereof.
- f) The required number of supervisory airmen on any equipment shall be at least 10% of the total flight crew strength on the equipment.

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1.3 SELECTION PROCEDURE FOR SUPERVISORY ASSIGNMENT:

The candidate's Training file shall be scrutinized by CPCT or his representative/Equipment Deputy CP/DGM Crew Training for eligibility, with special emphasis on the preceding two years, to check for the following:

- a) Any failure in simulator and/or route check
- b) Last four simulators, Last two route checks, flight standard check reports (remarks) shall be assessed and no more than 01 SB in each report where applicable.
- c) Any incident/accident/ATC violations in which lapses of the crew are confirmed.
- d) Any disciplinary lapses.
- e) Administrative action by issuance of any censure/warning/caution letter/litigation.

After scrutinizing the training file/feedback, Chief Pilot Crew Training may exercise his authority to administer an exam in order to determine suitability of a candidate to be considered for a supervisory assignment interview. Additionally, following will debar the candidate for supervisory assignment interview:

- a. Unjustified flight refusals.
- b. Trend for denial of training flights, if an instructor on previous equipment.

1.3.1 PROCEDURE:

- a) It shall be the responsibility of the CP Crew Training/Equipment Deputy Chief Pilot to convene a Selection Board as and when necessary, in advance of an expected vacancy. Such vacancies shall be determined keeping in view the regulatory restrictions as prescribed by Pakistan CAA. Also, the envisaged promotions on any equipment shall be given due consideration in determining the number of vacancies for supervisory pilots.
- b) The Secretary of the Selection Board (Equipment Dy. Chief Pilot) shall prepare a brief of each flight crew's training file with emphasis on the following and shall be placed before the Board:

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- i. Any failure in simulator and/or route check
 - ii. Two or more SBs in simulator/route/flight check reports.
 - iii. Any incident/accident/ATC violations (last 03 years)
 - iv. Any disciplinary lapses.
 - v. Administrative action by issuance of any censure/warning/ caution letter/ litigation.
- c) Prior to an interview for supervisory assignment, CPCT/Equipment Deputy Chief Pilot will issue readiness letter or through email to the eligible candidates at least 15 days before the interview.
- d) Due to a prior engagement or any other reason, if a candidate does not wish to appear before the interview board, he/she must inform the concerned Equipment Dy. CP or CPCT in writing (letter or email) before the interview, who will place it in his/her training file. Otherwise, it will presume that candidate is not willing to become an Instructor and shall not be considered for a later interview unless permission is granted by the CPCT.

1.3.2 THE SELECTION BOARD (SUPERVISORY ASSIGNMENTS):

- a) The Selection Board is responsible for the selection of TRI/SFI/TRE/SFE endorsement, prior to forwarding their case to the PCAA for an interview in Flight Standards Directorate.
- b) The Selection Board shall comprise:
- i. CP Crew Training (President of the Board)
 - ii. CP Standards Inspection.
 - iii. Equipment Deputy Chief Pilot (Secretary of the Board).
 - iv. One Equipment TRE or SFE. In case of non-availability, any TRE/SFE from higher equipment may be substituted.

Note: In the absence of a particular officer(s), one of the representatives from ‘ii’ or ‘iii’ shall be replaced with any available Chief Pilot or TRE/SFE of the higher equipment with the permission of the Chief of Flight Operations/DFO, However, presence of the CP Crew Training is mandatory. Chief of Flight Operations/DFO shall be the signatory and final authority.

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- c) A minimum of three members of the Board must agree in order for the Crew to qualify.
- d) If candidate is found suitable by the Selection Board for supervisory assignment, his/her case shall be referred to PCAA for an interview. After clearance from PCAA, the candidate shall be detailed for training as stipulated in table 2.1 as required.

1.3.3 REPORTING OF SUPERVISORY PILOT

As far as their duties are concerned, these training and check Flight Crew shall be under the control of CP Crew Training.

1.3.4 In case a TRE/SFE leaves the Airline, PIA will notify the same to FSD with a copy to PLO, PCAA.

1.4 THE EVALUATION BOARD (SCOPE):

The evaluation board is empowered and responsible for decisions with respect to:

- a) The evaluation of critically below standard cases;
- b) Clarifications on contradictions in the implementation of this policy and to provide recommendations thereof; Disciplinary cases professional or otherwise.
- c) Any special case(s) requiring non-routine evaluation.

1.4.1 COMPOSITION OF THE EVALUATION BOARD:

- a) Chief Pilot Crew Training (President of the Board);
- b) CP Standards Inspection
- c) Equipment Chief Pilot (Secretary of the Board)
- d) One Equipment TRE or SFE. In case of non-availability, a TRE or SFE from higher equipment may be substituted.

Note: In the absence of the particular officer, one of the representatives from (b) through (d) shall be nominated by the Chief Pilot Crew Training. The presence of CPCT is mandatory.

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1.4.2 GUIDELINES FOR EVALUATION BOARD:

1.4.2.1 Simulator / Base Check Failure:

- a) After unsatisfactory remedial training either in simulator and/or base check/line training, a pilot shall be reverted to the immediate previous short haul equipment or fly P2 on the same equipment, subject to the decision of the Evaluation Board. In such cases, the pilot shall be utilized for a period of at least one year from the date of first flight on the reverted seat or equipment. After completion of one year they shall be re-evaluated subject to performance. If performance still remains below minimum standard, then Evaluation Board will make a decision on a case to case basis. Evaluation Board can also combine period of stay and/or hours.

1.4.2.2 Line Training Failure:

- a) In case a Captain fails to qualify after additional training, he/she shall have to fly P2 on the same equipment for a minimum period of one (1) year or 300 hours, whichever is more, followed by a re-evaluation. If such re-evaluation is unsatisfactory, he/she shall be reverted to the immediate previous short haul equipment / fly P2 on the same equipment, as decided by the Evaluation Board. In this case the pilot shall be utilized for a period of at least two years and shall be subject to fulfilling all other experience requirements. If performance still remains below min standards, then the Evaluation Board will make a decision on the case to case basis.
- b) In case a FO fails to qualify after additional training, his/her case shall be referred to the Evaluation Board.

1.4.3 RESERVED

1.4.4 APPEAL AGAINST THE DECISION OF THE EVALUATION BOARD:

Chief of Flight Operations/DFO is the competent authority to review the decision of the Evaluation Board, whose decision shall be final. An appeal can be submitted within one week after conveying the Evaluation Board's decision.

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1.5 TRAINING & TESTING (GENERAL REQUIREMENTS):

- a) All Flying documents such as License/IR, PCAA Medical and ground courses of a trainee must be valid during all phases of training/check. It is the duty of the check flight crew to physically check all relevant flying documents of a trainee before commencement of training/check session. In case of Simulator training only, if a SFI/SFE finds out a trainee with an expired ground courses (other than valid License and Medical), the simulator training shall be continued however the SFI/SFE shall inform in writing at the earliest to CPCT and CPPS regarding the expired competency, ensuring such crew is not detailed on any further training/duties until the same is validated.
- b) An instructor when detailed for instructional duties (training/check on simulator/line), especially PCAA monitored check, he/she must have in possession his/her valid License/IR, PCAA Medical, DGR, SEP CRM, etc.
- c) Under normal circumstance, a person conducting check shall be currently qualified at least to the standard that the person being examined is required to demonstrate during that check.
- d) Submission of training file/check report in Training Division is the responsibility of the Check Pilot.
- e) Instructor or Examiner will ensure that submitted written reports or assessment are not altered or retracted in any way, by any person by internal or external.

1.5.1 TRAINING CODE OF CONDUCT:

An Instructor/Examiner is required to strictly adhere to the following General Rules of Conduct:

- a) All training personnel shall ensure proper use of all equipment, facilities and devices. Validity of document (License, Medical, Course(s), training Folders etc)
- b) Instructors shall perform their duties in accordance with the policies, procedures and guidelines provided in approved training manuals and supporting documentation.
- c) All safety rules shall be adhered to at all times.

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- d) Safety equipment shall be used in accordance with the applicable instructions whenever necessary.
- e) Threatening or violent behaviour or language towards individuals, another instructor, or a trainee is prohibited.
- f) Behaviour, actions or inactions that would in any way jeopardize the safety or well-being of other instructors, pilots, employees or passengers is prohibited.
- g) Smoking in non-smoking area is not permitted.
- h) Must not use behaviour, language, or non-verbal language that is discriminatory or intimidating.
- i) Harassment of individuals, whether sexual or otherwise, is not permitted.
- j) Must not behave in a manner that brings, or may bring, the organization into disrepute.
- k) Tactical sickness, will not be tolerated, and shall result in disciplinary action.

1.5.2 HANDLING OF "REPEATS" DURING TRANSITION/ RECURRENT TRAINING:

1.5.2.1 Recurrent Training Policy:

For simulator sessions associated with the Cyclic Training and Licence/IR Renewal Programme, handling of below standard performance is as follows:

- a) Where a sequence is not completed satisfactorily in the first session, training may be given in that sequence to achieve a satisfactory standard and the appropriate rating given.
- b) Where a sequence that has not been completed satisfactorily after additional training or cannot be repeated for any reason in the first session, then the trainee shall be removed from the roster pending the necessary training and satisfactory completion of the entire session."
- c) During recurrent training, if any sequence has to be repeated then that aspect shall get no higher than (SB) rating and comments must amplify the rating.

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- d) Repeats during a check or a recurrent training exercise, should be left until the end of the session so that the overall standard can be viewed without the effect of the practice.
- e) Except during the course of training, it must be stressed that where a crew member is given an unsatisfactory rating (U) in any exercise requiring to be rated, then it constitutes a failure in the check. In such a case, comments on the reason for the failure must be made together with recommendations for additional training or corrective action.
- f) More than 04 and 05 SB's during initial/recurrent simulator and route checks respectively will be considered as a "Failure".

1.5.2.2 Maximum Number of Repeats:

- a) Repeats of two individual sequences may be given. If more than two sequences are below standard then "Unsatisfactory Progress" shall be recorded, and the session repeated.
- b) If a recurrent training session is to be repeated because of an "Unsatisfactory Progress" rating, then for the repeated session to be deemed "Satisfactory" there must be no repeated sequences necessary to achieve the required standard. The "Repeat" of a sequence is an option available to the check flight crew. If the initial sequence is flown to such a standard that considerable training would be needed, the check flight crew may assess "Unsatisfactory Progress" at that point, and devote the remainder of the session to training input.
- c) Check flight crew must ensure that written comment on PCAA form amplifies the standard achieved. The DGM Crew Training and Licensing/Manager Crew licensing will alert CP Crew Training/ CP Standards Inspection, if a pilot requires multiple repeats over a period to attain the required operating standard.
- d) Check Flight Crew are reminded that recurrent training is carried out after an interval of five to seven months, so when assessing the standard during simulator session, performance shall allow an acceptable operational standard.

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1.5.2.3 Transition Training Policy on Repeats:

There are different requirements with regard to repeats depending on the type of session.

- a) If required, repeats during a transition training session shall normally be conducted there and then. In fact, the training should continue as long as the Check flight crew deems necessary to reach a desired standard.
- b) Repeats may be desirable during a training session even though a satisfactory standard was demonstrated in order to reinforce training.

1.5.2.4 Handling of Individual Repeats:

Following a below standard performance of a particular exercise, training input followed by a repeat of that exercise may be given. It is important that the check flight crew explains that particular training segment and then clearly mentions when the "Repeat" of the exercise begins. It is not appropriate to merely practice an exercise until the student achieves the required standard. Logically, the student shall be trained to a satisfactory standard before attempting a repeat of any exercise. If still the performance is below standard, then the simulator session is rated "Unsatisfactory Progress", and a repeat of that simulator session is required. More than three repeats of any exercise are not to be given. However, the last two consecutive attempts at a manoeuvre or item must be completed to at least satisfactory standard before the candidate is considered competent.

1.5.2.5 Failure to Meet Standards:

- i. Any rated flight crew member whose performance is found to be below Company standards shall be immediately withdrawn from operational duties and as per clause 7.9, after the DCP identifies crew weaknesses, assistive remedial training, shall be required to achieve a satisfactory standard prior to being validated as an operational crew member. Such remedial training shall be accorded priority. Chief Pilot Crew Training is authorized to grant extra ground/simulator/line training if remedial training/check is not completed within 30 days from the date of the failure.

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ii. In case a permanent crew member still remains below minimum standards, his/her case shall be scrutinized by the Evaluation Board which shall decide if:

- a. Extra training is required to be given, **or**
- b. Recommendation is to be made to the Higher Management for a suitable ground job, **or**
- c. Candidate is to be given an early retirement, **or**
- d. Candidate is to be terminated from service as per applicable rules.

Note: In case of a contractual crew member, action will be taken as per applicable clause(s) of his/her employment contract.

1.6 INTRA CREW COMMUNICATION:

The CP Crew Training shall ensure that formal and regular communication occurs between and among flight operations management, TRI/SFI/TRE/SFE and line flight crew members to achieve continuous improvement of ground, simulator and aeroplane training and line operations. The same shall be achieved through crew feedback forms, which shall be considered confidential and non-punitive.

1.6.1 INTERNAL REVIEW MEETINGS:

Training Divisions meetings will be conducted at least biannual basis and shall be focussed on flight crew, as well as on the content of the training programs applied to those personnel, and the devices and facilities supporting this training. These meetings must cover:

- a) Flight crew training progress and training schedule
- b) Review coordination and communication between external and internal stake holders.
- c) Flight documentations revision/amendments

1.7 CONSOLIDATION FLYING:

All flight crew are encouraged to approach their respective equipment Deputy CP or CPCT, should they consider that they are in need of any specific training or practice. This shall only be applicable to operational crew and shall be non-punitive.

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1.8 RE-ASSESSMENT OF TRAINING POLICIES:

A periodic re-assessment of training policies and procedures shall take place when deemed necessary. CP Crew Training in coordination with Equipment Chiefs, Flight Instructors / Examiners and Ground Instructors from PTC shall annually review/analyse classroom/CBT/E-Learning training material for relevance, upgrade, encompassing industry trend and feedback from the trainees/instructors.

1.9 GENERAL (ASSESSMENT REQUIREMENTS):

- I. During initial PPC/IR of a pilot, the other crew member(s) must be type qualified or shall have been duly recommended for the check.
- II. A common rating system is used to indicate the standard demonstrated by a crewmember during any training, recurrent training, check or line operation.
- III. A crewmember shall be rated against the desired standard when undergoing recurrent training or a proficiency check. When undergoing transition training, a crewmember shall be rated against the normal progress for that stage of training.
- IV. For PCAA requirements option is provided to indicate an overall assessment as follows:
 - a. Satisfactory Progress
 - b. Unsatisfactory Progress
- V. Check assessment forms, whether initial or recurrent PPC/IR or route-check, shall be assessed as per Chapter 2 of this Manual, guidelines mentioned in relevant PCAA documents/ANO including following grading:
 - a. Satisfactory (S)
 - b. Satisfactory with Briefing (SB)
 - c. Unsatisfactory (U)

Note: Remarks column of the check report is to be used for explaining 'SB's and/or 'U' items. Check Flight Crew are required to refrain from mentioning complimentary comments other than brief on 'SB' and 'U'. **Below Standard Rating** (Recurrent Training)

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- VI. Any individual rating of below standard on a recurrent training exercise shall be associated with an “unsatisfactory” assessment. Remedial training if required and a repeat to a satisfactory standard shall be given prior to continuing line operations.
- VII. A similar rating on transition training programme shall be associated with an unsatisfactory progress assessment and further training given to ensure that a satisfactory standard is reached. (Refer to clause 1.5.2.4).

1.10 ASSESSMENT GUIDELINE:

Following Standardized procedures shall be used for all training and evaluation events:

ASSESSMENT STANDARDS GUIDELINES FOR TRE/SFE

- I. Each sequence of the check ride shall be graded according to the following assessment standards and rating definitions. The appropriate rating for each exercise must be recorded on the applicable form and any sequence graded “SB” or “U” requires a narrative in the comments section of the form. The inter-relationship of flight crew coordination and airplane systems as it relates to automation may cause errors made during the completion of one exercise to affect the ratings of several sequences.
- II. Satisfactory (S):
A sequence shall be rated “Satisfactory (S)” if:
 - a) It contains minor errors only;
 - b) Airspeed and altitude control are acceptable for prevailing conditions; and
 - c) Airplane handling and knowledge are acceptable and safe, considering the experience of the candidate.
- III. Satisfactory with Briefing (SB): A sequence shall be rated “Satisfactory with Briefing (SB)” when:
 - a) Airplane handling and knowledge are safe but of a lower standard than would be expected and any deficiency can be corrected during debriefing;

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- b) The candidate had a brief excursion from published tolerances but initiated corrective action;
 - c) A sequence deviates from standard procedures or practices but does not create a more hazardous situation and is repeated satisfactorily or clarified by the candidate during debriefing;
 - d) There is a deviation from standard procedures or practices which the candidate acknowledged without prompting, that does not create a more hazardous condition and from which the candidate can recover unassisted; or
 - e) The candidate experienced some difficulty or required slight prompting from the other crew member to satisfactorily accomplish a task. Although not required, provided it is not listed as a fail item, a procedure or sequence that would normally rate an “SB” may be repeated at the discretion of the TRE/SFE. TRE/SFEs shall refrain from teaching or briefing the candidate on the correct completion of the exercise.
- IV. Unsatisfactory (U): If a sequence cannot be rated “Satisfactory (S)” or “Satisfactory with Briefing (SB)” according to the preceding guidelines, it shall be rated Unsatisfactory. A sequence shall also be rated Unsatisfactory (U) if:
- a) It endangers the airplane, passengers or crew;
 - b) It results in a crash;
 - c) Multiple errors are made in the completion of any one exercise;
 - d) It violates an ATC clearance or altitude;
 - e) The aim of the exercise is complete but there is a major deviation from standard procedures or practices or the safety of the airplane was jeopardized;
 - f) The candidate required continuous prompting or help from the other crew member to complete a task;
 - g) It exceeds airplane limitations; or

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- h) The candidate demonstrates unsatisfactory knowledge of airplane systems, equipment, or procedures.
- V. Conversion of Check Flight into Training Flight: At the discretion of the TRE/SFE, a check flight may be converted into “Training Flight”. In such a case, the relevant PCAA form will not be raised. Annotation of the same will be made in the “Training File” of the candidate along with the suggested remedial training.

1.10.1 TOLERANCES (AEROPLANE CONTROL):

The tolerance for instrument flight tests shall be respected by all check pilots. Each candidate shall demonstrate aeroplane control to maintain:

- a) Assigned headings within 10 degrees
- b) Assigned tracks and bearings within 10 degrees
- c) Altitude within 100 feet except at MDA when accurate altitude control is required.
- d) Air speed within + 10 KNOTS or – 5 KNOTS for holding, approach and missed approach.
- e) Not more than half scale deflection, as appropriate to the airplane type, of the course deviation indicators during instrument approaches.

These criteria assume no unusual circumstances and may require allowances for momentary variations. The exact rating definition and tolerances to be applied during a particular sequence may be replaced by the trainee’s ability to counteract deviations on account of prevailing phenomenon such as weather, turbulence, simulated malfunction and type of approach during normal and non-normal operations.

1.10.2 COMPANY STANDARDS (GRADING):

It is the PIAC policy to maintain a high level of professionalism. To achieve this goal, any pilot who is graded three (3) or more SBs (Satisfactory with Briefing) during initial or recurrent PPC/IR, shall strictly be kept under observation till next check. The check flight crew shall put down the reasons for SBs in the remark’s column and CPCT will accordingly issue an advisory letter to the

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trainee and copied to the CPSI and Equipment Deputy Chief Pilot. Then, both officials will decide how to improve the efficiency level of a trainee, especially in SB exercises/weak areas.

1.10.3 CONSIDERATIONS AND OBSERVATIONS (CHECK REPORT TERMINOLOGY):

Training and Check Flight Crew undertaking recurrent training exercises, shall constantly remind themselves that when signing the training/check documents, they are indicating a conviction that the crew member being assessed shall not drop below a MINIMUM STANDARD during the ensuing period.

Training and Check Flight Crew when submitting training/check reports shall ensure that they are signed by the trainees indicating that they are made aware of the contents.

It is most important that the remarks must complement the rating given.

1.10.3.1 Training Flight Crew shall bear in mind the following:

- a) The category of the crewmember being rated.
- b) The reason for which the crewmember is being rated.
- c) Recurrent training or checks.
- d) Rated against the satisfactory standard for the particular category and license.
- e) Transition Training rated against normal progress.

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1.10.4 TRAINEE/EXAMINER PAIRING SYSTEM (PPC/LINE CHECKS):

This pairing on Pilot Proficiency Checks (PPC) and Line Checks shall be achieved as follows:

Assistant Manager Crew Licensing shall forecast flight crew PPC/IR Checks and line checks for the next two months by the 10th of every month and forward this information to DGM Crew Planning/Scheduling. This data shall be extracted from Crew training Dashboard or otherwise.

- a) In case Dash Board is not accessible, DGM Crew Training and Licensing shall scrutinize the training files of flight crew and pair each trainee for check with Examiners as follows:
 - i. The Examiner selected shall not have carried out the preceding two checks of the flight crew. A line check by an Examiner during any of the last two-line checks shall not debar him from being selected for PPC/IR check and vice versa.
 - ii. Subsequent checks shall be rotated amongst all the available Examiners as far as practical.
- b) A TRE/SFE shall not conduct more than two consecutive line/simulator checks of a pilot. However, in extreme compelling circumstances, the same may be conducted with a written approval from DFS, PCAA.

1.10.5 AUTHORITY DURING LINE CHECK (ROUTE CHECK):

A TRE has the authority and responsibility to suspend the flight status of the crew member under check if the required PIA and PCAA standards are not met during a line check, and refer the matter to CP Crew Training.

The TRE retains the authority to assume command of the operation if it is considered necessary in the interest of safety. Such transfer would normally be made on the ground; for example, following completion of a sector to an unacceptable standard, the new crew status shall be reflected on all relevant documentation.

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1.10.6 SHORT / LONG HAUL FLIGHTS:

a) **Short Haul Flights (involving sectors less than 04 hours each):**

Flights to Domestic, Regional and Gulf routes.

b) **Long Haul Flights:**

One sector of not less than 4 hours scheduled Block time.

Note: For short haul aeroplanes, line checks (Route Checks) should be performed on nonslip flights as far as possible.

1.10.7 REQUIREMENTS FOR P1/P2 ENDORSEMENT /LICENSE RENEWAL ON LINE CHECKS (PILOT):

- I. Except Cadet Pilots, P1/P2 endorsement will be made after successful simulator check and first flight shall be planned after under supervision training followed by a satisfactory route check. In the case of Cadet Pilots, P2 endorsement will be made after completion of the required under supervision training followed by a Satisfactory route check.
- II. Final line checks must be completed in the aircraft and shall consist of at least two sectors up & down flight. The sectors shall be consecutive and conducted by the same TRE. In case short sector flight is not available, line check can be done on long haul flight involving a sector of four hours or more, at the discretion of the Chief Pilot Crew Training.

1.10.8 ACTION BY CHECK FLIGHT CREW IN A LINE CHECK FAILURE:

- a) A Line Check (R/C) failure away from home base poses the TRE with a variety of problems requiring careful consideration.
- b) If the performance of the crew on the sector is not up to a satisfactory standard, it may be appropriate to provide a training input to correct shortcomings and elevate the standard.
- c) The moment that assistance is given (as opposed to normal support), the check nature of the flight is negated. It then becomes a failure, requiring a repeat check.

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- d) In the event that the failure is of such nature that continued operation is not desirable, the crew member shall be removed from his station.
- e) In the case of failure of a Captain/First Officer, the TRE shall remove the concerned pilot and take over till returning to the base. The said crew member will be detailed for remedial training by the CPCT.
- f) It is imperative that when a failure on a Line Check (R/C) occurs, the crew member is aware of the suspended status and the Equipment Deputy Chief Pilot/CP Crew Training and duty scheduler are advised as soon as possible.

1.10.9 POLICY ON CHANGE OF INSTRUCTOR:

A pilot can request CPCT, not to detail with him maximum of one instructor for his/her simulator/line training and/or check. Although CPCT will approve his written request, but he has authority to withdraw/cancel/suspend the said approval at any time due to operational/company requirements or financial constraints.

1.10.10 POLICY ON MONITORING OF SIMULATOR & LINE TRAINING:

DGM Scheduling or Manager Scheduling along with DGM Crew Training and Licensing shall weekly present progress of simulator and under supervision training status of each trainee of all equipment (P1/P2) to the CPCT. In absence of CPCT, DGM Scheduling or Manager Scheduling will brief DGM Crew Training and Licensing for onward communication to the CPCT.

1.11 PILOT PROFICIENCY CHECK (REVENUE FLIGHTS):

Pilot Proficiency Checks (PPC) and Instrument Rating Checks shall not be conducted during revenue flights.

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1.12 FLIGHT STANDARDS POLICY:

1.12.1 SUPERVISION OF TRAINING & CHECK FLIGHT CREW:

CP Standards Inspection is responsible, in accordance with the Standards Inspection Policy, for the monitoring of:

- Flight operations standards;
- Check and training procedures and instructional standards;
- Unsafe trend(s).
- Trend analysis for training program improvement.
- CP Standards Inspection shall occasionally detail senior Standards Check Captain to observe the conduct of the training or check by an Instructor.
- Flight Crew, except PCAA Inspectors, observing the training or check shall be so authorized by the CP Standards Inspection.
- A person monitoring a training or check shall be currently qualified at least to the standard that the person being observed is required to demonstrate during that training or check. Qualification of a Standard Check Captain shall not be less than TRE/SFE.

1.13 ZERO-FLIGHT TIME SIMULATOR TRAINING:

All training shall be conducted on a zero-flight time simulator (Level C or D). However, if the training was conducted on a non-zero flight time simulator (Level A or B), then the initial six (6) take-offs & landings shall be conducted on a non-revenue flight; for such training purpose the aeroplane/simulator MEL shall be applicable.

The ZFTT shall cover:

- Flight Simulators (owned or subcontracted) are representative of aeroplane flown and are qualified to level C, D and equivalent.
- The minimum pilot experience shall be 200 hours for entry into each ZFTT.
- Each ZFTT qualification training course is customized as necessary to address pilot experience, flight crew position and simulator level.

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1.14 SIMULATOR SESSION TIMINGS:

Simulator sessions must be planned after due crew rest. If the crew proceeds abroad for simulator training, then the rest period shall be double the duty time or twelve (12) hours, whichever is more, prior to start of simulator sessions. All Simulator Training/ Checks shall be conducted between 0700 to 2359 hours local time only. Consecutive Night Limitations shall not apply to Simulator Training/ Checks. In case of exigencies, if simulator session falls outside this period, permission shall be obtained in advance from the PCAA accordingly along with concurrence of the trainees/instructors.

1.15 WEATHER AND ENVIRONMENT CONDITIONS – SIMULATOR TRAINING:

For the purpose of standardization, the following weather/environment conditions shall be simulated during training and PPC:

Crosswind: Component not to exceed 10kts during takeoff and landing under normal and non-normal conditions (Except during landing training session)

Ceiling and Visibility: For circuit training including visual approaches with system failures, cloud base 2000ft AGL and visibility 5kms.

Non-Precision Approach: Increase published MDA by 100ft and visibility by 500 meters to compensate for visual limitations.

Circling Approaches: Increase published circling minima by 200ft and visibility by 500 meters to compensate for visual limitations.

Precision Instrument Approach & Landing:

CAT-I Approaches: Ceiling and visibility/RVR as published and visibility not less than 800 meters and RVR not less than 550 meters.

CAT-II Approaches: Published minima but RVR not less than 300 meters.

CAT-IIIa Approaches: Published minima but RVR not less than 200 meters.

CAT-IIIb Approaches: Published minima but RVR not less than 75 meters.

LVTO: Low visibility takeoff requires at least 125/150 meters for Category B/C/D aero planes, respectively depending on runway lighting and availability of multiple RVR Otherwise it is increased to 200/500 meters.

Cold Weather: **Depth of Snow:** not to exceed 4mm/0.16 in.

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Depth of Slush: not to exceed ¼ in.

Depth of Standing water: not to exceed ½ in

Note: Simulator weather/environment conditions, indicated with each Lesson Plan, shall be strictly adhered to.

1.16 GUIDANCE ON MINIMUM SERVICEABILITY LEVEL FOR TRAINING DEVICES:

The check flight crew and evaluators shall ensure that simulators/training devices/ training airplanes meet minimum serviceability levels for training in accordance with PCAA approved applicable MEL.

Instructor should brief students regarding any simulator malfunctions before the start of SIM session.

1.16.1 WEATHER AND ENVIRONMENTAL CONDITIONS FOR TRAINING FLIGHTS:

As a policy, PIA doesn't conduct training flights, however, if it is conducted, following minima will be adhere to:

- a) Visibility not less than 3 km, or Circling Minima, whichever is greater, for circuit training. If circuit training is not being carried out then normal minima for the type of approach shall apply.
- b) Cloud Base or Ceiling not less than 2000 feet AGL.
- c) Crosswind not more than 15 knots for a dry runway, or not more than 10 knots for a wet runway.
- d) No thunderstorm activity within a 10 nm radius around the airfield circuit area or the training area.

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1.17 AEROPLANE TRAINING (IF REQUIRED):

Flying training will be structured and sufficiently comprehensive to familiarize the flight crew member thoroughly with all aspects of limitations and normal/abnormal and emergency procedures associated with the aeroplane.

Following Maneuvers and procedures shall not be accomplished/simulated in under supervision line/Aeroplane training:

- a) Wind shear avoidance and recovery
- b) Response to GPWS alerts and warnings and the avoidance of controlled flight into terrain (CFIT).
- c) Response to TCAS/ACAS alerts
- d) Rejected takeoff
- e) Emergency Evacuation
- f) Engine fire and failure
- g) Emergency descent

1.18 TRAINING FILES:

A Training File shall be maintained for each flight crew member. DGM Crew Training and Licensing will keep all files updated. In addition to this, a scanned record of training files shall also be maintained as a backup. Each Training File will contain the following documents:

- a) Simulator Check Reports
- b) Route Check Reports
- c) Company required training/check forms.
- d) Company required Check Reports
- e) Transition Training/ Recurrent Training Syllabi
- f) SEP Training Attendance Sheet
- g) CRM Training Attendance Sheet
- h) DGR Training Attendance Sheet
- i) Wet Drill/Ditching Attendance Sheet
- j) Evacuation/Slide Drill Attendance Sheet
- k) Refresher Course Certificate/Security Training Attendance Sheet
- l) PCAA Correspondence
- m) Internal Correspondence

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- n) Certificates related to Crew Training
- o) Type Training Records
- p) Supervisory Assignment details/correspondence
- q) Accident/incident details
- r) Promotion/Evaluation Boards correspondence/Minutes
- s) Any other document (discretion of the CPCT)

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CHAPTER 2: CHECK FLIGHT CREW REQUIREMENTS:

2.0 CATEGORIES OF TRAINING AND CHECK FLIGHT CREW:

2.0.1 CATEGORIES OF FLIGHT CREW INSTRUCTORS IN PIA:

- a. Synthetic Flight Instructor (SFI)
- b. Type Rating Instructor (TRI)
- c. Synthetic Flight Examiner (SFE)
- d. Type Rating Examiner (TRE)

2.0.2 TRAINING DIVISION OF FLIGHT OPERATIONS WILL INITIATE PROCESS EITHER FOR TRI OR SFI ENDORSEMENT ON TYPE, DEPENDING UPON OPERATIONAL REQUIREMENTS.

2.0.3 PRIVILEGES OF SYNTHETIC FLIGHT INSTRUCTOR (SFI):

- a. Captains with SFI endorsement on their licenses can carry out Simulator training of pilots for MPA Type Ratings; and the instruction required for multi-crew-operation.
- b. An SFI can conduct ground technical training in class room as well as have it assigned through e-learning (LMS) if he sees the need.
- c. An SFI may be assigned by the CPCT to develop/evaluate the ground technical training courses and their respective question bank for classroom or through e-learning (LMS).

2.0.4 PRIVILEGES OF TYPE RATING INSTRUCTOR (TRI):

- a. Captains with TRI endorsement on their licenses can carry out line indoctrination of pilots on aeroplane.
- b. A TRI can conduct ground technical training in class room as well as have it assigned through e-learning (LMS) if he sees the need.
- c. A TRI may be assigned by the CPCT to develop/evaluate the ground technical training courses and their respective question data bank for in class or through e-learning (LMS).

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2.0.5 SYNTHETIC FLIGHT EXAMINER (SFE):

A Synthetic Flight Examiner is a person who has been delegated powers to conduct simulator examination / checks on behalf of PCAA of aircraft weight category of 5700 Kgs and above.

2.0.5.1 Privileges of Synthetic Flight Examiner (SFE):

- a) Exercise all the privileges of a SFI of the type of aircraft.
- b) Conduct recurrent Pilot Proficiency Checks (PPC), Skill Tests, Recurrent instrument Rating (IR) Tests and Category II and/or III approach endorsements as applicable. All these endorsements shall be accomplished in approved Flight Simulation Training Device (FSTD).
- c) An SFE is not authorized to perform a skill test leading to the award of a license (CPL or ATPL or Type Rating) unless explicit approval has been granted to him in writing by FSD, PCAA.
- d) A SFE shall not conduct the check of a trainee whom he has trained.
- e) A SFE shall not conduct more than 02 consecutive PPC of a pilot. However, in extreme compelling circumstances, the same may be conducted with a written approval from FSD, PCAA.
- f) An SFE shall not conduct a test/check again of a pilot who was not successful at the previous test/check which was conducted by him. In all such cases, a Flight inspector or a Designated Examiner of PCAA will be detailed.
- g) With a written authorization from Flight Standards Directorate, an SFE may conduct a check of a pilot/ trainee of an organization other than where he is presently employed.
- h) An SFE shall not conduct the PPC of a PCAA Flight inspector, without the written authority from Flight Standards Directorate, PCAA.
- i) An SFE can conduct ground technical training in class room as well as have it assigned through e-learning (LMS) if he sees the need.

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- j) An SFE may be assigned by the CPCT to develop/evaluate the ground technical training courses and their respective question bank for classroom or through e-learning (LMS).

2.0.6 TYPE RATING EXAMINER (TRE):

A Type Rating Examiner is a person who has been delegated powers to conduct flight checks on behalf of PCAA on an aircraft of weight category of 5700Kgs and above. Type Rating Examiner (TRE) rating is endorsed on ATPL of a pilot who has met the PCAA requirements of issuance of TRE rating.

2.0.6.1 Privileges of Type Rating Examiner (TRE):

The privileges of the holder of a Type Rating Examiner rating are listed below:

- a) Exercise all the privileges of a TRI to the type of aircraft;
- b) Conduct Annual Line Checks of the pilots of the Organization;
- c) With the written permission from Flight Standards Directorate, PCAA, may conduct Initial Line Checks of his/her Organization's pilots, for the initial endorsement of that type on the applicants license;
- d) A TRE shall not conduct the check of a trainee whom he has trained, unless authorized by PCAA;
- e) With a written authorization from Flight Standards Directorate, a TRE may conduct a check of a pilot /trainee of an Organization other than where he is presently employed;
- f) A TRE shall not conduct more than two consecutive Line Checks of a pilot. However, in extreme compelling circumstances, the same may be conducted with a written approval from Flight Standards Directorate, PCAA; and
- g) A TRE shall not conduct the Line / Route Check of a PCAA Flight inspector, without the written authority from Flight Standards Directorate, PCAA.

- h) A TRE can conduct ground technical training in class room as well as have it assigned through e-learning (LMS) if he sees the need.
- i) A TRE may be assigned by the CPCT to develop/evaluate the ground technical training courses and their respective question bank for classroom or through e-learning (LMS).

2.0.7 DESIGNATED EXAMINER (DE)

PCAA may designate an Examiner (DE) to conduct skill test where normally a PCAA Inspector is required to examine the practical/theoretical skill/knowledge respectively. DE is detailed on a case-to-case basis and is not a permanent position.

2.0.7.1 Privileges of Designated Examiner:

The privileges of a Designated Examiner (DE) shall be as under:

- a) Skill test for issue/ renewal of License.
- b) Flight checks and Route Checks;
- c) Skill Test for issue / renewal of Instrument Rating;
- d) Skill Test for P-1/P-2 Type Rating; and
- e) For the first time approval of the supervisory staff, there shall be an open book Approved Person Exam (AP-1) on Annex 1, CARS and Licensing ANOs.

2.0.7.2 The DFS will only authorize those SFE/TREs to act as a DE who passed the PCAA Approved person (AP-1) examination.

Note: SFI/TRI/SFE/TRE ratings are endorsed on ATPL of a pilot who has met the PCAA requirements of issuance of such rating.

2.0.8 SIMULATOR EVALUATOR:

A simulator evaluator shall ensure that simulators and training devices, whether owned or subcontracted, have the required certifications and PCAA approval, meet required qualification and performance standards, and are annually evaluated to ensure compliance with the airlines and PCAA requirements. They will be appointed among the equipment standard

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inspectors. The evaluation of simulators or training devices should normally be carried out along with Deputy Chief Pilot QA (Flight Ops).

2.1 BASIC QUALIFICATION CRITERIA – TRAIN THE TRAINER COURSE:

2.1.1 POLICY ON TRAIN THE TRAINER GROUND COURSE:

Each trainee instructor must attend 05 days Train the Trainer TRI/SFI & TRE/SFE Ground Training Course being conducted as per syllabus Annexure-F of OM Part-D.

2.1.2 DESIRED QUALIFICATION CRITERIA FOR ATTAINING INSTRUCTOR/EXAMINER RATINGS ARE ENUNCIATED IN FOLLOWING PARAS OF THIS CLAUSE.

2.1.2.1 Eligibility Criteria for Instructor to conduct the Course

The TRI/SFI & TRE/SFE Ground training will be conducted at the Approved Training Centre of PIA and by Chief Pilot Training or his nominee, who must himself be holding a TRE and SFE endorsement on his ATPL.

2.1.3 VALIDITY OF COURSE & REFRESHER REQUIREMENT:

The initial TRI/SFI & TRE/SFE ground training course (Train the Trainer Course) is valid for a period of three years.

2.1.3.1 Train the Trainer Refresher Course will be conducted once in three years for all TRI/SFIs & TRE/SFEs. In addition, an Instructor's Seminar will be conducted yearly which will include equipment FDM and Instructor's meeting. After three years an Instructor will undergo for a Refresher Ground School as per syllabus available at clause 2.1.4.2 of this Chapter.

2.1.3.2 It is the responsibility of the DGM Training to maintain proper record of course attendance and joint responsibility with the individual Pilot Instructor to ensure that the Initial or Refresher Ground Training is completed in a timely manner. Instructors who do not undergo the

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Refresher will not exercise the privileges of the Instructional endorsement.

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2.1.4 COURSE STRUCTURE TRAIN THE TRAINER COURSE

Contents of this course have been approved by PCAA vide letter number HQCAA/1076/038/FSAC/5455 dated 11-Dec-2019

DAY 1:

- Introduction – Objective of the TRE/SFE Ground Training,
- Review of ICAO Annex-6 “Operation of Aircraft” & Annex-1 “Personal Licensing”,
- Review of Civil Aviation Rules, 1994 (CARs 94); especially Part-V, Part-VI, Part-XI and Part-XII,
- General review of Flight Standards ANOs,
- General review of Licensing ANOs – especially ANO on TRE/SFE,
- General review of FSD Air Safety Circulars.

DAY 2:

- Review of Company’s Operations Manual – Part-A - Relevant Portion,
- Review of Company’s Operations Manual – Part-D – Relevant Portions,
- Review of aircraft type SOPs,
- Review of simulator cyclic syllabus for the aircraft type.

DAY 3:

- Techniques of applied instructions,
- Assessment of student’s performance in those subjects in which ground instruction is given,
- The learning processes,
- Elements of effective teaching,
- Students evaluation and testing, training philosophies,
- Training program development.

DAY 4:

- Lesson Planning,
- Evaluation errors,

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- c) Analysis and corrections of students,
- d) Human performance and limitations relevant to flight instructions,
- e) Hazards involved in simulating system failures and malfunctions in the aircraft.

DAY 5:

- a) Fifteen minutes presentation to explain allotted exercises,
- b) Review of CAAF-028-RGLC & CAAF-029-RGLC,
- c) Filling of PCAA forms,
- d) Presentations from Peers.

2.1.4.1 Refresher of Train the Trainer Ground Course

Train the Trainer Refresher Course for a duration of one day will be conducted once in three years for all TRI/SFI and TRE/SFE as per following syllabus.

2.1.4.2 Refresher syllabus

Course Name

TRI/SFI & TRE/SFE Ground Training (Train The Trainer) Refresher

Duration

One day

Frequency of Course

Train The Trainer refresher course will be conducted once in three years for all TRI/SFI & TRE/SFE.

In addition, an instructor's seminar will be conducted yearly which will include equipment FDM and instructor's meeting.

Course Instructor

All those Instructors who are Approved by the PCAA to conduct the initial TRI/SFI & TRE/SFE Ground Course (Train The Trainer) are eligible to conduct this Refresher

- Discussion on latest regulatory documents issued or revised
- Discussion on latest company documents issued or revised in last three years

- Discussion on latest Manufacturer documents issued or revised in last three years
- Discussion on latest developments in Aviation technologies in last three years
- Discussion on latest developments in Aviation training techniques
- Discussion on anything learnt new by any participants during line ops or training which was previously ambiguous or unknown.
- Discussion on common misconceptions during training related to aircraft performance and EOSID
- Developments pertaining to FDM
- CRM tools
- Discussion on FDM high occurrence events and flight instruction techniques to mitigate it
- **Cockpit Communication** Difference between Standards calls, Briefing, and Sharing mental model
- **OBT- Introducing** new mechanism to utilize FDM tool at optimize level, Observation Based Training will be conducted on the basis of FDM findings.
 1. Identify and inform via email set format below
acknowledgement mandatory

Flt	Date	Sector	Finding	Severity Level	Severity Could lead to	Risk	Immediate TRG/EVAL	Unscheduled TRGREQ	Schedule TRG/EVAL

2. Train with TRI during line flights focusing on the finding
3. Counsel via employing facilitated de-brief method

The takeover steps:

Advice >> insist >> takeover

- Discussion on Common and repeated mistakes during training and line flying.
- Discussion on startle affect and how to train pilots to overcome it when need

- Discussion on Instructors standardization and importance of self-monitoring and self-correction thereafter each participant shall mention at least one mistake, error, instance which was committed in past and overcome or discuss a situation or decision which could be handled in a better way.
- Discussion and inputs on LFE program.
- Techniques of applied instructions [Slides from Day3]
- Evaluation errors [Slides from Day4]
- Human performance and limitations relevant to flight instructions [Slides from Day 4]

2.2 SYNTHETIC FLIGHT INSTRUCTOR – ISSUE REQUIREMENTS:

- a. Holds current or have held ATPL with aircraft type rating endorsed.
- b. PCAA Medical Certificate.
- c. Minimum 1000 Commercial Hours.
- d. Minimum 300 PIC hours on aircraft type.
- e. Undergone TRI/SFI Train the Trainer Ground Course as approved by the PCAA.
- f. Passed PCAA Flight Instructor (FI) examination (Candidates who have FI/AFI/TRI/SFI rating on their license are exempted).
- g. Minimum Grand total 3000 hours all types.
- h. No failure during last two PPCs.
- i. Submission of application to PCAA Licensing on the relevant form.

2.3 TYPE RATING INSTRUCTOR – ISSUANCE REQUIREMENTS:

- a. Holds current ATPL with aircraft type rating endorsed.
- b. PCAA Medical Certificate.
- c. Minimum 50 FSTD hours as Synthetic Flight Instructor (SFI) on type FSTD
- d. Minimum hours - 500 PIC on type jet aircraft and 250 PIC on type turboprop
- c. Minimum 1000 Commercial Hours.
- e. Minimum Grand total 3000 hours all types.

- f. Undergone TRI/SFI Train the Trainer Ground Course as approved by the PCAA.
- g. Passed PCAA Flight Instructor (FI) examination (Candidates who have FI/AFI/TRI/SFI rating on their license are exempted).
- h. No failure during last two PPCs.
- i. Submission of application to PCAA Licensing on the relevant form.

2.4 SYNTHETIC FLIGHT EXAMINER – ISSUANCE REQUIREMENTS:

- a. Hold a current or have held ATPL with aircraft type rating.
- b. PCAA Medical Certificate.
- c. Minimum hours -1000 PIC on type jet aircraft and 500 PIC on type turboprop.
- d. Minimum 100 FSTD hours as Synthetic Flight Instructor (SFI) on type FSTD.
- e. Minimum 200 hours on aircraft type as Type Rating Instructor (TRI)
- f. No failure during last two PPCs.
- g. Passed PCAA Approved Person (AP-1 Examination).
- h. Undergone five days Train the Trainer Course.
- i. Submission of application to PCAA Licensing on the relevant form.
- j. Prior to SFE evaluation, Candidate shall observe one complete simulator session which will include briefing, simulator check and debriefing with an SFE.
- k. To conduct a simulator check by an SFE/DE to be monitored by the FI PCAA or a DE. With the Authorization of the PCAA, any DE/SFE can also evaluate the SFE candidate on behalf of the PCAA. This check session will be conducted as per instructions mentioned in 2.23.4 of this chapter.
- l. During evaluation, if performance of a SFE candidate is considered “Unsatisfactory”, the Evaluation Board will decide further course of action.

2.5 TYPE RATING EXAMINER (TRE) – ISSUE REQUIREMENTS:

- a. Valid PCAA ATPL with valid IR on aircraft type.
- b. PCAA Medical Certificate.
- c. Must be a TRI on type with Minimum 200 TRI hours.
- d. Must be a Synthetic Flight Examiner (SFE) on type.
- e. No failure during last two PPCs.
- f. Passed PCAA Approved Person (AP-1 Examination).
- g. The candidate TRE should have undergone an annual Route Check and Standardization Check in last 365 days on must basis.
- h. The candidate TRE must have conducted a minimum of 05 Annual Route Checks as a TRI.
- i. Undergone five days Train the Trainer Course.
- j. Submission of application to PCAA Licensing on the relevant form.
- k. To conduct a Route check in presence of a TRE, monitored by the PCAA Inspector or a DE. This check session will be conducted as per instructions mentioned in 2.23.5 of this chapter.
- l. During evaluation, if performance of a TRE candidate is considered “Unsatisfactory”, the Evaluation Board will decide further course of action.

2.6 APPLICATION AND ACTION PROCESSES FOR INSTRUCTOR RATING ENDORSEMENT:

Following procedure shall be adopted for SFI/TRI/TRE/SFE endorsements:

- a) Submission of application to PCAA Licensing on the relevant form for SFE/TRE endorsement, giving full details as described on the Form;
- b) The above application Form must be recommended by the Chief of Flight of Operations/DFO or Chief Pilot Crew Training, PIA.
- c) The application will be sent to “Personnel Licensing Office” of PCAA, under covering letter along with applicable paid fee voucher or authority to deduct the same from the PIA’s account.

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- d) After scrutiny of the application by Personnel Licensing Office, the same will be sent to FSD for an interview and further action.
- e) Flight Standards Directorate (FSD) will check and assess the Training File of the applicant. If the training records are found satisfactory by DFS or his nominated Inspector, an Interview Board of three Flight Inspectors (minimum two) will conduct the interview and record their observations / recommendations in Part-2, Para-8 of the application form. Training File of the applicant will be sent to FSD as and when required by the PCAA.
- f) On a satisfactory recommendation by the Interview Board FSD will detail a Flight Inspector for the TRE checks.
- g) FSD will detail Flight Inspector/DE for monitoring the training or check session in the simulator or on a flight, to be conducted by the applicant. TRI/TRE checks may be conducted on the aircraft or on a flight simulator.
- h) In case of non-availability of the Flight Inspector or any other reason, Director Flight Standards can authorize any PIA's TRE/SFE of the same equipment to monitor the applicant on behalf of the PCAA.
- i) On the recommendation of Flight inspector / Designated Examiner of FSD, the applicable instructor rating of the aircraft will be endorsed on the ATPL of the applicant.

Note: In case a SFE/TRE leaves the PIA, CPCT will notify the same to FSD for the purpose of record (with a copy to Licensing Office, PCAA) within 10 working days of his/her leaving.

2.7 PANEL INTERVIEW BY FLIGHT STANDARDS:

Pilots nominated for either Instructor or Examiner's positions are mandatorily required to be interviewed by Director Flight Standards (DFS) for further processing. For scope of the interview following must be kept in mind while interviewing the instructor/Examiner. A nominee is expected to have gone thoroughly through the following:

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2.7.1 INSTRUCTOR / EXAMINER RATING (TRI/SFI &SFE/TRE) NOMINEE INTERVIEW SYLLABUS:

- Type Aircraft Standard Procedures (SOPs)
- Flight crew training/ Techniques Manual (FCTM)
- Operations Manual Part 'D' (OM-D)
- Safety Management Systems' (SMS) Manual
- Instructors & Examiners Manual
- PCAA ANO-014-FSXX – Crew Resource Management Training
- PCAA ANO-017-FSXX – Flight crew Training Requirements & Procedures
- PCAA ANO-020-FSXX- Accident Prevention & Safety Program.
- PCAA ANO-024-FSXX – Commercial Air Transport Operation (D9.3& Attachment.
- PCAA ANO-028-FSXX – Flight Data Analysis (FDA) & Flight Data Monitoring.

2.8 CONDUCT & LIMITS OF PILOT INSTRUCTORS:

2.8.1 PILOT INSTRUCTOR(S):

Pilot instructor(s) include synthetic Flight Instructor(s) and Type Rated Instructor(s) (i.e. SFI and TRI). These Instructors are to conduct training task assigned within a FSTD or aircraft environment, as applicable. They must conduct themselves with integrity in all assigned training tasks. All training tasks assigned to an instructor must be compliant with aircraft operating procedure, company SOPs and PCAA Rules. Their authority is limited to imparting line training and writing training report only.

2.8.2 CPCT has authority to assign any instructor to conduct ground classes of the flight crew as and when required.

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2.9 SFI RATING-CURRENCY:

Currency requirements are having completed at least 25 hours of synthetic flight instruction as SFI during the period of one year; and

- Attended an SFI refresher seminar, as approved by the CAA. within the last 12 months;
- Passed a proficiency check, the skill test on a flight simulator of the applicable type within the last 6 months;

Note: PIA will ensure that the SFI meets the currency requirements as outlined above. Similarly, the SFI himself/herself must ensure that he/she maintains the currency whilst exercising the privileges of the SFI endorsement.

2.9.1 SFI RATING-REGAINING CURRENCY:

- For regaining currency of a SFI rating the applicant shall:
- Undergo one simulator session of at least 02 hours; and
- Have completed a proficiency check on a flight simulator of the appropriate type.
- Have completed within a period of 12 months, preceding the application, at least three route sectors as a pilot or an observer on the flight deck of the applicable type.

Note: After regaining the SFI Rating, an SFI is required to complete all currency requirements as mentioned in clause 2.9 of OM Part-D within next 12 months.

2.9.2 SFI RATING-PERIOD OF VALIDITY:

- SFI Ratings shall remain valid subject to currency.
- An applicant who fails to achieve a pass in all sections of a proficiency check shall not exercise the privileges of that rating until the proficiency check has successfully been completed.

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2.9.3 CANCELLATION OF SFI RATING:

Two failures in the proficiency checks shall result in the cancellation of the SFI Rating on a particular type of Synthetic Flight Trainer of that aircraft. Whereas, for an Instructor or an Examiner, more than 2 exercise sequences assessed as 'Satisfactory with Briefing' (SB) shall be deemed as 'Unsatisfactory Check'.

2.9.4 SUSPENSION OF SFI RATING:

If an SB is given in any exercise of the proficiency check (Simulator and/or Route Check), the SFI rating shall be suspended till the successful next check with nil SB.

2.10 TRI RATING – CURRENCY:

Currency requirements are having completed at least 50 hours of flight instruction on airplanes as TRI during the period of one year; and:

- Attended a TRI refresher seminar, as approved by the PCAA, within the last 12 months;
- Passed a proficiency check within the last 6 months.

Note: DGM Crew Training will ensure that the TRI meets the currency requirements as outlined above. Similarly, the TRI himself/herself must ensure that he/she maintains the currency whilst exercising the privileges of the TRI endorsement. DGM Crew Training and Licensing/Manager Crew Training & Licensing will monitor currency requirements of each TRI and keep a record.

2.10.1 TRI RATING – REGAINING CURRENCY:

For regaining currency of a TRI rating the applicant shall:

- Undergo one simulator session of at least 02 hours; or
- One air exercise of at least 1 hour comprising a minimum of 2 take offs and landings; and

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- c) Attend a TRI refresher seminar, as approved by the PCAA, within the last 12 months;
- d) Pass a proficiency check within the last 6 months.

Note: After regaining the TRI Rating, a TRI is required to complete all currency requirements as mentioned in clause 2.6 of OM Part-D within next 12 months.

2.10.2 TRI RATING-PERIOD OF VALIDITY:

- a) TRI Ratings shall remain valid subject to currency.
- b) An applicant who fails to achieve a pass in all sections of a proficiency check shall not exercise the privileges of that rating until the proficiency check has successfully been completed. Passing criteria shall be applicable as mentioned in clause 1.5.2.1 (f)

2.10.3 CANCELLATION OF TRI RATING:

Two failures in the proficiency checks shall result in the cancellation of the SFI Rating on a particular type of Synthetic Flight Trainer of that aircraft. Whereas, for an Instructor or an Examiner, more than 2 exercise sequences assessed as 'Satisfactory with Briefing' (SB) shall be deemed as 'Unsatisfactory Check'.

2.10.4 SUSPENSION OF TRI RATING:

If an SB is given in any exercise of the proficiency check (Simulator and/or Route Check), the TRI rating shall be suspended till the successful next check with nil SB.

2.10.5 ADDITIONAL TRI RATING:

Before the privileges are extended to further Multi Pilot Aeroplane types, the holder shall have:

- a) Completed, within the 12 months preceding the application, at least 15 route sectors, to include take-offs and landings as pilot-in-command on the applicable aircraft type.

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- b) Completed type-training of at least 06 take-offs and landings from Right Seat with at least one take-off and landing at night.
- c) 'Satisfactory' Check by a PCAA Inspector or Designated Examiner.

2.11 SFE RATING - CURRENCY:

- a) Currency requirements are having completed at least 10 PPCs of that type of aero plane in the preceding 12 months;
- b) Flight Standards Directorate, PCAA may, in exceptional circumstance waive off the minimum requirement of 10 PPCs in the last 12 months;
- c) Attended a TRE/SFE Refresher Ground Training, within the last 03 years;
- d) Conduct a PPC as SFE duly monitored by a Flight Inspector/Designated Examiner of FSD once a year.

Note: Training Division of Flight Operations Department will ensure that the SFE meets the currency requirements as outlined above. Similarly, the SFE himself/herself must ensure that he/she maintains the currency whilst exercising the privileges of the SFE endorsement. DGM Crew Training and Licensing/Manager Crew Training & Licensing will monitor currency requirements of each SFE and keep a record.

2.11.1 SFE RATING REGAINING CURRENCY:

For regaining currency of a SFE rating the applicant shall:

- a) Undergo one simulator session of at least 04 hours (02 hours as PF and 02 hours as PNF/PM); duly monitored by a Flight Inspector of PCAA.
- b) Attended a TRE/SFE Refresher Ground Training, as approved by the PCAA, within the last 03 years; (if applicable)

Note: After regaining the SFE Rating, an SFE is required to complete all currency requirements as mentioned in clause 2.9 of OM Part-D within next 12 months.

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2.11.2 SFE RATING - PERIOD OF VALIDITY:

- SFE Ratings shall remain valid subject to validity of the PCAA Medical (Class 2) and currency requirements.
- An applicant who fails to achieve a "satisfactory" grading in the PCAA monitored PPC, will stop exercising the privileges of SFE.
- An applicant who fails to achieve a "satisfactory" grading in all exercises of the pilot proficiency check shall not exercise the privileges of that rating, until the PPC has been successfully completed. Satisfactory with Briefing (SB) shall not be accepted as Satisfactory.
- Any failure in the Pilot Proficiency Check, shall result in the suspension of the SFE rating on the particular type of aircraft. Licensing Branch, PCAA will inform Flight Standards Directorate, of the same as soon as the PPC failure report is received by them.
- Flight Standards Directorate will notify Licensing Office that, no further check reports of the concerned SFE should be entertained for renewal of licenses.

2.11.3 ADDITIONAL SFE RATING:

Procedure as per initial issue of SFE will be followed.

2.12 TRE RATING – CURRENCY:

- Currency requirements are having completed at least 10 Line Checks (Route Checks) on that type of aeroplane in the preceding 12 months;
- Flight Standards Directorate may, in exceptional circumstance waive off the minimum requirement of Line / Route Checks in 12 months;
- Attended a TRE/SFE Refresher Ground Training, as approved by the PCAA, within the last 03 years;

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- d) Passed a Pilot Proficiency Check on that aircraft type within the last 6 months;
- e) Conduct a Line Check as TRE duly monitored by a Flight Inspector / Designated Examiner of FSD once every 12 months
- f) Annual PPC of the TRE will be monitored by a Flight inspector/Designated Examiner of FSD.

Note: Training Division of Flight Operations Department will ensure that the TRE meets the currency requirements as outlined above. Similarly, the SFI himself/herself must ensure that he/she maintains the currency whilst exercising the privileges of the SFI endorsement. DGM Crew Training and Licensing/Manager Crew Training & Licensing will monitor currency requirements of each SFI and keep a record.

2.12.1 TRE RATING REGAINING - CURRENCY:

For regaining currency of a TRE, rating the applicant shall:

- a) Undergo one simulator session of at least 04 hours (02 hours as PF and 02 hours as PNF/PM); or
- b) Undergo at least one refresher training flight of 02 sectors, at least 02 hours comprising a minimum of 02 take offs and 02 landings from the right hand seat; and
- c) Attended a TRE/SFE Refresher Ground Training, as approved by the PCAA, within the last 03 years (If applicable);
- d) Pass a Pilot Proficiency Check within the last 6 months.

Note: After regaining the TRE Rating, TRE is required to complete all currency requirements as mentioned in clause 2.11 of OM Part-D within next 12 months.

2.12.2 TRE RATING - PERIOD OF VALIDITY:

- a) TRE ratings shall remain valid subject to validity of the license and recent experience.

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- b) An applicant who fails to achieve a satisfactory grading in all exercises of the Pilot Proficiency Check shall not exercise the privileges of that rating, until the PPC has been successfully completed. Satisfactory with Briefing (SB) shall not be accepted as Satisfactory.
- c) Any failure in the Pilot Proficiency Check shall result in the suspension of the TRE rating on the particular type of aircraft. Personnel Licensing Office will inform Flight Standards Directorate, of the same as soon as the PPC failure report is received by them.
- d) Flight Standards Directorate will notify Licensing Office that no further check reports of the concerned TRE should be entertained for renewal of licenses.

2.12.3 ADDITIONAL TRE RATING:

Procedure as per initial issue of TRE will be followed.

2.13 DOCUMENTS TO BE SUBMITTED FOR SFI/TRI & SFE/TRE ENDORSEMENT:

Following documents will be submitted to the Licensing office PCAA along with CAAF-020-LCXX-2.0 and CAAF-021-LCXX-2.0 for processing TRI/SFI & SFE/TRE Endorsements respectively:

- a) Medical fitness certificate CAAF-005-XXAM;
- b) Copies of last two PPC: CAAF-028-RGLC;
- c) Proof of TRI/SFI and TRE/SFE Ground Course;
- d) Flight log of last two months
- e) FI Examination Result (only for TRI/SFI) – Not required if candidate's license is FI or AFI endorsed earlier, or in case of additional TRI/SFI rating.
- f) After the successful check/evaluation for the desired rating, ATPL of the applicant will be sent to the Licensing Branch along with paid fee voucher or authorization in covering letter for deduction of fee from advance deposit of PIA in PCAA account.

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2.14 CONSOLIDATION & DEVELOPMENT OF INSTRUCTORS:

- a) CPCT/Respective equipment Deputy CPs shall ensure that they meet with training and check Flight Crew and evaluators at least twice in a calendar year to solicit feedback for regular improvements in the training and evaluation program. Each check flight crew shall attend such a meeting at least once a year. The check flight crew shall share and review their successful and unsuccessful/unsatisfactory training evaluations for trend monitoring and for identifying training deficiencies. The check flight crew's recommendations from these meetings shall be reviewed for modifying and improving the training program.
- b) Line crew shall also be detailed for attending these meetings and minutes of the meetings shall be recorded and distributed among the participants and instructors who were not present in the meeting. The required circulars/bulletins are uploaded in the AIMS/PIA website/iPad for crew information and feedback.

2.15 PERIODIC RE-ASSESSMENT (TRES/SFES):

TRES/SFEs shall be periodically reassessed at random by a Standards Check Captain.

2.16 APPOINTMENT & RECOGNITION (TRAINING & CHECK FLIGHT CREW):

Having satisfied the basic criteria and completed the course of training and demonstrated his/her ability to instruct, the new TRI/SFI or TRE/SFE shall receive a formal letter of appointment from the CP Crew Training, specifying his/her authority and responsibilities.

2.17 RECURRENT TRAINING & DEVELOPMENT (TRAINING & CHECK CREW MEMBER):

During his/her early experience of instructional duties the Training and check person's performance and continued interest shall be closely

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supervised by Standard Check Captains. Thereafter, his/her suitability shall be periodically reassessed. The background knowledge and expertise of the training/check Flight Crew shall be maintained and developed by continued supervision, advice and training.

Each training and check person shall participate in a minimum required training and/or evaluation session each calendar year, failing which he/she shall have to undergo a requalification program as per applicable rules.

2.18 PERIODIC MEETINGS:

Periodic meetings of TRI's, SFI's, TRE's and SFE's, Standard Check Captains, line crew members of the respective equipment and PIA Training Centre's Instructors shall be held at least biannually.

2.18.1 Integration of SMS/FDM/Investigations Outputs into Pilot Training

2.18.1.1. Purpose

To establish a systematic procedure ensuring that Safety Management System (SMS) outputs—specifically hazard reports, Flight Data Monitoring (FDM) trends, and safety investigations—are routinely analyzed and integrated into the recurrent pilot training syllabus. This ensures training remains relevant to current operational risks and maintains compliance with PCAA regulatory requirements.

2.18.1.2. Scope

This procedure applies to the Flight Operations Training Department and the Flight Operations Safety Action Group (SAG).

2.18.1.3. Responsibilities

- **Chief Pilot Crew Training (CPCT):** Responsible for initiating the review process, presenting safety data to flight instructors, and authorizing updates to the training syllabus.

- **Flight Ops SAG Members:** Responsible for analyzing safety data and providing actionable safety briefs to the Training Department.
- **Flight Instructors:** Responsible for reviewing the safety briefs and recommending practical syllabus adjustments.

2.18.1.4. Procedure Workflow

- **Step 1: Initiation and Notification:** At least **three (3) days** prior to the scheduled biannual Flight Instructors Meeting, the Chief Pilot Crew Training (CPCT) shall notify the Flight Ops SAG Members via email (fo.sag@piac.aero and sagfo@piac.aero) regarding the upcoming meeting date and request the Biannual Training Safety Brief.
- **Step 2: Data Collation and Analysis:** Upon receipt of the notification from CPCT, the Flight Ops SAG shall convene to review and analyze recent operational safety data. The analysis must encompass:
 - Recent voluntary and mandatory hazard/incident reports.
 - Current FDM trends (extracted from recent FDM Meeting Minutes).
 - Findings and recommendations from recent internal or external safety investigations.
- **Step 3: Preparation of the Safety Brief:** Based on the data analysis, the SAG shall compile a "Biannual Training Safety Brief." This brief will highlight key operational risks, recurring errors, and specific areas where crew performance could be enhanced through targeted training. The SAG will forward this brief to the CPCT prior to the instructors' meeting.
- **Step 4: Instructor Meeting and Syllabus Review:** During the biannual Flight Instructors Meeting, the CPCT will table the Biannual Training Safety Brief as a mandatory agenda item. The CPCT and the house of instructors will thoroughly discuss the brief to identify what specific additions, corrections, or targeted

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scenarios need to be incorporated into the upcoming recurrent training syllabi (e.g., specific simulator scenarios, ground school emphasis items).

- **Step 5: Implementation:** Approved changes will be integrated into the recurrent training syllabi by the Training Department. Instructors will be briefed on how to execute these new emphasis items during line or simulator checks.

2.18.1.5. Documentation and Evidence

To ensure continuous compliance and audit readiness, the following records shall be maintained by the Training Department:

1. Copies of the email correspondence between CPCT and SAG.
2. The Biannual Training Safety Brief provided by the SAG.
3. Minutes of the Biannual Flight Instructors Meeting, explicitly detailing the discussion of the safety brief and the agreed-upon syllabus changes.

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2.19 SFI/TRI TRAINING REQUIREMENTS:

Chapter 2 Table 1

S.	SFI	TRI
1.	In-house Interview by Selection Board to determine suitability for forwarding the case to PCAA.	In-house interview is not required, if also cleared in an earlier interview (type SFI).
2.	Interview in Flight Standards Directorate, PCAA	Interview in Flight Standards Directorate is not required, if cleared for TRI in an earlier interview of SFI on type.
3.	Passed FI-1 examination. (Candidates with FI/AFI rating endorsed on their licenses are exempted)	Not required (If completed previously)
4.	TRI/SFI Ground Course as per syllabus available at Chapter 2 sub clause 2.1.4 of this Chapter	Not required (If completed previously) To be detailed for a TRI/SFI Refresher, if required.
5.	Three (03) Simulator training and/or check observation sessions of 2 hours each.	3 flights or six sectors (whichever is more) as an Observer on training and/or check flights. (Line Observation) *Required only for ab initio TRI.
6.	Conduct 3 simulator training sessions on simulator instructor panel of 2 hours each, under supervision of a SFI/SFE	6 take-offs and landings From RH seat, to include One such take-off and landing at night in Aeroplane or simulator with TRI/SFI whichever is applicable. Instructor is required to fill the form available in 2.23 of this Chapter
7.	Conduct a simulator training session of a crew under supervision of a SFE, to be monitored by Flight Inspector PCAA for a minimum of 04 hours, or Evaluation by FI, PCAA or DE in Simulator.	Assessment shall be conducted in simulator/line by an SFE/TRE as per clause 2.23.3.1.7 of this chapter.

Notes:

- All SFI/TRI trainings and evaluations shall be carried out as per PCAA approved Instructors & Examiners Training Syllabus Annex-E of the OM-D.
- Serial No. 3 is not applicable if the Captain has already completed these requirements on the previous equipment flown as TRI/SFI.

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- During evaluation (Serial No. 7), if performance of a TRI/SFI candidate is considered “Unsatisfactory”, the Evaluation Board will decide further course of action. The same procedure will also apply in the case of a TRE/SFE.
- The validity of 05 days TRI/SFI & TRE/SFE Ground Course is 03 years and each instructor are required to attend 01 days Refresher every year as a part of recurrences.

2.20 ANO APPENDIXES:

All TREs/SFEs are required to adhere to following topics as per applicable PCAA ANO/Document.

1. TRE/SFE Delegation – Policy and guidelines
2. Conflict of Interest
3. Pilot Proficiency Checks (PPC)
4. Line/Route Check
5. Assessment Standards Guidelines
6. Error Margins during a PPC or Line Check
7. Evaluation Errors
8. Oral Questions

2.21 MISCELLANEOUS PROVISIONS:

2.21.1: Following provisions are annunciated here for better explanation of qualification requirements. However, any provision not covered herein will be put up for Director Flight Standard’s perusal and may be dealt with as ‘special case’ by him with due diligence for a waiver thereof.

2.21.1.1: When PIA inducts new type of aircraft in its fleet, requirement of being TRI/SFI may be waived off by the Director Flight Standards by direct TRE/SFE endorsement on case to case basis for smooth operation of the newly inducted aircraft.

2.21.1.2: A current pilot with temporary medical unfitness may be permitted to continue SFI or SFE duties with approval from Director Flight Standards.

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2.21.1.3: Where PIA doesn't have any examiner pilot(s) (SFE/TRE), but has instructor pilot(s) (SFI/TRI) yet, all pilot checks shall be conducted by instructor pilot(s) (SFI/TRI) with the express authority of Director Flight Standards and shall mandatorily be monitored by a PCAA Flight Inspector.

2.22 CONDUCT & AUTHORITY:

2.22.1: Any SFE/TRE may be authorized as designated examiner (DE) to conduct a check or a series of checks by approving authority – Director Flight Standards (DFS). This authority is issued vide an approval document authorizing a Designated Examiner (DE) to perform checking duties subject to the condition.

2.22.2: All Designate examiners are expected to act as delegates of the Pakistan Civil Aviation authority (PCAA) while conducting any authorized check (s)

2.22.3: Pakistan Civil Aviation Authority may suspend authority of an Examiner (SFE/ TRE/DE) without assigning any reason.

2.22.4: An inspector may conduct any check at any time, if deemed necessary, with written consent of DFS. Similarly, an inspector may monitor any approved any approved DFS. Similarly, an inspector may monitor any approved any Designated Examiner (DE) conducting any check with the consent of DFS.

2.23 INSTRUCTORS & EXAMINERS INDOCTRINATION SYLLABUS (ALL AEROPLANES):

2.23.1 GENERAL

PIA Instructors & Examiners indoctrination syllabus is designed to train and develop new SFI/TRI & SFE/TRE on a particular aircraft (ATR, A320 or B777) the SFI training is designed in Six phases; Phase One to Four require ground based self-studies followed by Phase Five and Six which involves Observation and Training sessions respectively on approved FSTD (Flight Simulation

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Training Device) during simulator sessions. Ideally all training is to be conducted sequentially, the SFI training being basic and initial for development of new instructors, therefore aspirant candidates must have at least completed the theoretical part of SFI training before moving to next competency.

Any question about the content or suggestions can be directed to:

Chief Pilot Crew Training

Flight Operations Dept. Head Office,

Karachi, Airport.

E-Mail: khiorpk@piac.aero

2.23.2 SYNTHETIC FLIGHT INSTRUCTOR (SFI)

2.23.2.1 PHASE 1

Topic	Self Study
TECHNICAL & PROCEDURES	12 Hrs

This Phase requires SFI candidate to review and revise Aircraft Systems, Performance, Normal Procedures, Abnormal Procedures, Memory items and Limitations.

2.23.2.2 PHASE 2:

Topic	Self Study
CYCLIC & TRANSITION SYLLABUS	06 Hrs

SFI candidate shall become acquainted with simulator recurrent and transition syllabus and study the exercises in conjunction with QRH and expanded procedures in FCOM.

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2.23.2.3 PHASE 3:

Topic	Self Study
LESSON PLANNING & BRIEFINGS	07 Hrs

In this Phase SFI candidate shall put the intended exercises from engine start to parking in a lesson plan with realistic time distribution and prepare/practice briefing sessions with short lectures on topics like:

- a) ENGINE FAIL after T/O,
- b) ENGINE FAIL in cruise,
- c) TCAS,
- d) GPWS,
- e) NON-PRECISION APPROACH (NPA),
- f) ENGINE FIRE AFTER T/O,
- g) DUAL HYDRAULIC FAILURE,
- h) EMERGENCY DESCENT,
- i) UPSET RECOVERY,
- j) CROSS WIND LANDING TECHNIQUE

2.23.2.4 PHASE 4

Topic	Self Study
Instructors Operating Station - MANUAL	03 Hrs

SFI candidate shall to review the simulator's IOS manual (instructors operating station), this contains information pertaining to the operations of simulator and define its interface.

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2.23.2.5 FLIGHT SIMULATOR TRAINING DEVICE (FSTD)

2.23.2.5.1 PHASE 5

Topic	SIM TIME
OBSERVATIONS SESSIONS	06 Hrs

The trainee SFI will occupy the observer seat in the FSTD (Flight Simulation Training Device) and will observe the simulator sessions to be made familiarized with the simulator functions in the syllabus below and will be marked checked accordingly:

2.23.2.5.2 PHASE 6:

Topic	SIM TIME
TRAINING SESSIONS	06 Hrs

The trainee SFI will occupy the instructor seat in the FSTD and will conduct the simulator sessions with assistance and instruction provided by endorsed SFI/SFE, trainee SFI shall be able to operate all the simulator functions in the syllabus below and will be marked checked accordingly:

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2.23.2.5.3 SYLLABUS

Name of Candidate: _____

P#: _____ ATPL# _____ ACFT TYPE: _____

S.NO.	SFI Training Syllabus	SFI/SFE Name, Initial & Date
1.	Observer and Operator seat adjustment function	
2.	FSTD door operation and activating Motion feature	
3.	Location of FSTD fire extinguisher	
4.	location of FSTD emergency exit, rope/ladder	
5.	Instructors panel reading light and display brightness	
6.	FSTD temperature control	
7.	Engine and environment sound volume control	
8.	Emergency stop switch	
9.	Master Index page and contents	
10.	Fuel, loading and CG configuration	
11.	Quick setup page	
12.	Generating Route departure and destination airport	
13.	Generating ATIS	
14.	Creating dispatch with C/F snag	
15.	Setting time of the day and season	

S.NO.	SFI Training Syllabus	SFI/SFE Name, Initial & Date
16.	Generating runway state dry, wet, contaminated, slush, compact snow or icy	
17.	CAVOK hard button	
18.	Freeze hard button	
19.	Generate Weather phenomenon CB, cumulus, microburst, wind shear, icing and turbulence	
20.	Changing current/destination WX	
21.	Setup general WX; QNH, wind, visibility, cloud base, temperature/dew point etc	
22.	Use of moving map, range and compass web	
23.	Usage of slew feature, Altitude, position, HDG and IAS	
24.	Reposition locations	
25.	FLT freeze, fuel freeze, position freeze usage	
26.	Visual effects page	
27.	Fail a particular NAV AID	
28.	Reset; engine quick restart, AHRS instant align, SYS reset, environment reset, malfunction reset, Master reset	
29.	Providing GPU	
30.	Cabin/Cargo door open close	
31.	Mechanic/cabin attendant call	
32.	Use of session video recording where applicable	

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S.NO.	SFI Training Syllabus	SFI/SFE Name, Initial & Date
33.	RFF vehicle generation	
34.	Marshaller generation	
35.	TUG master generation	
36.	Visual effects generation; rain, snow fall, birds etc	
37.	Crash inhibit function	
38.	GPWS generation	
39.	TCAS event generation	
40.	Use of track and de clutter function	
41.	FSTD locations of books stowage	
42.	Printer unit usage	
43.	Communication feature/ discrete communication	
44.	Malfunction index	
45.	Arming malfunction, arming criteria, activating malfunction	
46.	Smoke warm-up and smoke activation	
47.	Unusual attitudes activation	
48.	Flight path print for debriefing	
49.	Communication with FSTD engineer on intercom	
50.	Discuss FSTD and A/C differences/ defects if any	

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S.NO.	SFI Training Syllabus	SFI/SFE Name, Initial & Date
51.	SFI ability to radar vector	
52.	Communication; SFI role as ATC, GND crew, Cabin crew & Company.	
53.	System malfunction pages; Electrical, Start abnormalities, Engine, Propeller (ATR), Fuel system, Pneumatics, pressurization and door, Hydraulics, Flight Instruments, Navigation, Auto Flight, GPWS, Flight controls, Landing Gear and Brakes, Fire and smoke, Ice protection, Misc.	
54.	Time management	

Note:

Along with operating the FSTD, SFI candidate must also develop skills to observe the trainee for correct procedure adherence and note down his/her mistakes and shortcomings for debriefing later or correct the trainee on spot if required, the mistakes may be categorized in Minor, Major or Critical Errors. SFI shall learn to identify the **reasons** of errors e.g. inadequate knowledge, haste, nervousness, distraction, lack of situational awareness, incorrect scanning and eyeballing, once these reasons are identified instructor shall help the students to improve their performance.

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DEVIATIONS AND ERRORS:

Deviations:

A deviation is a quantifiable measurement of a variation in precision from a specified flight exercise tolerance.

Deviation Severity	Description
Minor Deviation	*A deviation that does not exceed a specified tolerance
Major Deviation	*A deviation that exceeds a specified tolerance by less than double ; or *Repeated minor deviations without achieving stability
Critical Deviation	*A deviation that exceeds a specified tolerance by more than double ; *Repeated major deviations without achieving stability; or *Not identifying and correcting a major deviation .

Errors:

An error is a qualitative assessment of **an action or inaction by a flight crew** that leads to a variation from flight crew intentions or expectations.

Error Severity	Description
Minor Error	*An action or inaction that is inconsequential to the completion of a task, procedure, or maneuver; and *Undesired Aircraft State (UAS) did not occur
Major Error	*An action or inaction that is consequential to the completion of a task, procedure, or maneuver; and *Undesired Aircraft State (UAS) did not occur
Critical Error	*An action or inaction that is consequential to the completion of a task, procedure, or maneuver; and *Undesired Aircraft State (UAS) occurred

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2.23.2.5.4 SCOPE OF SFI IN TRAINING EXERCISES:

The SFI will train to ensure students are performing as per the guidelines below in respective exercises.

ENGINE START/DEPART:

Aim:

To complete the correct engine start procedures including the use of an auxiliary power unit (APU) or external power source under various atmospheric conditions, conducting warm-up, run-up and system checks, recognize normal and abnormal situations, and take proper action in the event of a malfunction.

Description:

The candidate will demonstrate the proper use of the pre-start, start and pre-taxi checklists and check the appropriate radio communications, navigation and electronic equipment and selection of the appropriate communications and navigation frequencies prior to flight.

Performance Criteria:

Base the assessment on the candidate's ability to:

- a) ensure ground safety procedures are followed during the before-start, start, and after-start phases;
- b) ensure the appropriate use of ground crew personnel during the start procedures;
- c) perform all items of the start procedures by systematically following the approved checklist items for the before-start, start, and after-start phases;
- d) demonstrate sound judgment and operating practices in those instances where specific instructions or checklist items are not published;
- e) use the challenge-and-response (or other approved) method with the other crewmember(s), where applicable, to accomplish the checklist procedures;

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- f) coordinate with ground crew and ensures adequate clearance prior to moving any devices, such as door, hatches, and flight control surfaces;
- g) demonstrate adequate knowledge of the pre-takeoff checks by stating the reason for checking the items outlined on the approved checklist and explaining how to detect possible malfunctions;
- h) divide attention properly inside and outside cockpit;
- i) ensure that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the checklist;
- j) explain, as may be requested by the instructor, any normal or abnormal system operating characteristic or limitation; and the corrective action for a specific malfunction;
- k) determine if the aeroplane is safe for the proposed flight or requires maintenance;
- l) determine the aeroplane's takeoff performance, considering such factors as wind, density altitude, weight, temperature, pressure altitude, and runway condition and length;
- m) determine airspeeds/V-speeds and properly sets all instrument references, flight director and autopilot controls, and navigation and communications equipment;
- n) review procedures for emergency and abnormal situations, which may be encountered during takeoff, and states the corrective action required of the pilot in command and other concerned crewmembers;
- o) Perform an avionics and navigation equipment cockpit check; and
- p) obtain and correctly interpret the takeoff and departure clearance as issued by ATC.

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TAXI-OUT:

Aim:

To maneuver the aeroplane safely on the ground and avoid unnecessary interference with the movement of other traffic as appropriate to the aeroplane including pushback or power-back, as applicable.

Description:

The candidate will taxi the aircraft to and from the runway in use and as otherwise required during the session. While taxiing, the candidate will follow taxiing procedures including docking, where appropriate.

In addition, the taxi check will include the use of the taxiing checklist, taxiing in compliance with clearances and instructions issued by the air traffic control unit (instructor).

Performance Criteria:

Base the assessment on the candidate's ability to:

- demonstrate adequate knowledge of safe taxi procedures (as appropriate to the aeroplane including push-back or powerback, as may be applicable);
- demonstrate proficiency by maintaining correct and positive aeroplane control;
- maintain proper spacing on other aircraft, obstructions, and persons;
- accomplish the applicable checklist items and perform recommended procedures;
- maintain desired track and speed;
- perform an instrument check;
- comply with instructions/clearances issued by ATC (or the examiner simulating ATC);
- observe runway hold lines, localizer and glide slope critical areas and other surface control markings and lighting; and
- maintain constant vigilance and aeroplane control during taxi operation to prevent runway incursion.

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TAKE-OFF:

Aim:

To take off safely using the correct technique and procedure for the actual wind conditions, runway surface and length, and can assess the possibility of further conditions such as wind shear and wake turbulence. Moreover, SFI will note the trainees correct positioning of hands, toes and heels during takeoff role.

Description:

The candidate will demonstrate a normal takeoff performed in accordance with the Airplane Flight Manual.

The candidate will demonstrate an instrument take-off in the same manner as the normal take-off with simulated instrument conditions established at or after reaching an altitude of 200 feet above the airport elevation.

Where practicable, the candidate will demonstrate, one crosswind take-off performed in accordance with the FCOM/FCTM where applicable.

The candidate will demonstrate one such take off to the lowest limit as appropriate to his flight crew position.

Note: The instructor may combine any or all of these take-offs.

Performance Criteria Take off:

Base the assessment on the candidate's ability to:

- Demonstrate adequate knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the aeroplane) airspeeds, configurations, and emergency/abnormal procedures;
- note any surface conditions, obstructions, or other hazards that might hinder a safe takeoff;
- verify and correctly apply correction for the existing wind component to the takeoff performance;
- complete required checks prior to starting takeoff to verify the expected power plant performance.

- e. Performs all required pre-takeoff checks as required by the appropriate checklist items;
- f. aligns the aeroplane on the runway centerline;
- g. apply the controls correctly to maintain longitudinal alignment on the centerline of the runway prior to initiating and during the takeoff;
- h. adjusts the power plant controls as recommended by the FCOM.
- i. monitor power plant controls, settings, and instruments during takeoff to ensure all predetermined parameters are maintained;
- j. adjusts the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff segment;
- k. perform the required pitch changes and, as appropriate, performs or calls for and verifies the accomplishment of, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/V speeds within the tolerances established in the FCOM.
- l. use the applicable noise abatement and wake turbulence avoidance procedures, as required;
- m. accomplish or calls for and verifies the accomplishment of the appropriate checklist items;
- n. maintain the appropriate climb segment airspeed/V speeds; and
- o. maintain the desired heading within $\pm 10^\circ$ and the desired airspeed/V-speed within $+10/-5$ knots or the appropriate V speed range.

Performance Criteria Engine Failure After Take-Off:

Base the assessment on the candidate's ability to:

- a) recognize the simulated engine failure promptly;
- b) control the aeroplane;
- c) set the power controls and reduce drag by using control application, in the proper sequence;

- d) identify and verify the inoperative engine;
- e) bank toward the operating engine, as recommended for best performance;
- f) maintain directional control within ± 10 degrees of assigned heading.
- g) establish a positive rate of climb, if the aeroplane is capable;
- h) accelerate to and maintain one engine inoperative required airspeed/Vspeeds and trim the aeroplane, as required;
- i) continue towards a specified altitude;
- j) locate the necessary controls and switches to carry out and complete the emergency procedures in accordance with the emergency procedures checklist (Engine Failure during Takeoff)
- k) complete prescribed engine failure vital action checks from memory;
- l) complete the emergency drill, in accordance with the emergency checklist; and
- m) complete engine shutdown checks and other necessary checks in accordance with the appropriate emergency checklist(s).
- n) monitor the operating engine and take appropriate action to keep the operating engine parameters within limitations.

REJECTED TAKE-OFF:**Aim:**

To recognize an abnormal situation necessitating a rejected takeoff and to carry out an appropriate procedure in accordance with the FCTM/FCOM/SOP.

Description:

The candidate will demonstrate a rejected take-off before reaching V1 speed, the candidate will demonstrate one such rejected take off to the lowest limit as appropriate to his flight crew position.

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Performance Criteria:

Base the assessment on the candidate's ability to:

- a) demonstrate adequate knowledge of the technique and procedure for accomplishing a rejected takeoff after powerplant/system(s) failure/warnings, including related safety factors;
- b) take into account, prior to beginning the takeoff, operational factors which could affect the maneuver, such as Takeoff Warning Inhibit Systems or other aeroplane characteristics, runway length, surface conditions, wind, obstructions that could affect takeoff performance and could adversely affect safety;
- c) align the aeroplane on the runway centreline;
- d) perform all required pre-takeoff checks as required by the appropriate checklist items;
- e) adjust the power plant controls as recommended for the existing conditions;
- f) apply the controls correctly to maintain longitudinal alignment on the centreline of the runway;
- g) abort the takeoff if, the powerplant failure occurs at a point during the takeoff where the abort procedure can be initiated and the aeroplane can be safely stopped on the remaining runway/stopway.
- h) reduce the power promptly,
- i) use spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, maintaining positive control in such a manner as to bring the aeroplane to a safe stop.
- j) Accomplishes the appropriate power plant failure procedures and/or checklist.

INITIAL CLIMB / ENROUTE CLIMB:

Aim:

To comply with initial climb departure procedures and enroute departure procedures as cleared.

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Description:

The candidate will complete the initial climb procedures, the departure procedures and establish the aircraft on the en-route course, as cleared. In addition, the candidate will demonstrate the proper programming and use of Flight Management Systems (FMS/GNSS) as applicable.

Performance Criteria Initial Climb:

Base the assessment on the candidate's ability to:

- a. transition smoothly and accurately from visual meteorological conditions to instrument meteorological conditions, where applicable;
- b. monitor power plant controls, settings, and instruments during the initial climb to ensure all predetermined parameters are maintained;
- c. adjusts the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff and climb segment;
- d. perform the required pitch changes and, as appropriate, performs or calls for and verifies the accomplishment of, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/Vspeeds within the tolerances established in the AFM.
- e. use the applicable noise abatement and wake turbulence avoidance procedures, as required;
- f. accomplish or call for and verify the accomplishment of the appropriate checklist items;
- g. maintain the desired heading within $\pm 10^\circ$ and the desired airspeed/V-speed within $+10/-5$ knots or the appropriate Vspeed range; and
- h. comply with ATC clearances and instructions issued by ATC (simulating ATC).

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Performance Criteria En-route Climb:

Base the assessment on the candidate's ability to:

- establish communications with ATC, using proper phraseology;
- select and identify use the appropriate communications and navigation systems associated with the proposed departure phase;
- perform the aircraft checklist items relative to the phase of flight;
- intercept, in a timely manner, all tracks, radials and bearings appropriate to the procedure, route or clearance;
- adhere to departure, noise abatement and transition procedures or ATC instructions;
- comply, in a timely manner, with all instructions and airspace restrictions;
- maintain proper aircraft control and flight within operating configurations and limitations;
- maintain assigned headings within ± 10 degrees;
- maintain assigned tracks and bearings within ± 10 degrees;
- maintain altitude within ± 100 feet;
- exhibit adequate knowledge of two-way radio communications failure procedures; and
- conduct the departure phase to a point where, in the opinion of the instructor, the transition to the en-route environment is complete.

CRUISE:

Aim:

To establish the aeroplane in cruising flight at the pre-planned power settings in accordance with the FCOM and to determine the candidate's ability to comply with en-route procedures as cleared.

Description:

The candidate will establish the aeroplane in cruising flight in accordance with the performance charts in FCOM. In addition, the candidate will maintain the aircraft on the en-route course and comply with en-route

procedures, as cleared; the candidate will demonstrate the proper programming and use of Flight Management Systems as applicable.

Performance Criteria:

Base the assessment on the candidate's ability to:

- a) select and use the appropriate communications frequencies;
- b) select and identify the navigation aids associated with the proposed en-route phase;
- c) perform the aircraft checklist items relative to the phase of flight;
- d) intercept, in a timely manner, all tracks, radials and bearings appropriate to the route or clearance;
- e) adhere to the en-route procedures;
- f) maintain proper aircraft control and flight within operating limitations;
- g) maintain assigned heading, tracks or bearings within ± 10 degrees, and altitude within ± 100 feet;
- h) set the power/throttle(s), as required.
- i) confirm cruise performance and demonstrate good decision-making to deal with the consequences of variances from the expected performance.

STEEP TURNS:**Aim:**

To perform level and coordinated steep turns.

Description:

The candidate will execute at least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360° .

The candidate will specify the selected altitude, airspeed and initial heading before entering the turn.

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Performance Criteria:

Base the assessment on the candidate's ability to:

- where applicable, divide attention appropriately between outside visual references and instrument indications;
- roll into and out of turns, using smooth and coordinated pitch, bank and power control to maintain the specified altitude within ± 100 feet and the desired airspeed within ± 10 knots;
- establish the recommended entry airspeed;
- maintain the bank angle of 45° within $\pm 10^\circ$ while in smooth stabilized flight;
- after 180° of turn, roll out of the turn at approximately the same rate used to roll into the turn and reverse the direction of turn and repeat the maneuver in the opposite direction;
- roll out of the turn at the reversal heading and the entry heading within $\pm 10^\circ$; and
- avoid any indication of an approaching stall, abnormal flight attitude, or exceeding any structural or operating limitation during any part of the maneuver.

APPROACHES TO STALL:

Aim:

To determine the candidate's ability to recognize and recover promptly and correctly from an approach to a stall in various configurations, and avoid a stall.

Description:

For the purpose of this maneuver, an approach to a stall may be identified by:

The first indication of aerodynamic buffeting, a lack of pitch authority, a lack of roll control, an inability to arrest a descent rate; and/or the activation of stall warning devices, stick shaker and/or stick pusher devices.

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Stalls shall be practiced:

In the *take-off* configuration.

In a *clean* configuration, preferably at a medium or high altitude; and

In a *landing* configuration.

While in a turn with a bank angle of between 15° and 30°.

Performance Criteria:

Assessment of the candidate's ability to:

- recognize the first indication of an approach to a stall.
- disconnect autopilot and auto-throttle (as applicable);
- apply nose down pitch control until indications of stall and/or stall warning is significantly diminish or disappear, and trim as needed;
- roll to wings level using ailerons and apply rudder only as necessary to control sideslip;
- add or adjust power/thrust as needed;
- carry out configuration changes as recommended and ensure that speed brakes/spoilers (if installed) are retracted;
- recover to a safe airspeed and stabilized flight; and
- ensure that the aeroplane is in a suitable configuration by checking pertinent items from an appropriate checklist."

HOLDING:

Aim:

To establish the aircraft in a holding pattern using simulated ATC clearance.

Description:

The candidate must demonstrate adequate knowledge of a holding procedure for a standard or non-standard, published or non-published holding pattern.

If appropriate, the candidate must demonstrate adequate knowledge of holding endurance, including, but not necessarily limited to, fuel on board, fuel flow while holding, fuel required to alternate, etc.

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Based on an clearance, the candidate will select a suitable entry procedure, enter the hold and establish the aircraft in the holding pattern. Also, the candidate will demonstrate the proper programming and use of Flight Management Systems as applicable.

Performance Criteria:

Base the assessment on the candidate's ability to:

- a) change to the recommended holding airspeed appropriate for the aeroplane and holding altitude, so as to cross the holding fix at or below maximum holding airspeed;
- b) recognize arrival at the clearance limit or holding fix and initiate entry into the holding pattern;
- c) follow appropriate entry procedures for a standard, nonstandard, published, or non-published holding pattern;
- d) report entering the hold;
- e) comply with ATC reporting requirements;
- f) use the proper timing criteria required by the holding altitude and ATC or as instructed;
- g) comply with the holding pattern leg length when a DME distance is specified;
- h) use the proper wind-drift correction techniques to accurately maintain the desired radial, track, courses, or bearing;
- i) arrive over the holding fix as close as possible to the "expect further clearance" time;
- j) maintain the appropriate airspeed/V-speed within ± 10 knots, altitude within ± 100 feet, headings/tracks/course within $\pm 10^\circ$ or within $\frac{1}{2}$ scale deflection of the course deviation indicator, as applicable and accurately tracks radials, courses, and bearings; and
- k) maintain proper aircraft control and flight within operating configurations and limitations while in the hold.

DESCENT:

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Aim:

To comply with arrival procedures and maintain correct descent profile.

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Description:

Descent begins when the crew departs the cruise altitude for the purpose of an approach at a **particular destination** and ends when the crew initiates changes in aircraft configuration and/or speeds to facilitate a landing on a particular runway.

Performance Criteria:

Base the assessment on the candidate's ability to:

- a. demonstrate adequate knowledge of Approach Charts,
- b. select and identify the navigation aids associated with the proposed arrival phase;
- c. select and correctly identify all instrument references, flight director and autopilot controls, and navigation and communications equipment associated with the arrival;
- d. perform the aeroplane checklist items appropriate to the arrival;
- e. select and establish communications with ATC, using proper phraseology;
- f. comply, in a timely manner, with all ATC clearances, instructions, and restrictions;
- g. demonstrate adequate knowledge of two-way communications failure procedures;
- h. intercept, in a timely manner, all tracks, radials and bearings appropriate to the procedure, route,
- i. ATC clearance, or as directed by the instructor;
- j. correctly adhere to arrival procedures;
- k. adhere to airspeed restrictions and adjustments required by ATC, FCOM and SOP.
- l. establish, where appropriate, a rate of descent consistent with the aeroplane operating characteristics and safety;
- m. maintain the appropriate airspeed/V-speed within ± 10 knots, but not less than VREF, if applicable; heading $\pm 10^\circ$; altitude within ± 100 feet; and accurately tracks radials, courses, and bearings;

- n. complies with the provisions of the Profile Descent, STAR, and other arrival procedures, as appropriate; and
- o. maintain proper aircraft control and flight within operating limitations.

APPROACH:**Aim:**

To fly a successful stabilized precision and non-precision instrument approach in accordance with the published instrument approach procedure.

Description:

The candidate will be trained to fly instrument approaches with failure of one engine. The failure should occur before initiating the final approach segment and must continue to touchdown or throughout the missed approach procedure.

Note: For CDA the candidate may fly at altitudes higher than the applicable minimum altitudes depicted on the approach chart, but descent during the final segment of the approach should result in reaching the MDA at a distance from the MAP approximately equal to the recommended minimum visibility. The minimum altitudes depicted on the approach chart represent hard approach floor heights above terrain or other obstacles determined during the approach design process. Descent below these altitudes compromises the approach design safety factor.

Non-Precision Instrument Approach– Non CDA:**Performance Criteria:**

Base the assessment on the candidate's ability to:

- a. select and comply with the VOR/ LOC or NDB instrument approach procedure to be performed;
- b. establish two-way communications with ATC using the proper communications phraseology and techniques, either personally, or, if appropriate, directs co-pilot/safety pilot to do so, as required for the phase of flight or approach segment;

- c. comply in a timely manner, with all clearances, instructions, and procedures issued by ATC and advise accordingly if unable to comply;
- d. select, tune, identify, confirm and monitor the operational status of ground and aircraft navigation equipment to be used for the approach procedure;
- e. establish the appropriate aircraft configuration and airspeed/V-speed considering turbulence, windshear, microburst conditions, or other meteorological and operating conditions;
- f. complete the aircraft check list items appropriate to the phase of flight or approach segment, including engine out approach and landing checklist, as appropriate;
- g. prior to final approach course, maintain declared altitudes (± 100 feet) without descending below applicable minimum altitudes, and maintain headings (± 10 degrees);
- h. on the intermediate and final segments of the final approach course:
 - I. maintain VOR/ LOC/ LOC BC tracking within $\frac{1}{2}$ scale deflection of the course deviation indicator or within 5 degrees of the desired track in the case of an NDB approach;
 - II. fly the approach in a stabilized manner without descending below the applicable minimum altitudes depicted on the approach chart (+as required/-0 feet);
 - III. descend to and accurately maintain the Minimum Descent Altitude (MDA) and track to the Missed Approach Point (MAP) or to the recommended minimum visibility that would permit completion of the visual portion of the approach with a normal rate of descent and minimal maneuvering;
- i. maintain declared approach airspeeds (+10/-5 knots);
- j. initiate the missed approach procedure, if the required visual references for the intended runway are not obtained at the MAP

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execute a normal landing from a straight-in or circling approach as required.

Non Precision Instrument Approach – CDA:

Performance Criteria:

Base the assessment on the candidate's ability to:

When using an CDA technique while conducting the final approach segment of a non-precision approach to straight-in minima, the candidate will be assessed on his/her ability to:

- a) use temperature corrections to MDA / DA and other published altitudes, during cold weather operations;
- b) verify altitude and waypoint information.
- c) compute a stable approach path that approximates an optimum descent angle in accordance with Standard Operating Procedures (SOP), by using any aircraft computer-generated approach path systems or other methods of computing stable approach paths to the target touchdown point, for example by determining an appropriate descent angle or descent rate;
- d) brief the anticipated procedure in accordance with SOPs, and in particular any additional altitude margin to the Minimum Descent Altitude (MDA), where applicable;
- e) maneuver the aircraft so as to commence the final approach segment in the proper configuration and at an appropriate indicated airspeed, in accordance with SOPs;
- f) overfly any step-down fix between the Final Approach Fix (FAF) and the Missed Approach Point (MAP) at or above the minimum altitude;
- g) carry out a continuous descent, without level-offs, to be flown based on the descent angle obtained from the approach chart or as determined by the flight crew member(s);
- h) meet all criteria for a stabilized approach by 1000 feet AGL.

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- i) maintain an appropriate vertical profile to a point in space which will permit a safe landing with minimum maneuvering if the required visual reference to continue to land has been established;
- j) initiate a missed approach if any stabilized approach parameter is not met by the applicable limit or if the required visual reference necessary to continue to land has not been established, upon reaching the earlier of: i. MDA / DA; or ii. the MAP; and
- k) commence the horizontal (lateral) navigation portion of the published missed approach procedure at the MAP.
 - I. The pilot-in-command shall conduct a final approach descent with a planned CDA from the final approach fix to a nominal landing runway threshold crossing height of 50 feet;
 - II. The pilot-in-command shall initiate a missed approach upon reaching the earliest of either the MDA or the MAP, where the required visual reference necessary to continue the approach to land has not been established;

Precision Instrument Approach – ILS:

Performance Criteria:

Assessment of the candidate's ability to:

- a) select and comply with the ILS instrument approach procedure to be performed;
- b) establish two-way communications with ATC using the proper communications phraseology and techniques.
- c) comply in a timely manner, with all clearances, instructions, and procedures issued by ATC and advise accordingly if unable to comply;
- d) select, tune, identify and confirm the operational status of ground and aircraft navigation equipment to be used for the approach procedure.

- e) establish the appropriate aircraft configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions;
- f) complete the aircraft checklist items appropriate to the phase of flight or approach segment, including engine-out approach and landing checklist, as appropriate;
- g) prior to final approach course, maintain declared or assigned altitudes within ± 100 feet without descending below applicable minimum altitudes and maintain headings within ± 10 degrees;
- h) on final approach course, allow no more than $\frac{1}{2}$ scale deflection of the localizer and/or glide slope indications;
- i) maintain declared approach airspeeds within $+10/-5$ knots.
- j) maintain a stabilized descent to the Decision Height (DH) or Decision Altitude (DA) to permit completion of the visual portion of the approach and landing with minimal maneuvering;
- k) initiate the missed approach procedure, upon reaching the DH/DA, when the required visual references for the intended runway are not obtained.

Circling Approach:

Performance Criteria:

Base the assessment on the candidate's ability to:

- a. demonstrate adequate knowledge of circling approach categories, speeds, and complies with procedures to a specified runway;
- b. demonstrate sound judgment and knowledge of the aeroplane maneuvering capabilities throughout the circling approach;
- c. descend at a rate that ensures arrival at the MDA at, or prior to, a point from which a normal circle-to-land maneuver can be accomplished;
- d. avoids descent below the appropriate circling MDA or exceeding the visibility criteria until in a position from which a descent to a normal landing can be made.

- e. maneuver the aeroplane, after reaching the authorized circling approach altitude, by visual references to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course;
- f. maintain the desired altitude within -0, +100 feet, heading/track within ±10°, the airspeed/Vspeed within +10/-5 knots, but not less than the airspeed as specified in the FCOM;
- g. use the appropriate aeroplane configuration for normal and abnormal situations and procedures, where applicable;
- h. turn in the appropriate direction, when a missed approach is dictated during the circling approach, and uses the correct procedure and aeroplane configuration; and
- i. perform all procedures required for the circling approach and aeroplane control in a smooth, positive, and timely manner.

GO-AROUND:**Aim:**

To carry out a successful missed approach.

Description:

Following an instrument approach, the candidate will conduct a missed approach at any time from intercepting final approach to touch down on the runway. Except where ATC amends it, the candidate must follow the published missed approach profile.

In addition, the candidate will demonstrate the proper programming and use of Flight Management Systems as applicable.

Missed Approach**Performance Criteria:**

Base the assessment on the candidate's ability to:

- a) demonstrate adequate knowledge of missed approach procedures associated with standard instrument approaches;

- b) initiate the missed approach procedure promptly by the timely application of power, establish the proper climb attitude, and reduces drag in accordance with the approved procedures;
- c) report to beginning the missed approach procedure;
- d) comply with the published or alternate missed approach procedure.
- e) report with ATC anytime the aircraft is unable to comply with a clearance, restriction, or climb gradient;
- f) follow the recommended aeroplane check list items appropriate to the go-around procedure;
- g) request a clearance, if appropriate, to the alternate airport, another approach, a holding fix, clearance limit, or as directed by the instructor.
- h) maintain recommended airspeeds within +10/-5 knots;
- i) maintain heading, track or bearing within ± 10 degrees; and
- j) climb to and maintain the published missed approach altitude, or as cleared by ATC.

LANDING:
Aim:

To carry out a normal or crosswind landing and, where practical, a landing from an instrument approach by visual descent from an approach MDA or DA.

Description:

The candidate will be trained for:

- a) normal landing as well as without glide slope or PAPI/VASI information;
- b) crosswind landing, where practicable, under existing meteorological, runway and airport traffic conditions;
- c) landing and maneuvering to that landing with a engine failure

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Performance Criteria:

Base the assessment on the candidate's ability to:

- a) demonstrate adequate knowledge of normal and crosswind approaches and landings including recommended approach angles, airspeeds, V-speeds, configurations, performance limitations, and ATC instructions.
- b) consider factors to be applied to the approach and landing such as displaced thresholds, meteorological conditions, NOTAMs, wake turbulence, wind shear, microburst, gust/wind factors, visibility, runway surface, braking conditions, and other related safety factors.
- c) establish the approach and landing configuration appropriate for the runway and meteorological conditions, and adjusts the power plant controls as required;
- d) perform the aircraft checklist items relative to the phase of flight;
- e) maintains a ground track that ensures the desired traffic pattern will be flown, taking into account any obstructions and ATC instructions;
- f) verify existing wind conditions, makes proper correction for drift, and maintains a precise ground track;
- g) maintain a stabilized approach and the desired airspeed/V-speed within +10/-5 knots.
- h) execute a landing from an approach MDA or DA when the required visual references for the intended runway are obtained;
- i) accomplish a smooth, positively controlled transition from final approach to touchdown.
- j) maintain positive directional control and crosswind correction during the after-landing roll;
- k) use spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the aeroplane to a safe stop; and

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- l) complete the applicable after-landing checklist items in a timely manner and as recommended by the manufacturer.

GROUND ARRIVAL:

Aim:

To conduct after landing taxi in, arrival/engine shutdown, post-flight and flight close procedures as appropriate.

Description:

The candidate will demonstrate the ability to maneuver the aircraft under its own power to an arrival area for parking, shut down the engines and auxiliary systems and conduct required post flight procedures.

Performance Criteria:

Base the assessment on the candidate's ability to:

- a) demonstrate proficiency by maintaining correct and positive control;
- b) consider the safety of nearby persons or property by maintaining proper look-out, spacing between aircraft and obstructions;
- c) accomplish the applicable checklist items and performs the recommended procedures;
- d) maintain the desired taxi speed;
- e) comply with instructions issued by ATC (instructor)
- f) observe runway hold lines, localizer and glide slope critical areas, and other surface control markings and lighting to prevent a runway incursion.
- g) maintain constant vigilance and aeroplane control during the taxi operation.

2.23.2.6 DE-BRIEFING:

Debriefing Methods:

There are two debrief methods which are considered most effective.

Instructor will select one of the following methods depending on the outcome of the session:

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- i. The traditional debrief; and
- ii. The facilitated debrief;

Note: The C-A-L Model which analyzes and evaluates CRM with a link to the line flying environment should be incorporated into a facilitative debrief.

Successful Session:

Normally, a facilitated debrief (incorporating the C-A-L model) is used for a successful session.

The traditional debrief may be used for a routine session with only minor errors where a facilitated debrief would add little value.

Unsuccessful Session:

The traditional debrief must be used in the case of an unsuccessful performance.

The C-A-L model is not incorporated in this case.

Regardless of the debrief method employed, the debrief should promote learning and increase the knowledge and confidence of the candidate(s).

The Traditional Debrief:

During a traditional debrief, the instructor leads discussion points.

It must encompass both technical and nontechnical elements (i.e., cooperation, leadership and managerial skills, situational awareness, decision making, communication, and threat & error management).

While a candidate(s) must be debriefed as soon as practical following a session, the instructor must ensure that the debrief is thorough and accurate. Instructors should review the session in a logical order which is not necessarily chronological.

A traditional debrief should be organized as follows:

- i. Overall assessment of the session (i.e., successful or unsuccessful);
- ii. Performance strengths;
- iii. Performance weaknesses;
- iv. Questions and feedback; and

- v. Specific actions necessary for the candidate to improve future performance.

While it may be easier to concentrate on negative performance, the candidate may be more receptive to assessments of poor performance if good performance is recognized first.

A candidate's performance shouldn't be specifically critiqued until their knowledge of a procedure and/or motivations for actions taken have been determined. While criticism should be balanced by praise, Instructors must be plain-spoken if the candidate is to receive full benefit of the debrief.

The Facilitated Debrief:

The facilitated debrief emphasizes candidate self-critique. This method of debriefing draws upon the candidate's professional experience to enhance learning.

An effective facilitated debrief ensures that candidates do most of the talking. Ideally, the flight crew should discuss issues among themselves and thoroughly analyze situations that confronted them during the session.

The facilitated debrief must cover both technical elements (i.e., aircraft handling and knowledge and skills) and non-technical elements (i.e., cooperation, leadership and managerial skills, situational awareness and decision making). Related nontechnical concepts (i.e., communication, automation and threat and error management) should also be considered.

Levels of Facilitation:

There are three levels of facilitation; high, medium and low. An Instructor should strive to use the highest level of facilitation possible.

High Level Facilitation:

High level facilitation is possible when the crew discovers and discusses important issues on their own with minimal guidance from the instructor. For facilitating a discussion at this level, the flight crewmembers must be able to do the following:

- a. Identify important topics and issues that arose during the session;
- b. set an agenda for discussing these issues,
- c. Analyze (critically) the situation; and
- d. Evaluate how well they performed.

The instructor's role is as follows:

- a. Inform the crew of the objectives for the debrief,
- b. Outline the debrief process; and
- c. Assist in guiding the discussion only when necessary.

Although the instructor retains responsibility for ensuring that the debrief objectives are met, the instructor achieves this through general guidance rather than actually leading the discussion.

Medium Level Facilitation:

Medium level facilitation occurs when the instructor must help the crew discover important issues and lessons by asking questions.

An instructor will encourage the crew to analyze situations and their performance in greater detail during this level of facilitation.

The instructor must therefore lead the discussion more directly.

Low Level Facilitation:

Low level facilitation does not imply inadequate facilitation on the part of the instructor. It may be necessary and appropriate to use when crews do not respond to higher levels of facilitation.

Low level facilitation must be employed when flight crewmembers show little initiative and respond only superficially. At this level, self-discovery by the crew is limited; however, the instructor is still encouraged to use effective facilitation techniques to lead the crew to critical issues, appropriate solutions and correct evaluation.

The Instructor is expected to summarize each item and confirm the flight crew understands and agrees with the outcome of the discussion before moving on to the next debrief item.

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Conducting a Facilitated Debrief

Introduction and Format

An introduction lays the foundation for the debrief. It should explicitly state how the crew and the instructor will participate. It should also include the following:

- Clarify your role and set expectations for crew participation;
- Provide rationale for the use of facilitation debrief;
- Explain the format or model that will be used (e.g., C-A-L model);
and
- Explain that all critical areas will be covered.
- Agenda

An agenda is helpful to identify items that must be discussed. While this should include areas of both good and poor performance, it must contain any exercise which requires improvement.

To promote crew discussion, the crew should develop the agenda with the instructor.

Behavior Model (e.g., C-A-L Model)

Organizing the discussion with the use of a recognized behavior model provides a structure that will ensure that non-technical evaluation elements and related concepts are discussed in addition to technical evaluation elements.

The instructor should use the CAL model.

Recommended Techniques and Practices

The following techniques and practices are provided. Instructors are encouraged to refine their style of facilitation to suit the candidate and his training need:

- Participation encourages adult learning.
- Do not lecture or make long speeches.
- Do not give the impression that only your views are important.
- Balance the role of instructor and facilitator (ensuring that all of your points are covered).

- e) Use facilitation to meet debrief objectives.
- f) Adapt facilitation to the level of crew experience and performance to meet crew needs.
- g) Adjust your facilitation to the level needed to engage crew to the maximum extent.
- h) Ensure that both technical and non-technical issues are discussed.
- i) Keep discussion crew-centered.
- j) Ensure the crew analyzes performance and discusses how to do better.
- k) Encourage crewmembers to do most of the talking.
- l) Ask questions that begin with what, how and why (open-ended questions).
- m) Re-word questions instead of giving the answer.
- n) Use questions to promote in-depth crew participation.
- o) Ask quiet crewmembers to comment on what other crewmembers said.
- p) Re-direct crew comments and questions back to them.
- q) Use silence/pauses to elicit thoughtful crew responses.
- r) Ask follow-up questions that require in-depth analysis.
- s) Ask crew to analyze the reasoning behind their decisions.
- t) Do not interrupt the crew or leave a topic while they still want to talk.
- u) Do not give your own analysis before the crew.
- v) Reinforce good crew performance following crew analysis.

The C-A-L Model:

- a) It is known that CRM skills are frequently the underlying cause(s) of poor as well as excellent performance. It is imperative these skills are reviewed during a session debrief.
- b) C-A-L stands for CRM, analysis (and evaluation) and line flying.
- c) The C-A-L model is a facilitated debrief method that ensures participation by the flight crew members and promotes an in-

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depth review and analysis of non-technical (i.e., CRM) evaluation elements. It goes further by relating performance to the line flying environment.

C-A-L Model for Facilitated Debriefing	
C	CRM (non-technical elements and related concepts) * Display a list of non-technical elements and related non-technical concepts. *Tie discussion points to operational issues.
A	Analysis and Evaluation *Explicitly evaluate performance during the session. *How effective was management of the situation? *What went well, and why? *What could be improved, and how? *Interactively analyze the situation confronted. *What happened? *How was it managed (include non-technical techniques utilized)? *Why it was managed that way?
L	Line Operations *Discuss how the session performance and associated non-technical elements and related concepts relate to line operations. *Discuss related line incidents that illustrate non-technical elements and related non-technical concepts. *Discuss how to apply session success to line operations. *Discuss how things could have been done differently. *What could have been done differently to improve the outcome in the session? *What non-technical element and/or related non-technical concepts techniques could have helped? *How could you turn areas for improvement into strengths? *What can be done to prevent or manage similar situations on line?

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2.23.2.7 SFI CHECK/EVALUATION:

SFI will conduct a simulator training or check session in presence of a SFE and a CAA flight inspector, the SFI candidate must ensure good time management to plan the session in such a way that all mandatory items are completed in stipulated time, the students shall be briefed about the exercises, but sequence shall not be disclosed in briefing. Any items not completed with satisfactory performance may be given an allowance of one repeat if instructor feels the margin of improvement; this repeat shall be performed in the end of the session, extra time maybe acquired if deemed necessary. The SFI candidate performance shall be found satisfactory for issuance of SFI rating.

2.23.3 TYPE RATING INSTRUCTOR(TRI)

2.23.3.1 TRI REQUIREMENTS:

2.23.3.1.1 Train the Trainer Ground School:

The candidate TRI shall successfully attend the last three days minimum of the Train the Trainer Ground school.

2.23.3.1.2 P1 Experience:

The candidate TRI shall attain the OM-D minimum Hours requirement as P1 on the equipment.

2.23.3.1.3 Interview:

The candidate TRI shall undergo an in-house interview if initially not underwent for SFI. The interview board has given satisfactory remarks to the candidate.

2.23.3.1.4 Shadow Sessions (Observation of Training Flights):

The candidate TRI shall perform Three flights or Six sectors (whichever is more) as an Observer on training and/or check flights (Line Observation). This requirement is only for ab-initio TRI.

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2.23.3.1.5 Line Indoctrination:

During line indoctrination phase the candidate TRI will perform line flights with a TRI/TRE for the purpose of line indoctrination and RHS landings. In cruise the TRI/TRE will choose any exercises or discussion items (minimum Two per sector) from the Under Supervision syllabus of that equipment and assign it to the candidate TRI, now the TRI/TRE will play the role of Phantom trainee. The candidate TRI will brief and explain those exercises to the Phantom trainee using cockpit ergonomics in the same manner as it is to be done to a trainee Captain or First officer. Upon completion, the TRI/TRE will provide tips for betterment or identify any inadequacy in the explanation/briefing method. When TRI/TRE is satisfied he will pen down the name of chosen exercise/discussion item with satisfactory remarks in the syllabus. Total **Twelve** exercises/discussion items are to be completed minimum two each sector, more than twelve exercises may be discussed if so, it shall be written in the syllabus accordingly. This will be followed by a RHS landing of candidate TRI on the same sector.

2.23.3.1.6 RHS Take-offs & Landings:

Right Hand Seat (RHS) Take-off/Landings will be carried out of the candidate TRI to make him acclimatized with flying and PF/PNF task sharing duties from the RHS. A total of **Six** Landings shall be performed with Minimum one-night RHS landing and one PNF take-off from RHS.

Note (2.5/2.6): TRI RHS Take-offs/Landings training is allowed to be conducted in a level D/Category 7 FSTD. In this case, step 2.5 is to be simulated in Simulator Cruise, thereafter, reposition to finals shall be executed to perform RHS landings of the candidate TRI. In this case if a SFE is operating the FSTD any crew may occupy the left seat of the cockpit but if a SFI is operating the FSTD a TRI/TRE will be required on the left seat and to fill the syllabus.

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Name of Candidate: _____

P#: _____ ATPL# _____ ACFT TYPE: _____

TRI Line Indoctrination and RHS T/O & LDGs FORM						
DATE	FLT#	SECTOR	EXERCISE / DISCUSSION ITEM	LDGs D/N	Remarks	TRI/TRE Name & Signature
			1. 2. 3.			
			1. 2. 3.			
			1. 2. 3.			
			1. 2. 3.			
			1. 2. 3.			
			1. 2. 3.			
			1. 2. 3.			

Total RHS LDGS = 6 (minimum 1 night)

RHS PNF T/O = 1

Exercise / discussion item total = minimum 12

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Exercise / discussion item per sector = minimum 02

2.23.3.1.7 TRI Check/Evaluation:

Assessment of competence for a TRI shall be conducted in simulator. If simulator is not available or accessible, an aircraft shall be used.

The TRI check/evaluation will require following three men in a simulator or on a line flight cockpit:

1. Candidate TRI
2. SFE/TRE
3. PCAA inspector or DE

TRI check will require an applicant to perform in a simulator/line flight with an SFE/TRE who while assessing training capabilities. The Candidate TRI will also play the role of a Phantom trainee. The Candidate TRI shall render training to Phantom trainee in various phases of simulator/flight brief/explain him on minimum Two exercises/discussion items in cruise which are allotted to him by the SFE/TRE.

In order to clear the candidate TRI, the SFE/TRE shall assess the candidate TRI for his articulation method, impartment of cognition and overall conduct of the flight in a safe manner.

2.23.4 SYNTHETIC FLIGHT EXAMINER(SFE)

2.23.4.1 SFE REQUIREMENTS:

2.23.4.1.1 Train the Trainer Ground School:

The candidate SFE must have successfully attended the five days Train the Trainer Ground School.

2.23.4.1.2 Experience:

The candidate SFE shall attain minimums hours as a SFI in accordance with OM-D requirements.

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2.23.4.1.3 Shadow Session (Observation of SIM Session):

Candidate SFE shall observe one complete check Simulator session which will include Briefing, Simulator check and Debriefing with an SFE.

2.23.4.1.4 SFE Check:

Check of candidate SFE will be performed on a Simulator during a recurrent Day-2 or transition check in which the complete check session (briefing, Simulator check and De-briefing) will be conducted by the candidate SFE in the presence of an SFE. Moreover, the candidate SFE will ensure that the conduct of check is different from recurrent day 1 and transition training sessions, therefore he will refrain from impromptu coaching during the check session, instead he will note down the points for debriefing.

The check will be monitored by a PCAA inspector or a DE.

2.23.5 TYPE RATING EXAMINER (TRE)

2.23.5.1 TRE Requirements:

2.23.5.1.1 TRAIN THE TRAINER GROUND SCHOOL:

The candidate TRE must have successfully attended the five days Train the Trainer Ground school.

2.23.5.1.2 EXPERIENCE:

The candidate TRE shall attain minimums hours as a TRI in accordance with the OM-D requirements.

2.23.5.1.3 PERSONAL CHECKING AND STANDARDIZATION:

The candidate TRE on must bases has underwent and cleared an Annual Route check and a Standardization check in last 365 days.

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2.23.5.1.4 CONDUCT OF ANNUAL ROUTE CHECKS:

The candidate TRE must have conducted a minimum of **Five** Annual Route checks as a TRI.

2.23.5.1.5 TRE CHECK:

The candidate TRE will conduct a route check of a Captain or a First officer in presence of a TRE which will be monitored by a PCAA inspector or DE. If any Captains or First officers are not scheduled for a route check then the TRE shall play the role of a Phantom Trainee First officer under check and will sit on the RHS. This will require the following three men in the cockpit:

- a)** Candidate TRE,
- b)** TRE,
- c)** PCAA inspector or DE.

The candidate TRE shall prepare a lesson plan applicable to realistic line flying phases, this lesson plan shall inculcate assessment of the trainee under check via oral questioning and exercises so it is assured that the required proficiency level of the crew under check suffice company standards and he/she may be entrusted for a safe conduct of line operations.

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CHAPTER 3: SELECTION PROCEDURE FOR CADET PILOTS:

3.0 SELECTION PROCEDURES FOR CADET PILOTS:

3.1 OBJECTIVES:

The aim of the selection policy is to ensure that methods and standards of pilot selection and screening for initial employment as a flight crew member meet or exceeds the requirements of professional personnel selection. The Airline shall ensure that:

- a) Screening methods used are up-to-date, and comprehensive as to their objectivity, reliability, validity and fairness to the applicant;
- b) Any discrimination as to the race, sex, religion, technical background or political affiliation of the applicant is excluded;
- c) Applicants are assessed against uniform high standards to optimize the quality of future Airline pilots.

Note: PIA recognizes the value of a stringent initial selection but emphasizes that the selection is a continual process, through the initial training, as even the best initial selection methods can only predict the success of the applicant and shall not be set against and above the training results.

3.2 ELIGIBILITY CRITERIA (INITIAL EMPLOYMENT):

- a) English shall be the designated common language and ELP level IV or above is required to be certified by PCAA on the relevant licence for all candidates.
- b) The candidate shall hold a valid Pakistan CPL with Instrument Rating (required to be verified for authenticity) including at least 190 flying hours.
- c) The candidate's general, educational qualifications shall be commensurate with those required for entry into a college or a university. (Required to be verified for authenticity).

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- d) The candidate shall be in possession of a valid Class I Medical fitness certificate, in compliance with the PCAA and ICAO standards.

3.3 SELECTION BOARD:

The Selection Board from the Flight Operations Department constitutes of Chief of Flight Operations/Director Flight Operations, CP Crew Training and CP Standards Inspection.

3.3.1 GUIDELINES:

PIA recognizes that the ideal airline pilot model does not exist. It has to be stated, however, that an airline pilot's duties and responsibilities dictate that the selection process aims at selecting those candidates who have:

- a) sufficient motor and cognitive skills to efficiently handle the aeroplane and execute proper flight management;
- b) personality structure suitable for duties as an airline pilot;
- c) the right attitude and social skills for team work;
- d) motivation to develop and maintain a high level of airmanship;
- e) leadership and command potential;
- f) Qualities that enable them to perceive the airline pilot's profession in a wider context and perform accordingly.

3.4 SELECTION PROCEDURE (INITIAL EMPLOYMENT)

3.4.1 SELECTION CRITERIA:

The selection criteria will be set by Chief of Flight Operations/ Director Flight Operations, CP Crew Training and CP Standards Inspection.

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3.4.2 GENERAL:

3.4.2.1 Security Screening/Check:

The Security Division, in coordination with the Employment Division and Flight Operations, shall process the security background checks, as required by the Airline and PCAA.

3.4.2.2 Written Test and/or through National Testing System (NTS):

The written tests are useful for assessing the technical and general knowledge in Aviation related subjects. Different sets of Test Papers for written test shall be prepared by the Selection Board. It shall be the responsibility of the Selection Board to conduct, monitor and evaluate the written tests. However, importance of computer based test is considered a modern technique to evaluate a candidate. Chief of Flight Operations/DFO will decide either Written Test and/or NTS method be adopted for this purpose.

3.4.2.3 Psychological Tests:

- a) PIA recognizes the value of the psychological tests in the initial selection as a means of forecasting the future capability and quality of the applicant as an airline pilot, especially where young applicants are concerned. PIA accepts the economic necessity for the use of tests in lieu of direct performance observations in simulated situations, which in principle are to be followed.
- b) The use of tests aims at the optimum level of objectivity and standardized entry to the pilot profession. It is clear that relying on interviews and/or information about an applicant's background does not guarantee the objectivity required.
- c) Tests shall be administered only by qualified psychologists. Test results shall be interpreted as a whole; no single test shall become a deciding factor in selection.

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- d) It is to be noted that significant cultural influences affect the results of some tests. The test models used shall be general in scope and culture free to ensure maximum effect.

3.4.2.3 Psychomotor and Coordination Tests:

- a) The use of flight training devices will be required for this assessment. If these devices are not available, skilfully designed psychological co-ordination tests shall be used in the selection process to predict success in training as their reliability and validity are well established if used by a trained psychologist.
- b) As scientific results show that these tests have the best predictive value to the overall performance, their relative importance in evaluating the applicant is emphasized.

3.4.2.4 Aptitude Tests / Intellectual Ability:

As these tests are fairly well validated and reliable their use shall be followed in the selection process.

3.4.2.5 Personality Tests:

Assessing personality is a most essential part of any psychological screening for airline pilot. Established personality tests are available but no single test exists that could be considered the most suitable for pilot selection. In most cases they require a high level of expertise by the user and thus cannot be used by layman.

Note: Since personality questionnaires of foreign cultural design and content can be of little value in another cultural setting, suitably localized questionnaires are employed.

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3.4.2.6 Medical Assessment:

The successful candidates from the written test shall report to PIA's Chief Flight Surgeon/Chief Medical Officer for medical assessment.

3.4.2.7 Flight Check:

After clearance from Chief Flight Surgeon/Chief Medical Officer, each candidate shall be required to undergo a flight check. Candidates with satisfactory rating from this check shall be eligible for final interview. Candidates will be required to sign a declaration that a failure in flight check will not be contested at any forum. Another Flight Check shall not be undertaken under any circumstances.

3.4.3 INTERVIEWS:

Interviews are used as an essential part of a selection process. It is to be noted that laymen interviews are a very unreliable selection method and shall not be decisive; otherwise the civil rights of applicants are threatened by prejudice and favouritism

- a) The Selection Board (Initial Employment) conducting interviews must be aware of interviewing techniques.
- b) Interviews are normally the most useful method to evaluate the motivational background of applicants as future airline pilots. Psychological tests are not suitable for that purpose with the exception of some general achievement motivation tests that can be used in this context as supporting material. The limitations of national legislation being observed, it is useful to take applicants' background history into account.
- c) The interview shall also be used to assess some vital aspects of the candidate, inclusive of English language proficiency, communication and other interpersonal skills.

3.4.4 OTHER ASPECTS:

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- a) The leadership or command potential of applicants is evaluated using the information provided by the whole battery of tests and interpreted by trained psychologists. No single test shall be decisive in this evaluation and the unreliability of interviews is to be noted. Where applicants have work experience either in the aviation industry or other relevant areas, it shall provide useful information about leadership or command potential and other desirable attributes.
- b) During actual promotion for command, there shall not be any special psychological screening as the original selection process shall have the level of validity that guarantees career success for command.
- c) Validation of Selection
The Selection Board (Initial Employment) shall not work in isolation and based on constant feedback. Therefore, it is essential that those responsible for training, line management and selection, work in close co-operation.

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CHAPTER 4: CADET PILOT TRAINING (BASIC):

4.1 OBJECTIVES:

- a) To teach the inductee Cadet Pilots the basics of all the systems used in modern aeroplanes, so as to prepare them to undertake the type technical course.
- b) To consolidate within the operating environment the training received by the new entry pilot at the ab initio stage.
- c) To provide type conversion training onto the aircraft which he/she shall be flying.
- d) To train the candidate in standard operating procedures.
- e) To achieve proficiency in the operations of the aeroplane within the air traffic environment.
- f) To achieve proficiency in performing the function and duties of a second-in-command, and the proficiency to perform the duties of PF as well as PM/PNF on his/her intended aircraft type.
- g) To provide Company Orientation to the Cadet Pilots.

4.2 TRAINING AIDS:

- a) E-Learning/LMS
- b) I-Pads/Android Tablets
- c) Multimedia/Projectors/Slides / PowerPoint Presentations
- d) Models
- e) Training Videos

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4.3 BASIC COURSE:

Duration of the Basic Course shall be of 10 Weeks. Following is the syllabus description of the Basic Course:

Two Weeks:

Duration (Days)	SUBJECT	To be conducted by
10 Days	Company and Regulatory Orientation	CPCT or his Delegated person
	Management and HR Overview	PTC Instructor
	Aerodynamics and the Theory of Flight	PTC Instructor
	Airframe and Associated Systems	PTC Instructor
	Turboprops / Turbofans and Associated Systems	PTC Instructor
	Airplane Electrical Systems	PTC Instructor
	Airplane Instruments	PTC Instructor
	Airplane Radio, Radar and Navigation Systems	PTC Instructor
	Airplane Performance and Mass & Balance consult ATR/A320 weight Report	E-Learning (LMS)/DGM Ops Engg. Or nominee
	Metrology, TAF, SIGMET, PREP, Prognostic charts and NOTAMS	A line Pilot/TRI (to be detailed by CPCT)

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Two Weeks:

Duration (Days)	SUBJECT	To be conducted by
10 working Days	Computer Orientation, electronic documents, iPad, EFB electronic flight log, PIA crew app usage, E-Learning (LMS) usage, bulletins & circulars and how to access them, updating documents and charts.	A line Pilot/TRI (to be detailed by CPCT)
	CRM day1	E-Learning (LMS)/Any PCAA approved CRM Facilitator
	CRM day2	
	Introduction to SMS & Safety Culture, Awareness to SAFA inspections	E-Learning (LMS)/As detailed by GM Safety & QA
	Flight physiology: Human Performance, Human Factors, Sleep importance and management.	E-Learning (LMS)/A line Pilot/TRI (to be detailed by CPCT)
	- Airline norms & discipline. - Importance of adhering to proper attire and uniform. - Appearance in Public and Customers. - Usage of equipment and type of kit suitable in flying duties: shoes, watch, glasses, personal and cockpit hygiene - Minimum Equipment List (MEL)	A line Pilot/TRI (to be detailed by CPCT)
	Flight plan/Fuel Planning	E-Learning (LMS)/A line Pilot/TRI (to be detailed by CPCT)
	FCOM overview	
	Obstacle Clearance	
	Diversion Planning	
	Effect of inoperative or missing components	
	Engine-out Drift down (if applicable)	
	AFM overview	
	FCTM overview	
	TOGW + APP CLIMB LIM CHARTS how and when to consult	

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	QRH Handling	

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two Weeks:

Duration (Days)	SUBJECT	To be conducted by
05 working days	<u>JEPPESEN AIRWAY Manual:</u> • Definitions and abbreviations, • Chart format, legends and descriptions, • signs and markings • En-route, • Radio Aids, • Table and codes, • ATC, Emergency, • Airport Directory and Terminal	A line Pilot/TRI (to be detailed by CPCT)
05 working days	<u>EFB</u> • Introduction • Overview of the EFB system architecture • General Guidelines and Limitations of the system • Human performance considerations on the use of the EFB • EFB Approved Applications • Use of each operational software application 1. PIA Crew App (Usage & Database update) 2. Jeppesen FD Pro (Usage & Database update) 3. Flight Package (Usage & updating via Email) 4. Documentation / e-Forms • EFB Normal Procedures • Procedures for cross-checking data entry and computed information • Conditions (including phases of flight) under which the EFB may not be used • EFB Abnormal and Emergency Procedures	A line Pilot/TRI (to be detailed by CPCT)

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Two weeks

Duration (Days)	SUBJECT	To be conducted by
10 working days	MCC: Multi crew Coordination course. RT Procedures. Any available Simulator at Karachi or Computer Based Simulation will be for utilized for introduction to airline flying, cockpit decorum, standard calls usage of FD bars and Autopilot, concept of cross checking the other pilot and autopilot, utilizing the other pilot in decision making, concept of confirming from other pilot before critical and non-reversible actions.	A line Pilot/TRI (to be detailed by CPCT)

One week:

Duration (Days)	SUBJECT	To be conducted by
5 working days	SOP: Standard Operating Procedure (ATR/A320)	A line Pilot/TRI (to be detailed by CPCT)
	Aviation Security course	PCAA Approved Instructor/E-Learning (LMS)
	DGR	PCAA Approved PTC Instructor/E-Learning (LMS)

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One week:

Duration (Days)	SUBJECT	To be conducted by
05 Working days	ATR/A320 TRANSITION SIMULATOR PREPARATION Class room briefing and mockup training groups of Four 2 hours each. Exercise memory items and limitations. Practice normal and abnormal procedures	A line Pilot/TRI (to be detailed by CPCT)

4.4 COMPANY AND REGULATORY ORIENTATION:

Prior to being assigned duties in line operation, the inductee Cadet Pilot shall undergo Airline and Regulatory familiarization training to ensure familiarity with:

- a) Company Organogram and Hierarchy
- b) Flight Operations Department:
 1. Department Organogram/Divisions/Divisional CP Job Descriptions
 2. Duties and Responsibilities as a flight crew member, as a second-in-command, as PF and as PNF/PM
 3. Layout of OM, overview of various Parts and Sections, the importance of the OM during operational activities.
 4. Technical/other manuals on company Web site/crew app on Ipad.
- c) Engineering and Maintenance
- d) Administration/HR/Security
- e) Flight Services
- f) Airport Services/Passenger Handling/Cargo Handling/Catering
- g) Marketing/Finance/Corporate Planning
- h) PIA Fleet/Network/Time Table/World Airline Guides/Codes

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- i) Passenger Reservation/Ticketing/CRC/IT/ERP.
- j) AIMS/Pilot Working Agreement/Admin Orders/Medical Facilities
- k) Pakistan CAA:
 - 1. Organogram and Hierarchy
 - 2. PCAA website/Civil Aviation Rules/Relevant Regulations/ANO/AOC/Safety Circulars/International regulatory and oversight agencies
- l) Airline AOC/ Authorized Operations/Restrictions
- m) Jeppesen (including RNP/RVSM) procedures training (See below).

RNP/RNAV TRAINING PROGRAM

- 1 Pilot Initial Training
- 2 Course Duration: 01 hours
- 3 Trainer: Training or Check Pilot / Approved PTC Instructor
- 4 Course Objective: To provide the new-hire pilots an insight into the requirements of operating with required navigational accuracy in the horizontal plane required in any defined airspace.
- 5 Course Outline
 - Definitions
 - Approval & Certification
 - Equipment Requirements
 - Pre-flight & En route Procedures
 - Position & Weather Reporting
 - Contingency Procedures
- 6 Required Navigational Performance (RNP) Area Navigation (RNAV)

DEFINITIONS

RNP

The ICAO Special Committee on Future Air Navigation Systems (FANS) defines RNP as a statement of required navigation accuracy in the horizontal plane (lateral and longitudinal position fixing) necessary for operation in a

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defined airspace. RNP types are identified by a single accuracy value, shown in the table below. For example, the statement of RNP 1 refers to required navigation performance accuracy within 1 NM of the desired flight path at least 95% of the flying time.

Table: _Existing levels of navigation accuracy

Chapter 4 Table 1

RNP RNAV Type	Accuracy in the designated airspace
RNP 1	±1.0 NM
RNP 4	±4.0 NM
RNP 5 (B-RNAV)	±5.0 NM
RNP 10	±10.0NM
RNP 12.6	±12.6NM
RNP 20	±20.0NM

Basic RNAV, B-RNAV (RNP 5), is a derivate of RNP 4, allowing continued operation without modification of existing route structures and is implemented in the ECAC (European Civil Aviation Conference) Airspace.

Potential application for RNP airspace includes:

- a defined airspace, such as North Atlantic minimum navigation performance specifications (MNPS) airspace.
- A fixed ATS route, such as between Sydney, Australia and Auckland, New Zealand.
- random track operations.
- a volume of airspace, such as a block altitude, on a specified route.

The implementation of RNP allows enhancements of ATC system capacity and efficiency while retaining or establishing enhanced system safety.

RNAV

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Area Navigation, RNAV, is the primary means of meeting RNP requirements. RNAV operations within the RNP concept permit flight in any airspace within prescribed accuracy tolerances, without the need to fly directly over ground-based navigation facilities. The application of RNAV techniques provides a number of benefits, for example:

- establishment of more direct routes reducing the flight distances.
- establishment of dual or parallel routes to accommodate a greater flow of en route traffic.
- establishment of bypass routes for high density traffic areas.
- establishment of contingency routes.
- establishment of optimum locations for holding patterns.
- reduces the number of ground navigation facilities.

Navigation parameters such as distance and bearing to a way point are computed from the aeroplane's position to the location of the way point. Course guidance is generally derived from the linear deviation from the desired track of a great circle course. The desired course may be pilot elect able or may be determined by the navigation computer through computations based on the locations of successive way points.

Precision RNAV (P-RNAV) (RNP 1) - shall provide a 95% containment value of ± 1 NM (± 1.85 km).

Basic RNAV (B-RNAV) (RNP 5) - shall provide a 95% containment value of ± 5 NM (± 9.26 km). This level is similar to that currently achieved by aeroplanes without RNAV capability on ATS routes defined by a VOR or VOR/DME, when VOR's are less than 100 NM apart.

RNP AND RNAV REQUIREMENTS

For RNP and RNAV operations, operators have the responsibility to ensure the required level accuracy, within the notified RNP/RNAV environment, by means of appropriate equipment usage and prescribed procedures for the flight crew. It is essential that ATC.

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receives an indication from the operator that a flight, planned along RNP/RNAV routes or in a RNP/RNAV area, has the required navigation capability.

APPROVAL AND CERTIFICATION

A fundamental requirement for the implementation of RNP is the approval of flight operations in the various RNP type airspaces by the State of the operator. Approval will be granted individually for each operator and each individual aircraft type used by the operator. RNAV and FMS equipment also needs to obtain airworthiness approval by the national authority. The approving authority must ensure that aircraft equipment be installed and operated in a manner appropriate to the RNP type approval being sought. An approval for a certain RNP type does not mean that the aeroplane may be operated wherever the RNP type applies. The RNP type approval is specific to a particular type of navigation equipment and application, and for the use of INS/IRS a time limit may apply. For example, an aircraft, having approval for RNP 5 in the B-RNAV airspace of Europe, using RNAV equipment requiring input from ground based navigation facilities such as VOR/DME may not be operated in a RNP 10 airspace where such facilities are not available.

EQUIPMENT REQUIREMENTS

RNP

Many different types of equipment are currently available to meet requirements for one or more RNP types. For example, a VOR/DME navigation system in combination with a simple RNAV computer accepting VOR/DME input is the least sophisticated equipment.

RNAV

Area Navigation Equipment determines aeroplane's position by processing data from one or more sensors. Determination of aeroplane's position is dependent on such factors as sensor availability and accuracy, signal

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parameters (signal source strength, transmitted signal degradation).
Position determination may employ such inputs as :

- distance measurements from two or more Distance Measuring Equipment (DME) ground stations (DME-DME);
- Very High Frequency Omnidirectional radio Range with DME (VOR/DME);
- Inertial systems (INS, with radio updating or limited 2 hour use after last on ground update)
- LORAN C (with limitations)
- Global Navigation Satellite System (with limitations).

GENERAL OPERATIONAL LIMITATIONS

Due to the availability and integrity of the various sensor systems, and effects of from outside sources, certain operational limitations must be imposed on the use of some types of RNAV equipment as follows:

Operational Areas

Operators shall define the area(s) in which operations are intended and ensure that equipment usage is capable of performance within the defined standard.

Operational Equipment

• INS

Without an automatic radio update, INS function is limited in usage for a 2 hour period from the last on ground position update. This can result in a degradation of accuracy with elapsed time. As a requirement, a linear decay value of 1.5 to 2 NM per hour must be considered.

• GNSS

During the pre-flight planning phase, if 24 satellites (23 if baro-aiding is incorporated into the GPS installation) are projected to be operational for the flight, then the aeroplane can depart without

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further action. If 23 satellites or less (22 or less if baro-aiding is incorporated), are projected to be operational, then the availability of GPS integrity (RAIM) should be confirmed for the intended flight (route and time).

SYSTEM AVAILABILITY

Navigation systems must demonstrate an acceptably reliable continuity of function prior to approval. National authorities may choose to rely on redundancy of systems in order to obtain an average airborne system availability of 99.99% of flight time for B-RNAV. Navigation function availability may be assured by the use of the multi sensor area navigation systems which incorporate various position fixing sensors, each of which is individually usable for airborne area navigation. Some RNAV systems permit the use of combinations of systems or pilot selection of one system in preference to another, depending on factors such as reception and weather conditions.

RECOMMENDATIONS

As long as VOR/DME facilities are available, and aeroplanes are equipped with VOR/DME instrumentation, the carriage of a single B-RNAV system will provide equivalent safety to the average systems availability requirements. It is anticipated that the withdrawal of VOR facilities will result in a requirement to carry redundant B-RNAV systems in order to meet the average system availability requirement.

CONTINGENCY

Flight Crew Inputs

Procedures shall enable erroneous flight crew inputs to be detected before the aeroplane's position accuracy can be degraded. It is the crew's responsibility to ensure that the navigation accuracy is maintained. In particular, the following common mistakes must be avoided:

Insertion errors

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Coordinates are inserted incorrectly into the system. (Particular care must be taken in case of a new ATC clearance).

De-coupling

If the pilot allows the autopilot to become de-coupled from the equipment which he/she thinks is providing steering output.

Using Faulty Equipment

The pilot might continue to use a navigation system which has become inaccurate.

FUNCTIONAL REQUIREMENTS

Navigation equipment should be capable of enabling the aeroplane to be navigated within the constraints of the air traffic service to the accuracy required in a promulgated RNP type of airspace. The carriage of RNAV equipment may be required in some regions or States and therefore the reason why frequent reference is made to the use of RNAV equipment.

NAVIGATION DATA BASE

It is the responsibility of the States to maintain the level of accuracy and thoroughness of the source material on which data bases rely. Data base providers have the responsibility to ensure that they accurately reproduce the source material as provided by the States.

RNP

Aeroplane's Flight Management System (FMS) software should employ the same geodetic reference datum as that used for locating ground based or earth-referenced navigational aids to avoid navigation errors when transferring between different geodetic reference datum application areas. The equipment shall provide an electronically-updatable navigation database containing at least the following location information:

- ARP
- VORs, DMEs, VORTACs and NDBs
- All named fixes

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- All procedures defined by a State such as Routes, SIDs, STARs, APCH, holdings, etc.

RNAV

For B-RNAV a navigation data base is optional. If provided, it shall consist of current navigation reference data officially promulgated for civil aviation use, and contain at least navigation aid and way point information covering the region of intended operation. It is desirable if storing a number of flight plans. The navigation data base installed in the aeroplane must be checked for its validity before the flight.

Route planning

The system shall allow the construction and/or modification of a flight plan. The flight crew shall be able to determine the correctness of the flight plan. B-RNAV shall provide a means for the insertion or modification of data in the flight plan via the RNAV Control Display Unit (CDU).

In-Flight Update

Verification of the data in respect to the Flight Path being flown, and the stored data base at any time without the guidance and navigation outputs of the computer being affected is mandatory. The route data shall consist of the names or coordinates of the way points and shall include distance and tracks between them. The present track and distance to go to the next way point shall be provided, except when operating on a non fixed leg. The flight crew shall be able to modify the flight plan at any time. An additional means of updating the flight plan by use of a ground/air data link is optional.

NAVIGATION

Navigation Mode and Annunciation

The flight crew shall be enabled to monitor navigation mode and position.

Tuning and Selection of Radio Aids

Automatic selection and tuning of VOR and/or DME channels in accordance with stored program procedures, and related aeroplane's position and data base requirements, is required. The selected frequencies and ICAO

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identifiers shall be available for display. Individual NAVAIDs shall be inhibited from the automatic selection process by the crew if desired. The ability of manual tuning to/of a Radio Navigation Aid (NAVAID) or displaying the data shall be given.

Route Execution

(Aeroplanes equipped with FMS should comply with the following statements in general):

Cross Track Deviation

A continuous display of distance from the intended track shall be provided. The display resolution shall be consistent with the system accuracy.

Parallel Offsets

A system is desired which provides the ability to fly parallel tracks offset by up to 20 NM from the primary track defined by the way points. The presence of an offset shall be continuously indicated.

Flight Plan

Operators of aeroplanes fitted with RNAV having a navigation accuracy meeting RNP 5 shall insert the designator 'R' in item 10 of the flight plan.

Operators of State aeroplanes not equipped with RNAV but having a navigation accuracy meeting RNP shall not insert the designators 'S' or 'R' in item 10 of the flight plan. Since such flights require special handling by air traffic control, item 18 of the flight plan shall contain STS/NONRNAV.

CONTINGENCY PROCEDURES

If, as a result of a failure of the RNAV system or degradation of it below RNP 5, an aeroplane is unable to either enter the designated airspace or continue operations in accordance with the current air traffic control clearance, a revised clearance shall, whenever possible, be obtained by the pilot.

When a verbal coordination process is being used, the sending air traffic control unit shall include the phrase 'NEGATIVE-RNAV' at the end of the message. The phrase 'NEGATIVE-RNAV' shall be also included by the pilot

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immediately following the aeroplane call sign whenever initial contact on an ATC unit frequency is established.

OPERATIONS MANUAL

The Operations manual shall describe the RNAV equipment procedures to be used for

- pre-flight, in-flight and post-flight; and
- in the event of a loss or impairment of RNAV navigation capability.

The procedures as filed by the state authorities do strictly apply.

RVSM TRAINING PROGRAM

1. Pilot Initial Training
2. Course Duration: 01 hours
3. Trainer: Training or Check Pilot / Approved PTC Instructors
4. Course Objectives: To provide the newly inducted pilots an insight into operation in the RVSM environment.
5. Course outline:
 - RVSM Airspace Definition
 - RVSM Benefits
 - Equipment Requirement
 - Approval Process
 - Operation in RVSM Airspace
 - Contingency Procedures
 - Operating Practices

RVSM Training Course

1. RVSM Airspace

Reduced Vertical Separation Minimums (RVSM) is a term used to describe the reduction of the standard vertical separation required between aeroplanes flying at levels between FL 290 and FL 410 from the original 2000 ft to 1000 ft. Historically, the standard vertical separation was 1000 ft from the surface to FL 290, 2000 ft from FL 290 to FL 410, and 4000 ft above FL

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410 to offset the diminishing accuracy of altimeters with increase in height. However, with improvements in the accuracy and performance of altimeters, air data computers and autopilots with time the 2000 ft vertical separation for modern aeroplanes was considered too cautious. ICAO proposed that this be reduced to 1000 ft. With a start in 1997 on the North Atlantic Organized Track System (NAT OTS), the entire western hemisphere saw RVSM implementation between FL 290 and FL 410, inclusive of both levels, by January of 2005. Since then many other regions around the world have incorporated RVSM, including Pakistan airspace.

RVSM Benefits

RVSM allowed increased air traffic density because of the six additional flight levels, flexibility in preferred routing and fuel economy resulting from a larger flight level menu. It offered these advantages retaining the high levels of safety by demanding improvements in equipment certification and crew training and operator approval by the regulators.

2. Equipment Required

The minimum equipment list (MEL) fulfilling RVSM requirement as per MASPS (minimum aircraft systems performance specifications) require:

- Two independent altitude measuring systems (altimeters), each equipped with cross-coupled static/source system with ice protection if located in areas subject to ice accretion, that in addition to display of pressure altitude for crew also provide digitalized signal to the automatic altitude control and alerting system,
- An automatic altitude alerting system
- An automatic altitude control system
- One SSR transponder with an altitude reporting system

3. Approval Process

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Operators intending to conduct flights within the volume of airspace where RVSM is applied shall require an approval for such operations from the regulators. To obtain such an approval the operator shall have to satisfy the regulator:

- that the aeroplane under approval has the vertical navigation performance capability required for RVSM operations through compliance with the MEL requirements
- that there is a continued airworthiness maintenance program in place
- that flight crew procedures for RVSM operation are in place

Operation of RVSM approved aeroplanes shall be indicated by insertion of letter 'W' in item 10 of the ATC Flight Plan, regardless of the requested flight level.

4. Operation in RVSM airspace

Detailed procedures for RVSM operation are to be found in Air Traffic Control chapter of the Jeppesen. Different controlled areas may have some area specific procedures.

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Chapter 4 Table 2

The controller/pilot* phraseology shall be as under:

Phrase	Purpose
(call sign) CONFIRM RVSM APPROVED	Used by the controller to ascertain the RVSM approval status of the acft.
NEGATIVE RVSM*	Used by the pilot to report non-RVSM approval status. a. on the initial call on any frequency within the RVSM airspace (controllers shall provide a read back with this same phrase), and b. in all requests for flight level changes c. in all read backs of flight level clearances pertaining to flight levels.
AFFIRM RVSM*	Used by the pilot to report RVSM approval status.
CONFIRM ABLE TO RESUME RVSM	Used by the controller to request confirmation that an aircraft has regained RVSM approved status or a pilot is ready to resume RVSM operations.
(call sign) UNABLE ISSUE CLEARANCE INTO RVSM AIRSPACE, MAINTAIN [or DESCEND TO, or CLIMB TO] FLIGHT LEVEL (number)	Used to deny ATC clearance into RVSM airspace.
UNABLE RVSM DUE TURBULENCE*	Used by the pilot to report when severe turbulence affects the aircraft's capability to maintain the height-keeping requirements for RVSM.
UNABLE RVSM DUE EQUIPMENT*	Used by the pilot to report that the aircraft's equipment has degraded below the minimum aircraft system performance specifications (MASPS).
READY TO RESUME RVSM*	Used by the pilot to report the ability to resume operations within the RVSM airspace after an equipment or weather-related contingency.
REPORT WHEN ABLE TO RESUME RVSM	Used by the controller to confirm that an aircraft has regained its RVSM approval status or to confirm that the pilot is ready to resume RVSM operations.

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Phrase	Purpose
* indicates a pilot transmission	

5. Contingency Procedures

An in-flight contingency affecting flight in an RVSM environment pertains to unforeseen circumstances that directly impact the ability of an aeroplane to meet the minimum vertical navigation performance requirements of RVSM airspace. These can be the result of degradation of aeroplane's equipment associated with height-keeping, or from turbulent atmospheric conditions.

Failure of one or more primary pressure altimeters, divergence in primary pressure altimeter indications, failure of automatic altitude control (altitude hold) or failure of altitude alerting system shall be considered as aeroplane,s equipment degradation.

Atmospheric contingent conditions may result from severe turbulence, mountain waves or from wake vortex. ATC may suspend RVSM operations in an area of forecast severe turbulence.

The pilot shall immediately inform ATC as soon as possible, using specified phraseology, and obtain revised clearance prior to initiating any deviation from the cleared route or flight level, whenever possible. ATC will then either provide a minimum vertical separation of 2000 ft, or an appropriate horizontal separation from all other aircraft.

6. Operating Practices

Good RVSM flight procedures would require crew interaction in several areas of operation:

- Flight Planning: Checking of the ATC and Company Flight Plans for correctness
- Pre-flight: Checking of the aeroplane equipment required for RVSM operation, added emphasis on exterior checks related to pitot/static systems

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- c. Procedures prior to entering RVSM airspace: Checking of aeroplane equipment for degradation and communicating with ATC
- d. In-flight procedures: Deal with periodic checking of aeroplane equipment, for example divergence in primary pressure altimeter readouts, ACAS lookout
- e. Post Flight procedures: Reporting equipment defects

Suggested reading: Jeppesen Airway Manual/Air Traffic Control chapter

TERRAIN AWARENESS TRAINING PROGRAM

(GPWS Alerts /CFIT Avoidance /Terrain Avoidance Maneuvre)

1. Flight Crew Initial and Recurrent Training
2. Course Duration: 02 hours
3. Trainer: Training or Check Pilot / Approved PTC Instructor
4. Course Objective: To provide training to flight crew members
 - to gain proficiency in terrain awareness
 - to GPWS warnings and alerts
 - to be able to avoid CFIT

The training shall be followed by evaluation of trainees

5. Course Outline:

The training will be video-based, followed by discussion during initial ground training. Subsequent hands-on training and evaluation shall be done on the FFS. Recurrent training shall be done on the FFS.

6. Course Material:

- GPWS Training video
- CFIT Training video

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4.5 MANAGEMENT AND HR OVERVIEW:

a) Management Techniques:

- I. Goal-setting,
- II. Team Building and Management,
- III. Crew member development.

b) Human Relations:

- I. Communications,
- II. Sharing of relevant information,
- III. Process of decision making.

4.6 AERODYNAMICS AND THE THEORY OF FLIGHT:

- a. General description and explanation of Newton's Laws of Motion, Force, Energy and Gas Laws.
- b. Atmosphere: Physical properties of air, effect of pressure, density, temp and humidity on air, and air distribution up to stratosphere and beyond. I.S.A. and unit of measurement.
- c. Airflow: Description and use of Bernoulli theorem, evolution of aerofoil, various shapes and pressure distribution, types of airflow.
- d. Lift & Drag: Factors affecting lift, variable camber and devices, low speed problem, coefficient of lift, type and cause of drag, their remedies and coefficient of drag.
- e. Level Flight Four forces on an aeroplane, position of the forces and their effect.
- f. Stability and Controls Definition and devices used to obtain various stabilities, action of Controls and balancing.
- g. High speed Flight Creation of sound and its speed, factors affecting speed of sound, relationship between speed of sound and aeroplane, Mach number and effect of shock and bow wave on flight.
- h. Subsonic, Supersonic Airflow Solution of the problems of transonic and supersonic flight.

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4.7 AIRFRAME AND ASSOCIATED SYSTEMS:

4.7.1 HYDRAULIC SYSTEM:

- General description and properties of liquids, types of liquids used in hydraulic systems.
- Description and operation of major components in hydraulic system.

4.7.2 PNEUMATIC SYSTEM:

Properties of compressed air and its advantages and disadvantages in pneumatic system.

4.7.3 LANDING GEAR SYSTEM

- Types of landing gears and various locks
- Landing gear retraction and extension devices.
- Types of shock absorbers in common use.

4.7.4 WHEELS AND BRAKES:

- Wheel types and construction of wheels
- Description of tyre and tube and general servicing
- Brakes, types and construction of brake (hydraulic and pneumatic) assemblies.
- Principles of anti-skid devices.

4.7.5 DE-ICING AND ANTI-ICING SYSTEM:

- De-Icing system in common use, its operation and its parts.
- Anti-Icing systems in common use its operation and parts.

4.7.6 AIR-CONDITIONING AND PRESSURIZATION:

- Purpose of pressurization and air-conditioning, the structural aspects and method of sealing.
- General principle and description of air-cycle.

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- c) Description of air-conditioning and pressurization system and function of various major components.
- d) Isobaric and differential ranges.
- e) Method of de-misting cabin and cockpit windows.

4.7.7 FUEL SYSTEM:

Type of fuel tanks, various fuel feed systems and major components, fuel tank venting, method of re-fuelling and de-fuelling and precautions.

4.7.7 FIRE PROTECTION SYSTEM:

- a) Principle of fire detection system and extinguishing systems in common use.
- b) Warning system and precautions.

4.7.8 OXYGEN SYSTEM

Basic regulatory requirements for the provision of crew and passenger oxygen systems aboard modern aeroplane.

4.7.9 EXAMINATION AND REVIEW:

To be done at PTC or PCAA approved facility / E-Learning (LMS)

4.8 TURBOPROPS/TURBOFANS AND ASSOCIATED SYSTEMS:

4.8.1 INTRODUCTION:

Jet Engine Physics and its application explanation of various laws involved:

- a) Basic Gas Turbine – Main components and their function, gas flow, behaviour of pressure, temp. And velocity.
- b) Jet propulsion – description of turbo-jet, turbo-prop, turbo-fan, ram-jet, pulse jet and rockets, their advantages and disadvantages.
- c) Jet Thrust – development of thrust and relationship with H.P. parameters affecting thrust, thrust augmentation (after burner).

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4.8.2 JET ENGINE COMPONENTS:

- Air Inlet ducts – various types and their requirements.
- Compressors – types and requirement, compressor stall and prevention.
- Combustion chambers – types and requirement, fuel manifold and nozzles.
- Turbine – types, pressure/velocity diagram.
- Exhaust duct – types, requirements, exhaust cones and struts.

4.8.3 JET ENGINE SYSTEMS:

- Lubrication system,
- Ignition System,
- Fuel System,
- Cooling and anti-icing System,
- Thrust reverser System.

4.8.4 EXAMINATION AND REVIEW:

To be done at PTC or PCAA approved facility / E-Learning (LMS)

4.9 AEROPLANE ELECTRICAL SYSTEMS:

4.9.1 BASIC ELECTRICITY:

- Electrical fundamentals, introduction and description of atomic structure, behaviour of electrons, electron flow, conductor and insulator, resistance and its effect.
- Principle of various method used in the generation of E.M.F. such as electro-chemical, thermo-electric, electro-magnetic and photo-electric methods.
- Different type of aeroplane batteries and their description (lead acid and alkaline, primary and secondary cell).

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4.9.2 GENERATORS AND MOTORS:

- Brief description of D.C. generators, characteristics of series, shunt and compound generators.
- Brief description of A.C generators (alternators) rotating armature and rotating field type alternators, single and 3-phase generators, advantages of A.C. generator over D.C. generator.
- Principle of D.C. motor – type and characteristics.
- Principle of A.C. motor – type and characteristics.
- Aeroplane electrical components – circuit breakers, fuses, thermal switches, switch, relays, transformers, rectifiers, capacitors, solenoids, inductors and filters etc.
- Electric machines – converters, inverters, actuators, vibrators, boosters etc.
- Measuring instruments – voltmeter, ammeter, power meter.
- Symbols and abbreviations.

4.10 AEROPLANE INSTRUMENTS:

- Mechanical Instruments pressure gauges. Bourdon tube and capsule operated, altimeter, airspeed indicators, rate of climb and mach meter and true airspeed indicator.
- Electrical Instruments Tachometers, thermometers, remote indicating system (desyn, autosyn and megnosyn) fuel quantity gauge capacitor type, fuel flow meter.
- Gyroscopic instruments principle and type of gyros and application on aeroplane's instruments, directional gyro, artificial horizon, and turn and slip indicator.
- Navigation Instruments magnetic compass, gyrosyn compass, flight director.
- Autopilot principle and basic purpose of autopilot, basic requirements of autopilot, typical autopilot controls and use.

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4.10.1 EXAMINATION AND REVIEW :

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4.11 AEROPLANE – RADIO, RADAR AND NAVIGATION SYSTEMS:

- Propagation of radio waves, principle of radio transmission and reception/ description of basic transmitter and receiver.
- Principle and description of microphone, loud-speakers and aerials.
- Principle and description of ADF, ILS and VOR.
- Fundamentals and principle of radar.
- Principle and description of WX Radar, DME, Radio Altimeter, ATC Transponder.

4.11.1 EXAMINATION AND REVIEW

To be done at PTC or PCAA approved facility / E-Learning (LMS)

4.12 AEROPLANE – PERFORMANCE , MASS AND BALANCE:

4.12.1 MASS AND BALANCE:

- Definition of aeroplane's CG and its limitations, the effect of CG position over aeroplane's performance, definition of arm, moment, datum, mean aerodynamic chord and method of finding out CG of aeroplane.
- Basics of flight load/trim sheet.

4.12.2 AEROPLANE PERFORMANCE:

- Factors affecting the take-off performance, definition and description of various limitations imposed upon take-off gross Mass of aeroplane (Box A, B, C, D limitation).
- Definition of various speeds such as V1, VR, V2, VS, VMCG and VMCA etc

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- c) Factors affecting the landing performance, regulation governing the runway length at scheduled and alternate field, approach climb and landing definitions and requirements.
- d) Factors affecting the aeroplane performance in cruise, various cruise powers, speeds and engine power limitations.
- e) Three and one engine performance.

4.12.3 EXAMINATION AND REVIEW:

To be done at PTC or PCAA approved facility / E-Learning (LMS)

4.13 COMPUTER ORIENTATION:

- a) Introduction and Basic Concept
- b) Computer Hardware
- c) Computer Software
- d) Introduction to MS Word/PowerPoint/Excel
- e) Introduction to E-Learning (LMS)

4.14 HUMAN PERFORMANCE, HUMAN FACTORS AND CRM:

4.14.1 BASIC HEALTH:

Know the effect and importance on pilot performance of the following factors:

- a) Diet, exercise
- b) Coronary risk factors – smoking, cholesterol, obesity, hereditary factors
- c) Upper respiratory tract infections e.g. colds, hay fever, congestion of air passage and sinuses
- d) Food poisoning and other digestion problems
- e) Headaches and migraines
- f) Pregnancy:
 - When to stop flying

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- Impact on cockpit ergonomics
 - g) Injuries
 - h) Aging
 - i) Alcohol and smoking
 - j) Blood donations
 - k) Dehydration
 - l) Emotional
 - m) Anxiety, depression, fear
 - know that a pilot shall not to fly when on any medication unless a medical clearance from the flight medical examiner has been obtained.
 - Know the responsibilities of pilots with regard to being medically fit for flight.

4.14.2 BASIC HUMAN FACTORS AND CRM:

Introduction to the basics of Human Factors shall be provided during the Initial (Indoctrination) CRM that shall use the approved syllabi, to include as a minimum, Threat and Error Management, Assertive Communication, Situational Awareness, Attitudes and Behaviors, Stress and Fatigue Management.

4.14.3 HEALTH AND FITNESS:

Physical Examinations:

- a) Reasons for and frequency of physical examinations and that a PCAA network of Designated Aviation Medical Examiners exists;
- b) process of obtaining a medical examination;
- c) role of the PCAA with regard to medical fitness and that only those conditions which present a flight safety hazard are disqualifying;

Alcohol:

- a) Explain how alcohol is absorbed and excreted;

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- b) state the factors that affect the elimination of alcohol from the body and describe the effects of illicit drugs and alcohol on proficiency e.g.;
- Judgement, comprehension, attention to details
 - The senses, co-ordination and reaction times.

Drugs:

Have a broad knowledge of the undesirable effects of over the counter and prescription drugs. In particular the side effects of:

- a) Aspirin, antihistamines, nasal decongestants,
- b) Amphetamines, tranquillizers, sedatives, antibiotics.

Blood donations:

- a) State the effect on flying after giving blood donation,
- b) State the recommended period between blood donation and the subsequent flight and know that this period can vary between individuals.

Hyperventilation:

- a) Know how to recognize and combat hyperventilation,
- b) Know what hyperventilation is and its causes.

4.14.4 ATMOSPHERIC PRESSURE CHANGES:

Trapped gases:

- a) know the effect of changes in pressure in gases trapped in the body cavities:
- b) Describe the effect on normal bodily function.
- c) State/list measures for prevention/treatment.

Flying after Underwater Diving:

Know the effects of flying after a period of underwater diving and state the precautions to be taken if intending to fly after underwater diving.

Basic Knowledge of the Anatomy of the Ear:

- a) know its function in receiving sound transmissions,

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- b) Explain the purpose of the Eustachian tube and effects of atmospheric / cabin pressure changes,
- c) State the effects of noise exposure on:
 - 1. Hearing loss: long / short term,
 - 2. Speech intelligibility,
 - 3. Fatigue.
- d) Describe recommended methods of hearing protection.

4.14.5 VISION, SPATIAL DISORIENTATION, ILLUSIONS:

- a) Have a basic knowledge of the anatomy of the eye and its function during the day and at night,
- b) Know factors which affect night vision and identify methods of dark adaptation,
- c) Describe the limitations of the eye in discerning objects at night and the 'off-centre' method of identifying objects at night.
- d) Know the limitations of the eye with respect to:
 - 1. The ability to discern objects during flight.e.g. other aeroplanes, transmission lines etc,
 - 2. empty field myopia,
 - 3. glare,
 - 4. colour vision in aviation,
 - 5. Common visual problems viz; myopia, hyperopia, astigmatism, presbyopia.

4.15 TRAINING:

After completion of the Basic Course, A cadet Pilot shall be detailed for respective type technical course, Simulator Training followed by Under Supervision Line Training as per approved syllabi.

Training shall be continuous from entry into ground school through to qualification as second-in-command in line operations.

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4.16 LANGUAGE:

English shall be the designated common language for all flight operations in order to:

- a) Effectively communicate during the performance of operational duties,
- b) Understand information in the OM pertaining to duties and responsibilities.

English language proficiency evaluation as per ICAO standards shall be conducted as per latest PCAA instructions.

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CHAPTER 5: INITIAL COMMAND TRAINING & SYLLIBI

5.1 INITIAL COMMAND TRAINING

5.1.1 GENERAL REQUIREMENTS:

The trainee shall be required to undergo the following training leading to the Initial Command:

- a) Approved aircraft specific type technical training followed by a written evaluation exam,
- b) Approved FBS/FFS simulator training as per syllabus, followed by a pre-rating check and a PCAA monitored/authorized type rating check,
- c) Under-Supervision line flying as per syllabus, followed by a pre-rating line check and PCAA monitored/authorized type rating check.

Note: ATPL is a mandatory requirement for P1 training. If any of the first officers lacks in fulfilling this requirement, he/she will be detailed for P2 training instead of P1 training on the equipment that he/she is promoted for command. Moreover, CPL holders, who have cleared their ATPL examination of PCAA, are also eligible for P1 simulator training/checks. For P1 line training ATPL is mandatory.

5.1.2 INITIAL COMMAND PREPARATION TRAINING:

5.1.2.1 OBJECTIVES:

5.1.2.1.1 Initial Command Training Course is designed to be completed over three days prior to commencing supervision line training, conducted by an ATR/A320 SFI or TRI.

5.1.2.1.2 Captain preparation training must not only focus on flying skills and systems knowledge but also include how crewmembers communicate with one another, the effective sharing of relevant information and the process of decision making. A good Captain's characteristics may be defined as being a commander and leader: the former in the sense of achieving unity of action and the latter as the art of gaining

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co-operation from other individuals. Besides the safety of the aeroplane, occupants and cargo, responsibilities of the Captain encompass planning the operation, organizing his resources to carry out the plan, directing the crew in the activities essential to the objectives, co-ordinating the efforts of the crew and supporting services and controlling the end result so that it meets operational objectives.

In simpler terms, the Captain is the coordinator of the flight, the team leader of the crew and PIA representative in relation to passengers or external authorities. None of these requirements involves the mechanics of flying, which is the direction towards which most up-grading training is slanted.

5.1.2.1.3 The modern transport airplane with its complex equipment cannot be operated by one man: therefore, the Captain must be a manager who inspires crew co-ordination and co-operation. Managerial skills are becoming even more important in light of current energy costs, which shall no doubt have a major influence on airline operations in the future. To train a man for a managerial position is a difficult and time-consuming process and it must begin on the day on which a pilot begins his airline career as a First Officer; it must then be intensified prior to his being upgraded to Captain. A two-day training course shall comprise the following:

Leadership:

The art of influencing human behaviour so as to accomplish a task in the manner desired by the leader.

Management:

Science of employing men and material in the economical and effective way for accomplishment of a task.

Command:

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- a) The art of exercising lawful authority, which a superior exerts over his subordinates by virtue of his rank and appointment.
- b) To provide pilots with basic command development knowledge prior to promotion.
- c) To develop an understanding of interpersonal values and behaviours which are essential to optimum performance in the cockpit.
- d) To understand the Captain's authority and legal considerations.
- e) To provide a complete, understanding of the PIA's Organization and Departments.

5.1.2.2 CRITERIA:

This training shall be in the form of a concentrated course, to be given well in advance of the promotion process.

5.1.2.3 TRAINING COURSES:

The Command Preparation Course shall be reviewed in CRM workshop/under supervision flying, covering following areas:

Command Techniques:

- a) Authoritative
- b) Participative
- c) Laissez-faire (Avoiding unnecessary intervention in the performance of other flight crew members)

Captain/PIC:

Legal Status/Authority/Responsibility Considerations

Resource Management:

- a) Goal-setting
- b) Team management
- c) Crew member development

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- d) Communications
- e) Sharing of relevant information
- f) Process of decision making

PIA's Organization (Supporting Departments):

- a) Flight Operations
- b) Engineering & Maintenance
- c) HR/Administration
- d) Flight Services
- e) Airport Services
- f) Marketing

OM Familiarization:

- a) Authority and responsibility of PIC.
- b) Responsibility of PIC related to aircraft documents, to include AOC Specifications and Limitations, Operational Flight Plan, ATS Flight Plan, Aircraft Technical Log and Airplane Flight Log.
- c) Reporting of accidents and incidents.

Routes and Airports Qualification training requirements as mentioned in relevant chapters of OM.

5.2 INITIAL COMMAND SYLLABI:

5.2.0 INTRODUCTION TO INITIAL COMMAND COURSE TRAINING

The Command Upgrade Training consists of the following:

- a) Complete study of Initial Command guidance (prerequisite, OM-D Chp 5)
- b) Course shall be completed before the commencement of under supervision line training
- c) Initial Command Course (3 Days Classroom) conducted by an ATR/A320 SFI or TRI

This manual is a self-study guide. It should be used in conjunction with other study material such as OM Parts A, D, SOP's, FCOM'S, etc. For brevity, the male terms he/him are used throughout, but are considered to be interchangeable with she/her. Although the normal flow of promotion to Captain is via the ATR/A320, some general references to A320 and B777 are also included for continuity. Thus, this manual does not deal with aircraft specific details.

5.2.1 PREAMBLE:

What sort of image do you wish to create as an aircraft commander? Below is a list of some of the many undesirable images, which a good commander would not want to be associated with.

- Aggressive
- Arrogant
- Boring
- Condescending
- Domineering
- Demeaning
- Dogmatic
- Dismissive
- Embarrassing
- Unhygienic

Look at yourself in the mirror occasionally and see if any of these items are appearing, then take action accordingly. To be a good commander it takes an effort to remain 'in the slot'. Listen to feedback which will occasionally be given to you in various forms. Later on, more will be said about "Feedback". A good question to ask yourself in order to set your standards is: "What sort of aircraft commander would I like to be seen as, and why?"

Having looked at the "Bad Images," let us now look at some of the "Good Images" on which to build your image:

● Approachable	● Encourages	● Good operator	● Smart
● Communicates	● Fair	● Non-judgmental	● Takes responsibility
● Confident	● Flexible	● Open / Friendly	● Team builder

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● Consistent	● Good listener	● Positive	● Technically competent
● Delegates	● Humble	● Relaxed	● Uses appropriate authority

With the above images in mind, you can now start developing your own image. Do it slowly and build on each item. As you gain experience as a commander, so will your stature and respect increase. Do not expect to be an instant success. Be safe and sure, emulate those commanders that you have respect for and one day you will be a good commander too.

5.2.2 LEADERSHIP

Some people are born leaders and remain so, while others learn to be good leaders. What therefore is the definition of a leader?

“A Leader is a person who has the power to “CHANGE” the thought and behavior of others in a desired way.” Leadership, like respect, is earned; whereas authority is assigned.

- Authoritarian leadership - directing, precise orders, monitoring of performance.
- Integrating leadership - cooperative, consult, take part, share ideas, embolden to decide.
- Participative leadership - convince, explicate, illustrate decisions, questions, chance for clarification.
- Leadership by delegation - non-leading, delegate responsibility for decisions and execution, hand-over.

Command style should be mainly driven by the level of competence/maturity of the part of the crew which should be led. Sliding along the scale is necessary for captains but especially required for trainers/instructors, who will have to adapt to the development of their trainees. Clearly, an immature crew requires more direction, a mature crew just delegation.

LEADERSHIP IS MADE UP OF TWO:

- The ability to motivate others and gain their respect.

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- b) The ability to make good decisions and be supported by those around you.

These two very important items are analyzed individually in '4. Motivation' and in '5. Decision Making'

Conflict resolution Aloft:

Commander of the aircraft being final authority is responsible for smooth and harmonious conduct of a flight. Any conflict between crew members, passengers or ATC may lead to a unsafe environment. Hence commander shall ensure all endeavors for no egoistic resolutions of conflicts. Most of the times defusing the situation till landing is of utmost importance than passing a judgment or resolution there and then. Commanders shall instill this quality in themselves and their first officers.

THE FLIGHT DECK AUTHORITY GRADIENT:

There are three main types of flight deck authority gradients:

- THE AUTOCRATIC FLIGHT DECK
- THE LAISSEZ-FAIRE FLIGHT DECK
- THE SYNERGISTIC FLIGHT DECK

THE AUTOCRATIC FLIGHT DECK:

The Autocratic Flight Deck is one where the captain imposes views on other flight crew and takes no opinions from others. There is little or no delegation and the captain becomes isolated from the rest of the crew. The captain regards any suggestions made by the crew as criticism or even as insubordination. Not surprisingly, the result is a tense atmosphere where the captain is actually overloaded in the event of any problem. This situation is possible if the captain is actually under-confident but uses authority to impose control and to hide weakness. It can also occur where there is a steep gradient of experience in the flight deck or where the captain has a particularly strong character and the co-pilot has a weaker, more subservient personality.

THE LAISSEZ-FAIRE FLIGHT DECK:

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In the Laissez-Faire Flight Deck scenario, the captain is passive and allows suggestions and decision making from the flight crew. The atmosphere is laid-back and the captain aims to please. However, the inevitable authority vacuum is filled either by a member of flight crew who takes over the role of leader, or each crew member works in isolation creating a ***self-centered cockpit*** with obvious inherent danger.

THE SYNERGISTIC FLIGHT DECK:

The Synergistic Flight Deck is the ideal scenario. The captain leads by example. The crew develops their skills as a result of the constructive advice given by the captain who encourages their suggestions. Responsibility is clearly delegated; plans are formed and executed together. Information is shared and decisions are made with active participation from the group. A constructive debrief also suggests ideas for future improvement of performance. As a result, the crew is motivated and the atmosphere is positive and professional.

Synergy:

The interaction or cooperation of two or more people to produce a combined effect greater than the sum of their separate effects.

5.2.3 MOTIVATIONS

Motivation is that which induces a person to act, preferably on their own. That is done without any further inducement, which in turn they do voluntarily from then on.

Abraham Maslow (1908 - 1970), who chaired the psychology department at 'Brandeis' in the United States, did much research on motivation and human psychology. It was he who invented "Maslow's Triangle." He looked into the needs of the individual and then related these to every day life. The basic requirements of the individual are called the basic human needs, which are: FOOD – WATER – SHELTER

A pilot already has "Food – Water – Shelter" since he or she has a stable job which in turn provides the basic essentials of life. Once these three items

have been acquired, the individual will increasingly start to look for safety in the job. From this point on we can now use the triangle to the aircraft commander's benefit, since we can assume that the basic human needs of the first officer have been achieved.

Let us assume that the commander has met a first officer for the very first time and that they are going to fly as a crew. This commander needs to get the first officer "On Side" in order to have a successful day. In the diagram below, you will see that it is a brick-building

Let us look at each level in the triangle:



- a) The Individual's Physical & Psychological Needs – Make the first-officer feel comfortable. You must be approachable and encouraging, by doing this, you will be removing any fear. This will make the first officer feel secure and not threatened.
- b) Safety and Security – encourage the first officer to ask questions, be a good listener. This increases the feeling of security. The first officer is now in a good comfort zone. The first officer feels safe and does not have to look over his or her shoulder.
- c) Belonging and Affection – The first officer will begin to feel that he or she now belongs to a team, which gives a sense of well-being and enjoyment for the task. There is no longer anxiety and loneliness.
- d) Self-Esteem – Now that the first officer is part of a team, they enjoy it. He or she feels that their input is worthwhile. They are encouraged to do even better.

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- e) Self-Fulfilment – They now are definitely part of a good team and want to give you all the support that they can, to make it a winning team.

As an aircraft commander, you have now achieved your objective by having someone alongside of you, who is going to look after you. The more you delegate the more help you will receive and the less stress and worry you will have. What could be better? Safety has been enhanced and the day is running smoothly. The basis of good leadership is Listen, Motivate, involve others and be positive at all times. You will now see how “Motivation” is linked so closely to “Leadership.” The other item in Leadership is “Decision Making.”

5.2.4 DECISION MAKING

In recent years, the “Decision Making” technique has changed. In aviation, decisions were made in the past by one person, the aircraft commander, calling on his wealth of experience. Such commanders were “Solo Operators and did everything themselves and the first officer was metaphorically there to carry the paper work and to raise and lower the undercarriage. These commanders made some good decisions and also some very bad decisions as they had not taken all the facts into account, by not asking other members of the crew for their views. Crews were also too frightened to speak-up because of fear instilled by the chain of command. Today, things have changed dramatically. The commander is still responsible for what happens, but now has many ways of achieving the desired goal, by discussing with the crew the various options available. It will reduce the stress on the commander and broaden the available alternatives with crew input.

Let us look at some of the tools available to an aircraft commander and crew, in order that a good decision can be made. There are a couple of mnemonics that are used in aviation to assist in decision-making. These are “GRADE” as used by the majority of airlines and “DODAR” as used by a few operators only. Both philosophies achieve the same goal. For ease of reference, both philosophies are listed to allow immediate and meaningful comparison of

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differences. Note the similarity in end-result. Decision making methodologies are also specific to your aircraft type SOP. The methods below are used to expand the thought process of new commanders.

GRADE stands for	DODAR stands for
Gather	Diagnose.
Review	Options
Analyze Alternative	Decide
Decide & Do	Assign
Evaluate	Review

We will analyse GRADE looking at each stipulation in turn:

Gather:

- Gather all the information available.
- Take all the time available, do not rush.

Review:

- Sort and check the information.
- Give it a priority.
- Resolve ambiguities – First filter.
- What is the situation now?
- How should it be?
- Discard irrelevant information – Second filter.

Analyze Alternatives:

- Look for alternatives
- Discard irrelevant information – Third filter Look for route to achieve your objective

Decide and Do:

- Make a decision– get as much help as possible from your crew.
- Act accordingly.

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- c) Doing might mean “Do nothing” – if it is not ‘broke’, do not break it.
- d) Delegate – do not try to do everything yourself

Evaluate:

- a) Check the outcome. Is the problem cured?
- b) Check that you have achieved the objective that you wanted.
- c) Get “Feedback” from the crew.
- d) Start GRADE again to check all eventualities

The above mnemonic will help you and the crew slow down and explore all the possibilities that are available on the day.

Good decision makers:

- a) Delegate task responsibilities.
- b) Involve all resources. They get information from all possible sources.
- c) Communicate what they expect to see.
- d) Recognize the responsibilities of authority.
- e) Choose appropriate behaviour

Whereas poor decision makers:

- a) Over-control.
- b) Focus only on the task and not on the overview.
- c) Distance themselves from the crew.
- d) Avoid conflict. Occasionally you have to correct someone.
- e) Behave inconsistently
- f) Jump to conclusions, without the necessary evidence

Decision-making requires practice, which is not readily obtainable today, since the modern commercial aircraft is so reliable. In fact, some people have gone through their flying career having rarely if ever, had to open the Quick Reference Handbook (QRH), other than in the simulator. So how does the modern-day co-pilot gain experience if there are no incidents? The obvious way to assist in the development of decision making and experience,

is to make your own decision quietly to yourself, before the captain declares the final decision. See if your decision is the same; if not, why not? You may not have taken into account some small item that his or her experience assisted in making the decision which you can learn from.

5.2.5 PRIORITIZATIONS

DECISION MAKING:

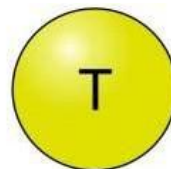
Successful decision-making is also helped by “Prioritization.” This is where you organize your mind in such a way that you develop an order in which things must be done if there are multiple items to be actioned. By doing this you greatly reduce stress, not only for yourself, but also the crew. Here there is a helpful diagram of trying to keep three balls in the air. This technique is usually used when airborne. Each ball has a greater and lesser importance at different times during the decision-making. Each ball has a name to it as well. These balls change size as their importance changes. The more important the item the bigger the ball is. Graphic was developed from work by John Adair.



Individual



Group



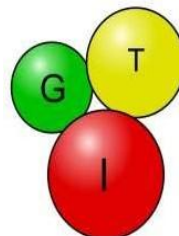
Task

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Let us take a situation. While on a flight from A to B, one of your passengers needs urgent medical

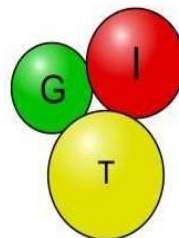
1. Passenger needs help

The **INDIVIDUAL'S** need for medical attention on the aircraft has priority over the **TASK**, flying the aircraft or the needs of the **GROUP**. The aircraft is in a safe condition and the passengers (**GROUP**) are comfortable.



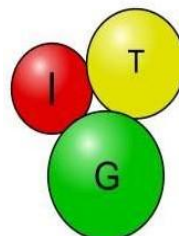
2. Decision to divert

The new **TASK** takes precedence involving diversion to an airfield with medical facilities. The **INDIVIDUAL** is being looked after and the passengers (**GROUP**) are still comfortable.



3. On the Ground at the diversion airfield

With the patient (**INDIVIDUAL**) in medical care and the **TASK** achieved, that is the diversion completed and the aircraft is safely on the ground, the **GROUP**, that is the other passengers, now become dominant.

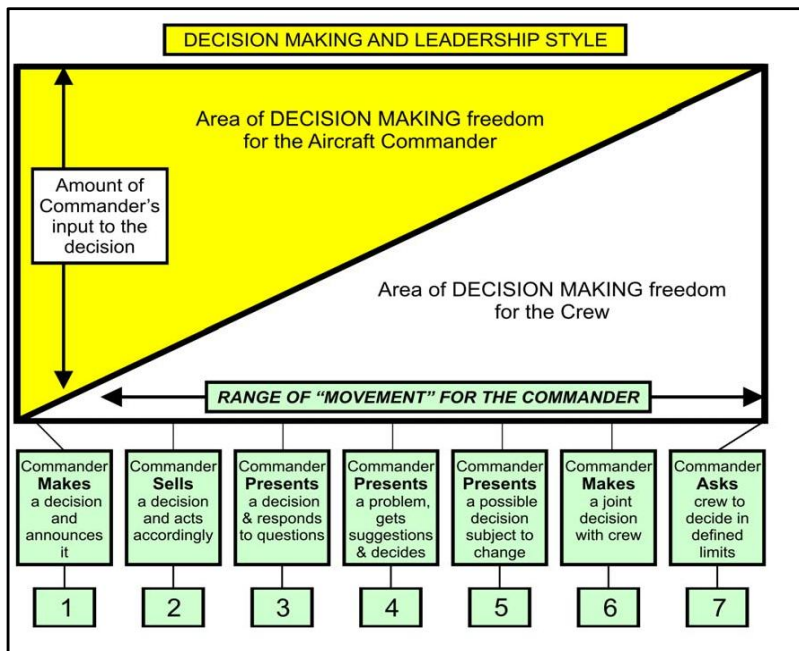


One can see from the above, that there is a definite order of priority of doing things:

First, get the Passengers taken care-of by the Cabin Crew. Second, do a GRADE and decide whether to divert or continue to destination. Third, if you divert, then the passengers group becomes the priority. They need information and care.

5.2.6 DECISION MAKING AND LEADERSHIP STYLE:

- a) Combining “Prioritization” with GRADE, you will end up with good decisions every time, provided you involve your crew. Let us now look at the link between Decision Making and Leadership and see how the two combine.



- b) The table below is divided into two triangles. Giving the aircraft commander space to move from total autocracy where the commander

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alone makes the decision to what looks at first sight, virtually no authority at all with no decision-making input at all.

The vertical area in the shaded yellow triangle is proportional to the power that the aircraft commander has in the decision-making and the style that is used to achieve the end result. The commander will have to slide back and forth across the scale at the bottom of the Developed from a BA training graphic

We now need to diagnose each box and see the impact that the style has on the decision.

1. This is the commander deciding only with no crew input. For example, on reaching Decision Height the response to the challenge “Decide” is ‘Land’ or ‘Go Around’. It is cut and dried.
2. The commander does most of the decision making with a small amount of support, such as when flying an ILS on limits, with a strong cross-wind. The aircraft is bouncing around and is difficult to control; the commander says aloud “I do not like this” and the first officer replies, “I agree,” to which the commander says “Go Around.” The need for a go around was being sold to the first officer.
3. In this situation, the commander has made the decision and enquires if everyone understands the decision.
4. This one is almost the same as the previous, with the exception that the commander listens to suggestions, but the commander makes the final decision.
5. Here the commander comes up with a possible solution, but is hoping for additional ideas from the crew to assist in the final decision.
6. The crew and commander discuss the possibilities and come up with a joint decision.
7. In this scenario, the commander hands-over completely the decision making to the crew, within defined limits. For example, when on a night-stop, the commander asks: “Where shall we eat tonight?” Note that the commander has laid down the limitations, that is, “where are

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we dining?” The question is limited to one specific item / activity for the crew to choose.

Poor area for the commander to move to for a decision is Box 7. If the commander uses the appropriate “Questioning,” it is in fact the most powerful area to be in. Knowledge of the above Diagram and its boxes, just like GRADE, can be a very useful tool for the aircraft commander. It will help keep the crew together and enhance his Leadership role.

One of the major Leadership roles for an aircraft commander is to keep the passengers onside and happy. This leads us to the use of the Public Address system.

Remember: keep your cabin crew and passengers well informed of your decision.

5.2.7 BEHAVIOR

The behavior of the aircraft commander is very important. You must always try to remain in “ADULT MODE.” This will enable you to achieve the maximum from the crew. Do not go to Parent or Child Mode. If on the other hand someone that you are working with moves away from “ADULT MODE,” endeavor to bring them back.

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Remember first impressions last and that your BEHAVIOR breeds the BEHAVIOR in others.

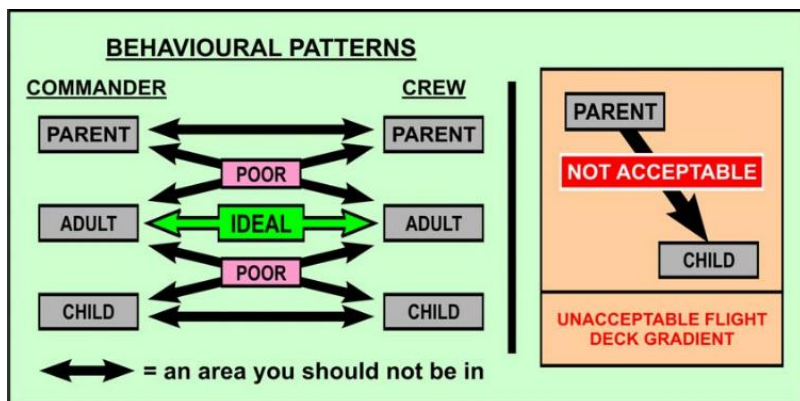
Developed from an Eric

Berne CTC/Thomson Airline course document Graphic.

“ADULT MODE” is what should be the objective response to the current situation.

1. Builds a mental model of others without preconceptions.
2. Honest about one’s own feelings and expresses them appropriately, while respecting the feelings of others.
3. Explores the intentions of others, using questioning and listening skills.
4. Considers the consequences of words and actions.
5. Considers not only what they say, but also how they say it.

How do we know that someone is in Adult Mode? - What are the outward signs? Their Vocal signs are that the voice is:



1. Steady and firm.
2. Sincere and clear.
3. At an appropriate volume.

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4. At an even pace.

Their physical signs are that the:

1. Eye contact is positive but not staring or threatening.
2. Facial expression gives the same message as words.
3. Body language is open and relaxed.

Generally speaking, there are two types of aircraft commander:

1. THE POOR COMMANDER TENDS TO AGGRESSIVE BEHAVIOR, WITH THE FOLLOWING TRAITS:
 - a) Quick to Anger.
 - b) Little Self Control.
 - c) Threatening Body Language.
 - d) Telling.
 - e) Shouts.
 - f) Swears much of the time.
 - g) Gets excited quickly.
 - h) Focuses on Personalities.
 - i) Rants and is irrational.
 - j) Basically under-confident.
2. THE GOOD COMMANDER THAT HAS A POSITIVE ASSERTIVE BEHAVIOR, IS A LEADER WHO:
 - a) Is calm.
 - b) Is controlled.
 - c) Uses appropriate Body Language.
 - d) Listens.
 - e) Uses appropriate Vocal Volume.
 - f) Is even-paced
 - g) Is issue-centered.
 - h) Stays focused, confident and in control.

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If both the commander and the crew stay in “ADULT MODE,” they will achieve what is called “EFFECTIVE BEHAVIOR,” and will

- a) Focus on the objective.
- b) Listen to each other.
- c) Ensure mutual understanding.
- d) Talk about the issues concerning the objective – NOT personalities.

If all of the above are achieved then the result will be “EFFECTIVE ADULT” behavior.

- a) The matter will be settled.
- b) There will be a mutually acceptable outcome.

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5.2.8 DEFINITIONS

There are a number of keywords which are frequently used in Company Operations Manuals and in all relevant legislation. A review of their meaning may prevent misunderstanding.

WELFARE	Well being
SAFETY	Free from harm, unhurt, protected, sure
RESPONSIBLE	Accountable, trustworthy, rational
COMMAND	To order or demand with AUTHORITY, to govern or Control, to lead
CAPTAIN	the officer in-charge
COMMAND AUTHORITY	Legal right
DISCIPLINE	Subjection to authority
EFFICIENT	Capable, able, effective (Efficiency = Competency)
LEAD	Guide, conduct, persuade, direct

5.2.9 CAPTAIN'S RESPONSIBILITIES:

An introduction:

In the starkest terms, the Captain is responsible for everything that happens on the aircraft of which he has command. It follows therefore that he must be fully aware of his responsibilities and those of crew and supporting ground staff. In particular he must be aware of specific responsibilities as laid down by CAR's 1994 and in Company OM's. He must also be aware of the wider and more general responsibility that is attached to one in a position of authority.

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Legal status:

In legal terms the authority of a commander is as follows:

“Every person on board an aircraft shall obey all lawful commands which the commander of that aircraft may give for the purposes of securing the safety of the aircraft and of persons or property carried therein or the safety, efficiency, or regularity of air navigation.”

It is a precise, unequivocal statement.

The following references to the OM’s and other publications provide the kernel from which to widen the study area of command responsibilities. It must be recognized that a good Captain never ceases updating his knowledge and appraising new information and techniques.

NEVER STOP LEARNING - KEEP SHARP!

5.2.10 OPERATIONS MANUALS (OM):

The importance of having a complete and up-to-date knowledge of company policies in OM contents has already been emphasized.

You should be aware by now that the backbone of your command upgrade training will be OM Part A. As a future captain you are supposed to know all the Operations Manuals.

To aid your studies, but not to limit them, the following sections of these manuals encompass areas that are of particular significance to the Pilot in Command:

- a) OM Part A & D,
- b) FCOM,
- c) QRH,
- d) MEL/CDL.

As soon as your line training starts, it is a good idea to start reading OM part A (often neglected as a First Officer) at this stage with “the eye of a captain”. Remember that things like the loading of the aircraft, fuel policy, FDTL, which airport to choose in case of diversion, and much more now becomes your

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direct responsibility. Good knowledge of this manual, as well as knowing where to find what information, might one day save your day!

5.2.11 COMMUNICATION AND DECISION MAKING

Communication:

Speaking:

Communication in some form is a requirement of every society and it is almost universal that each animal species possesses the ability to communicate in some recognizable form to other members of the group and often to members of other groups. Communication is not confined to vocal means, but will in any event have a series of conventions and patterns which make it recognizable and above all, repeatable.

In our modern society the means of communication are developing at an amazing rate, becoming an ever more complex subject. The technology of communication is not our subject here.

We will examine some rather less advanced concepts than e-mail, Internet and satellite communications. We will consider basic communication on a person-to-person level. Communication on this level is being somewhat degraded by the electronic revolution. In our society, language is the currency which enables most communication. In our particular business we rely heavily on communication in various forms. Without it, we as a 'mini-society', could not function as we currently do. Almost everything we do involves communication of some sort; talking to ATC, read & respond to checklists, P.A to the Passengers, Crew briefings, filling in the Tech. Log. or Flight Report, talking to Dispatch, or Crew scheduling on the phone; all of these are communication. All of them contain the same elements - a sender, a message, a receiver and feedback.

There are two primary mediums for communication: aural and visual. Various paths exist for the transmission of information by both these means. However it is achieved, to be effective, communication must be a two way process. A verbal message is pointless if it goes unheard. If it goes

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unacknowledged it will be a cause for concern – Was it heard? Was it understood? Was it misunderstood?

This is why feedback is so important. It provides a form of quality control over a transmitted message. If the message is received and understood then no further action is necessary, but the feedback may be a request for more information. This is, perhaps, because the initial message was in some way incomplete or misunderstood. If a colleague tells you something, then they are attempting to communicate with you, however, if you do not hear what is said or are not receptive in some way then that attempted communication will have failed. The two of you have not communicated although one has tried. Failure to respond to a verbal message will probably cause a repetition, but this time 'LOUDER'!

The sender of a written message, e.g. a duty letter or NOTAM, has only communicated with those who read it not just those who received it. If some of the intended recipients do not receive or read it, then it has failed to reach a part of its audience. In this case the sender may not know if the message reaches its intended target, as any feedback will inevitably be delayed by such remote communication. In reality there is often no feedback built into such communications and as such they are doubtfully a reliable means of transmitting important information.

A first rate example of feedback is the repeating of ATC clearances. The controller gives you a clearance and by repeating it back to him, he is made immediately aware that you have correctly received and understood the clearance. If the read-back is incorrect or incomplete then the controller can repeat the clearance in order to ensure full understanding and compliance. To summarize, feedback provides 'closure' on a communication.

The feedback may be one of the following:

- a) Message correctly received - no action needed.
- b) Message received but not understood fully - clarify.
- c) Message received & request more information - provide if possible.

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- d) Message received in part - repeat missing part.
- e) Message not received - WAKE UP!

Poor communication on the Flight Deck, with ATC, Cabin Crew, Company or Passengers is a common cause of misunderstanding and conflict (remember that this works both ways). It has even been responsible either directly or indirectly for many accidents and even more incidents. As the Commander of the aircraft, it follows that you must be as good as you can at communicating and encourage others to strive in a similar fashion.

Some people are seemingly born as natural communicators; others struggle to achieve much more than a grunt or a shrug of the shoulders. The majority of us manage well enough, but with a little thought and some application we can do a whole lot better.

The primary requirement is to be aware why you are communicating and who with. This will enable you to make your communication appropriate for the circumstances. Messages need to be tailored to the needs of the receiver. Being the best you can at communicating will take a little effort initially, but with practice will become second nature. It will pay handsome dividends in that you will be less likely to be misunderstood and will have the esteem of your colleagues and crew.

Some considerations:

- a) You are all members of one crew on the same aircraft - good communication throughout the crew is essential to a smooth running operation. As Captain you must set the right example.
- b) To be effective, communication must be precise and concise, and it must be relevant and given at an appropriate time.
- c) Remember that a two pilot airplane is just that – it is NOT two pilots taking turns at flying solo! Keep the cross cockpit communication lines open at all times.

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- d) The style of your verbal delivery; a poorly delivered message may be disregarded in spite of being factually correct.

Vocal style:

- Rate of Speech delivery - too fast can sound a bit panicky; too slow will put them to sleep.
- Tone of Voice – a moderate tone is desired. Firm and respectful at the same time.

National/regional accent vs. BBC English:

Let's face it, most of us have some sort of 'accent' and will have a certain amount of dialect in our speech. As you progress to higher equipment and travel more internationally, many different accents of English will be heard. Remember that Aviation is a very International Business and many of those we communicate with do not speak English as a first language and will find difficulty with some colloquialisms. At the very least they are likely to lose something in the translation.

In these circumstances slowing down your delivery rate may help the other person - speak slowly enough to be understood without sounding like a demented tourist. Also speak clearly and use simple words. In face-to-face situations, carefully watching the other persons' reactions to what you say will provide an early warning that understanding may not be taking place. Do not make the assumption that just because you have told someone something that they understood you.

Listening:

In communicating we now know that listening is as important as speaking. After all if you don't ask questions how do you find out what you need to know? Having said that you will probably spend more time listening to 'incoming' than you will spend on 'outgoing'. It's not really quite easy, to listen well you must pay attention. You must pay attention to the meaning and listen to the feeling and emotion being put into the words.

The problem is most of us are listening passively and only change up a gear to listening actively when we really want to hear something. How many

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times have you ‘listened’ to a briefing only to realize later that you didn’t take any of it in? By listening passively we listen only to a fraction of what is said and may miss something important. Whether we want to hear it or not is entirely another matter.

Real active listening is a skill that must be learned and practiced. Beware that over-concentration on listening can lead to listening only to the words and not the message. In the same way that a secretary taking short hand dictation is interested only in capturing on paper the words that are spoken to her, the message is irrelevant. Active listening should be conducted in a relaxed fashion and not with the air of an inquisitor.

Speaking + Listening = Communicating

When we communicate we are trying to establish an idea in someone else’s mind, our aim is to get them to visualize exactly what we have in our mind at the time we ‘transmit’ the idea. If the idea is a simple one then the task is not too difficult, particularly if the other party already has some knowledge of the subject:

1. We must be aware of how we create our mental picture by careful use of words to describe what we ‘see’.
2. We should also be careful to transmit information at a time when the recipient is able to receive it, in other words when they are likely to be able to actively listen. If they are busy doing something else there is a good chance that your communication may be lost in the background noise of their passive listening.
3. If the mental picture to be transmitted is more complex than the same rules of transmission apply, but you are going to have to break the picture down into smaller and more easily understood frames. When doing this, start from a known point and define where you are starting your explanation from. If you miss out that stage or you don’t build your mind picture up in a logical sequence then you will get into a muddle and not be understood.

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4. Beware also of making assumptions about what someone else might or might not know. If you have to communicate in this piecemeal fashion, then ensure that each piece is acknowledged and understood (feedback).
5. Allow the recipient adequate time to assemble each piece of the picture and fit it in with the deliveries already made.
6. As Captain you must be open to 'all round' communication. This means facilitating those who wish to communicate with you or other members of your crew. Try not to shut people out, particularly by the use of 'closed' statements or negative remarks and don't talk at them. You are the one who sets the example to your crew and to others, so do make it a good example.

Communication & decision making: The vicious circle.

General

There is an interaction between information transmitted and subsequently received (communication) and decision making; and any consequent information given in return (communication).

Communicating as already said, is a two way process. Information is exchanged, and your communication to others provides them with information which is used to make their decisions. In return, based on the decisions they have made or actions taken (as a result of your communication to them) they will communicate information to you.

If your initial communication was incorrect or incomplete then the return information will also be awry and incorrect actions may already have been enacted. In a nutshell, "GARBAGE IN, GARBAGE OUT!"

Good communication and decision making can be seen to be a part of a never ending 'information loop' and as such become inseparable. Good communication does not prevent bad decisions but does make them less likely. Certainly it enables good decisions to be made by making the correct information available.

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Bad communication however will hamper the process of decision making and may so obscure the facts that a correct answer to a problem is unachievable. If you find yourself qualifying a statement with “You know what I mean?”, then you were not really happy with the transmission you just made. This means that the other party (or parties) has to guess at what you really meant. This is not a satisfactory situation especially on the Flight deck:

- a) Being certain that you say what you mean is important to enable others to understand you, particularly in times of stress e.g. Emergency situations.
- b) Being certain that you mean what you say is important for sincerity’s sake.
- c) If the information you pass to others is ‘mindless’, then they will make ‘mindless’ decisions, and in return pass you ‘mindless’ information about what is happening.

Definitions

Communication: The giving or imparting of information or a message.

Decision: To make a judgement or to come to a conclusion.

Decision making: The means by which a judgement is made, and to pre-judge an event is often to make an incorrect decision (one made without all the facts). This may be due to the necessary information being unavailable, which could be the result poor or nonexistent communication which masks available information or perhaps distorts or misrepresents it in some way.

To assist with the Aeronautical Decision Making (ADM) process there are a number of tools in the form of acronyms which can be used to make it a conscious process. One of them is DODAR:

Diagnosis: Make a diagnosis. Utilize all available resources and view differing options as being helpful and not a hindrance.

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Options: Work out what your options are. Encourage all crew members to express options and air their doubts or objections without fear of being made to look foolish.

Decisions: Make the decisions. Always explain the reasons for a particular decision, deal only with facts. Do not be inclusive but remember that any decision may be modified in the light of changing circumstances.

Assign Tasks: Allocate the tasks and share the workload.

Review Your Decision: Keep reviewing the decision.

Personalities:

Most of the people you will deal with as a Captain are hard working professionals, whose overall aim is much the same as yours: to dispatch the aircraft safely and if possible, on time. Unfortunately not everyone is as focused on assisting you in your aims. You will come across a few of the following (and possibly others as well):

1. First Officers who think they would make a better Captain than you.
2. Lead Cabin Crew who fail to communicate adequately with you, and probably also the rest of the crew and the passengers.
3. Engineers who aren't going to fix anything - "It can be done on the night stop", or refers immediately to the MEL.
4. Dispatchers or schedulers who are only interested in getting the flight to leave on time, regardless of overriding factors. How you deal with these and other problems you encounter daily is of course entirely up to you.

YOU ARE THE CAPTAIN (remember those definitions) - it is up to you to sort out the problem.

How you do this will obviously vary with the circumstances, your own personality and the experience and personality of those who are involved.

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It will be worth your while putting some effort into general considerations along the following lines so that you are at least prepared. You will have heard it before: Safety is the first priority. This is even more valid when you are the Captain:

Safety is YOUR first priority, nobody else's!

If a situation with a crew member cannot be resolved and a complete communication breakdown occurs action must be taken.

1. It is not acceptable to have two or more crew members on a public transport airplane who are actively not co-operating or communicating!
2. As a last resort you may have to consider offloading or replacing one or possibly more individuals to resolve the situation.
3. Finally, consider your approach to these individuals. You must be firm but fair in your dealings with your crew. Open communication and a respect for their fears and feelings will go a long way to making you a Captain that crew respects and enjoys working with. Simple things such as explaining what is happening when you have a 'technical' or 'weather' delay will allay their worries (Is it safe?) Remember, most of the crew have little technical aviation background, but are educated and want and need to understand what is going on. Apart from demonstrating that you care enough to explain what is happening, it widens their knowledge and increases their respect for you when they can see that you have a good understanding of the situation.

5.2.12 FLIGHT MANAGEMENT & FLIGHT DECK MANAGEMENT:

"Aircraft captaincy involves the management of the aircraft, its crew, and the supporting company infrastructure in a changing ambient environment. The final goal is to achieve the highest levels of safety, comfort, and efficiency."

The aim of the captain therefore is to achieve safe, comfortable, and efficient operations. This he cannot do alone; he must delegate tasks as

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appropriate to crew members and others and ensure prompt and accurate compliance.

The captain holds the final responsibility for the operation of the aircraft. However, all crew members must assist the captain in decision making and obtaining information on which decisions may be made. The captain must allow other crew members to question his decisions. Previously we saw how incomplete or poor communication can hamper good decision making. It therefore follows that no one, least of all the captain, is infallible.

Making correct decisions is only part of the story; making them at the correct time so that they can be implemented without adverse impact on other tasks and prioritizing the resultant workload are of paramount importance in flight deck management. A well-managed flight deck should appear to be a calm and well-ordered place, busy at peak periods certainly, but never frantic and definitely never degenerating to the point where one or both pilots are overloaded. In the former well-ordered arena, the pilots will have enough spare capacity to accept unexpected additional tasks without undue distraction from that primary task; Flying the aircraft. In the latter chaotic state, one extra task may be sufficient to distract one or both pilots for long enough for an irrecoverable situation to develop.

Consideration needs to be given to other aspects of the progress of the flight. This involves communicating with cabin crew and also passengers, albeit not at the expense of primary tasks. The parallel operation of the cabin in harmony with the physical progress of the airplane through the sky is an important part of any airline's success. The passengers pay for it all!

Flight deck workload management:

It is self-evident that avoidance of accidents should be the priority of all who work in our industry. Also, it should be the primary task of the crew and thus the captain, to plan their work in such a manner to avoid inducing an accident and to permit themselves to deal with unforeseen events which may otherwise lead to an accident.

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“Pilot error” is one of the great misused and misunderstood phrases of the industry. IFALPA discourages the use of the phrase ‘cause’ and ICAO is also in the process of replacing ‘cause’ with ‘contributing factor’. CRM training will have shown you most convincingly that incidents and accidents are the result of multiple contributing factors. However, it will suffice if we simplify and accept for this section of the course that we treat ‘pilot error’ as an error or oversight of a crew member that contributes to an incident or accident, even if it is the final link in the chain.

Sadly, “pilot error” continues to be a major contributing factor of accidents to perfectly serviceable or at any rate flyable airplanes. Some 80% of all Western built Hull Loss Accidents are attributable to Avoidable Human Factors. The error may be just that, a single simple error of judgement or skill.

More usually, it is the culmination of a chain of minor errors and omissions on its own. Each of these may be insignificant, but when allied to others in the chain they create a situation that is irrecoverable. Clearly such a situation can be injurious to your career as well as your life.

A well ordered Flight Deck where forward planning, workload management, SOP’s, and teamwork reign supreme is unlikely to become the ‘scene of a crime’ as far as multiple errors and omissions are concerned. The calls and cross-checks that are an integral part of our SOP’s will help to ensure this.

An undisciplined and chaotic flight deck where an artificially high peak workload is created and non-standard procedures are the norm is the breeding ground for a situation to develop which the crew no longer has the capacity to recognize or deal with.

It is well known and documented that most accidents occur to airplanes during phases of flight that take them close to or on the ground. During these phases of flight, the airplane is operated at the very lower end of its flight envelope and undergoes considerable acceleration to its enroute climb speed, or deceleration from descent to approach speed. Also it undergoes the transformation from a wheeled to a winged vehicle, and vice versa,

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during takeoff and landing. This alone creates a higher workload for the crew than a stable phase of flight (e.g. - cruise). Inevitably, the takeoff and landing involves passing through the most hazardous layer of the atmosphere.

The layer nearest to the ground contains a greater concentration of hazards than any other, e.g. terrain, turbulence, wind shear, precipitation, icing, birds, and other airplanes. It is also the busiest time for both pilots flying a SID or STAR at times with noise abatement considerations, increased frequency of R/T calls, changes to frequencies and clearances, checklists to read, altimeters to set and check, radio aids to identify, reconfiguring the airplane (flaps, gear, speed brakes), operating anti ice systems, maneuvering onto final approach etc. Clearly the collective wisdom of the crew need to be available to deal with this and still be able to cope with the unexpected.

A superior pilot is one who uses his superior judgement to avoid situations that require him to demonstrate his superior skill!

A strong and interesting correlation exists between accidents and incidents reports. An exact comparison is difficult bearing in mind that the reporting categories are variable. High workload phases of flight are the most vulnerable to both accidents and incidents. Almost half of reported incidents that occurred in the Descent Approach and Landing phase are in part attributed to communication failure (NOT Radio Failure) with ATC. Over a third are attributable in part to communications failures on the Flight Deck. (Consider WHEN and IF you use the Cockpit speaker and hand mike rather than the headset).

Some lessons to be learned:

- a) Workload - Prioritize tasks and plan your routine workload to keep as much as possible away from operating 'peak periods'
- b) Avoid distractions – ATC 'chat', Cabin Crew 'requests', talkative crew on jump seat; the sterile flight deck procedure is therefore a reason, do not abuse it.
- c) Flight deck discipline - Be professional, insist on SOP's.

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- d) Destabilized approaches – Know the criteria; anticipate, do not be tempted to continue with it. Go-around/cancel the approach or better still avoid the situation by better planning.
- e) Preparation - Are you SURE that the airplane is prepared for takeoff or landing?
- f) Terrain – Terrain awareness; know where the ground and obstacles are, all the time.
- g) Direct routings - Be airspace aware (What Category airspace are you being sent into and what level of ATC service can you expect. Have charts available, it's the only way to obtain that information.
- h) Icing - Take great care in icing conditions. Be very particular about de-icing and anti-icing procedures.

All of these items come under the banner of airmanship. The first two are perhaps less tangible than the rest but are none the less vital to proper management of the flight deck environment and safe flight progress. It is not possible to write a procedure or a checklist to regulate workload planning or eliminate distractions. A thoughtful and professional approach to the problem is required and evidently experience also helps. Task prioritization and workload planning will help toward the goal of a safe operation. Clearly such careful and organized planning of workload will improve the flow and overall tone of the flight deck. In itself this will not prevent some unforeseen catastrophes from befalling you, but it will leave you in a far better position to cope with it and prevent you from becoming a 'statistic'.

Task Prioritization:

Some simplified guidelines:

Aviate - Navigate - Communicate – Manage In other words prioritize

A much simplified model of task prioritization using three levels of task:

1. Flight Path Control; Flying by PF, Monitoring by PM
2. Systems Operation; Anti-ice, monitoring icing
3. Extra Tasks; PA, Flight Logs/debrief.

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Be aware of the risks involved by accepting additional inappropriate tasks, especially at peak workload times. For example, when PM takes over flying duties from PF while PF sets up the GNSS/FMGS/FMS for approach, PM is now responsible for flight path control and must not allow anything else to distract from that. Any extra tasks must be placed on hold. This, unfortunately, is often disregarded and should be emphasized.

Do not overload the PM with extra tasks, again particularly at peak times, e.g. asking the First Officer to calculate the diversion fuel while attempting to intercept the ILS is clearly a bad idea and also contrary to Company policy and SOP.

Some more examples of inappropriate task prioritization:

- a) Making a routine P.A. to passengers while starting engines during pushback. Both pilots should be concentrating on engine start and monitoring Intercom with ground personnel and radio with ATC.
- b) P.A. or Company R/T calls on final approach.
- c) PM filling the Flight Plan at low altitude. PM should be 'Head Up'- Monitoring flight path and maintaining a lookout during initial climb below 10,000 feet/FL100.
- d) Approach Brief after Top of Descent, unless there's a Runway change or diversion.

As captain you must be prepared to prioritize tasks for both pilots – regardless of who is PF.

Planning:

Experience dictates that the best run Flight Decks are those where there are few surprises. 'Anticipation' or 'Forward Planning' will have removed the element of surprise by considering options before a decision is required. By doing this the workload has been transferred to the 'off peak' areas. And due and correct consideration has been given to all the factors involved. An optimum solution to the problem can now be deduced.

"KEEP AHEAD OF THE AIRCRAFT"

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Should you find yourself, or your First Officer being 'surprised' by a particular circumstance, or should you find yourself with a very high workload, particularly towards the end of a flight, ask yourself:

- a) WHY?
- b) What did you as a crew miss?
- c) Could you have done it better?

The content of the sections thus far is not meant to overwhelm you with the gravity of the position of aircraft commander, but should have given you an insight of the level of responsibility.

Commercial flying is not inherently dangerous but the sky can be a particularly unforgiving place to be.

Wilbur Wright said in 1908: "For flying to be completely safe you must sit on the fence and watch the birds".

Not a practical proposition for PIA pilots. It does mean that an aircraft captain must strive to ALWAYS be vigilant and work to improve standards and never allow experience to pave the way to complacency. Remember the 5 'Ps': "Prior Planning Prevents Poor Performance"

5.2.13 FLIGHT PLANNING CONSIDERATIONS

Weather briefing.

The following is a review of areas which require particular attention and consideration of the captain during briefing. In general these areas are also of concern in-flight and affect decisions regarding destination, choice of alternates, uplift of fuel etc.

Clear air turbulence (CAT)

CAT should be avoided whenever possible. If it cannot be avoided then it will affect your thoughts on cruise levels and also briefing your Cabin Crew.

For jets, at light aircraft weights it may be possible to climb above the CAT and over fly it. More usually and particularly at heavy weights or on short sectors where time at cruise level is brief, it will be preferable to cruise

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beneath any area of CAT. This will avoid or minimize any encounter and has the advantage of improved buffet margins. It should be recognized that this may be detrimental to fuel economy and timekeeping. For turboprops, changing of Flight Level may be considered if CAT is encountered. A deep study of prognostic charts and ‘turbulence’ selection of WX in Jeppesen FD Pro will help you avoid being caught off guard.

If CAT is experienced, forecast, or in particular reported by aircraft on your route and at your planned cruise level, then Cabin service may need to be amended or curtailed for the duration of the event. In which case, you will need to advise the LCC as early as possible, giving appropriate information. CAT on the Operational Flight Plan (OFP). The wind shear factor on the OFP gives you a good idea of when to expect CAT. (Remember the factor varies from 1 to 20)

Note: staying ‘low’ and widening your buffet margins will give you much greater protection should you encounter any severe CAT. If you accept a climb to a level that you can only just make, your margins will be smaller and the presence of any CAT should cause you to think seriously about the combination of the two factors. Always refer to your aircraft specific SOP to select the Flight Level appropriate for various conditions.

CB’s and thunderstorm activity.

These should be avoided whenever possible. Even the smallest ones are uncomfortable.

- Consider the passengers; if you are uncomfortable they are in all probability worried, upset, or frightened. Many of them will, inevitably, be sick.
- Consider the Cabin Crew; they will be similarly affected and if attempting to work in the cabin or galley, may be placed in a hazardous situation.

The worst CB/TS are downright dangerous. Consider the output of an active CB with TS: Turbulence, Windshear, Icing, very heavy Hail and/or Rain and

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Lightning. These are aircraft damaging and thus life threatening conditions. Cruise levels may need to be changed or raised, subject to weight considerations etc., and routings may need altering at other stages of flight in order to avoid CB'S. It is often the case that a routing avoiding all encounters with CB'S can be flown by good use of the weather radar and liaison with ATC. Judicious use of requests for 'direct' routings can sometimes also give the added benefit of a shorter route.

Again, Cabin Crew must be informed according to the likely impact on Cabin service and safety. In the event that CB's, with or without TS, have to be flown through or around during initial climb or the latter part of descent, then the only safe option is for the Cabin Crew to remain seated for the duration of the event. After take-off this will mean a delay to the start of service, and prior to landing may require curtailment of the service. However important the service might be towards the passengers and the image of the company, safety should always come first.

- a) Serviceability of the weather radar is another vital consideration. Consider the M.E.L.
- b) OM-A, Chapter 8 gives you all the guidelines you need regarding adverse weather conditions.
- c) Suggested reading is a review of relevant weather radar specific to the aircraft type.

Extra fuel may need to be carried in order to account for the anticipated use of anti- ice systems, extended routings or holding at destination, or possibly alternate, awaiting the clearance of TS before an approach can be commenced.

'Mechanical' turbulence

This is usually associated with strong wind conditions and in general only affects the lower few thousand feet of the atmosphere. In these circumstances the same conditions apply to the cabin crew and service as mentioned in the section on CB/TS. The advantage is that the duration is usually brief, whereas with CB it may continue up to a considerable altitude.

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Crosswinds.

Some questions to be addressed during the Weather Briefing:

Will a crosswind on a particular runway cause you any operational problems?

- Is there a more into wind runway and is it long enough for take-off and/or landing at your anticipated weight?
- What is the runway state i.e. braking action? Bearing in mind the forecast, is it reasonable to expect it to stay the same?
- Is the routing to the other runway a greater or lesser distance and will more fuel be required or less?
- Are the approach aids operating for that runway and is the weather above minima?
- Is the Company preferred alternate within the limits for crosswind? If not, which alternate is?
- Is the crosswind within limits for the First Officer to act as PF? (OM-A, Chapter 13)

Runway state

Should a runway be reported as contaminated or as having a braking action less than 'good', then consider the following ;

- Crosswind limit for current braking action?
- If contaminated, is it within acceptable limits for the airplane?
- Cleared length of runway and width of clearance?
- Takeoff performance calculations - RTOW for load sheet?
- Landing performance - RLW for load sheet?
- Technique for takeoff and landing?
- Captain mandatorily be PF.

Low visibility operations

In the event that a takeoff or landing is likely in conditions at or near to the minima for the anticipated runway other considerations apply:

- Airplane certification and serviceability for Cat II/III ILS approaches (A320, B777) ?

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- b) Crew recency?
- c) Takeoff or landing minima as appropriate?
- d) RLW for Cat II/III Approaches (A320, B777). Go around weight and auto land weights considered?
- e) Extra fuel considerations.
- f) Special procedures as described in OM-A, Chapter 8.
- g) Approach aids serviceable?
- h) Takeoff alternate needed or not?

En - route icing forecast

If icing is forecast, consider allowing extra fuel for use of anti-ice or de-icing systems as appropriate to the aircraft type. In particular take note of any icing forecast for all anticipated holding flight levels. Extended flight times in such conditions are hazardous, especially for ATR's and will inevitably result in prolonged use of anti-ice and a consequent increase in fuel burn for jet aircraft. Jeppesen FD Pro, 'Icing potential' selection in WX is a good tool to anticipate icing conditions.

NOTAMs

A Dispatch briefing and study of the NOTAM's must be done. This needs to be as thorough and systematic as the check of the weather charts and forecasts. As appropriate, the airfields of departure, departure alternate, en-route alternate, destination, and alternates need to be checked for their opening hours. Serviceability of approach aids and any changes, temporary or otherwise, to the RFF category must also be checked.

- a) Other items to check include:
- b) Changed departure or arrival procedures.
- c) Availability of en-route Nav Aids.
- d) Runway length availability.
- e) Work in progress - closure of taxiways, runway exit points, etc.

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5.2.14 DOCUMENTATION & REPORTS

The aim of this section is to ensure familiarity with those forms and reports that you will encounter as a captain. Some of these, for example Digital Flight log and Technical Log Book, you will use daily. Others, for example the Air Safety Report (ASR) or Bird/Animal Hit form are less frequently used but must nevertheless be completed correctly to avoid creating confusion and extra work for the recipient.

The forms are self-explanatory. All the forms are currently available on the Digital Crew app. And in the Aircraft library. Additional text explaining a form, or providing more information, is usually already on the form.

- **Report writing**

Any paperwork that requires completion constitutes a ‘report’ of some sort.

The majority of reports are specifically designed to gather information on a particular topic. The two common methods of data collection by such forms are:

- a) Question and answer.
- b) ‘Multiple choice’ type.

Both have the benefit of providing the information to the recipient in a pre-planned and logical format. Please bear this principle in mind when completing any narrative on a report. Aircraft Occurrence Initial Report and ASR’s are a common example, and from time to time you may wish, or be requested to submit a report on some other subject or occurrence.

Some guidelines:

- a) Layout the information logically - cause, effect, actions, result or chronology.
- b) Be factual. Resist the temptation to offer interpretations or opinions.
- c) Be brief, without making the report unreadable.
- d) Avoid ambiguity and generalization.
- e) Avoid Dramatization.
- f) Make it legible.

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Aircraft Technical Log Book (TLB) - contents and requirements

The TLB will provide you with a snapshot of your aircraft's current technical status. It also contains a wealth of information on the aircraft's history and on its future: expiry dates for specific checks, inspections etc. are detailed.

In order to use the TLB to your advantage, you must be familiar with its contents and confident in its usage. Next time you fly, take time to have a detailed look at it. More details on how to use the technical log can be found in OM-A, Chapter 8.

Digital Flight Log and Captain's De-brief

The Digital Flight Log requires no introduction as it is the standard working document for every duty period. The Captain's De-brief Report (DBR) is sometimes overlooked, but must be completed for all delays and incidents, and addressed to the appropriate department if necessary. Forms for any incident or occurrence may also be filled if relevant.

Reporting of Occurrences and Incidents.

Occurrences which threaten or have the potential to threaten the safety of an aircraft, person, or ground facility must be brought to the attention of the Safety and QA Department in order to rectify or influence such a situation. This means bringing it to the attention of the operator and, in serious cases, to the attention of Pakistan Civil Aviation Authority (PCAA). This may trigger investigation and appropriate action to prevent a recurrence. The PCAA has a range of other forms available to cover specific safety related incidents. All relevant forms may be sent to PIA's Safety Department for onwards submission to PCAA when appropriate. PIA has its own Air Safety Report (ASR).

Utilizing the ASR form and sending/emailing it to the Safety Department absolves you from the need to file any form directly with the PCAA, upon receipt of your ASR they will do it for you. It should be noted that if you have a bird strike, it needs to be mentioned in the TLB, the ATC informed, and the

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relevant Bird hit form filled and submitted to Safety Department. An ASR in this situation may also be filled.

The ASR is commonly filled for Air Proximity/ATC, TCAS RA, Wake Turbulence and more. As the ASR is a recommended form to use you should familiarize yourself with its use.

Customs & General Declaration.

Normally the GD will be looked after by Scheduling and Traffic. Although LCC is responsible to check the GD and customs declaration for Cabin Crew, and Cockpit crew Customs declaration is done by themselves, but you as a captain are ultimately responsible for all of the crew.

Various types of forms

- a) Death on board
- b) Birth on board
- c) Disorderly passenger
- d) Confidential Aviation Incident Report
- e) Lightning Strike Report etc.

Area / Airport familiarization

A thorough knowledge of the entire network of your fleet is absolutely mandatory as a Captain. Equally knowing which airfields have specific terrain or operational problems may help in the decision making when selecting a diversion, particularly if required for a non- normal situation.

Load sheet and NOTOC

Load sheet

A load sheet must be produced before every flight. This is a legal requirement as well as being common sense. The load sheet after all not only gives you the disposition of weight throughout the airplane but also the trim figures required for stabilizer settings for take-off.

There are two distinct types of load sheets you will encounter:

- a) Computerized type.
- b) Manual type. This must be completed on the appropriate company format. Remember that as Captain you are responsible for checking

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the load sheet. Do not merely sign it and assume that the figures are correct.

Always make sure you have signed the load sheet. If there is a NOTOC make sure you have signed this as well. In case several editions exist of a load sheet for a certain flight you are required to demand and keep a copy of all previous editions of the load sheet so you can put it in the flight folder.

Retain the top copy of the load sheet for eventual submission to the company with the flight folder and give the remaining copies to the handling agents at your airfield of departure.

Notification to Captain (A320, B777)

The Notification to Captain (NOTOC) is provided to give all pertinent details of Dangerous Goods that are being carried on that particular flight (A320, B777). It is a requirement that all Dangerous Goods are notified to the Captain. This will enable you, in the event of an Incident or Emergency situation, to advise Emergency services via ATC of the type and quantity of goods and their location in the aircraft. Details of the NOTOC are outlined in OM-A, Chapter 9.

Although as a Captain of the flight you are, in this instance, to trust the ground staff for the correct loading and packaging of the dangerous goods on board, it is good airmanship to verify the goods as noted on the NOTOC with the UN and Emergency drill codes to be found in the red ICAO Emergency response guide.

Note: you may be presented with a NOTOC in a completely different format; typically this will be a NOTOC from a different carrier and will be formulated to suit their requirements. The content of the NOTOC however should be the same and provide you with adequate information on the risk associated with carrying that particular cargo. Should the information not be forthcoming then the cargo should not be accepted for carriage.

Conclusion

Paperwork, even in this Electronic and Virtual Age, is still the lifeblood of most commercial organizations. It is important to make sure that it is

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correctly and promptly completed. However important the paperwork may be, it must never interfere with your primary task of operating the airplane safely.

We have covered most important forms in this chapter, however many more exist. They can all be found in the Digital Crew app. Make sure you familiarize yourself with all kinds of forms.

5.2.15 FLIGHT PROCEDURES

The subjects covered in this next section are broadly 'technical' subjects. They all require a good knowledge of legal requirements and company policy in order to fulfill your duties as a Captain.

Fuel policy and requirements

A detailed knowledge of all the requirements for refueling your aircraft and subsequently use of the fuel is of paramount importance. Too little or too much fuel can be an embarrassment. Too little may also be dangerous and carrying unnecessary excess fuel repeatedly will damage the companies' commercial prospects.

The following are a non-extensive list of topics related to fuel that should be researched in depth from OM-A, and Bulletins/Circulars:

- a) Fuel Policy
- b) Fuel Requirement and planning.
- c) Fuel Emergency - ATC response
- d) Load Sheet, trip fuel figure
- e) Action before flight - tech log requirement & discrepancies
- f) FCOM limitations
- g) Fuel grades, company procedure
- h) Refuelling procedure and precautions
- i) Maintenance & HF radio use while refuelling
- j) Fuel contamination procedure if any
- k) Contract fuel suppliers
- l) Calculating sector fuel

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- m) Ordering fuel
- n) Refuelling with passengers on board, boarding, or disembarking
- o) Economy fuel values (cost index (A320, B777))
- p) In flight fuel checks

OFP - checking

The Operational Flight Plan (OFP) that you receive is made some hours in advance of departure time and is calculated using the following:

- a) Wind Velocity - Forecast winds
- b) Flight Level - Flight Planned level.
- c) Uses the planned Take Off Gross Weight
- d) Biased for ISA deviation

Following are some of the parameters that should be verified on the OFP.

- a) Pay Load: Expected passenger number + expected cargo
- b) Route: Either a stored 'user' route or a 'tactical route' – note this may or may not match with the GNSS/FMGS/FMS paired airfield routes so exercise care in inserting these. Always crosscheck the inserted route versus OFP route, as per the aircraft type SOP.
- c) Alternate: The alternate used by default is the nearest suitable airfield to your destination based on company policy.

Considering the large number of variables involved it is fair to say that a high degree of accuracy is achieved. Despite this, the document is based on certain assumptions and is computer produced. It always remains the Captains responsibility to load the correct quantity of fuel. To be confident that the fuel figure is realistic the following items should be examined for accuracy:

EZFW versus actual ZFW

The EZFW is based the expected payload. Usually, given the check-in requirements for passengers and the actual printing time of the OFP, this is a reasonably accurate figure. However remember that if the actual

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passenger figure and or cargo are significantly different from the EZFW the trip fuel will be different and adjustment to that fuel burn should be considered. The correction to fuel burn is made using weight change figures on the OFP.

Wind component - to destination and alternates

Do the en-route and various alternate components look correct? The forecast wind charts for Cruise Level and Level for diversion to an alternate should be carefully studied and compared to the OFP. If any doubt exists about likely en-route conditions prudence dictates that the most restrictive case be used.

A check of the figures given for other (lower) levels on the OFP is worthwhile. In non-RVSM/radar airspace you may not get your planned level and by examining different levels from the cruise wind forecast charts and significant weather charts it may be apparent that the existence of a jet stream or stronger head winds will have a profound effect on your fuel burn should you be 'unlucky' enough not to be given your planned FL.

Remember: it's the Commanders responsibility to have sufficient fuel!

En-route alternate or destination alternate considerations

In general, Operations Specifications in the AOC has an extensive list of the destination and alternate airfields. You can find as well the exact requirements for an airport to be considered adequate or suitable in OM-A, Chapter 8.

Weather

OM-A, Chapter 8 provides the guidelines regarding weather minima for alternates.

Alternate selection

On some routes considerable increases/reductions in fuel reserves, and therefore Trip Fuel, may occur if you use an alternate airfield other than the one on the OFP. If you change the alternate, do make sure that the field you have chosen is 'suitable' and 'available'. Also be reminded that the Alternate on the OFP is the suitable airfield within the closest range of your

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destination. This not always is the commercially preferred alternate nor is it always the best option in your case.

Cruise level

The best cruising level is usually calculated based on the best fuel economy.

Routing

You may plot your planned route on the significant weather chart to see if any CB's, CAT, ISA deviation (indicating turbulence) and jet streams are protruding your route. Alternatively, Jeppesen FD Pro app is very useful in anticipating possible adverse weather along your route.

Also check the Notams for any airspace/airways closure which might need you to adjust your time over a certain route or in rare cases even necessitate a re-routing.

Delays / Pre-Start Delays

Delays prior to departure can be caused by all sorts of factors, known as well as unknown. This section only covers the known factors.

Slot Time (A320, B777)

Certain airports around the world which are busy and need flow control, may have departure slots which are issued at certain times of the day. Usually the ground staff will inform you if such a slot exists. If this is the case it is good airmanship still to plan to be fully ready at the scheduled time of departure. As soon as you are ready you can issue a "ready" message to ATC which might improve your slot.

- a) In case your slot is significant and cannot be improved, take the following into consideration:
- b) Is it allowed to keep the APU running for the time remaining?
- c) Can I stay on the stand or is the stand needed for incoming traffic?
- d) Did I inform passengers and cabin crew?
- e) Do I have enough fuel on board?

Some delays, for example ATC Computer Failure or RVR at Departure Airfield below minima for takeoff are more difficult to assess because the correct

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duration of the delay is impossible to determine. A generous 'educated guess' using your experience is the only sensible way to deal with what is usually a very rare occurrence. Congestion at the holding point is also difficult to judge. In all cases do not forget to keep a watchful eye on your fuel planning.

En-route Delays

This section deals with delays that may occur without specific warning, but some of which may be reasonably anticipated. Airmanship dictates that the possibility of a hold en-route or at destination be considered, particularly with regard to expected traffic at busy airports and weather. However, in normal operating conditions the likelihood of holding need not be overstated. In unusual circumstances however, an increase in fuel may be needed to permit extended holding. It is also worth considering how busy your alternate field will be should you need to go there. You may not be the only one.

Other considerations

Cruise Level

Many things can go unplanned regarding your cruising level plan. You might be restricted by regarding your maximum cruising level, or you simply might have a good chance you will be denied a slot at your planned cruising level. In all cases, remember that cruising either above or below optimum flight level has a fuel burn penalty.

Consider also the trade-off between fuel burn and flight time. While tactical changes of speed are sometimes necessary to beat an airfield closure time, DO NOT habitually fly at a higher speed than your recommended speed target as dictated by your aircraft specific cost index (A320, B777).

Weather / Adverse weather

Consider the effects of an extended routing to avoid for example a Sigmet predicting turbulence along your route, CB's etc. Another factor, often underestimated, is the requirement at some airports to fly a set speed on

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final approach. For example, the requirement to maintain 160 KIAS until 4 NM on final with 40 Kts winds at 5,000 ft will have some impact on your fuel. The following factors need considering to varying degrees for the appropriate stage of flight to determine the likely effect on fuel burn:

- a) RVR: The application of Low Visibility Procedures reduces traffic flow rates and induces delays, besides any approach ban that may exist.
- b) Crosswind: Extended routing may be needed to position for an into the wind runway.
- c) Contaminated / slippery runways: Delays may occur due to runway closure for runway clearance or de-icing, or by very slow clearance of landing aircraft due to reduced braking friction coefficients or possibly closed runway exits, for example at YYZ.
- d) Icing: Use of engine or airframe de-icing is not included in the OFP fuel figures.

Operational:

- a) Single pack operation: Reduces your cruising altitude capability in certain cases.
- b) Configuration deviation list (CDL): Make due allowance for missing or defective components.
- c) Extended taxi route: Very occasionally temporary closures may result in unusually long taxi distances.
- d) Fuel tankering: Dispatch may specify this for the construction of the OFP, but they do NOT consider if landing at maximum landing weight on a wet runway is appropriate.
- e) APU or Hotel Mode: Airports that do not have ground support may require continuous use during transit.

The good news is that you should not have to consider all these factors on any one flight. Rarely will you be called upon to take account of more than two or three. Many of the factors have a small, almost negligible effect on

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fuel burn, but awareness of such variables shows good airmanship and should circumstances dictate allowance can be made in the fuel uplift.

The development of a methodical approach to checking weather, NOTAMs, and OFP will simplify the task of calculating a realistic fuel figure that you can be confident with. It is likely that such a figure will also be more economical. Fuel calculations must be made by reference to facts, not by emotion. If you find that you are consistently arriving at destination with significantly extra fuel or are arriving with 'minimum' or less, then you should urgently review your techniques for calculating/assessing fuel requirements.

Alternates, Diversions & Tech Stops

Take off alternate

A Take Off alternate must be nominated whenever weather conditions (or any other condition) would prevent you to turn back to your departure airfield. How to deal with this is described in OM-A, Chapter 8.

Destination alternate

PIA requires to always nominate at least one alternate airfield prior to departure. In certain cases two alternates are required.

Enroute and ETOPS/EDTO alternates

Please refer to OM-A, Chapter 8.

Company preferred alternates

PIA determines which alternate can be used based on suitability, making the evaluation easy for you. There are lists of alternates approved by PCAA in Operations Specifications of the AOC and Jeppesen Tailored Manuals. It is advisable, unless you find yourself in a full scale emergency, to always use the airports in these lists when needed.

In any case it is clear that when using these predetermined alternates a lot of pressure will be taken of your shoulders in the mid of your already stressful decision making during a diversion. Basically all you would have to verify still is:

- a) Weather
- b) Notams

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c) Fuel requirement

Technical stops

In the rare case a technical stop would be required; you should get full support of the PIA dispatch staff. Certainly in the case of a planned technical stop (e.g. refueling) all the logistical items will be dealt with for you.

In case an unforeseen technical stop is required it would always be a good idea to contact the Situation Room by any means available to you (ACARS, SATCOM, HF, Phone patch etc.) in order to involve them in your decision making as they have a broader view of the situation. This should not be considered as an undermining of your authority as Commander but should be welcomed as an extra resource in your decision making process.

In case this would still not be possible, using the lists of adequate airports as mentioned above will help you a lot further in all cases.

5.2.16 EMERGENCY EQUIPMENT & SAFETY PRECAUTIONS

Safety precautions can be considered as advanced care given in order to prevent hazardous or injurious situations occurring. In effect they are preventative measures and are in place to safeguard life, health, and property. Emergency equipment can be typified as specialized tools or equipment designed to help neutralize a hazardous or even life threatening situation.

A review of the following topics is recommended to widen and reinforce your understanding of these areas:

- a) Safety precautions
- b) Carriage of safety equipment
- c) Equipment location in your aircraft
- d) Diagrams
- e) First aid kit
- f) Hypoxia and its prevention

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- g) Smoking on board
- h) Unruly passengers
- i) Oxygen - regulations
- j) Oxygen - passenger system
- k) Oxygen - crew system
- l) Oxygen - portable oxygen
- m) Smoke hoods /PBE
- n) Seats, seat belts
- o) Fire extinguishers
- p) Emergency exit lights
- q) Emergency evacuation routes and over-wing hatches
- r) Escape slides
- s) Inoperative exits
- t) Lifejackets & flotation devices
- u) Electronic interference
- v) Passenger devices
- w) Lightning strikes

Prevention of Hypoxia

Introduction

We work in a hostile environment. Our airplanes cruise at altitudes of up to 41,000 feet. At these altitudes and just at the other side of the flight deck windows temperatures can be as low as minus 74°C.

Time of useful consciousness is counted in seconds. We need to know how and why to survive in this environment should the unthinkable happen: pressurization failure. Several accidents and incidents have occurred in which the aircraft's emergency oxygen equipment has been involved, some of the former with fatal results. You may think you know all there is to know about the subject, if so this will be a useful refresher. If not please take the time to read and digest.

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With pressurized aircraft, loss of cabin pressure at any altitude above 10,000 ft will result in some deterioration of consciousness, while at altitudes greater than 20,000 ft there will be a very rapid impairment of ability unless oxygen is breathed directly at the moment of decompression. Mountaineers and people living at significantly high altitudes may adapt to the low-density air, but there will not be time for this to occur in the rapid ascent associated with flight.

Breathing Air at Altitude

The intensity of the hypoxia induced while breathing air varies with the altitude, the duration of the exposure and the rate of ascent. The other major factor affecting the intensity of hypoxia at altitude is the degree of physical exercise. Exercise markedly intensifies the effects of a given degree of hypoxia. Finally there is considerable individual variability in the symptoms and effects of hypoxia. Generally the higher the altitude, the more marked the symptoms. Rapid rates of ascent however allow higher altitudes to be reached before severe symptoms occur.

In these circumstances, unconsciousness may occur before any or many of the symptoms of hypoxia appear.

Effects of Slow Ascent to Altitude

Flight Levels up to FL 100

Seated individuals have few symptoms apart from some loss of night vision. Their ability to perform most complex tasks will be unimpaired. However, the speed with which they can react to novel conditions can be shown in the laboratory to be impaired at an altitude of 8,000 ft. The marginal impairment of performance produced in normal healthy individuals by breathing air at altitudes up to 10,000 ft is considered acceptable.

Flight Levels between FL 100 and FL 150

Resting individuals have little or nothing in the way of symptoms but their ability to perform skilled tasks such as aircraft control and navigation is impaired. This impairment is increasing with altitude above 10,000 ft. Individuals are frequently unaware of the hypoxia or of the impairment of

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performance which it produces. Indeed, they may well believe that they are performing better than usual. Physical exercise particularly at altitudes above 12,000 ft frequently produces mild symptoms, especially breathlessness. Exposure to these altitudes for longer than 10-20 minutes often induces a severe headache.

Flight Levels between FL 150 and FL 200

Above 15,000 ft symptoms of hypoxia occur even in individuals at rest. There is marked impairment of performance, even of simple tasks, together with a loss of critical judgement and willpower.

Thinking is slowed. There is muscular incoordination and marked changes in the emotional state. Individuals may become irritated or ill tempered, or even physically violent. They usually have no insight into their condition, an effect which makes hypoxia such a potentially dangerous hazard in aviation. Individuals frequently feel light-headed, with a tingling in the lips and limbs. Physical exertion greatly increases the severity of all the effects and it often causes unconsciousness.

Flight Levels above FL 200

Breathing air at altitudes above 20,000 ft results in severe symptoms even in individuals at rest. Mental performance and comprehension decline rapidly and unconsciousness occurs with little warning. In individuals seated at rest, the time between cessation of supplemental oxygen and serious impairment of consciousness is 10 -15 minutes at 20,000 ft, 2.5 - 6 minutes at 25,000 ft, and 1.5 - 3 minutes at 30000 ft. Any exertion at altitudes above 20,000 ft rapidly produces loss of consciousness.

Effects of Rapid Decompression

The previous paragraphs describe the hypoxia induced by either slow ascent while breathing air or cessation of supplemental oxygen at a given altitude. The severity and rate of onset of hypoxia when it is induced by a sudden failure of the cabin pressurization of an aircraft is considerably greater than when the hypoxia is induced by cessation of supplemental oxygen at the

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same altitude. Thus serious impairment of performance will occur within 1.5 minutes following a rapid decompression while breathing air to 25,000 ft.

Oxygen breathing must be commenced within a few seconds of the beginning of a rapid decompression at altitudes between 15,000 ft to 30,000 ft if no impairment of performance due to hypoxia is to occur. Rapid decompression at altitudes above 30,000 ft will result in transient impairment of performance even if 100% oxygen is breathed as the decompression commences.

These facts emphasize the importance of the correct use of oxygen equipment in the event of the decompression of a pressurized aircraft. It must be remembered that the effects of hypoxia outlined in the previous paragraphs apply to healthy, normal individuals. A proportion of passengers may be suffering, either knowingly or unknowingly, from conditions which reduce their tolerance of hypoxia below that of the normal, healthy individual. Heavy smoking has the equivalent effect of raising the altitude by several thousand feet. Individuals suffering from certain diseases of the heart or lungs do not tolerate well the hypoxia induced by breathing air at altitudes greater than 5-6,000 ft.

Use of Oxygen

General

The hypoxia induced by breathing air (21 % oxygen) at altitude is combated by increasing the concentration of oxygen in the gas breathed. Breathing 42% oxygen at 18,000 ft (0.5 atmospheres) maintains the partial pressure of oxygen in the lung gas and the oxygen supply to the tissues at the same levels as produced by breathing air at sea level. The limit to the enrichment with oxygen comes when the gas is 100% oxygen. Breathing 100% oxygen at 34,00p ft is equivalent to breathing air at sea level, while breathing 100% oxygen at 40,000 ft is equivalent to breathing air at an altitude of 8-10,000 ft. Although descent at very high rates may even produce a tear in the ear drum, this type of injury nearly always heals rapidly and completely and has no long term effects. From the physiological considerations presented in the

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previous sections, pilots will appreciate that if an emergency condition arises, there must be an immediate and meticulous response to the prescribed drills. It is imperative that flight crew perform all pre-flight normal functional checks of the oxygen system. Your life and those of the passengers depend upon having a serviceable system.

5.2.17 ABNORMAL & EMERGENCY SITUATIONS

Definitions

Abnormal situation: a situation which is non-normal, not usual or not typical.

Emergency: sudden and unforeseen event, requiring prompt action.

Study topics

Review these topics from OM-A, FCOM's, Jeppesen, SEP manual:

Managing failures in general.

- a) CAP/ECAM/ EICAS correct handling
- b) Abnormal & emergency procedure general.
- c) Engine failures and fire drills
- d) Engine failure in flight: strategies and procedures.
- e) Decompression and emergency descent procedures.
- f) Use of and principles behind drift down charts.
- g) Emergency during T/O, landing, or taxi.
- h) Emergency evacuation
- i) Passenger evacuation: generalized guidance and procedures
- j) Fire and smoke
- k) Fuel emergency
- l) Communication: general
- m) Communication: in case of emergency
- n) Interception procedures
- o) Communications failure: company policy
- p) Communications failure: ICAO procedure and national differences
- q) Aerodrome emergency services

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- r) Simulated emergency
- s) Crew incapacitation
- t) Dangerous goods: emergency procedure
- u) Non-normal procedures
- v) Non-normal checklists
- w) Memory items
- x) Many more

The most important sources of information regarding how to handle abnormal situations and emergencies will be in FCOM, FCTM, SOP, and QRH:

- a) FCOM/SOP : Emergencies and Abnormals
- b) FCOM/SOP : Supplementary techniques
- c) FCOM/SOP : Special operations
- d) FCTM: Flight crew training manual for your type of aircraft
- e) QRH

Judging and handling abnormal and emergency situations

- a) These references clearly cover a wide spectrum of possibilities, from the merely inconvenient occurrence which requires nothing more than making a Tech Log entry to the potentially life threatening situation. Clearly some of the Non-Normal (QRH) drills are more urgent than others.
- b) CAP/ECAM/EICAS or QRH will not always tell you what is and what is not defined as an Emergency. Some situations, for example TCAS RA, which are clearly emergencies, are not covered by either one of them. Reliance on the 'Non-Normal' drills for every conceivable situation eventually is just not possible. They simply cannot be made to cater for every eventuality.
- c) So, the big question is: "What constitutes an Emergency?" As already discussed, the complexity of the situation makes it unfeasible to catalog all abnormal situations into Emergency and Non-Emergency.

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- d) The following is a blanket definition to use as a yardstick for any abnormal circumstance.
- e) "An emergency situation is one which threatens the life, health, or well-being of any passenger, crew member, or person on the ground, or which threatens or is reasonably likely to threaten the safety of the aircraft".
- f) Aviation history reveals too many occasions where inappropriate action by the crew has turned the proverbial drama into something of a crisis. Worse has occurred when a minor malfunction has resulted in a major accident because of incorrect crew action.
- g) There are four (4) possible incorrect paths to follow when dealing with an abnormal situation and more importantly, they are not difficult to avoid.

1. Failure to fly the Aircraft

Unacceptable. As Captain you must decide who is flying the airplane and who is to execute the checklist (i.e. PF / PM duties). Ensure that PF is not unduly distracted by the requirements of any drill, checklist, or other action from proper flight path control. This is good old fashioned flight deck management.

2. Incorrect identification of a problem or failure

- a) This is commonly the result of an incorrect 'snap' diagnosis. This of course is a failure to gather and analyze all the pertinent facts. It can be avoided by using all available resources, including ATC, Engineer on headset, and Cabin Crew, to obtain relevant information.
- b) Remember that a complete picture of what is happening has to be built up. If you don't gather all the information you will not be able to create a complete and accurate picture.

Caution: The phraseology of non-pilots to describe an event may differ from that which we would consider 'standard'. You must therefore be prepared

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to ask the right questions and if necessary confirm, by other means, that the event described is indeed what you understood and also that which has occurred.

At best an incorrect diagnosis and subsequent drill will make your life much harder. You will have to undo the incorrect drill and then, having correctly identified the problem, redo the correct drill.

At worst the situation may become so confused by correcting an incorrect drill that an irrecoverable situation is created or loss of control results.

3. Over reaction to a situation

This is typified by an inappropriate and usually excessively rapid response to the initial event. In response to a shot of adrenaline a somewhat panicky "Do something - anything!" attitude has taken over rather than a deliberate response to an identified problem or threat. In most cases a few moments of mature analysis rather than a knee jerk reaction would provide a better result.

4. Under reaction to a situation (indecisive)

A situation where a serious threat to the aircraft or occupants is not recognized, or recognition is unduly delayed, or action is not taken despite correct recognition. This can create a situation where remedial action becomes impossible.

Note: In many cases the cabin crew are responsible for the initial incorrect identification and poor communication. E.g. an alarmist cry of "FIRE" instead of "Smoke from oven X" creates the seed of the inappropriate response by their overreaction to a situation. Unfortunately too many people do believe the old saying: "There is no smoke without fire" and thus make a connection that may not exist. Equally Cabin Crew who are 'in denial' of the reality of a situation can feed you reassuring words, and maintain a continued affirmation that the situation is under control. This will contribute to a delay in taking appropriate action. It is worth noting, that an initial over or under reaction to the event in their domain by the Cabin Crew will result in a similar

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response by the flight deck crew. Unless of course the flight deck crew ask the correct questions in order to obtain the correct answers.

Summary:

The ultimate responsibility for dealing with abnormal situations lies, as always, with the Captain.

You must:

- a) Gather and analyze all available information about the situation.
- b) Identify the nature of the problem or threat.
- c) Take appropriate and timely initial action.
- d) Decide on a subsequent course of action. This will depend on the success of the initial action e.g. an engine fire warning: is it extinguished or not? Very different courses of action are required depending on the outcome.
- e) Continue to monitor and review the situation.

Remember that no two events are identical. Each situation must be examined and treated as an individual case. There is no such thing as a 'standard' failure or emergency situation, each is unique and needs to be treated as such. The OM-A, Chapter 13 provides guidance on the management of Abnormals.

5.2.18 FAILURE MANAGEMENT

General

As mentioned in the previous chapter, a clear cut method of handling failures cannot be given in a single manual. Every failure is different and subsequently asks for a different approach. On the other hand you as a Captain are required to develop your own methodology for approaching failures. It has been proven that in case you, as a human being, approach every situation with a certain working method which is always the same for your case; you are much less prone to making a mistake or to forget something.

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In the following paragraph we will look at some basic principles your working method should incorporate.

Managing failures

1. Control aircraft

Use automation (trim properly and engage the autopilot).

In case of complicated failures it might be a good idea to delegate the controls of your aircraft to the First Officer so you can focus on the failure management. Complete any ECAM/EICAS or QRH items and make sure all normal checklists are completed as well.

2. Get safe

- Advise ATC (Mayday or Pan if necessary),
- Request radar vectors (Heading and Altitude),
- Request to join a Hold somewhere safe (Hold at PPOS can be a good solution). In case you are on the approach when the failure happens it might be safer to execute a missed approach or cancel the approach.

3. Tidy up

Complete any outstanding normal checks. Think about immediate cabin safety.

4. Analysis

Use all available brains to identify failures. Complete the obvious corrective actions.

4. Plan

- Hold: how long? Fuel available vs. fuel required to complete all tasks.
- Continue flight if possible (provided Safety is ASSURED).
- Use commercially viable alternate unless failure dictates otherwise. Involve First Officer with decision.
- Brief LCC. NITS briefing should be done before informing the passengers.
- Time permitting inform the passengers in an appropriate way.

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6. Evacuation guidelines

The decision to evacuate the passengers and crew from the aircraft is one not to be taken lightly. The decision either way could have enormous implications. It must be based on the overall situation of the Aircraft, influenced by both internal and external factors. It is probable that the full picture will evolve as you gather information. Remember: use all resources of information, use all available brains. Each piece of information needs to be analyzed and added to the whole in order to see how it affects the overall picture.

Flight crews should address two questions when deciding on the appropriate course of action in a given scenario, utilizing the most reliable information available at the time:

- a) Are the passengers safe inside the Aircraft?
- b) Is the situation stable and likely to remain so?

If, within the best information available, the above answers are YES, do not initiate an evacuation unless circumstances change for the worse.

If a reasonable element of doubt exists as to whether the present situation provides an adequate level of passenger safety, or the situation is deteriorating towards an unacceptable safety level, an evacuation will most probably be the best option available to the captain. Remember that EVACUATION can be UNPLANNED or PLANNED

In the case of PLANNED evacuation make sure your correct orders are briefed and understood by your LCC during your NITS briefing. This is why it is so important your NITS briefing is repeated by the LCC word for word. An UNPLANNED evacuation could happen during landing or rejected take off.

The crew must endeavor to obtain accurate information on exterior events from any reputable source. Whenever time permits, stress to the external observer (mostly cabin crew) the need to describe to you exactly what he/she can see, not what he/she thinks or supposes is happening.

Remember that at the height of an aircraft incident, observers may be excited or under some degree of stress. A puff of smoke from no 'light up'

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during engine start or APU exhaust can all too easily be portrayed by the message "you're on fire". Ask what color the smoke is, the answer gives a clue as to its origin.

5.2.19 AIRCRAFT PERFORMANCE – REGULATIONS & OPERATING MINIMA

As you are very well aware of, many rules and regulations exist regarding Aircraft Performance and Operating regulations and minima. OM-A, Chapter 8 covers many aspects and one should have solid knowledge of its content. Jeppesen Airway manual is another important document which you will need constant reference to. Both manuals should be studied in depth throughout your upgrade training.

The following topics are suggested for review / revision (non-exhaustive list):

- a) EU-OPS/EASA AIR OPS AOM's in general
- b) Commencement and Continuation of approach (Approach ban)
- c) Stabilization criteria as per OM-A, Chapter 13
- d) Takeoff minimums
- e) Circling minimums
- f) Non-precision approach minimums
- g) RVR and CMV
- h) Std/State minimums
- i) RFF
- j) Operations to CAT II and CAT III A/B minimums (A320, B777)

5.2.20 MEDICAL

The information in OM-A, Chapter 8 is a good guideline for dealing with medical matters, including the following important topics. Being fully aware of the this is of paramount importance.

- a) Problems with sick passengers
- b) Refusing sick passengers

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- c) Obtaining help & medical assistance by radio / ACARS / telephone
- d) Expectant mothers
- e) Infectious disease
- f) Health regulations

5.2.21 DANGEROUS GOODS

As dangerous goods training is covered as part of the 'ground refreshers', you should be well briefed on this subject. It is not suggested that an intimate knowledge of the Dangerous Goods Regulations is required. However a good working knowledge along with the ability to find appropriate guidance material is essential. To this end it is suggested that you review the appropriate sections of OM-A, Chapter 9 together with the course handout and DGR training manual program received during your DGR course. It is important to have good knowledge of the procedures when dealing with incidents involving Dangerous Goods (A320, B777) utilizing the ICAO EMERGENCY RESPONSE GUIDE. Carriage of DG (Except fire arm) is not allowed on ATR (refer OPS SPECS).

5.2.22 NEW SITUATIONS, NEW PEOPLE, NEW CHALLENGES

This part of the syllabus comprises an Introduction to some of the new situations and new people that you will encounter as a Captain. As a newly promoted Captain you will come across situations that you may have experienced as a First Officer, but are now required to take responsibility for as Captain. Similarly, you will have to communicate and deal with people, either individually or in groups, with whom you have previously had little or no contact. As your experience in command grows, most of this will become second nature. In the meantime this section gives some guidance in these areas as a first step in the right direction.

Specific information is given to cover some of the 'new' situations in order that correct procedures are known and the pitfalls are avoided. However,

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to have specific procedures for dealing with people are not possible. People are individuals and must be treated as such in order to encourage them to do their best. Guidance of a general nature on the other hand regarding the content of communication is possible and, where appropriate, is given.

It is important to remember that the style of your communication will be unique to you. By giving some prior consideration to this you will at least ensure that ambiguity is avoided and offense is not given. In dealing with personnel and coping with situations, some situations are bound to be more demanding than others. Do not be overwhelmed by this, use all available resources and consider all possibilities before selecting your optimum solution.

Flight Deck Crew

First Officers

As a Captain the majority of your dealings with other pilots will now be with First Officers. You are now the senior pilot on board, the one that others, including your First Officer, look to for guidance and leadership and of course solve those tricky problems that they cannot solve themselves.

Your First Officer is your senior crew member, your second in command. Accordingly your First Officer deserves to be treated with respect by all concerned but in particular by you. Working on the basis that the First Officer is provided to work as an airborne clerk and is aboard merely to keep your paperwork in order, and occasionally you reluctantly let him/her fly the aircraft, has proven to be wrong, counterproductive, and in many cases, dangerous.

He or she is unlikely to respect you as a Captain if you operate on the 'oneman show' principle, and consequently is unlikely to perform optimally. Equally you are failing to contribute in enriching and enhancing their experience that they'll need when they become Captains. Always remember that not so long ago you were in the exact the same situation!

The following points are worthy of consideration:

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At all times your First Officer is a valuable source of a second opinion, more so when you have an experienced First Officer.

- a) Situations may arise where it is more prudent to allow the First Officer to handle the aircraft while you manage the problem.
- b) With problems on the ground it is often best to leave the First Officer in charge of the aircraft while you are elsewhere dealing with a problem.
- c) Occasions will arise when a change of control is advisable:
- d) First Officer's sector, but conditions place the operation outside his handling limits, refer to OM-A and SOP's
- e) Your sector, but the need arises for a lengthy HF call or any other situation which would distract you from your PF duties unduly.
- f) First Officer's performance not up to the required standard.
- g) If the First Officer's performance is not up to the standard in any area, you should let them know. Improvement is unlikely if the individual is not aware of any shortcomings. Major or continued problems might warrant a discrete word with the equipment Chief Pilot.
- h) Delegation of any task to the First Officer does not absolve you from responsibility. In this respect you must be aware that the experience levels of our copilots vary and this should be a major consideration when deciding which sectors to delegate to First Officers.
- i) Do not allow the First Officer's handling of the aircraft to create a situation which is beyond your ability to recover. If you have any doubt about the manner in which the aircraft is being handled you have two possible options; The first is to give instructions or advice to stop a situation deteriorating and thereafter to improve it, the second is to take control yourself and correct it.

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- j) It must always be clear who is flying the aircraft. This is particularly true when a change of handling pilot occurs. The time honored: "You have control" routine should always be used.
- k) Should it be necessary to 'debrief' your First Officer for some shortcoming in their performance, it is essential to do this out of earshot of other crew or ground staff and particularly passengers. The Flight Deck should provide adequate privacy for a 'quiet word'. Shouting matches are not to be contemplated.
- l) A clear understanding of 'who does what' in both normal and non-normal circumstances is essential.
- m) First Officers briefings; if your First Officer gives a takeoff or landing brief that is deficient or employs a technique that you do not wish to use, then clearly you must correct his briefing and explain why.

Remember: Always try to clear any ambiguity, and try to solve any problem on board of your aircraft so both pilots can go home after the flight with a pleasant feeling. This is a skill any good commander should possess and failure to do so you should consider it as a personal challenge for you as Captain to acquire that skill.

Captains flying together

It is occasionally necessary (First Officer shortage) to schedule two Captains to fly together. From the Company point of view this is good use of resources. From the pilots point of view it is not always the most popular of duties. It should not be a burdensome task which some perceive it to be.

On all fleets Captains are trained to operate as RHS in emergencies (pilot incapacitation for example). This is facilitated by a RHS training as part of every Captains Proficiency Check. So, in most circumstances, there is no reason why two Captains cannot share the flying. The colleague in the RHS is fulfilling the PM role of First Officer when he is occupying that seat. By

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operating like this there can be no doubt or confusion as to just who is in charge of the aircraft. Each pilot has a clearly defined area of responsibility within the Flight deck and will operate in his appropriate capacity (PF or PM) during both normal and non-normal operations. Company policy regarding the legal Pilot in Command based on seniority should be regarded.

Problems do occasionally arise when a Captain feels uneasy with operating from the RHS as PM. This can lead to an unpleasant atmosphere in the flight deck, which at worst case could be potentially dangerous. Anyone in this category should accept their temporary change of role with good grace and bear the following in mind:

- a) It is an opportunity to reacquaint themselves of the role and tasks of the First Officer.
- b) It is possible to learn something from watching another Captain at work. All of us can learn if we are really honest about it.
- c) It should be viewed as any duty delegated by the company, it implies no downgrading of a captain's rank, and we should be professional in our approach towards this delegation.

Handing over to the next crew

Do's

- a) Put charts and manuals away.
- b) Tidy up. Dispose of cups, newspapers, and any other trash.
- c) Ensure ALL paperwork is completed properly. Also ensure that the TLB entries are as required and that the wording of any new defects is unambiguous and technically correct.
- d) Pass on verbally any information that you can to the next crew that will be of assistance to them: A/C technical status, en-route or destination weather, down route problems, e.g. Nav Aids/Runways etc that may just have gone out of service.

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- e) Shutdown checks including the “leaving the aircraft or securing” checklist if the next crew/maintenance are not there to take over.
- f) Make sure the A/C is ‘secure’ or left in charge of a responsible person

Don'ts

- a) Habitually align IRS's (A320)
- b) Enter the route or set-up GNSS/FMGS/FMS and the flight deck for departure, as the crew operating the flight should be the one's entering the data.
- c) Leave airplane with APU (A320, B777) running if an engineer or the next crew is not there to take charge.

Cabin Crew

Introduction

The flight and cabin crew of an airliner should always aim to act as one cohesive crew. This may be severely tested in non-normal or emergency circumstances. In almost all other respects the crew is actually treated as two separate entities:

Flight deck and cabin crew.

They are recruited by and work for different departments. Indeed, the recruitment criteria are amazingly dissimilar. They wear different uniforms, have different pay and conditions and they have a radically different career structure and level of qualification. The specific tasks allotted to each group are widely dissimilar as are the respective levels of responsibility.

This difference between flight deck and cabin crew can and does lead to a number of difficulties.

- a) Ignorance of each other's tasks, duties and responsibilities,
- b) Refusal to communicate adequately under normal conditions.
- c) To have a ‘them and us’ situation.

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- d) With weak or indifferent leadership, it can lead to the situation where multiple leaders emerge thus having a team without a commander.

Worse still can occur with weak or indifferent leadership, which can lead to the assumption of authority by those with no right to exercise it and without proper knowledge of the responsibility which that authority demands. Clearly with these sorts of problems existing it is not surprising that events sometimes can go out of control in both normal and non-normal situations. It is clear that good, firm leadership from the flight deck crew, and in particular the Captain of a flight, will influence the attitudes and actions of the cabin crew and thus bypass many of these potential obstacles. Good communication is required among the crew. Although in these notes it is editorially convenient to deal with the flight deck and cabin crew as separate, we must still try to consider the crew as a whole.

Communication should be both concise and precise as well as being delivered at the correct time. Given all of this, the efficiency of the operation in normal circumstances should be maximized and the potential for miscommunication in any non-normal circumstance minimized.

The following section provides some generalized guidance on liaison with your cabin crew before, during and after a flight. Remember that the cabin crew are your eyes and ears in the cabin and also that certain of their tasks like the safety briefing, life jacket demonstration etc, are your legally your responsibility which you have delegated to the cabin crew to perform.

Customer service is an immensely important part of the commercial aspect of airline operations these days. The cabin crew plays an important part in this, but we must not

lose sight of the primary reason for cabin crew: SAFETY. So under no circumstances should service, however important, infringe upon safety.

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Pre-flight

Initial contact with your cabin crew by means of a short briefing is important for a variety of reasons. For one, it permits the introduction of all crew members, thus establishing a 'who is who' for the entire crew.

This is particularly important to ensure that new crew members feel part of the 'team'. It allows for the exchange of information relevant to the forthcoming duty. This will set the tone for the day: you will have opened the door to two way communication by the disclosure of this information thereby getting rid of any communication barrier that might have existed.

By ensuring proper instructions, it indicates to the crew that you are concerned about their welfare. This goes a long way to creating a team spirit that should outlast the duty period. By the passing of information at the briefing you show that you are efficient and keen to ensure that the job is done properly. It is to be hoped that the rest of the crew will follow you as an example.

And most importantly: It creates the “one crew” we have been talking about before, instead of two separate entities.

In PIA it is difficult to do a crew briefing at the briefing room at the airport. Therefore, always try to go onboard the aircraft a bit earlier so you can conduct a briefing on board. The briefing is unlikely to take more than a few minutes and whichever of the following are relevant should be included:

- a) Names of the crew (flight & Cabin) to get acquainted “break the ICE”.
- b) Flight times
- c) Flight conditions; in particular turbulence, CAT, TS, or simple low altitude turbulence caused by strong winds. These are the conditions most likely to have an impact on cabin service and safety.
- d) Legalities: people called from standby. Make sure everybody is legal to perform the duty of the day.
- e) Slot times/delays

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- f) Refueling or not
- g) If it is a training flight, inform the crew about jump-seat occupants or any other operational constraint.
- h) Any other information you deem necessary.

The LCC on his/her turn should inform you about:

- a) any training taking place in the cabin.
- b) Provide you with a list of names, duty positions, and staff numbers of the cabin crew.

Given the above information the LCC will now have a clearer picture of the likely workload and can plan accordingly. And once more, now the crew will feel much more as being part of one team.

On routes where problem passengers are known to exist e.g. with excessive hand baggage or alcohol related behavior problems, a reassuring word to your cabin crew that they have your full support to deal with the situation will improve that confidence to deal with it properly. As a result you are less likely to be bothered later in flight or post flight with endless horror stories which you can do little about.

Onboard

Once on the aircraft but before departure the need for communication between flight deck and cabin crew still exists. It is in fact becoming more important as the situation is now dynamic and errors or omissions can have serious consequences.

Cabin defects

Discuss any Cabin Defects with the LCC relating to cabin equipment or furnishings. This may as an example save them the time and effort in loading meals into an unserviceable oven only then to have to unload and reload them, possibly in the galley at the other end of the aircraft and quite possibly in flight. This sort of occurrence may have a considerable effect on cabin service and can be easily avoided. This also will prevent the LCC re-entering

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a previously entered defect in ignorance. This saves time: theirs, yours, and the engineers.

Any defects discovered pre-flight or at any later stage should be reported to you by the LCC. The necessity of that item should be considered and if required engineering called without delay. More routine items such as replenishing the potable water or toilet servicing may also need attention. These should be advised immediately to the load controller if present or via the R/T to the company or handling agent.

Cabin defects book

This book is an annexure to the Aircraft Technical Logbook. Defects relating to cabin furnishings or equipment are entered by cabin crew in the Cabin Defects Log and the entry signed and dated by the crew member making the entry. The defect will subsequently be rectified and annotated as such, or will be "carried forward" via a Technical Logbook page and annotated and cross referenced accordingly. Any defect recorded relating to an item of safety equipment must be entered in the Technical Log as a defect.

Boarding time

The LCC must be made aware of intended boarding time of passengers at an early enough time to enable compliance. Factors which will cause boarding time to vary should of course be taken into account. These include such variables as slot time, disabled passengers, serviceability of the APU for air conditioning (A320, B777), time to transport passengers to a remote stand by bus, and inevitably a host of others.

An essential pre-requisite for boarding is completion of the cabin safety and security check, the LCC being required to inform the Captain that the check is complete, the cleaning is done, and catering charge has been obtained. It seems obvious, but is all too often overlooked that cabin clearing must be completed, and all cleaners and other non-crew personnel along with their equipment should be away from the aircraft before boarding can commence. Should a decision to board while refueling or refuel with passengers on board be necessary, then the LCC must be briefed and the

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procedure in OM-A, Chapter 8 applied. Local regulations concerning the procedure must also be adhered to; these may include the attendance of Fire Fighting personnel and equipment, the placing of steps or other means of egress. Some airport authorities prohibit refueling with passengers on board.

In Flight

ETA

Keeping cabin crew up to date with flight progress is important particularly on short and busy flights. On short sectors their flexibility to accelerate the service if flight time is reduced is minimal, the only option being to somehow curtail the service if circumstances dictate. In order to avoid this situation a realistic estimate of arrival time should be given early in the flight, usually short sectors pose greater demand and stress on Cabin Crew, thus good coordination can mitigate or reduce such stress.

Early advice of a delayed ETA due to holding, increased track distance, runway change etc, should be given as this may allow completion of service or at least allow it to be completed in a more relaxed fashion.

Of more importance is a situation where an ETA has been brought forward significantly due to a direct reroute. Such a significant reduction in flight time may leave the cabin crew unprepared for landing and thereby cause a go-around. A timely announcement and switching on the seat belt sign will keep cabin crew up to date on the flight progress and allow them to pace the last part of the service and prepare the cabin for landing.

Turnaround

Cabin crew will normally rise to the challenge of a quick turnaround but may need the occasional prompt. As Captain your job is to manage the turnaround by delegation of tasks to your crew, the engineers, and ground staff. In this area tact and diplomacy including the words 'please' and 'thank you' will achieve far more. Becoming too involved with accomplishing tasks

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may diminish your capability to supervise the turnaround and detect which task is liable to be the critical one, i.e. last to be completed. This may prevent timely corrective action being taken. In these cases it can be helpful to delegate the technical aspects of the flight to your First Officer so you can handle the managerial tasks.

Meal breaks

It is obvious that, when possible, crew meals should be consumed as near to normal meal times as possible and obviously on a lot of flights this is hardly possible. Difficulties can also arise on routes where short, multiple sectors are operated. Here it may be that by deferring a meal break to a later turnaround, which is of longer duration, the meal may be taken in a more relaxed and sociable atmosphere than is the 'norm'. However, when contemplating this, the physiological aspects, especially the time since the crew last ate must be considered. A crew whose members have low blood sugar levels due to a lack of recent nourishment is less likely to cope well with routine tasks, and may fail to cope adequately with any non-normal circumstance. Some symptoms of this deprivation are: short-temper, inability to exercise proper judgement, and to make sound decisions.

Do not be tempted to coerce your crew to skip a meal entirely in order to make up time. The time saved is at best minimal as eating almost always takes place concurrently with other turnaround activities which would anyway prevent passenger boarding at an earlier time. Should you attempt this you will end up with a hungry and dispirited crew who may not give their best to our passengers.

Unexpected turbulence

If the encounter is of sufficient duration or severity then the 'fasten seat belt' sign must be illuminated and a PA made. Normally the LCC will make this PA, but in the event of a sudden onset of significant turbulence the cabin crew may need to be secured as well and in this case a PA by the flight crew

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may be necessary. The PA should be as re-assuring to the passengers as possible and as informative to the cabin crew as is reasonable. The onset of even light to moderate CAT at altitude can be scary for even seasoned travelers, inexperienced passengers may well be terrified by the experience. The LCC will give you a 'cabin secured' check once the cabin is secured. it is good to mention to the crew during the briefing to call you if they feel the turbulence to be significant and you haven't turned on the FASTEN SEAT BELT sign yet, as in the cockpit the feel can be different from the tail of the aircraft.

Diversions

In the event of a diversion the LCC will have a number of questions, these will include:

- a) Where are we going to?
- b) What happened?
- c) How long before we reach there?
- d) What happens when we get there?

Have your answers ready, as inevitably a diversion increases the workload of the entire crew and they need relevant information to enable them to plan that workload. Diversions are situations where maximum flexibility of all concerned is required to expedite matters and minimize disruption to our passengers.

It would be advisable to contact Situation Room as soon as possible by any communication means available. For this purpose you could contact them by using ACARS, SATCOM , HF, phone patch, etc. Regardless which option you might use, it is important to provide the information to your cabin crew as soon as the company is contacted and your questions are answered

Emergency & Evacuation Procedures

In PIA a set procedure exists for these kinds of situations: the N.I.T.S. briefing. This procedure is described in the "Cabin Crew SEP Manual", a

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manual you can find on the Digital Crew app. It is of utmost importance that you are absolutely familiar with this procedure as your Cabin Crew is trained to receive any information regarding an Emergency in exactly this format.

- a) **N** -> Nature of the problem. Keep it as understandable as possible and refrain from using too many technical terms. These might seem comprehensible to you but could be too complicated for your LCC.
- b) **I** -> Intention. What has been your decision and, in case applicable, where are we diverting to?
- c) **T** -> Time. How much time is there left before we are estimated to be landing? Remember, your cabin crew probably still has to secure the cabin and prepare it for the emergency.
- d) **S** -> Special Instructions. Will an evacuation be required?

Remember: once you have given your NITS briefing it is a requirement for your LCC to repeat your briefing “literally”. This ensures you they have fully understood the extent of the situation.

Once this has been done, do not forget to ask for updates from the Cabin Crew regarding the progress of their preparations in the cabin. You will be very busy trying to deal with the situation in the Flight deck, trying to land the airplane safely, so this part is often overlooked. Their feedback is an important detail in your time management dealing with the situation. Ask them: Is the cabin secured? Are there any passengers in urgent need of medical assistance? Is there panic on board etc...?)

If an evacuation is planned, it is not necessary to specify which exits to be used. However any information pertinent to the availability of exits would be appropriate. For the cabin staff, the basic philosophy for evacuation is to use all available exits. They will expect some to be jammed, under water, blocked by fire or otherwise unusable. On discovering an exit not safe, they will abandon all attempts to use it and proceed to another exit. Each door/exit will be evaluated before it is opened.

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You, as the Captain, will be expected to remain on board to monitor the evacuation internally while your First Officer with the LCC will be in charge to guide evacuated passengers away from the airplane on the outside.

Also, it is important to highlight, when the landing has been completed and the airplane has rested on ground safely, evacuation might not be required any more, e.g. engine failure. Therefore, it would be important to remember that you might elect to cancel the emergency and for this purpose, you must inform passenger and cabin crew before you intend to clear the runway. The OM-A and SEP Manual state that when evacuation is no longer required, you must inform on PA by announcing "Cabin crew and Passengers remain seated".

Always remember: Safety of the passengers is of paramount importance, but crew should not take unnecessary risks.

Post flight

Ensure that all relevant details are completed on the Digital Flight log and that any DBR is also completed. Do remember to thank the cabin crew for their efforts, particularly if they have worked hard on a busy or disrupted day. A little praise will go a long way toward making them feel valued both as an individual and as a crew member.

Communications with Ground Staff and Company

This section deals in brief with aspects of communication with personnel other than members of your crew. It is not possible to cover all aspects of every conceivable situation with all concerned parties but the intention here is to advise you of lines of communication that are open to you and in some instances where to seek assistance.

Air transport is an enormous collaborative effort. Pilots are privileged to be at the forefront of this. Many responsibilities are placed upon us, both as Captains and as pilots, in order that the safety and regularity of air transport is maintained and improved. Equally we can expect that all others who rely

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upon the airline industry for their livelihood should support us wholeheartedly. We must do our part by communicating adequately with all concerned and thus help to motivate them.

Ground Staff

Those that we have most dealings with are the Dispatchers and Engineers.

Dispatchers

Their responsibility is to coordinate with all those agencies required to ensure that the aircraft is safely and expeditiously prepared for flight and if possible to dispatch it on time. Their most obvious contribution may be the Operational Flight Plan. They should be able to provide you with the following essential information:

- a) All documents pertinent the flight (OFP, NOTAMs, Weather briefing etc)
- b) Information on departures delays if any, and if available an estimate of holding delays at destination.
- c) The fuel figure is required by the Load Controller for inclusion in the load sheet and the Dispatcher usually collects this data. At many locations they will pass the figure to Engineering and Load Control on your behalf.

Other items that you will from time to time need to discuss with the Dispatcher:

- a) Passenger boarding time
- b) Technical problems
- c) ATC delays (to board or not/ remote holding to free the stand)
- d) Crew transport to/from the aircraft
- e) Changes to load sheet to pass on to the CLC.

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Handling Agents

At outstations the coordination of the aircraft operation is controlled by Handling Agents acting on behalf of the Company. The handling agent normally has comprehensive communications available and is equipped with all means necessary to enable communication on the ground and in the air.

Requests for extra cleaning, engineers, toilet servicing, weather updates etc should all be passed by VHF radio if possible to the handling agent at the earliest possible stage, thus giving them adequate time to react. Any queries about stand occupancy or request for a stand change may also be addressed to them.

Situation Room

Situation Room is responsible for the smooth running of the airline's aviation activities on a day to day basis. It is in everyone's interests for relations between the crew and Situation Room to be good. Furthermore, communication between the two groups needs to be beyond reproach.

Remember that the Situation Room can be reached by ACARS, VHF/HF, phone, email, or SATCOM. So if advice is needed, e.g. on a re-routing, use of a non standard alternate, etc., call the Situation Room. Equally if you have a problem that will affect the operation downstream, let them know: unplanned technical stop, any form of unserviceability which may delay or cancel the next or subsequent sector, crew sickness or incapacity, sick passenger requiring medical attention at destination, etc. All these, and more, the Situation Room will want to know about. It is better to give them too much information than not enough.

Keep the lines of communication open and keep Situation Room advised of your thinking when attempting to solve operational problems. It is quite possible that someone else has already experienced your problem on the same route previously and Situation Room know the answer. If you don't speak to them you will never know.

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Remember: use all resources available to you in order to form the best possible decision.

Should you be faced with a diversion for technical or weather reasons and you are fortunate enough to have a range of alternates available, i.e. fuel is not yet a factor, then a call to Situation Room to ascertain which is the best alternate from an operational viewpoint is essential to assist in the management of the operation.

If, however you are forced into an emergency diversion due to a serious situation developing, then different criteria apply. This is not an area for discussion or options, but if you find time Situation Room would appreciate a call so that they are aware of your intentions. It must be emphasized that such a call is an 'extra' in these circumstances and in all probability you would not have sufficient time or capacity to make the call.

In this case a, a phone call or HF call after landing and after the situation is secure will put their minds at rest, and they will now know where you are, what happened and can start to sort out the situation.

Non urgent calls to Situation Room or Flight Dispatch at Karachi, Lahore, Islamabad, are no less important. They enable you to pass your ETA and to give any further information that they may require, particularly if you are not running on schedule. The passing of basic defect information to Maintenance is an example. If some defect occurs after getting airborne, that will require investigation or rectification on arrival at destination, then pass the details to Maintenance via Situation Room. They can start the process of letting engineering at destination know of the problem and also start locating possible spares that may be required.

Flight Dispatch / Equipment Chief Pilot

Working in Flight Dispatch are a number of people with a wide experience and particular knowledge of the operation of our aircraft. Should you have a problem you cannot solve or need some advice on, use their expertise. A quick phone call or request on company VHF or ACARS message to relay your

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query should give you the answer and put your mind at ease. In particular the management pilots are all very experienced Captains, so the chances are they can solve your problem from personal experience.

Engineering

The relationship between pilots and engineers and the professional regard between the two is probably greater than between any other two dissimilar groups in the airline industry. Perhaps because pilots and engineers are the only two professional groups in the industry who are specialists and are required, by law, to be licensed.

However, just as cabin crew and pilots attract different types of people, pilots and engineers not necessarily find communication straight forward. If you were, for example, to ask a pilot and an engineer for a description of a flight, just imagine how different each story would be. For ground crew the flight is already over by the time it is airborne. The flight will be defined by whatever problems or defects were remedied. They will remember the technical aspects more readily than the personnel involved. The ground maintenance role, an organizational and systemized function, ends when that of the flight crew starts and vice versa.

The primary working interface between the two groups is the Aircraft Technical Logbook (TLB). It is imperative that any defect entered in the TLB be as precise and detailed as possible. A verbal description if possible is also a good idea.

Communications with passengers

Almost all of your dealings with passengers will be by use of the PA. Practice makes perfect. Probably in the early days of your Command you will need to write down your PA as a script and edit it before delivery. Try to sound professional, do not speak too fast and try to keep your PA short and to the point. Nothing puts passengers off more than a long rambling hesitant announcement.

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Passenger contact is inevitable. From time to time you will come into direct contact with passengers, either on the airplane or in the terminal. Not surprisingly our passengers expect a certain standard from the aircrew (and especially the Captain) to which they entrust their lives. Poor behavior, an apparent casual attitude or untidy appearance may create an image that passengers cannot reconcile with their expectations. This may persuade some of these people to use other airlines or even other means of transport. Do make sure your crew is smart enough to appear in public, be particular and insist on the uniform regulations being adhered to. Remember that your behavior should be the yardstick for the rest of your crew.

In case of an unexpected situation or emergency always make sure you inform your passengers accordingly. This is an art on its own as you do not want to go too deep in the reasons why a diversion or certain decision might be necessary, but on the other hand you do not want to leave them completely in the dark as well. It is a good idea to practice certain situations, and the most appropriate PA in each one of them, at home well before any actual situation arises. You will be grateful to yourself you did so on the day you need to actually use that PA.

Remember: many passengers are still not very comfortable with air travel and they literally put all their faith in you as the Captain. A reassuring word from you when the situation demands it will do wonders, both for them as well as for the safety of the entire flight.

5.2.23 NEW SITUATIONS

Pushback & startup - Some pitfalls and hazards

Although you probably have done several push backs and startups as First Officer before, things change rather drastically now you are the commander of a flight. Especially the legal aspect now becomes important. So take special care of these items.

Following is a list with aspects you know are required to have a deeper insight into.

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- a) Ground checks. Legally it is of the utmost importance that you receive a clear signal from the ground crew that your aircraft is secured and ready to be pushed back. Once you receive this clearance and you start pushing back, you have the full responsibility of the flight. You need to be sure about the following:
 1. All doors and hatches are closed and locked
 2. The steering bypass pin is properly installed (A320, B777)
 3. Nose wheel steering is OFF (ATR)
 4. All ground checks completed
 5. Area behind and around the aircraft is clear
- b) Rudder pedals. Keep feet away from brake pedals and flat on the cockpit floor during pushback unless actually intentionally applying or releasing the brakes (A320, B777).
- c) Communication (Ground). Communication with the ground crew is of the utmost importance. Remember that communication is transferring a message and making sure the message has been understood by the receiving party. An additional factor in our kind of operation is the vast range of nationalities among the ground staff. Most of us do not have English as a mother tongue. Therefore standard phraseology is the key to successful communication. The use of “Brakes released” and “Brakes Set” are recommended over the use of often barely understandable phrases such as “Brakes ON” or “Brakes Off”.
- d) Note: In case you were to notice a break in communication due to a language barrier between your flight deck and the ground crew it might be a good idea to revert to whatever wording

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your engineer is using i.e. if he says “Brakes Off please” reply with “brakes OFF”.

- e) Communication (ATC). Monitor both VHF 1 and the flight intercom for the duration of pushback and start up.
- f) Distraction. Do not allow distractions to interfere with the pushback or engine start, e.g. doing the PA during Engine start is not a good idea.
- g) Releasing ground crew. After pushback/engine start and when the parking brake has been set, the ground personnel in charge will be waiting for your signal to be released. Make sure both the tractor/tow bar and the ground staff are well clear of the aircraft before asking taxi clearance. Note as well that you need to visually verify that the ground staff is holding the steering bypass pin (A320, B777) in his hand. Therefore do not move the aircraft until you have positively confirmed that they are clear and, if appropriate, you have been shown the steering bypass pin.

Taxiing

- a) Make sure you have reviewed SOP and supplementary techniques/FCTM, as they provide good guidelines for everything regarding taxiing your aircraft properly. Always make sure that the aircraft is moving before initiating even the gentlest of turns. Undue strain may be put on the nose gear leg, the steering gear, tires etc. In a similar fashion always be gentle and progressive with the steering. Too tight a turn, at low speed in particular, will cause the aircraft to pivot around the inner (relative to the turn) main gear, again placing an enormous strain due to side loads on the gear leg and causing the tires to be scrubbed.
- b) Riding the brakes will lead to high brake temperatures. Brakes should be applied to reduce speed and then allow the aircraft

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to accelerate again, repeating the cycle as required. It is recommended on all fleets to let the aircraft accelerate to the SOP limit taxi speed and then to use one brake application to decelerate again to 10kts taxi speed.

- c) As with during any long vehicle or towing a trailer, the inner wheels in a turn 'cut in' or move in a smaller turn radius. Do not be tempted to cut corners and be aware constantly of the overall size of your aircraft. Be aware also of the limits of visibility of each particular model and in turns to the right make sure that the First Officer clears you visually to the right, just like you would in a turn to the left. These callouts should be made verbally so they are recorded on the CVR in case an incident would occur.
- d) Entering a stand poses additional risks. Exercising caution and a good lookout and proper control of your speed should ensure a safe arrival. Whenever you are moving onto a stand and you are not sure you have sufficient clearance to proceed on both sides of your airplane:
- e) STOP and call a Marshaller. Beware of unqualified personnel who will appear out of nowhere to 'marshal' you onto the stand, only to disappear when something goes wrong. A qualified marshaller is required by regulations as well as many airports to guide you in. The same applies if the stand guidance, AGNIS etc. is unserviceable or switched off. Do not take any risk!
- f) Try to limit thrust (jets) as much as possible in order to reduce the potential blast damage injury and also to limit the possibility of FOD. An engine at idle power is an effective vacuum cleaner; one at a high N1 setting is devastatingly efficient at picking up anything in its area of influence. Even a

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simple newspaper or plastic bag can cause serious problems if ingested.

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Handling reverse thrust

A few words and some research on the subject will be beneficial as this will ensure correct usage and understanding of the benefits of reverse thrust correctly applied and the problems created if it is not. It is recommended to use reverse thrust on every landing, regardless of runway length. Aircraft specific SOP's should be consulted on the correct method of using reverse thrust and auto brakes, where applicable.

Rejected Take-Off (RTO)

Full Reverse Thrust on all operating engines must be considered during a RTO. Equally the auto brake MAX function, if applicable, should be left engaged up to the same point or, if unavailable, maximum manual braking must be used. By using all applicable methods, you will make sure the aircraft will stop in the shortest possible distance and time.

Regarding this point, it is highly important to remember that there are several factors or errors that might affect the decision to reject a takeoff and hence would affect ASDA. Some of them are;

- a) Factors involved in decision making
- b) Inappropriate aircraft status at dispatch
- c) Brake worn or not working properly
- d) Residual brake temperature for Takeoff.
- e) Errors in flight preparation
- f) Error in aircraft TOGW determination (Load sheet)
- g) Error in T/O data calculation; V1, Vr, V2, FLEX, ATM, etc.
- h) Runway friction coefficient lower than expected.
- i) Efficiency of decision affected by:
- j) Inadequate or incomplete pre-flight briefing
- k) Too long to recognize unexpected conditions
- l) Misunderstanding of cues associated to the failure
- m) Limited time decision
- n) No adherence to standard call out policy
- o) Poor Crew coordination

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DE-ICING and ANTI-ICING

Judging by the number of aircraft that have been written off attempting to get airborne with some degree of contamination on them, it should be clear that this subject is not universally understood. An in depth study is strongly recommended. References can be found in OM-A, FCOM.

Ice, on the wings or any other part of the airframe will cause an increase in drag and an increase in weight. Both of these are undesirable and will degrade aircraft performance by an unquantifiable amount. Worse still are the changes to the aerodynamic properties on which the aircraft relies. CL Max is for predictable and controllable handling. The angle of attack at which it is achieved as well as its value is both significantly reduced by a contaminated aerofoil. It no longer possesses the profile its designer intended. This means that the angle of attack at which the stall occurs may be reached prior to the angle of attack at which the stall warning devices are activated and that the ability of the wing to lift a given weight is compromised.

Changes to the handling may include a rapid pitch up during rotation or severe roll once airborne.

MANAGING DELAYS

Technical delays

The resolution of technical problems may be a simple matter, such as changing navigation or landing light bulb. This is not something to delay passenger boarding or with which to trouble the cabin crew, quite simply it has no relevance to the 'cabin' or its occupants.

When more major reasons are present or may reasonably be anticipated and some delay is thus likely, then due consideration needs to be given to delaying passenger boarding or disembarkation and of course to informing both cabin crew and ground staff as to the situation. Cabin Crew frequently shows an interest in technical problems and many, particularly the junior crew members, are very concerned about safety aspects. A few well chosen

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words will help remove any anxiety they may have and thus should ensure that they are more positive, and also perhaps less emotive when dealing with queries from passengers.

Cabin Crew are on board to ensure the safety and to enhance the comfort of our passengers. They need to know when to prepare the cabin, including the all important catering, in advance of passenger embarkation or alternatively departure. The LCC needs to be kept informed of developments and given a reasonable estimate of the time to complete the engineering work, in order to prepare the cabin.

Alternatively, should passengers remain on board during the delay it may prove thoughtful to carry out some form of refreshment service. Do remember that trolleys are prohibited from the aisles on the ground as they would impede evacuation.

Extra catering may need to be uplifted. Whether passengers remain on board or not can be something of a dilemma. Many passengers are unhappy watching engineers working on an aircraft in which they intend to fly, particularly when engine cowlings, inspection panels etc, are opened or removed. Others may complain after a lengthy period of being “locked up” in the aircraft.

Comfort levels are almost always better in the departure lounge as are the available facilities: telephones, toilets, refreshment facilities, TV etc. In particular if the onboard air conditioning is unusable or otherwise unable to cope with ambient conditions, then if the delay is more than expected, the passengers will be in a more comfortable and less stressful environment back in the terminal. In that case you will not have the problems of extra catering; the demand for information relayed via the cabin crew, air conditioning requirements and requests for mobile phones to be used or messages to be passed.

Incredibly the disadvantage of returning passengers to the terminal is that they disappear. There is a tendency for them to wander off, decide not to travel but tell no-one, or just ignore boarding announcements. This in turn

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can lead to further delays while discrepancies are resolved or the bags of missing passengers located and removed from the aircraft.

A further difficulty can arise if you are not on a stand adjacent to the terminal building. Airside transport at many airports is a slow and a generally inflexible way to move passengers.

The logistics of removing a hundred or more passengers from the aircraft to the terminal and back from a remote stand makes this a task not to be undertaken lightly. Advice must be taken initially from engineers as to the expected length of delay once initial diagnosis is complete. This advice must then be combined with the “big picture” already formed by information from the ground staff regarding airport facilities, transportation, etc. in order to find the proper solution for the situation. One thing is sure, in case of a lengthy delay there is no other option but to return the passengers to the terminal.

Air Traffic Control Delays

These broadly fall into two categories:

- a) 'Known' delays where a SLOT is issued before boarding is due to commence.
- b) 'Advised' delays are where you are advised either during boarding of passengers or when start up is called for.

Known delays

It is recommended to board according to your scheduled departure time. In the meantime advise ATC that you are 'fully ready' once boarding is completed. This is not universally successful but does have a significant success rate that easily justifies its continued use. This applies to International airports where a SLOT or ADT is disseminated before departure.

Advised delays

Except when caused by a catastrophic computer failure at the ATC Center or by extensive bad weather, the delays are usually known and are usually of a

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short duration, often related to transient congestion at the departure airfield or on a particular route.

In the event of an advised delay the LCC as well as the engineer in charge of the pushback should be informed in order to allow them to plan their respective duties. Local ground staff should also be kept informed either directly if still in attendance or otherwise by R/T.

A quick word to your passengers will always be appreciated in situations like this as well. It shows you are in control of the situation while trying to improve it at the same time. Never leave your passengers in the dark. They count on you for a reliable update on the situation.

Communication of delays to passengers

In all cases of delay a PA should be made by the Captain explaining the reasons for the delay. It should not be too technical or too long, keep it short and simple. Any delay is an entirely negative experience for any passenger as for them it has no good side at all. In order then to soften the impact of this disruption to our customers, the PA should be positive. It should be optimistic as well as mentioning the measures that you, the engineers, ground staff, air traffic control or whoever is taking to expedite matters. Be positive at all times.

Final

Do remember, when managing any delay, that your priorities are to minimize the extent of the delay wherever possible, to minimize the disruption to our passengers and to ensure that they remain as comfortable as possible throughout the whole ordeal.

Minimum Equipment List (M.E.L)

The MEL is provided for use prior to departure to ascertain whether or not an aircraft may be dispatched. You should make yourself 100% familiar with

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its applicability, layout, and content. A thorough study of the Preamble contained at the beginning of the MEL will also explain policy matters.

Generally, the MEL is only applicable as long as the aircraft is at the gate without the engines started. As soon as we initiate engine start, we usually only have to follow standard procedures, e.g. ECAM/EICAS/QRH, to handle any malfunctions.

In real life however, it is good airmanship to use your MEL as a reference document in all cases. It will provide you with good extra information regarding the failure you just suffered.

For example, a fault appears during taxi, which the EICAS/ECAM/QRH does not specifically mention return to parking. This is perhaps a straight forward procedure with very few possible resets so in theory you could depart with it. The MEL however says that dispatch is only allowed after a maintenance action is required. Similarly, a failure which otherwise won't be a problem for dispatch from your origin, may be a problem for your destination, e.g. ACW fault, and destination runway is 'narrow'. In this case, as a good captain, you should contact Maintenance and return to the ramp/gate for maintenance action.

In the same philosophy the MEL can provide you, in case of any in-flight failure, with a better idea whether it is better to return to base or to continue the flight.

It is worth stating that the MEL needs to be read and considered very carefully and in full prior to making a decision. A second or third opinion is often useful. Get the First Officer to read it also and make sure that you both understand the requirements. If one is available, then an engineer's view of the MEL is always worthwhile.

5.2.24 CONCLUSION

We hope you found the Initial Command Manual both interesting and instructional. The less experienced amongst you have perhaps had your eyes opened a little toward the differences in responsibility and role between the

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occupant of the left and right hand seats. None of you, regardless of experience level, should allow yourselves to be overwhelmed by the apparent scale of the task that appears to be the Captains burden. The necessary attributes include a conscientious and considered approach to the job and the ability to lead from the front.

Successful Captains are those who are prepared to think their way through problems, but are not too proud to seek assistance from their peers; they are good communicators. This means listening as well as talking and above all they never, ever stop learning and never, ever cease to strive to improve their standards and those of their colleagues.

The knowledge gained during your recent studies will serve as a solid grounding for your future career. Furthermore, it will enable you and your Training Captain to concentrate on the practicalities of decision making on the line during your forthcoming line training.

Good luck!

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CHAPTER 6: TRANSITION TRAINING:

6.0 TRANSITION TRAINING:

OBJECTIVE

Complete transition training to the left/right hand seat and to achieve proficiency in all procedures to the required standard, for the issue of an endorsement after completion of requisite simulator sessions as stipulated in the specific aircraft training syllabus. Other training details e.g. LMS and FBS etc. shall also be completed in accordance with the equipment training syllabus.

6.1 GENERAL:

- a) All pilots undertaking transition training shall have their complete "Type Technical" programme, confirmed in writing by the CP Scheduling at least 14 days before the commencement of course.
- b) All pilots undertaking transition training shall preferably have their complete "Simulator Training" programme, confirmed in writing by the DGM Crew Training.
- c) For all training (Ground, Simulator, Line) strict adherence to the checklist philosophy shall be emphasised.
- d) Training shall also place emphasis on normal/non normal procedures, including as a minimum`:
 - (i) Pilot Monitoring (PM) Pilot Flying (PF) and other flight crew division of duties (task sharing)
 - (ii) Positive transfer of aircraft control.
 - (iii) Consistent checklist philosophy.
 - (iv) Emphasis on a prioritization of tasks (e.g. "aviate, navigate, communicate").
 - (v) Proper use of all levels of flight automation.

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- e) Upon successfully completing these trainings, CP Crew Training shall confirm the same in writing to CP Scheduling.
- f) Training and evaluation shall be done covering operational authorization as per AOC.

6.2 PRE-REQUISITES:

To be eligible for selection for transition training a pilot shall:

- a) Be cleared by the Promotion or Evaluation Board (whichever is applicable). Promotion/Evaluation Board clearance is not required in the case of crew of permanently grounded aeroplane. They will be placed on an aeroplane in accordance with their seniority.
- b) Have completed all relevant PCAA requirements.
- c) Satisfy all requirements specified in the Flight Crew Training/Qualification Table 6.1.

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6.3 INITIAL / TRANSITION TRAINING & EVALUATION:

Chapter 6 table 1

TYPE OF TRAINING/QUALIFICATION		GND		SIM		LINE	
		TRG	EVAL	TRG	EVAL	TRG	EVAL
1.	JOINT EMERGENCY/ SAFETY eQUIPMENT/ EVACUATION	X	X				
2.	JOINT FLIGHT & CABIN CREW EMERGENCY	X					
3.	AVIATION SECURITY TRAINING	⊗					
4.	EDTO/ETOPS /NAT HLA (MNPS)	⊗	⊗	X	X	X	X
5.	DANGEROUS GOODS REGULATIONS	⊗	⊗				
6.	JOINT CRM INCLUDING THREAT & ERROR MANAGEMENT(cockpit/cabin crew & FOO*) *Simulator part for Cockpit Crew only	X	X	X	X		
7.	CRM SKILL (SIM OR LINE)			X		X	
8.	ADVERSE WEATHER OPERATIONS (Hot Weather/ Cold Weather/Contaminated Runways/ Thunderstorm Avoidance/De-icing/Anti-Icing)	⊗	⊗	X	X		
9.	UPSET PREVENTION & RECOVERY TRAINING	⊗		X	X		
10.	RVSM / RNP	⊗	⊗	X	X		
11.	WINDSHEAR AVOIDANCE & RECOVERY	⊗	⊗	X	X		
12.	TERRAIN AWARENESS/GPWS/CFIT AVOIDANCE	⊗	⊗	X	X		
13.	TCAS / ACAS RESPONSE & PROCEDURES	⊗	⊗	X	X		
14.	LINE OPERATIONAL SIMULATION (LOS)				X		

(CHAPTER 6 TABLE 1 CONTINUED)		GND		SIM		LINE	
		TRG	EVAL	TRG	EVAL	TRG	EVAL
TYPE OF TRAINING/QUALIFICATION							
15.	AEROPLANE DIFFERENCES / VARIANTS	⊗	⊗	X	X	X	X
16.	AEROPLANE TYPE PERFORMANCE	X	X	X	X		
17.	AEROPLANE TYPE SYSTEMS / LIMITATIONS	⊗	⊗	X	X		
18.	SEAT SPECIFIC TRAINING (CAPTAINS ONLY)	X		X	X		
19.	LVO / ALL WEATHER OPERATIONS	⊗	⊗	X	X		
20.	NORMAL/NON-NORMAL PROCEDURE	X	X	X	X		
21.	SPECIAL ROUTES & SPECIAL AIRPORTS	X		X	X	X	X
22.	OPERATION NEAR/IN VOLCANIC ASH	⊗	⊗	X	X		
23.	CREW INCAPACITATION	X	X	X	X		
24.	RECENT BULLETINS/AMENDMENTS/ POLICIES/ MODS	X					
25.	AOC/OPS/OPERATIONS SPECIFICATION			X	X		
26.	PROFICIENCY CHECK (PPC)			X	X		
27.	INITIAL LINE/ROUTE CHECK					X	X
28.	STALL & RECOVERY	⊗		X	X		
29.	ENGLISH LANGUAGE PROFICIENCY	Evaluation & Endorsement shall be conducted by the PCAA, frequency of evaluation is determined by the level of proficiency					

Note 1: Ground training includes pre-simulator briefing, LMS or class room training. (X sign for PTC/Ground and ⊗ is for LMS)

Note 2: Each Trainee needs to complete all applicable ground trainings/courses during transition, training phase where applicable theoretical trainings will be conducted through E-Learning (LMS). However, if required, supervised classroom session (as per syllabus requirement) will be conducted for resolution of any queries on the subject matter. The class will be conducted under the supervision of a PCAA approved Ground Instructor / SFI / SFE / TRI / TRE / Operations Engineer).

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Note 3: all cabin crew and flight crew training conducted in PTC by FSU instructors is documented in the **Training Exposition Manual (TEM)**. The Training Exposition Manual is maintained and updated every two years by PTC FSU. The TEM is a part of OM-D.

Note 4: For DGR training refer DGR training program manual on digital crew app.

Note 5: CRM Course curriculum / syllabus is available with flight safety department.

Note 6: Adverse weather syllabus is available on LMS

6.4 COMMAND TRAINING SYLLABUS FOR FIRST OFFICERS (PROMOTION TO PILOT- IN- COMMAND):

6.4.1 GROUND TRAINING:

Type Rating:

- a) Complete the aeroplane type technical ground courses, and other courses of instruction through E-Learning (LMS)/physical classes, which shall include an online examination/evaluation through the same to determine satisfactory knowledge before being detailed for any simulator/flight training.
- b) In case of a failure in type ground technical training course, CPCT in consultation with Chief Instructor Operations/concerned ground instructor shall grant extra ground training, followed by another examination/evaluation. In case of second failure, the evaluation board shall decide further course of action.
- c) It shall be ensured that a flight crewmember completes Differences Training when operating a variant of an aeroplane of the same type (as per ANO 91.0017). Differences course shall be conducted as a part of transition training syllabus or whenever any up-gradation/modification has taken place in the existing fleet.

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6.4.2 FLIGHT SIMULATOR TRAINING AND CHECK (ALL AEROPLANES):

a) Training: (Command Training):

The objective is to provide conversion to the left-hand seat and to achieve proficiency in all procedures up to Command standard, for the issue of a Command endorsement after completion of requisite simulator sessions as stipulated in the specific aeroplane training syllabus. Other training details

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e.g. LMS, FBS, and FFS etc., shall also be completed in accordance with the equipment training syllabus. Strict adherence to checklist philosophy shall constantly be emphasised. Emphasis shall also be placed on the “Aviate/Navigate/Communicate” priority sequence.

- b) CPCT is authorized to approve restart of a complete simulator training or less commensurate with the extent of the gap in simulator training due to sickness of the trainee or any other unforeseen circumstances. In such a case, this will not constitute to a failure.

If initial simulator check of a trainee could not be conducted within 15 days after successful pre-rating check, CPCT is authorized to grant extra simulator session(s) over and above the syllabus for familiarization purpose.

c) **Proficiency Assessment during Initial Simulator Training:**

Initially after completion of FBS or subsequently within four FFS simulator training sessions, a training and/or check flight crew must assess if the trainee will attain proficiency level within the stipulated training time, otherwise a re-evaluation by the Evaluation Board shall be considered on recommendation of the check flight crew.

- d) FBS and FFS shall be conducted by a separate SFI/SFE, however, CPCT is authorized to waive off this requirement as an operational/company requirement.

e) **Simulator Check (Command Training):**

A final Simulator Check, in the form of a MOFT/LOFT oriented exercise incorporating instrument failures, emergency procedures, Instrument let downs and handling to a Command standard, shall be conducted by a SFE monitored by FI, PCAA or his nominee.

- f) Evaluation shall not be conducted by a SFE who has recommended the trainee for pre-rating and/or final check. However, in unavoidable circumstances waiver is required from the Director Flight Standards,

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PCAA. If Flight Inspector is present during the simulator check session for monitoring, then no waiver is required from DFS PCAA

Note 1: Right Hand Seat (RHS) Syllabus shall be completed before initial command check. TCAS and EGPWS training shall be mandatory from RHS.

Note 2 In no case shall a Pilot Proficiency Check, whether initial or renewal, be cleared on the basis of granting additional under-supervision flying hours.

g) Failure (Pre-rating/Check) & Remedial Training:

An unsuccessful pre-rating or check shall constitute the first failure. In such a case, the pilot shall be granted two (2) remedial sessions of four (04) hours each. He/she may then either be recommended for a check or granted two more sessions (which shall be considered second failures).

After four remedial sessions, the pilot shall be put up for the final check, if deemed appropriate by the instructor. If a trainee is not recommended for the check, this will also be considered a third failure.

In case of a third successive failure, an Evaluation Board shall decide further course of action.

The final check will be conducted by a SFE other than the one who conducted the initial pre-rating/check.

Note: Failure report(s) shall be submitted to the Director Flight Standards and Director Personnel Licensing, PCAA for information.

6.4.3 LINE TRAINING (UNDER SUPERVISION) FOR LHS:

Line training shall be undertaken to meet the PCAA requirements. Before the initiation of line training, the flight crew member shall have undergone a successful PPC on the simulator, conducted by an SFE. During evaluation, the trainee shall have demonstrated adequate knowledge, skills and performance standards needed for the operation of that type of aircraft.

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6.4.4 LINE TRAINING REQUIREMENTS:

6.4.4.1: If the training was conducted on a zero flight time simulator (Level C or D), then two simulator hours of landings trainings, as PF, shall be conducted after successful completion of final proficiency check. Thereafter first six landings as PF shall be accomplished on line. Except on ATR aircraft, first six landings as PF shall be conducted by a TRI/TRE, however, only TRE shall conduct this training on ATR aircraft. The duration (hours) of this training will be accumulated in stipulated hours i.e. 50 and 70 hours for normal crew and Cadet Pilots (whichever is applicable). In case performance of a trainee during line training or the first six landings is found unsatisfactory, CPCT will take appropriate action on case to case basis for remedial purposes.

6.4.4.2 The Line Training shall be conducted by a TRI/TRE to provide consolidation under supervision training of fifty/seventy hours whichever is applicable, in the left hand seat, in manipulative skills, and for the development of the required level of command management. Grant of under-supervision hours in excess of stipulated hours and/or incomplete syllabus due to trainee's inadequacy shall constitute a failure. (See Note table 12.1, A-320)

6.4.4.3 CPCT is authorized to grant extra hours or restart complete under supervision training of a pilot in case of a long gap in line training due to sickness of the trainee or any other unforeseen circumstances. In such a case, this will not constitute to a failure.

6.4.4.4 TRI/TRE shall ensure that training is imparted for Operations Requirements/Specifications as per the AOC. The TRI/TRE shall also ensure that the trainee is familiar with the contents of the AOC. This shall include approaches authorised by the Authority, circling and visibility requirements for take-off, approach, landing, and allowances for inoperative ground component/equipment and the wind limitations (crosswind or tailwind, as applicable). The trainee will also be required

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to demonstrate knowledge of these elements of the AOC in the final evaluation after completion of training.

6.4.4.5 Line training shall continually emphasise on the use of CRM skills acquired during that training.

6.4.5 REQUIREMENT OF SECTORS DURING UNDER SUPERVISION FLYING:

After simulator training, 50/70 hours (as applicable) of under supervision flying shall be completed which will include minimum of eight (08) sectors to include six landings before the trainee is put up for the final route check. If requirement of eight sectors could not be met due to any reason, CP Scheduling/Equipment Dy. Chief Pilot will seek a waiver from CPCT of this condition specifying the reason.

Minimum of two sectors shall be flown as PM/PNF.

6.4.6 PRE-FINAL COMMAND ROUTE CHECK:

- a) In addition to clause 1.10.7 (second paragraph), pre-Final Command Route Check shall be conducted by a TRI/TRE, flown over 2 sectors to a Command standard. This check shall include an oral examination of any Operating Procedures (e.g. wind shear, temperature inversion after take-off, adverse weather procedures, go-around procedure, EGPWS warning, TCAS activation, bomb threat, etc).
- b) If last training flight is conducted by TRE, then final route check shall be conducted by a separate TRE, however, in unavoidable circumstances waiver is required from the Director Flight Standards, PCAA. If Flight Inspector is present during the check for monitoring, then no waiver is required.
- c) If initial line check of a trainee is not conducted within 15 days of his/her last flight on which 50 or 70 hours (whichever is applicable), are completed, CPCT will grant extra sectors/hours over and above the stipulated under supervision training for familiarization.

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Note: Right Hand Seat (RHS) Syllabus shall be completed before initial command check.

6.4.7 FAILURE IN PRE-RATING/FINAL COMMAND ROUTE CHECK & REMEDIAL TRAINING:

- Grant of under-supervision hours in excess of stipulated hours and/or incomplete syllabus due to trainee's inadequacy shall constitute to a first failure. In addition to that, an unsuccessful check shall also be the first failure.
- After a first failure, the pilot shall be given necessary remedial training up to and maximum of 25 hours of under supervision by Chief Pilot Crew Training, followed by a final Command Route Check.
- In case he/she is not recommended for the check or unsatisfactory performance in the check, this will constitute to a **second failure**. In either scenario, the case shall be referred to the Evaluation Board to take appropriate action.
- Failure report shall be submitted to the Director Flight Standards and Director Personnel Licensing, PCAA for information.

6.4.8 FINAL COMMAND CHECK:

It shall be conducted by a TRE, flown over 2 sectors (as PF & PM), to a Command standard, monitored by FI PCAA or his nominee.

Please also refer to clause 1.10.6 and 1.10.7 (ii).

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6.4.9 REQUIREMENTS FOLLOWING CHECK:

After successful completion of transition training of a flight crew, the CPCT will finally review his/her transition training file in view of accomplishment of regulatory and company requirements. CPCT then forward this file to the DGM Crew Training and Licensing for completing the formalities of “Clearance to Fly”. DGM Training will accordingly initiate a Minute for obtaining permission from the Chief of Flight Operations/DFO through CPCT and Scheduling Division. An interview shall be arranged with Chief of Flight Operations/Director Flight Operations or his/her nominee before operating the first flight.

6.5 FIRST OFFICER TRAINING SYLLABUS:

6.5.1 GROUND TRAINING:

I. Type Rating:

Complete the approved aeroplane type ground training course through E-Learning (LMS), and other courses required, which shall include an examination—through the same platform (if applicable) to determine satisfactory knowledge before being detailed for any simulator/ flight training.

In case of a failure in type ground training course, CPCT in consultation with Chief Instructor Operations/concerned ground instructor shall grant extra ground training, followed by another examination/evaluation. In case of second failure, the Evaluation Board shall decide further course of action. It will be ensured that a flight crewmember completes “Difference Training” when operating a variant of an aeroplane of the same type as per ANO 91.0017.

II. For Cadet Pilots, Type Technical Course shall be extended for one day in which a lecture will be delivered by a Pilot Instructor/Chief Pilot ATR, covering the following topics:

a. SOP

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- b. OM
- c. Jeppesen Procedure
- d. Simulator training syllabus briefing

III. Cockpit Timings:

Cadet Pilots shall be planned for four hours of cockpit timing training. A rated Captain or First Officer will accompany them.

IV. Observation Flights:

Each Cadet Pilot shall be planned for minimum of four sectors on domestic routes (presently) and without crew slip pattern.

6.5.2 PRE-SIMULATOR EVALUATION:

Based on performance during Type Technical Course, prior to detailing for initial simulator training, CPCT has the authority to detail any pilot for Pre-Simulator Evaluation. In case of a failure, trainee will be given more training as per recommendations/comments of the evaluator, otherwise evaluation board will decide the case.

6.5.3 FLIGHT/ SIMULATOR:

a) Training: (First Officer):

After completion of 10 FFS ATR / 07 FFS A-320 / 08 FFS B-777 simulator sessions of four hours duration each (two hours PF and two hours PM/PNF) proficiency level in all procedures for First Officer's standard should be achieved before he/she is recommended for final check.

b) CPCT is authorized to approve restart of a complete simulator training program or less commensurate with the extent of the gap in simulator training due to sickness of the trainee or any other unforeseen circumstances. In such a case, this will not constitute to a failure.

c) Proficiency Assessment during Training:

Initially after completion of FBS or subsequently within four simulator training sessions a training and/or check flight crew must assess if the trainee shall attain proficiency level within the stipulated training time,

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otherwise a re-evaluation by the Evaluation Board may be considered on recommendation of Instructor.

d) FBS and FFS shall be conducted by a separate SFI/SFE, however, CPCT is authorized to waive off this requirement as an operational/company requirement.

e) Simulator Check (First Officer):

A Final proficiency check shall be conducted by an SFE and monitored by FI PCAA or his nominee (as determined by PCAA latest policies).

f) Evaluation shall not be conducted by an SFE who has recommended the trainee for pre-rating and/or final check. However, in unavoidable circumstances waiver is required from the Director Flight Standards, PCAA. If Flight Inspector is present during the simulator check session for monitoring, then no waiver is required from DFS PCAA.

g) Failure (Pre-rating/ Check) & Remedial Training:

An unsuccessful pre-rating or check shall constitute the first failure. In such a case the pilot shall be granted two (2) remedial sessions of four (04) hours each. He/she may then either be recommended for a check or granted two more sessions (which shall be considered second failures).

Note 1: In no case shall a Pilot Proficiency Check, whether initial or renewal, be cleared on the basis of granting additional under-supervision flying hours.

Note 2: If an ab-initio Pilot (Cadet Pilot) fails to maintain satisfactory progress during initial training or fails the simulator proficiency check, he/she may be given maximum of 2 remedial training sessions, followed by a check. In case of second unsatisfactory performance, the case shall be referred to the competent authority for termination of his/her service.

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6.6 LINE TRAINING (FIRST OFFICERS/CADET PILOTS):

Before the initiation of line training, the flight crew member shall have undergone a successful PPC on the simulator, conducted by a SFE. The trainee shall have demonstrated adequate knowledge, skills and performance standards needed for the operation of aeroplane.

6.6.1 LINE TRAINING REQUIREMENTS (ZERO/NON-ZERO FLIGHT TIME SIMULATORS):

If the training was conducted on a zero flight time simulator (Level C or D), then two simulator hours of landings trainings, as PF, shall be conducted after successful completion of final proficiency check. If the training was conducted on a Non-Zero flight time simulator (Level A or B), then six take-offs & landings shall be conducted on a non-revenue flight (Base training). This training will be conducted by a TRE, and non-normal conditions shall not be intentionally created. This training shall be carried out within the following weather parameters:

- a) Visibility – More than 05 KM,
- b) Cloud Ceiling – 2000 ft or above.

6.6.2 REQUIREMENTS ON FIRST SIX TAKE-OFFS & LANDINGS:

First six take-offs & landings as PF shall be accomplished on line and duration (hours) of this training will be accumulated in stipulated hours mentioned in under supervision line training syllabus. Except on ATR aircraft, first six landings as PF shall be conducted by a TRI/TRE, however, only a TRE shall conduct this training on ATR aircraft. In case performance of a trainee during line training or first six take-offs & landings is found unsatisfactory, CPCT will take further course of action on case to case basis.

6.6.3 AUTHORITY OF CPCT ON LINE TRAINING:

- a) CPCT is authorized to grant extra hours or restart complete under supervision training in case of a long gap in line training due to sickness

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of the trainee or any other unforeseen circumstances. In such a case, this will not constitute a failure.

- b) If initial line check of a trainee is not conducted within 15 days of his/her last flight on which 50 or 70 hours (whichever is applicable), are completed, CPCT will grant extra sectors/hours over and above the stipulated under supervision training for familiarization.

6.6.4 AUTHORITY TO CONDUCT LINE TRAINING:

Line Training shall be conducted by a TRI/TRE to develop the manipulative skills and Pilot Not Flying duties.

6.6.4.1 TRI/TRE shall ensure that training is imparted for Operations Requirements/Specifications as per the AOC, to include approaches authorized by the Authority, circling and visibility requirements for takeoff, approach and landing, and allowances for inoperative ground equipment and the wind limitations.

6.6.5 REQUIREMENT OF SECTORS DURING UNDER SUPERVISION FLYING:

After simulator training, 50 or 70 hours (whichever case may be) of under supervision flying shall be completed which will include minimum of eight (08) sectors to include six landings before the trainee is put up for the final route check. If requirement of eight sectors could not be met due to any reason (e.g. only long haul sectors available), CP Scheduling/Equipment Deputy Chief Pilot will seek a waiver from CPCT of this condition specifying the reason.

It shall be ensured that the trainee develops sufficient proficiency in both PF and PM duties.

6.6.6 FINAL LINE CHECK:

- i. A final route-check shall be conducted at the completion of 50/70 hours (whichever is applicable) of under supervision line training by a

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TRE and monitored by FI PCAA or his nominee (as determined by PCAA latest policies). . Pre-rating Route Check is not required for First Officers/Cadet Pilots. Line training shall be imparted with emphasis on CRM philosophy and skills. This final line check shall be conducted, flown over two sectors (as PF & PM) including an oral examination of any Operating Procedures (e.g. wind shear, temperature inversion after take-off, adverse weather procedures, go-around procedure, EGPWS warning, TCAS activation, bomb threat, etc).

- ii. The final line check shall be conducted by other than the TRE/TRI, who carried out the last training flight and recommended for check, however, in unavoidable circumstances waiver is required from the Director Flight Standards, PCAA . If Flight Inspector is present during the check for monitoring, then no waiver is required from DFS PCAA

6.6.7 FAILURE IN INITIAL ROUTE CHECK & REMEDIAL TRAINING:

- I. Grant of under-supervision hours in excess of 50 or 70 hours (whichever is applicable) and/or incomplete syllabus due to trainee's inadequacy shall constitute a first failure. In addition to that, an unsuccessful check shall also be the **first failure**.
- II. After a first failure, the pilot shall be given necessary remedial training up to and maximum of 25 hours of under supervision by Chief Pilot Crew Training, followed by a final line check.
- III. After the additional 25 hours, if the trainee is not recommended for the check or unsatisfactory performance in the check, this will constitute a **second failure**. In either scenario, the case shall be referred to the Evaluation Board to take appropriate action.
- IV. Failure report shall be submitted to the Director Flight Standards and Director Personnel Licensing, PCAA for information.

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6.7 POST- TRAINING REQUIREMENTS:

6.7.1 CAPTAIN:

On the completion of Command Training the following shall apply:

- a) A Captain shall be rostered to operate as Pilot-In-Command within fourteen (14) days of successfully completing a Command Training Programme.
- b) If the time between the completion of the Command Training Programme and the first flight as Pilot-In-Command exceeds fourteen (14) days, then the duly approved training must be completed before proceeding as Pilot-In-Command i.e. two P1 under supervision sectors for re-capping and familiarization of procedures and techniques.
- c) Following the initial check, a Captain shall complete a pattern of operation of at least four (4) sectors substantially over a route on which training or checking was undertaken during Command Training i.e. familiar sectors.
- d) Subsequent to this pattern a Captain may (subject to route qualification) operate to any aerodrome in the Company's network.

6.7.2 AUTHORITY FOR ALLOWING TAKE-OFFS AND LANDINGS TO THE RHS:

Captains are authorized to allow take off and landings to First Officers only after:

- a) The Captain has completed 100 hours in command, and
- b) The restrictions as specified in SOP/OM are complied with.

6.7.3 FIRST OFFICER (POST TRANSITION / LINE TRAINING):

After initial route check or P2 endorsement (whichever is applicable), a First Officer shall be rostered to operate his/her first flight within 14 days, failing which CPCT will detail him/her for required familiarization training on case to case basis.

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A First Officer shall be rostered so as to achieve at least 8 sectors as Pilot Flying in the first 120 days.

6.8 FAILURES DURING TRAINING PHASE:

Failures during Transition Training shall be cumulative, i.e. if there is one failure during simulator training and one during line training, these shall be recorded as two failures during training phase.

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CHAPTER 7: RECURRENT TRAINING:

7.0 OBJECTIVES:

- a) To enable the pilot to practice aeroplane handling manoeuvres and procedures (both normal and abnormal) in order for him/her to maintain proficiency.
- b) To enable the pilot to practice essential procedures which are only rarely encountered in normal operations.
- c) To enable the pilot to maintain proficiency of knowledge and of the use of emergency equipment and procedures.
- d) To introduce the pilots to new or revised policies, rules, instructions, procedures and equipment.
- e) To provide the pilot with up-to-date information on the current operating environment,
- f) To alert the pilots of the lessons to be learnt from recent accidents, incidents, latest trends from FDM and Trend Analysis from Training Division's Dash Board.
- g) To enhance and update knowledge and skills in the field of human performance and CRM.
- h) To provide simulator practice to pilots for operation into critical aerodromes.
- i) To train pilots on change in systems/fleet modification and upgrades.
- j) To re-emphasise the need to strictly adhere to checklist philosophy in all ground, simulator and line trainings, and to emphasise on the need to prioritize on "Aviate/Navigate/Communicate".
- k) To enable a pilot to practice and carry out LVP and CAT-II/III type of departures and arrivals on designated equipment.
- l) To provide training for new policies, rules, instructions and procedures.
- m) To provide introduction to new aircraft types, systems and fleet.
- n) Training and evaluation shall be done covering operational authorization as per AOC.

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7.1 TRAINING AIDS AND EQUIPMENT:

a) In accordance with PCAA regulations, training aids and equipment including:

- Mock-ups,
- cockpit procedure trainers,
- simulators,
- other devices (IPads, Laptops, Computers in case of E-learning/ LMS) and course materials used in the flight crew training and evaluation program,

The above shall reasonably reflect the configuration of the fleet (types and variants) for which the respective training is being conducted.

- b) Where appropriate, advantage shall be taken of modern training aids, equipment, techniques and philosophies.
- c) Maximum use shall be made of ground-based equipment such as flight simulators, in order to minimize the risks inherent in airborne training.

7.1.1 TRAINING FACILITIES:

In order to conduct training courses, the company will ensure that adequate facilities are provided.

CPCT may recommend the use of external training providers and facilities. Specific approval is required from the Authority for the use of outsourced training providers and facilities. Outsourced providers and facilities will be subject to both scheduled and unscheduled Flight Training audits on behalf of CPCT to ensure Company SOP is adhered.

7.1.1.1 GENERAL (policies concerning the training environment):

Training or checking will be performed in the aeroplane or an approved flight simulator or, in the case of emergency and safety equipment training (SEP), in a representative training device. The type of equipment used for checking

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should be representative of the instrumentation, equipment and layout of the aeroplane type operated by the flight crew member.

7.1.1.2 CLASSROOM FACILITIES:

Classroom training aids and equipment including computers should reflect the content of the course and the complexity of the aeroplanes. For aeroplanes certified for multi-pilot operations, the minimum level of ground training aids may include equipment that provides a realistic cockpit working environment. Task analysis and the latest state of the art training technology should be incorporated into the training facilities wherever possible. Facilities for self and supervised testing may be available to the student

7.1.1.3 E-LEARNING (LMS):

Where CBT aids are used as a training tool, the PIA will ensure that a fully qualified ground instructor is available at all times (physically or online) when such equipment is being used by the students. Other than for revision periods, CBT lessons should be briefed and debriefed by a qualified ground instructor (physically or online). Where online learning is used to deliver modules to pilots, the Training Division is responsible for maintaining records associated with module completion and associated assessment and, advising the relevant Equipment Deputy Chief Pilot of any candidate failing to successfully complete the module in the associated time frame.

7.1.1.4 TRAINING DEVICES:

A Flight Training Device or Other Training Device may be provided to supplement the classroom training and enable students to practice and consolidate theoretical instruction.

Simulated aeroplane, weather and environmental conditions are to be standardized and appropriate for the training/evaluation being administered.

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7.2 CRITERIA:

7.2.1 LANGUAGE:

English shall be the designated common language for all flight crew training and evaluation activities. Any pilot who has ICAO English Language Proficiency (ELP) of 4 or 5 will undergo an English proficiency test by PCAA in accordance with ICAO English language standards focussing on following key areas:

- a) Effectively communicate during the performance of operational duties.
- b) Understand information in the OM pertaining to duties and responsibilities.

7.2.1.1: Latest PCAA instructions inclusive of testing procedure shall apply on all those pilots who are required to renew/upgrade their English Language Proficiency level.

7.2.2 PRINCIPLES OF FLIGHT SIMULATION:

- a) Flight simulation sessions shall follow the principles of Manoeuvre Oriented Flight Training/Line Oriented Flight Training/Line Operation Simulation (MOFT/LOFT/LOS).
- b) A pilot shall be evaluated for LVP/CAT-II/III training during his/her first recurrent simulator check after becoming operational on the required type of equipment. Upon satisfactory evaluation, CPCT will issue LVP/CAT-II/III card. If LVP/CAT-II/III card has already been issued to a pilot and his/her performance concerning to LVP operations during recurrent check is not up to the mark, the Instructor will withdraw his/her card and submit to the CPCT for necessary action to inform the CPPS for not utilizing the pilot at the aerodromes requiring such operations.
- c) Training and Check Airmen shall be proficient in instructional techniques and in the operation of their training equipment.

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7.2.3 TRAINING CYCLES (PHASES):

- a) Review systems and operational problems in the context of line operating environment. The programme provides for a twelve (12) months training cycle of two distinct phases (six months apart).
- b) Simulator training sessions shall be provided for each pilot, twice with a 12 month period, with a minimum separation of 120 days.
- c) If a pilot could not be detailed for a simulator check in the previous Six (6) months he/she shall be removed from line flying duties and detailed for the simulator training/check. OPC may be granted an extension of up to 2 months provided written approval is sought from PCAA.
- d) All trainers and examiners on type are required to undergo Day 1 simulator training session before their PPC.
- e) Some training sessions shall contain a period of free time which is at the disposal of the pilot for supervised practice of any desired manoeuvres or procedures.
- f) The training programme shall be planned on a broad time scale of one or more years.
- g) The training programme shall be amended when necessary to accommodate items of current interest or significance.
- h) The flight and ground training programmes shall, where appropriate, be integrated and complementary to one another.
- i) If Trend Analysis (Training Division Dash Board & CBTA Performance Training Advisor) shows a pilot's operating skills are significantly lacking, then they shall be provided with a competency enhancement programme made by the CPCT on a case to case basis, supervised by a suitably qualified pilot.

7.3 REQUIREMENT (RECURRENT TRAINING):

An annual recurrent training and check is necessary to satisfy pilot licensing requirements. A recurrent simulator check shall be of 04 hours, two hours as PF and two hours as PM/PNF. However, there is

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great benefit to be obtained from a broader programme of recurrent training and check covering more than the minimum mandatory items. There are many examples of training exercises that can be designed to enhance safety and operating efficiency.

7.3.1 EXERCISE/ SEQUENCE FAMILIARIZATION:

- a) It shall be ensured that flight crew members, prior to an evaluation, are familiar with those manoeuvres and/or malfunctions that may be presented during the evaluation, but are not given information that reveals the sequence and the circumstances under which such manoeuvres or malfunctions shall be presented.
- b) Introduction of new training material into each successive training session shall aid and develop the long term flight crew educational process. The avoidance of a particular accident being repeated shall be a primary consideration in this context.
- c) The following syllabus is concerned with items not normally included in flight checks but whose regular practice, demonstration or discussion shall maintain a high level of crew alertness and proficiency. The availability of simulator time shall affect the frequency of practice which shall be possible. Furthermore, the ability to practice some of the manoeuvres shall be dependent upon the quality of the simulator in use.

7.4 SYLLABUS FOR RECURRENT TRAINING PROGRAMME:

The matrix provides a tabular presentation of the cyclic requirement for various trainings and/or qualifications for the flight crew. Various operational procedures, problems, and other items suitable for simulation, or mandatory for simulation, are listed hereunder:

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INTERVAL	SIX (6) MONTHS						ONE (1) YEAR						TWO (2) YEARS					
	GND		SIM		LINE		GND		SIM		LINE		GND		SIM		LINE	
	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL
1. JOINT EMERGENCY/ SAFETY EQUIPMENT/ EVACUATION							X	X										
2. JOINT FLIGHT/ CABIN CREW EMERGENCY							X	X										
3. AVIATION SECURITY													X					
4. ETOPS/MNPS/EDTO							X	X										
5. DANGEROUS GOODS REGULATIONS													X	X				
6. JOINT CRM INCLUDING THREAT & ERROR MANAGEMENT (cockpit /cabin crew & foo)													X	X				
7. CRM SKILL TRAINING (SIM OR LINE)									X	X		X						
8. SMS TRAINING													X					
9. ADVERSE WX OPERATIONS (hot wx/ cold WX/ contaminated Runways/thunderstorm avoidance de-icing/anti icing)							X	X	X	X								
10. UPSET PREVENTION & RECOVERY TRAINING			X	X														
11. WINDSHEAR AVOIDANCE & RECOVERY			X	X														
12. TERRAIN AWARENESS / GPWS/ CFIT AVOIDANCE			X	X														
13. STALL AND RECOVERY			X	X														
14. TCAS / ACAS			X	X														
15. LINE OPERATIONAL SIMULATION (LOS)										X								

Continued next page

END OF TABLE

INTERVAL	SIX (6) MONTHS						ONE (1) YEAR						TWO (2) YEARS					
TYPE OF QUALIFICATION	GND		SIM		LINE		GND		SIM		LINE		GND		SIM		LINE	
	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL	TRG	EVAL
16. DIFFERENCES / VARIANTS	X	X																
17. AEROPLANE TYPE PERFORMANCE					X	X	X	X										
18. LINE/ROUTE CHECK								X				X						
19. SEAT SPECIFIC TRAINING (CAPTAINS)			X	X														
20. LVO/ALL WEATHER OPERATIONS	X	X	X	X														
21. NORMAL/ NON-NORMAL PROCEDURES			X	X														
22. SPECIAL ROUTES & AIRPORTS (SIM OR LINE)								X	X	X	X							
23. CREW INCAPACITATION							X	X	X	X								
24. RECENT BULLETINS/ AMENDMENTS/ POLICIES/MODs	X																	
25. OPERATION NEAR/IN VOLCANIC ASH													X		X	X		
26. OPERATOR PROFICIENCY CHECK (OPC)	X	X	X	X														
27. AOC/OPERATION SPECIFICATIONS	X	X	X	X	X	X												
28. EGPWS									X	X								
29. ELP	Evaluation & Endorsement shall be conducted by the PCAA, frequency of evaluation is determined by the level of proficiency																	

7.4.1 OPERATIONAL PROCEDURES:

- Engine Start Malfunctions
- Rejected Take-off, RTO Statistics, RTO Performance Assumptions
- Engine Fire after V1

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- d) Engine Fail after V1
- e) Air Work
- f) Abnormal/Emergency Procedures
- g) System Abnormals
- h) Precision Approach
- i) Non-Precision Approach
- j) LVTO/AWO/Cat II-IIIa-IIIb
- k) One Engine Out Approach/ Landing
- l) Go Around following an Unstable Approach due Unusual Weather or Windshear
- m) Complex/Non-Standard departures/approaches, inclusive of performance turns on take-off, noise abatement procedures, SIDs, STARs, profile descents, circling approaches.
- n) Terrain Awareness/GPWS Alerts/CFIT Avoidance
- o) ACAS/TCAS procedures and phraseology
- p) Aeroplane differences/variants training
- q) Operations Specifications/limitations/AOC restrictions
- r) Crew Resource Management (CRM)
- s) Special routes/airports

7.4.2 OPERATIONAL PROBLEMS:

- a) Degraded aeroplane performance and calculations due:
 - i. system un-serviceability,
 - ii. contaminated runways,
 - iii. De-icing/anti-icing policies and procedures
 - iv. operations in very high temperatures.
- b) Failures when using reduced take-off thrust.
- c) Recovery from high and low speed stalls, and high sink rate.
- d) Jet upset, thrust lever, trim and elevator use.
- e) Engine-out cruise technique: drift down procedures, terrain clearance, safety altitudes.

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- f) Emergency descent due to pressurization and/or structural failure
- g) Crew co-ordination and allocation of duties.
- h) Brake and/or tyre failures.
- i) Navigational failures, including use of the standby instruments and/or systems.
- j) Recognition of degraded pilot/static system due to contamination by ice, weather or foreign body.
- k) Operation with malfunctioning or inoperative airspeed instruments.
- l) Operation on standby electrical systems.
- m) Reduced flap landings.
- n) Adverse weather (cold and hot weather).
- o) Thunderstorm avoidance.

7.4.3 EMERGENCY DRILLS:

- a) Emergency landings on land and water: technique and general flight deck considerations
- b) Partial gear landing
- c) Bomb scares
- d) Hijacking
- e) Structural failures, including operations with partial control surfaces
- f) Flight crew member incapacitation
- g) Cabin associated emergencies: fire, smoke, etc,
- h) Gross misloading or mis trimming of the aeroplane,
- i) Post drill actions following: (i) engine failure, (ii) crash, (iii) overrun, (iv) landing short: use of exits; post-accident survival,
- j) Practice full use of cockpit safety and emergency equipment, Including use of smoke goggles and portable oxygen and communications following decompression

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- k) Ground Proximity Warning Systems/CFIT, including the escape manoeuvre
- l) Passenger evacuation.

7.4.4 ADDITIONAL ITEMS SUITABLE FOR SIMULATION:

- a) Windshear, both on take-off and landing; recognition of cockpit indications and procedures to avoid serious consequences,
- b) Visual and other illusions affecting pilot performance, including take-off and landing in low visibility conditions
- c) Visual approaches: different approach angles by day and by night, and sensory illusions during go-around,
- d) Automatic flight systems: limitations in various operating conditions,
- e) New equipment and procedures: operation and limitations,
- f) Recent accident and incident reconstruction,
- g) Specific aerodynamic flight characteristics for the particular aircraft type, including performance during take-off and landing,
- h) stall characteristics, operation in turbulence, etc,
- i) Detection of incorrect or hazardous ATC clearances,

7.4.5 RHS TRAINING FOR CAPTAINS (AS PF):

RHS training/check of a Captain shall be carried out during every recurrent training session to cover the following:

- a) One engine out on take-off.
- b) One engine out go-around from DH/ MDA(H).
- c) One engine out landing.
- d) Emergency Evacuation

Note: A Captain can be utilized from RHS after first recurrent simulator check or completion of 100 flying hours from LHS on type, whichever is earlier.

7.4.6 LINE OPERATIONAL SIMULATION:

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Real time training/evaluation in a line environment setting: Refer to Chapter 13 of this Manual.

7.5 SYLLABUS FOR RECURRENT TRAINING PROGRAMME (GROUND/CLASSROOM):

COMPULSORY ITEMS:

These items shall be included in the syllabus at fixed intervals. They shall be of similar content in each session.

Note: Certain operational subjects required in the ground training syllabus may be accomplished as part of the simulator training, aeroplane training or during line operations

7.5.1 REVIEW OF RECENT OPERATIONAL AMENDMENTS E.G. FCOM, OETB (EVERY 6 MONTHS)

7.5.2 SAFETY EQUIPMENT AND EMERGENCY PROCEDURES (ONCE A YEAR):

- a) Emergency evacuation (once every year)
- b) Common flight/cabin emergency, safety equipment.
- c) Common flight/cabin evacuation/threats and coordination.

7.5.3 Dangerous Goods Regulations & Evaluation (Once Every Two Years)

Refer Dangerous Goods training program manual.

7.5.4 JOINT CRM (ONCE EVERY TWO YEARS):

All flight crew, cabin crew and FOO shall undergo joint CRM training using trained, approved facilitators. Course curriculum / syllabus is available with flight safety department.

7.5.5 ETOPS/EDTO/MNPS LMS TRAINING & EVALUATION (ONCE EVERY YEAR)

7.5.6 GENERAL EDUCATIONAL AND INFORMATIVE ITEMS:

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The details of these items may vary at each session, in line with technical developments. A test of knowledge shall not be required.

7.5.7 FLIGHT SAFETY (TWICE EVERY YEAR):

- a) A review of type-related and other Flight Safety topics with a view to learning from other people's mistakes and misfortunes.
- b) Review of recent and recurring mechanical problems for the aircraft type

7.5.8 AVIATION SECURITY TRAINING (EVERY TWO YEARS):

Note: The focus of security training shall be to ensure that flight crew maintain control of flight deck in all situations. Security training course includes appropriate responses to acts of unlawful interference, security of flight deck, maintaining control of the flight deck, appropriate self-defence and use of non-lethal and non-protective devices, sabotage, hijacking, unruly/disruptive/disorderly passengers and bomb threats.

7.5.9 AEROPLANE KNOWLEDGE AND PERFORMANCE (TWICE EVERY YEAR)

7.5.10 AERODROME AND RUNWAY (ONCE EVERY YEAR) :

The following areas shall be covered by a Check Flight Crew from Jeppesen Route Manual:

- a) Noise abatement.
- b) Lighting systems: approach lights, runway lights, taxiway lights, VASIS, apron docking guidance systems.
- c) Use of ATC and emergency services.
- d) En route Emergency aerodrome information and selection.
- e) Terrain Awareness/GPWS Alerts (CFIT) during takeoff/Approach.
- f) Routes, special routes and special airports.

7.5.11 FLIGHT PLANNING AND NAVIGATION (ONCE EVERY YEAR):

- a) New developments.

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- b) Limitations of existing equipment, e.g. VOR, VHF COMM, NDB, etc. operational ranges and limitation from Jeppesen.
- c) ATC R/T procedures and liaison from Jeppesen; common errors in R/T phraseology.
- d) Performance, Enroute procedures (TCAS/ACAS, RVSM, RNP).
- e) Fuel economy considerations, e.g. Fuel Policy, FCOM, etc.
- f) Commercial considerations.

7.5.12 WEATHER AND CLIMATOLOGY (ONCE EVERY YEAR):

- a) De -/anti icing policies and procedures.
- b) Contaminated runway operations.
- c) Review of area or route weather, where significant.
- d) Forecasting of severe weather conditions including turbulence and wind shear, and in-flight avoidance procedures.
- e) Review of TAFs and METAR.
- f) Thunderstorm avoidance.
- g) Cold weather operations.
- h) Operations near volcanic ash.

Note: Adverse weather syllabus is available on LMS.

7.5.13 CREW HEALTH AND WELFARE (ONCE EVERY TWO YEARS):

- a) Incapacitation training,
- b) Diet, food poisoning etc,
- c) Diseases and precautions, in particular hepatitis,
- d) Effect of alcohol and drugs,
- e) Effect of smoking,
- f) Rest periods.

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7.6 REMEDIAL TRAINING FOR FAILURE DURING PPC/IR:

If a Pilot fails to qualify during recurrent PPC/IR, he/she may be granted remedial training of two sessions (four hours each).

He/she may then either be recommended for a check or granted two more sessions (which shall be considered second failures). In such a case, the matter shall be referred to the Evaluation Board.

Ideally, remedial simulator training and check sessions must be completed within 30 days after a failure; if not possible due to any reason, CPCT will grant extra training (if considered necessary) on case to case basis.

The check will be conducted by a different SFE from the one who conducted the earlier one. In case this requirement could not be met, a permission will be required from the FSD PCAA (DFS).

7.7 ANNUAL LINE/ROUTE FLIGHT TRAINING & EVALUATION – POLICY AND GUIDELINES:

7.7.1 CHECKING PHILOSOPHY – GENERAL:

7.7.1.1 To evaluate the overall technical proficiency. Communications skills, leadership and situational awareness of pilots with respect to normal procedures on the aircraft. TRE must closely observe the performance of the candidate. To evaluate that the trainee/candidate has achieved the required skill to conduct safe line operations on the specific type of aircraft. The incumbent shall be able to demonstrate knowledge and skill with respect to such things as normal operations. With respect to pilot decision making, Crew coordination, airplane automation, FMS programming, Auto flight systems and flight mode awareness.

7.7.1.2 No list of “Do’s” or “Don’ts” can cater to all the situation that may occur during in-flight tests or checks on the aircraft. PIA, therefore, relies on the ability of detailed TRE to fully assess the consequences of their actions and demands. Flight safety shall always take top priority.

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7.7.1.3 One of the purposes of any in-flight test or check is to enable a candidate to demonstrate his/ her ability to operate a given aircraft in accordance with prescribed standards, limitations and procedures. There is no need whatsoever to place a flight crew member in a position in which he/ she may have to call upon superior knowledge and skills to ensure successful recovery.

7.7.1.4 Annual Route checks must be completed in the aircraft and shall consist of at least two sectors, one sector as Pilot Flying (PF) and one sector as Pilot Monitoring (PM) at the discretion of the TRI/TRE both the sectors or a part thereof may be flown as PF, to ascertain certain aspects of pilot ability.

The sectors shall be consecutive and conducted by the same TRI/TRE. In case short sector flight is not available, line check can be done on long haul flight involving a sector of four hours or more, at the discretion of the Chief Pilot Crew Training.

7.7.2 GENERAL GUIDELINES:

7.7.2.1: TREs must make every effort to make the candidate feel at ease. Be realistic in your demands and simulations.

7.7.2.2 Always give candidate a thorough briefing before flight using the guidelines mentioned hereunder emphasizing and ensuring that all participants have a clear understanding of:

- The purpose and scope of the test or check;
- The outline of the proposed sequence of events;
- Any aircraft or operational restrictions imposed to enhance safety;
- Who the designated Pilot-in-Command is – if applicable/required.

7.7.2.3 Prevailing weather at departure and destination airfield and limitations in which the check may be discontinued.

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7.7.2.4 Ensure radio communications between candidates and air traffic services (ATS) can be monitored (serviceable and functioning headset assembly or cockpit/cabin loudspeaker).

7.7.2.5 Maintain a good lookout and situational awareness during the flight check.

7.7.2.6 TRI/TRE shall ensure that training is imparted for Operations Requirements/Specifications as per the AOC. The TRI/TRE shall also ensure that the trainee is familiar with the contents of the AOC. This shall include approaches authorised by the Authority, circling and visibility requirements for take-off, approach, landing, and allowances for inoperative ground component/equipment and the wind limitations (crosswind or tailwind, as applicable). The trainee will also be required to demonstrate knowledge of these elements of the AOC in the final evaluation after completion of training.

7.7.2.7 Discuss actions to be taken by flight crewmembers before they leave their station (e.g., seat change, short duration absences, etc)

7.7.2.8 Circuit breakers must never be pulled to simulate equipment failure.

7.8 REMEDIAL TRAINING FOR FAILURE DURING ROUTE CHECK:

In case a pilot fails in a route check, they shall be granted remedial training by Chief Pilot Crew Training on case to case basis, followed by another route check to be conducted by a TRI/TRE other than the one who previously conducted the unsatisfactory check. In case of unavoidable circumstances, waiver is required to be obtained from DFS and a copy of which will be placed in the training file of the candidate, however, in case of the PCAA monitored check, no waiver is required. If he/she still does not qualify again, the case shall be referred to the Evaluation Board.

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7.9 TREND MONITORING ANALYSIS:

Introduction:

Training Division shall ensure continual improvement of flight crew training and evaluation program to include as a minimum, the monitoring, recording and evaluation of results of successful, marginal and unsuccessful flight crew.

All check forms of flight crew shall be presented to CPCT for review and monitoring of trend. CPCT shall then provide guidance for improvement training.

The Training Division will send last two simulator check reports to every crew member to review his performance before the next check. The SFI/SFE shall analyse these check reports before the training/check session to determine the weak areas and subsequent correctional training.

This program serves as an essential tool for the ongoing enhancement of Pilots training standard. As part of our commitment to maintaining the highest standards of safety and performance, we conduct regular trend monitoring and analysis of all check reports in the Training Division's Dash Board. Through this process, if it comes to attention that a specific crew member has displayed the need for improvement in certain competencies. This procedure outlines the proactive measures in order to address and rectify these areas of concern.

Airmanship:

Airmanship encompasses a comprehensive range of skills, knowledge, attitudes, and behaviors. It defines a pilot's or aviation professional's ability to operate an aircraft safely, efficiently, and effectively in all phases of flight. Airmanship goes beyond technical proficiency and encompasses decision-making, situational awareness, communication, and an unwavering commitment to safety. It is the bedrock upon which reliable and responsible aviation practices are built, ensuring the well-being of all those on board and the successful execution of flight operations.

Situational Awareness Definition:

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Pilots are said to have situational awareness when they:

- a) Are aware of what aircraft and its systems are doing (**Awareness of Aircraft and Systems**),
- b) Are aware of where the aircraft is and what its environment is (**Spatial Awareness**),
- c) Keep track of time and fuel (**Time and Fuel Management**),
- d) Are aware of condition of people involved in the operation including passengers (**Monitoring of People**),
- e) Recognize what is likely to happen, plan and stay ahead of the situation (**Anticipation and Planning**),
- f) Develop “what if” scenarios and plan for contingencies (**Contingency Planning**),
- g) Identify threats to the safety of the aircraft and people and take appropriate action (**Threat Identification and Response**).

Identification of crew requiring assistive training:

Equipment Deputy Chief Pilot shall review the Training Dash Board and identify the crew with specific area of concern who qualifies for such training and notify CPCT.

Assessment by the Chief Pilot Crew Training:

1. Chief Pilot Training marks the applicable areas within the document No. FLTOPS/TRG-PCEC/01/00 (Pilot Competency Enhancement Checklist) based on the issues identified during the review.
2. **Training Coordination By Equipment Dy/Chief Pilot:**
 - After marking the applicable areas, the Chief Pilot Training is responsible for assigning any required training, which may include Learning Management System (LMS) or classroom training. Equipment chief will be responsible for coordinating the training required.
3. **Instructor Assignment:**

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- Once the necessary training is determined, the Chief Pilot Crew Training will forward the document to Equipment Chief who will select and assign / brief the instructor responsible for addressing the highlighted issues.

4. **Simulator Sessions:**

- Equipment Chief will coordinate with scheduling and training for planning the crew concerned.
- Equipment Chief will inform the concerned pilot about the training and any preparation required.
- The relevant documents shall be passed to the selected instructor.
- The assigned instructor will conduct the simulator session(s) designed to address the identified concerns outlined in the relevant document.
- Scenarios within the simulator sessions are tailored to provide targeted training and practice for the pilot.

5. **Standards Check:**

- After satisfactory completion of the required training, a Standards or a Route Check will be planned by the Equipment Chief.

6. **Post Training Requirement:**

- The Equipment Chief will brief the CPCT along with training records.
- CPCT after reviewing the training records (PCEC) will take the decision, either close the case, assign further training or keep concerned pilot under special vigilance.

Guidelines for Problems Identified:

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The following areas of concern may be identified in the pilot's performance:

1. **Casual Attitude:** The pilot has displayed a casual attitude, which can compromise safety and professionalism.
2. **Complacency:** Instances of complacency have been observed, indicating the need for heightened vigilance.
3. **Situational Awareness:** There have been lapses in situational awareness, a critical aspect of safe flight operations.

Recommended Corrections:

1. Training via LMS:

- a) **System Knowledge:** To improve competency in knowledge, the pilot will be enrolled in system knowledge training through Learning Management System (LMS). This training aims to bolster their understanding of aircraft systems, reinforcing the importance of technical proficiency.
- b) **Performance:** Complacency issues related to aircraft performance will be addressed through specialized training, which includes in-depth study of aircraft performance graphs and calculations. Emphasis will be placed on the meticulous analysis of these metrics to ensure precise adherence to procedures.
- c) **Pilot Incapacitation:** To enhance situational awareness, specialized training on pilot incapacitation scenarios will be provided, fostering a heightened sense of awareness and readiness as well as to improve manual/auto flight skills and decision-making competencies.
- d) **CRM Refresher:** The crew member in question has exhibited weaknesses in Crew Resource Management (CRM). To address this concern, the individual will be promptly assigned a CRM refresher course through Learning Management System (LMS). This course aims to bolster their CRM skills, promoting effective teamwork and communication and leadership qualities.

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- e) **Jeppesen Familiarization:** The crew member will be assigned to a Jeppesen familiarization class, which includes training on the use of Jeppesen FD Pro. This training will enhance their proficiency in navigation and flight planning, ensuring a more comprehensive understanding of the operational tools. Emphasis on extracting pertinent information and referring to Jeppesen text more efficiently.
- f) **Adverse Weather:** Training on adverse weather scenarios will be included in the LMS program, ensuring the pilot is well-prepared to handle challenging weather conditions.

2. Simulator Sessions with dedicated Instructor (LOFT Session):

To target specific areas of improvement highlighted in the crew member's history, they will be assigned to work with an instructor. This instructor will conduct simulator sessions tailored to address these identified weaknesses, providing targeted guidance and training.

- a) **QRH, MEL:** The crew member will undergo a Line-Oriented Flight Training (LOFT) session in the simulator to address procedural adherence. This session will cover Quick Reference Handbook (QRH) and Minimum Equipment List (MEL) procedures.
- b) **Procedural Execution and Adherence:** The LOFT session will focus on improving procedural execution and ensuring strict adherence to normal/abnormal procedures.
- c) **Jeppesen Knowledge:** Jeppesen knowledge will be reinforced during the simulator session, promoting better navigation and flight planning.
- d) **SOP:** Standard Operating Procedures (SOP) adherence will be a key focus, fostering consistent and standardized operating practices.
- e) **ILS / NPA (S.E.):**
 - *Manual Flying:* Crew members will practice manual flying during Single-Engine (S.E.) NPA (Non Precision Approach)

ILS (Instrument Landing System) approaches, focusing on precise control and instrument interpretation.

- *With Autopilot:* Autopilot usage during S.E. NPA and ILS approaches will be covered, emphasizing the proper engagement and monitoring of autopilot systems.
- *Thrust Asymmetry Compensation (TAC) on / TAC off:* Training will encompass scenarios with Thrust Asymmetry Compensation both enabled and disabled during Single-Engine (S.E.) NPA and ILS approaches. This will enhance pilot proficiency in managing thrust imbalances in various conditions.

f) Evacuation:

- *Electronic Checklist:* Crew members will receive training on handling evacuation procedures using electronic checklists, ensuring a thorough understanding of emergency evacuation protocols.
- *QRH:* Additionally, the use of the Quick Reference Handbook (QRH) for evacuation scenarios will be practiced, emphasizing the importance of procedural accuracy during emergency situations.

g) Decision Making: Special emphasis will be placed on enhancing situational awareness and decision-making skills. Crew members will be presented with challenging scenarios that require quick and informed decision-making, fostering a heightened sense of awareness and readiness.

h) Eng Start Malfunctions: Training scenarios involving engine start malfunctions will be included to ensure crew members are well-prepared to handle such situations effectively, with a focus on recognition and corrective actions.

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- i) **CAT II / CAT III:** Crew members will receive specialized training with respect to Category II (CAT II) and Category III (CAT III) approaches, adhering to relevant Aviation Authority regulations and procedures to ensure precision and safety in low-visibility conditions.
- j) **Go Around:** Training sessions will cover go-around procedures, including both single engine go-around and normal go-around scenarios, to reinforce proper go-around techniques and decision-making in various situations.
- k) **GPWS (Ground Proximity Warning Systems):** Crew members will receive specialized training to effectively respond to GPWS alerts and warnings. This training will focus on understanding the various GPWS modes, recognizing terrain proximity risks, and executing appropriate corrective actions.
- l) **Takeoff Engine Fail between V1 and V2:** Crew members will undergo training scenarios simulating engine failure events occurring between the critical takeoff speeds of V1 (decision speed) and V2 (takeoff safety speed). These exercises will emphasize on the recognition of a malfunctioning engine, proper procedures and decision-making required to safely manage such occurrences during critical phases of flight.
- m) **Problem Solving:** Comprehensive problem-solving scenarios will be introduced to enhance the crew members' ability to assess and address unforeseen challenges and complex issues in real-time. These exercises will focus on fostering analytical thinking, effective decision-making, and efficient resolution of in-flight problems.
- n) **UPRT (Upset Prevention and Recovery Training):** UPRT will be a dedicated training segment aimed at equipping crew members with the knowledge and skills required to recognize and recover from aircraft upsets. This training emphasizes the importance of maintaining control in challenging flight situations.

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o) Windshear: Training on windshear scenarios will be provided, enhancing crew members' ability to detect and react to windshear conditions, which can pose a significant safety challenge during takeoff and landing phases. This training includes strategies for mitigating the effects of windshear and ensuring safe flight operations.

3. Airmanship Enhancement: The assigned instructor is also advised to focus on enhancing the crew member's overall airmanship. This includes:

- **Knowledge:** Ensuring a comprehensive understanding of aviation concepts and procedures.
- **Skill Implementation:** Developing the practical skills necessary to apply knowledge effectively.
- **Consistent Situational Awareness:** Cultivating a habit of continuously monitoring and assessing situations, and making informed, safe decisions.

4. Standards Check Recommendation: Once the assigned instructor believes the pilot has achieved the required level of competency and has addressed the identified areas of concern, the crew member will be recommended for a standards check. This evaluation will determine the pilot's readiness and ability to meet our airline's rigorous standards. Moreover the crew member must be scheduled for PM simulator duties (unpaid) at least once a month to maintain the training imparted through this program, this will continue until the crew member manages to achieve no SB's or U for two consecutive checks. These targeted interventions, grounded in a commitment to airmanship excellence, will empower our crew member to overcome their identified weaknesses and contribute positively to the Airline's safety and operational efficiency.

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7.10 TRAINING ON NEW POLICIES, RULES INSTRUCTIONS AND PROCEDURES:

During recurrent simulator trainings, SFI/SFE is to ensure that crew is conversant with the new policies, Rules, Instructions and Procedures. New circulars are the most efficient way of communicating and updating crew on the new developments. Instructors are to ensure that crew has gone through the circulars and have sufficient knowledge of these updates.

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CHAPTER 8: ALL WEATHER OPERATIONS TRAINING:

8.0 ALL WEATHER OPERATIONS (AWO) TRAINING:

8.1 REGENCY:

To retain Low Visibility Operations recency of qualification, a Captain must participate in the approved simulator cyclic and proficiency program (six monthly) and complete an auto coupled ILS approach to touchdown at least every 45 days in an airplane. If an autoland using Low Visibility procedures has not been completed in the preceding 45 days, recency can be up-dated by:

- Completing an autoland in the aeroplane in CAT I or better conditions using Low Visibility procedures, or
- completing an autoland in an approved flight simulator using Low Visibility procedures, or
- Viewing video detailing Low Visibility procedures. Where recency is updated by this method, the succeeding update must be in the aeroplane or flight Simulator.

Note: Low Visibility procedures do not imply use of a Cat II or Cat III minima. The minima for the approach shall be that published on the applicable approach chart.

8.2 AUTOLAND COMPETENCE CHECK:

Autoland competence checking is achieved by participation in the approved simulator cyclic and proficiency training program.

8.3 LOW VISIBILITY TAKEOFF COMPETENCE CHECK:

Low visibility takeoff competence checking is achieved by participation in the approved simulator cyclic and proficiency training program.

Note: A Captain does not require a Low Visibility Operations qualified Co-pilot in the right hand seat, when carrying out a practice approach to meet recency requirement in CAT I or better weather conditions. However the

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Captain is required to procedurally brief a non-qualified Co-pilot/First Officer prior to commencement of practice approach.

8.4 AUTOLAND SUPPORT AND LOW VISIBILITY COMPETENCE CHECK:

Auto-land support and low visibility competence checking is achieved by participation in the approved simulator cyclic and proficiency training program.

8.5 FIRST OFFICERS:

First Officers or Co-Pilot, being the support crew for CAT II operations, shall be trained and assessed during recurrent proficiency checks in low visibility procedures including CAT II landings.

8.6 REQUIREMENT FOR LVP APPROACHES (PIC):

Minimum exposure for PIC to conduct Low Visibility Approaches shall be 100 hours on type.

8.7 ALL WEATHER OPERATIONS-CLASSROOM/LMS SYLLABUS AS APPLICABLE:

8.7.1 Duration: 03:00 HRS:

8.7.2 Instructor: A designated instructor duly approved by CPCT is eligible to conduct this class.

8.7.3 The content provided here will be updated as required. This classroom training syllabus is to be used by instructors as a guideline to elaborate on points as the instructor may deem necessary.

8.7.4 Jeppesen ATC chapter Aerodrome Operating Minimums (EASA Air Operations, Jeppesen) and ICAO definitions (RVR , ILS Approach categories etc)

8.7.5 Reference to OM, SOP , FCTM and FCOM with respect to AWO.

8.7.6 ANO-019-FSXX-2.0 All Weather Operations and/or any other applicable publication of the PCAA shall be used for guidance.

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8.7.7 ICAO Document 9365 Manual of All-Weather Operations shall be used for guidance. Chapter 4 of this Document deals with basic requirements of the Airplane and Flight Crew. And, Chapter 5 Additional requirements for category II and III ILS Operations.

8.7.8 Guidelines For Instructor:

The following shall be discussed during the training session:

- a) characteristics of visual and non-visual approach aids;
- b) aircraft -specific flight systems, and instrumentation and display systems and the associated limitations;
- c) changes, if any, to aerodrome operating minima necessitated by inoperable or unserviceable instruments or systems;
- d) weather and technical status at dispatch. Consult MEL to check equipment required for AWO. Weather requirements at dispatch and discussion on LVO, takeoff alternate and destination alternate, fuel policy;
- e) Taxi procedure, limitations and specific briefing on ground operations (lighting, markings, taxi speed, communication and crew briefing, CL with parking brake set).
- f) runway assessment at takeoff (RVR, CL/RL counting)
- g) Low Visibility aborted takeoff (loss of visual references and failures leading to abort followed by actions post aborted takeoff).
- h) Approach and missed approach procedures and techniques;
- i) use of visibility and RVR reports, including the various methods of assessing RVR, and the limitations associated with each method, the characteristics of fog and its effect on the relationship of RVR to the pilot's visual segment and the problem of visual illusions;
- j) Adverse Weather in Supplementary Procedures (icing conditions, wind shear dust/sand storms reducing visibility, turbulence, precipitation and day or night conditions);

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- k) FAIL OPERATIONAL AND FAIL PASSIVE SYSTEMS
- l) the PF/PM tasks at DA/H, the use of visual cues, their availability and limitations in reduced RVR and various glide path angles, pitch attitudes and cockpit cut-off angles; cockpit seat adjustment, the heights at which various cues may be expected to become visible in actual operations; procedures and techniques for transition from instrument to visual reference, including the geometry of eye-height, wheel height, antenna position and pitch attitude with reference to various pitch attitudes;
- m) Approach Ban (with respect to state rules of different countries).
- n) Checklist use, switching, downgrading criteria with respect to 1000ft AGL.
- o) Alert Height concept if applicable (CAT III)
- p) System Failures that necessitate a go around below alert height.
- q) action to be taken if the visibility deteriorates when the aircraft is below DA/H or MDA/H, and the techniques to be adopted for transition from visual to instrument flight;
- r) action in the event of ground or airborne equipment failure, both above and below DA/H or MDA/H;
- s) the effect of system malfunction on auto-throttle or autopilot performance (e.g. engine failure, pitch trim failure);
- t) Go Around with gear contact with ground, Autoland, balked/rejected landing

8.7.9 Fleet Specific PIA SOPs:

Fleet Specific PIA SOPs contain the operational aspects of all-weather operations. The following shall be discussed;

- a) take-offs in reduced visibility, including system failures, engine failures and rejected take-off;
- b) system failures during approach, landing and missed approach; (1000 ft AGL, Alert Height (CATIII), Downgrading)

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- c) Instrument approaches with all engines operating and with the engine inoperative, using the various flight guidance and control systems installed in the aircraft, down to the specified operating minima and transition to visual reference and landing;
- d) instrument approach with all engines operating and with the engine inoperative, using the various flight guidance and control systems installed in the aircraft, down to the specified operating minima, followed by a missed approach, all without external visual reference. Type of approaches CAT I, CAT II , CAT III with RVR/with DH or no DH limitations, visual cues at DH, Autoland capability ;
- e) Call outs during Low Visibility Approaches
- f) Instrument approaches using the aircraft's automatic flight control system, followed by reversion to manual control for flare and landing;
- g) Procedures and techniques for reversion to instrument flight and the execution of a balked landing and subsequent recovery resulting from loss of visual reference below DA/H or MDA/H.
- h) Pilot Incapacitation.
- i) Review of lesson plan along with trainee input and response.
- j) Emphasis on CRM, crew coordination and standard call outs.

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CHAPTER 9: FLIGHT CREW INCAPACITATION TRAINING:

9.0 FLIGHT CREW INCAPACITATION TRAINING:

9.1 OBJECTIVES:

To train crews to be alert to the possibility of a flight crewmember becoming incapacitated in flight.

This training shall be provided to all flight crew members during type qualification, transition (Conversion), upgrade to PIC, re-qualification and recurrent training.

To train crew to take suitable actions to ensure the safety of the aeroplane following the incapacitation of a flight crewmember.

9.2 CRITERIA:

The training and detailed briefing shall be given prior to the simulator so that the above objectives are fulfilled.

Simulator training shall be undertaken on a recurrent basis to provide the opportunity to experience and practice the operation of the aeroplane with the resulting reduced crew complement.

9.3 INTRODUCTION:

The purpose of this text is to provide a general outline regarding basic steps in training of flight crew to reduce the operational hazards resulting after the incapacitation of a flight crew member.

9.4 DEFINITIONS:

Incapacitation in the above context is defined as any physiological or psychological condition, which adversely affects flight crew performance in flight.

For training purposes, incapacitation shall be classified into two categories:

- a) Obvious (usually maximal loss of function),
- b) Subtle (usually partial loss of function).

9.4.1 OBVIOUS INCAPACITATION:

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Obvious incapacitation is generally sudden, usually prolonged, and usually results in a complete loss of operating function. By definition, it is immediately apparent to the remaining flight crewmembers.

Included in this category is the case where a flight crewmember is aware of his own significant discomfort or pain: in such an event he/she shall immediately advise the other flight crewmembers of his condition.

9.4.2 SUBTLE INCAPACITATION:

Subtle incapacitation is generally partial in nature and often transient (for periods of seconds or minutes). It presents a significant operational hazard because it is difficult for other crewmembers to detect. The affected flight crewmember may look well and be conscious, but with his brain only functioning partially. He/she may be unaware of, or incapable of assessing the consequence of his condition.

9.5 CREW TRAINING:

Crew training on a recurrent basis is recommended as a method of reducing the operational hazards resulting from flight crewmember incapacitation. The training proposed is adaptable to the different operating procedures used by operators.

Furthermore, although it supports and reinforces well-recognized operating philosophies and procedures, it requires only nominal additional flight simulator time and does not require new flight techniques.

9.5.1 TRAINING PROCEDURE:

Initial briefing shall be given prior to the simulator training. Thereafter, refresher training during recency shall review the subject, and include discussion of notified cases of flight crew incapacitation.

9.6 METHODS OF RECOGNISING SUBTLE INCAPACITATION BEFORE THE AEROPLANE REACHES A CRITICAL SITUATION:

- a) Strict adherence to standard operating procedures;

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- b) Routine monitoring and cross-checking of flight instruments and crew actions, particularly during critical phases of flight;
- c) The use of the challenge and response concept in completion of checks and drills;
- d) The use of the crew concept of operation, which integrates the functions and actions of a flight crew and requires that each member's action is monitored by another; and
- e) The use of the "Two Communication Rule":

The "Two Communication Rule" means that flight crew members shall have a very high degree of suspicion of a subtle incapacitation whenever a flight crew member does not respond appropriately to two verbal communications, or whenever he/she does not respond appropriately to any verbal communication, associated with a significant deviation from a standard flight profile.

It is necessary to stress the importance of a crew's adherence to Standard Operating Procedures and Standard Flight Profiles at all times. It is frequently a procedural deviation that provides the first indication of incapacitation. In such a case the procedural deviation is the first "communication" and any inappropriate verbal response associated with it shall trigger the high degree of suspicion.

The second operational need is for an organized method of dealing with the incapacitation and loss of a flight crewmember's services. All cases of incapacitation create three basic problems and it is essential that they are considered in the following order:

- a) Maintain control of the aeroplane;
- b) Take care of the incapacitated crew member; and
- c) Re-organize the flight deck and land the aeroplane.

The remaining pilot must first assume command and maintain control of the aeroplane. Furthermore he/she shall check the position of essential controls

and switches and in nearly all cases make use of the autopilot and declare an emergency. Use of the autopilot and priority of air traffic service are two obvious and effective ways of maintaining a tolerable level of workload.

The second step is to take care of the incapacitated flight crewmember; the grounds for this are not entirely humanitarian; if left unattended an incapacitated pilot can become a major problem and in any case is a major distraction to the remaining crew. Thus the incapacitated pilot must be restrained and removed from the flight controls. In all cases, the advisability of removing a pilot (perhaps unconscious) from his seat must be dictated by consideration of the phase of the flight, the crew available, and the contours of the flight deck. Obviously, if a passive incapacitation occurs on short finals in good weather, the approach may best be continued to a landing.

Note: (Consideration of the restraint and care of an incapacitated Pilot dictates that cabin attendants are at least familiar with the operation of harness and seat controls and that their services are utilized whenever necessary).

Finally, and after the incapacitated flight crew member has been taken care of, the remaining flight crew shall re-organize the cockpit and prepare for landing. Details shall depend on many variables including such considerations as the type of aircraft being flown, phase of flight, enroute and terminal weather, and many others. Generally, it can be said that this particular part of the operation shall be nothing more than a routine exercise for a trained crew.

9.7 SIMULATOR TRAINING:

Simulator training shall be given following the initial classroom indoctrination and thereafter during refresher training programmes.

As a guideline, the following procedure may be adopted. Just prior to entering the simulator, the Captain or Co-pilot/First Officer could be discretely briefed to cease functioning at a particular point in the flight, e.g. when passing the outer marker, after calling for landing gear up, and so on.

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Clearly, exercises in dealing with incapacitation do not lend themselves to formal assessment of performance. In fact, beyond the appreciation and application of basic principles, such exercises shall be conducted in a manner, which encourages initiative, and subsequent debriefing shall take the form of open discussion rather than censure. It is therefore preferable that incapacitation is dealt with during sessions confined to refresher training, and divorced from competency testing.

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CHAPTER 10 – REGENCY OF EXPERIENCE

10.0 AEROPLANE (PILOT):

In accordance with PCAA and PIA policy the following recency of experience requirements shall be met:

- a) Flight crew are personally responsible for maintaining and recording recency.
- b) Notwithstanding any other recency requirements for Captains and Co-pilots/First Officers; these ranks must complete any Cyclic exercises/Ground Courses and/or Line Check (R/C) by the appropriate time. Any sequence missed during an absence must be completed prior to acting as Pilot-In-Command, Co-pilot/First Officer or relieving the Pilot-In-Command for Co-pilots/First Officers. After an extended absence, the pilot may require a re-familiarization or re-endorsement course subject to Chief Pilot Crew Training's discretion.

10.1 TAKE-OFFS AND LANDINGS (45 DAYS RESTRICTION):

A pilot is required to have acted as PF (pilot flying) during 1 take-off and landing within a 45 days period. Any pilot not in compliance with this shall not act as PIC or a First Officer as applicable.

A pilot is required to have acted as PF during 3 take-offs and landings within a 90 days period. A pilot not in compliance with this shall not act as PIC or a First Officer as applicable.

NOTE: In the case of a Captain it is accepted that an automatic landing would satisfy the above landing requirements (First Officers must perform manual landings).

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10.2 CURRENCY ON AIRCRAFT TYPE/LAPSE OF RATING

Chapter 10 Table 1

Period (days) from last Flight as PF	Training Requirements
i) 46-70	a) Complete any missed simulator cyclic syllabus; or, if none have been missed, complete a simulator cyclic syllabus of day 2 only; or a) Complete two take-offs and two landings as PF, on a Training Flight; or b) Complete two hours flight time on line including one take-off and one landing as PF, with a TRI/TRE in a pilot seat; or c) Complete two en-route sectors of at least 45 minutes flight time each including two take-offs and two landings, as PF, with a TRE/TRI in a pilot seat.
ii) 71-90	a) Complete any missed simulator cyclic syllabus, or, if none have been missed, complete a simulator cyclic syllabus of day 2 only; b) Complete a Line Check(R/C) to be conducted by a TRE/TRI. c) Two Sectors of under supervision line training before line check, in case of non-compliance of clause 'a' above.
iii) 91-180	a) Complete any missed simulator cyclic syllabus, or, if none have been missed, complete a simulator cyclic syllabus of day 2 only; b) Three Takeoffs & Landings followed by a route check. c) In case of non-compliance of clause 'a' above: Six takeoff and landings before line check and clause 'b' to be disregarded.

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Period (days) from last Flight as PF	Training Requirements
iv) 181-365	a) Type Technical Refresher – 02 Days b) Three Simulator Training sessions followed by a check (Total 4 sessions). c) Six takeoff and landings followed by a route check.
v) 366-550	a) Type Technical Refresher – 02 Days b) Four Simulator Training sessions followed by a check (Total 5 sessions). b) Six takeoff and landings followed by a route check.
vi) 551-1825	a) Type Technical Refresher – 05 Days b) Five Simulator Training sessions followed by a check (Total 6 sessions). c) Six takeoff and landings followed by a route check.
vii) Beyond 1825 days	Complete transition training (Type Technical + Simulator training & Check + under supervision line training & route check).

Note: All above recency trainings mentioned in clause 10.2 are the minimum requirements. However, CPCT is authorized to add necessary ground training and enhance simulator and/or line training on case to case basis.

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10.3 REGENCY TRAINING REQUIREMENT FOR CONTRACTUAL PILOTS

10.3.1 Those contractual pilots who kept their licenses/ratings valid will also undergo for required recency training as mentioned in clause 10.2 including Note.

10.3.2 In case of unsatisfactory performance of a contractual pilot during any phase of training as mentioned in clause 10.2, the Chief Pilot Crew Training will decide further correctional training or recommend termination of his/her contract to the Chief of Flight Operations/DFO.

10.4 TRAINING REQUIREMENT IN CASE OF REVERSION TO PREVIOUS EQUIPMENT:

Flight crew are prohibited from operating their previous equipment once training is started on a new equipment. Whenever a pilot is reverted to his / her previous equipment during or after training the following shall apply:

- a) If a pilot undergoes ground training for the other aeroplane and he/ she has not missed any cyclic simulator/ base check then:
 - i. If less than two weeks ground training then no corrective training is required.
 - ii. If more than two weeks ground training then the pilot has to attend approved Long Refresher Training (five days) of the previous equipment.
- b. If a pilot is reverted to his previous equipment after starting simulator training or line training, the crew shall undergo:
 - Approved 5 day long refresher course of the previous equipment,
 - Two Recurrent Simulator training sessions followed by a Simulator Check (PCAA Monitored, if required),
 - Six sectors of under supervision flying followed by a line check (PCAA monitored, if required).
- c. After a pilot has started line flying on the promoted aeroplane and if reverted to the previous aeroplane, following training shall be required:

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Chapter 10 Table 2

S.#	Flying Period on Promoted Aeroplane	Training Requirements on Previous Aeroplane (In case of reversion)
1.	Less than 45 days	(i) Long Refresher – 05 days (ii) 4 Sectors of under supervision training followed by a route check.
2.	45 to 180 days	(i) Long Refresher – 05 days (ii) Two simulator sessions, followed by a PCAA monitored check (if applicable). (iii) Six Take-offs and Landings as PF during line flying to include 2 such T/O and Landings by night, followed by a PCAA monitored route check (if applicable).
3.	180 to 550 days	(i) Ground Technical Course (AIRCRAFT Type) – As approved by PCAA (ii) 50% of transition Simulator Training (i.e. FBS, FFS) followed by a PCAA monitored simulator check (if applicable). (iii) 50% of under-supervision flying followed by a PCAA monitored Line Check (if applicable).
4.	More than 550 days	Complete Transition Training

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10.5 INSTRUMENT FLIGHT:

To retain Instrument Flight recency, a Captain must participate in the approved simulator cyclic and proficiency program and complete an ILS approach at least every 45 days.

If an ILS has not been completed in the preceding 45 days, recency can be revalidated by completing an ILS in the simulator or aeroplane under the supervision of a TRE/SFE.

10.6 TRI/SFI/TRE/SFE:

For recency requirements for renewal of TRI/SFI/TRE/SFE ratings refer to Chapter 2 of this Manual.

10.7 UPDATING OF RECORDS IN TRAINING DASH BOARD/CREW APP/AIMS:

DGM Crew Training and Licensing shall be responsible for the process of maintaining appropriate and updated records of recency of training and check of the Flight Crew.

10.8 DOCUMENTS VALIDITY:

Each crewmember has the responsibility, in parallel with the Training Division, to ensure that all required documents are valid.

A two-tier authentication system shall help to ensure compliance.

10.9 TRAINING REQUIREMENT IN CASE OF CHANGE OF SEAT OF AN AEROPLANE I.E. FROM P1 TO P2 OR VICE VERSA:

Due to any reason, if a rated Captain or First Officer of a particular type of an aeroplane is required to be trained on other seat of the same aeroplane, he/she shall be detailed for minimum of following training from the other side of the rated seat:

10.9.1 TRAINING REQUIREMENTS FROM P1 TO P2 (FOR RATED OR UNDER TRAINING CAPTAIN/FO):

- a) 04 FFS sessions from RHS followed by a PCAA monitored check (if applicable).

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- b) Ten sectors of under supervision training or 25 hours from RHS, whichever is more, followed by a PCAA monitored route check (if applicable).

Note: Chief Pilot Crew Training has authority to enhance the simulator and/or under supervision training on case to case basis.

10.9.2 TRAINING REQUIREMENTS FROM P2 TO P1 AFTER COMPLETING REQUIRED HOURS/PERIOD AS P2 ON TYPE (AS PER EVALUATION BOARD DECISION) :

In order to become eligible from P2 to P1 after an unsuccessful attempt (Either in sim or line training/check) and the subsequent administrative action, the following training requirements must be fulfilled:

- a) Four FFS (Full Flight Simulator) from LHS sessions followed by PCAA (Pakistan Civil Aviation Authority) monitored check.
- b) Ten sectors of under-supervision training or 25 hours from LHS, whichever is more followed by a PCAA monitored route check.

In case of a failure either in a simulator or line training/check, CPCT has authority to grant necessary remedial training on case to case basis but not more than the above conversion training, **or** refer the case to the Evaluation Board, **or** revert to his/her previous seat.

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CHAPTER 11: EMERGENCY PROCEDURES TRAINING

11.0 GENERAL:

All flight crew and cabin crew shall attend an approved company course covering emergency procedures and complete a practical proficiency evaluation in accordance with the requirements of PCAA Regulations. This requirement must be completed at the time of induction, transition training and thereafter during a refresher conducted once every calendar year.

The above training and evaluation must be undertaken within 3 months of expiry of the calendar year period. All crewmembers shall be required to demonstrate proficiency in the following:

11.1 PORTABLE AND FIXED EMERGENCY EQUIPMENT:

- a) Location as per Emergency Equipment Location Chart,
- b) Pre-flight check and operation of equipment:

11.2 EXITS:

- a) Location and types of exits,
- b) Flight Deck exits - Check and Operation,
- c) Arming and disarming procedures,
- d) Operation of exits - Normal/Emergency,
- e) Cabin crew exit responsibility.

11.3 EVACUATION DEVICES:

- a) Types of devices,
- b) Pre-flight check and operation.

11.4 EVACUATION PROCEDURES:

- a) Land,
- b) Ditching,
- c) Control of Passengers,
- d) Evacuation of handicapped passengers.

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11.5 PLANNED AND UNPLANNED EMERGENCIES:

- a) Take-off Phase,
- b) Landing Phase,
- c) Unplanned Emergencies:
 - a. Rejected Takeoff.
 - b. Crash Landing.
- d) Planned Emergencies:
 - a. Crew coordination,
 - b. Cabin preparation.

11.6 FIRE:

- a) Type of Equipment's,
- b) Pre-flight checks,
- c) Operation,
- d) Precautions,
- e) Fire fighting procedure,
- f) Crew co-ordination,
- g) The effect of smoke in an enclosed area,
- h) Smoke evacuation - Duties of Cabin Crew.

11.7 OXYGEN SYSTEMS:

- a) General description of fixed and portable oxygen,
- b) Pre-flight checks,
- c) Operation of oxygen bottles.

11.8 PRESSURIZATION:

- a) Duties of cabin crew,
- b) Rapid decompression,
- c) Effects of decompression on human body,
- d) Physical phenomenon of decompression,
- e) Time of useful consciousness,

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- f) Cabin crew duties when cabin altitude descends to 10,000 or below and Captain makes announcement, "LCC to the Cockpit".
- g) Passenger oxygen reset

11.9 SURVIVAL:

- a) Land,
- b) Ditching.

11.10 FIRST AID:

- a) Unconsciousness,
- b) Cardio-pulmonary resuscitation (C.P.R),
- c) Choking,
- d) Pilot incapacitation,
- e) *Aims and objectives of first aid,
- f) *Bleeding,
- g) *Shock,
- h) *Injuries,
- i) *Passenger illness,
- j) *Child birth,
- k) *Stroke,
- l) *Burns,
- m) *Food Poisoning,
- n) *Epilepsy,

- o) *Fainting,
- p) *Air sickness,
- q) *Alcoholic intoxication,
- r) *Death on board.

Note: * Required during flight crew induction only.

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11.11 EXAMINATION:

Questions testing individual crewmember's Emergency Procedures knowledge shall be included during course quiz sessions and in all examinations by Operations Instructors of PTC. (Initial/Transition training only).

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CHAPTER 12: PILOT'S PROMOTIONS:

12.0 PROMOTIONS:

12.1 PROMOTION BOARD:

Promotion of pilots will be made through clearance by the Promotion Board, consisting of following

a) Chief of Flight Operations / DFO	- President of the Board
b) Chief Pilot Crew Training	- Member
c) Chief Pilot Standards Inspection	- Member
d) DGM Crew Training & Licensing	- Secretary

Note: In the absence of 'a' or 'c', Chief of Flight Operations/DFO shall nominate any senior executive of Flight Operations Department from amongst the Chief Pilots. In absence of the Co FO/DFO, CPCT shall chair the meeting. The meeting of the Promotion Board can be convened at any time on Airline's requirement.

12.2 VACANCIES:

As and when the requirement of a certain number of Cockpit Crew on any equipment becomes necessary by the Corporation, requisite number of vacancies will be declared by the Scheduling Division in the following manner:

- a) Scheduling Division will provide equipment-wise and station-wise forecast of vacancies for (6) six months.
- b) The forecast of vacancies can be changed if in the opinion of the Corporation such a change is justified.
- c) Scheduling Division will then prepare a list of all Cockpit Crew who are eligible for promotion, according to their seniority as on the date of the forecast of the vacancies. The Scheduling Division will forward this list to the DGM Crew Training & Licensing for convening the Promotion Board.

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- d) The above list will include 25% - 50% extra names in addition to the forecast requirements on the equipment so as to cater for such Crew who may not be cleared by the Promotion Board or those who may not make the grade in training later.
- e) If at the time of Promotion Board, the Crew does not meet the required promotion criteria due no lapse on their part, the corporation shall make every effort to undo any injustice that may have taken place.
- f) The Board will discuss each eligible Cockpit Crew in order of seniority to review his/her record for promotion to the forecasted vacancies.

12.3 PROMOTION CRITERIA:

Following criteria's will apply for promotion of all pilots on all equipment's:

LAST THREE YEARS:

- a) No accident,
- b) No failure on Initial Simulator / Initial Route Check.

LAST TWO YEAR:

- a) No failure on Simulator/Route /Route & Aerodrome Clearance check,
- b) No disciplinary/administrative lapse.

LAST ONE YEAR:

- a) No incident and/or violation report/s,
- b) 2 SB's or more in last simulator check.

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12.3.1 ADDITIONAL REQUIREMENTS FOR UPWARD PROMOTION OF ATR PILOTS:

In addition to the above requirement as mentioned in clause 12.3, CPCT is authorized to detail a First Officer of the basic equipment (ATR-42/72) for a simulator and/or line evaluation on case to case basis, if the candidate:

- a. Had a proficiency check failure either in simulator or line check on the basic equipment (ATR-42/72). **and/or**
- b. Had more than 2 SB grading in each of the two previous Simulator Checks.

12.3.2 QUALIFICATION AND EXPERIENCE CRITERIA FOR INITIAL COMMAND:

- a) For eligibility of a First Officer to be selected for command, he/she is required to meet all regulatory/PIA requirements as laid down in clause 12.3 and **TABLE 1** of this Chapter.
- b) Additionally, a pilot must demonstrate sound management and CRM skills. The candidate's Training file shall be scrutinized with special emphasis on the preceding two years, to check for the following:
 1. Any failures,
 2. ATC violations,
 3. Disciplinary lapses,
- d) Candidate's in-eligibility for the position of "Pilot-in-Command", in accordance with company's current Policy.

12.4 ACTIONS/GUIDELINES AFTER PROMOTION BOARD:

All those crew who are cleared by the promotion Board will be eligible for training. Promotion will take place strictly in order of seniority of the Crew on the respective equipment, and will be made subject to vacancy, successful completion of training and satisfactory assessment checks.

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12.4.1 Cockpit Crew who are cleared by the Promotion Board and are on the list of 25% - 50% extra names but are not taken up for training will be considered for promotion in future forecast vacancies in order of seniority.

12.4.2 Any reason considered for debarring a Crew from promotion will be sufficiently established and noted in the Promotion Board Proforma and the concerned Crew will be informed in writing accordingly.

12.4.3 In case of any infringement of above standard as mentioned in clause 12.3, after the clearance by promotion board and prior to commencement of technical course of the promoted aircraft, the aforesaid criteria shall apply as benchmark.

12.4.4 In addition to above guidelines and clause 12.3 of this Manual, the final decision will be the prerogative of the Promotion/Command Board, as applicable.

12.5 MINIMUM EXPERIENCE REQUIREMENTS:

12.5.1 MINIMUM OPERATIONAL HOURS FOR PROMOTION:

In order to become eligible for next promotion, a pilot must serve minimum of 500 hours (excluding training hours) on type. However, this shall not hamper promotion of other inline junior crew who has completed required hours along with promotion criteria.

12.5.2 RELAXATION DUE COMPANY REQUIREMENTS:

Waiver on the minimum operational hours will be granted by the Flight Operations Management subject to company requirement only. This shall strictly be allowed only if there are no pilots available on that equipment who have attained minimum 500 hrs (excluding training hours) on that equipment.

Chapter 12 table 1

Aeroplane	P1	P2
Multi-Pilot Aeroplane less than 5700 Kg	a) ATPL b) Total: 1500 Hours c) Training as per PCAA approved program	a) CPL with IR b) Training as per PCAA approved program
(ATR) Multi-Pilot Aircraft 5700 Kg or more and less than 40,000 Kg.)	a) ATPL b) Clearance from Command Board along with other promotion criterion c) Total: 1500 Hours d) 500 hours as PIC of Multi-Engine aeroplane in Commercial Air Transport Operations; or e) Minimum 1000 hours as P-2 of weight category C or higher in commercial air transport operations; f) Training as per PCAA approved program.	a) CPL with IR b) Training as per PCAA approved program
(A-320) (Aeroplane of equal to or more than 40,000 Kg but less than 100,000 Kg.)	a) ATPL b) Total flying hours: 2500 hours or more with minimum 300 hours as PIC on ATR in Commercial Air Transport Operations along with other promotion criterion. P1 on ATR will require to undergo 50 hours of under supervision line training. OR In case of promotion from B777 P2 to A320 P1: c) Minimum 3500 flying hours as P2 in PIA. d) Training as per PCAA approved program	a) CPL with IR b) Minimum 500 P2 flying hours on ATR in Commercial Air Transport Operations, along with other promotion criterion c) Training as per PCAA approved program with minimum of 50 hours of Under Supervision flying for pilots having 500 hours; and 70 hours for pilots having less than 500 hours on aeroplane.

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Aeroplane	P1	P2
	e) B777 P2 will require to undergo 70 hours of under supervision line training.	
(B-777) (Aeroplane of equal to or more than 200,000 Kg.)	a) ATPL b) Total flying hours: 6000 hours with 500 hours as PIC on A-320 aircraft or equivalent or above in Commercial Air Transport Operations along with other promotion criterion. c) Training as per PCAA approved program	a) ATPL or CPL/IR with 1500 hours and; b) Minimum of 500 hours on A-320 aircraft or equivalent or above in Commercial Air Transport Operations along with other promotion criterion. c) Training as per PCAA approved program.

Note: CPL holders who cleared the ATPL examination of PCAA are also eligible for P1 simulator/line training and checks on aeroplane Category 'A' & 'B'.

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CHAPTER 13: LINE OPERATIONAL SIMULATIONS:

13.0 PURPOSE:

The purpose of this document is to provide guidance in designing and implementing Line Operational Simulations in the Airline's flight crew training programme. Such simulations shall include Line Operational Flight Simulation, LOS, and Special Purpose Operational Training, SPOT.

13.1 BACKGROUND:

- a. With improvement in the level of sophistication of modern flight simulators, more and more operators have come to rely on them for practically their entire flight training programme. LOS was introduced as an addition to the already prevalent Maneuvre Oriented Flight Training, MOFT to train flight crew members. LOS is training in a simulator with a complete set of crew using representative flight segments that contain normal, abnormal, and emergency procedures that may be encountered in line operations.
- b. LOS is a useful training methodology as it provides the crewmembers the opportunity to practice line operations, such as manoeuvres, operating skills, systems operations and airline procedures in a realistic environment. Crewmembers learn to handle a variety of scripted real-time scenarios of routine and non-normal nature, using cockpit resource management skills that include crew coordination, judgment, decision making, communications and situation awareness.
- c. SPOT is a specific training methodology which has commonalities as well as differences when compared with LOS.
- d. The overall objective of Line Operational Simulations is to improve the total flight crew performance thereby mitigating incidents and accidents during operational flying.

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13.2 SUMMARY:

This document identifies three types of Line Operational Simulations:

- i. Recurrent LOS
- ii. Qualification LOS
- iii. SPOT

13.3 DEFINITIONS:

13.3.1 LINE QUALIFIED:

Describes a Crewmember or Check Flight Crew who is current, and qualified to conduct actual flight operations in an assigned aeroplane and duty positions.

13.3.2 TASK FAMILIAR:

Describes a crewmember that is familiar with and can satisfactorily accomplish the duties of a particular cockpit position though not qualified for that duty position. For example, a second-in-command co-pilot, who performs the duties of the pilot-in-command during simulator trainings.

13.3.3 QUALIFICATION LOS:

An approved flight simulator course of LOS to facilitate transition from initial training on flight simulator to line flying.

13.3.4 RECURRENT LOS:

An approved flight simulator course of LOS which may be used to meet recurrent flying training requirements.

13.3.5 SPECIAL PURPOSE OPERATIONAL TRAINING (SPOT):

An approved flight simulator course which may be used to learn, practice, and accomplish specific training objectives such as training in variant aeroplane or specific aircraft equipment.

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13.4 BASIC ELEMENTS OF LOS:

For LOS to provide realistic line-oriented training certain key elements need to be specified. They apply to Recurrent LOS, Qualification LOS, and in part to SPOT.

13.4.1 CREW COMPOSITION AND PARTICIPATION:

LOS shall take place in a line operational environment with a complete set of crew. Every effort shall be made to schedule and maintain crew integrity. During LOS each crewmember shall perform as an individual and as a member of the team, as is expected during line operations.

A Training and/or check flight crew may act as a cabin crewmember when such a requirement arises and it is impractical to have a cabin crew in the simulator.

All participating crewmembers shall be in full uniform for the training.

13.4.2 REAL-WORLD / REAL-TIME SITUATIONS:

LOS shall contain scenarios of real-world line operational situations which should progress in real time. These should be representative of flight segments where an entire route operation is completed. In cases of flights involving repetitive events, the enroute segments may be compressed. However enough time should be allotted to crewmembers to be able to resume or restart the scenario without confusion.

13.4.3 NO-JEOPARDY TRAINING

LOS being no-jeopardy training, the check flight crew shall not issue a passing or failing grade to a participating crewmember. As a LOS scenario progresses it is allowed to continue without interruption so that crewmembers may learn by experiencing the results of their decisions. Decisions that produce unwanted results shall not indicate a training failure, but will rather serve as a learning experience. If the LOS check flight crew identifies crew performance deficiencies, additional training or instruction

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shall be provided. This training or instruction may be in any form, including additional LOS. Before the crewmember returns to line operations, the performance deficiencies shall be corrected and the check flight crew must document the training as satisfactorily completed. The no-jeopardy concept allows crewmembers to use their full resources without the check flight crew's interference. At the end of session, and after debriefing, the check pilot shall certify that the training has been completed.

13.4.4 UN-INTERRUPTED TRAINING:

LOS scenarios shall run full length, with no interruption from check flight crew permitted. The effects of crewmember decisions shall be allowed to accrue and influence the rest of the flight. The concept shall be that crewmembers learn more effectively when allowed to learn from their own actions, rather than being interrupted and corrected by the check flight crew. In rare cases, and that too only in Qualification LOS, an instructor may choose to intervene if he/she determines that negative learning is taking place.

13.4.5 FEEDBACK:

Feedback to participating crewmembers on their performance in a LOS scenario is pivotal to good training. This shall take place during Debriefing, which is a vital phase of LOS.

13.5 PHASES OF LOFT:

A typical LOS shall comprise the following sequential phases

13.5.1 BRIEFING:

Before the training segment begins the check flight crew shall brief the crewmembers on the LOS scenario, including the training objectives, and the role of the check flight crew. The check flight crew shall be considered "not present", except in the role of an Air Traffic Controller, or some other ground

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based entity. It must be emphasized that crewmembers shall perform their duties just as they would in line operations.

13.5.2 PRE-FLIGHT PLANNING / DOCUMENTS / ACTIVITIES:

Pre-flight planning documents, such as flight plans and weather reports, shall be prepared in advance with the particular training objective in mind. Other pre-flight activities shall include cockpit setup, preparation of take-off data cards (if applicable), etc.

13.5.3 FLIGHT SEGMENT:

The flight segment shall include engine starting, taxiing, take-off, climb, cruise, approach, landing, shutdown, and shall include the time in communication with ATC and other ground agencies.

13.5.4 DEBRIEFING:

Debriefing shall include feedback to crewmembers on their performance. Comments on their performance shall be made to individuals, and to the team as a whole. It is important that crewmembers be given the opportunity to self-assess, to critique and analyze their own performance (facilitated debriefing).

CRM skills must be used during this analysis to extract maximum benefits out of the training.

13.5.5 TRAINING DURATION:

- a) Both Recurrent and Qualification LOS shall be based on 4 hours of total training activity, which must include at least 2 hours of LOS scenarios. Reasonable amount of time shall be allowed for problem solving, such as consulting minimum equipment list, referring to operations manual, preparing take-off or landing data cards, as well as other crew actions which are necessitated by the training scenario.

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- b) For Qualification LOS the 4 hours of training shall include cockpit preparation, pre-flight activities, crew briefings, and interactions with flight dispatch and other ground agencies.
- c) For Recurrent LOS any additional hours of training beyond the 2 hours of LOS scenarios may be utilized for other specific training requirements like recurrent MOFT.
- d) All crewmembers participating in a LOS session shall be credited with 4 hours of training time.

13.6 LOS SCENARIOS (GUIDELINES):

- 1) Scenarios shall normally be representative of the flight segment appropriate to the operations being conducted by the Airline. Some elements that should be considered while designing such scenarios will be:
 - a) Origin, routing and destination.
 - b) Short-haul or Long-haul sectors.
 - c) Revised arrival procedures, such as unexpected runway change
 - d) Abnormal and emergency situations, from simple conditions like a potential hot start to more complex ones which affect the remainder of flight, like an engine failure.
 - e) Adverse weather conditions.
 - f) Partial or complete loss of flight management systems.
- 2) LOS scenarios shall run in real time. This may include inactive time to realistically resemble actual operations.
- 3) LOS scenarios shall contain realistic elements, like messages from the ATC, passenger issues, or interruptions by flight attendants.
- 4) Short scenarios to teach specific skills, like wind shear recovery, TCAS or specific navigation equipment usage shall be part of SPOT.
- 5) LOS scenarios shall be updated periodically to ensure that they meet the requirements of changing training needs.

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13.6.1 APPROVAL OF LOS SCENARIOS:

Scenarios shall be approved for use by PCAA.

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13.7 LOS AND CRM:

LOS scenarios shall require crewmembers to utilize and reinforce CRM skills. Additionally, focused CRM training can be provided independently during separate Special Purpose Operational Training.

13.8 CRITIQUE OF CREWMEMBER PERFORMANCE:

Crewmember critique shall take place during Debriefing. This should include discussion of individual and team performance, as well as assessment by the crewmembers of their own performance. The critique should consider the crewmember's judgment and their interaction with all resources in handling problems. This should consider their interaction with ATC, company communications, operations manual, flight manual, with workload reducing devices like autopilots/flight directors, and with other crew members.

13.9 USE OF AUDIOVISUAL EQUIPMENT:

If available, audio visual feedback will also be used because of its usefulness as a debriefing tool as it allows crewmembers to view their performance from a third-party perspective.

Recorded audio-visual feedback shall be destroyed at completion of debriefing.

13.10 ADDITIONAL TRAINING / LOS COMPLETION:

Decisions that produce unwanted results shall not indicate training failure, but will serve as a learning experience, which may indicate need for additional instructions or modified training. The additional training may be in any form, including additional LOS. In any case, required additional training shall be provided and documented as satisfactorily completed prior to the crewmember's return to line operations.

Although additional training may have been necessary for an individual or a group, each LOS scenario shall be recorded as "complete" at the end of debriefing.

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13.11 TYPES OF LOS:

13.11.1 RECURRENT LOS:

Recurrent LOS is intended for flight crewmembers that are presently qualified in a particular aircraft type. Recurrent LOS shall be designed to ensure that each crewmember maintains proficiency in the type of aircraft and the crewmember duty position.

Interruption of Recurrent LOS is not permitted.

13.11.2 GUIDELINE:

- No direct instructions or interruption of scenario by the check flight crew is permitted.
- Recurrent LOS requires scheduling of a complete set of line qualified crew.
- Crew substitutes, although discouraged, may only be used as a last resort to prevent interruption of scheduled training. The LOS check flight crew shall not act as a substitute crew.
- Training may include one or more flight segments to achieve training objectives.

13.12 QUALIFICATION LOS:

Qualification LOS is designed to prepare crewmembers, which are not yet qualified, for line operations.

Qualification LOS facilitates the transition from simulator training to operational flying.

13.12.1 GUIDELINES:

- Minimal interruption of the scenario for the purpose of instruction is permitted only when the check flight crew is certain that negative learning is taking place.

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- b) Requires scheduling of a complete crew compliment. Ideally, the qualifying crewmember should be scheduled with other crewmembers that are line qualified. If not, line qualified these supporting crewmembers shall at least be Task Familiar for the assigned duty position.
- c) Crew substitutes, although discouraged, may only be used as a last resort to prevent interruption of scheduled training. The LOS check flight crew shall not act as substitute crew.
- d) Training shall consist of at least two flight segments, one containing normal line operations and one containing abnormal and emergency occurrences.

13.13 SPECIAL PURPOSE OPERATIONAL TRAINING:

- i. SPOT is a flight simulator-based training, and is useful whenever specific coordinated crew performance is required. It shall not be a substitute for recurrent or qualification LOS. Examples of SPOT may include training which:
 - a) focuses on CRM skills,
 - b) provides differences training on variant aeroplanes,
 - c) provides windshear or TCAS training,
 - d) Trains in special aeroplane equipment, like flight management system or navigational equipment.
- ii. SPOT contains some elements that resemble LOS, like line environment scenarios, real-time no-jeopardy training and the use of feedback and critique.
 - a) Elements that differ from LOS are:
 - b) Direct instruction and interruption of scenario by the check flight crew is permitted.
 - c) SPOT allows the use of a complete or partial set of crews, depending upon the training objectives.

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- d) The use of crew substitutes will depend on the type of training.
- e) SPOT may contain any number of partial or full flight segments depending upon the training objectives.

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CHAPTER 14: ROUTE AND AIRPORT QUALIFICATION:

14.0 GENERAL:

- a) Before operating a Company aeroplane engaged in regular public transport operations over a particular route, a pilot must be qualified in accordance with the PCAA mandatory requirements.
- b) The Chief of Flight Operations/Director Flight Operations will lay down all requirements for qualification of pilots, and the CP Crew Training will directly ensure compliance and PCAA approval.
- c) PIA Pilots will be trained by viewing approved audio-visual programs for the route proficiency or a familiarization flight on the route or undergo route training.
- d) For purposes of Aerodrome or Route Qualifications a Route check will be the requirement according to the appropriate category qualification.
- e) There is no regulatory requirement for providing an additional crew member during route/airfield competence qualification flights. As such a normal crew compliment shall be detailed on these flights.
- f) For flights requiring multiple crew operation, the crew member undergoing route training or route check shall be considered as operating crew.
- g) For familiarization with specific routes and aerodromes refer to OM-C.

14.1 REQUIREMENTS:

Captains shall maintain route qualification and recency at those aerodromes to which they could reasonably be expected to operate in addition to satisfy the fleet/aerodrome requirements.

14.2 AERODROME CATEGORY:

There are five categories assigned to aerodromes. These five categories are Category 'A', 'B', 'C', 'D' and 'X'.

14.3 CATEGORY A:

Aerodromes which require neither initial nor periodic route qualification. After initial route check pilots are cleared to operate to Category A airfields unrestricted subject to recency requirement

14.3.1 AERODROMES – CATEGORY ‘A’:

1. ABU DHABI	2. JACOBABAD	3. RAHIM YAR KHAN
4. AL-AIN	5. JAKARTA	6. RIYADH
7. ALMATY	8. JEDDAH	9. SAIDU SHARIF
10. AMMAN	11. JIWANI	12. ORMARA
13. ATHENS	14. KABUL	15. PARACHINAR
16. BAHAWALPUR	17. KARACHI	18. PASNI
19. BAHRAIN	20. KHUZDAR	21. PESHAWAR
22. BAKU	23. KUALA LUMPUR	24. -----
25. BANGKOK	26. KUWAIT	27. RAHIM YAR KHAN
28. BANNU	29. LAHORE	30. RIYADH
31. COLOMBO	32. MALE	33. SAIDU SHARIF
34. DALBANDIN	35. MANILA	36. SAWAN
37. DAMASCUS	38. MIANWALI	39. SEHWAN
40. DAMMAM	41. MILAN	42. SHARJAH
43. DELHI	44. MIRPUR KHAS	45. SIALKOT
46. DERA GHAZI KHAN	47. MOENJODARO	48. SINGAPORE
49. DERA ISMAIL KHAN	50. MOSCOW	51. SUI
52. DHAHRAN	53. MULTAN	54. SUKKUR
55. DHAKA	56. MUMBAI	57. TASHKENT
58. DOHA	59. MUSCAT	60. TEHRAN
61. DUBAI	62. NAIROBI	63. TOKYO
64. FAISALABAD	65. NAWABSHAH	66. TRIPOLI
67. GAWADAR	68. ORMARA	69. TURBAT
70. HONG KONG	71. PARACHINAR	72. YANGON
73. HYDERABAD	74. PASNI	75. ZHOB
76. ISLAMABAD	77. PESHAWAR	
78. ISTANBUL	79. QUETTA	

Note: Any additional airfield which meets the above aerodrome specifications shall be considered a category-A airfield.

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14.4 CATEGORY B:

Aerodromes that require a Route training flight followed by a route check. Subsequently these destinations will be considered as “Category A aerodromes”.

14.4.1 AERODROMES – CATEGORY ‘B’:

1. BEIJING
2. PANJGUR

14.4.2 TRAINING REQUIREMENT FOR PANJGUR AERODROME:

Captain:

Minimum 100 hours on type excluding under supervision, followed by a route training flight and route check, if the Captain has flown to Panjgur during U/S training, he shall directly be planned for a route check.

First Officer:

Minimum 100 hours on type excluding under supervision, followed by a route training flight and a route check. Provided other requirements are completed, a First Office with more than 100 hours but awaiting Panjgur Route Training/Check may be detailed to Panjgur but landing will be done by the Captain.

14.5 CATEGORY C:

Aerodromes requiring a route check having a validity of **Three Years**.

14.5.1 AERODROMES – CATEGORY ‘C’:

Category-C (Europe)		Category-C (North American)
1. AMSTERDAM	1. MANCHESTER	1. CHICAGO
2. BARCELONA	2. OSLO	2. HOUSTON
3. BIRMINGHAM	3. PARIS	3. TORONTO
4. COPENHAGEN	4. ROME	4. NEW YORK
5. FRANKFURT	5. STANSTEAD	5. WASHINGTON
6. GLASGOW	6. SHANNON	XXXXXXXXXXXX
7. LEEDS	7. ZURICH	
8. LONDON	XXXXXXX	

Note: QUETTA is also a Category C airport.

14.5.2 CATEGORY C RECENCY:

i. Period Exceeding 12 months and less than 36 months:

- If a Pilot has not operated into the aerodrome for a period exceeding 12 months but not exceeding 36 months, a route check is required prior to operating independently into the aerodrome.
- An audio-visual briefing if available or a detailed pre-flight briefing must be conducted regarding aerodrome/En-route procedures and briefing shall also include any changes, additions or amendments to the aerodrome and route related procedures.

ii. Period Exceeding 36 months:

If this period exceeds 36 months, initial qualification requirements shall apply.

14.6 CATEGORY D:

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Privately owned aerodromes for which PIACL provides domestic charter services through ATR will be considered as “Category D Aerodromes”.

14.6.1 AERODROMES – CATEGORY ‘D’

1. BHIT
2. ISLAMKOT (THAR - MAI BAKHTAWAR)
3. KADANWARI
4. SAWAN
5. SEHWAN SHARIF
6. ZAMZAMA

14.6.2 CHARTER OPERATIONS:

Captain/First Officers:

The PCAA does not lay down any physical qualification requirements for pilots operating aeroplanes engaged in charter operations. However, an adequate knowledge of the route to be flown, the main and alternate aerodromes which are to be used, etc, as specified in CARs is required. Compliance will normally be achieved by providing the Captain with route briefing material which will cover any operational material not included in the Company Operations Manual. Route briefing material will be approved by the Chief Pilot Training or his delegate.

14.6.3 REQUIREMENTS OF CREW FOR “CATEGORY D” AERODROMES OPERATION:

- i. Captain Shall Have:
 - a. 500 hours as P1 on ATR OR 100 hours on ATR and a total of 1000 accumulated hours (P1 & P2 on Turbo Prop (ATR and F-27)
 - b. Route Familiarization Flight.
- ii. First Officer Shall Have:

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- a) 100 hours as P2 on ATR after successfully completing the Line check.
- b) Route Familiarization Flight.

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14.7 CATEGORY X:

Aerodromes that requires special training due to their topography, limiting airfield length, airfield requiring special procedures due weather or airfield requiring special procedures for navigation during en-route contingencies.

14.7.1 AERODROMES – CATEGORY ‘X’:

1. CHITRAL
2. GILGIT
3. KATHMANDU
4. MUZAFFARABAD
5. RAWALAKOT
6. SKARDU

NOTES:

- a) Qualification to any western European destination qualifies the pilot for all western European/ Category-B aerodromes.
- b) Qualification to New York, Chicago, Toronto, Houston or Washington qualifies the Captain for all PIA North Atlantic aerodrome.

14.7.2 CATEGORY X REGENCY:

i. Period Exceeding 12 months and less than 36 months:

- a) If a Pilot has not operated into the aerodrome for a period exceeding 12 months but not exceeding 36 months, a route check is required prior to operating independently into the aerodrome.
- b) A detailed pre-flight briefing must be conducted regarding aerodrome/En-route procedures and briefing shall also include any changes, additions or amendments to the aerodrome and route related procedures.

ii. Period Exceeding 36 months:

If this period exceeds 36 months, initial qualification requirements shall apply.

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Note 1: for the purpose of route check validity, all categories X aerodromes conform to the validity requirements of category C aerodromes.

Note 2: the initial six take-offs and landings for P-1/P-2 under supervision flying shall not be planned on category X aerodromes.

14.8 ALTERNATE DESTINATIONS:

Where an aerodrome is nominated as an alternate destination for a particular route, it may be categorized as a Category –A aerodrome (for purpose of alternate selection).

14.9 SPECIAL AIRPORT CLEARANCES- REQUIREMENTS (TURBO-PROP):

14.9.1 GILGIT, SKARDU:

The Captain/First Officer:

- Shall have minimum 150 Hours on type. At the discretion of the CPCT, requirement of 150 hours can be reduced to 100 hours in favour of those pilots who flown previously on this route.
- Shall have completed one route familiarization flight.
- Shall undergo in depth briefing by the Training or Check Pilot.
- Shall have completed two route trainings under the supervision of a Training or Check Pilot qualified for that aerodrome.
- Shall have completed one Route Check to the aerodrome.

Note 1: Initial operation to the aerodrome must be done within 14 days of the clearance.

Note 2: For flight crew who are already cleared and operational on Gilgit sector shall be required to undergo one route training and one route check for Skardu clearance.

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14.9.2 CHITRAL:

- Minimum 150 Hours on type,
- Completed one route familiarization flight,
- Shall undergo in depth briefing by the Training or Check Pilot,
- Completed one route training under the supervision of a Training or Check Pilot qualified for that aerodrome,
- Completed one Route Check to the aerodrome.

Note: Initial operation to the aerodrome must be done within 14 days of the clearance.

14.9.2.1 Recency Training Chitral:

If a Captain and First Officer have not operated into the aerodrome exceeding 12 months, the initial qualification requirements will apply.

14.10 ADDITIONAL REQUIREMENTS FOR CAPTAIN AND FIRST OFFICER FOR CHITRAL, GILGIT AND SKARDU:

During route training flights to the Northern Area airfields, the Pilot under training must be familiarised in the following areas of operation:

- Operation via the Valleys at different altitudes.
- Diversion from direct route to valley route from different positions and vice versa.
- Operation via Valleys at 12500 feet and operation from designated point to Islamabad at 9500 feet.
- Action in case of pressurization failure at various points. Descend to 9500 feet.
- This exercise has to be performed in clear weather conditions only.
- Positive identification of all reporting points and salient features along the routes in this area.

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- g) Briefing on weather that can be experienced in the area during summer and winter, winds experienced in the surrounding area of the aerodrome and its limitations on approach, landing and missed approach.

14.11 MUZAFARABAD, RAWALAKOT:

Captains/First Officer shall have:

- Minimum 100 Hours on the type.
- An In-depth briefing by check captain.
- Completed one route training into the aerodrome under the supervision of a Training or Check Pilot qualified for that aerodrome complete one Route Check to the aerodrome.

NOTE 1: Training or Check Pilot must brief on terrain, weather, wind shear etc.

NOTE 2: Initial operation to the aerodrome must be within 14 days of clearance.

14.11.1 REGENCY (MUZAFFARABAD, RAWALAKOT):

If a Captain and First Officer has not operated into the aerodrome exceeding 12 months, the initial qualification requirements apply.

14.12 SPECIAL AIRPORT CLEARANCES- REQUIREMENTS (TURBO-JET):

14.12.1 KATHMANDU, SKARDU, ALMATY:

Captain/First Officer shall have:

- Minimum 200 Hours on the Type.
- In depth Briefing by Training or Check Pilot.
- Complete one route familiarization to the aerodrome.
- Complete maximum of two route training into the aerodrome under the supervision of a Training or Check Pilot qualified for that aerodrome. This route training could be reduced to one if training/check pilot deems it sufficient based on performance during first route training.
- Complete one Route Check to the aerodrome.

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Note 1: Training or Check Pilot must brief on terrain, weather, wind shear etc.

Note 2: Initial operation to the aerodrome must be within 14 days of clearance.

14.13 NORTH ATLANTIC /AMERICAN AERODROMES-REQUIREMENTS (EDTO/ETOPS/MNPS OPERATIONS)

14.13.1 INITIAL QUALIFICATION

- ground training via Learning Management System (LMS)
- Simulator training as per syllabus at clause 14.14 of this Manual for a duration of 02 hours per trainee
- Line Training on two sectors to be carried out by any TRI/TRE on type.
- Upon Satisfactory performance during line training, a route check will be conducted by a TRE on type.
- The Route Check will be conducted on the first sector, and upon demonstrating satisfactory performance, candidate will be authorized to conduct their first flight on the second sector.

Note 1: Initial operation to the aerodrome must be within 14 days of clearance.

Note 2: Clearance to one of the North Atlantic/American aerodrome(s) qualifies the Captain and First officer for all PIA North American aerodromes.

14.13.2 REGENCY:

- If a qualified Captain /First Officer has not operated into or out of the North Atlantic/American aerodrome(s) for a period exceeding 12 months but less than 3 years, either in depth briefing or audio visual programme or simulator training as initial qualification to be completed without route check.

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- b) Exceeding 03 years, the flight crew shall complete initial qualification requirements.

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14.14 ROUTE/AERODROME TRAINING SYLLABUS

(GROUND / SIMULATOR / AIRCRAFT)

INSTRUCTOR ELIGIBILITY

Any TRI/TRE/SFI & SFE (Route & Aerodrome Qualified) on type is authorized to conduct this training.

Trainees

All B-777/A-320/ATR pilots are required to undergo this training before operating a particular route/aerodrome.

Duration of Training

Ground – 03 Hours

Simulator – 02 Hours per trainee

Guidelines for Instructors

All instructors are requested to strictly adhere to the following instructions:

- To sign off a particular item only after a proficient level has been achieved.
- If an item is not applicable, “N/A” may be mentioned against that item.
- Always keep a copy of this syllabus during flying or instructional duties.

Reference

OM Part-D, OM Part-C, Northern Areas SOP, Route & NAV Bulletins.

Training conducted on (Tick any applicable box below):

Date: _____

Ground ☐ Simulator ☐ Aircraft ☐

Type of Aircraft

Flt. # & Date _____ Sector: _____
(Only Applicable if training is carried on an aero plane)

Capt. F/O			Performance			Remarks
P #	Lic #	Ref. #	Ground	SIM	A/C	
1. Communication: Through ACARS/CPDLC						
a) Normal and Non-Normal.						
b) PBN, PBC, PBS						
c) ADS - B.						
a) Alternate Requirements						
2. THREATS						
a) High Mountains						
b) Oceanic Airspace						
c) Northern Area:						
• Direct / Valley Route						
• Salient Ground Features						
d) Wind effects in relation to seasonal /orographic						
e) Weather Effects:						
• CB						
• Windshear						
• Microburst						
• Rapidly Changing Weather						
• Turbulence,						
• Mountain Wave						
f) Effects of Density Altitude on A/C Performance						
g) Low Temperature Effects						
h) Hypoxia						
i) High Altitude RWY Ops						
• High TAS & Ground Speed						

3. ESCAPE ROUTE				
a) Briefing				
b) Using Enroute Charts with respect to high terrain				
c) SLOP				
d) EDTO				
e) How to insert sigmet area in Ipad/FMC				
f) Enroute Diversion				
• FMC Work				
(i) CP				
(ii) Weather				
4. CONTINGENCIES				
a) ENG failure & Drift Down (Different Strategies)				
b) Pressurization Failure & Emergency Descent				
c) Missed App and emphasis on stable App criteria				
d) Latest Route & Navigation Bulletins on Flight Contingency Procedure.				
e) Oxygen Requirement (CAR94)				

Instructor's Remarks

Signature of Trainee

Name & Signature of Instructor

Signature of Chief Pilot Crew Training

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CHAPTER 15: OTHER TRAINING PROGRAMS:

15.1 UPSET PREVENTION & RECOVERY TRAINING (UPRT) SYLLABUS THROUGH LMS & SIMULATOR:

15.1.1 UPSET PREVENTION AND RECOVERY TRAINING:

As per ICAO Doc 10011 Aeroplane upset is defined as below:

15.1.1.1 The term “aeroplane upset” is defined in the glossary as an in-flight condition by which unintentionally an aeroplane exceeds the parameters normally experienced in normal line operations or training. An upset is generally recognized as a condition of flight during which the pitch of the aeroplane unintentionally exceeds either 25 degrees nose up or 10 degrees nose down; or a bank angle exceeding 45 degrees; or flight within the aforementioned parameters but at inappropriate airspeeds.

15.1.1.2 For the purposes of continuity, “aeroplane upset” will be the term used throughout this manual recognizing that there are several other terms in use within the aviation industry referring to this particular type of occurrence. When reading this manual, it is important to be clear on two points about aeroplane upsets. First is the notion of unintentional. In other words, the aeroplane is not doing what it was intended to do by the flight crew and is approaching unsafe parameters. Second is the fact that a pilot must not wait until the aeroplane is in a fully developed upset before taking recovery action to return to stabilized flight path parameters. The term “loss of control in-flight” (LOC-I) is a categorization of an accident or incident resulting from a deviation from the intended flight path.

15.1.1.3 Finally, it is important to understand that there is a relationship to the definitions of ‘stall’ and ‘upset’. Although not all aeroplane upset occurrences involve an aerodynamic stall, an unintentional stall is

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indeed a form of upset even though it may not meet the pitch and bank attitude upset parameters. This is because during a stall the aeroplane meets the upset criteria of being at an inappropriate airspeed for the conditions. In all instances of an aeroplane upset involving a stall, it is stressed in this manual that the aeroplane must first be recovered from the stall condition before any other upset recovery action can become effective. Therefore, since upset and stall events are closely related, it is highly desirable to ensure that any comprehensive training programme for the prevention and recovery from a stall be closely linked with training for the prevention and recovery of aeroplane upsets.

15.1.1.4 The latest revision of AUPRTA concludes that an upset condition exists any time that an airplane is deviating from the intended airplane state. The AUPRTA has been updated to emphasize the importance of recognition and avoidance of situations that can lead to airplane upsets and to improve a pilot's ability to recover control of an airplane that deviates from the intended airplane state.

15.1.1.5 Upset prevention and recovery training (UPRT) refers to training consisting of:

- a) Upset **prevention** training: a combined use of theoretical knowledge and flying training with the target of providing flight crew with the required skill to **prevent** aeroplane upsets; and
- b) Upset **recovery** training: a combined use of theoretical knowledge and flying training with the target of providing flight crew with the required skill to **recover** from aeroplane upsets.

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15.1.2 UPSET PREVENTION TRAINING:

Components of upset prevention training are integrated into transition and recurrent courses. Contents of the course include regulatory requirements as in PCAA ASC-021-FSXX-1.0 dated 01.11.2019

15.1.3 GUIDANCE FOR UPSET PREVENTION AND RECOVERY TRAINING:

15.1.4.1 Threat and Error Management (TEM) and Crew Resource Management (CRM) principles are integrated into the recurrent UPRT.

15.1.4.2 Upset prevention training is a combination of maneuver-based training and scenario-based training.

15.1.4.3 Recurrent training requirements are as per PCAA regulations and defined in OM PART D table 7.1.

15.1.4.4 The learning elements required for both upset prevention and for recovery covers four levels of mitigation:

- a. Awareness (developing an understanding of the causal factors of upsets)
- b. Recognition (early detection of conditions that could cause an upset)
- c. Avoidance (immediate intervention to prevent further escalation of an upset)
- d. Recovery (exercising techniques to recover from a developed upset and re-stabilize the flight path)

15.1.4 UPSET RECOVERY TRAINING:

The requirements of upset recovery training are incorporated in PCAA ASC-021-FSXX-1.0 dated 01.11.2019

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15.1.5.1 Maneuver-oriented training or instructor created scenario demonstrations will allow the trainee to experience the different scenarios in a particular aircraft type when the simulation supports the required capabilities. The familiarization with the warnings and the envelope protection features of the particular aircraft will develop awareness regarding what in-flight condition crew will be exposed to.

15.1.5.2 Scenario-based training is intended to create realistic conditions to incorporate **startle effect** when an upset occurs. A level of surprise in the simulator can be created to induce upsets due to external factors, such as wake vortices, clear air turbulence, mountain waves, thunderstorms, icing, microburst, etc.

15.1.5.3 Based on PCAA requirements UPRT training will include reference to possible scenarios like

- a) Pitch Runaway during takeoff,
- b) Nose-low stall,
- c) High Altitude TCAS Alert,
- d) Inadvertent stall warning,
- e) Recovery from over bank,
- f) Unreliable airspeed,
- g) Power off stall event,
- h) Startle.

15.1.6.4 Based on objective data, enhanced Upset Prevention and Recovery Training is required in following fields:

- a) Stall Warning,
- b) Over speed,
- c) Bank-angle exceedance,
- d) GPWS,
- e) Windshear,
- f) Excessive Sink Rate,
- g) Automation Handling,

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h) Tail strikes.

15.1.5 PIACL DOES NOT CONDUCT IN-FLIGHT TRAINING OF ANY UPRT:

Instructor Qualification and Standardization:

ICAO states that “there are specific risks associated with UPRT, which demand that the training be effectively managed by the applicable quality assurance and safety management related practices of the training provider.” As upsets are seldom part of line flying instructors will undergo specific training of UPRT to be devised by CPCT and incorporated in the syllabi.

15.1.6 USE OF FSTD FOR UPRT:

The use of an FSTD for UPRT provides training without the risks associated with inflight training. To ensure standardized learning based training and to avoid negative effects of training, instructors must ensure that all stall and upset recovery training exercises are performed within the validated training envelope of the particular FSTD.

15.1.6.1 UPSET PREVENTION AND RECOVERY TRAINING (UPRT) – TRAINING ENVELOPE:

The training envelope is the envelope within which all training exercises will be carried out. It is specified by in terms of the range of attitudes, speeds and g-loads, and takes into account the capabilities of the instructors and the FSTD training envelope.

- A. Adherence to the Flight Crew Training Manual:** In order to avoid negative training and negative transfer of training, instructors must strictly adhere to the exercises in the FCTM.
- B. Exercises and the FSTD Training Envelope:** All exercises of the Training Manual are designed to ensure that training can be carried out within the so-called FSTD training envelope, which defines the

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usable region of the FSTD. Instructors should ensure not to exceed the FSTD training envelope when delivering training. Any exceedance invalidates the exercise and must be highlighted to the trainee.

Note: An approved FSTD for URPT will be incorporated into training requirements as per ICAO DOC 9625 Criteria for Qualification of FSTD.

15.1.6.2 Pitch, Bank, Airspeed, g-load:

The FSTD training envelope by itself is not limited in pitch or bank.

Airspeed and g-load must remain within the certified g- and speed/Mach envelope of the aeroplane as shown on the V-n diagram (speed vs load factor)

15.1.6.3 Angle of Attack (AOA):

For FSTDs not approved for Full Stall training, the critical AOA must not be exceeded. The recovery from an approach-to-stall should be initiated at the earliest recognizable stall warning.

Prolonged flight in the buffet should be avoided as this may constitute negative training.

Note: Refer to the FSTD Qualification Certificate of the simulator device for the capabilities, restrictions or limitations of the respective FSTD.

Except for UPRT, operating limitations published in the Flight Crew Operating Manual (FCOM) and Airplane Flight Manual (AFM) apply.

15.1.7 PERSONNEL PROVIDING FSTD UPSET PREVENTION AND RECOVERY TRAINING (UPRT)

The personnel providing UPRT in FSTDs adequate training to conduct UPRT. All instructors will complete UPRT FSTD instructor training during their initial qualification. This consists of theoretical training and flight training in a FFS. Level of proficiency will be maintained by the instructor in his or her line simulator.

Training Department will ensure that instructors providing UPRT:

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- a) Elaborate the importance of the upset prevention strategies during training;
- b) Are able to demonstrate the correct upset recovery techniques for the specific aircraft type;
- c) Understand the capabilities and limitations of the FSTD used for UPRT;
- d) Are aware of the potential of negative transfer of training that may exist when training outside the capabilities of the FSTD;
- e) Give adequate knowledge to trainees on prevention and recovery techniques as per Original Equipment Manufacturer (OEM recommendations)
- f) Incorporate the missing critical human factors due to the limitations of the FSTD and convey this to the flight crew receiving the training.

15.1.8 THE UPRT ELEMENTS AND COMPONENTS OF AN AIRLINE TRAINING PROGRAM WILL INCLUDE THE FOLLOWING:

- a) Aerodynamics,
- b) Causes and contributing factors of upsets,
- c) Safety Review of Accidents and Incidents relating to Airplane Upsets,
- d) Energy Management,
- e) Flight Path Management,
- f) Recognition,
- g) Upset Prevention & Recovery Techniques,
- h) System Malfunction,
- i) Specialized Training Elements (including recoveries from various conditions),
- j) Human Factors (Situation Awareness, Startle, Threat & Error Management, Crew Resource Management.

As per ICAO UPRT is a **training** and **not checking**

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15.1.9 REFERENCE DOCUMENTS

- PCAA ASC-021-FSXX-1.0 dated 01.11.2019
- ICAO Doc 10011 MANUAL ON AEROPLANE UPSET PREVENTION AND RECOVERY TRAINING
- ICAO Doc 9625 Manual for Criteria for Qualification of Flight Simulator Training Device
- AUPRTA: Airplane Upset and Prevention Recovery Training Aid

Table1: Elements and Respective Components of Upset Prevention Training (04 hours per set in FSTD to be conducted by an SFI/SFE)

Elements and Components		Ground Training (LMS & Pre-SIM Briefing)	FSTD/ Aeroplane Training
A	Aerodynamics	.	.
1.	General Aerodynamics Characteristics	.	.
2.	Aeroplane Certification and limitations	.	.
3.	Aerodynamics (high and low altitude)	.	.
4.	Aeroplane performance (high and low altitude)	.	.
5.	Angle of attack (AOA) and stall awareness	.	.
6.	Stick shaker or other stall-warning device activation (as applicable)	.	.
7.	Stick pusher (as applicable)	.	.
8.	Mach effects (if applicable to the aeroplane type)	.	.
9.	Aeroplane stability	.	.
10.	Control surface fundamentals	.	.
11.	Use of trims	.	.
12.	Icing and contamination effects	.	.
13.	Propeller effect: Asymmetric power effect, power lift effect, Propeller slipstream, Engine Torque effect (as applicable)	.	.
B.	Causes of and contributing factors to upsets	.	.
1.	Environmental	.	.
2.	Pilot-induced	.	.
3.	Mechanical (aeroplane system)	.	.
C.	Safety review of accidents and incidents relating to aeroplane upsets	.	.
1.	Safety review of accidents and incidents relating to aeroplane upsets	.	.
D.	g-load awareness and management	.	.
1.	Positive/negative/increasing/decreasing g-loads	.	.
2.	Lateral g awareness (sideslip)	.	.
3.	g-load management	.	.
E.	Energy management	.	.
1.	Kinetic energy vs potential energy vs chemical energy (power)	.	.

Elements and Components		Ground Training (LMS & Pre-SIM Briefing)	FSTD/ Aeroplane Training
F.	Flight path management		
1.	Relationship between pitch, power and performance	.	.
2.	Performance and effects of differing power plants (if applicable)	.	.
3.	Manual and automation inputs for guidance and control	.	.
4.	Type-specific characteristics	.	.
5.	Management of go-arounds from various stages during the approach	.	.
6.	Automation management	.	.
7.	Proper use of rudder	.	.
G.	Recognition		
1.	Type-specific examples of physiological, visual and instrument clues during developing and developed upsets	.	.
2.	Pitch/power/roll/yaw	.	.
3.	Effective scanning (effective monitoring)	.	.
4.	Type-specific stall protection systems and cues	.	.
5.	Criteria for identifying stalls and upsets	.	.
H.	System malfunction (including immediate handling and subsequent operational considerations, as applicable)		
1.	Flight control defects	.	.
2.	Engine failure (partial or full)	.	.
3.	Instrument failures	.	.
4.	Loss of reliable airspeed	.	.
5.	Automation failures	.	.
6.	Fly-by-wire protection degradations	.	.
7.	Stall protection system failures including icing alerting systems	.	.
I.	Manual handling skills (no autopilot, no autothrust/autothrottle and, where possible, without flight directors)		
1.	Flight at different speeds, including slow flight, and altitudes within the full normal flight envelope		.
2.	Procedural instrument flying and maneuvering including instrument departure and arrival		.

Elements and Components		Ground Training (LMS & Pre-SIM Briefing)	FSTD/ Aeroplane Training
3.	Visual approach		.
4.	Go-arounds from various stages during the approach		.
5.	Steep turns		.

Table 2: Exercises for Upset Recovery Training

Exercises		Ground Training	FFS Training
A	Recovery from upsets		
1.	Timely and appropriate intervention	.	.
2.	Recovery from stall events, in the following configurations: - Take-off configuration, - Clean configuration low altitude, - Clean configuration near maximum operating altitude, - Landing configuration during the approach phase; and - Terrain- critical scenarios	.	.
3.	Recovery from nose high at various bank angles	.	.
4.	Recovery from nose low at various bank angles	.	.
5.	Consolidated summary of aeroplane recovery techniques	.	.

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15.2 CHINA CLEARANCE SYLLABUS:

15.2.1 Duration: 03:00 HRS

15.2.2 Instructor: A designated instructor duly approved by CPCT is eligible to conduct this class.

15.2.3 The content provided here will be **updated** as required. This classroom training syllabus is to be used by instructors as a guideline to elaborate on points as the instructor may deem necessary. PIA EDTO Guide to be used for enabling trainee to have clear understanding of EDTO operations. Instructor will use guide lines along with supporting documents to plan the lesson.

15.2.4 PIA operations to China with a route over the Karakorams presents the most challenging flight profile. Updated Routes & Navigation Bulletin from Technical Division provides guidance to the crew on the subject.

15.2.5 China Flights Contingency Procedures (Routes and Navigation Bulletin).

15.2.6 This Bulletin is updated by the Technical Division as required. The Bulletin contains terrain information and contingency procedures for the crew.

15.2.7 The following assumptions should be considered while executing the contingency procedures:

- a) Obstacles on the airway are considered up to 5nm either side
- b) All obstacles are cleared by at least 2000 feet under ISA conditions
- c) Flights after depressurization is done with MMO/VMO calculated with no wind effect
- d) In case of turn back some time is lost in the turn, an early decision is imperative

15.2.8 In Flight Contingency Procedures (East-Bound and West-Bound).

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The crew is required to have knowledge and operational competency in following Procedures described in the Routes and Navigation Bulletin.

- a) Engine Failure
- b) Pressurization Failure
- c) Oxygen requirements

15.2.9 Critical Points and Escape Routes

Critical Points (CP) are defined as markers for the Engine Failure and Pressurization Failure contingency procedures marked on the tailor made Jeppesen EDTO chart for PIA. Escape routes to alternates are also marked on the same chart.

15.2.10 Engine Failure and Pressurization Failure Descent Profile Charts for China Flights. These charts are provided, and updated, as required, by Technical Division. Along with the Descent Profile information for the contingency procedures along the ATS route, these charts also provide information for fuel requirement at critical points. There exists a restriction on maximum allowable gross weight at Critical points. This weight restriction varies with deviation from ISA conditions. This information is also a part of this document.

15.2.11 Guidelines for Instructor:

- a) Review procedures for engine failure and loss of cabin pressurization during cruise (refer to FCOM, FCTM and circulars from technical division)
- b) Review and building escape routes in the FMS (RTE 2 or end of flight plan)
- c) Review engine and pressurization failure charts.
- d) Calculate drift down ceiling (performance charts).

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- e) Calculate ETP.
- f) Familiarity with en route charts (MEA, MOCA, MORA, Grid MORA in case of weather deviation)
- g) Metric Altitudes and use of RVSM conversion table.

15.2.12 Documents for Guidance:

- i) PCAA ANO-013-FSXX-2.0 and/or any other publication of the PCAA.
- ii) PIA EDTO Guide
- iii) **Sample China Flight plan** to increase familiarity with the procedures.

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15.3 NORTH ATLANTIC OPERATIONS—CLASSROOM/LMS TRAINING SYLLABUS AS APPLICABLE

15.3.1 Duration: 03:00 HRS

15.3.2 A designated instructor duly approved by CPCT is eligible to conduct the class.

15.3.3 Reference documents:

- a) NAT DOC 007
- b) NAT OPS Bulletins
- c) North Atlantic Plotting Chart and Text
- d) North Atlantic Jeppesen/PIA Tailored Jeppesen
- e) North Atlantic Oceanic Checklist
- f) Global Operational Datalink Document (GOLD)
- g) PIA EDTO Guide
- h) Sample Flight Plan

15.3.4 The content provided here will be **updated** as required. This classroom training syllabus is to be used by instructors as a guideline to elaborate on points as the instructor may deem necessary. PIA EDTO Guide to be used to enable trainee to have a greater understanding of EDTO Operations. The instructor will use the **guidelines** along with the reference documents to plan the lesson. Other information provided in this chapter is for added knowledge regarding understanding of what features comprise the NAT HLA.

15.3.5 Direct Controller Pilot Communications (DCPC) and ATS Surveillance are unavailable in most parts of the NAT Region. Aircraft separation, and hence safety, are ensured by emending the highest standards of horizontal and vertical navigation performance/accuracy and of operating discipline.

15.3.6 The North Atlantic (NAT) Region

The North Atlantic Region encompasses all of airspace over the Atlantic Ocean between roughly 20° north latitude and the North Pole except the airspace of New York Oceanic West. It is divided into a total of seven Oceanic Control Areas (OCAs) / Flight Information Regions (FIRs). These OCAs / FIRs are as follows:

- a) Nuuk BGGL FIR (airspace above FL195 south of 63°30" N is controlled by Gander, north of that latitude is controlled by Reykjavik and is considered part of their respective control area)
- b) Reykjavik OCA / BIRD FIR
- c) Bodø Oceanic ENOB FIR / Bodø OCA (above FL195)
- d) Gander OCA / CZQX FIR
- e) Shanwick OCA / EGGX FIR
- f) New York Oceanic East OCA / KZWY FIR
- g) Santa Maria OCA / LPPO FIR
- h) Embedded within the North Atlantic Region are a number of domestic CTAs / TMAs including:
 - i) Reykjavik (Iceland)
 - j) Santa Maria (The Azores)

15.3.7 Flight Rules:

Over the high seas, the lower limit of all NAT oceanic control areas is FL55. There is no upper limit. Airspace at and above FL55 is Class A controlled airspace and below FL55 it is Class G uncontrolled air space. The vast majority of North Atlantic flights are performed by commercial jet transport aircraft in the range of altitudes between FL290 – FL410. To ensure adequate airspace capacity and provide for safe vertical separations, Reduced Vertical Separation Minima (RVSM) is applied throughout the ICAO NAT region.

15.3.7.1 A large portion of the airspace of the NAT, which, incidentally, contains the majority of these NAT crossings routes, is designated as the NAT High Level Airspace (NAT HLA) between FL 285 and 420

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inclusive. Within this airspace a formal approval process by the State of Registry of the aircraft or the State of the operator ensures that aircraft meet defined NAT HLA Standards and that appropriate flight crew procedures and training have been adopted. The lateral dimensions of the NAT HLA include the following Control Areas (CTAs):

REYKJAVIK, SHANWICK (excluding SOTA & BOTA), GANDER, SANTA MARIA OCEANIC, BODO OCEANIC and NEW YORK OCEANIC EAST.

15.3.8 The Organized Track System (OTS)

As a result of passenger demand, time zone differences and airport noise restrictions, much of the North Atlantic (NAT) air traffic contributes to two major alternating flows: a westbound flow departing Europe in the morning, and an eastbound flow departing North America in the evening. The effect of these flows is to concentrate most of the traffic uni-directionally, with peak westbound traffic crossing the 30W longitude between 1130 UTC and 1900 UTC and peak eastbound traffic crossing the 30W longitude between 0100 UTC and 0800 UTC.

15.3.8.1 The flight levels normally associated with the OTS are FL310 to FL400 inclusive. These flight levels, and their use have been negotiated and agreed by the NATS ATS providers and are published as the Flight Level Allocation Scheme (FLAS). (See Attachment 5). The FLAS also determines flight levels available for traffic routing partly or wholly outside of the OTS as well as flights operating outside of the valid time periods of the OTS; often referred to as “transition times’.

15.3.9 Random Routes

Use of the OTS tracks is not mandatory Aircraft may flight plan on random routes which remain clear of the OTS or may fly on any route that joins, leaves, or crosses the OTS. Operators must be aware that while ATC will make every effort to clear random traffic across the OTS at requested levels,

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re-routes or significant changes in flight level from those planned are very likely to be necessary during most of the OTS traffic periods. A comprehensive understanding of the OTS and the FLAS may assist flight planners in determining the feasibility of flight profiles.

15.3.10 SLOP:

Strategic Lateral Offset Procedures (SLOP) are authorized and encouraged in NAT HLA. Discuss SLOP procedure.

15.3.11 Separation:

Separation within NAT airspace is procedural and is based on altitude, distance and time.

15.3.11.1 Vertical separation of 1000' is provided between FL60 and FL280 as well as in the Reduced Vertical Separation Minimum airspace. Flights above FL410 will be separated by 2000' vertically.

15.3.11.2 Lateral separation is distance based and is approximately one degree of latitude. Performance Based Communications and Surveillance (PBCS) tracks (formerly Reduced Lateral Separation Minimum (RLatSM) tracks) allow suitably equipped, certified and authorized aircraft to fly tracks separated by half of one degree.

15.3.11.3 Longitudinal separation between subsequent aircraft following the same track (in-trail) and between aircraft on intersecting tracks is time-based and is thus expressed in clock minutes. The standard time interval between aircraft following the same route with the same assigned speed is 10 minutes. That time interval will be adjusted to accommodate aircraft with different speed assignments, shorter if the leading aircraft is faster and longer if the leading aircraft is slower. Aircraft separation is assessed in terms of differences between the respective ATAs / ETAs at common points. The maintenance of in-trail separations is aided by the application of the

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Mach Number Technique in which jet aircraft are assigned a specific mach number as part of their clearance. However, aircraft clock errors resulting in waypoint ATA and ETA errors in position reports can lead to an erosion of actual longitudinal separations between aircraft. It is thus vitally important that the time-keeping device intended to be used to indicate waypoint passing times is accurate, and is synchronized to an acceptable UTC time signal before commencing flight in NAT airspace.

15.3.12 Operation of Transponders:

Transponders should be operated at all times while in North Atlantic (NAT) with respect to requirements of respective oceanic airspace.

15.3.13 High Level Airspace (HLA)

A large portion of the airspace of the North Atlantic Region, between FL 285 and FL 420 inclusive, is designated as the NAT High Level Airspace (NAT HLA). The lateral dimensions of the HLA include Gander, Reykjavik, Bodø Oceanic, Shanwick (except the Shannon Oceanic Transition Area (SOTA) and Brest Oceanic Transition Area (BOTA)), Santa Maria Oceanic and that portion of New York Oceanic East that is north of 27° N. Within this airspace a formal Approval Process by the State of Registry of the aircraft or the State of the Operator ensures that aircraft meet defined NAT HLA Standards and that appropriate crew procedures and training have been adopted. HLA Standards include the requirement for two approved independent Long-Range Navigation Systems (LRNS).

The unique, unidirectional, flexible track structure of the North Atlantic Organized Track System (NAT OTS) is located within HLA, predominantly in the Gander and Shanwick Oceanic CTAs.

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15.3.14 Provisions for Aircraft Not Meeting HLA/MNPS Criteria:

Aircraft not meeting the navigation requirements for HLA airspace can choose to fly above FL420 or below FL285. Additionally, within the HLA, special routes, referred to as "Blue Spruce Routes", have been designated for aircraft equipped with only one LRNS plus normal short-range navigation equipment (VOR, DME, ADF), which require to cross the North Atlantic between Europe and North America (or vice versa). As these routes are within NAT HLA Airspace, State approval must be obtained prior to flying along them. These routes are also available for interim use by aircraft normally approved for unrestricted NAT HLA operations that have suffered a partial loss of navigation capability and have only a single remaining functional LRNS.

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15.3.15 REDUCED VERTICAL SEPARATION MINIMUM (RVSM) AIRSPACE

Reduced Vertical Separation Minima (RVSM), in the band of altitudes FL290 - FL410, is applicable in all NAT HLA. Aircraft not RVSM certified will be cleared either above or below RVSM airspace. These aircraft may be cleared to climb or descend through RVSM airspace on a non-interference basis.

ATC may provide special approval for a NAT HLA MNPS approved aircraft that is not approved for RVSM operation to fly in NAT HLA airspace provided that the aircraft:

is on a delivery flight; or was RVSM approved but has suffered an equipment failure and is being returned to its base for repair and/or re-approval; or is on a mercy or humanitarian flight. Prior coordination is required.

Aircraft following a “random route” or flying outside the OTS time periods, may plan any flight level(s) irrespective of direction (i.e. there is no need in the NAT HLA to plan in accordance with the ICAO Annex 2 Table of Cruising Levels).

15.3.16 GUIDELINES FOR INSTRUCTOR:

- a) Lateral Navigation equipment carriage
- b) LRNs requirements, failures and contingencies
- c) Altimetry (tolerances, contingencies, RVSM, FLAS)
- d) Discuss TMI
- e) Discuss OTS
- f) Discuss Random Routes
- g) Flight Planning from NAT DOC 007
- h) Communication procedures (oceanic clearances, RCL using data link, errors, HF communication [SELCAL, NAT frequency Families], failures and contingencies)
- i) ADS-B/ADS-C, CPDLC procedures, Uplink message latency in NAT HLA (DLM)
- j) Transponder operation in NAT HLA

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- k) In Flight Contingencies NAT 007 weather deviation and diversion.
- l) Use of Oceanic Checklist and CFP (Master Document and markings for oceanic way points on flight plan)
- m) Plotting Chart, calculate ETP and understanding.
- n) EDTO requirements (critical fuel scenario, OEI speed , diversion strategies etc.)

15.3.17 Data link Mandate Airspace:

CPCLC / ADS-C mandated airspace includes FL 290 and above throughout the ICAO NAT region. Aircraft must be equipped with and operating FANS 1/A or equivalent CPDLC and ADS-C.

15.3.17.1 Overview of Doc 007- North Atlantic Operations Manual (ICAO)

Although all possible contingencies cannot be covered, the procedures described in ICAO NAT Doc 007 provides for the more frequent cases.

15.3.18 NORTH ATLANTIC OPERATIONS CHECKLIST

15.3.18.1 PIA checklist shall be used in North Atlantic Operations.

15.3.18.2 PCAA ANO Extended Diversion Time Operations

15.3.18.3 PCAA ANO-013-FSXX-2.0 shall be used for guidance.

15.3.18.4 PIA EDTO Guide to be used in North Atlantic Operations.

15.3.18.5 Use sample North Atlantic Flight Plans and Plotting Charts to increase familiarity with the procedures.

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15.4 NORTHERN AREA CLEARANCE – CLASSROOM TRAINING SYLLABUS

15.4.1 Duration: 03:00 HRS:

15.4.1.1 **Instructor:** A designated flight instructor is eligible to conduct this class duly cleared on Northern Area Routes.

SECTION	SUB SECTION	DISCUSSION ITEMS
GENERAL	FLIGHT RULES METROLOGY TOPOGRAPHY EGPWS	– IFR/VFR FLIGHT RULES – NORTHERN AREAS WEATHER PHENOMENON CLOUD TYPES, WIND EFFECTS – PROMINENT LANDMARKS, PEAKS, VALLEYS, RIVERS, – EGPWS ONBOARD EQUIPMENT AND USE, MEMORY ITEMS
ROUTE	ORIENTATION	– FLIGHT ROUTE, RESTRICTED PROHIBITED AREAS, AIRSPACES, COMMUNICATION PROCEDURES, ENROUTE SAFE ALTITUDE, CRITICAL POINTS
AIRCRAFT	EQUIPMENT FLIGHT PLANNING PERFORMANCE	– REQUIRED EQUIPMENT FOR DISPATCH – FUEL, ALTERNATE, WEIGHT, PCN RELATED WEIGHT REQUIREMENT, – SINGLE ENGINE CEILING, APPROACH CLIMB PERFORMANCE CALCULATION
AERODROME	SPECIFICATIONS	– RUNWAY DIMENSIONS – RESCUE AND FIRE CAT – ATC FREQUENCIES AND OPERATIONAL HOURS. – NOTAMS

Instructor is to refer to fleet specific Northern Area Operations SOP and be aware of training requirements in OM Part D. Refer to FCOM, FCTM, MEL, AFM for narrow RWY ops and drift down strategies.

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15.5 REDUCED VERTICAL SEPARATION MINIMUM (RVSM) – CLASSROOM/LMS TRAINING SYLLABUS

15.5.1 REQUIREMENTS

15.5.1.1 Instructor: A designated instructor duly approved by CPCT will be eligible to conduct this session.

15.5.1.2 Reference documents:

- PCAA ANO-015-FSXX-4.0 dated 01-01-2018,
- Jeppesen Airway Manual,
- Aircraft AFM, FCOM, FCTM.

15.5.2 Updated documents will be provided:

- REDUCED VERTICAL SEPARATION MINIMUMS (RVSM) — A reduction in the vertical separation between FL290 – FL410 from 2000ft to 1000ft
- ICAO RULES OF THE AIR - ANNEX 2 provides table of cruising levels.
- PCAA ANO defines approval and monitoring program.
- The guidelines of this chapter will be incorporated into the Cadet Pilot indoctrination program, transition training, under supervision flying and recurrent training.

15.5.3 Guidelines for Instructor:

- Define RVSM, cruising level and contingency procedures for RVSM airspace using Jeppesen manual.
- Refer to Aircraft specific AFM, FCOM, FCTM for necessary equipment in RVSM airspace.
- Refer to MEL/DDG for equipment necessary for flight to be conducted into RVSM airspace
- Consult PCAA ANO for minimum equipment for RVSM entry (current minimum equipment required as per PCAA given below but any update will supersede this)

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15.5.4 Aircraft Systems and Equipment minimum requirement is:

- a) Two independent altitude measurement systems;
- b) One Secondary Surveillance Radar (SSR) altitude reporting transponder. If only one is fitted, it shall have the capability for switching to operate from either altitude measurement system;
- c) An altitude alert system;
- d) An automatic altitude control system.

15.5.5 Review RVSM requirements with respect to:

- i) Flight planning;(ATC, Jeppesen)
- ii) Pre-flight procedures at the aircraft for each flight; (Aircraft specific procedures MEL, AFM)
- iii) Procedures prior to RVSM airspace entry (State approvals and published procedures);
- iv) In-flight procedures; (As per Jeppesen state approvals and procedures)
- v) Flight crew training procedures (HVR encounters, system degradation and use of Check list and ATC specific procedures)

15.5.6 Define errors which lead to reporting and investigation of RVSM approval like Total Vertical Error (TVE), Altimetry System Error (ASE) and Assigned Altitude Deviation (AAD).

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15.6 REQUIRED NAVIGATION PERFORMANCE(RNP) AND PERFORMANCE BASED NAVIGATION(PBN) – CLASSROOM TRAINING/LMS SYLLABUS

15.6.1 REQUIRMENTS

15.6.1.1 Required Navigation Performance(RNP) and Performance Based Navigation(PBN):

15.6.1.2 Instructor: A designated instructor duly approved by CPCT is eligible to conduct this class.

15.6.2 Reference Documents:

Jeppesen Airway Manual (ATC, Radio Data, Doc 8168), AFM, FCOM, FCTM, PCAA ANO-017-FSXX-2.0 Appendix "I".

15.6.3 The guidelines of this chapter will be incorporated into the Cadet Pilot Indoctrination program, transition training, under supervision flying and recurrent training.

15.6.4 REQUIRED NAVIGATION PERFORMANCE (RNP) — A statement of the navigation performance accuracy necessary for operation within a defined airspace.

NOTE: Navigation performance and requirements are defined for a particular RNP type and/or application.

15.6.4.1 RNP TYPE — A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time.

EXAMPLE: RNP 4 represents a navigation accuracy of plus or minus 7.4 km (4 NM) on a 95 per-cent containment basis.

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15.6.4.2 AREA NAVIGATION (RNAV) — A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

15.6.5 PERFORMANCE-BASED NAVIGATION (PBN) — Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

NOTE: Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept

15.6.6 PERFORMANCE-BASED COMMUNICATION (PBC) — Communication based on performance specifications applied to the provision of air traffic services.

NOTE: An RCP specification includes communication performance requirements that are allocated to system components in terms of the communication to be provided and associated transaction time, continuity, availability, integrity, safety and functionality needed for the proposed operation in the context of a particular airspace concept.

15.6.7 PERFORMANCE-BASED SURVEILLANCE (PBS) —

Surveillance based on performance specifications applied to the provision of air traffic services.

NOTE: An RSP specification includes surveillance performance requirements that are allocated to system components in terms of the surveillance to be provided and associated data delivery time, continuity, availability, integrity, accuracy of the surveillance data, safety and functionality

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needed for the proposed operation in the context of a particular airspace concept.

15.6.8 PERFORMANCE BASED COMMUNICATION AND SURVEILLANCE (PBCS):

Performance Based Communication (PBC) and Performance Based Surveillance (PBS) refers to communication and surveillance based on performance specifications applied to the provision of air traffic services. The standards and procedures for an air traffic management (ATM) operation that are predicated on communication and surveillance capabilities, such as the application of reduced separation minima, must refer to the appropriate Required Communication Performance (RCP) and Required Surveillance Performance (RSP) specification. The RCP and RSP specifications are a set of requirements for air traffic service provision and associated ground equipment, aircraft capability and operations needed to support performance based communication and surveillance.

15.6.9 GUIDELINES FOR INSTRUCTOR:

- a) Definitions of RNP, RNAV, PBN, PBCS, RCP, RSP from Jeppesen.
- b) Flight procedures defined in PBN Doc 8168 (Jeppesen).
- c) Type of RNP Approaches and requirements (RNP APP, RNP AR, RNPC).
- d) Refer to FCOM/FCTM supplementary procedures regarding RNP Operations
- e) System degradation and contingencies, and corrective procedures.
- f) Position updating procedures defined in FCOM/FCTM.
- g) State Approvals and regulatory requirements

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15.7 AIRCRAFT DIFFERENCE TRAINING – CLASSROOM/LMS TRAINING SYLLABUS

15.7.1 Aircraft Difference Training

15.7.2 **Instructor:** A designated instructor duly approved by CPCT is eligible to conduct this course.

15.7.3 Reference Documents:

(FCOM, FCTM, AFM)

15.7.4 Guidelines provided to instructor will be used and indoctrinated in the transition training, under supervision flying and recurrent training.

15.7.5 Guidelines for Instructor:

15.7.5.1 Refer to FCOM, FCTM and AFM for difference in variant types with regards to systems and limitations.

15.7.5.2 Refer to MEL/CDL/DDG for restrictions and dispatch requirements on different variants.

15.7.5.3 Refer to SOP, FCOM and FCTM for difference in procedures when flying different variants

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15.8 AVIATION SECURITY TRAINING PROGRAM

15.8.1 AVIATION SECURITY PROCEDURES FOR FLIGHT CREW AND CABIN CREW BASIC TRAINING PROGRAMME (DURATION TWO DAYS (TWELVE HOURS))

Chapter 15 Table 1

Sr. No.	Section	Subject
1.	Introduction and general information update	1.1 Greeting and training starts 1.2 Confidence and information protection 1.3 Government activities 1.4 Operator activities 1.5 Safety risk 1.6 Military intelligence 1.7 Historical review of unlawful interference in civil aviation operations – ICAO Annex - 17
2.	Flight deck security	2.1 General provisions 2.2 Notification procedure/codes 2.3 Methods of door locking / unlocking 2.4 Operating procedure 2.5 Able-bodied passengers – explanation 2.6 Needs of flight crew and other additional crew members 2.7 Operating procedure when a pilot leaves a flight deck during the flight with two pilots assigned 2.8 SARPs field of application
3.	Aircraft search checklist Aircraft search checklist	3.1 Concepts and principle contained in the checklist 3.2 Restrictions applied to checklist application procedure 3.3 General provisions 3.4 Least risk bomb location (LRBL) 3.5 Explosives compared to CHEM& BIO weapons – difference in application/checklist 3.6 Recognition of explosives, explosive devices & components

Sr. No.	Section	Subject
	Continue..	3.7 Safety risk in cargo compartment 3.8 Alternate airport landing and passengers' disembarkation 3.9 Possession of information of the crew if there are dangerous goods on board 3.10 Search of aircraft.
4.	Unlawful interference extent evaluation	4.1 What is unlawful interference? 4.2 Possession of information on dangerous goods on board 4.3 Safety department of the operator 4.4 Classification of risks 4.5 Troublesome passengers, causes of unruly/disruptive behaviors and management 4.6 Hi-jacking 4.7 Explosion risk
5.	Communication and coordination activity of the crew	5.1 Provision of communication and coordination between the crew 5.2 New duties of cockpit crew – INFLUENCE on training and communication system 5.3 Captain's pre-flight briefing 5.4 Crew response – general provisions 5.5 Tactical cockpit crew response 5.6 Resource management apart from the crew 5.7 Communication between passengers compartment and cockpit in case of unlawful interference
6.	Appropriate self – defense actions	6.1 Situation awareness 6.2 Evaluation of security facilities available 6.3 Methods of self – defense (through video)
7.	Utilization of protective limited-lethality devices when approved by CAA Pakistan	7.1 Approval by CAA Pakistan (not yet authorized) 7.2 Capability and limitations of limited lethality weapon 7.3 Requirements on personnel training 7.4 Other devices immediately available to the crew

Sr. No.	Section	Subject
8.	Study of terrorists behavior and skills application in emergency situation of terrorists behavior and passenger response evaluation	8.1 Terrorism and terrorists 8.2 Unsteady nature of hi-jacking (unlawful interference) 8.3 Crew counteraction to terrorists
9.	Cockpit actions procedure connected with aircraft security	9.1 Basic conception of cockpit crew protection measures 9.2 Other actions
10.	Problems of the crew upon the incident	10.1 Remain in lockdown – “it’s not over until it’s over” 10.2 Disabling of aircraft 10.3 Crew evacuation considerations 10.4 Expected crew treatment immediately post flight 10.5 Parking of aircraft after a bomb or CBW threat 10.6 Crew protection and care 10.7 Media concerns
11.	Miscellaneous	11.1 Reporting acts of unlawful interference 11.2 Revision/self-study 11.3 Question/Answer session 11.4 Aircraft search & LRB procedures’ in mock-up 11.5 Written test 30 minutes

15.8.2 LESSON PLAN COCKPIT CREW AND CABIN CREW BASIC AVIATION SECURITY TRAINING

Chapter 15 Table 2

DAY ONE:

Session I (0800-1000 Hours)		Session II (1030-1200 Hours)	
SECTION-1. Introduction and general information update 1.1 Greeting and training starts 1.2 Domestic Commercial Operations 1.3 Confidence and information protection 1.4 Government activities 1.5 Operator activities 1.6 Safety risk 1.7 Military intelligence 1.8 Historical review of unlawful interference in Civil Aviation operations – ICAO Annex - 17 SECTION-2 - Flight deck security 2.1 General provisions 2.2 Notification procedure /codes 2.3 Methods of door locking/unlocking 2.4 Operating procedure 2.5 Able-bodied passengers – explanation	Break (1000-1030)	2.6 Needs of flight crew and other additional crew members 2.7 Operating procedure when a pilot leaves a flight deck during the flight with two pilots assigned 2.8 SARPs field of application SECTION-3 - Aircraft search checklist 3.1 Concepts and principle contained in the Checklist 3.2 Restrictions applied to checklist application procedure 3.3 General provisions 3.4 Least risk bomb location (LRBL) 3.5 Explosives compared to CBW – difference in application 3.6 Recognition of explosives, explosive devices & components 3.7 Safety risk in cargo compartment 3.8 Alternate airport landing and passengers disembarkation	Break (1200-1215)

DAY ONE
DAY TWO

Session III (1215-1400 Hours)	Session I (0800-1000 Hours)	Break (1000-1030)
3.9 Possession of information of the crew if dangerous goods are on board 3.10 Search of aircraft SECTION-4 - Unlawful interference extent evaluation 4.1 What is unlawful interference? 4.2 Possession of information on dangerous goods on board 4.3 Safety department of the operator 4.4 Classification of risks 4.5 Troublesome passengers & causes / disruptive behaviors/ management 4.6 Hi-jacking 4.7 Explosion risk SECTION – 5 - Communication and coordination activity of the crew 5.1 Provision of communication and coordination between the crew	5.2 New duties of cockpit crew – INFLUENCE on training and communication system 5.3 Captain’s pre-flight briefing 5.4 Crew response – general provisions 5.5 Tactical cockpit crew response 5.6 Resource management apart from the crew 5.7 Communication between Passengers compartment and cockpit in case of Unlawful interference SECTION-6. Appropriate self – defense actions 6.1 Situation awareness 6.2 Evaluation of security facilities available 6.3 Methods of self – defense (through video) SECTION –7. Utilization of protective limited-lethality devices approved by CAA Pakistan 7.1 Approval by CAA Pakistan (not yet authorized)	

DAY TWO:

Session II (1030-1200 Hours)	Break (1200-1015)	Session III (1215-1400 Hours)	WRITTEN TEST 30 MINUTES
7.2 Capability and limitations of limited lethality weapon 7.3 Requirements on personnel training 7.4 Other devices immediately available to the crew SECTION-8. Study of terrorists behavior and skills application in emergency situation of terrorists behavior and passenger response evaluation 8.1 Terrorism and terrorists 8.2 Unsteady nature of hi-jacking (unlawful interference) 8.3 Crew counteraction to terrorists SECTION-9. Cockpit actions procedure connected with aircraft security 9.1 Basic conception of cockpit crew protection measures 9.2 Other actions		SECTION-10. Problems of the crew upon the incident 10.1 Remain in lockdown – “it’s not over until it’s over” 10.2 Disabling of aircraft 10.3 Crew evacuation considerations 10.4 Expected crew treatment Immediately post flight 10.5 Parking of aircraft after a bomb or CBW threat 10.6 Crew protection and care 10.7 Media concerns SECTION-11. Miscellaneous • Reporting acts of unlawful interference • Revision/self-study • Question/answer session • Bomb search/LRBL procedures’ in mock-up	

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15.8.3 SYLLABUS/LESSON PLAN - CREW MEMBERS REFRESHER TRAINING:

Chapter 15 Table 3

Sr. #	SECTION	CONTENTS	DURATION
1.	Introduction and general information update	1.1 Introduction 1.2 General updates 1.3 Important definitions	10 min
2.	Determination of the seriousness of any occurrence	2.1 What is unlawful interference? 2.2 Possession of information on dangerous goods on board 2.3 Knowing the threat 2.4 Classification of threats 2.5 Unruly passengers 2.6 Causes of unruly/disruptive behaviors & management 2.7 Unruly passenger - PIC responsibility 2.8 Unruly passengers - preventive strategy 2.9 Notification card to unruly passenger 2.10 Hijacking 2.11 Bomb threats	20 min
3.	Crew communication and coordination	3.1 Provision of communication and coordination between the crew 3.2 New duties of cockpit crew members 3.3 Captain's pre-flight briefing 3.4 Crew response – general provisions 3.5 Tactical crew response: 3.6 Resource management apart from the crew: 3.7 Communication between passenger's compartment and cockpit in case of unlawful interference	20 min
4.	Appropriate self-defense responses	4.1 Situation awareness 4.2 Evaluation of security facilities available 4.3 Methods of self-defense (video)	15 min

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Sr. #	SECTION	CONTENTS	DURATION
5.	Use of non-lethal protective devices assigned to crew members	5.1 Not authorized by PCAA 5.2 Other means immediately available to the crew	05 minutes
6.	Understanding the behavior of terrorists	6.1 Terrorism and terrorists 6.2 Unsteady nature of hijacking 6.3 Crew counteraction to terrorists	10 minutes
7.	Live situational training exercises regarding various threat conditions	7.1 General 7.2 Live training exercises during threat conditions (video)	15 minutes
8.	Flight deck procedures to protect the aero plane	8.1 Basic concept of flight crew compartment protection 8.2 Other considerations 8.3 Malfunctioning of electronic equipment 8.4 Flight tracking system 8.5 Possibility of interception 8.6 Post landing procedure during hijacking	10 minutes
9.	Aero plane search procedures and guidance on least-risk bomb locations	9.1 General considerations 9.2 Search guidelines 9.3 Search to what depth/standard 9.4 Bomb threat aircraft on the ground/procedures 9.5 Bomb threats in-flight 9.6 Explosive devices in flight-LRBL 9.7 Explosive devices compared to CBW – difference in application/checklist 9.8 Searching an aero plane 9.9 Recognition of explosives, explosive devices and components 9.10 Aircraft search and LRBL practice in mock up*	15 minutes

Note: 1. To reoccur once in two years. 2. *One hour extra time for cabin crew aircraft search & LRBL practice in mock up

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CHAPTER 16: ATR-42/72-500 TRAINING SYLLABI

16.0 TRANSITION TRAINING:

16.0.1 TYPE TECHNICAL GROUND COURSE

OBJECTIVE:

To enable the crew to obtain knowledge of aircraft systems, attain proficiency in the application of operational, abnormal and emergency procedures, and to provide hands on training thereof.

At the end of the training program, each crew member must be capable, under all circumstances of carrying out his task, safely and efficiently. A trainee will be allowed to pass from one phase to the next only if he has attained the skill necessary for the required tasks.

ELEMENTS:

This training will consist of the followings:

- Computer based training (CBT) program utilizing Learning Management System
- Fixed Based Simulator (FBS) Training
- Full Flight Simulator (FFS) Training
- Low Visibility Operations - Cat-I Training
- Landing Training
- Line Training

DOCUMENTATION:

1. Flight Crew Operating Manual
2. Checklists Normal / Abnormal (QRH)
3. Flight Crew Training Manual
4. Minimum Equipment List
5. Weight and Balance
6. TCAS II Booklet
7. Operations Engineering Technical Bulletin / Operations Engineering Information Bulletin.

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16.0.1.1 CBT PROGRAM (LMS):

OBJECTIVE:

The primary object of the LMS program is to provide flight crew members with the necessary knowledge for understanding the basic functions of aircraft systems, the use of individual system components, integration of the aircraft systems, the understanding, application, performance and the procedures on the use of safety equipment.

Upon completion of the CBT program (LMS), the trainee will be sufficiently prepared to enter the FBS/FFS Training.

16.0.1.2 INSTRUCTOR QUALIFICATION

This Training will be supervised/conducted by the qualified Instructors as defined by the PCAA for assisting the pilots and supplementing through lectures when required either through distance learning or classroom training.

16.0.1.3 TRAINING AIDS:

The following Training Aids will be used in this Training Program:

- Personal Laptop/Computer/I Pad and a student account on LMS
- Transparencies where necessary Cockpit illustration panel charts
- Projector (if required)
- White Board / Marker, Pens

16.0.1.4 COURSE DURATION:

The duration of the training program is 15 working days (11 Days LMS, Day 12 Examination & Performance, Day 13 Performance, Day 14 & 15 SEP in classroom).

16.0.1.5 DAY WISE COURSE BREAKUP:

Each system will be covered through LMS covering following topics:

1. Controls and Indicators
2. System Description and Schematic
3. Normal and non-normal procedures
4. Supplementary procedures
5. MEL provisions and DDG procedures

Chapter 16 Table 1

DAY	TOPICS	METHOD	
Day 1	Aircraft General: - General Dimensions - Cockpit Layout - Doors - Lighting - Water & Waste System Multi-Function Computer (MFC) - Description	- Control & Operation - Lateral Maintenance Panel Centralized Crew Alerting System (CCAS) - Description - Control & Operation - MFC Logic - Maintenance Panel	LMS
Day 2	Electrical System - Dc Power Description - Controls - Electrical Supply / MFC Logic / Monitoring AC Constant Frequency Description - Controls	- Electrical Supply / MFC Logic / Monitoring Maintenance Panel AC Wild & External Power - Description - Control - Maintenance Panel	LMS
Day 3	Fuel System - Description - Control, Supply & Monitoring - Maintenance Panel Power Plant - System Description - Engine - Fuel System - Lubrication System System Description - Ignition System	- Propeller System Operations - Engine Governing - Propeller Speed Governing System Controls - ATPCs - Power Levers - IDLE Gate - Condition Levers - Indications & Panels	LMS
Day 4	Power Plant Maintenance Panel	- Electrical Supply / MFC Logic/ Monitoring - Power Plant	LMS
Day 5	Fire Detection - General - Engine Fire Detection - Cargo & Toilets	Air or Pneumatics - General - Pneumatics control - Electrical supply / MFC logic/ Monitoring	LMS

DAY	TOPICS	METHOD
Day 5 cont.	- Avionics Smoke Detection - Engine / Cargo / Cockpit / Cabin Toilets Fire Extinguish System - Maintenance panel	
Day 6	Air Conditioning - System Description - Controls - Electrical Supply / MFC Login / Monitoring Pressurization - System Description - Controls - Electrical Supply / MFC Logic / Monitoring Hydraulics - Description - Control - Electrical supply / MFC / Monitoring	LMS
Day 7	Landing Gears - Description - Controls - Electrical Supply / Monitoring - Maintenance Panel Nose wheel, Brakes & Antiskid - Description - Control - Electrical Supply / Monitoring - Maintenance Panel Flight Controls - Roll & Pitch - Description - Controls Electrical Supply / MFC Logic / Monitoring YAW System & Flaps - Controls - Electrical Supply / MFC Logic / Monitoring Gust Lock - Controls - Electrical Supply / MFC Logic / Monitoring - Maintenance panel	LMS
Day 8	Flight Instruments - Air Data Systems - Description - Controls - Electrical Supply / Monitoring AHRS & EFIS - Description - Controls - Electrical Supply / Monitoring	LMS

DAY	TOPICS	METHOD
Day 9	Ice & Rain Protection • Anti Icing Advisory System • Description • Controls • Electrical Supply / Monitoring Engine & Wing Protection • Description • Controls • Electrical Supply / MFC Logic / Monitoring Prop Anti Icing & Window Heat • Description • Controls • Electrical Supply / MFC Logic / Monitoring • Maintenance Panel	LMS
Day 10	AFCS • Description • Controls • Electrical Supply / MFC Logic Auto Pilot/ Yaw Damper / Flight Director • Description • Controls • Operation • Modes Altitude Alert System • Description • Controls • Operation & Indications	LMS
Day 11	Communication • Description • Control • Electrical Supply / Monitoring • Panels Emergency Equipment • Description • Oxygen Supply • Emergency Evacuation Navigation System • VOR/LLS/DME • ADF System • Radio Alt • GPWS • Weather Radar • GNSS	LMS
Day 12	Test Performance Power settings • RTOW chart • Take Off • Climb • Cruise • Holding • Descent • Approach Handling • Obstacle Clearance	LMS / class room
Day 13	Performance One engine inoperative Engine & fuel calculation Load & Trims sheet MEL/CDL Exam / Review	Class room
Day 14	SEP DAY 1	Class room
Day 15	SEP DAY 2	Class room

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16.1 TRANSITION TRAINING SIMULATOR

16.1.1 FIX BASED SIMULATOR (FBS)

16.1.1.1 FBS 01

FBS: 01	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

PRE-SIM BRIEFING:

OBJECTIVES	Introduction to aircraft normal operations, computation of TO/LDG data card in normal and icing conditions. Use of AFCS and FD bars, Ariel work, Familiarization with Aircraft systems

CRM Objective	Crew Communication, use of Normal CL and Standard calls

Exercises and Procedures

Dark Cockpit on entry, power up and selection on GND ELEC

TRAINEE 1 and 2 Alternatively		PF	PM
1.	Safety check before power up, check GPU voltage and select		
2.	Pilot Seat and harness adjustment		
3.	Familiarization with cockpit lighting and controls, increase/decrease intensity of lights, CRT display and WX RDR display		
4.	Use of headset/bloom mike, intercom and PTT on yoke and pedestal, PTT on NWS, Hand mike VHF com 1 and 2 selection audio control panel logic and adjusting headset and speaker volume, tuning VOR and ADF.		
5.	Location and method for testing Oxygen mask		
6.	Overview of Systems on OVHD panel and CCAS		
7.	Location of Auto Pilot Quick disconnect PB, YD and AP engagement logic and way to Disconnect, AFCS overview, vertical and lateral modes		
8.	EFIS presentation, HDG, ALT and CRS knobs selection of different EFIS displays, coupling and ADC sw.		
9.	Preliminary cockpit preparation		
10.	System check, learn use of equipment and function of each button in details		
11.	Final cockpit preparation, ENG start, before Taxi C/L, Taxi C/L		

TRAINEE 1 and 2 Alternatively		PF	PM
12.	Take -off – climb sequence(several times) – after TO/CL		
13.	Climb, use of IAS, VS and pitch mode Accelerate/decelerate during climb, best rate of climb and best angle of climb speed HI/LO bank, demo repercussion of selecting horns Anti ice below red bug speed, acceleration to more than red bug selection of LVL2 and LVL3, deselecting icing AOA light.		
14.	Cruise FL 70, RT phraseology		
15.	Acceleration – deceleration, familiarization with PL positions Notch, Ramp and wall etc, decelerate back to TURB speed, initiate climb FL100		
16.	30° Bank turn with and without spoilers		
17.	Steep turn 180° (Left – Right) with and without spoilers		
18.	Descent, accelerate/decelerate in descent, use of CL 100% OVRD and normalize, ILS approach with FD and AP		

Instructor's Comments

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16.1.1.2 FBS 02

FBS: 02	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

PRE-SIM BRIEFING:

OBJECTIVES	To familiarize the pilot with ATR procedures through use of normal checklist. To develop the ability to maneuver the ATR. TO/LDG data card Orientation and introduction to aircraft systems in normal conditions.

CRM Objective	Crew Coordination and Communication

Exercises and Procedures
A/C electrically supplied by batteries

TRAINEE 1		PF	PM
1.	Safety checks before start up		
2.	Start Hotel mode on batteries		
3.	Preliminary cockpit preparation		
4.	System Preparation		
5.	Final cockpit preparation/before Taxi C/L – Taxi C/L - before Take-off C/L		
6.	Take Off – Climb sequence – After T/O C/L (several times)		
7.	SID, climb to FL 110		
8.	Cruise, acceleration, deceleration, 30° bank turn with configuration changes - AFCS utilization.		
9.	Arrival preparation (Weather, data card, arrival briefing)		
10.	Descent with 3°angle, see speed and Vs relation		
11.	ILS approach		
12.	Landing		
13.	After landing C/L		

TRAINEE 2		PF	PM
1.	Aircraft in Hotel Mode		
2.	Final Cockpit preparation / before Taxi C/L - Taxi C/L - before TO C/L		
3.	Take off – Climb sequence – After T/O C/L (several times)		
4.	SID, climb to FL 110		
5.	Cruise, acceleration, deceleration, 30° bank turn with configuration changes - AFCS utilization.		
6.	Arrival preparation (Weather, data card, arrival briefing)		

	TRAINEE 2	PF	PM
7.	Descent with 3° angle, see speed and Vs relation		
8.	ILS approach		
9.	Landing		
10.	After landing C/L		
11.	Parking C/L		
12.	Leaving the aircraft C/L		
13.	If time permitting, repositioning on final for some ILS without AP		

Note: Trainees must be thoroughly familiarized to the procedure of correct filling of TO/LDG

Data Card during Pre-Simulator briefing.

Instructor's Comments

NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	SIGNATURE OF TRAINEE

16.1.1.3 FBS 03
FBS: 03
TIME: 4 Hours
Name of trainee: _____

P- _____

LIC TYPE & NO _____

Date: _____

PRE-SIM BRIEFING
OBJECTIVES

 To familiarize the pilot with ATR procedures through use of normal checklist.
 To develop the ability to maneuver the ATR.
 Orientation and introduction to aircraft systems in normal conditions.

CRM Objective

Crew Coordination and Communication

Exercises and Procedures

A/C electrically supplied by batteries

TRAINEE 1		PF	PM
1.	Safety checks before start up		
2.	Start Hotel mode on batteries		
3.	Preliminary cockpit preparation		
4.	System Preparation		
5.	Final cockpit preparation/before Taxi C/L – Taxi C/L - before Take-off C/L		
6.	Take Off – Climb sequence – After T/O C/L (several times)		
7.	SID, climb to FL 110		
8.	Cruise, acceleration, deceleration, 30° bank turn with configuration changes - AFCS utilization.		
9.	Arrival preparation (Weather, data card, arrival briefing)		
10.	Descent with 3° angle, see speed and Vs relation		
11.	ILS approach		
12.	Landing		
13.	Take Off Abort – Dual DC Gen fault before V1		

TRAINEE 2		PF	PM
1.	Aircraft in Hotel Mode		
2.	Final Cockpit preparation / before Taxi C/L - Taxi C/L - before TO C/L		
3.	Take off – Climb sequence – After T/O C/L (several times)		
4.	SID, climb to FL 110		
5.	Cruise, acceleration, deceleration, 30° bank turn with configuration changes - AFCS utilization.		
6.	Arrival preparation (Weather, data card, arrival briefing)		

	TRAINEE 2	PF	PM
7.	Descent with 3°angle , see speed and Vs relation		
8.	ILS approach		
9.	Landing		
10.	Non extinguishable Engine Fire before V1		
11.	Evacuation		
12.	If time permitting, repositioning on final for some ILS without AP		

Instructor's Comments

NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	SIGNATURE OF TRAINEE

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16.1.1.4 FBS 04

FBS: 04 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

PRE-SIM BRIEFING

OBJECTIVES	To familiarize the pilot with ATR procedures through use of normal and abnormal checklist. Orientation and introduction to aircraft systems in abnormal conditions.

CRM Objective	Crew Coordination and Communication

Exercises and Procedures
A/C electrically supplied by DC GPU

TRAINEE 1		PF	PM
1.	Preliminary cockpit preparation		
2.	Engine / Flight control/AFCS test		
3.	Final Cockpit Preparation		
5.	Excessive ITT during start / No NH during Start		
6.	Before taxi C/L, Taxi C/L/Before T/O C/L		
7.	Take Off – Climb sequence – After T/O C/L		
8.	SID, climb		
9.	Emergency Descend, ILS Approach, Both Engine Go Around		
10.	Arrival preparation (weather, data card, briefing)		
11.	Electrical Failures (orientation) *DC Bus Fail *ACW Bus Fail *DC EMER Bus Fail *DC Essential Bus Fail *DC Standby Bus Fail *AC Bus Fail *Inverter Fail *Gen Fault *Dual DC Gen Fault		
12.	Hold – VOR approach, Both Engine Operative Go Around, Landing		
13.	Take off Engine Fire after V1		
14.	Single Engine Circuit		
15.	Visual Landing		
16.	Landing		
17.	Dynamic Engine Test / After Landing C/L		

TRAINEE 2		PF	PM
1.	Start Abnormality / No NH during start		
2.	Take off / climb sequence / After Take – off C/L		
3.	SID, climb		

TRAINEE 2		PF	PM
4.	Cruise, acceleration, deceleration and configuration changes without AP		
5.	Electrical Failures (orientation) * DC Bus Fail *ACW Bus Fail *DC EMER Bus Fail *DC Essential Bus Fail *DC Standby Bus Fail *AC Bus Fail * Inverter Fail Gen Fault *Dual DC Gen Fault		
6.	SGU Fault and CRT Fault Orientation		
7.	Arrival preparation (weather, data card, briefing)		
8.	Descent, Vectors for ILS, Both Engine Go Around		
9.	Hold – VOR approach,		
10.	Landing with Abnormal Landing Gear		
11.	Take off Engine Fire after V1		
12.	Single Engine Circuit		
13.	Visual Landing		
14.	After Landing C/L, Parking C/L, Leaving the aircraft C/L		

Instructor's Comments

☐ RECOMMENDED FOR FFS ☐ NOT RECOMMENDED FOR FFS		
NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	SIGNATURE OF TRAINEE

16.1.2 FFS

16.1.2.1 FFS 01

FFS: 01	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

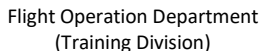
PRE-SIM BRIEFING:

OBJECTIVES	To develop pilot's skill in aircraft normal operations. To recognize stall characteristics and make prompt efficient recovery and strive for effective cockpit management

CRM Objective	Crew Communication and Checklist Use

Exercises and Procedures
A/C electrically supplied by batteries

TRAINEE 1 and 2 Alternately		PF	PM
1.	Safety check before start up		
2.	Preliminary cockpit preparation		
3.	No ITT During Start – Start in HOTEL Mode		
4.	Final cockpit preparation, before Taxi C/L, Taxi C/L		
5.	Take -off – climb sequence – after TO/CL		
6.	Cruise FL 80, TCAS activation and RT phraseology		
7.	Acceleration – deceleration		
8.	30° Bank turn with and without spoilers		
9.	Steep turn 180° (Left – Right) with and without spoilers		
10.	Stall in clean configuration / Flaps/15 – <i>gears</i> down / flaps 35° - <i>gears</i> down.		
11.	Unusual attitudes		
12.	Descent		
13.	ILS approach with FD and no AP – Go around procedure		
14.	Downwind for ILS approach without FD and AP – Landing		
15.	Take-off for ILS and circle to land on opposite runway		
16.	Go-around at 50 feet		
17.	PEC SGL CH (reset)		
18.	PEC FAULT		
19.	Visual pattern		
20.	Landing with Xwind > 10 kts		



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SIGNATURE OF
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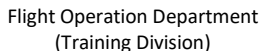
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TRAINEE

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16.1.2.2 FFS 02

PRE-SIM BRIEFING:

FFS: 02		TIME: 4 Hours	
Name of trainee: _____		P- _____	
LIC TYPE & NO _____		Date: _____	
OBJECTIVES	To familiarize the pilot with ATR procedures through use of normal check-list. To develop the ability to maneuver the ATR, maintain attitude, orientation and introduction normal conditions.		
CRM Objective	Communication in the cockpit		
Exercises and Procedures			
A/C electrically supplied by Batteries			
TRAINEE 1 and 2 Alternatively		PF	PM
1.	Safety checks before start up		
2.	Preliminary cockpit preparation		
3.	System preparation		
4.	Final cockpit preparation, engine start-up in hotel mode on batteries - No NH during start		
5.	Before Taxi C/L, Taxi C/L		
6.	Take-off – climb sequence – after TO/CL		
7.	Climb with optimum rate, level-off FL100		
8.	Stall in clean configuration		
9.	Stall in Landing Configuration		
10.	Steep turn 180° (Left – Right) with and without spoilers		
11.	Unusual attitudes		
12.	Descent		
13.	Cruise, Fuel Clog		
14.	Descent, Descent C/L, (surprise unusual attitude)		
15.	ILS approach		
16.	Go-around (end of ice accretion)		
17.	ADF approach		
18.	Landing, engine dynamic test		
19.	After landing C/L		
20.	Parking C/L, Shut down , leaving the aircraft C/L		



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[illegible]NAME OF
INSTRUCTOR

SIGNATURE OF
INSTRUCTOR

SIGNATURE OF
TRAINEE

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16.1.2.3 FFS 03

FFS: 03	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

PRE-SIM BRIEFING:

OBJECTIVES	To familiarize the pilot with ATR procedures through use of checklist. To develop the ability to maneuver the ATR. Introduction to Icing conditions Orientation and introduction to aircraft systems failures.

CRM Objective	Communication in the cockpit

Exercises and Procedures
A/C electrically supplied by DC GPU

	PF CM2	PF	PM
1. Cockpit Preparation			
2. Start problems –GUST LOCK not properly locked			
3. In Hotel Mode –NAC OVHT (reset)			
4. Engine 1 start – HOT Start (re-set)			
5. PACK 1 FAULT (reset)			
6. Take-off			
7. Cruise – DC GEN 2 FAULT (reset)			
8. ACW BUS 1 OFF (no ice accretion)			
9. Capt. EADI FAULT			
10. F/O EHSI FAULT			
11. ILS approach (composite mode) - Landing			
12. Take Off –AHRS 1 ROLL DRIFT after V1			
13. AHRS 1 FAULT (reset)			
14. SGU 2 FAIL (PF CM1)			
15. ILS approach – Landing			

	PF CM1	PF	PM
1.	Power Back Procedure		
2.	EEC Off effects on ground		
3.	PEC Off effects n ground		
4.	Take-off – ADU FAIL – Use of TCS – ALT HOLD		
5.	ACW BUS 1 OFF (with Ice accretion)		
6.	ILS approach – Landing		
7.	Take-off – LH Gear does not lock up (reset)		
8.	VOR/DME approach – NOSE GEAR UNLOCK light on overhead panel after extension. Landing		
9.	Take-off with tail badly de-iced, Heavy Tail (both CM1 and CM2)		
10.	Reset for Take-off		
11.	Take-off with Type II fluid (both CM1 and CM2)		
12.	Reset Take-off position after each take-off		
13.	Take-off with ELEVATOR JAM after rotation (both CM1 and CM2)		
14.	Landing with ELEVATOR JAM (both CM1 and CM2)		
15.	After Landing C/L – Parking C/L		

Instructor's Comments

NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	SIGNATURE OF TRAINEE

16.1.2.4 FFS 04
FFS: 04
Name of trainee: _____

TIME: 4 Hours
P- _____

LIC TYPE & NO _____

Date: _____

PRE-SIM BRIEFING

OBJECTIVES	To familiarize the pilot with ATR procedures through use of checklist. To develop the ability to maneuver the ATR. Orientation and introduction to aircraft systems failures.

CRM Objective	Decision making

Exercises and Procedures

A/C electrically supplied by DC GPU

	PF CM1	PF	PM
1. Start up, Abnormal Prop Brake during Prop Brake release			
2. Take-off			
3. Engine 1 flame out			
4. Engine restart			
5. Engine 1 OIL LOW PRESS			
6. Single engine ILS approach			
7. Go-around			
8. Freeze – Init takeoff			
9. Engine 1 <i>INEXTINGUISHABLE</i> FIRE, 10 knots before V1			
10. Rejected take-off, followed by emergency evacuation			
11. Re-set for take-off			
12. ENGINE EXTINGUISHABLE (2 bottles) after V1			
13. VOR/DME approach – no visual reference – Go -around			
14. Down wind – CM1 Incapacitation			
15. Landing by CM2			

	PF CM 2	PF	PM
1. Cockpit Preparation, Excessive ITT during Start			
2. Take Off			
3. ENG 1 FLAMEOUT			
4. Engine restart			
5. Excessive ITT			

	PF CM 2	PF	PM
6.	Single Engine ILS approach		
7.	Go-around		
8.	Freeze – Init Takeoff		
9.	ENG1 IN-EXTINGUISHABLE FIRE, 10 knots before V1		
10.	Rejected take-off, followed by emergency evacuation		
11.	Re-set for take-off		
12.	ENG EXTINGUISHABLE (2 bottles) after V1		
13.	VOR/DME approach – no visual reference – Go-around		
14.	Down wind – CM2 Incapacitation		
15.	Landing by CM 1		

Instructor's Comments

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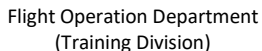
16.1.2.5 FFS 05

PRE-SIM BRIEFING

FFS: 05		TIME: 4 Hours
Name of trainee: _____		P- _____
LIC TYPE & NO _____		Date: _____
OBJECTIVES	To develop pilot's skill in aircraft normal operations. Recognize stall characteristics and make prompt efficient recovery and strive for effective cockpit management. Practice flying in Icing conditions	
CRM Objective	Crew Resource Management (LOFT) Decision making Errors (Self Critique)	

Exercises and Procedures			
A/C electrically supplied by DC GPU			
PF CM1		PF	PM
1.	WEAK DC GPU, Cockpit preparation		
2.	Taxi – Nose Wheel Steering INOP		
3.	Take-off ENG1 FLAMEOUT at V1, Abort		
4.	Engine Stall after V1, Take off		
5.	Single engine ADF approach (Weather below minimum)		
6.	Go Around – Visual pattern (Weather improved)		
7.	Landing		
8.	Take Off – FLAPS UNLOCK AFTER V1		
9.	Green HYD LOW PRESS		
10.	ADF approach (no flaps) – Landing		
11.	Rejected Take off due Engine 1 Flame out before V1		
12.	Take-off – ENG2 FLAME-OUT at V1		
13.	Down wind – Engine re-start with DC GEN2 remains FAULT		
14.	Then DC GEN 1 FAULT (BOTH DC GEN FAULT - Use TRU)		
15.	ILS approach – Landing		
16.	Take-off – AILERON JAM – visual pattern – Landing		

	PF CM2	PF	PM
1.	Take-off		
2.	INV FAULT		
3.	MFC 1A + 2A FAULT		
4.	ADF APPROACH – IMC Go Around - Weather improves		
5.	Visual pattern – Landing		
6.	Engine Stall after V1, Take off and land back		
7.	Take-off – ENG1 FLAME-OUT at V1		
8.	Down Wind – Engine re-start unsuccessful		
9.	ADF approach single engine		
10.	EGPWS activation – Go Around - visual pattern - Land		
11.	Rejected Take-off due pitch disconnect followed by pitch reconnection on ground		
12.	Take-off – Engine fire after V1 - Extinguishable		
13.	Down wind – Both EEC Fail, Landing		



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Instructor's Comments

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16.1.2.5 FFS 06

FFS: 06 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

PRE-SIM BRIEFING

OBJECTIVES	MEL DISPATCH: (MEL briefing, how to use it). UPTRIM INOP (briefing should present the 3 cases of ATPCS fail and related consequences)
CRM Objective	Crew Resource Management (LOFT) Decision making Errors (Self Critique)

Exercises and Procedures
A/C electrically supplied by DC GPU

PF CM1	PF	PM
1. Cockpit preparation – ATPCS FAIL (no UPTRIM - MEL)		
2. Take-off – Engine flame-out		
3. ILS approach – Go Around (single engine)		
4. Visual pattern – CM incapacitation		
5. Landing		
6. Take-off – Electrical smoke, Normalize		
7. Take Off Climb FL 200, PACK 1 Fault, Pack 2 Fault, both Pack Fault Normalize		
8. CRZ ENG Flame Out, Practice drift down, calculate S/E performance/fuel		
9. Excessive Cabin Delta Pressure		
10. Radar vector – ILS approach AP engaged		
11. Landing		
12. Take-off, Ceiling 150 ft		
13. One EEC Fail		
14. ILS approach – Go Around – Weather improving		
15. RNAV Approach, Landing		

PF CM2	PF	PM
1. Take-off - ceiling 150feet		
2. Blue HYD LO LEVEL, ILS approach, Go-around		
3. Green HYD LO PRESS after gear retraction – ceiling improves		
4. Visual pattern – Landing with Dual HYD failure		

5.	Take-off, FL 200, Engine Flame out		
6.	SE drift Down procedure without obstacles		
7.	Climb FL 200, SE drift down procedure with obstacles		
8.	Ice accretion AIRFRAME AIR BLEED FAULT		
9.	ILS approach - Go-around single engine		
10.	RNAV Approach		
11.	Landing		
12.	Parking- PROP BRK UNLOCK		
13.	If time permits, some single engine visual patterns and go-around		

Instructor's Comments

NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	SIGNATURE OF TRAINEE

16.1.2.7 FFS 07

FFS: 07	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

PRE-SIM BRIEFING

OBJECTIVES	To practice abnormal situations leading to decision making and human factor evaluation.

<u>CRM Objective</u>	Crew Resource Management (LOFT) Decision making Errors (Self Critique)

Exercises and Procedures

A/C electrically supplied by DC GPU

	PF CM1	PF	PM
1. Cockpit preparation –			
2. LO PITCH after Take-Off. Reposition			
3. Take-off – Engine Fire			
4. VOR approach – Go Around (single engine)			
5. Visual pattern			
6. Landing			
7. Take-off – Air-conditioning smoke, Normalize			
8. Engine Low Oil Pressure In Flight			
9. Radar vector – SE ILS approach AP disengaged			
10. Landing			
11. Take-off Unusual Attitude Recovery (for Repetition)			
12. Electrical Malfunction (for Repetition)			
13. ILS approach – Go Around – Weather improving			
14. Visual pattern			
15. PEC Fault at 700 feet AGL			
16. Landing			

	PF CM2	PF	PM
1. Take-off - ceiling 150 feet			
2. LO PITCH after Take-Off. Reposition			
3. Engine failure at 200 feet			

4.	ILS approach, SE Go-around		
5.	Engine Restart in Air		
6.	Visual pattern – Landing		
7.	Take-off		
8.	TCAS RA		
9.	Dual Gen Failure		
10.	Visual approach		
11.	EGPWS activation, go around		
12.	Visual pattern		
13.	Landing		
14.	Parking- PROP BRK UNLOCK		
15.	If time permits, some single engine visual patterns and go-around		

Instructor's Comments

16.1.2.8 FFS 08
FFS: 08
TIME: 4 Hours
Name of trainee: _____

P- _____

LIC TYPE & NO _____

Date: _____

PRE-SIM BRIEFING:
OBJECTIVES

Fine tuning of procedures during normal and abnormal situations

CRM Objective

Crew Resource Management (LOFT)

Decision making

Errors (Self Critique)

Exercises and Procedures

A/C electrically supplied by DC GPU

PF CM1		PF	PM
1.	Cockpit preparation		
2.	Take-off - ceiling 150feet , Blue HYD LO LEVEL		
3.	ILS approach, Go-around		
4.	Green HYD LO PRESS after gear retraction – ceiling improves		
5.	Visual pattern – Landing with Dual HYD failure		
6.	Take-off		
7.	Climb FL 200 – Emergency Descent with structure failure		
8.	Low Pitch in Flight – engine shut down		
9.	Standard Drift down procedure		
10.	ILS approach - PEC Fault at 300 feet AGL, Go-around single engine		
11.	Visual pattern		
12.	Landing		
13.	Parking		
14.	If time permits, some single engine visual patterns and go-around		

PF CM2		PF	PM
1.	Take-off - ceiling 150 feet		
2.	Take-off – Engine flame-out after V1		
3.	ILS approach – Go Around (single engine)		
4.	Visual pattern – CM incapacitation		
5.	Landing		

6.	Take-off – Engine Fire at 200 feet AGL		
7.	Radar vector – ILS approach AP disengaged		
8.	Landing		
9.	Take-off, Ceiling 150 ft		
10.	Wind shear, weather avoidance		
11.	ILS approach – below minima -Go Around – Weather improving		
12.	Visual pattern		
13.	PEC Fault		
14.	Landing		

Instructor's Comments

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16.1.2.9 FFS 09

FFS: 09	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

PRE-SIM BRIEFING

OBJECTIVES	Practice demanding exercises and emphasis on weak areas. Exercises at Instructors discretion and Use of abnormal CL. Task sharing during abnormalities

CRM Objective	Crew Resource Management, Task sharing. Decision making. Discussing course of action. Informing Crew and PAX, ATC & Company Errors (Self Critique)

Exercises and Procedures

A/C electrically supplied by DC GPU

	PF CM2	PF	PM
1.	Transit checks		
2.	Ground icing conditions		
3.	Taxi anti skid fault, reset		
4.	Take-Off in icing conditions, ENG over TQ after Vr		
5.	Flaps asymmetry on retraction, normalized		
6.	Climb cabin auto press fault, manual control		
7.	CRZ FL 210.... excess cabin delta press		
8.	Decent ENG failure		
9.	Vectors to intercept NDB QDM for entry in to holding pattern		
10.	NDB Let down to land		
11.	Instructors discretion:		
12.	Repeat weak exercises:		
13.	Landing gear gravity extension		
14.	Gear collapse on Landing, emergency evacuation		

	PF CM1	PF	PM
1.	Final Cockpit Preparation		
2.	NAC over heat during taxi		

3.	Take-Off ENG stall at VR - Normalized		
4.	Severe icing		
5.	Stall Recovery in clean configuration		
6.	Unreliable airspeed in CRZ, APP and landing		
7.	Take-Off ailerons jam, land back		
8.	Instructors discretion:		
9.	Repeat weak exercises:		
10.	NDB Let down Go-Around		
11.	Un-commanded 100% NP ENG 1		
12.	PROP Over Limit		
13.	Vectors for visual approach and landing		
14.	Parking normal brakes failure use EMER brakes		

Instructor's Comments

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16.1.2.10 FFS 10 (Pre-Rating)

FFS: 10 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

PRE-SIM BRIEFING

OBJECTIVES	Progress Control to determine whether or not the pilot is ready for the FS Type Rating Skill Test. Line Oriented Flight Training (LOFT). To facilitate transition from a pure simulator training environment to normal flight operations. Emphases will be on crew and cockpit management procedures.

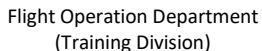
<u>CRM Objective</u>	Crew Resource Management (LOFT) Decision making Errors (Self Critique)

Exercises and Procedures

A/C electrically supplied by DC GPU

PF CM2 (KHI-WNS)		PF	PM
1.	Pre- Flight Checks / Engine Start Malfunctions		
2.	Take-off, Engine Fire After V1, RTO		
3.	Take Off, Engine Fire After V1, SID, Climb		
4.	Cruise – use weather radar (avoid storm)		
5.	TCAS event		
6.	Single Engine VOR Approach, Landing		
7.	Take Off, Climb FL 200, Emergency Descent		
8.	Stall Recovery		
9.	Engine Fire at 1000 Feet non-extinguishable), LDG, EMER evacuation		
10.	Take-off – Wind shear during Take Off – Visual pattern		
11.	EGPWS Activation		
12.	Engine Failure at 1500 feet AGL,		
13.	Upset Prevention Recovery Technique		
14.	Single Engine ILS, Auto Pilot Off, Landing		

PF CM1 (WNS-KHI)		PF	PM
1.	Pre- Flight Checks / Engine Start Malfunctions		
2.	Take-off, Engine Fire After V1, RTO		
3.	Take Off, Engine Fire After V1, SID, Climb		
4.	Cruise – use weather radar (avoid storm)		
5.	TCAS event		
6.	Single Engine VOR Approach, Landing		
7.	Take Off, Climb FL 200, Emergency Descent		
8.	Stall Recovery		
9.	Engine Fire at 1000 Feet (non-extinguishable), Landing , emergency evacuation		
10.	Take-off – Wind shear during Take Off – Visual pattern		
11.	EGPWS Activation		
12.	Engine Failure at 1500 feet AGL,		
13.	Upset Prevention Recovery Technique		
14.	Single Engine ILS, Auto Pilot Off, Landing		



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☐ RECOMMENDED ☐ NOT RECOMMENDED FOR PCAA MONITORED PPC

NAME OF INSTRUCTOR

SIGNATURE OF
INSTRUCTOR

SIGNATURE OF
TRAINEE

16.1.2.11 FFS 11 TYPE RATING SKILL CHECK

FFS: 11 Name of trainee: _____ LIC TYPE & NO _____	TIME: 04 Hours P- _____ Date: _____

	PF	PM
1. Cockpit preparation (Transit)		
2. Start abnormalities		
3. Taxing		
4. Take-off, engine fail at V1 (in-flight re-start possible)		
5. SID, Climb, TCAS Activation (RT Phraseology)		
6. DC BUS 2 OFF for Trainee 1 (restore)		
7. ACW BUS 1 OFF for Trainee 2 (restore)		
8. Cruise FL 250		
9. Emergency Descent		
10. Level-off FL 100		
11. Stall landing configuration		
12. Both HYD, SYS LOSS – No flaps landing		
13. Take-off elevator jam – Land		
14. Take-off engine fire at V1 (Extinguishable)		
15. Non precision approach, IMC		
16. EGPWS warning (simulate CFIT), Go-around, radar vectors for ILS approach		
17. Landing		
18. Rejected take-off (inextinguishable engine fire before V1)		
19. Emergency evacuation		

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16.1.2.12 FFS 12 – Total 06 Hours session

- (i) Landing Training
- (ii) Recognition of Unstable Approaches and Recovery

16.1.2.12.1 FFS 12 Landing Training

OBJECTIVES

The purpose of the landing training is to fulfill Type Rating and Endorsement Requirements and to prepare the trainee for Line Training and to become proficient in the Landing Technique.

- Varying wind conditions
- Takeoff / landing in wind shear
- Landing from “Steep” or “Shallow” Approaches
- Landing with one engine
- X-wind Landing technique

GENERAL

Simulator Instructor (Pilot) will conduct the landing training. One-hour briefing will precede landing training session

The emphasis will be on crew coordination throughout with minimum of distractions for flight profiles enabling the trainee’s concentration to be focused on performing the necessary procedures.

DURATION

Each trainee will receive **two hours** of landing training in the simulator before commencing line training. RHS training for captains on following items:

- (1) Takeoff Engine Failure at V1
- (2) ILS approach single engine
- (3) Single Engine go around
- (4) Single Engine ILS APP & landing/evacuation

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PREPARATION

The trainee will demonstrate ability to perform all normal procedures.

Trainees are expected to study and understand related sections in FCTM prior to landing training.

Instructor will provide take-off and landing data card.

AREAS TO BE COVERED

- Normal preflight procedures
- Use of automation
- Manual handling
- Lesson Plan

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LANDING TRAINING (SIMULATOR)

Pre-Session Briefing	Takeoff Data card / Bug Setting		
	Takeoff Technique		
	Effect of Head / Tail wind on APPR		
	Adverse Weather Landing Technique		
	Normal Landing Technique		
	X-Wind Landing Technique		
WEATHER		At Instructor's discretion	
Airport / Runway / Condition		OPKC 25R	DRY
RANK & NAME	DATE:	PLANNED TRG TIME	ACTUAL TRG TIME
P-		02:00 HOURS	
COMMENTS			
TRAINING AND CHECK AIRMAN	SIGNATURE	TRAINEE'S SIGNATURE	

LANDING TRAINING (SIMULATOR)

NAME _____ P- _____ DATE ____ / ____ / ____

POSITION: () CM1 () CM2						
	Number of Attempts			Extra Attempts		
TOW – 18,600 KGS						
WIND:						
HEAD WIND 20 KTS						
HEAD WIND 30 KTS						
X-WIND (LEFT - 45°) 30 KTS						
X-WIND (RIGHT - 45°) 30 KTS						
X-WIND (90°) LEFT 30 KTS						
X-WIND (90°) RIGHT 30 KTS						
WIND SHEAR:						
TAKEOFF (HEAD WIND TO TAIL WIND)						
TAKEOFF (TAIL WIND TO HEAD WIND)						
DOWN BURST (TAKEOFF AND LANDING)						
VISUAL APPROACHES (USING VASI)						
STEEP APPROACH (ROD>1000 FPM, NO VASI)						
SHALLOW APP. (ROD<300 FPM, NO VASI)						
Adverse Wx – Patchy Clouds/Rain						
SINGLE ENG APPROACH (#1 ENG FAIL):						
X-WIND (90°) LEFT 30 KTS						
SINGLE ENG APPROACH (#2 ENG FAIL):						
X-WIND (90°) RIGHT 30 KTS						
EXTRA LANDINGS (RIGHT SEAT FOR CAPTAIN)						
Note: 1. Each takeoff / landing will be marked with a “v” (tick). 2. A total number of about Twenty (20) landings will be practiced and marked in the boxes. Additional landings, if required, may be practiced if time permits. 3. The above landings practice is considered sufficient for a crew member to achieve a satisfactory standard. 4. Instructor to mention in comments if extra landings have been required.						
CAPTAIN'S RIGHT HAND SEAT TRAINING					PM	PF
1.	Engine Failure after V1					
2.	Single Engine go-Around					
3.	Single Engine Landing emergency Evacuation (Bomb on Board)					

Instructor's Comments

NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	SIGNATURE OF TRAINEE

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16.1.2.12.2 RECOGNITION OF UNSTABLE APPROACHES AND RECOVERY

OBJECTIVES

This training is to imbed the concept of different energy states and its impact on stable approach. Any attempt to correct unstable approaches at 1000 ft AAL. Go-around becomes mandatory then. **Different situations including visual approaches, steep slope approaches, speed restrictions on finals etc shall be practiced**

DURATION

One hour per trainee.

(in case of landing training and unstable approach practice session together, 6 hours session shall be planned)

GUIDELINES TO INSTRUCTOR

This briefing and training can be carried out together with the landing session or separately

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Lesson Plan

Pre-Session Briefing	Effect of Head/Tail Wind on APPR (INCR/REDUCED ROD)					
	Wind Correction on Landing					
	Normal Landing Technique					
	X-WIND Landing Technique					
	Recovery from Balked/bounced landing					
	Glide interception from above					
	Visual approach maneuver (example of OPQT to be simulated for both runway ends)					
Weather	At instructor's discretion					
Airport/Runway Condition	At instructor's discretion					
Performance	TOM 64 T		CONFIG 2		CG-	
RANK & NAME		P-NO	DATE	PLANNED TRG TIME: 02:00 hrs	ACTUAL TRG TIME:	TRG
TRAINING OR CHECK AIRMAN NAME		SIGNATURE		TRAINEE'S SIGNATURE		

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16.2 UNDER SUPERVISION LINE TRAINING

Objective :

The objective of Line Training is to allow the Trainee to practice Normal Line Procedures on the aircraft, and to achieve proficiency and confidence in these procedures. The intent of Line Training is to assist the Pilot in line, route and airport qualification (as defined in OM-D Chapter 14). Only routine operations in normal configuration are intended and no abnormal situations will be intentionally created.

The TRI/TRE will sign the aircraft load sheet and Flight Plan and take Full responsibility for the safety of the aircraft, crew and passengers and the integrity of the operating schedule.

General:

TRI/TRE must conduct himself in a professional, proficient and efficient manner in every aspect, so as to enhance the professional and executive capability of the Trainee.

Each exercise in the Line Training syllabus will be covered, but the TRI/TRE will only sign the particular exercise once a proficient level has been achieved. If a proficient level is not achieved, then it is required that amplifying comments be made to fully identify the trainee's deficiencies in the comments section, along with the exercise name. The Line Training Lesson Plan contains (*) items which are "For Discussion Only". The trainee must satisfactorily answer any questions on the items, to enable the instructor to sign the particular item.

TRI/TRE are authorized to conduct Line Training for the **first Six Takeoff and Landings**, in which emphasis will be laid on Rotation and Flare technique.

After the completion of the Six Takeoff and Landings, and achievement of a satisfactory Standard in Takeoff and Landing procedure, all TRI/TRE are authorized to complete the Line Training. If the first six takeoffs and Landings of a crew member is unsatisfactory, the case shall be referred to the Chief Pilot Crew Training for necessary action.

Preparation:

Trainees are expected to be familiar with SOP, FCOM PROCEDURES, FOM, OETBs and MEL application.

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The trainee is also expected to study and assimilate all the items in the Lesson Plan of Line Training Syllabus, before commencement of Line Training.

Any misapprehensions will be clarified by the TRI/TRE during Line Training.

Under Supervision Line Training:

Captains and First Officers undergoing transition training are required to be detailed for **50 Hours** of under supervision line flying with at-least ten (10) Sectors, whereas **Ab-initio** cadet pilots will undergo **70 Hours**, in which all exercises and discussion items in the Lesson Plan must be satisfactorily completed.

Captains:

On satisfactory completion of the exercises and items in the Lesson Plan, the Trainee will be put up for a "Pre-Final Command Route Check". Followed by a Command Route Check.

First Officers & Cadets:

On satisfactory completion of the exercises and items in the Lesson Plan, Trainee will be put up for a "Route Check ".

CAPTAIN/FO/CADET:		P-
Lesson Plan	Flight # / Date	Instructor's Name & Signature
1. FLIGHT BRIEFING		
Departure Wx		
En-route Wx		
Destination & Alternate Wx		
Prognostic Charts		
METAR/TAFOR		
Aerodrome Notams		
FIR/UIR Notams		
Company Routing		
Flight Level		
Air Time/Block Time Vs Reg. Fuel		
Fuel Requirements		
TOM Calculations		
ATC Flight Plan		
Alternate Requirements		
2. PRE-FIGHT		
Exterior Safety Inspection		
Cockpit Safety Inspection		
Preliminary Flight Deck Preparation		
Interior Inspection		
Exterior Inspection		
Flight Deck Preparation		
Emergency Equipment		
Cabin & Service door operation		
Cargo door Operation ELEC/MAN		
Cockpit Door locking system		
Emergency Exits		
3. DEPARTURE BRIEFING		
A/C status MEL restriction on OPS		
Wx / Runway Conditions		
VHF Comm. Frequencies in use		
Start & Push Back Up Procedure		
Taxi out Procedure & RWY in use		
SID in use, Required NDB, VOR		

CAPTAIN/FO/CADET:		P-
Lesson Plan	Flight # / Date	Instructor's Name & Signature
Noise Abatement Procedure (if any)		
Obstacle Requirements (MSA)		
Transition Altitude		
Restricted/Prohibited Areas		
Radio Failure Procedure		
4. DEPARTURE		
Use of Normal Checklist		
Engine Starting		
Before Push Back and Start		
Taxing		
Takeoff Flaps 15		
Rolling Takeoff		
Static Takeoff		
SID		
LNAV Departure		
Use of AFCS		
5. GNSS/GPS		
Initialization		
ROUTE Page		
LEG Page		
DEP/ARR Page		
HOLD Page		
PROG Page		
VNAV Page		
Diversions on Route 2		
Temporary Data Building (4 types)		
6. DESCENT		
Planning Time & distance procedure		
Acquisition of DEST & ALT weather		
Fuel Calculation		
Insufficient TOD Fuel/action		
Descent speed schedule		
Speed Control		
Use of vertical profile/ VTK error		
7. WEATHER		

CAPTAIN/FO/CADET:		P-
Lesson Plan	Flight # / Date	Instructor's Name & Signature
Adverse Weather Procedures		
Cold/ Hot Weather Operation		
WX Radar GND Check & Airborne Use		
Anti-Ice LVL2 & LVL3 Use		
Icing Speeds & AOA Lt		
Hotel Mode Limitations		
Visibility to RVR (CMV)		
8. PRECISION APPROACHES		
AFCS Approach (ILS)		
FDS Approach (ILS)		
Raw Data Appl ILS (Drift Indicator Use)		
STD/Decelerated APP		
9. NON PRECISION APPROACHES		
RNAV APP contained in database		
LNAV APP not in database(visual Ref)		
VOR Approach		
NDB Approach		
Visual Approach		
Circle to Land		
10. LANDINGS		
Flaps 25 Landing		
Flaps 35 Landing		
Cross Wind Landing Technique*		
GO AROUND Technique*		
11. PNF Duties MIN 2 Sectors		
I)		
II)		
12. ITEMS FOR DISCUSSION		
Pressurization*		
Un-pressurized Takeoff and Landing*		
No Bleed Takeoff / Landing*		
ATPCS OFF Procedure*		
ATPCS AF or UPTRIM off Procedure*		

CAPTAIN/FO/CADET:		P-
Lesson Plan	Flight # / Date	Instructor's Name & Signature
Narrow runway operation*		
ACW2 OFF Procedure*		
AHRS ERECT IN FLIGHT*		
JEPPESEN ATC and EMER Chapters*		
RNP*		
Single Engine Ceiling*		
Fuel calculation at destination*		
C.G position effects on A/C*		
TCAS*		
Descent Predictions*		
Consulting Graphs*		
MEL*		
Tail strike Causes*		
Electrical failures identifications*		
CRZ Engine Failure*		
System check procedure before QRH*		
13. CRM SKILLS		
a) Threat & Error Management		
b) Decision Making & Team work		
c) Communication Assertiveness		
d) Situational Awareness		

16.3 TYPE TECHNICAL REFRESHER SYLLABUS (LMS CONTENTS)

Chapter 16 Table 2

REFRESHER Winter -1		REFRESHER Winter -2	
PHASE	CONTENTS	PHASE	CONTENTS
PHASE-A OCT-DEC (ODD YEAR) Est. Time = 4:44:57	- Aircraft General - Auto-flight - Adverse Weather (Cold) - TCAS	PHASE-A OCT-DEC (EVEN YEAR) Est. Time = 5:41:57	- Navigation - Adverse Weather (Cold) - TCAS
PHASE-B JAN-MAR (EVEN YEAR) Est. Time = 3:37:32 + Extra Time	- Hydraulics - Fire Protection - AOC/OPS SPEC. - Recent Bulletins - UPRT - GRF	PHASE-B JAN-MAR (ODD YEAR) Est. Time = 5:00:47 + Extra Time	- Fuel - Landing Gear - Fire Protection - Flight Controls - AOC/OPS Spec. - Recent Bulletins - UPRT - GRF
REFRESHER Summer -1		REFRESHER Summer-2	
PHASE	CONTENTS	PHASE	CONTENTS
PHASE-A APR-JUN (ODD YEAR) Est. Time = 4:54:34	- Electrical - Air System - Communication - Ice and Rain Protection - Adverse Weather (Hot) - TCAS	PHASE-A APR-JUN (EVEN YEAR) Est. Time = 4:02:49	- Indicating and Recording system - Pneumatic System - Power plant system - Adverse Weather (Hot) - TCAS
PHASE-B JUL-SEP (ODD YEAR) Est. Time = 4:04:45 + Extra Time	- Aircraft Performance - AOC/OPS Spec. - Recent Bulletins - Crew Incapacitation - UPRT - GRF	PHASE-B JUL-SEP (EVEN YEAR) Est. Time = 4:04:45 + Extra Time	- AOC/OPS Spec. - Recent Bulletins - Aircraft Performance - Crew Incapacitation - UPRT - GRF

16.4 RECURRENT SIMULATOR TRAINING

16.4.1 JAN-JUNE (ALPHA)

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "ALPHA" (JAN - JUN)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	18,000 KGS	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	22,000 KGS	CRUISE ALTITUDE	FL110	MEL ITEMS	-
RESERVE FUEL	_____KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER (INSTRUCTOR'S DISCRETION)					
ATC: OPKC BADU1D BADUL J112 NH OPHN					
DESTINATION AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20		BRAKING ACTION MEDIUM	
WEATHER (INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: OPHN NH D→ MAKLI OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the instructor.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude. In order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS “ALPHA” (JAN - JUN)		DAY-1 (Training Session)	
DISCUSSION ITEMS			GRADE		REFERENCE
1.	OEBs				FCOM
2.	ATR CIRCULARS				PIA CREW APP
3.	DETERMINATION OF WIND COMPONENT				FCOM PER.1.6
4.	CALCULATION OF VAPP				QRH, FCOM, FCTM
5.	QRH PHILOSOPHY				FCOM, QRH
6.	SYSTEM CHECK, NON-RESET ITEMS				FCOM, SOP
7.	DISPATCH WITH ONE EEC OFF				MEL, AFM
SESSION DETAIL			PF	PM	
1.	COCKPIT PREPARATION				SOP, FCOM
2.	START MALFUNCTIONS (No NH)				QRH, FCOM, FCTM
3.	TAXI OUT –MALFUNCTION/RESET/MEL				FCOM, FCTM, MEL
4.	T. OFLAPS JAM VECTORS to LAND BACK				FCOM
5.	WINDSHEAR ON APP GA (For CAPTs), FLAPS RE-SET				FCTM, FCOM
6.	TCAS EVENT				FCOM
7.	STALL				FCOM, FCTM
8.	GPWS (For CAPTs)				FCOM, FCTM
9.	UPSET RECOVERY				FCOM, FCTM
10.	SYS FAULT (FUEL, ELEC)				QRH, FCOM
11.	LO PITCH IN FLT				QRH, FCOM
12.	S/E NPA (NH VOR/DME fail) NDB LETDOWN OPNH LDG				SOP, FCOM, FCTM
13.	RESET OPKC T/O EO> V1 SE ILS APP (GA @ DA)				QRH, FCOM, FCTM
14.	VECTOR TO BASE LEG, AP OFF SE ILS (LANDING)				QRH, FCOM, FCTM
15.	T/O ENG FIRE> V1 SE ILS APP (LANDING)				QRH, FCOM, FCTM
16.	T/O CAPT Incapacitation > V1 CM2 LAND BACK (For FOs)				OM-D, OM-A
17.	T/O ENG FAIL < V1 ABORT, BRAKE FIRE EVACUATE				SOP, FCTM, FCOM
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
R.H.S TRAINING FOR CAPTAINS			PF	PM	
1.	TAKEOFF ENGINE FAILURE AT V1				QRH, FCOM, FCTM
2.	SINGLE ENGINE GO-AROUND FROM DA (H)				QRH, FCOM, FCTM
3.	SINGLE ENGINE ILS APPROACH & LANDING				QRH, FCOM, FCTM
4.	PAX. EVACUATION				QRH, FCOM, FCTM
RESOURCE MANAGEMENT(M)			PF	PM	
CREW COMMUNICATION					SOP, OM
a.	BETWEEN COCKPIT & CABIN				SOP, OM
b.	DURING NORMAL PROCEDURES				SOP, OM
c.	DURING NON-NORMAL PROCEDURES				SOP, OM
d.	USE OF STANDARD TERMINOLOGY				SOP, OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – CAPTs)/ (Jul-Dec – FOs)			

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "ALPHA" (JAN - JUN)		DAY-2 (Check/Evaluation Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	18,000 KGS	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	22,000 KGS	CRUISE ALTITUDE	FL110	MEL ITEMS	-
RESERVE FUEL	_____KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ATC: OPKC BADU1D BADUL J112 NH OPNH					
DESTINATION AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20		BRAKING ACTION MEDIUM	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: OPNH NH D → MAKLI OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers from which Pilot's SOP adherence and skill level will be assessed. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, EFIS and TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired outcome for overall assessment of the check session.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "ALPHA" (JAN - JUN)		DAY- 2 (Check / Evaluation Session)	
NOTE: DATA CARD PREPARATION, DISCUSSION ITEMS AND BRIEFING SHALL BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
1.	ADVERSE WEATHER OPERATIONS				FCOM, FCTM
2.	USE OF MEL				MEL, OM
3.	MEMORY ITEMS				FCOM
4.	LIMITATIONS				FCOM
5.	STALL & RECOVERY				FCTM, FCOM
6.	GO-AROUND PROCEDURE / CANCEL APPROACH				FCTM, FCOM
7.	LANDING DISTANCE CALCULATIONS				QRH, FCOM
8.	MOST FREQUENT FDM EVENTS				FDM DATA
INSTRUCTOR DISCRETION			PF	PM	
1.	FINAL COCKPIT PREPARATION (STEP 3)				FCOM
2.	START MALFUNCTIONS (M1)				FCOM, FCTM
3.	TAXI OUT MALFUNCTION – RESET				FCOM, FCTM
4.	T/O IMC "EFIS COMP" in turn, checklist A/P re-engage				FCOM, QRH
5.	TCAS EVENT (M)				FCOM, FCTM
6.	GPWS EVENT (for CAPTs) (M2)				FCOM, FCTM
7.	CLEAN STALL WHILE TURNING – RECOVERY (M1)				FCOM, FCTM
8.	UPSET RECOVERY (M) - Company msg: LAND BACK				FCOM, FCTM
9.	APP WINDSHEAR G.A (for CAPTs) (M2)-vectors OPNH				FCOM, FCTM
10.	EN-RTE SYS FAULT HYD, AUTO PRESS (Restore)				QRH, FCOM
11.	CRZ ENG FLAME OUT AT 160 KTS near OPNH				SOP, QRH, FCOM
12.	OPNH VOR/DME APPROACH (M)				SOP, FCTM
13.	S/E GO AROUND (M)				FCOM, FCTM
14.	WX improve VISUAL S/E LDG OPNH (M)				FCOM, FCTM
15.	T/O OPKC ENG FAIL BW V1 & V2 (M)				FCOM, FCTM
16.	S/E ILS (A/P disconnect before interception of LOC) (M)				FCOM, FCTM
17.	ENGINE FIRE > V1 (M)				FCOM, FCTM
18.	PILOT INCAPACITATION (for F/O) (M1)				FCOM, OM-A, OM-D
19.	RTO (M)				SOP, FCOM, FCTM
20.	EVACUATION (M1)				QRH, OM
21.	MANUAL FLIGHT				FCOM, FCTM
22.	DISCONTINUED APPROACH MANEUVER				CPCT CIRCULAR
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
RESOURCE MANAGEMENT (M)					
CREW COMMUNICATION					SOP/OM
a. BETWEEN COCKPIT & CABIN					SOP/OM
b. DURING NORMAL PROCEDURES					SOP/OM
c. DURING NON-NORMAL PROCEDURES					SOP/OM
d. USE OF STANDARD TERMINOLOGY					SOP/OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – CAPts)/ (Jul-Dec – FOs)			

16.4.2 JULY-DEC (BRAVO)

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "BRAVO" (JUL - DEC)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	?	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	?	CRUISE ALTITUDE	FL 80	MEL ITEMS	ONE BRAKE C/F
RESERVE FUEL	KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPTU	RUNWAY IN USE 26R	BRAKING ACTION GOOD		
WEATHER .....(INSTRUCTOR'S DISCRETION)					
ATC: OPTU TU DIRECT GD OPGD					
DESTINATION AIRPORT	ICAO CODE OPGD	RUNWAY IN USE 24	BRAKING ACTION GOOD		
WEATHER .....(INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L	BRAKING ACTION GOOD		
ATC: OPGD GD J120 LOTAT LOTAT2A KC OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the instructor.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD		☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS “BRAVO” (JUL - DEC)		DAY-1 (Training Session)	
DISCUSSION ITEMS			GRADE		REFERENCE
1. DISCUSS AN INCIDENT/ACCIDENT FEEDBACK FROM TRAINEE HOW TO AVOID SIMILAR SITUATION					SAFETY INVESTIGATION REPORTS
2. A/C LIMITATIONS					FCOM
3. NARROW R/W REQUIREMENTS & LIMITATIONS					FCOM, SOP
4. WEAK GPU PROCEDURE					FCOM
5. DISPATCH WITH ONE BRAKE C/F					MEL, AFM, QRH
SESSION DETAIL			PF	PM	
1. COCKPIT PREPARATION					SOP, FCOM
2. START MALFUNCTIONS (Hot Start)					QRH, FCOM
3. TAXI OUT -NAC OVHT - RESET					QRH, FCOM
4. T.O WINDSHEAR (For F/Qs)					FCOM
5. TCAS EVENT					FCOM
6. STALL					FCOM, FCTM
7. GPWS (For F/Qs)					FCOM, FCTM
8. UPSET RECOVERY					FCOM, FCTM
9. SYS FAULT (ACW GEN FAULT, PITCH DISCONN) Restore					QRH, FCOM
10. LO PTCH IN FLT					QRH, FCOM
11. S/E NPA (NDB LETDOWN OPGD LDG)					SOP, FCOM, FCTM
12. RESET OPKC TO EO> V1 SE ILS APP (GA @ DA)					QRH, FCOM, FCTM
13. VECTOR TO BASE LEG, AP OFF SE ILS (LANDING)					QRH, FCOM, FCTM
14. TO ENG FIRE> V1 SE ILS APP (LANDING)EVACUATE					QRH, FCOM, FCTM
15. TO CAPT Incapacitation > V1 CM2 LAND BACK (For FOs)					OM-D, OM-A
16. TO FLAPS UNLK < V1 ABORT					SOP, FCTM, FCOM
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
R.H.S TRAINING FOR CAPTAINS			PF	PM	
1. TAKEOFF ENGINE FAILURE AT V1					QRH, FCOM, FCTM
2. SINGLE ENGINE GO-AROUND FROM DA (H)					QRH, FCOM, FCTM
3. SINGLE ENGINE ILS APPROACH & LANDING					QRH, FCOM, FCTM
4. PAX. EVACUATION					QRH, FCOM, FCTM
RESOURCE MANAGEMENT(M)			PF	PM	
CREW COMMUNICATION					SOP, OM
a. BETWEEN COCKPIT & CABIN					SOP, OM
b. DURING NORMAL PROCEDURES					SOP, OM
c. DURING NON-NORMAL PROCEDURES					SOP, OM
d. USE OF STANDARD TERMINOLOGY					SOP, OM
LEGEND					
M: Mandatory Item	M1:Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – CAPTs)/ (Jul-Dec – FOs)			

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "BRAVO" (JUL - DEC)		DAY- 2 (Check/Evaluation Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	?	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	?	CRUISE ALTITUDE	FL80		
RESERVE FUEL	___KGS	CRZ	Notch	MEL ITEMS	ONE BRAKE C/F
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPTU	RUNWAY IN USE 26R		BRAKING ACTION GOOD	
WEATHER .....(INSTRUCTOR'S DISCRETION)					
ATC: OPTU TU DIRECT GD OPGD					
DESTINATION AIRPORT	ICAO CODE OPGD	RUNWAY IN USE 24		BRAKING ACTION GOOD	
WEATHER .....(INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: OPGD GD J120 LOTAT LOTAT2A KC OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers from which Pilot's SOP adherence and skill level will be assessed. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, EFIS and TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired outcome for overall assessment of the check session.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD		☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "BRAVO" (JUL - DEC)		DAY- 2 (Check/Evaluation Session)	
NOTE: DATA CARD PREPARATION, DISCUSSION ITEMS AND BRIEFING SHALL BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
1. FUEL LEAK IN FLT					FCOM, QRH
2. MEMORY ITEMS					MEL, OM
3. LIMITATIONS					FCOM
4. DISPATCH WITH ONE BRAKE C/F					MEL, AFM, QRH
5. MOST FREQUENT FDM EVENTS					FDM DATA
SESSION DETAIL			PF	PM	
1. FINAL COCKPIT PREPARATION (STEP 3)					FCOM
2. START MALFUNCTIONS (M1)					FCOM, FCTM
3. TAXI OUT MALFUNCTION - RESET					FCOM, FCTM
4. T.O WINDSHEAR (For F/Os) (M2)					FCOM, QRH
5. TCAS EVENT (M)					FCOM, FCTM
6. GPWS (For F/Os) (M2)					FCOM, FCTM
7. LDG STALL WHILE TURNING - RECOVERY (M1)					FCOM, FCTM
8. UPSET RECOVERY (M)					FCOM, FCTM
9. ACW BUSS OFF DIVERT OPKC					FCOM, FCTM
10. EN-RTE FL210 PACK FAULT 1, BLEED FAULT 2					QRH, FCOM
11. EMER DESCENT (M1)					SOP, QRH, FCOM
12. S/E OPKC VOR/DME APPROACH (M)					SOP, FCTM
13. S/E GO AROUND (M)					FCOM, FCTM
14. WX improve VISUAL S/E LDG OPKC (M)					FCOM, FCTM
15. T/O KHI ENG FAIL B/W V1 & V2 (M)					FCOM, FCTM
16. S/E ILS (AP disconnect before interception of LOC) (M)					FCOM, FCTM
17. RTO (M)					FCOM, FCTM
18. ENGINE FIRE > V1 (M)					FCOM, FCTM
19. T/O ENG FAIL CROSSING ACC ALT (visual land back)					FCOM, SOP
20. MANUAL FLIGHT					FCOM, FCTM
21. DISCONTINUED APPROACH MANEUVER					CPCT CIRCULAR
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
RESOURCE MANAGEMENT (M)					
CREW COMMUNICATION					SOP/OM
a. BETWEEN COCKPIT & CABIN					SOP/OM
b. DURING NORMAL PROCEDURES					SOP/OM
c. DURING NON-NORMAL PROCEDURES					SOP/OM
d. USE OF STANDARD TERMINOLOGY					SOP/OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capts)/ (Jul-Dec – FOs)			

16.4.3 JAN-JUNE (CHARLIE)

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "CHARLIE" (JAN - JUN)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	
ZERO FUEL WT	?	TAKE OFF CG	25%	AT ACC ALT	
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	
TAKEOFF WT	?	CRUISE ALTITUDE	FL140	FROM FOS	
RESERVE FUEL	___KGS	CRZ	Notch	MEL ITEMS	
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ATC: MELO1F G208 PG					
DESTINATION AIRPORT	ICAO CODE OPPG	RUNWAY IN USE 31		BRAKING ACTION GOOD	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: PG G210 KC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome.					
6. The Sequence of Non-normal procedures/TOWG for subsequent Take-offs will be at the discretion of the instructor.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD		☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "CHARLI" (JAN - JUN)		DAY- 1 (Training Session)	
DISCUSSION ITEMS			GRADE		REFERENCE
1.	SHORT FIELD LDG TECHNIQUE				SOP
2.	TAIL STRIKE PREVENTION				SOP
3.	T/O BRIEFING				SOP
4.	T/O ENGINE OUT PLAN				FCOM, FCTM
5.	STICK PUSHER INHIBITION				FCOM, SOP
6.	DISPATCH WITH ATPCS OFF				MEL, AFM
7.	AERODROME MARKING & R/W LIGHTING				JEPPESSEN
SESSION DETAIL			PF	PM	
1.	COCKPIT PREPARATION				SOP, FCOM
2.	START MALFUNCTIONS (No ITT)				QRH, FCOM, FCTM
3.	TAXI OUT –MALFUNCTION/RESET				FCOM, FCTM, MEL
4.	TCAS EVENT				FCTM, FCOM
5.	STALL				FCTM, FCOM
6.	GPWS (For CAPTs)				FCTM, FCOM
7.	UPSET RECOVERY				FCTM
8.	SYS FAULT (HYD, FLT CONT.) RESTORE				FCOM
9.	LDG OPPG WAVEOFF AFTER TOUCHDOWN				FCOM, FCTM
10.	VISUAL APP WINDSHAR GA				FCOM, FCTM
11.	LO PITCH IN CLIMB				FCOM
12.	S/ENPA NDB LETDOWN OPPG LDG				SOP, FCOM, FCTM
13.	RESET OPPG TO EO> V1 (NO UPTRIM & AF)				SOP, FCOM, FCTM
14.	ENGOUT PLAN VISUAL LAND BACK OPPG				SOP, FCOM, FCTM
15.	RESET OPKCTO ENG FIRE> V1 SE ILS APP (LANDING)				QRH, FCOM, FCTM
16.	VECTOR TO BASE LEG. AP OFF SE ILS (LANDING)				QRH, FCOM, FCTM
17.	TO CAPT Incapacitation > V1 CM2 LAND BACK (For FOs)				OM-D, OM-A
18.	TO ENGFAL < V1 ABORT, SMOKE EVACUATE				QRH, FCOM
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
R.H.S TRAINING FOR CAPTAINS			PF	PM	
1.	TAKEOFF ENGINE FAILURE AT V1				QRH, FCOM, FCTM
2.	SINGLE ENGINE GO-AROUND FROM DA (H)				QRH, FCOM, FCTM
3.	SINGLE ENGINE ILS APPROACH & LANDING				QRH, FCOM, FCTM
4.	PAX. EVACUATION				QRH, FCOM, FCTM
RESOURCE MANAGEMENT(M)			PF	PM	
CREW COMMUNICATION					SOP, OM
a.	BETWEEN COCKPIT & CABIN				SOP, OM
b.	DURING NORMAL PROCEDURES				SOP, OM
c.	DURING NON-NORMAL PROCEDURES				SOP, OM
d.	USE OF STANDARD TERMINOLOGY				SOP, OM
LEGEND					
M: Mandatory Item	M1:Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – CAPTs)/ (Jul-Dec – FOs)			

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "CHARLI" (JAN - JUN)		DAY-2 (Check/Evaluation Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	
ZERO FUEL WT	18,000 KGS	TAKE OFF CG	25%	AT ACC ALT	
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG FROM FOS	
TAKEOFF WT	22,000 KGS	CRUISE ALTITUDE	FL140	MEL ITEMS	
RESERVE FUEL	____KGS	CRZ	Notch	-	
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ATC: MELO1F G208 PG					
DESTINATION AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20		BRAKING ACTION MEDIUM	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: PG G210 KC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers from which Pilot's SOP adherence and skill level will be assessed. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, EFIS and TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired outcome for overall assessment of the check session.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD		☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "CHARLI" (JAN - JUN)		DAY- 2 (Check/Evaluation Session)	
NOTE: DATA CARD PREPARATION, DISCUSSION ITEMS AND BRIEFING SHALL BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
1. CROSS WIND T/O & LANDING TECHNIQUE					PIA CREW APP, FCTM
2. A/C TECHNICAL					FCOM
3. LOST COMM					JEPPESEN
4. MOUNTAIN WAVE & JET UPSET THREATS					FCTM
5. USE OF WX RADAR, THUNDERSTORM AVOIDANCE/ MICRO BURST HAZARD					WX RDR MANUAL, FCTM
6. IFP NEW DEVELOPMENTS & AMMEDMENTS					JEPPESEN BRIEFING BULLETINS
7. MOST FREQUENT FDM EVENTS					FDM DATA
SESSION DETAIL			PF	PM	
1. FINALCOCKPIT PREPARATION (STEP 3)					FCOM
2. START MALFUNCTIONS (M1)					FCOM, FCTM
3. TAXI OUT MALFUNCTION - Restore					FCOM, FCTM
4. T/O IMC AHRS FAILURE IN TURN- Restore					FCOM, QRH
5. TCAS EVENT (M)					FCOM, FCTM
6. GPWS EVENT (for CAPTs) (M2)					FCOM, FCTM
7. CLEAN STALL WHILE TURNING - RECOVERY (M1)					FCOM, FCTM
8. UPSET RECOVERY (M)					FCOM, FCTM
9. PEC FAULT (CAPT) / UNEXP NP100% (F/O) - Restore					FCOM
10. EEC FAULT Company msg: LAND BACK OPKC					FCOM
11. APP WINDSHEAR G.A (for CAPTs) (M2)-vector OPPG					FCOM, FCTM
12. EN-RTE SYS FAULT(DUAL DC GEN FAULT) - Restore					QRH, FCOM
13. CRZ ENG OUT AT 180 KTS near OPPG					SOP, QRH, FCOM
14. OPPG S/E NDB APPROACH (M)					SOP, FCTM
15. SE GO AROUND (M)					FCOM, FCTM
16. WX improve VISUAL S/E LDG OPPG (M)					FCOM, FCTM
17. IDLE GATE STUCK AFTER LDG (by MEMORY)					SOP (Ch18 Pg14, QRH, FCOM
18. T/O OPPG ENG FAIL BW V1 & V2 – LAND BACK (M)					FCOM, FCTM
19. RESET KHI T/O ENGINE FIRE > V1 (M)					FCOM, FCTM
20. SE ILS (AP disconnect before interception of LOC) (M)					FCOM, FCTM
21. PILOT INCAPACITATION (for FO) (M1)					FCOM, OM-A, OM-D
22. RTO (M)					SOP, FCOM, FCTM
23. EVACUATION (M1)					QRH, OM
24. MANUAL FLIGHT					FCOM, FCTM
25. DISCONTINUED APPROACH MANEUVER					CPCT CIRCULAR
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
RESOURCE MANAGEMENT (M)					
CREW COMMUNICATION					SOP/OM
a. BETWEEN COCKPIT & CABIN					SOP/OM
b. DURING NORMAL PROCEDURES					SOP/OM
c. DURING NON-NORMAL PROCEDURES					SOP/OM
d. USE OF STANDARD TERMINOLOGY					SOP/OM
LEGEND					
M: Mandatory Item		M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – CAPts) / (Jul-Dec – FOs)		

16.4.4 JUL-DEC (DELTA)

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "DELTA" (JUL - DEC)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR 42/72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	?	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	?	CRUISE ALTITUDE	FL150	MEL ITEMS	EEC C/F
RESERVE FUEL	___KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPIS	RUNWAY IN USE 28R		BRAKING ACTION GOOD	
WEATHER..... (INSTRUCTOR'S DISCRETION WITH ICING CONDITIONS)					
ATC: OPIS INDE1H INDEK J121 LA OPLA					
DESTINATION AIRPORT	ICAO CODE OPLA (OPGT)	RUNWAY IN USE 36R(25)		BRAKING ACTION GOOD	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPIS	RUNWAY IN USE 28R		BRAKING ACTION GOOD	
ATC: OPLA LA J121 INDEK INDE1A OPIS					
SESSION OBJECTIVE					
1. The objective of the session is to practice normal and emergency procedures/maneuvers in icing conditions. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction, weather information and air traffic clearances, as far as possible conduct the flight on a real time basis. OPGT shall be practiced for North cleared crew and upon instructor's discretion.					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the instructor.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS “DELTA” (JUL - DEC)		DAY-1 (Training Session)	
DISCUSSION ITEMS			GRADE		REFERENCE
1.	DIFFERENCES ATR 42/72				FCOM
2.	LVO/ALL WEATHER OPS				FCOM, OM
3.	USE OF ANTI/DE ICE				FCOM
4.	VOLCANIC ASH HAZARD				FCOM, FCTM
5.	EEC C/F				MEL, AFM
6.	LATESET AMMEDMENTS/OEBs/CIRCULARS				CREW APP, FCOM
7.	SPECIAL OPS (if applicable)				FCOM, NORTH SOP
SESSION DETAIL			PF	PM	
1.	COCKPIT PREPARATION				SOP, FCOM
2.	START MALFUNCTIONS (No OIL PRESS)				QRH, FCOM, FCTM
3.	TAXI OUT-MALFUNCTION				FCOM, FCTM, MEL
4.	T. OUNRELIABLE AIRSPEED - RESTORE				FCOM
5.	TCAS EVENT				FCTM, FCOM
6.	STALL LANDING CONFIG				FCOM
7.	GPWS (for F/Qs)				FCOM, FCTM
8.	UPSET RECOVERY				FCOM, FCTM
9.	PACK 1 FAULT, BLEED 2 LEAK – EMER DESCENT				FCOM, FCTM
10.	SYS FAULT ENG OIL LO - CAPT (CCAS+LOCAL)				QRH, FCOM
11.	SYS FAULT ENG OIL LO – F/O (FALSE LOCAL)				QRH, FCOM
12.	S/ENPA – G/A OPLA (OPGT) [due APP Destabilize]				SOP, FCOM, FCTM
13.	VISUAL LAND BACK				FCTM, N. SOP
14.	RESET OPIS T/O ENG FAIL AT ACC ALT				QRH, FCOM, FCTM
15.	VECTOR TO BASE LEG. AP OFF SE ILS (LANDING)				QRH, FCOM, FCTM
16.	TO ENG FIRE> V1 SE ILS APP (LANDING)				QRH, FCOM, FCTM
17.	ENG FIRE UNEXT EVACUATE				OM-D, OM-A
18.	T/O WIND SHEAR (for F/Qs)				FCTM, FCOM
19.	T/O FLAPS UNLK < V1 ABORT				FCTM, FCOM
INSTRUCTOR DISCRETION			PF	PM	
1.					
R.H.S TRAINING FOR CAPTAINS			PF	PM	
1.	TAKEOFF ENGINE FAILURE AT V1				QRH, FCOM, FCTM
2.	SINGLE ENGINE GO-AROUND FROM DA (H)				QRH, FCOM, FCTM
3.	SINGLE ENGINE ILS APPROACH & LANDING				QRH, FCOM, FCTM
4.	PAX. EVACUATION				QRH, FCOM, FCTM
RESOURCE MANAGEMENT(M)			PF	PM	
CREW COMMUNICATION					SOP, OM
a.	BETWEEN COCKPIT & CABIN				SOP, OM
b.	DURING NORMAL PROCEDURES				SOP, OM
c.	DURING NON-NORMAL PROCEDURES				SOP, OM
d.	USE OF STANDARD TERMINOLOGY				SOP, OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – CAPTs)/ (Jul-Dec – FOs)			

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "DELTA" (JUL - DEC)		DAY- 2 (Check/Evaluation Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I/P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR 42/72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	16,000 KGS	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	20,000 KGS	CRUISE ALTITUDE	FL150	MEL ITEMS	-
RESERVE FUEL	___KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPIS	RUNWAY IN USE 28R		BRAKING ACTION GOOD	
WEATHER..... (INSTRUCTOR'S DISCRETION WITH ICING CONDITIONS)					
ATC: OPIS INDE1H INDEK J121 LA OPLA					
DESTINATION AIRPORT	ICAO CODE OPLA (OPGT)	RUNWAY IN USE 36R (25)		BRAKING ACTION MEDIUM	
WEATHER..... (INSTRUCTOR'S DISCRETION)					
ALTERNATE AIRPORT	ICAO CODE OPIS	RUNWAY IN USE 28R		BRAKING ACTION GOOD	
ATC: OPLA LA J121 INDEK INDE1A OPIS					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers from which Pilot's SOP adherence and skill level will be assessed in icing conditions . The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction, weather information and air traffic clearances, as far as possible conduct the flight on a real time basis. OPGT OPS shall be assessed for North cleared crew and upon instructor's discretion.					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, EFIS and TCS etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired outcome for overall assessment of the check session.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR		LIC. NO

FLIGHT OPERATIONS TRAINING DIVISION		ATR SYLLABUS "DELTA" (JUL - DEC)		DAY- 2 (Check/Evaluation Session)	
NOTE: DATA CARD PREPARATION, DISCUSSION ITEMS AND BRIEFING SHALL BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
1.	CROSS WIND LANDING & T/O TECHNIQUE				PIA CREW APP, FCTM
2.	A/C TECHNICAL				FCOM
3.	LOST COMM				JEPPESEN
4.	MOUNTAIN WAVE & JET UPSET THREATS				FCTM
5.	USE OF WX RADAR, MICRO BURST HAZARD				WX RDR MANUAL, FCTM
6.	IFP NEW DEVELOPMENTS & AMMEDMENTS				JEPPESEN BRIEFING BULLETINS
7.	MOST FREQUENT FDM EVENTS				FDM DATA
SESSION DETAIL					
1.	FINAL COCKPIT PREPARATION (STEP 3)				FCOM
2.	START MALFUNCTIONS (M1)				FCOM, FCTM
3.	TAXI OUT MALFUNCTION – RESET				FCOM, FCTM
4.	T/O ELEVATOR JAM – RESTORE				FCOM, QRH
5.	TCAS EVENT (M)				FCOM, FCTM
6.	GPWS EVENT (for F/Os) (M2)				FCOM, FCTM
7.	LDG CONFIGSTALL WHILE TURNING (M1)				FCOM, FCTM
8.	UPSET RECOVERY (M)				FCOM, FCTM
9.	EN-RTE SYS FAULT HYD, PEC (RESTORE)				FCOM, FCTM
10.	EMER DESCENT (M1)				QRH, FCOM
11.	ENG FLAME OUT IN DESCENT				SOP, QRH, FCOM
12.	S/E NPA OPIS APPROACH (M)				SOP, FCTM
13.	SE GO AROUND (M)				FCOM, FCTM
14.	WX improve VISUAL S/E LDG OPIS (M)				FCOM, FCTM
15.	T/O OPIS ENG. FAIL B/W V1 & V2 (M)				FCOM, FCTM
16.	SE ILS (AP disconnect before interception of LOC) (M)				FCOM, FCTM
17.	ENGINE FIRE > V1 (M)				FCOM, FCTM
18.	WINDSHEAR ON T/O (for FO) (M2)				FCOM, FCTM
19.	RTO (M)				SOP, FCOM, FCTM
20.	MANUAL FLIGHT				FCOM, FCTM
21.	DISCONTINUED APPROACH MANEUVER				CPCT CIRCULAR
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
RESOURCE MANAGEMENT (M)					
CREW COMMUNICATION					SOP/OM
a. BETWEEN COCKPIT & CABIN					SOP/OM
b. DURING NORMAL PROCEDURES					SOP/OM
c. DURING NON-NORMAL PROCEDURES					SOP/OM
d. USE OF STANDARD TERMINOLOGY					SOP/OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Cpts)/ (Jul-Dec – FOs)			

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16.5 SEAT CONVERSION TRAINING

16.5.1 SEAT CONVERSION SIMULATOR TRAINING

Day 1 Page 1 – OPKC-OPNH

NAME:		P.NO:		CREW POSITION	
DATE	LOCATION	TOTAL SESSION TIME	CAPT	F/O	
		04:00 HOURS	TIME PF	TIME PNF	
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	18,000 KGS	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	22,000 KGS	CRUISE ALTITUDE	FL110	MEL ITEMS	-
RESERVE FUEL	___ KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L	BRAKING ACTION GOOD		
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPKC BADU3C BADUL J112 NH OPNH					
DESTINATION AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20	BRAKING ACTION MEDIUM		
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L	BRAKING ACTION GOOD		
ATC: OPNH NH J112 KC OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level. Objective is to familiarize the trainee with handling and task sharing, also to correctly compute performance and data card. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor.					
5. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the instructor.					
6. Command qualities (where applicable) and crew co-ordination are part of the desired learning outcome.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR		LIC. NO	

Day 1 Page 2 – OPKC-OPNH

FLIGHT OPERATIONS TRAINING DIVISION		OPKC - OPNH		DAY- 1 (Training Session)	
DISCUSSION ITEMS		GRADE		REFERENCE	
1. OEBs				FCOM	
2. ATR CIRCULARS				PIA CREW APP	
3. DETERMINATION OF WIND COMPONENT				FCOM PER.1.6	
4. CALCULATION OF VAPP				QRH, FCOM, FCTM	
5. QRH PHILOSOPHY				FCOM, QRH	
6. SYSTEM CHECK, NON-RESET ITEMS				FCOM, SOP	
7. CROSS WIND LANDING & T/O TECHNIQUE				PIA CREW APP, FCTM	
SESSION DETAIL		PF	PM		
1. SAFETY CHECK BEFORE POWER UP, CHECK GPU VOLTAGE & AVAIL				SOP, FCOM	
2. PRELIMINARY COCKPIT PREPARATION, SYSTEM PREPARATION				FCOM	
3. FINAL COCKPIT PREPARATION, ENG START, BEFORE TAXI/T.O PRO.				FCOM, SOP	
4. TAKE-OFF, CLIMB PROCEDURE, AFTER T/O C/L				FCOM, SOP	
5. CRUISE FL100. ACCELERATE – DECELERATE, GET USE TO HAND POSITION ON PL POSITIONS NOTCH, RAMP AND WALL ETC. STEEP TURNS 180° BOTH SIDES				FCTM, FCOM	
6. ARRIVAL PREPARATION (WEATHER, DATA CARD, ARRIVAL BRIEFING)				FCOM, SOP	
7. TOD CALCULATIONS FOR 3° DESCENT				FCOM, SOP	
8. RADAR VECTORS FOR ILS APPROACH				FCOM, FCTM	
9. NORMAL LANDING				FCOM, FCTM	
10. REPOSITION ON FINALS FOR SOME ILS APP & LDG WITHOUT A/P				FCOM, FCTM	
11. REPOSITION ON FINALS FOR X-WIND ILS APP & LDG WITH A/P				QRH, FCOM	
12. REPOSITION ON FINALS FOR X-WIND ILS APP & LDG WITHOUT A/P				QRH, FCOM	
13. REPOSITION FOR X-WIND T/O VISUAL CIRCUIT LAND BACK				SOP, FCOM, FCTM	
14. REPOSITION FOR NORMAL T/O VECTORS FOR ILS APP RAW DATA				QRH, FCOM, FCTM	
15. IDLE GATE STUCK AFTER LANDING				QRH, FCOM	
16. AFTER LANDING PROCEDURE				QRH, FCOM, FCTM	
17. AFTER LANDING C/L, PARKING C/L AND LEAVING THE AIRCRAFT C/L				OM-D, OM-A	
INSTRUCTOR DISCRETION		PF	PM		
1.					
2.					
RESOURCE MANAGEMENT		PF	PM		
CREW COMMUNICATION				SOP, OM	
a. BETWEEN COCKPIT & CABIN				SOP, OM	
b. DURING NORMAL PROCEDURES				SOP, OM	
c. DURING NON-NORMAL PROCEDURES				SOP, OM	
d. USE OF STANDARD TERMINOLOGY				SOP, OM	

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Day 2 Page 3 – OPTU-OPGD

NAME:		P.NO:		CREW POSITION	
DATE		LOCATION		CAPT F/O	
TOTAL SESSION TIME		04:00 HOURS		TIME PF TIME PNF	
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	?	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	?	CRUISE ALTITUDE	FL 80	MEL ITEMS	ONE BRAKE C/F
RESERVE FUEL	___ KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPTU	RUNWAY IN USE 26R	BRAKING ACTION GOOD		
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPTU TU DIRECT GD OPGD					
DESTINATION AIRPORT	ICAO CODE OPGD	RUNWAY IN USE 24	BRAKING ACTION GOOD		
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPGD	RUNWAY IN USE 25L	BRAKING ACTION GOOD		
ATC: OPGD GD J120 LOTAT LOTAT2A KC OPGD					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level. Objective is to familiarize the trainee with handling and task sharing, also to correctly compute performance and data card. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor.					
5. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the instructor.					
6. Command qualities (where applicable) and crew co-ordination are part of the desired learning outcome.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR		LIC. NO	

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Day 2 Page 4 – OPTU-OPGD

FLIGHT OPERATIONS TRAINING DIVISION	OPTU - OPGD		DAY-2 (Training Session)	
DISCUSSION ITEMS	GRADE		REFERENCE	
1. DISCUSS AN INCIDENT/ACCIDENT FEEDBACK FROM TRAINEE HOW TO AVOID SIMILAR SITUATION			SAFETY INVESTIGATION REPORTS	
2. A/C LIMITATIONS			FCOM	
3. NARROW R/W REQUIREMENTS & LIMITATIONS			FCOM, SOP	
4. WEAK GPU PROCEDURE			FCOM	
5. DISPATCH WITH ONE BRAKE C/F			MEL, AFM, QRH	
SESSION DETAIL	PF	PM		
1. NO GPU AVAIL, SAFETY CHECKS, HOTEL MODE START			SOP, FCOM	
2. COCKPIT PREPARATION			FCOM, SOP	
3. START PROBLEMS ENG #1, EXCESSIVE ITT/NO NH			QRH, FCOM	
4. TAXI- ANTISKID FAULT, RESTORE			QRH, FCOM	
5. TAKE-OFF, FLAPS UNLK AFTER V1			FCOM	
6. EGPWS ACTIVATION			FCOM, FCTM	
7. STALL RECOVERY (CLEAN/LDG CONFIGURATION)			FCOM, FCTM	
8. TCAS EVENT			FCOM, FCTM	
9. STEEP TURNS			FCTM	
10. UNUSUAL ATTITUDE AND RECOVERY			FCOM, FCTM	
11. DC ESSENTIAL BUS/ DC EMER BUS ACW BUS FAIL (CM1:PNF)			FCOM	
12. EEC/PEC FAULT (CM2:PNF)			FCOM	
13. AUTO PRESS FAULT- MANUAL CONTROL (CM2:PNF)			FCOM	
14. EMERGENCY DESCENT			FCOM, FCTM	
15. ENG FLAME OUT DURING DESCENT, VOR/NDB APP			FCOM, SOP	
16. SINGLE ENG LANDING			FCOM, SOP	
17. AFTER LANDING PROCEDURE/CL, PARKING CL			FCOM	
18. VISUAL PATTERN, CM1 INCAPACITATION			FCOM, OM	
19. T/O ENG FAIL BETWEEN V1 AND V2			QRH, FCOM	
20. S/E ILS WITH AP OFF			SOP, FCOM, FCTM	
21. TAKEOFF- ENG FIRE BEFORE V1 - ABORT			FCOM, FCTM	
22. FIRE NOT EXTINGUISHABLE EMERGENCY EVACUATION			QRH, FCOM, FCTM	
INSTRUCTOR DISCRETION	PF	PM		
1.				
2.				
RESOURCE MANAGEMENT	PF	PM		
CREW COMMUNICATION			SOP, OM	
a. BETWEEN COCKPIT & CABIN			SOP, OM	
b. DURING NORMAL PROCEDURES			SOP, OM	
c. DURING NON-NORMAL PROCEDURES			SOP, OM	
d. USE OF STANDARD TERMINOLOGY			SOP, OM	

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Day 3 Page 5 – OPKC-OPNH

FLIGHT OPERATIONS TRAINING DIVISION		OPKC - OPNH		DAY- 3 (Training Session)	
NAME:		P.NO:		CREW POSITION	
				CAPT F/O	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	18,000 KGS	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	22,000 KGS	CRUISE ALTITUDE	FL110	MEL ITEMS	-
RESERVE FUEL	___ KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPKC BADU3C BADUL J112 NH OPNH					
DESTINATION AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: OPNH NH J112 KC OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level. Objective is to familiarize the trainee with handling and task sharing, also to correctly compute performance and data card. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction.; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor.					
5. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the instructor.					
6. Command qualities (where applicable) and crew co-ordination are part of the desired learning outcome.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD ☐ HIGH ☐ AVERAGE ☐ MARGINAL ☐ REMEDIAL REQUIRED					
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR		LIC. NO	

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Day 3 Page 6 – OPKC-OPNH

FLIGHT OPERATIONS TRAINING DIVISION		OPKC - OPNH		DAY- 3 (Training Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
1.	ADVERSE WEATHER OPERATIONS				FCOM, FCTM
2.	USE OF MEL				MEL, OM
3.	MEMORY ITEMS				FCOM
4.	LIMITATIONS				FCOM
5.	STALL & RECOVERY				FCTM, FCOM
6.	GO-AROUND PROCEDURE / CANCEL APPROACH				FCTM, FCOM
7.	LANDING DISTANCE CALCULATIONS				QRH, FCOM
SESSION DETAIL			PF	PM	
1.	FINALCOCKPIT PREPARATION (STEP 3)				FCOM
2.	START MALFUNCTIONS				FCOM, FCTM
3.	TAXI OUT MALFUNCTION - RESET				FCOM, FCTM
4.	T/O IMC EFIS. COMP IN TURN, CL AP RE-ENGAGE				FCOM, QRH
5.	TCAS EVENT				FCOM, FCTM
6.	GPWS EVENT				FCOM, FCTM
7.	CLEAN STALL WHILE TURNING - RECOVERY				FCOM, FCTM
8.	UPSET RECOVERY - Company msg: LAND BACK				FCOM, FCTM
9.	APP WINDSHEAR G.A - vectors OPNH				FCOM, FCTM
10.	EN-RTE SYS FAULT HYD, AUTO PRESS (Restore)				QRH, FCOM
11.	CRZ ENG FLAME OUT AT 160 KTS near NH				SOP, QRH, FCOM
12.	OPNH VOR/DME APPROACH				SOP, FCTM
13.	SE GO AROUND				FCOM, FCTM
14.	WX improve VISUAL S/E LDG OPNH				FCOM, FCTM
15.	T/O KHI ENG. FAIL B/W V1 & V2				FCOM, FCTM
16.	SE ILS (AP disconnect before interception of LOC)				FCOM, FCTM
17.	ENGINE FIRE > V1				FCOM, FCTM
18.	PILOT INCAPACITATION (for FO)				FCOM, OM-A, OM-D
19.	RTO				SOP, FCOM, FCTM
20.	EVACUATION				QRH, OM
INSTRUCTOR DISCRETION			PF	PM	
1.					
2.					
RESOURCE MANAGEMENT					
CREW COMMUNICATION					SOP/OM
a.	BETWEEN COCKPIT & CABIN				SOP/OM
b.	DURING NORMAL PROCEDURES				SOP/OM
c.	DURING NON-NORMAL PROCEDURES				SOP/OM
d.	USE OF STANDARD TERMINOLOGY				SOP/OM

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Day 4 Page 7 – OPKC-OPNH

FLIGHT OPERATIONS TRAINING DIVISION		OPKC - OPNH		DAY- 4 (Recommendation Session)	
NAME:		P.NO:		CREW POSITION	
				CAPT F/O	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	
ZERO FUEL WT	18,000 KGS	TAKE OFF CG	25%	AT ACC ALT	
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG FROM FOS	
TAKEOFF WT	22,000 KGS	CRUISE ALTITUDE	FL110	MEL ITEMS	
RESERVE FUEL	___ KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPKC BADU3C BADUL J112 NH OPNH					
DESTINATION AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: OPNH NH J112 KC OPKC					
SESSION OBJECTIVE					
1. Progress Control to determine if Pilot is ready for Final SIM Type Rating Check. Emphasis will be on situational awareness. The sequence and maneuvers / exercises may be changed and selected at the discretion of the instructor.					
2. The instructor will provide appropriate instruction, weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, TCS etc.) unless specifically restricted by the instructor. CRM objective will be Decision Making and identification of errors (Self Critique) in de-brief.					
5. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the instructor.					
6. Command qualities (where applicable) and crew co-ordination are part of the desired learning outcome.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 FPM when 1000 Ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR		LIC. NO

Day 4 Page 8 – OPKC-OPNH

FLIGHT OPERATIONS TRAINING DIVISION		OPKC - OPNH		DAY- 4 (Recommendation Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
1.	DISPATCH WITH ONE EEC OFF				MEL, AFM
2.	A/C TECHNICAL				FCOM
3.	LOST COMM				JEPPESEN
4.	MOUNTAIN WAVE & JET UPSET THREATS				FCTM
5.	USE OF WX RADAR, MICRO BURST HAZARD				WX RDR MANUAL, FCTM
6.	IFP NEW DEVELOPMENTS & AMMEDMENTS				JEPPESEN BRIEFING BULLETINS
SESSION DETAIL			PF	PM	
1.	PRE-FLIGHT CHECKS				FCOM
2.	ENGINE START MALFUNCTIONS				FCOM
3.	TAKEOFF- ENG 1 FLAME OUT BEFORE V1, ABORT				FCOM, SOP
4.	TAKEOFF – WIND SHEAR DURING TAKEOFF (FO)				FCOM, FCTM
5.	EGPWS ACTIVATION				FCOM, FCTM
6.	STEEP TURNS				FCTM
7.	TAKEOFF – ELEVATOR JAM, VISUAL PATTERN, LANDING (CAPT)				FCOM
8.	TCAS EVENT				FCOM, FCTM
9.	STALL (CLEAN/ LDG CONFIG)				FCOM, FCTM
10.	UNUSUAL ATTITUDE AND RECOVERY				FCOM, FCTM
11.	CLIMB FL170, EMERGENCY DESCENT				FCOM, FCTM
12.	ENGOIL LO PRESS, S/E VOR/NDB APPROACH				FCOM, FCTM
13.	TAKEOFF – ENG FLAME OUT AFTER V1, SID				FCOM, FCTM
14.	RADAR VECTORS FOR MANUAL ILS, GO-AROUND				FCOM, FCTM
15.	LDG GEAR UNSAFE INDICATION (AFTER EXTENSION), C/L, LANDING WITH ABNORMAL LANDING GEAR				QRH, FCOM
16.	TAKEOFF- ENG FLAME OUT ABOVE ACC ALT				SOP, FCOM, FCTM
17.	TAKEOFF – ENG FIRE AFTER V1 (NOT EXTINGUISHABLE), S/E LDG				FCOM, FCTM
18.	EMERGENCY EVACUATION				QRH
1.	VISUAL PATTERN, CM1 INCAPACITATION			PF	PM
1.					
2.					
RESOURCE MANAGEMENT					
CREW COMMUNICATION					
	a. BETWEEN COCKPIT & CABIN				SOP/OM
	b. DURING NORMAL PROCEDURES				SOP/OM
	c. DURING NON-NORMAL PROCEDURES				SOP/OM
	d. USE OF STANDARD TERMINOLOGY				SOP/OM

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Day 5 Page 9 – OPKC-OPNH

FLIGHT OPERATIONS TRAINING DIVISION		OPKC - OPNH		DAY- 5 (Check/Evaluation Session)	
NAME:		P.NO:		CREW POSITION CAPT F/O	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
VERSION	ATR72-500	ZFW CG	23%	THRUST REDUCTION	AT ACC ALT
ZERO FUEL WT	18,000 KGS	TAKE OFF CG	25%		
TOTAL FUEL	4,000 KGS	TAKEOFF FLAPS	15	ACC ALT 2/1 ENG	FROM FOS
TAKEOFF WT	22,000 KGS	CRUISE ALTITUDE	FL110	MEL ITEMS	-
RESERVE FUEL	___ KGS	CRZ	Notch		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPKC BADU3C BADUL J112 NH OPNH					
DESTINATION AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: OPNH NH J112 KC OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers from which Pilot's SOP adherence and skill level will be assessed. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (Autopilot, EFIS and TCS etc) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired outcome for overall assessment of the check session.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are required to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD ☐ HIGH ☐ AVERAGE ☐ MARGINAL ☐ REMEDIAL REQUIRED					
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR		LIC. NO	

Day 5 Page 10 – OPKC-OPNH

FLIGHT OPERATIONS TRAINING DIVISION		OPKC - OPNH	DAY- 5 (Check/Evaluation Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME				
DISCUSSION ITEMS			GRADE	REFERENCE
1.	SHORT FIELD LDG TECHNIQUE			SOP
2.	TAIL STRIKE PREVENTION			SOP
3.	T/O BRIEFING			SOP
4.	T/O ENGINE OUT PLAN			FCOM, FCTM
5.	STICK PUSHER INHIBITION			FCOM, SOP
6.	DISPATCH WITH ATPCS OFF			MEL, AFM
7.	AERODROME MARKING & R/W LIGHTING			JEPPESSEN
SESSION DETAIL				
1.	FINAL COCKPIT PREPARATION (STEP 3)			FCOM
2.	START MALFUNCTIONS (M1)			FCOM, FCTM
3.	TAXI OUT MALFUNCTION - RESET			FCOM, FCTM
4.	T/O IMC EFIS. COMP IN TURN, CL AP RE-ENGAGE			FCOM, QRH
5.	TCAS EVENT (M)			FCOM, FCTM
6.	GPWS EVENT (M2)			FCOM, FCTM
7.	CLEAN STALL WHILE TURNING – RECOVERY (M1)			FCOM, FCTM
8.	STEEP TURNS (M3)			FCTM
9.	UPSET RECOVERY (M)			FCOM, FCTM
10.	APP WINDSHEAR G.A (proceed OPNH) (M2)			FCOM, FCTM
11.	EN-RTE SYS FAULT HYD, AUTO PRESS (Restore)			QRH, FCOM
12.	CRZ ENG FLAME OUT AT 160 KTS near NH			SOP, QRH, FCOM
13.	OPNH VOR/DME APPROACH (M)			SOP, FCTM
14.	SE GO AROUND (M)			FCOM, FCTM
15.	WX improve VISUAL S/E LDG OPNH (M)			FCOM, FCTM
16.	T/O KHI ENG. FAIL B/W V1 & V2 (M)			FCOM, FCTM
17.	SE ILS (AP disconnect before interception of LOC) (M)			FCOM, FCTM
18.	ENGINE FIRE > V1 (M)			FCOM, FCTM
19.	PILOT INCAPACITATION (for FO) (M1)			FCOM, OM-A, OM-D
20.	RTO (M)			SOP, FCOM, FCTM
21.	EVACUATION (M1)			QRH, OM
INSTRUCTOR DISCRETION			PF	PM
1.				
2.				
RESOURCE MANAGEMENT (M)				
CREW COMMUNICATION				
a. BETWEEN COCKPIT & CABIN				SOP/OM
b. DURING NORMAL PROCEDURES				SOP/OM
c. DURING NON-NORMAL PROCEDURES				SOP/OM
d. USE OF STANDARD TERMINOLOGY				SOP/OM
LEGEND				
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capt) (Jul-Dec – FOs)		

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16.5.2 SEAT CONVERSION LINE TRAINING:

Objective:

The objective of this conversion Training is to allow the Trainee to practice Normal Line Procedures on the aircraft while acclimating him/her for change of Seat, moreover to achieve proficiency and confidence in the procedures respective to their area of responsibility. Only routine operations in normal configuration are intended and no abnormal situations will be intentionally created.

General:

Each exercise in this Training Program will be covered, but the Instructor will only sign off the particular exercise once a proficient level has been achieved. If proficiency is not achieved, then it is required that amplifying comments be made to fully identify the trainee's deficiencies in the comments section along with the exercise number.

The Training Lesson Plan contains asterisk (*) items, which are "For Discussion Only". The Instructor will sign off all such items only when proficient knowledge has been demonstrated by the trainee.

TRI/TRE will conduct this training and sign the aircraft load sheet/flight Plan and take full responsibility for the safety of the aircraft, crew and passengers and the integrity of the operating schedule.

Preparation:

Trainee is expected to be familiar with ATR SOP, FCOM, FCTM, MEL/AFM along with PIA OM. Cognitive understanding and application of these manuals will be expected from the trainee during the training.

The trainee is also expected to study and assimilate all the items in the syllabus before commencement of this Training Program.

Under Supervision Line Flying:

Pilots undergoing this training are required to complete Ten sectors or 25 Hours of under supervision line training whichever is more. All exercises and discussion items in the Lesson Plan must be satisfactorily completed.

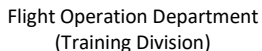
Upon satisfactory completion of the exercises and items in the Lesson Plan along with the stipulated Training above, the Trainee will be put up for a “Route Check”.

CAPT / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
1. FLIGHT BRIEFING				
A) Meteorology				
a) Departure ~~Wx~~				
b) Enroute/Emergency Alt. ~~Wx~~				
c) Destination & Alternate ~~Wx~~				
B) NOTAMS				
C) Flight Plan				
a) Routing, FIRs, Prohibited & Danger areas				
b) Flight Level				
c) Fuel Requirements				
d) TOW Calculations				
e) ATC Flight Plan				
f) Alternate Requirements				
2. PRE FLIGHT				
a) EMER equipment and Safety Checks				
b) Aircraft Documents				
c) Exterior Inspection				
d) Preflight Cockpit preparation and SYS check				
e) TO DATA Calculation				
f) GNSS setup / Route & FPL Loading				
3. DEPARTURE BRIEFING				
a) Aircraft technical status, MEL restriction on operations				
b) Required SID, RWY, NAV AIDS & FREQ in use				
c) Push back and Start up Procedures				
d) T/O brief and Engine out plan				
e) Obstacle Requirements (MSA)				
f) Com Failure Procedures				
g) Runway Conditions / ~~Wx~~ Conditions				
h) Restricted/Prohibited Areas				

CAPT / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
4. DEPARTURE/TAXI				
a)	Normal Checklist			
b)	Before Start Procedures			
c)	Hotel mode operation and Engine start limitation			
d)	Engine Start & After Start Procedures			
e)	Taxiing & Before T/O Procedures			
f)	Takeoff Flaps 15			
g)	SID – LNAV Departure			
h)	SID – V/L and HDG Departure			
5. ENROUTE PROCEDURES				
a)	GNSS Operation			
b)	Route Changes & Modifications			
c)	Determine ETA, Fuel Remaining for Destination and Alt/ ~~Enroute~~ Diversion			
d)	Determine extra hold fuel at destination (if avail)			
e)	WX acquisition for ~~Enroute~~ alternates			
f)	CRZ parameters			
g)	~~Enroute~~ NAVAIDs tuning			
6. DESCENT				
a)	Descent Preparations / Planning			
b)	Destination and Alt ~~WX~~			
c)	Insertion of STAR/APP GNSS preparation and checking, RAIM			
d)	Landing data and performance calculation			
e)	Approach Briefing			
f)	Minimum Fuel Advisory(*)			
g)	Descent Speed			
7. APPROACHES				
a)	Standard Approach			
b)	Speed Schedule			
c)	AFCS ILS Approach			

CAPT / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
d) Manual ILS Approach using F/D only				
e) Raw data ILS Approach				
d) RNAV/RNP Approach - Using LNAV				
8. LANDINGS				
a) Flaps 30 Landing				
b) Cross wind Ldg. Technique(*)				
9. PNF DUTIES (02 Sectors)				
a)				
b)				
10. ITEMS FOR DISCUSSION ONLY*				
a) Cabin Altitude - Auto controller fault				
b) Tail Strike circular ATR				
c) GNSS FAIL- V/L Navigation				
d) RNP/RNAV				
e) Engine fail at T/O after ACC ALT				
f) Jeppesen ATC and EMERGENCY				
g) Chart NOTAMS				
h) CRZ Engine Fail / Drift Down Procedures				
i) TCAS Event				
j) Determination of twin-engine ceiling 42/72				
k) TOGW with INOP items				
l) Visibility to RVR (CMV)				
m) Consulting performance graphs				
n) CFIT				
o) WX Radar GND Check & Airborne Use				
p) Narrow runway operation and limitations				
q) Short Field Landing technique - SOP				

CAPT / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
11. ADVERSE WEATHER PROCEDURES				
a)	Preparation for icing conditions (*)			
b)	~~Windshear~~ (*)			
c)	Anti/De-icing Procedure in air and on ground (*) – icing AOA Lt.			
d)	WX Radar GND Check & Airborne Use			
12. CRM SKILLS				
a)	Decision Making / Teamwork / Human Factors (*)			
b)	Communication/Assertiveness			
c)	Situational Awareness			
d)	Threat and Errors			



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16.6 DIFFERENCES

16.6.1 AIRCRAFT SYSTEMS

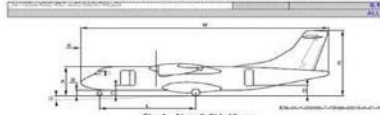
16.6.1.1 AIRCRAFT GENERAL

Dimensions and Ground Clearances.

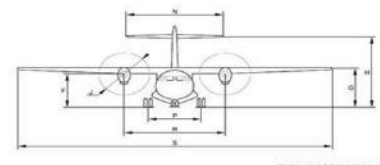
ATR42-500

ATR	DESCRIPTION	DSC 20.1
PK / 45 FCOM	DIMENSIONS AND AREAS DIMENSIONS	Page n°01

1 Aircraft Dimensions and Ground Clearances



- Fig. 1 : Aircraft Side View -



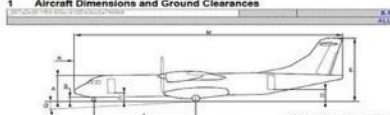
- Fig. 2 : Aircraft Front View -

	VERTICAL CLEARANCES (A → H)		
	OPERATING EMPTY WEIGHT	MAXIMUM RAMP WEIGHT	
	CG 16.4 %	CG 12 %	CG 36 %
A	3.22 m	3.15 m	3.21 m
B	0.59 m	0.52 m	0.58 m
C	1.17 m	1.1 m	1.15 m
D	1.46 m	1.30 m	1.33 m
E	7.75 m	7.66 m	7.55 m
F	3.13 m	3.06 m	3.08 m
G	3.76 m	3.69 m	3.68 m
H	7.01 m	6.92 m	6.81 m
a	-1.515 *	-1.446 *	-0.921 *
J		Ø 3.93 m	
K		1.68 m	
L		8.78 m	
M		22.67 m	
N		7.31 m	
P		4.1 m	
R		6.1 m	
S		24.57 m	

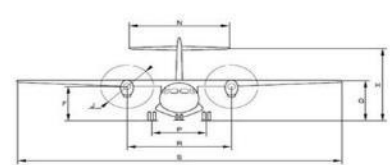
ATR72-500

ATR	DESCRIPTION	DSC 20.1
PK / 75 FCOM	DIMENSIONS AND AREAS DIMENSIONS	Page n°01

1 Aircraft Dimensions and Ground Clearances



- Fig. 1 : Aircraft Side View -



- Fig. 2 : Aircraft Front View -

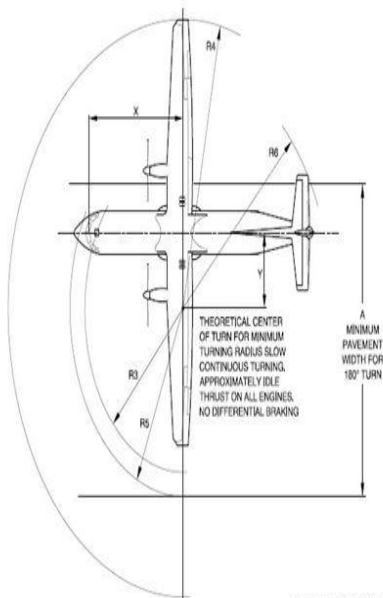
	VERTICAL CLEARANCES (A → H)		
	OPERATING EMPTY WEIGHT	MAXIMUM RAMP WEIGHT	
	CG 25 %	CG 14 %	CG 37 %
A	3.29 m	3.18 m	3.27 m
B	0.66 m	0.54 m	0.63 m
C	1.22 m	1.1 m	1.19 m
D	1.49 m	1.42 m	1.34 m
E	7.72 m	7.67 m	7.52 m
F	3.19 m	3.09 m	3.12 m
G	3.81 m	3.72 m	3.71 m
H	6.97 m	6.92 m	6.78 m
a	-1.011 *	-1.103 *	-0.95 *
J		Ø 3.93 m	
K		1.68 m	
L		10.79 m	
M		27.16 m	
N		7.31 m	
P		4.1 m	
R		6.1 m	
S		27.05 m	

Turning Capability on Ground

ATR42-500

2 Turning Capability on Ground

0.1	ALL



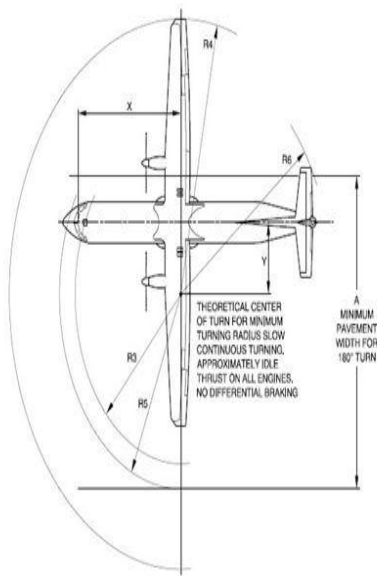
- Fig. 1 : Turning Capability -

TURN-ANGLE	X	Y	A	R3	R4	R5	R6
60°	8.78 m	5.07 m	17.75 m	10.3 m	17.4 m	11.7 m	15 m

ATR72-500

2 Turning Capability on Ground

0.1	ALL



- Fig. 1 : Turning Capability -

TURN-ANGLE	X	Y	A	R3	R4	R5	R6
60°	10.77 m	6.21 m	21.4 m	12.43 m	19.74 m	13.96 m	17.03 m

(a) Tail Prop and tail Bumper.

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ATR72-500

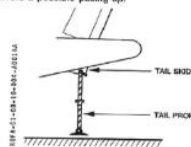
Not Installed

Not
Installed

 ATR 72 F.C.O.M.	AIRCRAFT GENERAL		1.00.10	
	GENERAL		P 4	001
				DEC 96

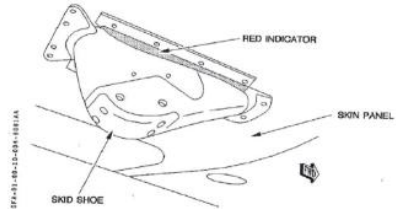
LOCATION OF THE TAIL PROP

On ground during passengers boarding/desembarking, the tail prop must be installed on the tail skid to avoid a possible pulling-up.



Note : When not used, the tail prop is stored in the rear unpressurized area of the aircraft (beyond the aft bulkhead).

TAIL BUMPER



At each walk ground, inspect skid shoe :

If it is stripped, check the red indicator :

- If this indicator does not show evidence of wear, aircraft can be flown.
- If this indicator shows evidence of wear, maintenance action is required.

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16.6.1.2 EMERGENCY EQUIPMENT

<u>ATR42-500</u>	<u>ATR72-500</u>
Not equipped with megaphone Portable Oxygen bottles(green)with Pressure gauge and recharge valve 1 bottle Passenger Oxygen masks equipped with valves, Bag and elastic strap 12 Protective breathing equipment(PBE) to supply 15 minutes pure oxygen with Hood, visor, speaking diaphragm and <u>oronasal</u> mask 2	Equipped with megaphone Portable Oxygen bottles(green)with Pressure gauge and recharge valve 2 bottles Passenger Oxygen masks equipped with valves bag and elastic strap. Location and number according to accommodation. 19 Protective breathing equipment (PBE) to supply 15minutes pure oxygen with hood, visor, speaking diaphragm and <u>oronasal</u> mask. 3

16.6.1.3 FLIGHT CONTROLS

<u>ATR42-500</u>	<u>ATR72-500</u>
Rudder Travel Limitation Unit(TLU)LOSPD Green light illuminates when Aircraft Speed<190Kts. Rudder Travel Limitation Unit(TLU)LOSPD Green light goes OFF when aircraft Speed>195Kts. TLU Guarded Switch on Overhead Panel (Manual Operation) > 195Kts - HI SPD TLU Guarded switched on Overhead Panel (Manual Operation) <190Kts- LO SPD Rudder TLULO speed light Illuminates RUDTLU LOSPD Flaps Control Lever Position 0°,15°,25°,35° Flaps Position Indicator 0°,15°,25°,35°	Rudder Travel Limitation Unit(TLU)LO SPD green light illuminates when Aircraft speed<180Kts. Rudder Travel Limitation Unit(TLU)LOSPD Green light goes OFF when aircraft Speed >185 ~~Kts~~. TLU Guarded Switched on Overhead Panel (Manual Operation) > 185Kts - HISPD TLU Guarded Switched on Overhead Panel (Manual Operation) <180Kts - LO SPD Rudder TLULO speed light Illuminates RUDTLU LOSPD OK OR LOSPD (According to Version) Flaps Control Lever Position 0°,15°,30° Flaps Position Indicator 0°,15°,30°

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16.6.1.4 FUEL SYSTEMS

	<u>ATR42-500</u>	<u>ATR72-500</u>
(a) Total Fuel Quantity.	4500Kg	5000Kg
(b) Refueling Point.	Under Right Wing	Rear Part of RH Main Landing Gear Fairing
(c) Complete Refueling Time.	15minutes	16minutes.

16.6.1.5 LANDING GEAR

ATR42-500	ATR72-500
Brake Temp Hot light illuminates when Temperature>160° C	Brake Temp Hot light illuminates when Temperature>150° C

16.6.1.6 ICE & RAIN PROTECTION

ATR42-500	ATR72-500
Deicing Distribution valves 6	Deicing Distribution valves 7

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16.6.1.7 POWER PLANT

	<u>ATR42-500</u>	<u>ATR72-500</u>
(a) Engine Installed.	PW127 E OR PW127M	PW127 F OR PW127M
(b) Power Settings.		
(i) RTO(Reserve Take Off)	2400SHP	2750SHP
(ii) MCT(Maximum Continuous Thrust)	2400SHP	2500SHP
(iii) TO	2160SHP	2475SHP
(iv) Climb	2160SHP	2192SHP
(v) Cruise	2132SHP	2132SHP
(c) Power Management.		
(i) M.C.T(Maximum Continuous Thrust)	Np (Prop RPM)=100% TQ(Torque) =100%	Np (Prop RPM) =100% TQ(Torque) =90.9%
(ii) CLB(Climb)	Np=82% TQ =109.7%	Np= 82% TQ =97.2%
(iii) CRZ(Cruise)	Np= 82% TQ =108.3%	Np= 82% TQ =94.5%
(d) ATPCS(Automatic Take Off Power Control System) Arming Conditions.	PWR MGT Sel on T.O. ATPCS Pb in Both PL >49° Both TQ >53% Arm green LT ON.	PWR MGT Sel on T.O. ATPCS Pb in Both PL >49° Both TQ >46% Arm green LT ON.
(e) ATPCS Triggering Condition.	One Torque below 21%	One Torque below 18%
(f) Torque Indicator markings.		
(i) Red dashed radial	121.8%	106.3%
(ii) Red dot	137%	120%

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16.6.1.8 IMPORTANT NOTES:

The ATR-72 aircraft is prone to tail strike at takeoff and landing phases. Crew is to be extra cautious during these phases of flight. The rotation during takeoff should be slow and progressive and initially pitch should not be more than **8 degrees**.

PM is to monitor the Pitch and call “**PITCH PITCH**” whenever pitch reaches 8-degree threshold.

Tail Prop shall always be installed when aircraft is parked. Captains are to ensure that Tail Prop is installed before Boarding and Off Loading of Pax at departure and destination airports. In case, if only 07 Pax move to the rear of the aircraft, without Tail Prop installed, **aircraft tail can touch the ground**.

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CHAPTER 17: A-320 TRAINING SYLLABI:

17.0 TRANSITION TRAINING

17.0.1 TYPE TECHNICAL GROUND COURSE

OBJECTIVE:

The primary object of the LMS program is to provide flight crew members with the necessary knowledge for understanding the basic functions of aircraft systems, the use of individual system components, integration of the aircraft systems, the understanding, application, performance and the procedures on the use of safety equipment.

Upon completion of the CBT program (LMS), the trainee will be sufficiently prepared to enter the FBS/FFS Training.

ELEMENTS:

This training will consist of the followings:

- Computer based training (CBT) program utilizing Learning Management System
- Fixed Based Simulator (FBS) Training
- Full Flight Simulator (FFS) Training
- Low Visibility Operations - Cat-I Training
- Landing Training
- Line Training

DOCUMENTATION:

1. Flight Crew Operating Manual
2. Checklists Normal / Abnormal (QRH)
3. Flight Crew Training Manual
4. Minimum Equipment List
5. Weight and Balance
6. TCAS II Booklet
7. Operations Engineering Technical Bulletin / Operations Engineering Information Bulletin.

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17.0.1.1 CBT PROGRAM (LMS):

OBJECTIVE:

The primary object of the LMS program is to provide flight crew members with the necessary knowledge for understanding the basic functions of aircraft systems, the use of individual system components, integration of the aircraft systems, the understanding, application, performance and the procedures on the use of safety equipment.

Upon completion of the CBT program (LMS), the trainee will be sufficiently prepared to enter the FBS/FFS Training.

17.0.1.2 INSTRUCTOR QUALIFICATION

This Training will be supervised/conducted by the qualified Instructors as defined by the PCAA for assisting the pilots and supplementing through lectures when required either through distance learning or classroom training.

17.0.1.3 TRAINING AIDS:

The following Training Aids will be used in this Training Program:

- Personal Laptop/Computer/I Pad and a student account on LMS
- Transparencies where necessary Cockpit illustration panel charts
- Projector (if required)
- White Board / Marker, Pens

17.0.1.4 COURSE DURATION:

The duration of the training program is 20 working days (14 Days on LMS, Day 15 Exam & Review on LMS in classroom, Day 16 Takeoff Performance in classroom, Day 17 Flexible Takeoff (NavBlue) classroom/online, Day 18 Performance NavBlue classroom/online Day 19/20 SEP in classroom).

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17.0.1.5 DAY WISE COURSE BREAKUP:

Each system will be covered through a Computer Based Training (LMS) presentation covering following topics:

- Controls and Indicators
- System Description and Schematic
- Normal and non-normal procedures
- Supplementary procedures
- MEL provisions and DDG procedures

Chapter 17 Table 1

DAY	TOPICS		MODE
Day 1	Aircraft General - Doors	- Lights - Cockpit Windows	LMS
Day 2	ECAM - Description - Indications on E/WD, SD - Sequence - Advisory Table	- Use of Summaries - OEB Reminder - Controls - Emergency/Abnormal Procedures	LMS
Day 3	Electrical - General Description - Generation of Electrical Power - Operations	- Abnormal Configurations - Control and Indicators - Emergency/Abnormal Procedures	LMS
Day 4	Pneumatics - General Description - Engine Bleed System - APU Bleed Air Supply - Cross Bleed - Leak Detection - Operation Following Failures - Control and Indicators	- Emergency/Abnormal Procedures Air conditioning - General Description - Main Components - Temperature and Flow Regulations - System Operation under failure conditions - Emergency/Abnormal Procedures	LMS

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DAY	TOPICS		MODE
Day 5	Pressurization - General Description - Main components - Automatic Operation - Manual Operation - Ditching - Control and Indicators - Emergency/Abnormal Procedures Ventilation	- General Description - Main components - Avionics Normal operation - Avionics abnormal operation - Battery - Lavatory and Galley - Control and Indicators - Emergency/Abnormal Procedures	LMS
Day 6	Fuel - General Description - Tanks - Main components - Engine Feed - APU Feed - Recirculation system - Refueling & Defueling - Fuel Quantity Indication system - Emergency / Abnormal Procedures	Ice & Rain Protection - General Description - Wing Anti Ice - Engine Anti Ice - Window Heat - Probes Heat - Rain Removal - Ice Detection System - Control and Indicators - Emergency/Abnormal Procedures	LMS
Day 7	Hydraulics - General Description - Generation - Distribution - Control and Indicators - Emergency/Abnormal Procedures	Landing Gear - System Interface - Interaction between Landing Gear & Aircraft System - Nose Wheel Steering - Brake & Anti Skid - Emergency/Abnormal Procedures	LMS
Day 8	Power Plant - General Description - Generation - FADEC - Thrust control system - Distribution	- Fuel System - Oil System - Air Bleed System - Thrust Reverser System - Ignition and Starting System - Emergency/Abnormal Procedures	LMS
Day 9	Navigation	- Radio Navigation	LMS

DAY	TOPICS		MODE
	- ADIRS Description - GPS Description - Standby Instruments	- Radio Altimeter - Control & Indicators - Emergency / Abnormal Procedures	
Day 10	Fire Protection - General Description - Engine & APU - Avionics Bay - Lavatory - Cargo Compartment - Control and Indicators - Emergency/Abnormal Procedures	APU - General Description - Main Components - Control & Indicators - Emergency / Abnormal Procedures - Brake & Anti Skid - Emergency/Abnormal Procedures	LMS
Day 11	Flight Controls - General Description - Basic Principle - Control Surfaces - Computer Architecture - Pitch Control - Roll Control - Speed Brakes & Ground Spoilers	- Yaw Control - Flight Control System Normal Law - General Description - Pitch mode (Ground Mode, Flight Mode, Flare Mode) - Lateral Control (Normal Law) - Sideslip Target - Aircraft Trimming	LMS
Day 12	Flight Controls - Protection - Flight Control Law Reconfiguration - Alternate Law - Alternate Law without Reduced Protection - Direct Law	- Abnormal Attitude Law - Mechanical Back-Up - Stick Stick - Flaps & Slats - Control & Indications - Emergency & Abnormal Procedures	LMS
Day 13	Electronic Flight Instrument System (EFIS) - General Description - Indications on PFD	- Indications on ND - EFIS Controls - Clocks - Control & Indicators - Flight Recorders	LMS
Day 14	Auto Flight - System Presentation	- Flight Management - Operation Rules	LMS

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DAY	TOPICS		MODE
	- Flight Control Unit - Flight Mode Annunciator - Auto Thrust	- Guidance Principles - Emergency & Abnormal Procedures	
Day 15	- Exam	- Review	LMS
Day 16	Takeoff Performance		Classroom
Day 17	Flexible Take off (NavBlue)		Classroom /Online
Day 18	Climb Performance Cruise Performance Holding Performance Descent Performance Approach Performance NavBlue	•Go Around Performance •Flight Planning/Diversion •One Engine Inoperative Performance •MEL/CDL	Classroom /Online
Day 19	SEP		Classroom
Day 20	SEP		Classroom

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17.1 TRANSITION TRAINING SIMULATOR

17.1.1 FIX BASED SIMULATOR (FBS)

17.1.1.1 FBS 01

FBS: 01 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

INSTRUCTOR WILL INITIALIZE AT THE GATE AND PERFORM QUICK COCKPIT PREPARATION

TRAINING EXERCISES	PF	PNF
1. SEAT & ARM REST ADJUSTMENT		
2. FLIGHT DECK LIGHTING		
3. FLY SMART USE		
4. FMGS PRESENTATION		
5. NORMAL TASK SHARING & BRIEFING		
6. EFIS & FCU		
7. PRELIMINARY COCKPIT PREPARATION		
8. COCKPIT PREPARATION		
9. FMS PREPARATION		
10. BEFORE PUSH BACK		
11. ENGINE START		
12. AFTER START		
13. TAXI		
14. TAKE-OFF		
15. CLIMB FL250		
16. DIRECT TO FUNCTION		
17. CRUISE		
18. CRUISE FMA REVIEW		
19. DESCENT PREPARATION		
20. DESCEND TO 3000.		

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TRAINING EXERCISES	PF	PNF
21. ILS APPROACH R/W 25L OPKC		
22. GO AROUND AT MINIMUM		
23. REPOSITION ILS 25L OPKC		
24. DIVERSION TO ALTERNATE OPNH		
25. ILS APP		
26. AUTOLAND		
27. AFTER LANDING		
28. PARKING		
29. SECURE		

Instructor's Comments

NAME OF INSTRUCTOR	SIGNATURE OF INSTR	SIGNATURE OF TRAINEE

17.1.1.2 FBS 02

FBS: 02	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

TRAINING EXERCISES	PF	PNF
1. FCU & AUTO FLT SYSTEM INTRODUCTION		
2. DISCUSSION OF AUTO FLIGHT MODES AND AUTO THRUST		
3. TRANSIT COCKPIT PREPARATION		
4. SYSTEM DISPLAY (SD) PAGES REVIEW		
5. GROUND SPEED MINI		
6. STANDARD CALLS & EMERGENCY BRIEFING		
7. INTRODUCTION TO NORMAL PROCEDURES		
8. FMS PREPARATION		
9. BEFORE PUSH BACK		
10. ENGINE START		
11. AFTER START		
12. TAXI		
13. TAKE-OFF		
14. CLIMB FL250		
15. DIRECT TO FUNCTION		
16. CRUISE		
17. CRUISE FMA REVIEW		
18. DESCENT PREPARATION		
19. DESCEND TO 3000.		
20. ILS APPROACH R/W 25L OPKC (EARLY STABILIZE)		

[illegible]

NAME OF INSTRUCTOR

SIGNATURE OF INSTR

SIGNATURE OF
TRAINEE

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17.1.1.1 FBS 03

FBS: 03 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

INSTRUCTOR WILL INITIALIZE AT THE GATE

TRAINING EXERCISES	PF	PNF
1. ECAM PHILOSOPHY & HANDLING		
2. MEL USE & EQRH		
3. ABNORMAL TASK SHARING		
4. BEFORE START / ENG START / AFTER START		
5. TAXI & BEFORE TAKE OFF		
6. TAKE OFF WITH PACKS ON		
7. CLIMB MODE (FMGS)		
8. CRUISE MODE (FMGS)		
9. A/THR DISCUSS/DEMO LOGIC		
10. AC BUS 2 FAULT		
11. BLEED FAULT		
12. GEN FAULT		
13. HYD G LOW LEVEL		
14. DESCENT PREPARATION		
15. FMGS SET -UP		
16. ILS APP		
17. AUTO LAND		
18. AFTER LANDING		
19. PARKING		
20. SECURING A/C		



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Instructor's Comments

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17.1.1.4 FBS 04

INSTRUCTOR WILL INITIALIZE AT THE GATE AND PERFORM QUICK COCKPIT

FBS: 04	TIME: 4 Hours
Name of trainee: _____	P- _____
LIC TYPE & NO _____	Date: _____

PREPARATION

TRAINING EXERCISES	PF	PNF
1. CROSS REFERENCE TABLE (NPA/RNAV)		
2. SUPP PROCEDURE & TASK SHARING		
3. ENG START WITH AIR STARTER/CROSS BLEED		
4. T/O – PARKING BRAKE ON WITH T/O THRUST		
5. CLIMB 9000ft SYSTEM PAGES REVIEW		
6. DISPLAY UNIT FAIL-Restore		
7. ELEC DC BUS FAULT-Restore		
8. CAB PRESS SYS1 FAULT then CAB PRESS SYS2 FAULT-Restore.		
9. HYD B RSVR OVHT		
10. APU FIRE-Restore		
11. ECAM ADVISORY (IDG OVERHEAT/CPC)		
12. ENG FIRE-Restore		
13. AFT CARGO SMOKE-Restore		
14. AIR L WING BLEED LEAK-Restore		
15. NAV ADR 2+3 FAULT-Restore		
16. DESCENT PREPARATION		
17. FLT/CTL (WTB ON) SLATS LOCKED-Restore		
18. FLT/CTL FLAPS FAULT-Restore		
19. NPA (RNP 25L FINAL APP)		
20. AROUND		
21. ILS AUTOLAND		

Note: In all non-normal situations and emergencies, Instructor must introduce the concept of Facts Options Risks Decision Execution Checklist (FORDEC) & Nature Intentions Time Special Briefing (NITS).

Instructor's Comments

[illegible]

17.1.1.5 FBS 05

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INSTRUCTOR WILL INITIALIZE AT THE GATE

FBS: 05 Name of trainee: _____		TIME: 4 Hours P- _____	
LIC TYPE & NO _____		Date: _____	

TRAINING EXERCISES	PF	PNF
1. COCKPIT PREPARATION		
2. ENGINE START/ENGINE 2 START FAULT-HOT START		
3. ENGINE 2 MANUAL START/AFTER START		
4. TAXI/BEFORE TAKE OFF		
5. TAKE OFF ENG FAIL AFTER V1 (AFTER A/P ON)		
6. RESTART		
7. ECAM MANAGEMENT		
8. CAB PR SYS 1 FAULT		
9. CAB PR SYS 1+2 FAULT		
10. MANUAL PRESSURIZATION		
11. EMERGENCY DESCENT (HIGH SPEED)		
12. FL100 ENG FIRE		
RE POSITION ON GROUND		
13. SINGLE ENG ILS AUTO LAND		
14. TAKE OFF		
15. NPA LOC/FPA		
16. FLAPS LOCKED		
17. GO AROUND FREEZE		
18. RESTORE		
19. ILS AUTOLAND		

Note: In all non-normal situations and emergencies, Instructor must introduce the concept of Facts Options Risks Decision Execution Checklist (FORDEC) & Nature Intentions Time Special Briefing (NITS).

[illegible]

NAME OF INSTRUCTOR

SIGNATURE OF INSTR

SIGNATURE OF
TRAINEE

17.1.1.1 FBS 06

PROGRESS CHECK

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INSTRUCTOR WILL INITIALIZE AT THE GATE.

FBS: 06 Name of trainee: _____ LIC TYPE & NO _____		TIME: 4 Hours P- _____ Date: _____	
TRAINING EXERCISES		PF	PNF
1. COCKPIT PREPARATION			
2. BEFORE START/ENG START			
3. HUNG START / ENGINE START FAULT			
4. RESTORE			
5. NORMAL START			
6. AFTER START			
7. TAXI AND BEFORE TAKE OFF			
8. TAKE OFF FLAPS FAULT (WTB) RESTORE			
9. DUAL HYDRAULIC FAILURE (G+B) RESTORE			
10. NPA VOR/DME (NAV/FPA)			
11. GO AROUND (ENG FAIL DURING G/A)			
12. FL 350 STRUCTURAL DAMAGE			
13. EMERGENCY DESCENT			
14. RESTORE			
INITIALIZE AT FL 350			
15. EMERGENCY DESCENT - NO DAMAGE			
16. ILS 25L (ENG FIRE 1000 AGL)			
17. LANDING			
18. EVACUATION			

Note: In all non-normal situations and emergencies, Instructor must introduce the concept of Facts Options Risks Decision Execution Checklist (FORDEC) & Nature Intentions Time Special Briefing (NITS).

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Instructor’s Comments

☐ Recommended for FFS		☐ Not recommended for FFS
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17.1.2 FFS

17.1.2.1 FFS 01

NOTE: BEFORE COMMENCEMENT OF THE FFS, INSTRUCTOR IS TO ENSURE THAT TRAINEES ARE FAMILIAR IN ECAM HANDLING, NORMAL PROCEDURES AND CALL OUTS.

INSTRUCTOR WILL INITIALIZE AT THE GATE.

FFS: 01 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

TRAINING EXERCISES	PF	PNF
1. PRELIMINARY COCKPIT PREPARATION		
2. COCKPIT PREPARATION		
3. ENGINE START / AFTER START		
4. TAXI		
5. TAKE OFF		
6. SID CLIMB 120		
7. A/P F/D DISCONNECTION AND RECONNECTION		
8. A/THR LOGIC		
9. SIDE STICK PRIORITY		
10. STUDY OF NORMAL LAWS / PROTECTIONS		
11. MODE REVERSIONS		
12. DESCENT/STAR		
13. ILS APPROACH		
14. LANDING		
INITIALIZE AT HOLDING POINT		
15. TAKE OFF		
16. VISUAL PATTERN		
17. LANDING		

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TRAINING EXERCISES	PF	PNF
18. MODERATE CROSSWIND 10-15 KTS		
19. LANDING		
20. AFTER LANDING		
21. TAXI		
22. PARKING		
23. SECURING THE AIRCRAFT		

Note: In all non-normal situations and emergencies, Instructor must enforce the concept of Facts Options Risks Decision Execution Checklist (FORDEC) & Nature Intentions Time Special Briefing (NITS), till pre-rating check.

[illegible]

NAME OF INSTRUCTOR

SIGNATURE OF INSTR

SIGNATURE OF
TRAINEE

17.1.2.2 FFS 02

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INSTRUCTOR WILL INITIALIZE AT THE GATE.

FFS: 02 Name of trainee: _____ LIC TYPE & NO _____		TIME: 4 Hours P- _____ Date: _____	
TRAINING EXERCISES		PF	PNF
1. PRELIMINARY COCKPIT PREPARATION.			
2. COCKPIT PREPARATION			
3. ENGINE START WITH MALFUNCTION			
4. TAKE OFF			
5. STANDARD ILS			
6. DISCONTINUED APPROACH TECHNIQUE			
7. ILS RAW DATA			
8. LANDING			
INIT AT TAKE OFF POINT			
9. TAKE OFF			
10. STEEP TURNS			
11. NPA MANAGED/RNAV/GNSS			
12. GO AROUND			
13. VISUAL APPROACH			
14. FLAP 3 LANDING CROSSWIND			
15. TAXI			
16. PARKING / SECURE			

[illegible]

INSTRUCTOR WILL INITIALIZE AT THE GATE.

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FFS: 03 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

TRAINING EXERCISES	PF	PNF
1. PRELIMINARY COCKPIT PREPARATION		
2. COCKPIT PREPARATION		
3. APU TRIP		
4. EXTERNAL PNEUMATIC/ CROSS BLEED START		
5. TAKE OFF		
6. CRUISE / TCAS EVENT		
7. STALL		
8. UPRT		
9. EGPWS EVENT		
10. ILS – G/S FROM ABOVE		
11. LANDING		
12. INIT HOLDING POINT		
13. LINE UP – PRED WINDSHEAR		
14. TAKE OFF WINDSHEAR		
15. RADAR VECTORS		
16. ILS APPROACH		
17. WINDSHEAR / GO AROUND		
18. NPA RNP NAV/FPA		
19. 180 DEGREE TURN ON THE RUNWAY		
20. TAXI / LOSS OF BRAKING		
21. RESTORE		
22. PARKING / SECURE		

Instructor's Comments

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FFS: 04 Name of trainee: _____		TIME: 4 Hours P- _____	
LIC TYPE & NO _____		Date: _____	
TRAINING EXERCISES		PF	PNF
1. TAKE OFF WIND SHEAR			
2. CLIMB ADR1 FAULT			
3. CRUISE FL 070			
4. ADR 2 FAULT			
5. ALTERNATE LAW			
6. STALL			
7. UPSET RECOVERY			
8. DESCENT			
9. ILS RAW DATA – DIRECT LAW			
10. LANDING			
11. EMERGENCY DESCENT TO FL 100 -RESTORE			
12. NPA VOR MANAGED			
13. LANDING			
INITIALIZATION AT HOLDING POINT			
14. TAKE OFF			
15. CLIMB NAV IR 3 FAULT			
16. NAV IR 2 DISCREPANCY			
17. SMOKE/FUME REMOVAL			
18. VISUAL LANDING			
19. EVACUATION			

Instructor's Comments

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FFS: 05		TIME: 4 Hours	
Name of trainee: _____		P- _____	
LIC TYPE & NO _____		Date: _____	
1. PRELIMINARY COCKPIT PREPARATION			
2. COCKPIT PREPARATION			
3. ENGINE START MALFUNCTION			
4. RESTORE			
5. TAXI			
6. ENGINE FAIL AT TAKE OFF BETWEEN V1 AND V2			
7. ILS ONE ENGINE OUT			
8. LANDING ONE ENGINE OUT			
INITIALIZATION AT APPROACH			
9. ILS APPROACH			
10. GO AROUND – ENGINE STALL – DAMAGE			
11. CLEAN UP - FREEZE			
12. RESTORE			
INITIALIZATION AT FL 350			
13. ALL ENGINE FLAME OUT			
14. RESTORE AFTER ONE ENGINE RELIGHT USING APU			
15. RADAR VECTORS			
16. NPA –VOR DME-SELECTED ONE ENGINE OUT			
INITIALIZATION AT HOLDING POINT			
17. G+Y SYSTEM LOW PRESSURE			
18. ILS DIRECT LAW			
19. LANDING with Flap/Slats Zero			

Instructor's Comments

FFS: 06

Name of trainee: _____

TIME: 4 Hours

P- _____

LIC TYPE & NO _____

Date: _____

TRAINING EXERCISES	PF	PNF
1. TRANSIT COCKPIT PREPARATION		
2. START MALFUNCTION		
3. RESET		
4. TAXI		
5. TAKE OFF		
6. TCAS EVENT		
7. CRUISE		
8. DESCENT		
9. ILS APP		
10. GO AROUND/ ENGINE FAIL		
11. CLEAN UP		
12. FREEZE/ RESET		
13. INITIALIZATION AT TAKE OFF		
14. TAKE OFF		
15. UNRELIABLE AIRSPEED		
16. ILS		
17. LANDING		
INITIALIZATION AT TAKE OFF		
18. TAKE OFF		
19. ENGINE FAIL AT 100 KNOTS		
20. REJECTED TAKE OFF		
INITIALIZATION AT TAKE OFF		
21. TAKE OFF		

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TRAINING EXERCISES	PF	PNF
22. RA 2 FAULT AT 2000 FT		
23. RADAR VECTORS-4500 FEET RA 1 FAULT		
24. LOC ONLY APPROACH		
25. LANDING		

Instructor's Comments

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17.1.2.7 FFS 07 – Pre-Rating

FFS: 07 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

INSTRUCTOR WILL INITIALIZE AT THE GATE AND PERFORM QUICK COCKPIT PREPARATION

TRAINING EXERCISES	PF	PNF
1. START MALFUNCTION		
2. TAXI		
3. LOSS OF BRAKING		
4. TAKE OFF		
5. ENGINE FAIL AT 100 KNOTS		
6. REJECTED TAKE OFF		
INITIALIZATION AT TAKE OFF POINT		
7. TAKE OFF		
8. PILOT INCAPACITATION (FO)		
9. WINDSHEAR		
10. TCAS EVENT		
11. STALL		
12. UPRT		
13. EGPWS EVENT		
14. CLIMB TO FL 350		
15. EMERGENCY DESCENT HIGH SPEED (FO)		
16. EMERGENCY DESCENT LOW SPEED (CAPTAIN)		
17. FL 100 ENG FIRE		
18. SE NPA – RNAV (CAPTAIN)		
19. SE NPA – LOC/FPA (FO)		
20. DESTABILIZE SE GO AROUND		
21. RE-POSITION TAKEOFF POINT		

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TRAINING EXERCISES	PF	PNF
22. ENGINE FIRE AFTER V1		
23. ENG FAIL AFTER V1		
24. LANDING		
25. EVACUATION		

Instructor's Comments

NAME OF INSTRUCTOR	SIGNATURE OF INSTR	SIGNATURE OF TRAINEE

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PROGRESS CHECK

17.1.2.8 FFS 08

FFS: 08 Name of trainee: _____ LIC TYPE & NO _____	TIME: 4 Hours P- _____ Date: _____

INITIALIZATION AT THE GATE

TRAINING EXERCISES	PF	PNF
1. PRELIMINARY COCKPIT PREPARATION		
2. COCKPIT PREPARATION		
3. ENGINE HOT START		
4. AFTER START		
5. TAKE OFF – WINDSHEAR		
6. CLIMB TCAS EVENT		
7. CRUISE		
8. FUEL LEAK		
9. ENG SHUT DOWN		
10. NPA ONE ENG OUT LOC ONLY		
11. GO AROUND – RESTORE G/S		
12. ILS ONE ENG OUT		
13. LANDING ONE ENG OUT		
INITIALIZATION AT TAKE OFF – CROSSWIND 20 KNOTS		
14. ENGINE FAIL AFTER V1		
15. ILS ONE ENGINE OUT –CROSSWIND		

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TRAINING EXERCISES	PF	PNF
INITIALIZATION AT LINE UP		
16. TAKE OFF		
17. TCAS EVENT		
18. CLIMB FL350		
19. RAPID DECOMPRESSION		
20. EMERGENCY DESCENT		
21. NPA VOR MANAGED		
22. LANDING		
INITIALIZATION AT HOLDING POINT		
23. TAKE OFF		
24. ENGINE FIRE /UN EXTINGUISHABLE		
25. VISUAL APPROACH		
26. LANDING		
27. EVACUATION		
INITIALIZATION AT LINE UP		
28. TOGA TAKEOFF		
29. ENGINE FAIL BEFORE V1		
30. REJECT TAKE OFF		
31. TAXI BACK		
32. SECURE		

[illegible]

Satisfactory

Unsatisfactory

NAME OF INSTRUCTOR

SIGNATURE OF INSTR

SIGNATURE OF TRAINEE

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17.1.2.9 FFS 9 LANDING TRAINING/RECOGNITION OF UNSTABLE APPROACHES AND RECOVERY

17.1.2.9.1 LANDING TRAINING

Objectives

The purpose of the Landing Training is to prepare the trainee for Line Training and to enable him to become proficient in the Landing Technique in:

- “Varying Wind Conditions”
- Landing and going around in “Windshear”
- Landing Technique on wet/contaminated runway
- Landing from “Steep” or “Shallow” Approaches (GS interception from above)
- Recovery from “Bounced Landing” and or Balked landing
- Overweight Landing
- Landing with One Engine Inoperative.

General

- Simulator Instructor (**SFI /SFE**) will conduct the Landing Training
- One and half hour briefing in Simulator Briefing Room will precede Landing Training
- The emphasis will be on crew COORDINATION throughout, with the minimum of distractions for flight profiles, enabling the trainee’s concentration to be focused on performing the necessary procedures

Duration

Each trainee will receive **two hours** of Landing Training in Simulator before commencing Line Training.

(in case of landing training and unstable approach practice session together, 6 hours session shall be planned)

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Preparation

- The trainee will be able to demonstrate his ability to perform all NORMAL PROCEDURES.
- Although relevant, self study sections, are presented against each exercise, it is not possible to indicate every relevant write up in every manual, therefore the trainees are expected to study and understand related sections in the FCOM and especially in the FCTM, prior to Landing Training.
- NORMAL CHECKLIST responses will be used in the appropriate sequence during the training exercise.

RHS training for captains on following items:

- Takeoff Engine Failure at V1
- ILS approach single engine
- Single Engine go around
- Single Engine ILS APP & landing/evacuation

Instructor will provide take off and landing data.

Areas To Be Covered in Briefing

- Normal procedures / checklist philosophy and use
- Departure and Arrival briefings
- Crew coordination
- Use of AFS
- Manual handling
- Communications (ATC, CABIN CREW, GROUND CREW)

Trainees and Instructor must bring the following:

Trainees	Updated and fully charged I pad
	Training Documentation (hard copies of syllabus)
SFI / SFE	Updated and fully charged I pad

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17.1.2.9.2 RECOGNITION OF UNSTABLE APPROACHES AND RECOVERY

OBJECTIVES

This training is to imbue the concept of different energy states and its impact on stable approach. Any attempt to correct unstable approach ceases at 1000 ft AAL. Go-around becomes mandatory then. **Different situations including visual approaches, steep slope approaches, speed restrictions on finals etc shall be practiced**

DURATION

One hour per trainee.

(in case of landing training and unstable approach practice session together, 6 hours session shall be planned)

GUIDELINES TO INSTRUCTOR

This briefing and training can be carried out together with the landing session or separately

Lesson Plan

Pre Session Briefing	Effect of Head/Tail Wind on APPR (INCR/REDUCED ROD)		
	Wind Correction on Landing		
	Normal Landing Technique		
	X-WIND Landing Technique		
	Recovery from Balked/bounced landing		
	Glide interception from above		
	Visual approach maneuver (example of OPQT to be simulated for both runway ends)		
	At instructor's discretion		
Weather			
Airport/Runway Condition	At instructor's discretion		
Performance	TOM 64 T	CONFIG 2	CG-



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PLANNED TIME: 02 HOURS

Name of Trainee: _____ P- _____

LIC TYPE & NO _____ DATE: _____

	NO. OF ATTEMPTS					RATING	
TOW (MEDIUM) 70T	1	2	3	4	5	PF	PNF
WIND:							
HEAD WINDS 10KTS							
HEAD WIND 20 KTS (STEADY)							
X-WIND (LEFT-45° 20 KTS ("))							
X-WIND (RIGHT-45° 20 KTS("))							
X-WIND (90°) L or R 20 KTS("))							
X-WIND (90°) LEFT 30 KTS ("))							
X-WIND (90°) RIGHT 30 KTS ("))							
WIND SHEAR:							
VISUAL APP CIRCLE TO LAND OPQT							
VISUAL APPROACHES (USING PAPI)							
DISCONTINUED APPROACH							
BALKED LANDING							
BOUNCED LANDING							
SE APPROACH (#2 ENG FAIL)							
X-WIND (90°) LEFT							
SE APP (#1 ENG FAIL)							
X-WIND (90°) RIGHT							
EXTRA LANDINGS							
TOW (LIGHT) 64 T							
HEAD WIND 10 KTS							
HEAD WIND 10 KTS							
Note: 1. Each landing will be marked with a "/" (slash) 2. At least twelve (12) specific landings (to be marked in the clear boxes) with extra SEVEN (7) additional (if required) practice landings (to be marked in the boxes) are allowed, and will be practiced. All these landings are catered for in the two hour Landing Training. 3. Usually the number of landings provided in the clear boxes are sufficient for a crew member to achieve a satisfactory standard. 4. If the number of Landings to achieve a satisfactory standard "Over Flow" into the boxes marked "X", they shall be accordingly marked.							

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DATE: _____

CAPT./FO : _____ **P-NO:** _____ **AIRCRAFT:** _____

Type of License & No. _____ **Duration of Training 01Hours/trainee**

1. **Recognition** of development of UA through.

a) Knowing and understanding the appropriate parameters and tolerances

associated with an approach (**STABILIZED APPROACH CRITERIA**).

b) The dynamics involved e.g.; ATC, Fatigue Factor, Hurry Syndrome,

Weather. Any malfunctions or abnormality.

c) Infringement of applicable tolerances necessitating a Go- Around.

2. **Controlling** a situation developing into a UA through manipulating aircraft controls or notifying ATC of company policy on stabilized approach.

3. **Action** necessitating a Go Around is the final step. A non-punitive time-honored maneuver which saves lives.

a) A It is essential to acknowledge the fact that all maneuvers required to control an unstable approach has a lower limit of 1000 feet AAL.

b) Practice Balked/**Bounced** Landing

APPROACHES	WIND EFFECT	ATC RESTRICTIONS	MALFUNCTION	TOPOGRAPHIC EFFECTS
ILS,RNP,VISUAL	Wind Shear, Tail to head and vice versa Micro burst	180 KT till 8 NM 160 KT till 4 NM Delayed Descend clearance	Flaps) Flap Asymmetry	Effect of mountain wave and or valley winds

Filling Instructions: Approach types and rest of the other scenarios must be filled in above table.

Comments & Signature of SFI/SFE _____

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17.1.2.10 FFS 10 CAT II / CAT III OPERATIONS

OBJECTIVE:

The objective of CAT II /CAT III operations is to provide a level of safety when landing in low visibility conditions, equivalent to that of normal operating conditions. Category II/ Category III constitutes the main part of All-weather Operations, which also consists of Cat II take-off and landing in low visibility conditions. It is the most effective way in which an airline can maintain its schedule throughout the year without any diversions due to weather.

ELEMENT AND DURATION:

A briefing of one and a half hour will precede the SIM CAT II/CAT-III training by the SFE/SFI considered as the Ground Training.

GENERAL:

The simulator instructor will conduct the low visibility operation briefing in the simulator briefing room.

A thorough and comprehensive briefing will reduce the need for coaching during FFS session. If there is a need for extensive instruction during the exercise, the simulator should be frozen and released after the instruction is completed.

At the end of each session, the briefing will be conducted.

The emphasis will be on crew coordination.

Approval for CAT II/CAT III operation is dependent on four elements in order to maintain the required level of safety

- The aircraft
- The airfield
- The flight crew
- The operator

LOW VISIBILITY TAKEOFF (LVTO):

Take off with RVR less than 400m is considered LVTO.

When weather conditions are more severe than the landing minima, a takeoff alternate is normally required within one hour at one engine inoperative speed in no wind condition/still air.

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The minimum RVR is a function of the aircraft category and of the runway equipment in no wind / still air. A320 is of category C (distance 340 NM).

CAT-II Definition (ICAO):

A category II approach is a precision instrument approach and landing with decision height lower than 200ft but not less than 100ft and a runway visual range not less than 350m.

CAT-III Definition:

A CAT III operation is a precision approach at lower than CAT II minima.

CAT III is divided in three sub categories

CAT-IIa: A precision instrument approach and landing with no decision height or a decision height lower than 100ft (30m) and a runway visual range not less than 700ft (200m).

CAT-IIb: A precision instrument approach and landing with no decision height or a decision height lower than 50ft (15m) and a runway visual range less than 700ft (200m), but not less than 150ft (50m). For JAA the runway visual range should not be less than 250ft (75m).

CAT-IIc: A precision instrument approach and landing with no decision height and no runway visual range.

AUTO LANDING

Automatic landing is not CAT III. An automatic landing system is only an equipment providing automatic control of the aircraft during the approach and landing and is not related to particular weather conditions. This system is mandatory for all CAT III operations. However, it is a common practice to perform automatic landing in good visibility but in that case the ILS performance must be sufficient and ILS signals protected.

FAIL PASSIVE AUTOMATIC PASSIVE SYSTEM

An automatic landing system is fail-passive if, in the event of a failure, there is no significant out-of-trim condition or deviation of flight path or attitude but landing is not completed automatically. For a fail-passive automatic landing system the pilot assumes control of the aircraft after a failure.

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On Airbus aircraft since the A320, fail-passive capability is announced by the display of **CAT 3 SINGLE** on the PFD.

FAIL OPERATIONAL AUTOMATIC LANDING SYSTEM

An automatic landing system is fail-operational if, in the event of a failure below alert height, the approach, the failure and landing can be completed by the remaining part of the automatic system. In the event of failure, the automatic landing system will operate as a fail-passive system.

On Airbus aircraft since the A320, fail operational capability is announced by the display of **CAT 3 DUAL** on the PFD.

DECISION HEIGHT AND ALERT HEIGHT

In CAT II / CAT III operations, two different heights are defined

DECISION HEIGHT (DH):

Decision height is the wheel height above the runway elevation by which a go around must be initiated unless adequate visual reference has been established, and aircraft position and approach path have been assessed as satisfactory to continue the approach and landing in safety.

VISUAL REFERENCE AT DH:

As the term adequate visual reference could be differently interpreted, JAA has defined criteria for CAT II and CAT III for visual reference at DH. For CAT II and CAT III A, a pilot may not continue the approach below DH unless a visual reference containing not less than a 3 light segment of the centerline of the approach lights or runway centerline or touchdown zone lights or runway edge lights is obtained. For CAT III B the visual reference must contain at least one centerline light.

ALERT HEIGHT (AH):

An alert height is a height above the runway, based on the characteristics of the aeroplane and its fail operational automatic landing system, above which a Category III approach would be discontinued and a missed approach initiated if a failure occurred in one of the redundant parts of the automatic landing system or in the relevant ground equipment.

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In other AH definitions, it is generally stated that if a failure occurred below the Alert Height, it would be ignored and the approach continued except if AUTOLAND warning is triggered. The AH concept is relevant when CAT 3 DUAL is displayed on FMA. Alert height is 100 ft for A320.

MINIMUM APPROACH BREAK OFF HEIGHT:

The minimum approach break off height (MABH) is the lowest height above the ground measured by radio altimeter, such that if a missed approach is initiated without external references

- a) In normal operations, the aircraft does not touch the ground during the procedure
- b) With an engine failure during a missed approach, it can be demonstrated that taking this failure probability, an accident is extremely improbable.

METHODOLOGY:

The instructors must highlight the following during the training.

- a) Checks of satisfactory functioning of equipment, both on the ground and in flight.
- b) Effect on minima caused by changes in the status of ground installations.
- c) Monitoring of automatic flight control systems and auto land status annunciators with emphasis on the action to be taken in the event of failures of such systems.
- d) Actions to be taken in the event of failures such as engines, electrical systems, hydraulics of flight control systems.
- e) The effect of unserviceabilities and use of minimum equipment lists.
- f) Guidance on the visual cues required at DH together with information on maximum deviation allowed from glide path or localizer.
- g) The importance and significance of AH (if applicable).
- h) Crew Incapacitation Procedures.

FOR DETAILED STUDY PLEASE REFER TO THE ALL WEATHER OPERATIONS A320.

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CAT-II/LVP

(02:00 HRS PER SET WITH PROPER CREW COMPLEMENT)

01:30 HOURS TRAINING & 00:30 HOURS EVALUATION

TRAINING EXERCISES	PF	PNF
INITIAL TAKE OFF		
1. Cockpit preparation by instructor		
2. Engines running fuel freeze		
3. Take off fog patches – follow yaw bar		
4. Radar vectors CAT II briefing		
5. Approach - 2APs		
6. Freeze at 150 ft review visual segment seat position - release		
7. Freeze at 100ft review visual segment seat position -release		
8. Auto land		
INITIAL TAKE OFF (Fuel Freeze)		
9. Take off Fog patches		
10. Rejected Take Off (one engine fail above 100kts) restore		
11. Take off Engine Fail after V1 (Between V1 and V2)		
12. Approach – 2APs and 2FDs – ELEC or HYD failure - go around		
INITIAL TAKEOFF (Fuel Freeze)		
13. Take off radar vectors downwind		
14. Standby horizon flag Reset (above 1000ft)		
15. Approach 2APs - DH 100ft		
16. Loss of LOC transmitter at 200ft AUTOLAND warning – go-around - restore		
17. Approach 2APs, DH 100 FT – 1 ATHR only		
18. Approach 2APs, DH 100 ft engine failure below 100 ft land		
19. Approach 2AP DH 100 ft ATT warning at 200ft (or 2 Radio Altimeter Failure)		
20. Manual go around (using standby horizon, if necessary)		
21. Approach 2APs, DH 100ft		
22. Approach 2APs, DH 100 ft landing with failures & reversion to higher minimums.		
23. CM1 incapacitation above DH go around		
24. Auto land with DH 100 ft		

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EVALUATION FFS CAT II/LVP (00:30 Hours per Set)

TRAINING EXERCISES	PF	PNF
INITIAL TAKE OFF		
1. Cockpit preparation by instructor		
2. Engine running (fuel freeze)		
3. Take off radar vectors briefing (CAT-II)		
4. Approach 2APs DH 100 ft no visual contact go around radar vectors Downwind		
5. Approach 2APs DH 100 ft, visual contact autoland		
6. Take off FOG patches		
7. Approach 2APs DH 100ft		
8. Engine fail above 200 feet, go around		
9. Approach 2 APs, DH 100 ft - ATHR only		
10. Remaining ATHR fail at 500 feet		
11. Autoland		

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CAT III

(02:00 HRS PER SET WITH PROPER CREW COMPLEMENT)

01:30 HOURS TRAINING & 00:30 HOURS EVALUATION

TRAINING EXERCISES	PF	PNF
INITIAL TAKE OFF		
1. Cockpit preparation by instructor		
2. Engines running fuel freeze		
3. Take off		
4. Holding CATIII briefing		
5. Approach CAT III DUAL		
6. Review visual segment – seat position		
7. DH 50 ft - freeze at 50 ft – RVR 200m		
8. DH 20 ft – freeze at 20 ft – RVR 125m		
9. Autoland		
10. Take off Fog patches follow yaw bar		
11. Approach above 1000ft		
12. Review loss of ILS transmitter		
13. Review loss of ILS receiver		
14. Review loss of radio altimeter		
15. Review loss of standby horizon		
16. Review instrument failures		
17. Autoland		
18. Take off Fog patches		
19. Engine failure above 100 kts		
20. Rejected take off		

TRAINING EXERCISES	PF	PNF
21. Take off (engine failure between V1 and V2)		
22. Initial Approach		
23. Take off		
24. Approach CAT III DUAL DH 20 ft		
25. ATT warning at 100 ft		
26. Go around using stand by horizon		
27. Approach CAT III DUAL - ILS performance degraded		
28. Engine failure at 200ft – go around – clean up		
29. Approach CAT III SINGLE DH 50 ft		
30. Auto pilot disconnect at 50 ft – go around		
31. Approach CAT III DUAL- CM1 incapacitation – CM2 go around		
32. Approach CAT III DUAL DH 50 ft		
33. Both Radio altimeter fail at 100ft – go around.		
34. Approach CAT III DUAL DH 50ft – engine fail below 100ft		
35. Autoland		

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EVALUATION FFS CAT III
(00:30 Hours per Trainee)

TRAINING EXERCISES	PF	PNF
INITIAL TAKE OFF		
1. Cockpit preparation by instructor		
2. Engines running fuel freeze		
3. Take off		
4. Holding CATIII briefing		
5. APPROACH - 2AP - DH 50ft – No Visual contact		
6. Go around – radar vectors		
7. Approach – 2AP – NO DH		
8. AUTO LAND		
9. Take off Fog patches		
10. Engine fail before Approach		
11. Approach – 2APs-DH 50ft		
12. Go around		
13. Approach – 2APs - DH 50ft		
14. Visual contact - Autoland		
15. Roll out fault.		

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17.2 UNDER SUPERVISION LINE TRAINING

Objective:

The objective of line training is to allow the trainee to practice normal line procedures on the aircraft, and to achieve proficiency and confidence in these procedures.

The intent of line training is to assist the pilot, on line, route and airport qualification as defined in the Training Policy Manual. Only routine operations in normal configuration are intended and no **abnormal situations will be intentionally created**.

General:

The TRI/TRE will sign the aircraft load sheet, flight plan and take full responsibility for the safety of the aircraft, crew, passengers and the integrity of the operating schedule.

The training or check pilot must conduct himself in a professional, proficient and efficient manner in every aspect, so as to enhance the professional and executive capability of the trainee.

Each exercise in the line training syllabus will be covered, but the TRI/TRE will only sign the particular exercise once a proficient level has been achieved by the trainee, otherwise, it is required that amplifying comments be made to fully identify the trainee's deficiencies in the comments section along with the exercise number.

The items in the line training syllabus containing asterisk (*) are for **discussion only**. The instructor will sign all such items only when proficient knowledge has been demonstrated by the trainee.

Preparation:

Trainees are required to be familiar with OM (Part-A & D), SOP, FCOM PROCEDURES, OETBs, MEL application and also study to assimilate items in the syllabus before commencement of line training

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Under Supervision Line Flying:

(i) First six Takeoffs and Landings

TRE / TRI are authorized to conduct line training for the first six takeoff and landings followed by stipulated line training (50/70 hours). The duration (hours) of first six takeoffs and landings will be included in 50 or 70 hours, (whichever is applicable) of the under-supervision training.

(ii) Required Sectors, Hours & Recommendations

All trainees are required to be detailed for minimum of ten (10) sectors during under supervision line training. Captain and First Officers shall complete the syllabus in 50 and 70 hours respectively. In addition, 70 hours of under supervision line training are required for B777 P2 to A320 P1 and 50 hours for ATR P1 to A320 P1. TRI can also recommend for Pre/Final Command Route Check.

(iii) Pre/Final Route Check

Captains: On satisfactory completion of the syllabus and required minimum sectors, the trainee will be put up for a “Pre Final Command Route Check” within 50/70 hours as applicable. Upon satisfactory performance, he/she will be put up for a “Final Command Route Check” to be conducted by a TRE.

First Officers: On satisfactory completion of the syllabus and required minimum sectors / hours, the trainee will be put up for a “Final Route Check” to be conducted by a TRE. Pre-rating check of the First Officers is not required.

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
e) Takeoff Flaps 1+F (FCTM)					
f) Takeoff Flaps 2					
g) Rolling Takeoff					
h) Static Takeoff (*)					
i) SID – FMGS departure					
4. CLIMB / ENROUTE					
a) Altitude / Speed restriction FMGS Unrestricted climb (speed/altitude)					
b) Discuss FCU in detail (*)					
c) Discuss POS MONITOR & SEL/DESELECT NAV AID -MCDU / Read same in FCOM (*)					
d) Discuss and practice creation of route Off Set					
e) Insert a holding pattern over any way point or Nav aid / monitor exit time & fuel					
f) Insert step prediction for climb or descent					
g) Insert winds for route way points and descent forecast					
h) Introduction to OEBs					
i) Calculation of cruise ISA and green dot speed from FCOM & QRH					
j) FMGC reset procedure on ground and in air /FCOM-/ irregularities (*)					
k) Plan descent / prepare / brief					
l) ROC and TOC restriction					
m) P.A. Announcement					
n) FMGS WORK					
(i) Route changes					
(ii) Enroute diversion (determine ETA, Fuel remaining) SEC FPL					
(iii) Create way points using Lat Long. PBD or PB/PB inputs					

Capt. F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
(iv)	Prepare and store new flt plan, involving different origin/destination Airfield.				
(v)	Learn the effective usage of secondary flight plan				
(vi)	Create /store new runways / new Nav aids				
(vii)	INIT B after prog start (fuel prog page)				
(viii)	Change the flt plan alt to another alt				
(ix)	PROG. Page				
(x)	Enable alternate in cruise and subsequently recover the flight plan				
(xi)	Activate approach phase in cruise and subsequently recover CRZ page				
(xii)	Practice update command on PROG page from a known VOR (*)				
(xiii)	Observe changes brought about by altering the Cost Index/ variable (OETB)				
5. DESCENT PREPARATION / DESCENT					
a)	Destination / Alternate weather				
b)	Fuel prediction				
c)	Planning / Briefing				
d)	Insufficient TOD Fuel (reserve/minimum)				
e)	Descend prediction				
f)	Star and Approach Insertion / Changes				
6. WEATHER					
a)	Flight in turbulence (QRH)				
b)	Use of Anti-Ice (FCOM / FCTM)				
c)	Adverse weather operation				
d)	Use of weather Radar (color codes *)				

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
7. APPROACHES					
a) ILS approach with auto pilot					
b) ILS approach manual with flight director					
c) Landing: decelerated precision ILS approach					
(i) Stabilized precision ILS approach / Glide slope from above					
(ii) Stabilized visual approach and landing					
(iii) Manually flown Landing: without auto thrust, raw data ILS approach					
(iv) Special Ops (FCOM *)					
(v) Cancel Approach (FCOM*)					
d) NON-PRECISSION APPROACH					
(i) Selected Guidance (Use of HDG SEL & TRK-FPA)					
(ii) Managed NAV/final approach					
8. LANDINGS					
a) Flaps 3 Landing					
b) Cross wind landing technique(*)					
c) Contaminated runway landing technique(*)					
d) Go-Around procedure (*)					
9. ITEMS FOR DISCUSSION					
a) Pressurization					
b) ADIRS fault / One IRS on "ATT" / Anomalies					
c) FMGS updating / Single FMS Ops/FMS failure					
d) Jeppesen (ATC, Emergency, meteorology, Airport Directory, Chart Change Notices)					
e) Max. Alt / Opt Alt / Buffet margin					
f) Special operations					
(i) Flight without cabin pressurization					
(ii) Operation from fluid contaminated RWY					

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
g) RNP / RNAV / PRNAV					
h) RVSM					
i) TCAS / EGPWS					
j) Wind shear (Avoidance and Recovery)					
k) Consulting Graphs & Tables					
l) MEL / OPS MAINT procedure / CDL					
m) Restricted / Danger / Prohibited areas					
n) Engine out drift down procedure (Strategies)					
o) All memory items in detail					
p) Diversion from a critical point keeping fuel as the primary factor					
q) Bomb on-board procedure					
r) Plan descent / prepare / brief missed approach go around in detail					
s) RNP and RVSM airspace requirements / FCOM					
t) Read ATC / emergency procedure for Pakistan airspace / Jeppesen					
u) Various descent techniques					
v) Read and discuss dual engine failure in cruise / with / without fuel remaining					
w) Radio failure on departure and arrival / requirements / Jeppesen					
x) RVR / visibility conversion table / Jeppesen					
y) Practice dual FMGC failure / raw data flight procedure till landing					
z) Stabilized circle to land approach and landing / FCOM					

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
10. CRM SKILLS					
a) Threat and error management					
b) Communication					
c) Decision making					
d) Teamwork					
e) Assertiveness					
f) Situational Awareness					
11. PNF DUTIES (Minimum 02 Sectors)					
i)					
ii)					
iii)					
iv)					



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Capt F/O	P #	LIC #	Ref. #

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17.3 TYPE TECHNICAL REFRESHER SYLLABUS (LMS)

REFRESHER WINTER-1		REFRESHER WINTER -2	
PHASE	CONTENTS	PHASE	CONTENTS
PHASE-A OCT-DEC (ODD YEAR) Est. Time= 5:27:05	- Flight Controls - LVO/All Weather Operation - Adverse Weather (Winter) - TCAS	PHASE-A OCT-DEC (EVEN YEAR) Est. Time = 6:12:05	- Landing Gear System - Hydraulics - LVO/All Weather Operation - Adverse Weather (Cold) - TCAS
PHASE-B JAN-MAR (EVEN YEAR) Est. Time = 5:55:02 + Extra Time	- Auto-flight - Oxygen - AOC/OPS Spec. - Volcanic Ash - UPRT - Ice & Rain Protection - Recent Bulletins - GRF	PHASE-B JAN-MAR (ODD YEAR) Est. Time = 6:41:32 + Extra Time	- Power Plant - Electrical - Volcanic Ash - UPRT - AOC/OPS Spec. - Recent Bulletins - GRF

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REFRESHER SUMMER-1		REFRESHER SUMMER -2	
PHASE	CONTENTS	PHASE	CONTENTS
PHASE-A APR-JUN (ODD YEAR) Est. Time = 7:40:50	- Instruments - LVO/All Weather Operation - Adverse Weather (Hot) - TCAS	PHASE-A APR-JUN (EVEN YEAR) Est. Time = 5:57:42	- Air Conditioning - Pneumatic - Pressurization - LVO/All Weather Operation - Adverse Weather (Hot) - TCAS
PHASE-B JUL-SEP (2025) Est. Time = 7:39:15 + Extra Time	- Aircraft General - APU - Fire Detection & Protection - Aircraft Performance - AOC/OPS SPEC. - Recent Bulletins - Crew Incapacitation - UPRT - GRF	PHASE-B JUL-SEP (2024) Est. Time = 7:04:00 + Extra Time	- Navigation - Adverse Weather (Hot) - AOC/OPS Spec. - Recent Bulletins - Airplane Type Performance - Crew Incapacitation - Fuel System - GRF

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17.3.1 LONG REFRESHER (LMS)

Day wise course breakup as below

Day 1

- ECAM
- ELECTRICAL
- PNEUMATICS
- HYDRAULICS

Day 2

- AIRCONDITIONING
- PRESSURIZATION + VENTILATION
- FLIGHT CONTROLS
- FUEL

Day 3

- POWER PLANT
- LANDING GEAR
- FIRE PROTECTION
- APU+ICE & RAIN PROTECTION

Day 4

- TAKEOFF PERFORMANCE

DAY 5

- FLEXIBLE TAKEOFF
- USE OF FUEL PENALTY FACTOR TABLE +LANDING PERFORMANCE
- EXAM

17.4 RECURRENT SIMULATOR TRAINING

17.4.1 REC1-JAN-JUNE -ALPHA

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FLIGHT OPERATIONS TRAINING DIVISION		SYLLABUS "ALPHA" (JAN -JUN)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME	04:00 HOURS	TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	58000 KGS	ZFW CG	32%	THRUST REDUCTION	1000 FT
TOTAL FUEL	10000 KGS	TAKEOFF CG	30%	ACC HEIGHT 2/1 ENG	3000/ 1500 FT
TAKEOFF WT	68000 KGS	TAKEOFF FLAPS	CONFIG 2	TAKEOFF THRUST	FLEX 58 C
RESERVE FUEL	_____ KGS	CROISE ALTITUDE	FL300	MEL ITEMS	Instructor's Discretion
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE	RUNWAY IN USE	BRAKING ACTION GOOD		
WEATHER: INSTRUCTOR'S DISCRETION					
ATC:					
DESTINATION AIRPORT	ICAO CODE	RUNWAY IN USE	BRAKING ACTION MEDIUM		
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE	RUNWAY IN USE	BRAKING ACTION GOOD		
ATC:					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Instructor .					
2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis.					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autobrake , auto thrust etc.) unless specifically restricted by the instructor.					
5. Core competencies enhancements are part of the desired learning outcome					
6. The Sequence of Normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Instructor .					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
8. Day-1 should be practiced as a LOFT					
Instructor and trainees are required to carry updated iPads & discuss EFB requirements					
DISCUSSION ITEMS		GRADE		REFERENCE	
		PF	PM		
1. SPECIAL OPERATIONS				FCOM	
2. ECAM HANDLING				FCOM, FCTM	
3. SUPPLEMENTARY PROCEDURES				FCOM, FCTM	
4. GROUND OPERATIONS IN HEAVY RAIN, GRF Reverse selection and seat position in adverse weather conditions				FCOM, FCTM, JEPPI	
5. AIRCRAFT APP GUIDANCE MANAGEMENT				FCOM(NP/FMS)	
6. FLT CONTROL LAWS PROTECTION				FCOM, FCTM	
7. FDM KEY EVENTS				FDM DATA	
COMPETENCE ENHANCEMENT(M)					
COMMUNICATION					
WORKLOAD MANAGEMENT					
SITUATIONAL AWARENESS					
KNOWLEDGE					
APPLICATION OF PROCEDURES					

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FLIGHT OPERATIONS TRAINING DIVISION		SYLLABUS "ALPHA" (JAN -JUN)		DAY- 2 (Evaluation / Check Session)			
NAME:		P.NO:		CREW POSITION			
				☐ CAPT ☐ F/O ☐ I.P			
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF		
AIRCRAFT DATA							
ZERO FUEL WT	56000KGS	C.G	---	THRUST REDUCTION	1000 FT		
TOTAL FUEL	10000 KGS	TAKEOFF FLAPS	CONFIG. 1+F or 2	ACC HEIGHT 2/1 ENG	3000/ 1500 FT		
TAKEOFF WT	68000 KGS	CRUISE ALTITUDE	FL310	TAKEOFF THRUST TO2	FLEX "C		
RESERVE FUEL	----- KGS	COST INDEX	30	MEL	Instructor's Discretion		
SESSION DATA AND WEATHER							
DEPARTURE AIRPORT	ICAO CODE -----	RUNWAY IN USE -----		BRAKING ACTION GOOD			
WEATHER: INSTRUCTOR'S DISCRETION							
ATC:							
DESTINATION AIRPORT	ICAO CODE -----	RUNWAY IN USE -----		BRAKING ACTION MEDIUM			
WEATHER: INSTRUCTOR'S DISCRETION							
ALTERNATE AIRPORT	ICAO CODE -----	RUNWAY IN USE -----		BRAKING ACTION GOOD			
ATC:							
SESSION OBJECTIVE							
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot. 2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis. 3. Simulator system faults will be removed after full stop landing. 4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor. 5. Core competencies enhancements are part of the desired learning outcome. 6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.							
Instructor and trainees are required to carry updated iPads and discuss EFB requirements							
DISCUSSION ITEMS				GRADE PF PNF		REFERENCE	
1. ALL WEATHER OPERATIONS						OM, FCTM	
2. GPS INTERFERENCE/SPOOFING						FCOM	
3. MEMORY ITEMS, LIMITATIONS						FCOM	
4. EFFICIENT FLIGHT CONDUCT							
5. STALL & RECOVERY						FCTM	
6. GO-AROUND PROCEDURE / CANCEL APPROACH						FCTM, FCOM	
7. RUNWAY MARKINGS AND LIGHTING SYSTEM						FCTM, JEPP	
COMPETENCE ENHANCEMENT (M)							
LEADERSHIP AND TEAMWORK							
PROBLEM SOLVING AND DECISION MAKING						OM	
FLIGHT PATH MANAGEMENT						OM	
AUTOMATION AND MANUAL CONTROL						OM	
CORE COMPETENCIES							

17.4.2 REC2-JUL-DEC –BRAVO

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 PAKISTAN International Airlines <i>Great People to Fly With</i>		A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST.....ALT.....		Doc. No. E/TRG/01-D01/B3-1 Dated: August 20, 2019	
				Edition 02 Revision 00	
FLIGHT OPERATIONS TRAINING DIVISION		SYLLABUS "BRAVO" (JAN - JUN)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	56000 KGS	ZFW CG	32%	THRUST REDUCTION	1000 FT
TOTAL FUEL	10000 KGS	TAKEOFF FLAPS	30%	ACC HEIGHT 2/1 ENG	3000/ 1500 F.T
TAKEOFF WT	66000 KGS	CRUISE ALTITUDE	FL330	TAKEOFF THRUST	FLEX 58°C
RESERVE FUEL	_____ KGS	COST INDEX	30	MEL ITEMS	Instructor's Discretion
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC:					
DESTINATION AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION GOOD	
ATC:					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Instructor .					
2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis.					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto thrust etc.) unless specifically restricted by the instructor.					
5. Core competencies enhancements are part of the desired learning outcome					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Instructor .					
7. Instructors to ensure that during intermediate final level off vertical speed is reduced to 1000fpm when 1000 ft level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
8. Day-1 should be practiced as a LOFT					
Instructor and trainees are required to carry updated iPads & discuss EFB requirements					
DISCUSSION ITEMS		GRADE		REFERENCE	
		PF	PM		
1.	CALCULATION OF VAPP, GS MINI			QRH, FCOM, FCTM	
2.	SYSTEM RESET PROCEDURE			QRH, FCOM, FCTM	
3.	SUPPLEMENTARY PROCEDURES			FCOM, FCTM	
4.	GPS INTERFERENCE/SPOOFING			FCOM	
5.	AIRCRAFT APP GUIDANCE MANAGEMENT			FCOM	
6.	ALTIMETER SETTING PROCEDURES			JEPPESEN/PANS OPS	
7.	FDM KEY EVENTS			FDM DATA	
COMPETENCE ENHANCEMENT(M)					
COMMUNICATION					
WORKLOAD MANAGEMENT					
SITUATIONAL AWARENESS					
KNOWLEDGE					
APPLICATION OF PROCEDURES					

		A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST.....ALT.....		Doc. No. F/TRG/01-D01/B3-1 Dated: August 20, 2019		Edition 02 Revision 00	
FLIGHT OPERATIONS TRAINING DIVISION		SYLLABUS "BRAVO" (JAN - JUN)		DAY- 2 (Evaluation / Check Session)			
NAME:		P.NO:		CREW POSITION			
DATE		LOCATION		TOTAL SESSION TIME 04:00 HOURS		CAPT	F/O I.P
				TIME PF		TIME PNF	
AIRCRAFT DATA							
ZERO FUEL WT	56000KGS	C.G		THRUST REDUCTION	1000 FT		
TOTAL FUEL	10000 KGS	TAKEOFF FLAPS	CONFIG 1+F or 2	ACC HEIGHT 2/1 ENG	3000/ 1500 FT		
TAKEOFF WT	66000 KGS	CRUISE ALTITUDE	FL310	TAKEOFF THRUST TO2	FLEX °C		
RESERVE FUEL	KGS	COST INDEX	30	MEL	Instructor's Discretion		
SESSION DATA AND WEATHER							
DEPARTURE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
				GOOD			
WEATHER: INSTRUCTOR'S DISCRETION							
ATC:							
DESTINATION AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
				MEDIUM			
WEATHER: INSTRUCTOR'S DISCRETION							
ALTERNATE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
				GOOD			
ATC:							
SESSION OBJECTIVE							
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.							
2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis.							
3. Simulator system faults will be removed after full stop landing.							
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.							
5. Core competencies enhancements are part of the desired learning outcome.							
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.							
Instructor and trainees are required to carry updated iPads & discuss EFB requirements							
DISCUSSION ITEMS				GRADE		REFERENCE	
				PF	PNF		
1. ALL WEATHER OPERATIONS						OM, FCTM	
2. USE OF MEL MULTIPLE SYSTEM MALFUNCTIONS						MEL OM	
3. MEMORY ITEMS, LIMITATIONS						FCOM	
4. HURRY SYNDROME							
5. STALL & RECOVERY						FCTM	
6. GO-AROUND PROCEDURE / DISCONTINUED APPROACH						FCTM, FCOM	
7. LANDING/TAKEOFF DISTANCE CALCULATIONS						FLY SMART/NAV BLUE	
COMPETENCE ENHANCEMENT (M)							
LEADERSHIP AND TEAMWORK						OM	
PROBLEM SOLVING AND DECISION MAKING						OM	
FLIGHT PATH MANAGEMENT						OM	
AUTOMATION AND MANUAL CONTROL						OM	

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	A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST.....ALT.....		Doc. No. F/TRG/01-D01/B3-1 Dated: August 20, 2019	Edition 02 Revision 00
	FLIGHT OPERATIONS TRAINING DIVISION	SYLLABUS "BRAVO" (JAN -JUN)	DAY- 2 (Evaluation / Check Session)	
SESSION DETAIL				
1. PRELIMINARY COCKPIT PREPARATION				FCOM
2. START MALFUNCTIONS (M1)				FCOM, FCTM
3. TAXI OUT MALFUNCTION				FCOM, FCTM
4. GPWS EVENT / WINDSHEAR (M2)				FCOM, FCTM
5. TCAS EVENT (M)				FCOM, FCTM
6. STALL RECOVERY (M1)				FCOM, FCTM
7. UPRT (M)				FCTM
8. EMERGENCY DESCENT (M1)				FCTM
9. ENG. REV UNLOCK				FCOM
10. ILS APPROACH LANDING WITHOUT AP (M)				FCOM, FCTM
11. SE GO AROUND				FCOM, FCTM
12. NPA 25L OR 07R (RNAV) (M)				FCOM, FCTM
13. ENG. FAIL B/W V1 & V2 (M)				FCOM, FCTM
14. ENGINE FIRE				FCOM, FCTM
15. PILOT INCAPACITATION (M1)				FCOM, FCTM
16. RTO / EVACUATION (M+M1)				FCOM, FCTM
LOW VISIBILITY PROCEDURE / CAT-II/CAT-III				
1. TAKEOFF RVR 125/150 M				OM, FCOM, FCTM
2. REJECTED TAKEOFF <100 KTS/V1				OM, FCOM, FCTM
3. CAT-II/III APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL				OM, FCOM, FCTM
4. CAT-II/III APPROACHES FAILURES NECESSITATING GO AROUND				OM, FCOM, FCTM
5. CAT-1/III APPROACHES WITH AUTO LAND				OM, FCOM, FCTM
SESSION EVALUATION				
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CORE COMPETENCIES				
OVERALL STANDARD REQUIRED	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL
COMMENTS:				

TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	LIC. NO

17.4.3 REC3-JAN-JUNE-CHARLIE

		A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST.....ALT.....		Doc: No.F/TRG/01-D01/B3-1 Dated: August 20, 2019		Edition 02 Revision 00	
FLIGHT OPERATIONS TRAINING DIVISION			SYLLABUS "CHARLIE" (JAN -JUN)		DAY- 1 (Training Session)		
NAME:			P.NO:		CREW POSITION		
DATE			LOCATION		☐ CAPT ☐ F/O ☐ I.P		
			TOTAL SESSION TIME		TIME PF		
			04:00 HOURS		TIME PNF		
AIRCRAFT DATA							
ZERO FUEL WT	58000 KGS	ZFW CG	32%	THRUST REDUCTION	1000 FT		
TOTAL FUEL	10000 KGS	TAKE OFF CG	30%	ACC HEIGHT 2/1 ENG	3000/1500 FT		
TAKEOFF WT	68000 KGS	TAKEOFF FLAPS	CONFIG 2	TAKEOFF THRUST	FLEX 58°C		
RESERVE FUEL	_____ KGS	CRUISE ALTITUDE	FL330	MEL ITEMS	Instructor's Discretion		
		COST INDEX	30				
SESSION DATA AND WEATHER							
DEPARTURE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
WEATHER:	INSTRUCTOR'S DISCRETION			GOOD			
ATC:.....							
DESTINATION AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
WEATHER:	INSTRUCTOR'S DISCRETION			MEDIUM			
ATC:.....							
SESSION OBJECTIVE							
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Instructor .							
2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis.							
3. Simulator system faults will be removed after full stop landing.							
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto thrust etc.) unless specifically restricted by the instructor.							
5. Core competencies enhancements are part of the desired learning outcome							
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Instructor .							
7. Instructors to ensure that during intermediate/final levels of vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.							
8. Day-1 should be practiced as a LOFT							
Instructor and trainees are required to carry updated iPads & discuss EFB requirements							
DISCUSSION ITEMS				GRADE		REFERENCE	
				PF PM			
1. SPECIAL OPERATIONS						FCOM	
2. ECAM HANDLING						FCOM, FCTM	
3. SUPPLEMENTARY PROCEDURES						FCOM, FCTM	
4. TECHNIQUES TO IMPROVE FUEL EFFICIENCY						FCTM	
5. PRESSURIZATION SYSTEM						FCOM	
6. MAXIMUM & OPTIMUM ALTITUDES						FCOM, QRH	
7. FDM KEY EVENT \$						FDM DATA	
COMPETENCE ENHANCEMENT(M)							
COMMUNICATION							
WORKLOAD MANAGEMENT							
SITUATIONAL AWARENESS							
KNOWLEDGE							
APPLICATION OF PROCEDURES							

		A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST..... ALT.....		Doc. No. F/TRG/01-D01/B3-1 Dated: August 20, 2019		Edition 02 Revision 00	
FLIGHT OPERATIONS TRAINING DIVISION			SYLLABUS "CHARLIE" (JAN - JUN)		DAY- 2 (Evaluation / Check Session)		
NAME:			P.NO:		CREW POSITION		
					CAPT F/O I.P		
DATE	LOCATION	TOTAL SESSION TIME		TIME PF	TIME PNF		
		04:00 HOURS					
AIRCRAFT DATA							
ZERO FUEL WT	56000KGS	C.G		THRUST REDUCTION	1000 FT		
TOTAL FUEL	10000 KGS	TAKEOFF FLAPS	CONFIG. 1+F or 2	ACC HEIGHT 2/1 ENG	3000/ 1500 FT		
TAKEOFF WT	66000 KGS	CRUISE ALTITUDE	FL310	TAKEOFF THRUST TO2	FLEX °C		
RESERVE FUEL	KGS	COST INDEX	30	MEL	Instructor's Discretion		
SESSION DATA AND WEATHER							
DEPARTURE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
				GOOD			
WEATHER: INSTRUCTOR'S DISCRETION							
ATC:							
DESTINATION AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
				MEDIUM			
WEATHER: INSTRUCTOR'S DISCRETION							
ALTERNATE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
				GOOD			
ATC:							
SESSION OBJECTIVE							
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.							
2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis.							
3. Simulator system faults will be removed after full stop landing.							
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.							
5. Core competencies enhancements are part of the desired learning outcome.							
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.							
Instructor and trainees are required to carry updated iPads & discuss EFB requirements							
DISCUSSION ITEMS				GRADE		REFERENCE	
				PF		PNF	
1. ALL WEATHER OPERATIONS, GRF						OM, FCTM, JEPP	
2. GPS INTERFERENCE/SPOOFING						FCOM	
3. MEMORY ITEMS						FCOM	
4. LIMITATIONS						FCOM	
5. APPROACH BAN						JEPPESEN	
6. GO-AROUND PROCEDURE / DISCONTINUED APPROACH						FCTM, FCOM	
7. LANDING DISTANCE CALCULATIONS BRAKE INOP						FLY SMART/NAV BLUE	
COMPETENCE ENHANCEMENT (M)							
LEADERSHIP AND TEAMWORK						OM	
PROBLEM SOLVING AND DECISION MAKING						OM	
FLIGHT PATH MANAGEMENT						OM	
AUTOMATION AND MANUAL CONTROL						OM	

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	A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP.....DEST.....ALT.....		Doc: No. F/TRG/01-D01/B3-1 Dated: August 20, 2019		Edition 02 Revision 00
	FLIGHT OPERATIONS TRAINING DIVISION		SYLLABUS "CHARLIE" (JAN -JUN)		DAY- 2 (Evaluation / Check Session)
SESSION DETAIL					
1. PRELIMINARY COCKPIT PREPARATION					FCOM
2. START MALFUNCTIONS (M1)					FCOM, FCTM
3. TAXI OUT MALFUNCTION					FCOM, FCTM
4. GPWS EVENT / WINDSHEAR (M2)					FCOM, FCTM
5. TCAS EVENT (M)					FCOM, FCTM
6. STALL RECOVERY (M1)					FCOM, FCTM
7. UPRT (M)					FCTM
8. DRIFT DOWN					FCTM
9. EMERGENCY DESCENT (M1)					FCTM
10. SE ILS APPROACH LANDING WITHOUT AP (M)					FCOM, FCTM
11. SE GO AROUND					FCOM, FCTM
12. NPA (RNAV) (M)					FCOM, FCTM
13. ENG. FAIL B/W V1 & V2 (M)					FCOM, FCTM
14. ENGINE FIRE (M)					FCOM, FCTM
15. PILOT INCAPACITATION (M1)					FCOM, FCTM
16. RTO / EVACUATION (M+M1)					FCOM, FCTM
LOW VISIBILITY PROCEDURE / CAT-II/CAT-III					
1. TAKEOFF RVR 125/150 M					OM, FCOM, FCTM
2. REJECTED TAKEOFF <100 KTS/V1					OM, FCOM, FCTM
3. CAT-II/III APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL					OM, FCOM, FCTM
4. CAT-II/III APPROACHES FAILURES NECESSITATING GO AROUND					OM, FCOM, FCTM
5. CAT-11/III APPROACHES WITH AUTO LAND					OM, FCOM, FCTM
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CORE COMPETENCIES					
OVERALL STANDARD REQUIRED		☐ HIGH ☐ AVERAGE ☐ MARGINAL ☐ REMEDIAL			
COMMENTS:					

TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	LIC. NO

17.4.4 REC4-JUL-DEC- DELTA

PCAA approval No.				Page 1 of 4	
 PAKISTAN International Airlines <i>Great People to Fly With</i>		A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST.....ALT.....		Doc. No. F/TRG/01-D01/B3-1 Dated: August 20, 2019	
FLIGHT OPERATIONS TRAINING DIVISION		SYLLABUS "DELTA" (JAN -JUN)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION	
DATE		LOCATION		☐ CAPT ☐ F/O ☐ I.P	
		TOTAL SESSION TIME 04:00 HOURS		TIME PF TIME PNF	
AIRCRAFT DATA					
ZERO FUEL WT	56000 KGS	ZFW CG	32%	THRUST REDUCTION	1000 FT
TOTAL FUEL	10000 KGS	TAKE OFF CG	30%	ACC HEIGHT 2/1 ENG	3000/1500 FT
TAKEOFF WT	66000 KGS	TAKEOFF FLAPS	CONFIG 2	TAKEOFF THRUST	FLEX 58 °C
RESERVE FUEL	_____ KGS	CRUISE ALTITUDE	FL330	MEL ITEMS	Instructor's Discretion
		COST INDEX	30		
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE	RUNWAY IN USE	BRAKING ACTION GOOD		
WEATHER: INSTRUCTOR'S DISCRETION					
ATC:					
DESTINATION AIRPORT	ICAO CODE	RUNWAY IN USE	BRAKING ACTION MEDIUM		
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE	RUNWAY IN USE	BRAKING ACTION GOOD		
ATC:					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Instructor.					
2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis.					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto thrust etc.) unless specifically restricted by the instructor.					
5. Core competencies enhancements are part of the desired learning outcome					
6. The sequence of non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Instructor.					
7. Instructions to ensure that during intermediate final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
8. Day-1 should be practiced as a LOFT					
Instructor and trainees are required to carry updated iPads & discuss EFB requirements					
DISCUSSION ITEMS			GRADE		REFERENCE
			PF	PM	
1. SEVERE TURBULENCE					QRH, FCOM, FCTM
2. SYSTEM RESET PROCEDURE					QRH, FCOM, FCTM
3. SUPPLEMENTARY PROCEDURES					FCOM, FCTM
4. MEL DISPATCH WITH MULTIPLE CF ITEMS					MEL
5. WEATHER RADAR					FCOM/FCTM
6. WINDSHEAR / PREDICTIVE WINDSHEAR					FCOM, FCTM
7. FDM KEY EVENTS					FDM DATA
COMPETENCE ENHANCEMENT(AI)					
COMMUNICATION					
WORKLOAD MANAGEMENT					
SITUATIONAL AWARENESS					
KNOWLEDGE					
APPLICATION OF PROCEDURES					

		A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST.....ALT.....		Doc. No. F/TRG/01-D01/B3-1 Dated: August 20, 2019		Edition 02 Revision 00	
FLIGHT OPERATIONS TRAINING DIVISION		SYLLABUS "DELTA" (JAN - JUN)		DAY- 2 (Evaluation / Check Session)			
NAME:		P.NO:		CREW POSITION			
				☐ CAPT ☐ F/O ☐ I.P			
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF		
AIRCRAFT DATA							
ZERO FUEL WT	56000KGS	C.G		THRUST REDUCTION	1000 FT		
TOTAL FUEL	10000 KGS	TAKEOFF FLAPS	CONFIG 1+F or 2	ACC HEIGHT 2/1 ENG	3000/ 1500 FT		
TAKEOFF WT	66000 KGS	CRUISE ALTITUDE	FL310	TAKEOFF THRUST TO2	FLEX _____ °C		
RESERVE FUEL	_____ KGS	COST INDEX	30	MEL	Instructor's Discretion		
SESSION DATA AND WEATHER							
DEPARTURE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
	.....	.....		GOOD			
WEATHER: INSTRUCTOR'S DISCRETION							
ATC:							
DESTINATION AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
	.....	.....		MEDIUM			
WEATHER: INSTRUCTOR'S DISCRETION							
ALTERNATE AIRPORT	ICAO CODE	RUNWAY IN USE		BRAKING ACTION			
	.....	.....		GOOD			
ATC:							
SESSION OBJECTIVE							
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.							
2. The instructor will provide appropriate instructions, weather information and air traffic clearances, as far as possible to conduct the flight on a real time basis.							
3. Simulator system faults will be removed after full stop landing.							
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.							
5. Core competencies enhancements are part of the desired learning outcome.							
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.							
Instructor and trainees are required to carry updated iPads & discuss EFB requirements							
DISCUSSION ITEMS				GRADE		REFERENCE	
				PF	PNF		
1. ALL WEATHER OPERATIONS						OM, FCTM	
2. GPS INTERFERENCE/SPOOFING						FCOM	
3. MEMORY ITEMS, LIMITATIONS						FCOM	
4. OPTIMUM VS MAX FL						FCOM	
5. RVR CMV						JEPPESEN, CIRCULAR	
6. GO-AROUND PROCEDURE / CANCEL APPROACH						FCTM, FCOM	
7. PERFORMANCE CALCULATIONS						FLY SMART/NAV BLUE	
COMPETENCE ENHANCEMENT (M)							
LEADERSHIP AND TEAMWORK						OM	
PROBLEM SOLVING AND DECISION MAKING						OM	
FLIGHT PATH MANAGEMENT						OM	
AUTOMATION AND MANUAL CONTROL						OM	

PCAA approval No.

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	A-320 RECURRENT SIMULATOR TRAINING SYLLABUS DEP..... DEST.....ALT.....		Doc. No. F/TRG/01-D01/B3-1 Dated: August 20, 2019	Edition 02 Revision 00
	FLIGHT OPERATIONS TRAINING DIVISION	SYLLABUS "DELTA" (JAN -JUN)	DAY- 2 (Evaluation / Check Session)	
SESSION DETAIL				
1. PRELIMINARY COCKPIT PREPARATION				FCOM
2. START MALFUNCTIONS (M1)				FCOM, FCTM
3. TAXI OUT MALFUNCTION				FCOM, FCTM
4. GPWS EVENT / WINDSHEAR (M2)				FCOM, FCTM
5. TCAS EVENT (M)				FCOM, FCTM
6. STALL RECOVERY (M1)				FCOM, FCTM
7. UPRT				FCTM
8. EMERGENCY DESCENT (M1)				FCTM
9. ENG. REV UNLOCK				FCOM
10. ILS APPROACH LANDING WITHOUT AP (M)				FCOM, FCTM
11. SE GO AROUND				FCOM, FCTM
12. NPA 25L OR 07R (RNAV) (M)				FCOM, FCTM
13. ENG. FAIL B/W V1 & V2 (M)				FCOM, FCTM
14. ENGINE FIRE				FCOM, FCTM
15. PILOT INCAPACITATION (M1)				FCOM, FCTM
16. RTO / EVACUATION (M+M1)				FCOM, FCTM
LOW VISIBILITY PROCEDURE / CAT-II/CAT-III				
1. TAKEOFF RVR 125/150 M				OM, FCOM, FCTM
2. REJECTED TAKEOFF <100 KTS/V1				OM, FCOM, FCTM
3. CAT-III APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL				OM, FCOM, FCTM
4. CAT-III APPROACHES FAILURES NECESSITATING GO AROUND				OM, FCOM, FCTM
5. CAT-III APPROACHES WITH AUTO LAND				OM, FCOM, FCTM
SESSION EVALUATION				
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CORE COMPETENCIES				
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:				

TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	LIC. NO

 PAKISTAN International Airlines <i>Great People to Fly With</i> Flight Operation Department (Training Division)	OM PART-D Document # F/TRG/01-D01	Edition 6 Rev 00 March 25, 2024
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17.5 LVTO, CAT II & CAT III

INTRODUCTION:

PIA has an All Weather Operations (AWO) approval from PCAA. The details of this approval are contained in the current PIA OPS SPECS.

The following write up addresses the strictly regulated requirements for operations using or requiring the use of:

Decision Altitude (DA) below 200ft & RVR/VIS less than 550m.

- Auto landing system.
- Low Visibility Take Off (LVTO).

In addition, further regulatory and certification requirements strictly govern:

- The Aircraft (A320).
- The Airfield.
- The Operator (PIAC).
- The Flight Crew.

OBJECTIVE:

The objective of CAT II /CAT III operations is to provide a level of safety when landing in low visibility conditions, equivalent to that of normal operating conditions. Category II/ Category III constitutes the main part of all weather Operations (AWO), which also consists of Take Off in low visibility conditions. It is the most effective way in which an airline can maintain its schedule throughout the year.

DURATION:

PHASE I: Class room session of 03:00(Three) Hours.

PHASE II: Full Flight Simulator session of 01:30 Hours.

PHASE III: Evaluation FFS session of 00:30 mins.

INSTRUCTOR:

PHASE I: A320 type rated TRI/SFI/TRE or SFE.

PHASE II & III: A320 type rated SFE

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MANUALS TO BE CONSULTED:

1. All weather Ops-SOP.
2. All weather Ops, OM-A.
3. Aerodrome operating Minimums, Jeppesen.
4. Operational Data, Required Equipment for CAT 2 and CAT 3- QRH
5. Normal procedures, SOP – APPROACH - Aircraft Guidance management and SOP - LANDING / AUTOLAND, FCOM.
6. All Weather Operations and Limitations- PCAA ANO #019

TERMINOLOGY:

All Weather Operations (AWO) are defined as any taxi, takeoff or landing operations in low visibility conditions, where the visual reference is limited by weather conditions. The term AWO includes Low Visibility Take-Off (LVTO), low visibility landing operations (Category II/III). Additionally the Low Visibility Taxi Procedures and considerations are part of AWO.

Alert Height (AH)

The height of the wheels above the ground, read on a radio altimeter, above which a go-around would be initiated if a failure occurred in one part of the aeroplane's fail-operational system. Below this height the probability of failure is such that if a part of the system fails the operation can still be continued by the remaining part while complying with the safety criteria (i.e. double failure extremely improbable).

The AH of PIA A320 is 100ft AGL.

AH is only applicable in CAT III Ops.

Approach Ban

The approach ban point is defined as the Outer Marker or the equivalent point. If no approach ban point is defined then the height of 1000 ft RA (AGL) shall be used. If the reported RVR/VIS is below the applicable (charted) minimum, then the approach **SHALL NOT** be continued beyond the approach ban point. If, after passing the approach ban point, the reported RVR/VIS falls below the applicable minimum, the approach may be continued to DA/H or MDA/H.

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The approach may be continued below DA/H or MDA/H and the landing may be completed, provided that the visual reference adequate for the type of approach operation and for the intended runway is established at the DA/H or MDA/H and is maintained.

ILS CATEGORIES (ICAO) —

- a. ILS Category I — An ILS approach procedure which provides for an approach to a decision height not lower than 60m (200ft) and a visibility not less than 800m (2400ft) or a runway visual range not less than 550m (1800ft).
- b. ILS Category II (Special authorisation required) — An ILS approach procedure which provides for an approach to a decision height lower than 60m (200ft) but not lower than 30m (100ft) and a runway visual range not less than 300m (1000ft) for aircraft categories A, B, C (D with auto landing), and not less than 350m (1200ft) for aircraft category D without auto landing.
- c. ILS Category III (Special authorisation required) —
 1. IIIA — An ILS approach procedure which provides for approach with either a decision height lower than 30m (100ft) or with no decision height and with a runway visual range of not less than 175m (574ft).
 2. IIIB — An ILS approach procedure which provides for approach with either a decision height lower than 15m (50ft) or with no decision height and with a runway visual range of less than 175m (574ft) but not less than 50m (150ft).
 3. IIIC — An ILS approach procedure which provides for approach with no decision height and no runway visual range limitations.

Automatic Landing System

The airborne equipment which provides automatic control of the aeroplane during the approach and landing.

Fail Operational Automatic Landing System

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Upon the failure of a component or part of the system; the operation may be continued on the remainder of the system.

In the event of a failure, the automatic landing system will operate as a fail-passive system.

Fail Passive Auto Landing System

A system is fail passive if in the event of a failure it disengages without any significant deviation of trim, flight path or attitude. The pilot assumes control of the aeroplane after a failure.

Low Visibility Procedures (LVP)

Procedure applied to an airfield to ensure safe operations during: Lower than Standard Category I (RVR below 550m, and/or the ceiling below 200ft), Category II/ III approaches and Low Visibility Takeoffs.

Low Visibility takeoff (LVTO)

A takeoff on a runway where the RVR is less then 400M and low visibility procedures are enforced.

REQUIRED VISUAL REFERENCE

The section of the visual aids or of the approach area specified for the type of approach being conducted which must be in view for sufficient time for the pilot to make an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

Runway Visual Range (RVR)

The range over which the pilot of an aircraft on the centreline of a runway can see the runway surface markings or the lights delineating the runway for identifying its centreline.

RVR measuring devices are an essential part of an airfield's CAT II/III capability. Such measurements are displayed and available so that ATC can pass changed

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readings to the aeroplane within 15 seconds. RVR transmissometers are installed at the Touch-Down (TD) and Mid Point (MP) of the runway for CAT II and in addition at the stop end (or Roll- out) for CAT III. TDZ RVR, which is the governing value, should always be passed but other RVR may not necessarily be passed.

Reported RVR

The RVR communicated to the commander of an aircraft, by or on behalf of the person in charge of the airfield.

AWO - TRAINING OBJECTIVES

- Practice Low Visibility Take-offs in applicable Minimum RVR.
- Practice Low Visibility approach and landing procedures to the applicable approved minima.
- Demonstrate and practice responses to equipment downgrading / malfunctions.
- Practice Low altitude go-around with and/or without malfunctions.
- Consolidate the AWO ground training with practical illustration of low visibility landing conditions.
- Demonstrate the level of proficiency necessary to pass a LVO evaluation (for OPC and Skill Test).
- Demonstrate over all competence to operate aircraft in Low Visibility Operations.

FLIGHT PREPARATIONS

In addition to normal flight preparation, the following planning and preparation must be performed when LVTO, CAT II and/or CAT III approaches are envisaged:

- CM1 will be the Pilot Flying (PF) and CM2 Pilot Monitoring (PM) during AWO.

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- Review NOTAMS: To make sure that the destination airport still meets CAT II/III requirements.
- Runway and approach lighting.
- Radio NAV aid availability.
- RVR equipment availability etc.
- Airplane Status: Check that required equipment for LVTO, CAT II or CAT III approaches is operative. Also check the Airplane Technical Logbook confirms that no write-up during previous flights affect the equipment required for LVTO, CAT II or CATIII.
- Crew Qualification: Crew qualification and currency must be reviewed (both Captain and F/O must be qualified and current).
- Weather Information: During LVTO, if the weather at the departure aerodrome is below the landing minima and a land back at the departure aerodrome is not possible, then, a take off alternate must be selected. The weather report / forecast or any combination thereof should indicate that during period commencing one hour before and ending one hour after, the ETA at the aerodrome, the weather condition will be at or above the applicable landing minimums. The ceiling must be taken into account when the only approaches available are non- precision or circling approaches.

The take off alternate should be within 01 hour of flight time at Single Engine TAS in still air and ISA conditions.

For A320 the single engine cruise distance in still air, ISA conditions is 350nm.

- Fuel Planning: As guidance, minimum of 30 minutes fuel should be carried or the expected delays (taxiing / approach) whichever is higher.
- Cabin Crew Briefing: Brief the Cabin Crew not to enter the Flight Deck, or call on the intercom during taxi or approach unless safety dictates.

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- Take-off Speed: For LVTO, pay load permitting, use the flap setting that gives the lowest take-off speeds utilising the tailwind (if it gives lower speed).
- Take Off thrust is setting is at the Captains discretion.

LOW VISIBILITY TAXI:

- Pre-departure brief the highlights and ‘HOTSPOTS’.
- ATC clearance received prior to taxi.
- Clear communication. CM1 steers the aircraft, CM2 supports to keep aware of position.
- The groundspeed max. 10 knots. The use of aircraft lights is recommended unless glare reduces visibility.
- ANY doubt about position, STOP. Contact ATC immediately.
- All re-calculations, checklists, take off review/confirmation or abnormal procedures shall be completed with the aircraft stationary and the PARKING BRAKE SET / ON.
- Strictly follow surface markings and lighted stop bars shall not be crossed. Line-up penalties (ASDA/TODA) may require adjustment.
- “Low Visibility Take-off Briefing” shall be performed additionally.

LOW VISIBILITY TAKEOFF:

Take-off with RVR less than 400m is considered as LVTO.

a) LVTO with RVR between 400m and 150m:

- The minimum RVR in this range of value is a function of the aircraft category and of the runway equipment (as specified in table 1).
- No operational approval is required from CAA to perform LVTO with RVR 400m to 150m.
- Flight crew members have satisfactorily completed training in a simulator approved for this purpose.

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Take-off RVR / Visibility for take-off	
Facilities	RVR / Visibility (Note 3)
Nil (Day only)	500 m
Runway edge lighting and / or centre line marking	250/300 m (Notes 1 & 2)
Runway edge and centre line lighting	200/250 m (Note 1)
Runway edge and centre line lighting and multiple RVR information	150/200 m (Notes 1 & 4)

Note 1: The higher values apply to Category D aeroplanes.

Note 2: For night operations at least runway edge and runway end lights are required.

Note 3: The reported RVR/Visibility value representative of the initial part of the take-off run can be replaced by pilot assessment.

Note 4: The required RVR value must be achieved for all of the relevant RVR reporting points with the exception given in Note 3 above.

b) LVTO with RVR between 150m and 125m:

Following requirements must be met:

- Operational approval is required from CAA to perform LVTO with RVR 150m to 125m.
- A visual segment of 90m is required from the cockpit during the take-off run with the minimum RVR.
- Low visibility procedures are in force.
- High Intensity Runway Centre Line lights (CL) spaced 15m or less and High Intensity Edge lights (HIRL) spaced 60m or less are in operation.
- The 125m RVR value has been achieved for all of the relevant RVR reporting points.
- Flight crew member have satisfactorily completed training in a simulator approved by CAA for this purpose.

As per Ops Specs, PIA has Operational approval from PCAA. A320 is cleared to 125m (CAT C), once the above requirements are fulfilled.

When visibility/RVR is less than 200m, Auto thrust and Auto Brake MUST be serviceable and T/O on contaminated runway is not allowed.

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Rejected Take Off:

If the visual references are lost below 100kts, the take-off must be rejected, using guidance of the yaw bar. If the visual references are lost above 100 kts the take-off should be continued, however in both cases the RTO items defined in the SOP must be respected.

CAT II & CAT III OPERATION

As per PIA Policy, all CAT II / CAT III (A/B) approaches must be followed by an Auto Land.

Auto land Crosswind component Limitation as per FCOM.

FMA rollout mode cannot be assured on contaminated Runways

Overweight Auto Land Policy: Overweight auto land is not recommended. If required an automatic approach may be attempted, however the pilot should disengage the autopilot prior to flare height and accomplish a manual landing.

CAUTION: If the auto pilot disconnects during an engine out go around, loss of autopilot rudder control can result in large yaw and roll excursions if thrust asymmetry compensation is inoperative.

USE OF LANDING LIGHTS

The use of landing lights at night in low visibility can be detrimental to the acquisition of visual reference. Reflected lights from water droplets or snow may actually reduce visibility. The landing lights would, therefore, not normally be used in CAT II/III weather conditions.

APPROACH STRATEGY

Regardless of the actual weather conditions, the crew should plan the approach using the best approach capability. This would normally be CAT 3 DUAL with autoland depending upon aircraft status. The crew should assess the weather with aspect to possible downgrade capacity.

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Conditions	CAT I	CAT II	CAT III	
			WITH DH	NO DH
Flying technique	Manual flying or AP/FD, A/THR	AP/FD, A/THR down to DH	AP/FD, A/THR and Autoland	
Minima & Weather	DA (DH) Baro ref visibility	DH with RA RVR		
Autoland	Possible with precautions	Recommended	Mandatory	

GO AROUND STRATEGY

The crew must be ready mentally for go around at any stage of the approach. Should a failure occur above 1000ft RA, all ECAM action (and DH amendment if required) should be completed before reaching 1000ft RA otherwise a go-around should be initiated. This ensures proper task sharing for the remainder of the approach.

TYPE AND COMMAND EXPERIENCE:

The following additional requirements are applicable to commanders who are new to the type:

- 100 hours as Pilot-in-Command on the type before performing any CAT II or CAT III operation.

COMPANY OPERATING MINIMA CAT II & III

Category	DH	Required RVR Reading		
		TDZ	MID	RO/ SE (*)
II	100 FT	350 M	>/= 125 M	>/= 75 M
III A	50 FT	200 M	>/= 75 M	>/= 75 M
III B	DH/ NO DH	75 M	>/= 75 M	>/= 75 M

(*) Rollout / Stop End RVR reading is mandatory and controlling only when that part of the runway is relevant. (Note: relevant, in this context, means that part of the runway used during the high speed phase of landing down to

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a speed of approximately 60 knots). CAT II, IIIA mid with manual rollout RVR requirement is 125M.

Note: For CAT II operations, the TDZ measurement is mandatory and for CAT III operations the TDZ and MID measurements is mandatory, (MID if U/S can be replace by RO), For CAT IIIB without DH only one RVR measurement is required. TDZ if u/s and replaced by mid zone as approved by the state of the aerodrome the RVR requirement remains as per TDZ.

LIMITATIONS:

CAT II

Minimum decision height.....100 ft

At least one autopilot must be engaged in APPR mode, and CAT 2 or CAT 3 SINGLE or CAT 3 DUAL must be displayed on the FMA. For manual landing, AP should be disconnected no later than 80 ft AGL.

CAT III

ILS CATEGORY III FAIL PASSIVE (SINGLE)

Minimum decision height.....50 ft A/THR must be used in selected or managed speed. At least one autopilot must be engaged in APPR mode, and CAT 3 SINGLE or CAT 3 DUAL must be displayed on the FMA.

ILS CATEGORY III FAIL OPERATIONAL (DUAL)

Alert height.....100 ft A/THR must be used in selected or managed speed. Both autopilots must be engaged in APPR mode, and CAT 3 DUAL must be displayed on the FMA.

CAT III with DH: Minimum Decision Height.....20 ft

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CAT III without DH: Minimum Runway Visual Range.....75 m

ENGINE-OUT

CAT II and CAT III fail passive autoland are only approved in configuration FULL, and if engine-out procedures are completed before reaching 1000 ft in approach.

MAXIMUM WIND CONDITIONS FOR ILS CAT I, CAT II OR CAT III Headwind:
30 kt

Tailwind : 10 kt

Crosswind: 20 kt

Note: Wind limitation is based on the surface wind reported by ATC. If the wind displayed on the ND exceeds the above-noted autoland limitations, but the tower reports a surface wind within the limitations, then the autopilot can remain engaged. If the tower reports a surface wind beyond limitations, only CAT I automatic approach without autoland can be performed.

APPROACH BRIEFING:

Before commencing a CAT II/III approach a number of factors must be considered by the crew. In addition to the standard approach briefing, the following points should be emphasised during an approach briefing for a low visibility approach:

- Aircraft capability
- Airport facilities
- Crew qualification
- Weather minima
- Task sharing
- Call-outs
- Go-around strategy

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For CATIII with no DH, the flight crew should enter "NO" in the DH field of the MCDU to avoid false "HUNDRED ABOVE" or "MINIMUM" auto callouts which would not be applicable.

Flight crew must check the required equipment for CAT 2 and CAT 3 in the QRH operational data section as per the aircraft MSN.

APPROACH PROCEDURE TASK SHARING

The workload is distributed in such a way that the PF primary tasks are supervising and decision making and the PM primary task is monitoring the operation of the automatic system.

PF Tasks

The PF supervises the approach (trajectory, attitude, speed) and takes appropriate decision at DH or in case of failure. Since the approach is flown with AP/FD/A-THR, the PF must be continuously ready to take-over:

- If any AP hard over is experienced
- If a major failure occurs
- If any doubt arises.

At 350 FT, once "LAND" is displayed on the FMA, the PF announces "LAND" and the final approach course from the PFD.

PM Tasks

The PM is head down throughout the automatic approach and automatic landing.

The PM monitors:

- The FMA and calls all mode changes below 350 ft as required (i.e. after PF calls "LAND")
- The Auto call out
- The aircraft trajectory or attitude exceedance
- Any failures.

The PM should be go-around minded.

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PF	PM
350 Feet RA	
☞ Check ILS Course on PFD ☞ Commence outside scanning ☞ Announce “LAND” when displayed on FMA	
At DH + 100 Feet	
	☞ Monitor auto callout ‘100 ABOVE’
At DH	
	☞ Monitor auto callout ‘MINIMUM’
If external visual reference are sufficient	
☞ Announce ‘CONTINUE’	
At 40 Feet RA	
	☞ Check FLARE on FMA and Announce
At 30 Feet RA	
☞ Monitor thrust reduction and flare by flight instruments	
At 10 feet RA Auto callout ‘RETARD’	
☞ Retard both thrust levers to idle ☞ Monitor lateral guidance by external reference	☞ Monitor engine parameters
AT TOUCHDOWN	
☞ Select and control Reserve thrust ☞ Disengage AP at the end of Rollout or at the latest when vacating RWY	☞ Check ROLLOUT on PMA and announce ☞ Check Reverse green and announce ☞ Announce 70 knots
If visual reference are NOT sufficient	
☞ Announce GO-AROUND, FLAPS and execute go around	

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VISUAL REFERENCES

For CAT II Operations

At DH, the visual reference specified below should be distinctly visible and identifiable to the

Pilot:

1. A segment of at least three consecutive lights being the centerline of the approach lights or touchdown zone lights, or runway centerline lights, or runway edge lights, or a combination of these;
2. This visual reference should a lateral element of the ground pattern, such as an approach light crossbar or the landing threshold or a barrette of the touchdown zone light unless the operation is conducted utilizing an approved HUDLS to touchdown.

For CAT III Operations

1. For CAT IIIA operations and for CATIIIB operations conducted either with fail-passive flight control systems or with the use of an approved HUDLS: at DH, a segment of at least three consecutive light being the centerline of the approach lights, or touchdown zone lights or runway centerline lights, or runway edge lights, or a combination of these is attained and can be maintained by a Pilot.
2. For CAT IIIB operations conducted either with fail-operational flight control systems or with a fail-operational hybrid landing system using a DH: at DH, at least one centerline light is attained and can be maintained by the Pilot.
3. For CAT IIIB with no DH there is no specification for visual reference with the runway prior to touchdown.

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SOME SYSTEM PARTICULARS

- Below 700 ft RA, data coming from the FMS is frozen e.g.: ILS tune inhibit.
- Below 400 ft RA, the FCU is frozen.
- At 350 ft, LAND must be displayed on FMA. This ensures correct final approach guidance.
- Below 200 ft, the AUTOLAND red light illuminates if:

Both Aps trip off

Excessive beam deviation is sensed

Localizer or glide slope transmitter or receiver fails

A RA discrepancy of at least 15 ft is sensed.

- Flare comes at or below 40 ft
- THR IDLE comes at or below 30 ft
- RETARD auto call out comes at 10 ft for autoland as an order (Instead of 20 ft for manual landing as a reminder).

AIRCRAFT CAPABILITY:

The failures that may affect the aircraft's CAT II or CAT III capability are listed in the QRH. Most of these failures are monitored by the FMGS and the landing capability will be displayed on the FMA once the APPR PB is pressed, i.e. CAT II, CAT III SINGLE, and CAT III DUAL. However, there are a number of failures which affect the aircraft's landing capability which are not monitored by the FMGS and, consequently, not reflected on the FMA. It is very important, therefore, that the crew refer to the QRH to establish the actual landing capability if some equipment are listed inoperative.

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REQUIREMENT REFERENCE TABLE FOR CAT II, III A/ B

	MINIMUM STATUS	FMA	EQUIPMENT	MINIMUM DH RVR	MINIMUM VISUAL REQUIREMENTS
CAT II	Fail Passive	CAT 2	Check Required Equipment	100 ft TD 350 MID 125 END 75	3 Approach or Runway Lights
CAT III A	Fail Passive	CAT 3 SINGLE	Check Required Equipment	50 ft TD 200 MID 75 END 75	3 Centreline Lights
CAT III B	Fail Operational	CAT 3 DUAL	Check Required Equipment	Less than 50 ft or No DH (as per state rules) TD 75 MID 75 END 75	1 Centreline Light with (DH)

Note: For CAT III B with No DH, no visual references required. RVR requirement remain the same as CAT III B (with DH).

FAILURE AND ASSOCIATED ACTIONS:

GENERAL

In general there are three possible responses to the failure/degradation of any system, Instrument or element during the approach.

1. CONTINUE the approach to the planned minima.
2. REVERT to higher minima and proceed to a new DH (above 1000ft).
3. GO AROUND and reassess the capability.

The nature of the failure/degradation and the point of its occurrence will determine which response is appropriate.

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As a general rule, if a failure occurs above 1000ft AGL the approach may be continued reverting to a higher DH, providing the appropriate conditions are met (refer to “DOWNGRADING CONDITION”). Below 1000ft (and down to AH when in CAT III DUAL) the occurrence of any failure implies a go-around, and a reassessment of the system capability. Another approach may then be undertaken to the appropriate minima for the given aircraft status.

It has been considered that below 1000ft, not enough time is available for the crew to perform the necessary switching, to check system configuration and limitations and brief for minima.

In CAT III DUAL, in general, a single failure (for example one AP failure or one engine failure) below AH does not necessitate a go-around. But a go-around is required if the AUTOLAND WARNING is triggered.

ABNORMAL PROCEDURES

The abnormal procedures can be classified into two groups:

1. Failures leading to a downgrading of capability as displayed on FMA and ECAM with an associated specific audio warning (triple click).
2. Failures that do not trigger a downgrading of capability but are signalled by other effects

(Flag, ECAM warning, amber caution and associated audio warnings).

It should be noted that some failures might trigger ECAM warnings, cautions and a downgrading of capability. The FCOM describes what should be the crew responses to failures in function to the height.

Above 1000ft Downgrading Conditions:

- a) Downgrading from CAT 3 to CAT 2 is permitted only if:
 - ECAM actions are completed,
 - RVR is at least equal to CAT II minima,
 - Briefing is amended to include CAT II procedure and DH.

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- Decision to downgrade is completed above 1000ft AGL.
- b) Downgrading from CAT 2 to CAT 1 permitted only if:
- ECAM actions are completed,
 - At least one FD is available,
 - RVR is at least equal to CAT I minima,
 - Briefing is amended to include CAT 1 procedure and DH.
 - The decision to downgrade is completed above 1000ft AGL.

Note: switching from one AP to another before 1000ft AGL is permitted.

Below 1000ft and above DH (for CAT 2 or CAT 3 SINGLE) or above AH (for CAT 3 DUAL) a go-around must be performed in case of:

- ALPHA FLOOR activation,
- Loss of AP (cavalry charge),
- Downgrading of capability (triple click),
- Amber caution (single chime),
- Engine failure.

At 350 ft RA **LAND** must be displayed on FMA and runway course must be checked. If runway course is incorrect or LAND does not appear, a go-around must be performed.

LAND is displayed if LOC and GS track modes are active and at least one RA is available. These conditions need to be obtained no later than 350ft AGL to allow a satisfactory automatic landing.

Depending on terrain profile before the runway **LAND** mode may appear at lower height. This can be acceptable provided it has been demonstrated that automatic landing is satisfactory.

At 200ft RA and below:

Any AUTOLAND warning requires an immediate go-around.

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If visual references are sufficient and a manual landing is possible, the PF may decide to land manually.

At flare height:

If FLARE does not come up on FMA, a go-around must be performed. However, if visual references are sufficient and a manual landing is possible, the PF may decide to complete the landing.

After touchdown:

In case of anti-skid or nose wheel steering failure, disconnect AP and take manual control. If automatic rollout control is not satisfactory, disconnect the AP immediately.

Autoland Warning:

With “LAND” or “FLARE” green on the FMA and at least one AP engaged, the AUTOLAND red light appears on the glare-shield when the aircraft is below 200 ft RA and one of the following events occurs:

- The autopilots are lost, or
- The aircraft gets too far off the beam (LOC or G/S flash on PFD), or
- Loss of LOC signal above 15 ft, or loss of glide signal above 100 ft (transmitter or receivers), or
- The difference between both radio altimeter indications is greater than 15 ft, or
- The FMGS detects a long flare.

Warning of Excessive Beam Deviation:

This warning is a flashing of the LOC and G/S scales on the PFD and ND ROSE ILS. It occurs whenever: - G/S deviation is greater than 1 dot (above 100 ft RA).
- LOC deviation is greater than 1/4 dot (above 15 ft RA).

INCAPACITATION:

CAT II / III approaches are closely coordinated team efforts in the flight deck. Generic procedure is defined in OM, SEP.

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Above 1000 FEET RA:

Any crew standard calls may be repeated and response should be taken before the announcing pilot must assume incapacitation. The remaining pilot may continue the approach provided the incapacitated pilot does not obstruct the flight controls and FMA reflects CAT 2 OR CAT 3 as appropriate. If this requirement is not met, the remaining pilot should carry out missed approach and then prepare for another approach if required for safety reason, or divert to an aerodrome with CAT I weather condition or better.

Below 1000 FEET RA and Above Alert Height:

The standard calls between 1000 ft RA and above AH (alert ht) must be repeated before incapacitation is assumed. If no reply is received, go around should be initiated immediately. It is to be emphasised, that 500 Feet and below there is not enough time to evaluate the condition and the go around should be initiated immediately.

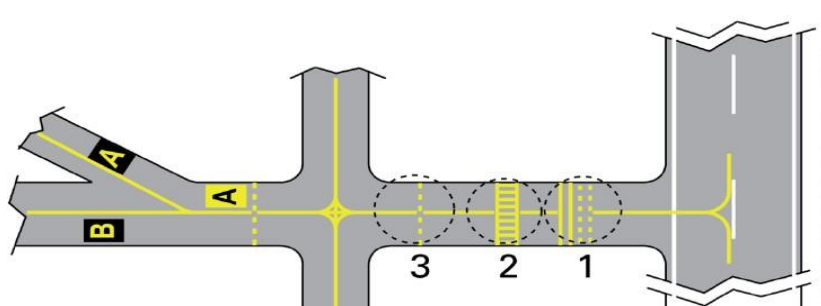
100 FEET (Alert Height) and Below:

The calls “100 ABOVE or MINIMUM” may not be repeated and incapacitation must be assumed. The approach should be continued to minimum and land if visual reference established.

Note: The cabin crew should be summoned to secure the incapacitated pilot. By 1000 Ft no FCU selections are required and landing checks should have been completed. The operating pilot should include external visual reference Approaching 200ft, the scan should be mainly external.

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AIRPORT LIGHTING SYSTEMS AND RUNWAY MARKINGS: TAXIWAY MARKINGS



1) Runway Taxi-Holding Position 'A'. Last holding position prior to entering runway.

Visual/CAT I & CAT II/III Taxi-Holding Positions where only one Taxi-Holding Position is provided.

2) Runway Taxi-Holding Position 'B' CAT I, II or III where a closer visual/CAT I Taxi- Holding Position is provided.

3) Intermediate Taxi-Holding Position.

RUNWAY LIGHTS

A320 : LVTO RVR < 150m

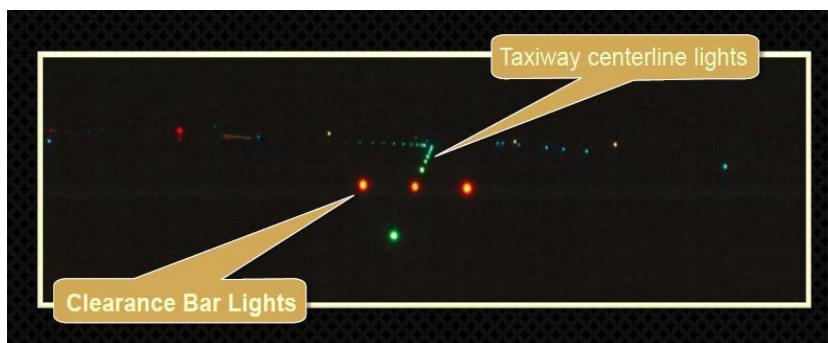


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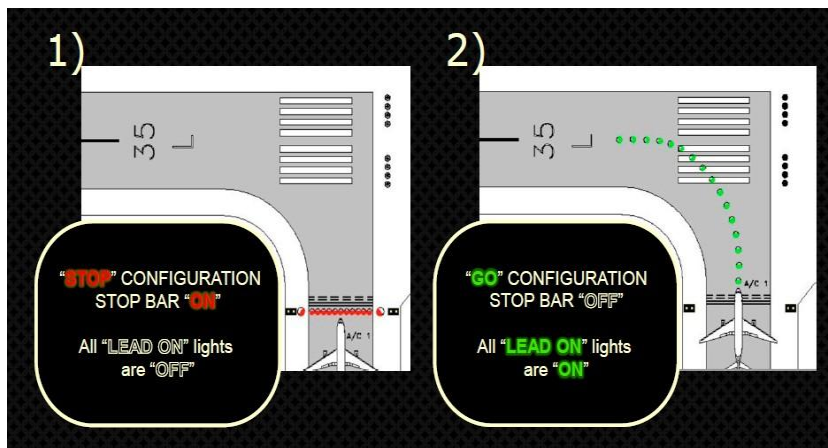
SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM (SMGCS)

Additional SMGCS Pilot Visual Aids at Airports to Operate below 600m RVR to support airline operations, Clearance Bars are installed at hold points on taxiways.

Taxiway centerline lights are installed on all SMGCS routes.

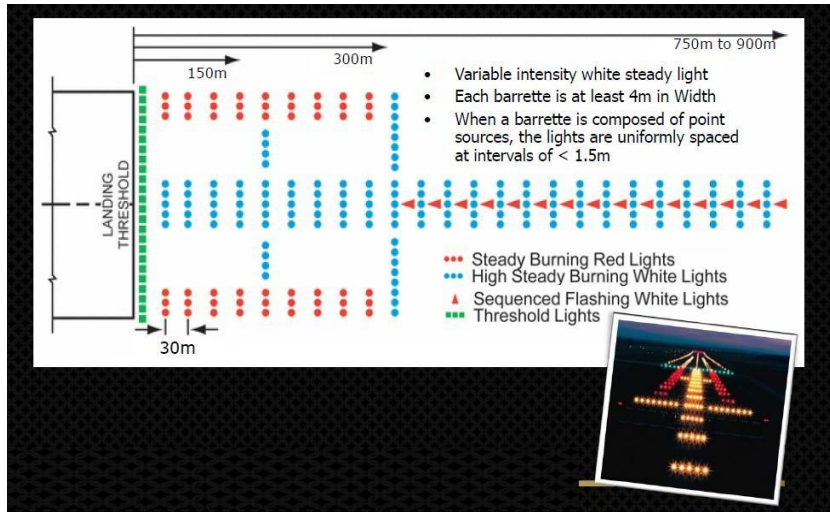


SMGCS PILOT VISUAL AIDS

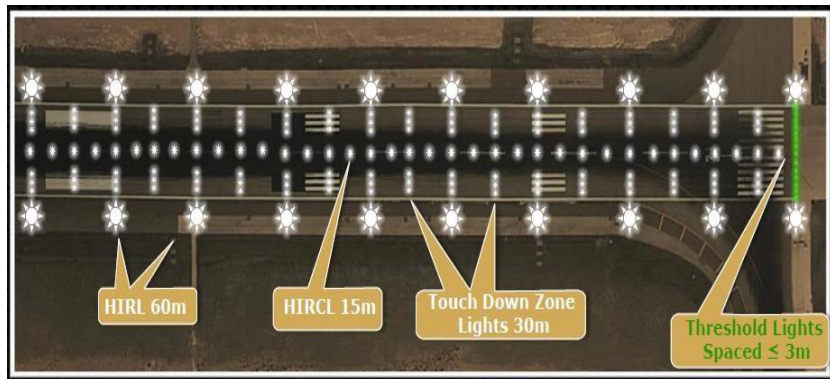


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SMGCS PILOT VISUAL AIDS



RUNWAY LIGHTS



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24. THRESHOLD LIGHTS green, spaced $\leq 3\text{m}$

Unidirectional green lights At right angles to the runway axis.

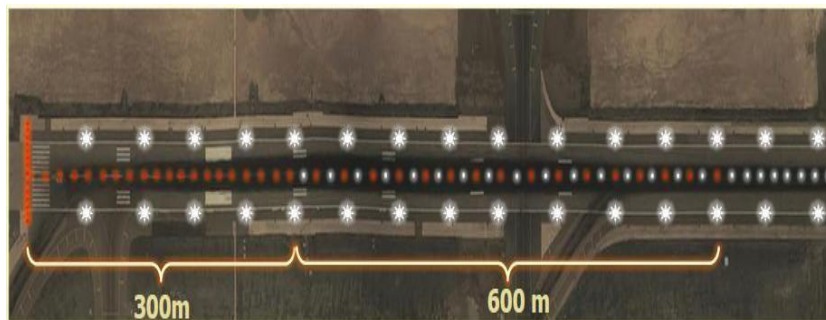
2) TOUCH DOWN ZONE Lights white Light rows equal spacing of both sides of extended centerline 30m apart.

24. HIRCL CENTRELINE LIGHTS white, spaced $\leq 15\text{m}$

Variable white to 900m from runway end, alternate red/white from 900m to 300m from end, then red.

24. HIRL RUNWAY EDGE LIGHTS white, spaced $\leq 60\text{m}$, 3m from runway edge, may be omitted at intersection.

RUNWAY LIGHTS



HIRCL CENTRELINE LIGHTS white, spaced $\leq 15\text{m}$

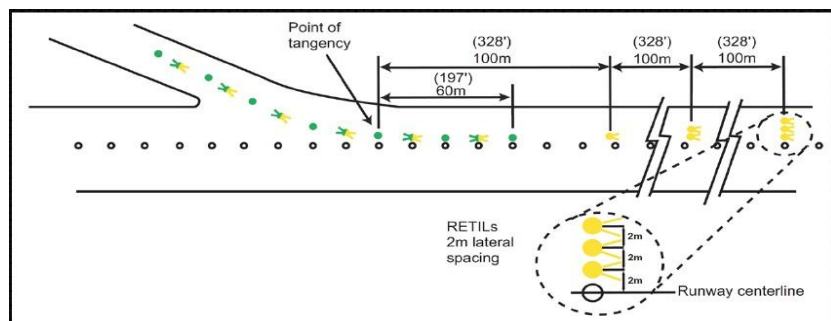
Variable white to 900m from runway end, alternate red/white from 900m to 300m from end, then red

RUNWAY END LIGHTS red, spaced $\leq 3\text{m}$

Unidirectional green lights, at right angles to the runway axis

HIGH SPEED TAXIWAY TURN-OFF INDICATOR LIGHTS (HSTIL) ICAO TERM IS RETIL

HSTIL are fixed unidirectional yellow lights, aligned so as to be visible to the pilot of a landing airplane in the direction of approach to the runway.



TRAINING AND EVALUATION

METHODOLOGY:

The instructors must highlight the following during the training:

- Checks of satisfactory functioning of equipment, both on the ground and in flight.
- Effect on minima caused by changes in the status of ground installations.
- Monitoring of automatic flight control systems and auto land status annunciators with emphasis on the action to be taken in the event of failures of such systems.
- Actions to be taken in the event of failures such as engines, electrical systems, hydraulics of flight control systems.
- The effect of unserviceabilities and use of minimum equipment lists.
- Guidance on the visual cues required at DH together with information on maximum deviation allowed from glide path or localizer.
- The importance and significance of AH (if applicable).
- Crew Incapacitation Procedures.

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CAT-II/LVP
(01:30 HRS)

TRAINING EXERCISES	PF	PM
INITIAL		
1. Cockpit preparation by instructor		
2. Engines running fuel freeze		
3. Take off fog patches – follow yaw bar		
4. Radar vectors CAT II briefing		
5. Approach – 2Aps		
6. Freeze at 150 ft review visual segment seat position – release		
7. Freeze at 100ft review visual segment seat position –release		
8. Auto land		
INITIAL TAKE OFF (Fuel Freeze)		
9. Take off Fog patches		
10. Rejected Take Off (one engine fail above 100kts) restore		
11. Take off Engine Fail after V1 (Between V1 and V2)		
12. Approach – 2Aps and 2FDs – ELEC or HYD failure – go around		
INITIAL TAKEOFF (Fuel Freeze)		
13. Take off radar vectors downwind		
14. Standby horizon flag Reset (above 1000ft)		
15. Approach 2Aps – DH 100ft		
16. Loss of LOC transmitter at 200ft AUTOLAND warning – go-around – restore		
17. No LAND		
18. No Flare		
19. Approach 2APS, DH 100 FT – 1 ATHR only		
20. Approach 2APS, DH 100 ft engine failure below 100 ft land		
21. Approach 2AP DH 100 ft ATT warning at 200ft (or 2 Radio Altimeter Failure)		
22. Manual go around (using standby horizon, if necessary)		
23. Approach 2APS, DH 100ft		
24. Approach 2APS, DH 100 ft landing with failures & reversion to higher minimums.		
25. CM1 incapacitation above DH go around		
26. Auto land with DH 100 ft		

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EVALUATION FFS CAT II/LVP

TRAINING EXERCISES	P	P
I		
1. Cockpit preparation by instructor		
2. Engine running (fuel freeze)		
3. Take off radar vectors briefing (CAT-II)		
4. Approach 2APs DH 100 ft no visual contact go around radar vectors Downwind		
5. Approach 2APs DH 100 ft, visual contact autoland		
6. Take off FOG patches		
7. Approach 2APs DH 100ft		
8. Engine fail above 200 feet, go around		
9. Approach 2 APs, DH 100 ft - ATHR only		
10. No LAND		
11. No Flare		
12. Remaining ATHR fail at 500 feet		
13. Autoland		

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CAT III
(01:30 HRS)

TRAINING EXERCISES	PF	PM
INITIAL TAKE OFF		
1. Cockpit preparation by instructor		
2. Engines running fuel freeze		
3. Take off		
4. Holding CATIII briefing		
5. Approach CAT III DUAL		
6. Review visual segment – seat position		
7. DH 50 ft - freeze at 50 ft – RVR 200m		
8. DH 20 ft – freeze at 20 ft – RVR 125m		
9. Autoland		
10. Take off Fog patches follow yaw bar		
11. Approach above 1000ft		
12. Review loss of ILS transmitter		
13. Review loss of ILS receiver		
14. Review loss of radio altimeter		
15. Review loss of standby horizon		
16. Review instrument failures		
17. Autoland		
18. Take off Fog patches		
19. Engine failure above 100 kts		
20. Rejected take off		
21. Take off (engine failure between V1 and V2)		
22. Initial Approach		
23. Take off		
24. Approach CAT III DUAL DH 20 ft		
25. ATT warning at 100 ft		
26. Go around using stand by horizon		
27. Approach CAT III DUAL - ILS performance degraded		
28. Engine failure at 200ft – go around – clean up		
29. Approach CAT III SINGLE DH 50 ft		
30. Auto pilot disconnect at 50 ft – go around		
31. Approach CAT III DUAL- CM1 incapacitation –CM2 go around		
32. Approach CAT III DUAL DH 50 ft		
33. No LAND		

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EVALUATION FFS CAT III

TRAINING EXERCISES	P	P
I		
1. Cockpit preparation by instructor		
2. Engines running fuel freeze		
3. Take off		
4. Holding CATIII briefing		
5. APPROACH – 2AP – DH 50ft – No Visual contact		
6. Go around – radar vectors		
7. Approach – 2AP – NO DH		
8. AUTO LAND		
9. Take off Fog patches		
10. Engine fail before Approach		
11. Approach – 2Aps-DH 50ft		
12. Go around		
13. Approach – 2Aps – DH 50ft		
14. No LAND		
15. No Flare		
16. Visual contact - Autoland		
17. Roll out fault.		

RECENCY

To retain Low Visibility Operations recency of qualification, a Captain must participate in the approved simulator cyclic and proficiency program (six monthly) and complete an auto coupled ILS approach to touchdown at least every 45 days in an airplane. If an autoland using Low Visibility procedures

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has not been completed in the preceding 45 days, recency can be up-dated by:

- a) Completing an autoland in the aeroplane in CAT I or better conditions using Low Visibility procedures, or
 - b) completing an autoland in an approved flight simulator using Low Visibility procedures, or c) Viewing video detailing Low Visibility procedures.
- Where recency is updated by this

method, the succeeding update must be in the aeroplane or flight Simulator.

Note: Low Visibility procedures do not imply use of a Cat II or Cat III minima. The minima for the approach shall be that published on the applicable approach chart.

AUTOLAND COMPETENCE CHECK

Autoland competence checking is achieved by participation in the approved simulator cyclic and proficiency training program.

LOW VISIBILITY TAKEOFF COMPETENCE CHECK

Low visibility takeoff competence checking is achieved by participation in the approved simulator cyclic and proficiency training program.

Note: A Captain does not require a Low Visibility Operations qualified Co-pilot in the right hand seat, when carrying out a practice approach to meet recency requirement in CAT I or better weather conditions. However the Captain is required to procedurally brief a non-qualified Co-pilot/First Officer prior to commencement of practice approach.

AUTOLAND SUPPORT AND LOW VISIBILITY COMPETENCE CHECK

Auto-land support and low visibility competence checking is achieved by participation in the approved simulator cyclic and proficiency training program.

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FIRST OFFICERS

First Officers or Co-Pilot, being the support crew for CAT II / CAT III operations, shall be trained and assessed during recurrent proficiency checks in low visibility procedures including CAT II / CAT III landings.

REQUIREMENT FOR LVP APPROACHES (PIC)

Minimum exposure for PIC to conduct Low Visibility Approaches shall be 100 hours on type.

17.6 SEAT CONVERSION

17.6.1 SEAT CONVERSION SIMULATOR TRAINING

Objective:

The objective of Conversion Line training from P1 to P2 is to allow the trainee to practice normal line procedures on the aircraft, and to achieve proficiency and confidence in these procedures.

The intent of line training is to assist the pilot, on line, route and airport qualification as defined in the OM Part-D (Training Policy Manual). Only routine operations in normal configuration are intended and no **abnormal situations will be intentionally created**.

The TRI/TRE will sign the aircraft load sheet, flight plan and take full responsibility for the safety of the aircraft, crew, passengers and the integrity of the operating schedule.

General:

The training or check pilot must conduct himself in a professional, proficient and efficient manner in every aspect, so as to enhance the professional and executive capability of the trainee

Each exercise in the line training syllabus will be covered, but the TRI/TRE/ will only sign the particular exercise once a proficient level has been achieved by the trainee. If a proficient level is not achieved, then it is required that amplifying comments be made to fully identify the trainee's deficiencies in the comments section along with the exercise number.

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The items in the line training syllabus containing asterisk (*) are for discussion only. The instructor will sign all such items only when proficient knowledge has been demonstrated by the trainee.

TRI and TRE are authorized to conduct line training for the first six takeoff and landings from RHS. After achieving satisfactory standard by the trainee in first six takeoff and landings, all TRI are also authorized to conduct the remaining line training.

Preparation:

Trainees are required to be familiar with OM (Part-A & D), SOP, FCOM PROCEDURES, OETBs, MEL application and also study to assimilate items in the syllabus before commencement of line training

Under Supervision Line Flying:

All trainees are required to fly twenty five (25) hours under supervision on line, including minimum of five (05) sectors, before they are put up for the final check.

Pre-rating line check is not required for First Officer. Upon satisfactory completion of the syllabus and required minimum sectors / hours, the trainee will be put up for a PCAA monitored “Final Route Check” to be conducted by a TRE.

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
1. FLIGHT DISPATCH BRIEFING					
a)	Departure weather.				
b)	~~Enroute~~ weather				
c)	Destination and Alternate weather.				
d)	~~NoJams~~				
e)	Computerized flight plan				
(i)	Routing				
(ii)	Flight Level				
(iii)	Fuel requirement				
(iv)	TOW calculation				
f)	ATC Flight Plan				
g)	Alternate requirements (Takeoff, ~~Enroute~~ , Destination and Emergency)				
2. PRE-FLIGHT					
a)	Safety exterior inspection				
b)	Tech Log / MEL / Aircraft Documents / Aircraft Tech. Library/Miscellaneous File				
c)	Preliminary cockpit preparation				
d)	Emergency equipment location (Cockpit and Cabin)				
e)	Exterior inspection				
f)	Door operation (Cockpit and Cabin)				
g)	Cockpit preparation				
h)	FMGS initialization				
i)	Briefings (As per SOP)				
3. DEPARTURE					
a)	Trim sheet				
b)	Before pushback and start procedure				
c)	Engine start and after start procedure				
d)	Taxi and before Take-off procedure				
e)	Takeoff Flaps 1+2				
f)	Takeoff Flaps 2				

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
g) Rolling Takeoff					
h) Static Takeoff (*)					
i) SID – FMGS departure					
4. CLIMB & CRUISE / ENROUTE					
a) Height / Speed restriction					
b) Discuss & Practice of Route offset					
c) Calculation of cruise ISA and green dot speed from QRI					
d) FMGS operation					
(i) Different pages of FMGS & Route change					
(ii) Enroute diversion (determine ETA, Fuel remaining)					
(iii) Create way points using Lat Long, PBD or PB/PB inputs					
(iv) Prepare and store new flight plan, involving different origin/destination Airfield					
(v) Create /store new runways / new NAV aids					
(vi) Change the flight plan alt to another alt					
(vii) Practice update command on PROG page from a known VOR					
(viii) ETP calculation					
5. DESCENT PREPARATION / DESCENT					
a) Destination / Alternate weather					
b) Fuel prediction					
c) Planning / Briefing					
d) Insufficient TOD Fuel / Action					
e) Descent prediction					
f) Star and Approach Insertion / Changes					
g) Insert holding pattern over present position, any way point or NAV aid and monitor fuel & time					

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
6. WEATHER					
a) Flight in turbulence					
b) Use of Anti Ice					
c) Use of weather Radar					
7. APPROACHES					
a) ILS approach manual with flight director					
b) Landing: decelerated precision ILS approach and landing					
(i) Stabilized precision ILS approach / Glide slope from above					
(ii) Stabilized visual approach and landing					
c) VOR approach					
(i) Selected Guidance (Use of HDG SEL & TRK FPA)					
e) RNAV Approach					
8. LANDINGS					
a) Flaps 3 Landing					
9. ITEMS FOR DISCUSSION					
a) Aircraft Systems (Press, HYD, FIDC & ETC.....)					
b) ADIRS fault / One IRS on "ATT" / Anomalies					
c) FMGS updating / Single FMS Ops/FMS failure					
d) Jeppesen (ATC, Emergency, meteorology, Airport Directory, Chart Change Notices)					
e) Max. AIL / Opt AIL / Buffet margin					
f) Special operations					
(i) Flight without cabin pressurization					
(ii) Operation from fluid contaminated RWY					
g) RNP / RNAV / PRNAV					
h) Windshear (Avoidance and Recovery)					
i) Consulting Graphs & Tables					
j) MFI / OPS MAINT procedure / CDI					

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
k)	Engine out drift down procedure (Strategies)				
l)	All memory items in detail				
m)	Ditch on board procedure				
n)	Preparation of load / trim sheet and its importance				
o)	Engine failure in cruise / drift down /in-flight fire / diversion				
p)	RNP and RVSM airspace requirements				
q)	RVR / visibility conversion table / Jeppesen				
r)	Discuss FCU in detail				
s)	Discuss all aircraft limitations				
t)	FMGC reset procedure on ground and in air				
u)	Adverse weather operation				
v)	On ground de-icing procedure (*)				
w)	Go-Around procedure (*)				
10. CRM SKILLS					
a)	Threat and error management				
b)	Communication				
c)	Decision making				
d)	Teamwork				
e)	Assertiveness				
f)	Situational Awareness				
11. PNF DUTIES (Minimum 02 Sectors)					
i)					
ii)					
iii)					
iv)					



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17.6.2 SEAT CONVERSION LINE TRAINING

Objective:

The objective of line training is to allow the trainee to practice normal line procedures on the aircraft, and to achieve proficiency and confidence in these procedures.

The intent of line training is to assist the pilot, on line, route and airport qualification as defined in the Training Policy Manual. Only routine operations in normal configuration are intended and no **abnormal situations will be intentionally created**.

General:

The TRI/TRE will sign the aircraft load sheet, flight plan and take full responsibility for the safety of the aircraft, crew, passengers and the integrity of the operating schedule.

The training or check pilot must conduct himself in a professional, proficient and efficient manner in every aspect, so as to enhance the professional and executive capability of the trainee.

Each exercise in the line training syllabus will be covered, but the TRI/TRE will only sign the particular exercise once a proficient level has been achieved by the trainee, otherwise, it is required that amplifying comments be made to fully identify the trainee's deficiencies in the comments section along with the exercise number.

The items in the line training syllabus containing asterisk (*) are for discussion only. The instructor will sign all such items only when proficient knowledge has been demonstrated by the trainee.

Preparation:

Trainees are required to be familiar with OM (Part-A & D), SOP, FCOM PROCEDURES, OETBs, MEL application and also study to assimilate items in the syllabus before commencement of line training

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Under Supervision Line Flying:

First six Takeoffs and Landings:

TRE / TRI are authorized to conduct line training for the first six takeoff and landings followed by stipulated line training (50/70 hours). The duration (hours) of first six takeoffs and landings will be included in 50 or 70 hours, (whichever is applicable) of the under supervision training.

Required Sectors, Hours & Recommendations:

All trainees are required to be detailed for minimum of ten (10) sectors during under supervision line training. Captain and First Officers shall complete the syllabus in 50 and 70 hours respectively. TRI can also recommend for Pre/Final Command Route Check.

Pre/Final Route Check:

Captains: On satisfactory completion of the syllabus and required minimum sectors, the trainee will be put up for a “Pre Final Command Route Check” within 50 hours. Upon satisfactory performance, he/she will be put up for a “Final Command Route Check” to be conducted by a TRE.

First Officers: On satisfactory completion of the syllabus and required minimum sectors / hours, the trainee will be put up for a “Final Route Check” to be conducted by a TRE. Pre-rating check of the First Officers is not required.

Capt. F/O			Flight No./Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
1. FLIGHT DISPATCH BRIEFING					
a)	Departure weather.				
b)	~~Enroute~~ weather				
c)	Destination and Alternate weather.				
d)	~~Notams~~				
e)	Computerized flight plan				
(i)	Routing				
(ii)	Flight Level				
(iii)	Fuel requirement				
(iv)	TOW calculation (Box A, B, C)				
f)	ATC Flight Plan				
g)	Alternate requirements (Takeoff, ~~Enroute~~ , Destination)				
h)	~~Enroute~~ : Adequate/Suitable (*FOM)				
2. PRE-FLIGHT					
a)	Safety exterior inspection				
b)	Tech Log / MEL / Aircraft Documents / Aircraft Tech. Library/Miscellaneous File				
c)	Preliminary cockpit preparation				
d)	Emergency equipment location (Cockpit and Cabin)				
e)	Exterior inspection				
f)	Door operation (Cockpit and Cabin)				
g)	Cockpit preparation				
h)	FMGS Initialization				
i)	Briefings (As per SOP)				
3. DEPARTURE					
a)	Trim sheet				
b)	Before pushback and start procedure				
c)	Engine start and after start procedure				
d)	Taxi and before Take-off procedure				

Capt. F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
e) Takeoff Flaps 1+F (FCTM)					
f) Takeoff Flaps 2					
g) Rolling Takeoff					
h) Static Takeoff (*)					
i) SID – FMGS departure					
4. CLIMB / ENROUTE					
a) Altitude / Speed restriction FMGS Unrestricted climb (speed/altitude)					
b) Discuss FCU in detail (*)					
c) Discuss POS MONITOR & SEL/DESELECT NAV AID -MCDU / Read same in FCOM (*)					
d) Discuss and practice creation of route Off Sel					
e) Insert a holding pattern over any way point or Way aid / monitor exit time & fuel					
f) Insert step prediction for climb or descent					
g) Insert winds for route way points and descent forecast					
h) Introduction to OEBs					
i) Calculation of cruise ISA and green dot speed from FCOM & QRH					
j) FMGC reset procedure on ground and in air /FCOM- irregularities (*)					
k) Plan descent / prepare / brief					
l) ROC and TOC restriction					
m) P.A. Announcement					
n) FMGS WORK					
(i) Route changes					
(i) Enroute diversion (determine ETA, Fuel remaining) SEC FPL					
(ii) Create way points using Lat/Long, PBD or PB/PB inputs					

Capt F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
(iv) Prepare and store new flt plan, involving different origin/destination Airfield.					
(v) Learn the effective usage of secondary flight plan					
(vi) Create /store new runways / new Nav aids					
(vii) INIT B after <u>eng start</u> (fuel <u>prog</u> page)					
(viii) Change the flt plan alt to another alt					
(ix) PROG. Page					
(x) Enable alternate in cruise and subsequently recover the flight plan					
(xi) Activate approach phase in cruise and subsequently recover CRZ page					
(xii) Practice update command on PROG page from a known VOR (*)					
(xiii) Observe changes brought about by altering the Cost Index/ variable (OETB)					
5. DESCENT PREPARATION / DESCENT					
a) Destination / Alternate weather					
b) Fuel prediction					
c) Planning / Briefing					
d) Insufficient TOD Fuel (reserve/minimum)					
e) Descend prediction					
f) Star and Approach Insertion / Changes					
6. WEATHER					
a) Flight in turbulence (QRH)					
b) Use of Anti-Ice (FCOM / FCTM)					
c) Adverse weather operation					
d) Use of weather Radar (color codes *)					

Capt. F/D			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
7. APPROACHES					
a) ILS approach with auto pilot					
b) ILS approach manual with flight director					
c) Landing: decelerated precision ILS approach					
(i) Stabilized precision ILS approach / Glide slope from above					
(ii) Stabilized visual approach and landing					
(iii) Manually flown Landing: without auto thrust, raw data ILS approach					
(iv) Special Ops (FCOM *)					
(v) Cancel Approach (FCOM*)					
d) NON-PRECISION APPROACH					
(i) Selected Guidance (Use of HDG SEL & TRK-FPA)					
(ii) Managed NAV/final approach					
8. LANDINGS					
a) Flaps 3 Landing					
b) Cross wind landing technique(*)					
c) Contaminated runway landing technique(*)					
d) Go-Around procedure (*)					
9. ITEMS FOR DISCUSSION					
a) Pressurization					
b) ADIRS fault / One IRS on "ATT" / Anomalies					
c) FMGS updating / Single FMS Ops/FMS failure					
d) Jeppesen (ATC, Emergency, meteorology, Airport Directory, Chart Change Notices)					
e) Max. Alt. / Opt Alt. / Buffet margin					
f) Special operations					
(i) Flight without cabin pressurization					
(ii) Operation from fluid contaminated RWY					

Capt. F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
g) RNP / RNAV / PRNAV					
h) RVSM					
i) TCAS / EGPWS					
j) Wind shear (Avoidance and Recovery)					
k) Consulting Graphs & Tables					
l) MEL / OPS MAINT procedure / CDL					
m) Restricted / Danger / Prohibited areas					
n) Engine out drift down procedure (Strategies)					
o) All memory items in detail					
p) Diversion from a critical point keeping fuel as the primary factor					
q) Bomb on-board procedure					
r) Plan descent / prepare / brief missed approach go around in detail					
s) RNP and RVSM airspace requirements / FCOM					
t) Read ATC / emergency procedure for Pakistan airspace / Jeppesen					
u) Various descent techniques					
v) Read and discuss dual engine failure in cruise / with / without fuel remaining					
w) Radio failure on departure and arrival / requirements / Jeppesen					
x) RVR / visibility conversion table / Jeppesen					
y) Practice dual FMGC failure / raw data flight procedure till landing					
z) Stabilized circle to land approach and landing / FCOM					

Capt. F/O			Flight No/Date	Instructor's Name	Instructor's Signature
P #	Lic #	Ref. #			
10. CRM SKILLS					
a) Threat and error management					
b) Communication					
c) Decision making					
d) Teamwork					
e) Assertiveness					
f) Situational Awareness					
11. PNF DUTIES (Minimum 02 Sectors)					
i)					
ii)					
iii)					
iv)					



Flight Operation Department
(Training Division)

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~~Capt~~ F/O	P #	LIC #	Ref. #

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CHAPTER 18: B777 TRAINING SYLLABI

18.0 TRANSITION TRAINING

Objective:

To enable the Crew to obtain knowledge of aircraft systems, attain proficiency in the application of operational, abnormal and emergency procedures, and to provide hands on training thereof.

At the end of the training program, each crew member must be capable, under all circumstances of carrying out his task, safely and efficiently.

A trainee will be allowed to pass from one phase to the next only if he has attained the skill necessary for the required tasks.

Elements:

This training will consist of the following:

- Type technical Course through e-Learning/classroom training
- FBS Training
- Full flight simulator (FFS) training
- Landing training/unstable approaches & recovery training
- ETOPS/MNPS/EDTO(LOFT)
- Low Visibility Operations – CAT-II/CAT-III training
- Under Supervision Line training

Documentation (Crew App / IPAD):

- Flight Crew Operating Manual Vol. 1
- Flight Crew Operating Manual Vol. 2
- Checklists – Normal / Abnormal (QRH)
- Flight Crew Training Manual
- Minimum Equipment List
- Weight and Balance
- TCAS II Booklet Operations Engineering Technical Bulletin / Operations Engineering Information Bulletin
- Jeppesen/FD Pro

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18.0.1 GROUND TYPE TECHNICAL TRAINING

18.0.1.0 CBT Program through LMS

Objective

The primary object of the e-learning program is to provide flight crew members with the necessary knowledge for understanding the basic functions of aircraft systems, the use of individual system components, integration of the aircraft systems, the understanding / application of Special Operations & Performance and the procedures on the use of safety equipment. Upon successful completion of the type technical course, the trainee will be detailed for initial Simulator Training.

18.0.1.1 Instructor Qualification

This Training will be supervised/conducted by the qualified Pilot/Ground Instructors as defined by the PCAA for assisting the pilots and supplementing through lectures when required either through distance learning or classroom training.

18.0.1.2 Training Aids:

The following Training Aids may be used in this Training Program:

- Personal Laptop/Computer/I Pad and a student account on LMS
- Transparencies where necessary Cockpit illustration panel charts
- Projector (if required)
- White Board / Marker, Pens

18.0.1.3 COURSE DURATION:

The duration of the training program is 13 working days (9 Days on LMS, 1 day both on LMS and classroom and a whole 3 days in Classroom) refer 18.0.1.4 for details.

18.0.1.4 Day wise course breakup

Each system will be covered through e-learning and classroom training.

DAY	TOPICS		MODE
Day 1	General Introduction • Course Overview • Familiarization with Manuals • Introduction to CBT: • The review of CBT Program • Airplane Familiarization: • Airplane Exterior • Passenger Cabin • Flight Deck and Systems • Aircraft Lighting: • Exterior Lighting • Interior Lighting • Test • Flight Deck Instruments Introduction • Primary Display System • Inboard Display Selectors • Display Select Panel • EFIS Control Panel	• Cursor Control Devices • Display Brightness Control • Display Control Switches • Non-Normal Conditions • Practice/ Test • FMC Familiarization: • FMC • CDU • Us • ing the CDU • Practice/ Test • Electronic Flight Instruments Overview: • EFIS Introduction • PFD – Airspeed, Attitude and Altitude • PFD – VSI, Heading and Auto flight Status • ND Approach and VOR Modes • ND Map and Plan Modes	LMS

DAY	TOPICS		MODE
Day 2	Crew Alerting System EICAS: - Display and Messages - System Operation - Airplane Status Messages - System Inhibits - Discrete Warnings - Non-normal Conditions Electronic Checklist-I: - Introduction - Normal Checklist - Non-normal Checklist - Normal and Non-normal Keys - Non-normal Checklist Queues - Practice/ Test Electronic Checklist-II: - Menu Keys - Un-annunciated Checklist - Operational Notes - Deferred Items - Resets and Overrides APU: - APU Introduction - Starting and Shut down - Non-normal Conditions - Practice/ Test - Electrical Systems: - Main Electrical Components - Primary and Secondary External Power	- APU Power - Generator Power - Electrical System Configuration for Flight - Airplane Shutdown and Security - Electrical Power Distribution: - Ground Handling and Ground Service Buses - Cabin Power Switches - DC Power System - Flight Control DC System - Auto land Electrical Configuration - Practice/ Test - Non-normal's: - Backup Power System - Standby Power System - Non-normal Operations - Fuel System - Components and Locations - Operation Prior to Flight - Operation In-flight and After Flight - Fuel Jettison System - Practice/ Test - Fuel System Non-normal: - Fuel Cross feed - Fuel Non-normal Messages	LMS

DAY	TOPICS		MODE
Day 3	Engines: • Overview • Engine Indications • EEC Normal Mode • EEC Alternate Mode • EEC Non-normal • Practice/ Test • Engine – Oil, Fuel, Vibration: • Oil System • Fuel System • Vibration Monitoring • Non-normal Operation Engine – Ignition and Starting • Components • Auto Start • Manual Start • In-flight Start • Continuous Ignition • Shut Down • Non-normal Operations • Practice/ Test • Thrust Reversers: • Overview • Normal Operation • Non-normal Operation ADIRS: • Air Data Inertial Reference System – Overview • Air Data Modules • ADIR Unit • ADIRU Pre-flight Alignment and Operations • Secondary Attitude Air Data Reference Unit (SAARU) • Non-normal Operation	• Practice/ Test • PFD – Pitot Static Displace: • PFD Overview • Airspeed Indication • Attitude Indication • Altitude Indication • Vertical Speed Indication PFD – Attitude – Radio Altitude and Other Displays • Miscellaneous Indications • ILS Approach Indications • Minimums • Heading, Track Indications • Air Data and Attitude Source Selection Switch • PFD Pre-flight • Non-normal Operation • Practice/ Test • NAV Display/ VOR Approach: • NAV Display Overview • Heading and Track Indication • NAV Radio Information and Tuning • Miscellaneous Indications • Centered Mode Display Differences • Non-normal Operations NAV Display – Map and Plan • Map and VOR / Approach Differences • Map Symbolology • Map Mode • Heading Reference • NAV Source Switch • ND Pre-flight • Non-normal Operations	LMS

DAY	TOPICS		MODE
Day 4	Auto flight Introduction and Pre-flight • Introduction • Pre-flight (Performance Data Not Yet Received) • Pre-flight (Performance Data Received) • Pre-flight Summary • Practice/ Test • Auto flight – Takeoff, climb, Cruise and Auto throttle Controls: • Overview • Takeoff • Flight Level Change • Level Flight • Heading Modes • Auto throttle controls Auto flight – Overview, Pre-flight, Takeoff, Climb and Cruise: • Overview • Pre-flight Phase – Use of Auto flight System • Takeoff Phase – Use of Auto flight System • Climb Phase – Use of Auto flight System • Cruise Phase – Use of Auto flight System Auto flight –Cruise, Descent, Approach, Landing and Go-around: • Cruise – Additional Features	• Approach – Additional Features • Go-around – Additional Features • Additional Features – Approach and Landing • Takeoff • Climb and Cruise • Approach and Landing • Practice / Test CDU Control of EFIS and DSP: • Alternate DSP Control • Alternate EFIS Control • Communications – VHF, HF and Interphone Systems: • Audio Control Panel • HF / VHF Communication • Flight and Service Interphone System • Cabin Interphone System • PA System • SELCAL Communication • Flight Deck Voice Recorder • Communication Non-normal Communications: • SATCOM Voice Communication • Crew Alerting system • Non-normal Conditions	LMS

DAY	TOPICS		MODE
	Descent – Additional Features		
Day 5	<i>Communication Data Links</i> - ACARS - Data Link Communication - Flight Deck Printer - Communication - Crew Alert System - Non-normal Conditions <i>FMC Route Entry Part-I</i> - Introduction - Enter a Route - Enter a Departure - Identify a Route Discontinuity - Enter a Company Route - Uplink a Route - Route – 2 - Data Link Pre-flight	<i>FMC Route Entry Part-II</i> - Introduction Legs page - Waypoint Airspeed Restrictions - Waypoint Altitude Restrictions <i>Auto flight – VNAV, Non-precision Approaches and Go-around</i> - VNAV Engage - VNAV Altitude Control - VNAV Cruise and Descent - Non-precision Approaches - Go-around <i>Auto flight Non-normal's</i> - Autopilot Non-normal - Auto throttle Non-normal - Auto land Non-normal	LMS
Day 6	<i>FMC Climb</i> - Overview - Climb Thrust - Climb Page - Climb Page Modifications - FMC Cruise Part-I - Initial Level Off from Climb - Speed Changes - Step Climb with Cruise Page - Step Climb with Legs Page - Route Data Pages - Wind Pages Updating and Wind Data Uplink <i>FMC Cruise Part-II</i> - Progress Page	- Delete Holding <i>FMC Flight Plan Changes</i> - Route Modifications and Discontinuities - Creating Waypoints - Creating Courses - Route Page Operations - FMC Route Offset and Fix Info - Route Offset Entry and Removal - Fix Info – Fix Entry and Abeam Entry - Fix Info – Creating Waypoints and Bearing/ Distance - Predicted ETA/ Altitude <i>FMC Approaches, STARS and Diversions</i> - Arrival Selection	LMS

DAY	TOPICS		MODE
	- Position Report Page - Reference NAV Data Page - Position Reference Pages - FMC Holding - Enter Holding at Present Position - Enter Holding at Fix Not in a Route - Exit Holding – Exit Armed - Exit Holding – At a Fix in a Route - Exit Holding – Direct to Waypoint	- Approach Reference Operations - Alternate Selection - Divert to Alternate Airport - VFR Approaches FMC Non-normal's - Engine Out Climb and Cruise - CDU Failure - FMC Failure - Alternate Navigation Legs Page - Alternate Navigation Progress Page	
Day 7	<i>FMC Pre-Flight</i> Ident Position Initialization Route/ NAV Radio Performance Initialization Thrust Limit and Takeoff Reference <i>FMC Climb and Cruise:</i> Climb and Cruise Data Progress Data RTA Progress Position Report Reference NAV Data Position Reference <i>FMC Flight Plan Changes and Flight Progress Data</i> Route Data and Winds Step Climb Part-I Course Intercepts Step Climb Part-II Abeam Points	<i>FMC Descents, Holding and Approach</i> Descent Preparation Descent and Hold Approach Intercept Alternates VFR Arrivals Alternate Data Link FMC Performance Introduction Cost Index ECON Speed Altitude Information Engine Out Performance FMC Failure FMC Takeoff Speeds <i>Reduce Thrust Takeoff:</i> Methods of Reducing Takeoff Thrust Derate – Description and Performance Improvement	LMS

DAY	TOPICS		MODE
	• Offset and Airways • LAT / Long Reporting Points	• Assume Temperature – Description, Restriction, Data Sources • Little More About Reduced Thrust Takeoff	
Day 8	Bleed Air • System Overview • APU Bleed Air • Engine Bleed Air • Bleed Air Isolation • Non-normal Operations • Test • Heating and Air-conditioning • Overview • Pack Operation and Temperature Control • Recirculation Fans • Equipment Cooling, Forward Cargo Air Conditioning • AFT and Bulk Cargo Heating • Shoulder and Foot Heating • Non-normal Operations Pressurization • Overview • System Operation • Non-normal Operation • Test • Anti-ice and Rain Protection • Anti-ice and Rain Components and Location	• Non-normal Operation Integrated Standby Flight Instruments (To be covered by PTC Instructor) • Introduction • Standby Attitude Indicator • Standby ASI • Standby Altimeter • Standby Compass • Clocks • Clock Introduction • Clock Set Time , Elapse Time, Chronograph • Test • ATC Transponder and Wx Radar • ATC Transponder • Wx Radar Non-normal Operation Engine and APU Fire Protection • Components • Engine Fire Protection • APU Fire Protection • APU Ground Control Panel • Non-normal Operations Cargo and Wheel Well Fire Protection • Cargo Fire Protection • Wheel Well Fire Protection • Lavatory Smoke Detection and Extinguisher • Non-normal's	LMS

DAY	TOPICS		MODE
	- Primary Ice Detection System - Engine Anti-ice - Wing Anti-ice - Window Heat - Windshield Rain Removal		
Day 9	Hydraulic Systems - Hydraulic Components - Hydraulically Powered Systems - Hydraulic Panel - Hydraulic Systems Non-normal - Non-normal Indications - Demand Pump ON - Isolation Valves - RAM Air Turbine Landing Gear - Normal Operation - Non-normal Operation - Nose and Main Gear Steering - Brake Systems - Wheel Brakes - Parking Brakes - Auto Brakes - Non-normal Operation Flight Control Overview - Fly-by-wire Introduction - Primary Flight Control System - Protection Features	- Modes of Operation - High Lift Devices - Control and Indicators - Flight Control Pitch and Yaw - Pitch Control - Pitch Trim - Yaw Control - Pitch and Yaw Non-normal Operation Flight Control – Roll - Ailerons and Flaprons - Roll Trim - Spoilers - Protection Features - Non-normal's - Additional Flight Control Non-normal's Flight Control – High Lift Devices - Primary Mode - Secondary Mode - Alternate Mode - Other Non-normal Operations - Composite Review	LMS

DAY	TOPICS		MODE
Day 10 Part 1 *	Crew Alerting System – GPWS/ PWS - GPWS Displays and Indications - GPWS Operation - Predictive Windshear System - GPWS Controls - Tail Strike Indicating System - TCAS - Types of Alerts - System Operation - Displays and Indications - Operating Practices - Inhibits Non-normal Conditions	Oxygen and Emergency Equipments - Flight Crew and Passenger Oxygen System - Emergency Lighting - Flight Deck Side Windows - Emergency Equipment - EGRESS and Evacuation - Doors, Slides and Evacuation Equipment - Exterior Doors - Passenger Entry Doors - Evacuation Slides/ Rafts - Non-normal Conditions	LMS
Day 10 Part 2	Performance - Takeoff Data - Weight and balance - Climb and Cruise Data - Fuel/Diversion planning	- Obstacle clearance - Descent Approach and Landing Data - MEL/CDL - OEI Performance	Classroom
Day 11	Variants/ Differences Training In B-777 Fleet Test & Review		LMS
Day 12	SEP DAY 1		Classroom
Day 13	SEP DAY 2		Classroom

*Day 10 is divided into two parts (LMS & Classroom)

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18.1 TRANSITION TRAINING SIMULATOR

18.1.0 FBS

INTRODUCTION

The Fixed Base Simulator (FBS) is a significant part of the training program and is conducted concurrently along with Computer Based Training. It consists of Days developed from specific objectives to progressively train automatic, normal and non-normal flight operations.

Each Day is a flight scenario designed to integrate weather, operating environment, Communications, thrust management, automated airplane maneuvering, and procedures. Operating philosophy and Crew Resource Management (CRM) is an integral part of each Day.

Your goal is to attain proficiency in normal procedures using the flight management system (FMS) and auto flight system. Proficiency is defined as “the ability to perform tasks in real time without assistance”.

Proficiency objectives are identified in each Day with asterisks (*). You must attain proficiency in all identified objectives prior to progressing to FFS training. You must also develop familiarity in non-normal procedures. Familiarity is defined as “understanding the process used to perform a task”. Familiarity objectives are identified in each Day with asterisks (*). Evaluation of your performance will be on a continuous basis (progressive evaluation).

Each Day has 3 parts: the briefing, FBS period, and debriefing.

- The briefing includes a discussion of the proficiency objectives, flight plan and significant events, and required level of performance. Briefing items are referenced to the appropriate sections of the Operations Manual (FCOM) or the Flight Crew Training Manual (FCTM).
- The FBS period affords the crew the opportunity to gain “hands on” system and procedural experience in the airplane environment.
- During the debriefing, a critique will be conducted consisting of a review of the Day and the performance level achieved.

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The Days progress from simple to complex. The earlier Days stress normal procedures and the introduction of selected non-normal procedures. The Days progress to include flights that reinforce normal procedures while integrating more complex clearances, flight plan changes, and non-normal procedures. All flights use the FMS and auto flight system to control the airplane.

Related route, weather, and performance data is specified in each Day. Airport information is obtained from the approach charts provided during training. Crew are expected to become familiar with the flight scenario prior to each Day.

The following pages provide planning data and specific procedures for each Day

FBS PROGRAM OBJECTIVES

Train to proficiency in performing airplane normal procedures during all phases of flight.

Train to proficiency in maintaining automatic airplane control and navigation using the auto flight system and Flight Management System (FMS).

Introduce selected non-normal procedures.

TRAINING MATERIALS

- Training Manual
- Operations Manual
- Flight Crew Training Manual
- Navigation plates (Jeppesen)
- LMS

GENERAL GUIDANCE TO INSTRUCTORS

To ensure standardization, Instructors should closely adhere to the Day Plans, Instructor Guide and established teaching procedures.

Suggestions for change are welcome and should be addressed to the Chief Pilot Training.

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Fixed Base Simulator (FBS) training is designed to teach normal and non-normal procedures. Systems training are the function of the Computer Based Training (CBT) phase, and FBS sessions should only be used for the reinforcement of systems knowledge where it is required. The primary purpose of FBS training is to integrate systems knowledge with operating procedures, both normal and non-normal, in order to prepare the trainees for the next stage of their training.

Instructors should emphasize to the trainees that system information must be derived from the CBT and not during FBS training.

Similarly, the purpose of FBS training is not to teach flying techniques. FBS Days consist of LOFT type scenarios, but it is not necessary to complete each stage of the flight in full. The scenarios are used merely to create situations which require the use of laid down procedures, thereby providing the trainees with the familiarity and practice the need to become proficient.

To this end, motion will not be used, and the autopilot will be engaged at a height of 200 feet after take off, remaining engaged for the rest of the flight. All landing will be accomplished by Auto land. Instructors should positively discourage trainees from treating the Day as training for a flight from a specific point of departure to a specific destination. Briefings should be practiced in the pre-Session Briefing period so that, during FBS sessions, neither Emergency, Departure nor Arrival Briefings need be conducted, and the Checklist response to these items will always be "Complete".

Instructors should make use of Position Freeze, Flight Freeze (if required), or a Repositioning function in order to concentrate on accomplishing a procedure rather than on maintaining continuous progress along the route of flight. ATC clearances should be given as required by the instructor and should contain standard phraseology as practiced in actual airspace to maintain realism.

Initial sessions of FBS should concentrate on streamlining checklist use and practicing procedures in the cockpit. Non-normal procedures are introduced

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in the later FBS sessions. The intent is to teach trainees how to accomplish representative non-normal procedures in a systemized manner along with normal procedures.

Multiple failures should not be simulated which can hamper trainee's progress. When a non-normal procedure has been accomplished, the malfunction should be cleared and the system reset.

Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.

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18.1.0.1 LESSON 1

18.1.0.1.1 FBS 1

DAY SUMMARY

This Day provides flight deck familiarization while practicing normal preflight and post flight procedures as defined in the Operations Manual. There is no flight because the Day focus is on the introduction of normal procedures. Scan flow patterns and crew duty orientation are introduced and practiced. Electronic checklist concepts are also introduced. Seating controls and flight deck lighting are reviewed, as well as APU, electrical, EICAS, and fuel systems as they occur during the procedures.

DAY OBJECTIVES

- Introduce preflight and post flight normal procedures.
- Introduce flight management system (FMS) tasks during preflight.

ROUTE OF FLIGHT

ORIGIN	MANCHESTER (EGCC) Gate ----- RWY 23 R
ROUTE	COMPANY ROUTE
DEPARTURE	SONEX ONE ROMEO (SONE 1R)
DESTINATION	MANCHESTER (EGCC)
FLIGHT NUMBER	PIA 777

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PERFORMANCE

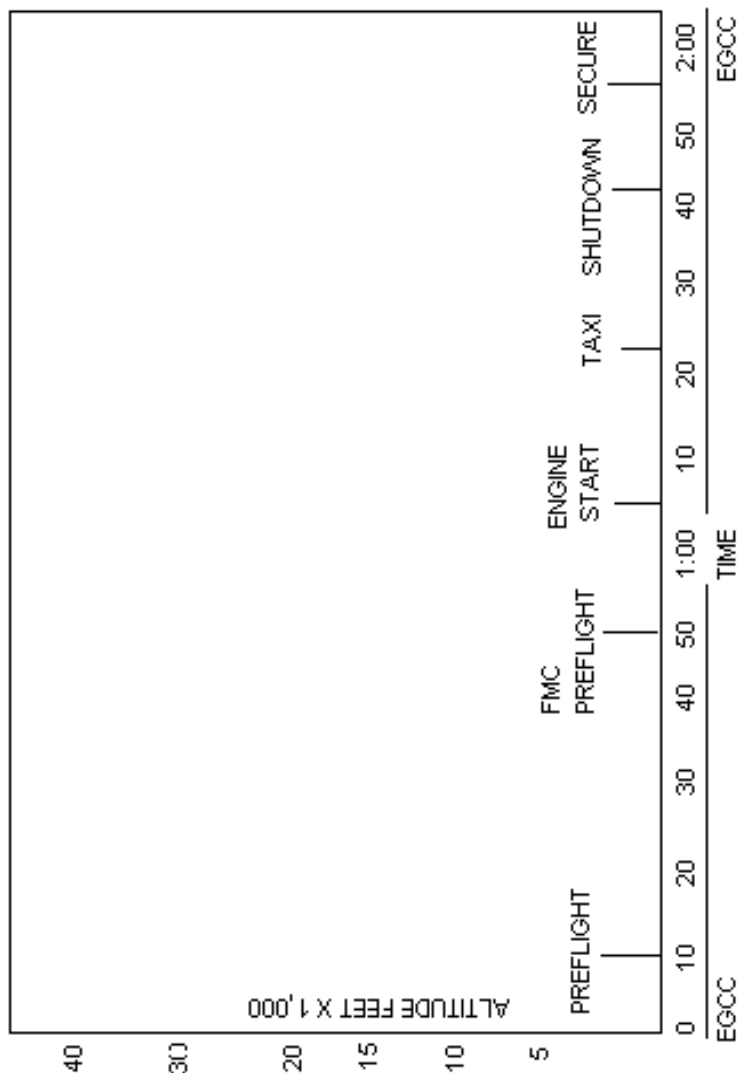
GR WT	197,000 KGS	FLAPS	15
FUEL	20,000 KGS	CG	23%
ZFW	177,000 KGS	WIND	Calm
RESERVES	5,500 KGS	SLOPE	0
CRZ ALT	9,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	T/OFF THRUST	THR REDUCTION	1,000'

WEATHER

EGCC Wind calm Visibility 15 Km Sky clear Temperature 15° C / Dew Point 08° C Altimeter 1013 Mb ILS RWY 23 R in use. Landing and departing RWY 23 R.

ATIS ARRIVAL 128.17, ATIS DEPARTURE 121.97

PROFILE



PREFLIGHT

Introduce scan flow patterns

Procedural tasks follow a phase of flight order and logical scan Flow pattern Introduce crew duty orientation

The “area of responsibility” concept is used.

Introduce Normal Procedures philosophy

Airplane condition is acceptable, and the flight deck is correctly Configured for each phase of flight.

Procedures are performed from recall and follow a panel flow. System status is verified before engine start by discrete lights and **EICAS**: after engine start by **EICAS** only.

Checklists are performed after the normal procedures and contain only items relating to safety of flight.

CDU manipulations are normally performed by the **PM** or **F/O** and verified by the **PF** or **CAPT**.

During autopilot operations, **MCP** manipulations are normally Performed by the **PF**. During autopilot off operations **MCP** Manipulations are normally performed by the **PM** at the request of the **PF**.

Introduce Display Select Panel (**DSP**)

Selection of the 3 **MFDs**

CANC/RCL switch

Synoptic display philosophy.

Introduce **FMC** Preflight procedures

Company route entry

The crew is not responsible for **FMC** preflight entries on this flight. Introduce

REFERENCE

FCOM NP.21

FCOM NP.21

FCOM NP.21

FCOM

FCTM

FCOM NP.21

FCOM NP.21

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Electronic checklist (ECL) FCOM10/ Checklist
instructions in QRH Organized by phase of flight

PREFLIGHT

REFERENCE

The **PM** selects and manipulates the checklist.
Verification and responses are made by the pilot who
Accomplished the item (area of responsibility)
Calling up and putting away the **ECL**.

ECL Features:

Many system switch/control positions are sensed (closed loop).
Checklist closed loop (sensed) steps are continuously evaluated in real time
for condition.

Gathers notes for easy review.

Deferred items are automatically appended to the appropriate
Normal checklist.

ECL can be controlled by either pilot.

Indication of who is in control on the CCD.

ECL colors.

Checklist complete prompt.

Normal Procedures FCOM NP.21

Before start procedures FCOM NP.21

FMC before start procedures FCOM NP.21,11.40

The crew is not responsible for **FMC** entries on this flight.

After Start procedures FCOM NP.21

TAXI-OUT

Normal Procedures FCOM NP.21

Flaps 15 take off.

Taxi is simulated since the FBS has no visual system.

TAKE OFF

Normal Procedures FCOM NP.21

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No take off will be accomplished on this flight,
Instead emphasis is on normal procedures.

TAXI-IN

Normal Procedures

REFERENCE

FCOM NP.21

SHUTDOWN

Normal Procedures

FCOM NP.21

SECURE

Normal Procedures

FCOM NP.21

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18.1.0.1.2 FBS 2

DAY SUMMARY

This Day is a local flight originating from and returning to Manchester (EGCC).

It continues to practice normal preflight and post flight procedures. The Day introduces auto flight use, flight instrument interpretation, and systems management. In addition, in-flight procedures are introduced and practiced including a flight director takeoff and automatic landing. Emphasis will be on FMS preflight entries, auto flight modes, and electronic flight instrument interpretation

DAY OBJECTIVES

- Perform normal procedures.
- Integrate FMS tasks during normal operation.
- Interpret EFIS displays.
- Integrate systems management tasks during normal procedures.

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ROUTE OF FLIGHT

ORIGIN	MANCHESTER (EGCC) Gate ----- RWY 23R
ROUTE	KUXEM DIRECT KEPAD L15 HON P155 EBOTO UN601 LESTA
DEPARTURE	KUXEM ONE ROMEO (KUXE 1R)
DESTINATION	MANCHESTER (EGCC)
FLIGHT NUMBER	PIA 777

PERFORMANCE

GRWT	197,000 KGS	FLAPS	15
FUEL	20,000 KGS	CG	23%
ZFW	177,000 KGS	WIND	230/15
RESERVES	5,500 KGS	SLOPE	0
CRZ ALT	9,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000
THRUST LIM	T/OFF THRUST	THR REDUCTION	Flaps 5'

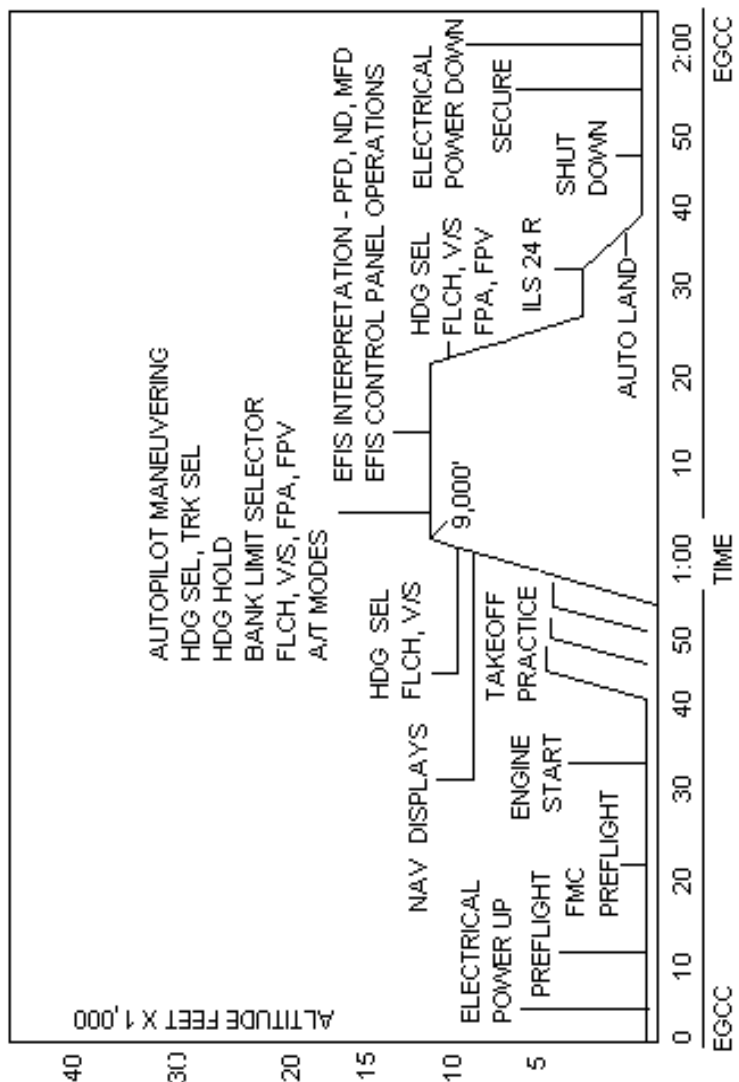
WEATHER

EGCC Wind 230/15 Visibility 15 Km Sky clears Temperature 15C / Dew Point 08 C Altimeter 1012 mb ILS RWY 23 R / Landing and departing RWY 23 R

CLEARANCE

Pakistan 777 is cleared to London Heathrow KUXEM ONE ROMEO (KUXE 1R) departure. Departure frequency 134.42. Squawk 4777.

PROFILE



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PRE FLIGHT

Electrical Power up Procedure
 Normal procedures
 FMC Preflight procedures
 Company Route entry

REFERENCE

FCOM SP.6
 FCOM NP 21
 FCOM NP 21

ENGINE START

Normal procedures
 Before start procedure
 FMC before Start procedures
 After start procedures

FCOM NP 21
 FCOM NP 21
 FCOM NP.21
 FCOM NP 21

TAXI OUT

Normal procedures
 Flaps 15 take off

FCOM NP 21
 FCTM

TAKEOFF

Normal procedures
 Two take offs from each seat – use LNAV/VNAV
 on One and HDG SEL/FLCH on the other from
 each seat
 Review flap retraction schedule
 Perform additional practice take offs as desired

FCOM NP 21, FCOM
 FCOM NP 21
 FCTM

CLIMB

Normal procedures
 FMC operations
 Interpret navigation displays (NDs)
 Heading control
 Perform Turns – use HDG SEL
 Review indications on the PFD, FMA and ND
 – HDG SEL
 Altitude Control
 Perform climb and review indications on the PFD and

FCOM NP 21
 FCOM 11.31
 FCOM 10
 FCOM SP4

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FMA –FLCH, VS

CRUISE

Normal procedures

FMC Operations

Autopilot Maneuvering

Practice maneuvering the airplane using the

Various integrated autopilot modes.

REFERENCE

FCOM NP

FCOM 10.31

FCOM SP4

Heading Control

FCOM SP4

Practice using autopilot heading control

– HDG SEL, TRK SEL, Use HDG HOLD, TRK HOLD

Discuss Bank Limit Selector

Altitude control

Practice using autopilot altitude control–FLCH,

V/S, FPA, FPV.Practice climb/descent

FCOM SP4

Thrust Control

FCOM SP4

Review auto throttle modes

A/T modes: SPD (V/S), THR (FLCH SPD), and FMAs.

Autopilot engage/disconnect

FCOM 4

Discuss A/P & A/T engage, disconnect control

Flight Director

FCOM 4

Review flight director display

EFIS interpretation

FCOM 10

Review the various displays, symbology,

and Colors on the PFD, ND, MFD.

EFIS Control Panel

FCOM 10

Normal Operations

Practice normal operations of the EFIS controls.

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Alternate operation

Practice CDU control of the EFIS control panel.

REFERENCE

Arrival Procedures (ARR – *LESTA1M*)

FCOM SP & 11

Review arrival procedure (ILS runway 23 R) at

Manchester (EGCC) – ARRIVALS page

APPROACH REF Page – Flaps 30 landing

Enter flap position and VREF speed for landing

DESCENT

Normal procedure

FCOM NP

FMC operations

FCOM 11

Heading Control

FCOM SP4

Practice using the heading select function during

Descent – HDG SEL

Altitude Control

Practice using autopilot descent control as desired

FCOM SP4

FLCH, V/S, FPA, FPV

APPROACH

Normal Procedures

FCOM NP 21

Review the Flap speed schedule

FCTM

ILS approach (Radar Vector if required)

FCOM NP21

Approach mode

FCOM NP 21

Perform an automatic approach

Introduce FMA annunciations.

LANDING

Normal Procedures

FCOM NP 21

Automatic Landing

FCOM 4.20.13

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TAXI IN

Normal Procedure

FCOM NP 21

SHUT DOWN

Normal Procedure

REFERENCE

FCOM NP 21

SECURE

Normal Procedures

FCOM NP 21

Electrical Power down Procedure

FCOM SP.6

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18.1.0.2 Lesson 2

18.1.0.2.1 FBS 3

DAY SUMMARY

This Day is a flight from Manchester (EGCC) to London Heathrow (EGLL). The Day practices normal procedures and display management. Crew uses the auto flight system to perform takeoff and control the airplane throughout the flight. LNAV is introduced. Emphasis will be on autopilot pitch modes to control climb and descent, autopilot roll modes to control heading and track, and the CDU to program the active route and update clearance changes in the FMS during the flight. Navigation mode practice and map interpretation are important accomplishments of the Day

DAY OBJECTIVES

- Perform normal procedures.
- Integrate FMS tasks during normal operation.
- Interpret Display Select Panel (DSP) displays.
- Integrate systems management tasks during normal procedures.

ROUTE OF FLIGHT

ORIGIN	MANCHESTER (EGCC) Gate ----- RWY 23R
ROUTE	NON STANDARD AIRWAY CLEARANCE
DEPARTURE	<i>EGCC LISTO2R LISTOL612 HON HON1H EGCC</i>
DESTINATION	London Heathrow (EGLL)
ALTERNATE	Birmingham (EGBB)
FLIGHT NUMBER	PIA 777

PERFORMANCE

GRWT	230,000 KGS	FLAPS	20
FUEL	20,000 KGS	CG	24%
ZFW	210,000 KGS	WIND	220/20
RESERVES	5,500 KGS	SLOPE	0
CRZ ALT	17,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	T/OFF THRUST	THR REDUCTION	1000

WEATHER

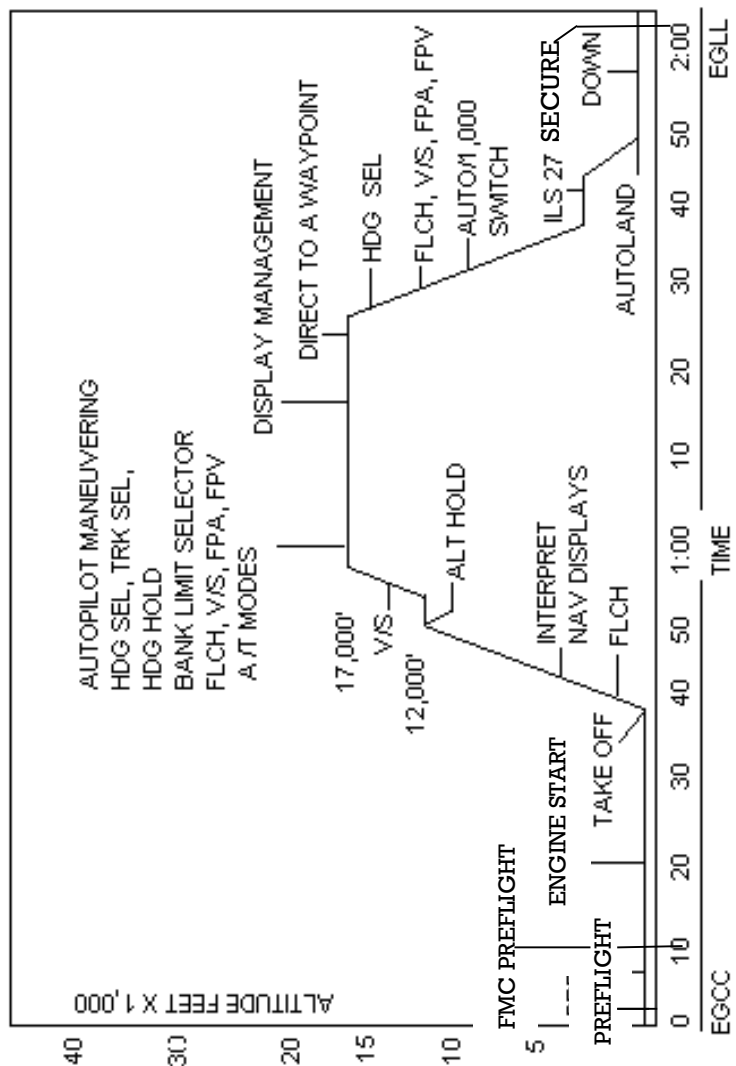
EGCC Wind 220/20 Visibility 15 km Sky clear Temperature 10C Dew Point 06
 C Altimeter 1014 Mb ILS RWY 23 R

EGLL Wind 330 / 15 Visibility 7 km Ceiling 3,000 Broken Temperature 23 C
 Dew Point 16 C Altimeter 1016 Mb ILS RWY 27 R

CLEARANCE

Pakistan 777 is cleared to London Heathrow *LISTO2R*. DEP frequency 128.05.
 Squawk 4777.

PROFILE



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PRE FLIGHT

Normal procedures
Introduce Radio Tuning – Audio control
Introduce Audio Control
FMC Pre-Flight Procedures
Manual route entry
Route: *LISTO L612 HON*

REFERENCE

FCOM NP.21
FCOM

FCOMNP.21,
FCOM 11.40

Dep: *LISTO TWO ROMEO (LIST O 2R)*
Select desired waypoint
Navigation Display Plan Mode

ATIS 121.97, DELIVERY (CPT) 121.7,
GROUND 121.85,TWR 118.62

FCOM 11.40
FCOM 11.40

ENGINE START

Normal Procedures
Before Start procedure
FMC before Start procedures
After Start Procedures

FCOM NP 21
FCOM NP 21
FCOM NP.21, 11.40
FCOM NP 21

TAXI OUT

Normal Procedures
Flaps 20 Take Off

FCOM NP 21

TAKE OFF

Normal Procedures
Use LNAV and VNAV for Take off

FCOM NP 21

CLIMB

Normal Procedures
FMC Operations

FCOM NP 21
FCOM 11

REFERENCE

Interpret navigations Display

FCOM 10

Altitude Control

Climb FL170 with FLCH mode

FCOM SP4

Intermediate level off at FL 120 use ALT HOLD

Climb to FL 170 use V/S

CRUISE

Normal Procedures

FCOM NP.21

FMC Operations

FCOM 11

Autopilot Maneuvering

FCOM SP4

Practice maneuvering the airplane using the

Various integrated autopilot modes, as necessary

Heading Control

FCOM SP4

Practice using autopilot heading controls

HDG SEL, TRK SEL, HDG HOLD, TRK HOLD

Bank Limit selector

Altitude Control

FCOM SP4

Practice Autopilot altitude Controls (Pitch Mode)

FLCH, V/S, FPA, FPV

Thrust Control

FCOM SP4

Review auto throttle modes

 Discuss modes – SPD (V/S), THR (FLCH SPD)
 and FMAs

Display Management

FCOM 10

Normal Operations

Discuss – inboard display selectors

Display select panel (DSP)

Alternate Operations

Practice CDU control of the display Select panel (DSP)

Direct to a waypoint

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After DOBEM cleared direct KENET - LEGS page

FCOM 11

REFERENCE

Arrival procedure (ARR OCK 1A)

FCOM 11

Enter arrival procedure ILS 27 R at EGLL

Enter flap position and

VREF speed – APPROACH REF. PAGE

ATIS - 115.1 NAV RADIO

DESCENT

Normal procedures

FCOM NP. 21

FMC operations

FCOM 11

Heading Control

FCOM SP4

Practice using heading select during descent HDG SEL

Altitude Control

Practice using autopilot descent controls as desired

FLCH, V/S, FPA, FPV

AUTO/1000 switch

From OCK proceed direct to BIGGIN (BIG)

APPROACH

Normal Procedures

FCOM NO 21, NP

Review the Flap Speeds schedule

FCTM

After BIGGIN turn left heading 335' – HDG SEL

Radar vectors to ILS RWY 27 R (LHR)

INTC CRS TO FAF (273 deg) – LEGS page

TWR..... GND.....

ILS Approach

ILS runway 27 R approach at LHR (EGLL)

Display an extended approach course to the final approach

Fix (INTC CRS TO FAF) – LEGS page (D4.0 IRR)

FCOM 11

Approach mode

FCOM 11

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Perform automatic landing ,Review FMA annunciations

LANDING

Normal Procedures

Automatic Landing

REFERENCE

FCOM NP 21

FCOM 4

TAXI IN

Normal Procedures

FCOM NP 21

SHUT DOWN

Normal Procedures

FCOM NP 21

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18.1.0.2.2 FBS 4

DAY SUMMARY

This Day is a night flight from Manchester (EGCC) to London Heathrow (EGLL).

VNAV is introduced. During the flight, LNAV and VNAV will be used as the primary automatic flight modes; however, HDG SEL and FLCH may be used as required. The CDU is used to program the active route and update clearance changes in the FMS during the flight. Holding is introduced and practiced.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Perform normal procedures.
- Perform integrated FMS tasks.
- Maintain airplane control and navigation using the autopilot and CDU.
- Perform systems management tasks.

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC) Gate Rwy 05L
ROUTE	<i>LISTO DCT L612 HON1H</i>
DEPARTURE	LISTO TWO SIERRA (LISTO 2S)
DESTINATION	London Heathrow (EGLL)
ALTERNATE	EGBB
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	240,000 KGS	FLAPS	OPT
FUEL	30,000 KGS	CG	24%
ZFW	210,000 KGS	WIND	Calm
RESERVES	5,500 KGS	SLOPE	0
CRZ ALT	17,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000
THRUST LIM	TO 1	THR REDUCTION	Flap 5

WEATHER

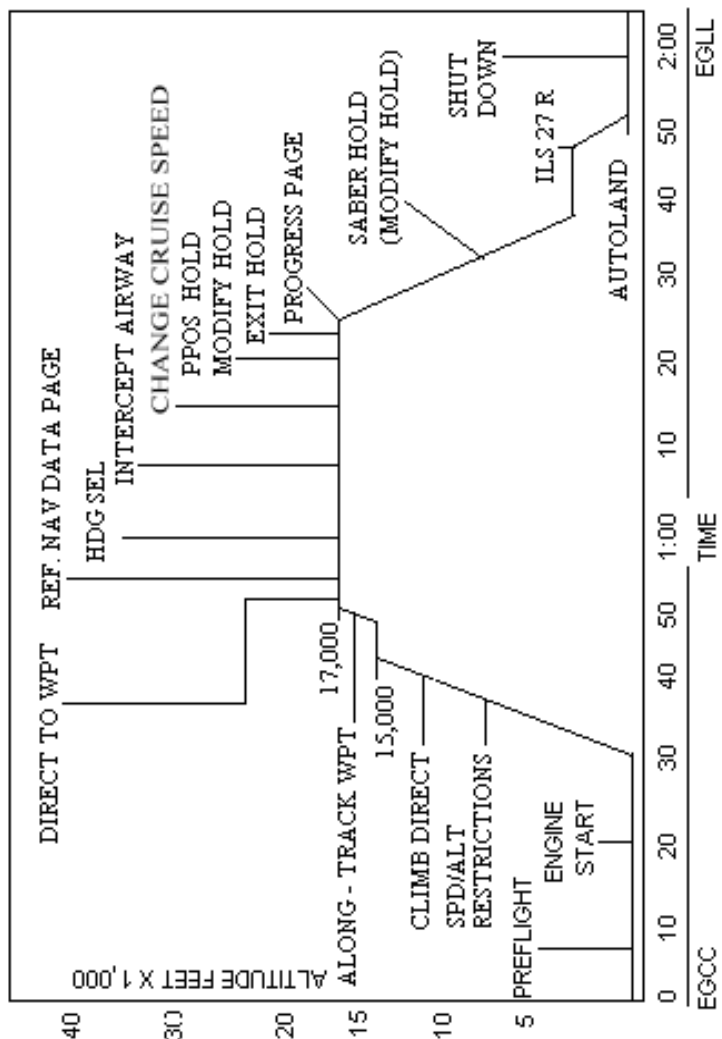
EGCC Wind calm Visibility 15 km Sky clear Temperature 15C
 Dew Point 06C Altimeter 1013 Mb ILS RWY 05 L.

EGLL Wind 270/15 Visibility 10 km Sky clear Temperature 19C / Dew Point
 13C Altimeter 1012 Mb ILS RWY 27 R.

CLEARANCE

Pakistan777 is cleared to LONDON Heathrow LISTO 2S departure. LISTO
 proceed DIRECT TELBA. Departure frequency 121.705 Squawk 4455.

PROFILE



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PRE FLIGHT

Normal Procedures
FMC Preflight Procedures
Manual route entry
Route: *LISTO L612 HON*

Departure: LISTO TWO SIERRA (LISTO 2S)

FREQ: ATIS – 121.98, CPT – 121.705, GND - 121.855
TWR – 118.63, DEP – 121.705

REFERENCE

FCOM NP.21
FCOM NP.21

ENGINE START

Normal Procedures
Before Start Procedures
FMC before Start Procedures
After Start Procedures (Before Taxi)

FCOM NP.21
FCOM NP.21
FCOM NP.21,
FCOM NP.21

TAXI-OUT

Normal procedures
Flaps 15 or 5 take off

FCOM NP.21

TAKE OFF

Normal Procedures
Use LNAV and VNAV for take off

FCOM NO.21,

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REFERENCE

CLIMB

Normal Procedures	FCOM NP.21
FMC Operations	FCOM 11
Revised Route LISTO DIRECT HON (Or PRESENT POSITION DIRECT TO HON) <i>L10 BPK Q295 BRAIN P44 CLN DIRECT TRIPO DIRECT LAM.</i>	
Enter speed/altitude Restriction	FCOM 11
CROSS HON at or below FL 200 and 280 knots – 280/200B on LEGS page.	
Climb Direct	
After HON resume normal climb speed and climb FL270 discuss MCP (ALT intervention) and FMC (CLB DIR)	FCOM 11
Along-Track waypoint	
Report 10 miles short of BPK (BPK/-10 on LEGS page)	FCOM 11

CRUISE

Normal procedures	FCOM
NP.21	
FMC operations	FCOM
Heading Control	
From HON, Turn to heading 090' –HDG SEL	
Intercept airways	
On heading 090 Intercept <i>UY250</i> (to) DTY. (RTE page)	
Inhibit Navigation aid	
HON VOR/DME is unreliable – do not use for navigation	
REF NAV DATA page	
Change cruise speed	
Reduce speed to 280 knots for spacing	
VNAV CRZ page	FCOM

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CRUISE

REFERENCE

Resume normal speed VNAV CRZ page

Present position HOLD

Hold present position HOLD page

FCOM 11.42

Direct to a waypoint

After CLN/-5 turn right direct TRIPO

FCOM 11.42

Arrival procedure

Expect ILS runway 27 R at London (EGLL)

FCOM

11.42

LAMBOURNE THREE ALFA (LAM 3A)

Amend missed approach procedure and maintain 5000

Review T/D point and deceleration point

Determine ETA, fuel remaining

Determine arrival ETA, and fuel remaining for London

and Alternate airport – Progress page

Modify Hold

Hold at position SABER FL70 and Modify Hold

to NON STD

Exit hold

Depart SABER holding on Course to LAM VOR

FCOM

11.42

DESCENT

Normal Procedures

FCOM NP.21

FMC Operations

FCOM 11.31

Descend and maintain 4,000 at pilot's discretion

APPROACH

REFERENCE

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Normal Procedures	FCOM NP.21,
ILS Approach	FCOM NP.21
Leave LAM, heading –HDG SEL	
Radar vector to ILS RWY 27 R (EGLL)	
Display an extended approach course to the final	
Approach fix (CF 27R INTC) – ARRIVAL page	FCOM 11
TWR – 118.7 GND - 121.9	

LANDING

Normal Procedures	FCOM NP.21
Automatic Landing	FCOM

TAXI-IN

Normal Procedures	FCOM NP.21

SHUT DOWN

Normal Procedures	FCOM NP.21

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18.1.0.3 Lesson 3

18.1.0.3.1 FBS 5

DAY SUMMARY

This Day continues to practice clearance changes during a flight in icing conditions from Manchester (EGCC) to Birmingham (EGBB). LNAV and VNAV continue to be used as the primary automatic flight modes. During the flight, HDG SEL and FLCH may be used as required.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Perform normal procedures.
- Perform integrated FMS tasks.
- Maintain airplane control and navigation using the auto flight system.
- Perform systems management tasks.

ROUTE OF FLIGHT

ORIGIN

POL5R POL. POL1B EGBB

Manchester (EGCC)

Gate -----

RWY 23 R

ROUTE

POL5R POL. POL1B EGBB

DEPARTURE

POL5R

DESTINATION

Birmingham (EGBB)

ALTERNATE

London Heathrow (EGLL)

FLIGHT NUMBER

PIA 777

PERFORMANCE

GRWT	240,000 KGS	FLAPS	OPT
FUEL	20,000 KGS	CG	24%
ZFW	220,000 KGS	WIND	Calm
RESERVES	7,574 KGS	SLOPE	0
CRZ ALT	FL 190	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000
THRUST LIM	TO 2	THR REDUCTION	1,000'

WEATHER

EGCC Wind calm Visibility 1500m Sleet Ceiling 800 Overcast

Temperature 0C Dew Point -2C Altimeter 1009 Mb ILS RWY 23 R

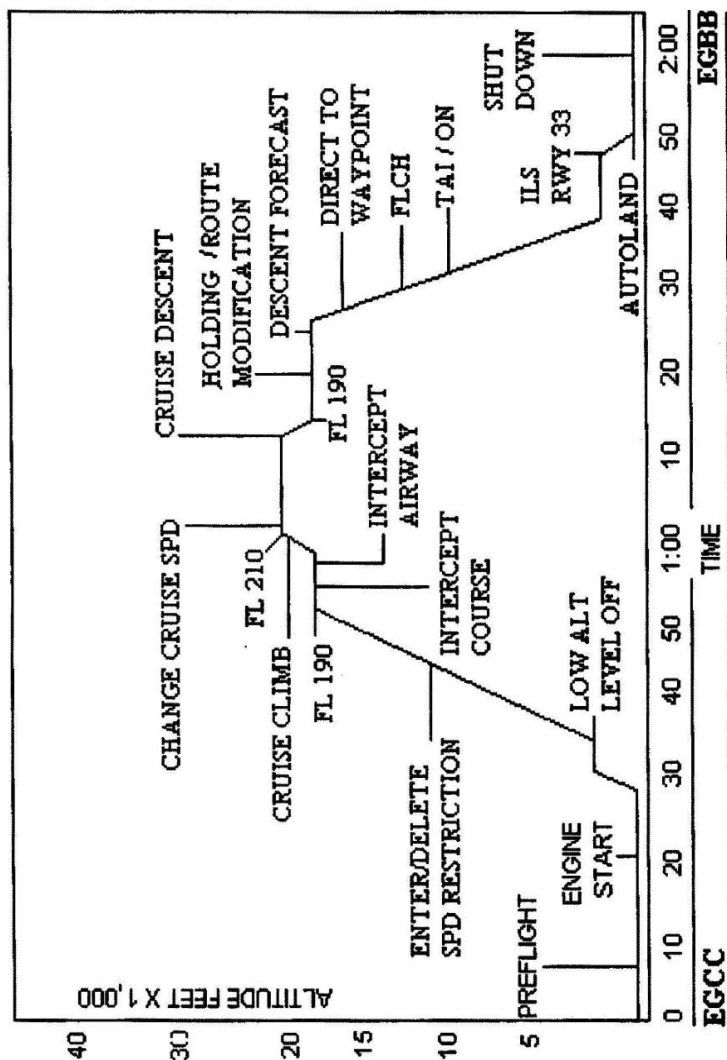
EGBB Wind 330/15 kts Visibility 3000m Rain Ceiling 3000 Broken

Temperature 15C Dew Point 10 C Altimeter 1008 Mb ILS RWY 33.

CLEARANCE Pakistan777 cleared to Birmingham *POL5R*

Departure, Squawk 4464, departure frequency 128.05

PROFILE



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PRE-FLIGHT

Normal Procedures
FMC Pre-flight Procedures
Manual entry
ROUTE: *EGCC POL5R POL. POLIB EGBB*
DEPARTURE: *POL5R*

REFERENCE

FCOM NP.21
FCOM NP.21,
FCOM

ENGINE START

Normal Procedures
Before Start Procedures
FMC before start procedures
After Start Procedures (Before Taxi)
Engine Anti-Ice Required

FCOM NP.21
FCOM NP.21
FCOM NP.21
FCOM NP.21
FCOM SP.3

TAXI OUT

Normal Procedures
Flaps 5 or 15 Take Off

FCOM NP.21

TAKE OFF

Normal Procedures
Use LNAV and VNAV for take off

FCOM NP.21,
FCOM 11.41 & 4.20

CLIMB

Normal Procedures
FMC Operations
Low altitude level off
Maintain 2,000 feet – altitude selector
Enter/Delete Speed restriction
Passing 3000 Maintain 230 knots for traffic Separation
Delete at 4,000 and climb to 5,000 feet
IAS/MACH SELECTOR (speed intervention)
Climb Direct – Resume normal climb speed.

FCOM NO.21
FCOM 11.31

FCTM 4.2

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Direct to a waypoint From POL proceed direct DCS L612 GOW

CRUISE

Normal Procedures
FMC Operations
Cruise Climb
Climb and maintain FL 210
Change Cruise Speed
Reduce speed to 290 knots, resume normal
speed after reaching 290 knots (speed intervention).

REFERENCE

FCOM NP 21
FCOM 11.31

Cruise Descent
Descent to FL 190 (Altitude Selector)
Holding
Hold at CHASE INBOUND 151° MAX ALT 5000'
– Hold page
Arrival procedure
Expect ILS runway 33 approach *POL1B EGBB*
TAI/ON altitude
Moderate icing is reported surface to 10,000 feet
DESCENT FORECAST page use

DESCENT

Normal Procedures
FMC Operations
Change descent speed
Enter/Delete speed/Altitude Restrictions
Altitude control
Descent to 3,000 feet FLCH

FCOM NP. 21
FCOM 11.31

APPROACH

Normal Procedures

FCOM NP.21

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ILS Approach	FCOM NP. 21,
Radar Vector for RWY 33	
LANDING	REFERENCE
Normal Approach	FCOM NP.21
Automatic Landing	FCOM NP.21
TAXI-IN	
Normal Procedures	FCOM NP.21
SHUT DOWN	
Normal Procedures	FCOM NP.21
SECURE	
Normal Procedures	FCOM NP.21

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18.1.0.3.2 FBS 6

DAY SUMMARY

This Day is a flight from Manchester (EGCC) to Amsterdam (EHAM); Route modifications are made as the flight progresses. Non-normal procedures are introduced. Emphasis will be on engine start and electrical system, smoke and smoke removal, and electronic flight instrument non-normal procedures which are introduced and practiced throughout the flight. A go-around is introduced at Amsterdam followed by radar vectors.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Perform integrated FMS tasks.
- Apply Crew Resource Management (CRM) attributes while practicing elected Normal and non-normal procedures.
- Maintain airplane control and navigation throughout the flight using the FMS Auto-flight system.
- Perform systems management tasks.
- *Demonstrate required level of proficiency in preflight and Post-flight normal Procedures.
- *Demonstrate required level of familiarity performing appropriate engine start, Electrical system, smoke and smoke removal, and EFIS non-normal procedures.

(*) Denotes proficiency items

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ROUTE OF FLIGHT

ORIGIN	MANCHESTER (EGCC)
	Gate -----
	RW 23R
ROUTE	EGCC POL5R POL DCT DESIG L603 LAMSO LAMSO2A EHAM
DEPARTURE	POL5R
DESTINATION	AMSTERDAM (EHAM)
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	230,000 KGS	FLAPS	OPT
FUEL	30,000 KGS	CG	23%
ZFW	200,000 KGS	WIND	320/ 12
RESERVES	5,400 KGS	SLOPE	0
CRZ ALT	FL 250	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000
THRUST LIM	AS REQUIRED	THR REDUCTION	Flaps 5

CRZ WIND at DTY	FL170	31025
	FL210	33035
	FL250	35045

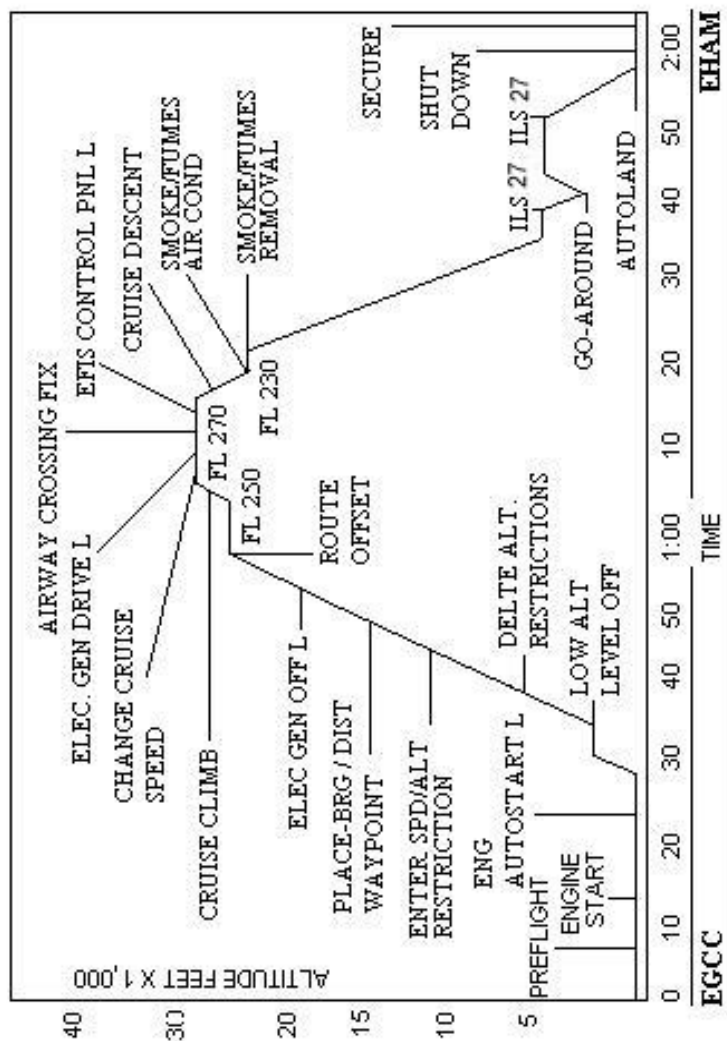
WEATHER

EGCC Wind 320/12 Visibility 15 km Ceiling BKN 2500 Temperature 13C / Dew Point 8 C Altimeter 1014 Mb ILS RWY 23 R.

EHAM Wind 200/15 Visibility 12 km SCT 1800 Temperature 28C Dew Point 21 C Altimeter 1016 Mb.

CLEARANCE

Pakistan777 is cleared to Amsterdam, POL5R ONE ROMEO Departure Frequency 134.42, squawk 4316.

PROFILE


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PRE FLIGHT

- * Normal Procedures
 - * FMC Pre-Flight Procedures
- Clearance: *POL5R*

Wind Data Entry

- Thrust Limit as required
- Enter or check Climb 1
- THRUST LIMIT PAGE

REFERENCE

FCOM NP.21
 FCOM NP.21,

FCTM, FCOM 11

FCOM

ENGINE START

- * Normal Procedures
 - * Before Start Procedures
 - * FMC before Start procedures
- Introduce Non-normal ECL Procedures
- * ENG. AUTO START L
 - * After Start Procedures
- (Reset when completed)

FCOM NP.21
 FCOM NP.21
 FCOM NP.21
 FCOM
 QRH 7.3
 FCOM NP.21

TAXI OUT

- Normal Procedures
- Flaps 05 OR 15Take off
- Runway Change to 05 L
- Departure (SID) Changed to *DESIGIS*
- EGCC DESIGIS DESIG L 603 LAMSO LAMSO2A EHAM*

FCOM NP.21
 FCTM

TAKE OFF

- Normal Procedures
- Use LNAV and VNAV for Take off

FCOM NP.21

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CLIMB

Normal Procedures
FMC Operations
Low Altitude level off
Maintain 2500 feet – Altitude selector
Delete altitude restriction
Cancel all altitude restrictions, climb and maintain
FL 250 altitude selectors (altitude instructions)
or FMC (Climb Direct)
Enter speed/altitude restrictions
11.31
Maintain 230 knots for traffic separation until
Reaching 10,000 feet on VNAV CLB page
Place bearing/Distance way point
11.42
POL direct DESIG radial 080/15 (DES01).
From that point turn right HDG 180 intercept L603 to LAMSO.
ELEC GEN OFF L
(Reset when complete)

REFERENCE

FCOM NP.21
FCM

FCOM

FCOM

QRH 6.5

CRUISE

Normal Procedures
FMC Operations
Route Offset
Offset 15 Miles (L 15) north of present route RTE page
Proceed direct to *LAMSO LAMS2A* Arrival Amsterdam
Cruise Climb
Climb and maintain FL 270 – Altitude selector
Change Cruise Speed
After the cruise climb reduce speed to 290 knots
for spacing - IAS/MACH selector. (Speed Intervention)

FCOM NP.21
FCOM 11.31

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Resume normal speed

REFERENCE

Route Modification/airways crossing fix

After *LAMSO* turn *R HDG150* intercept *L620 TULIP Y12*

SPY (SPIJKERBOOR) Expect radar vectors

ELEC GEN DRIVE L

QRH 6.4

EFIS control Panel

QRH & FCOM

10.10

(Reset when completed)

CRM consideration.

Crew member Training and Development

Build team skills

Discuss system capabilities and options

Review options to reinforce crew understanding

Cruise Descent

Descend and maintain FL 230 – Alt selector

ATIS 108.4/132.97

SMOKE/FUMES AIR COND

QRH 8.6

CRM Considerations

Captain's Authority

Manage and direct crew actions

Exercise emergency authority

Assign duties and responsibilities

Direct crew and get feedback

SMOKE/FUMES REMOVAL

QRH 8.24

DESCENT

Normal Procedures

FCOM NP.21

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Descent and maintain FL 100

FMC Operations

FCOM 11.31

APPROACH

REFERENCE

Normal Procedures

FCOM NP.21

Descent and maintain FL70 - proceed direct to

FCOM NP.21

SPL and cleared for ILS Approach RWY 27

GO-AROUND

Normal Procedures

FCOM NP.21

Go ground

FCOM NP.21

Climb on track 269' to 2000 ATC

APPROACH

Normal Procedures

FCOM NP.21

ILS Approach

FCOM NP.21

Radar Vector to ILS 27 – SCHIPHOL (WP) intc

LANDING

Normal Procedures

FCOM NP.21

Automatic Landing

FCOM

TAXI IN

Normal Procedures

FCOM NP.21

SHUT DOWN

Normal Procedures

FCOM NP.21

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SECURE

Normal Procedures

FCOM NP.21

18.1.0.4 Lesson 4

18.1.4.4.1 FBS 7

DAY SUMMARY

This Day is a flight from Amsterdam (EHAM) to Manchester (EGCC). The crew continues to integrate and practice FMS tasks. Emphasis will be on air systems, engine, APU, passenger evacuation, and fire non-normal procedures.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Perform integrated FMS tasks including holding.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Demonstrate continuous airplane control and navigation using the FMS auto flight system.
- Perform integrated systems management tasks.
- VNAV non-ILS approach procedures will be introduced per operator procedures.
- *Demonstrate required level of proficiency in normal in-flight procedures.

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- *Demonstrate required level of familiarity performing appropriate air system, engine, APU, fire, and passenger evacuation non-normal procedures.

(*) Denotes proficiency items

ROUTE OF FLIGHT

ORIGIN	Schiphol International Airport (EHAM) RWY 18L Takeoff Position
ROUTE	<i>EHAM (RWY 18L) BERG4E BERGI L602 SUPUR L60 SOPEK L60 OTBED OTBED1M (RWY 23R) EGCC</i>
DEPARTURE	<i>BERG4E</i>
DESTINATION	MANCHESTER (EGCC)
ALTERNATE	EGLL
FLIGHT NUMBER	PIA 777

PERFORMANCE

GRWT	230,000 KGS	FLAPS	OPT
FUEL	30,000 KGS	CG	24%
ZFW	200,,000 KGS	WIND	200°/ 15
RESERVES	5,400 KGS	SLOPE	0
CRZ ALT	FL 300	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000

WEATHER

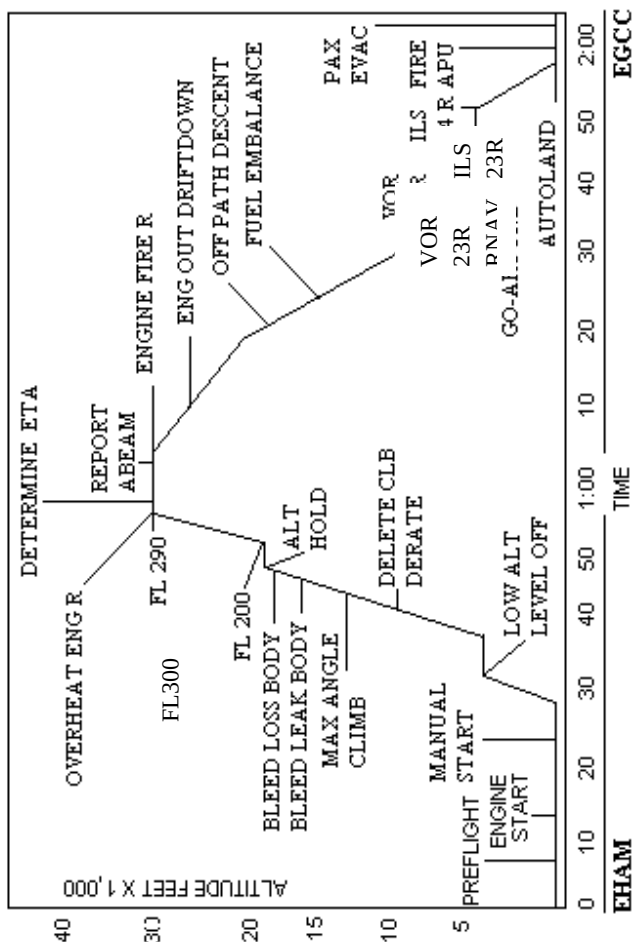
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EHAM Wind 200/15 Visibility 15 kms Temperature 25 C dew Point 20C
Altimeter 1012 Mb ILS RWY 18 L

EGCC Wind 350 / 15 Visibility 10 kms Temperature 25C Dew Point 19C
Altimeter 1016 Mb ILS RWY 23 R

CLEARANCE

Pakistan 777 is cleared to Manchester *BERGE4E* Departure. *BERG1 L60*
SOPEK Squ awk 4776. Departure frequency 121.2.

PROFILE


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PRE-FLIGHT

Normal Procedures
 FMC Pre-Flight Procedures
 Manual route entry
EHAM BERG4E BERGI L602 SOPUR L60
SOPEK L60 OTBED OTBEDIM EGCC

Departure: *BERG4E*
 Airways crossing fix
 Thrust limit as required
 Enter an assume temperature,
 Use CLB 1 for climb thrust – THRUST LIMIT PAGE

REFERENCE

FCOM NP.21
 FCOM NP.21
 FCOM

ENGINE START

Normal Procedures FCOM NP.21
 Before Start Procedures FCOM NP.21
 FMC before start procedures FCOM NP.21.
 Manual Start procedure FCOM SP.7
 Perform a Manual Engine Start on both engines
 After Start Procedures FCOM NP.20

TAXI OUT

Normal Procedures FCOM NP.21
 Flaps 5 OR 15 Take off FCTM

TAKE OFF

*Normal Procedures FCOM NP.21
 Use LNAV and VNAV for take off
 Flaps 15 take off
 (Use QRH for after take off checklist)

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CLIMB

- * Normal Procedures
- FMC procedure
- Low altitude level off
- Delete climb thrust derate (during initial climb)
- THRUST LIMIT PAGE Maximum angle climb
- Expedite climb to FL 180 - VNAV climb page

REFERENCE

- FCOM NP.21
- FCOM 11
- FCOM
- FCOM 11

- * BLEED LEAK BODY
- * BLEED LOSS BODY (Reset when complete)

REFERENCE

- QRH 2.2
- QRH 2.7

- Immediate level off
- Maintain present altitude (app FL200) – ALT HOLD
- After level off continue climb to FL 300

REFERENCE

CURISE

- * Normal Procedures
- FMC Operations
- * OVERHEAT ENG R Reset when complete
- (Use QRH checklist)
- Determine ETA at LAMBOURNE (LAM) and BPK
- (FMC ROUTE PAGE & PROGRESS PAGE)
- Create Abeam point
- Report abeam CLN - FIX INFORMATION PAGE
- Arrival Procedure
- Arrival (OTBE1M) VOR 23R*
- * FIRE ENG R
- CRM Considerations
- Resource Management

- FCOM NP.21
- FCOM 11
- QRH 8.8
- FCOM 11
- FCOM 11
- FCOM 11
- QRH 8.2

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Obtain All Required Information

Obtain Assistance and Coordinate Information

Use Other Aircraft for Assistance when Necessary

Engine Out drift down

Perform an engine out drift down to the engine

Out maximum cruise altitude – EOD/D page.

REFERENCE

FCOM.11

FCTM 4

DESCENT

Normal Procedures

FCOM NP.21

At pilot's discretion descend and maintain 5,000

FMC Operations

FCOM 11

Evaluate an OFFPATH DESCENT

FCOM 11

Evaluate a direct descent to a waypoint and altitude

– OFFPATH DES page (discuss clean/drag circle)

* FUEL IMBALANCE

QRH 12.13,

APPROACH

Non Normal Procedures

FCOM NP .21,

VOR DME approach (LNAV and VNAV use)

FCOM NP 21,

FCTM

Non ILS approach procedure VNAV

QRH

Fly pattern

FCOM NP21.

FCTM

Use of autopilot recommended

Fly off from FAF

No waypoint modifications

Flap configuration and speed Pacing

FCTM

Use of speed intervention

LNAV and VNAV use

One of the following required for VNAV use:

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Appropriate path with MAP at or before runway
threshold Glide path angle published on chart
and/or legs page Published VNAV DA (H)

REFERENCE

FMCS Certified for instrument approach navigation
with radio or GPS updating RNP vs. ANP-RNP manual
entry (0.3 for GPS).

FMA annunciation

Discuss “on approach” logic

FCOM 11 FCTM 5

APPROACH

Use of MDA (H) versus DA (H)

FCTM 5

If DA (H) is not published, the DA (H) may be
considered to be the Equivalent of the currently
applicable published MDA) H) Provided the Principal
operations inspector grants this authorization.

If required to use MDA (H) for the approach minimum
altitude, the Barometric minimum selector should be
set at MDA+50 feet to ensure that, if a missed
approach is initiated, descent below the MDA (H)
does not occur during the missed approach.

Set MDA (H) or DA (H) on MCP Raw data
requirements

FCTM

Set missed approach altitude

FCOM NP 21, FCTM

Autopilot disconnect

Flight director procedures

Visual flight path below DA (H) or MDA (H)

FCTM 8

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GO-AROUND

Non-Normal Procedures (Engine Inoperative)
 Go-around (engine Inoperative)
 Fly the published missed approach procedure

REFERENCE

QRH
 FCOM NP.

APPROACH

Non-Normal Procedures (Engine Inoperative)
 Flaps 20 landing
 ILS Approach (Engine Inoperative)
 NP.21,FCOM
 ILS RWY 23 R at Manchester

FCOM

FCOM

LANDING

Normal Procedures
 NP.21
 Automatic Landing

FCOM

FCOM 4

TAXI IN

Normal Procedures
 NP.21
 * FIRE APU
 FIRE APU lead to a Passenger Evacuation

FCOM

QRH 8.1

* PASSENGER EVACUATION

QRH

BACK COVER

CRM Consideration – Crewmember Training

Development

Ensure Communication available with cabin crew

Keep cabin aware of plans Lend support and

encouragemen Additionally,

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TAXI IN

CRM Considerations – Communications Acquire information on airplane status. First Officer, Tower, Cabin Staff, Other. Resolve conflicting information. Advocate position and communicate.

REFERENCE

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18.1.4.4.2 FBS 8

DAY SUMMARY

This Day is a flight from Manchester (EGCC) to London Heathrow (EGLL). FMS tasks continue to be integrated and practiced. Engine and hydraulic system non-normal procedures are practiced.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Perform integrated FMS tasks.
- Perform integrated systems management tasks.
- VNAV non-ILS approach procedures will be practiced per operator procedures.
- *Demonstrate continuous airplane control and navigation using the FMS and Auto flight system.
- *Demonstrate required level of proficiency in normal procedures such as engine start, taxi, takeoff SID and climb, FMC work, holding.
- *Demonstrate required level of proficiency in non-normal procedures ENG FAIL R, Hydraulic sys C practiced in this session.

(*) Denotes proficiency items

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC)
	Gate -----
	RWY 23 L
ROUTE	EGCC SANBA1Y SANBA DCT PEDIG M605 DTY DCT WCO EGLL
DEPARTURE	SONEX ONE YANKEE (SONE 1Y)

DESTINATION LONDON (Heathrow) EGLL
 ALTERNATE EGGB
 FLIGHT NUMBER PIA 777

PERFORMANCE

GRWT	220,000 KGS	FLAPS	OPT
FUEL	20,000 KGS	CG	24%
ZFW	200,000 KGS	WIND	Calm
RESERVES	5,400 KGS	SLOPE	0
CRZ ALT	FL 290	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3000'
THRUST LIM	AS REQUIRED	Thr Reduction	Flaps 5 or 15

WEATHER

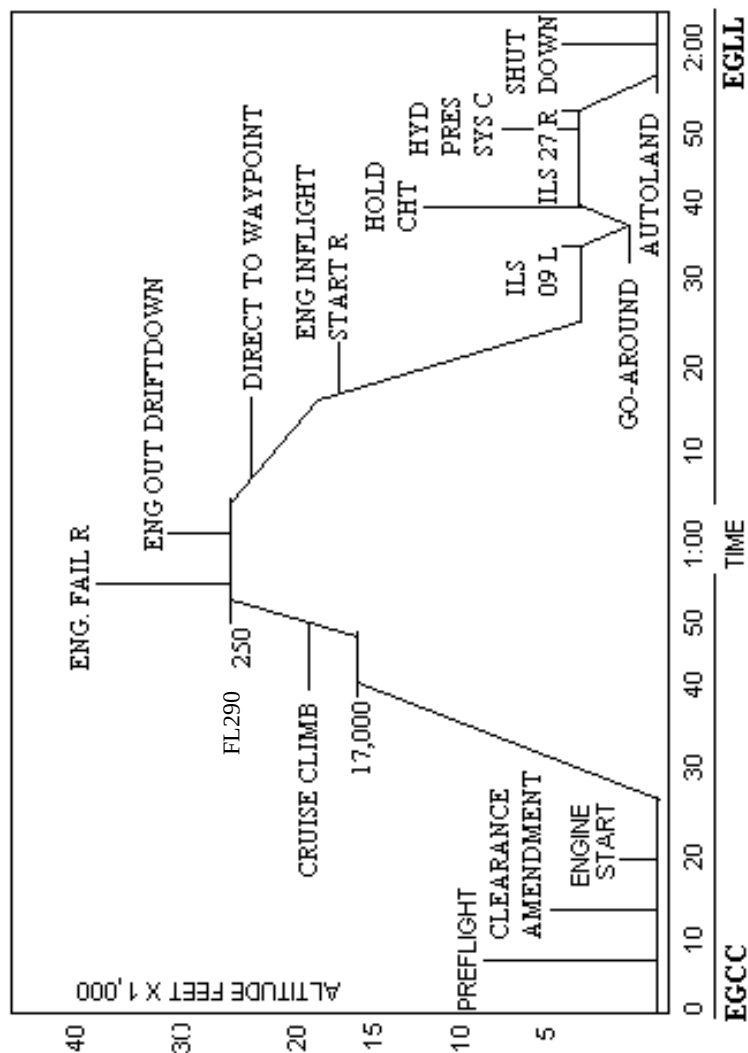
EGCC Wind calm / Visibility 5 Kms / Ceiling 3,000 Overcast / Temperature 15C
 Dew Point 11 C / Altimeter 1012 Mb / ILS RWY 05 L

EGLL Wind 210 / 10 / Visibility 7 miles / Ceiling 5,000 Broken / Temperature
 25C / Dew Point 18C / Altimeter 1016 Mb / ILS RWY 27 L

CLEARANCE

Pakistan 777 is cleared to London Heathrow (EGLL), *SANB1Y* departure. *SANBA*
DCT PEDIG, squawk 4747 departure frequency 136.57.

PROFILE



PRE-FLIGHT

Normal Procedures
 FMC Preflight Procedures (Manual Entry)
 SONEX direct HON L10 to BPK direct LAM
 Thrust Limit as required
 Enter an assumed temperature, use
 Full CLB thrust - THRUST LIM page

REFERENCE

FCOM NP.21
 FCOM NP.21
 FCOM

ENGINE START

Normal Procedures
 Before Start procedures
 FMC before Start Procedures
 Clearance amendment, RWY 05 L now in use
 New route LISTO 2S SIERRA (LISTO 2S)
 From LISTO L612 HONILEY (HON) L10
 to BPK then direct to LAM
 Use an assumed temperature take off; use full
 CLB thrust.
 Cruise altitude change – 17,000

FCOM NP.21
 FCOM NP.21
 FCOM NP.21

After Start Procedure

FCOM NP.21

TAXI OUT

Normal Procedures
 Flaps 15 OR 5 take off

FCOM NP.21
 FCTM

TAKE OFF

Normal Procedures
 Use LNAV and VNAV for take off

FCOM NP.21,

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CLIMB

Normal Procedures

FMC Operations

REFERENCE

FCOM NP.21

FCOM

CRUISE

Normal Procedures

FMC Operations

Cruise Climb

Climb and maintain FL 290 – Altitude Selector

Arrival procedure

FCOM NP.21

FCOM 11

FCOM 11

BIG1Z

*ENG FAIL R

Engine out Drift down

Perform an Engine out drift down to the engine out

Maximum cruise altitude EO D/D page

QRH 7.14

FCOM 11

FCTM 4

DESCENT

Normal Procedures

FMC Operations

Direct to a waypoint

After HON proceed direct to Westcott

(WCO NDB 335Khz)

Engine In-Flight Start R

Arrival procedure

Expect BNN 4A arrival ILS RWY 09 L approach

At pilot's discretion descent and maintain 2500

Cross WCO NDB at or above 7000

FCOM NP.21

FCOM 11

FCOM 11

QRH 7.22

FCOM 11

APPROACH

Normal Procedures

FCOM NP.21

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ILS Approach

FCOM NP.21.

GO-AROUND

REFERENCE

Normal procedures

FCOM NP.21

GO-AROUND

FCOM NP.21

Climb straight ahead when passing 1580 feet or
D 0.0 IAA whichever is later turn left direct to
Chiltern (CHT NDB 277Khz) and hold at 3000 feet.

*Holding

FCOM 11

Hold at CHILTERN (CHT NDB as published)

Climb and maintain 3,000 – HOLD page

*HYD PRESS SYS C

QRH 13.4

APPROACH

Normal Procedures

FCOM NP.21

ILS Approach

FCOM NP.21

Radar vector to ILS RWY 27 L

Display an extended approach course to

D4.0 ILL (INTC) 27 L - ARRIVAL page

LANDING

Normal Procedures

FCOM NP.21

Automatic Landing

FCOM

TAXI-IN

Normal Procedures

FCOM NP.21

SHUTDOWN

Normal Procedures

FCOM NP.21

Restore all systems to normal prior to shutdown.

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18.1.0.5 Lesson 5

18.1.4.5.1 FBS 9

DAY SUMMARY

This Day is a flight in icing conditions from Manchester (EGCC) to London (EGLL) with a diversion back to Manchester (EGCC). It continues to introduce and practice non-normal procedures. Emphasis will be on engine, icing, and hydraulic system non-normal procedures, and fuel jettison and in-flight diversion considerations and procedures.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Perform integrated FMS tasks.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- VNAV non-ILS approach procedures will be practiced per operator procedures.
- *Demonstrate appropriate level of proficiency performing integrated systems management tasks.
- *Demonstrate required level of proficiency in performing normal approach procedures.
- Demonstrate required level of familiarity performing appropriate environmental, Engine, fuel, and hydraulic system non-normal procedures.

(*) Denotes proficiency item.

ROUTE OF FLIGHT

ORIGIN	MANCHESTER (EGCC) Gate ----- RWY 05 L
ROUTE	<i>EGCC (RWY 05L) LISTO2S LISTO L612 HON HONIH EGLL (27L)</i>
DEPARTURE	<i>LISTO2S</i>
DESTINATION	LONDON Heathrow (EGLL)
ALTERNATE	MANCHESTER (EGCC)
FLIGHT NUMBER	B777

PERFORMANCE

GRWT	240,000 KGS	FLAPS	OPT
FUEL	30,000 KGS	CG	25%
ZFW	210,000 KGS	WIND	320° / 15
RESERVES	5,400 KGS	SLOPE	0
CRZ ALT	FL 250	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3000
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000'

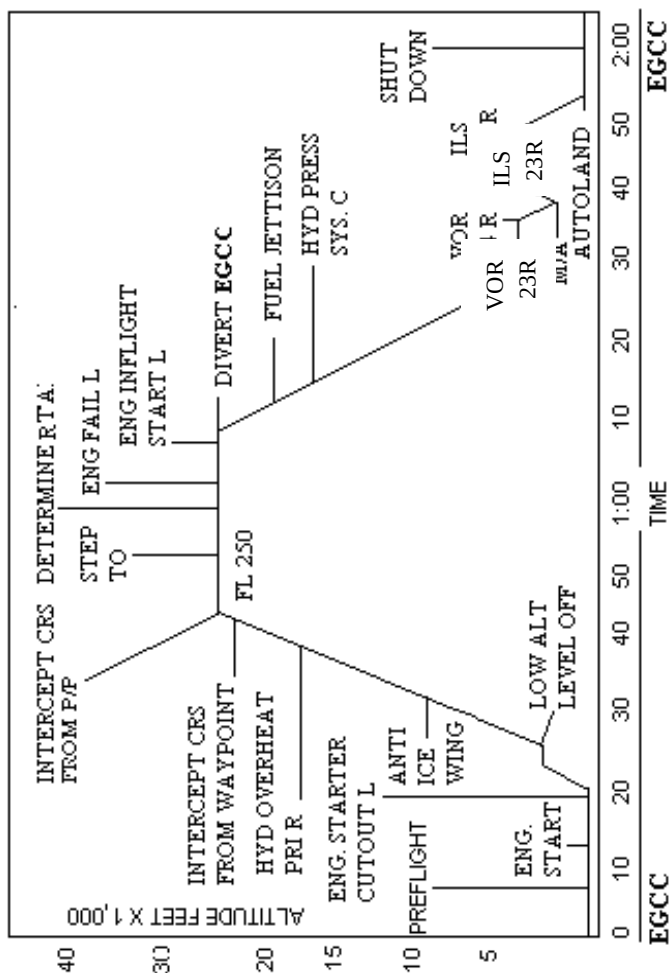
WEATHER

EGCC Wind 320/15 Visibility 5 km Rain Ceiling 2000 Overcast Temperature 01° C Dew Point 0° C, Altimeter 1011 Mb RWY 05 L.

EGLL Wind 260/ 10 Visibility 1000m Rain Ceiling 500 Overcast Temperature 05° C Dew Point 0°C Altimeter 1007 Mb ILS RWY 27 L.

CLEARANCE Pakistan 777 is cleared to London *LISTO2S* departure, squawk 2523. Departure frequency 128.05

PROFILE



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PRE-FLIGHT REFERENCE

Normal Procedures	FCOM/NP.21
FMC Preflight procedures	FCOM/NP.21,
Manual Route entry	FCOM
Route non standard airway clearance MONTY N864 DIKAS DIRECT KENET	
Departure MONTY ONE SIERRA (MONTY 1S)	
Thrust Limit as required	FCOM 11
Enter or check climb derate of CLB 1 – THRUST LIM page	

ENGINE START

Normal Procedures	FCOM/NP.21
Before Start Procedures	FCOM/NP.21
FMC before Start procedures	FCOM NP.21
*ENG STARTER CUTOFF L	QRH 7.37
After Start Procedures	FCOM
Engine Anti-Ice required	FCOM SP

TAXI OUT

Normal Procedures	FCOM/NP.21
Flaps 5 OR 15 take off	

TAKE OFF

Normal Procedures	FCOM NP.21
Use LNAV and VNAV for take off	

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CLIMB

Normal Procedures	FCOM NP.21
*FMC Operations	FCOM 11
Low Altitude level off	FCOM , FCTM
*ANTI-ICE WING	FCOM, QRH 3.6
*HYD. OVERHEAT PR1 R	FCOM, QRH 13.2
Intercept course from a waypoint	FCOM 11
Ten miles before WAL VOR (114.1) turn left	
heading 200 to intercept the 165 radial from	
WALLASEY (WAL 114.1) VOR (WAL165 ON LEG page)	
Intercept course from present position (P/P) When	
past abeam MONTY fly course 225 <i>turn L 090 HDG intercept L15 to HON</i>	
(P/P225 ON LEGS PAGE)	

REFERENCE

CRUISE

Normal Procedures	FCOM NP.21
FMC Operations	FCOM 11
STEP TO	FCOM 11
Determinate the time and distance to the step	
climb point for a step climb to FL 410 – VNAV	
CRZ & PROGRESS page	
Discussion only, DO NOT execute	
Determine RTA at TAPRO PROGRESS PAGE	FCOM 11
* FUEL LEAK	QRH 12.18
CRM consideration – Resource Management	
Obtain all required information	
Obtain assistance and coordinate information	
Prepare for route alterations	
One Pilot flies he other pilot works the problem	
Address and resolve the problem	
Divert (Selection of an alternate)	FCOM 11

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Arrival procedures

CRUISE

REFERENCE

Select Manchester as alternate using HON as
the overhead divert point – ALTN page

Proceed direct to LESTA

LESTA1M arrival for VOR DME 23 R approach (use LNAV and VNAV for approach).

**Another t /off with same WT. passing 10000 ft,
ATC has advised London airfield closed due
security reason ,Delay undetermined.**

DESCENT

Normal Procedures

FCOM NP.21

Descend and maintain 6000 feet

FMC Operations

FCOM 11

*FUEL JETTISON

QRH 12.16

Perform a fuel jettison to reduce weight to
maximum Landing weight (MLW)

*HYD PRES SYS C.

QRH 13.4

APPROACH

*Normal procedures

FCOM NP.21

VNAV VOR approach (23 R)

FCOM NP.21

GO-AROUND

Normal Procedures

FCOM NP.21

GO-AROUND (Published procedure)

FCOM NP.21

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APPROACH

* Normal Procedures

ILS approach 23 R approach (Radar Vector)

FCOM NP.21

FCOM NP.21

LANDING

* Normal Procedures

Automatic Landing

FCOM NP.21

FCOM 4

TAXI-IN

Procedures

Normal

FCOM NP.21

SHUTDOWN

Normal Procedures

Restore all systems to normal prior to shutdown.

FCOM NP.21

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18.1.0.5.2 FBS 10

DAY SUMMARY

This Day is a flight from Manchester (EGCC) to London Heathrow (EGLL) with a diversion into Birmingham (EGBB) it uses the full capabilities of the airplane systems including FMS. Emphasis is on display, cargo fire, air system, and flight control non-normal procedures. This flight reviews and enhances proficiency for the next phase of training.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Demonstrate appropriate level of proficiency performing FMS tasks.
- Demonstrate the appropriate level of proficiency maintaining continuous airplane control and navigation using the FMS auto flight system during complex situations under adverse conditions.
- Demonstrate the required level of proficiency performing go-around procedures.
- Demonstrate required level of familiarity performing appropriate display, cargo fire, air system, and flight control non-normal procedures. Evaluate crew progress/proficiency prior to the next phase of training. Provide any necessary training or recommendation prior to the next phase of training.

(*) Denotes proficiency item.

ROUTE OF FLIGHT

ORIGIN	MANCHESTER (EGCC)
	Gate -----
	RWY 23 R
ROUTE	EGCC SANBIR SANBA DCT PEDIG M605 DTY DCT WCO EGLL
EPARTURE	LONDON Heathrow (EGLL)
DESTINATION	BIRMINGHAM (EGBB)
ALTERNATE	PIA 777
FLIGHT NUMBER	

PERFORMANCE

GRWT	220,000 KGS	FLAPS	OPT
FUEL	20.000 KGS	CG	23%
ZFW	200,000 KGS	WIND	Calm
RESERVES	5,400 KGS	SLOPE	0
CRZ ALT	FL 250'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000'

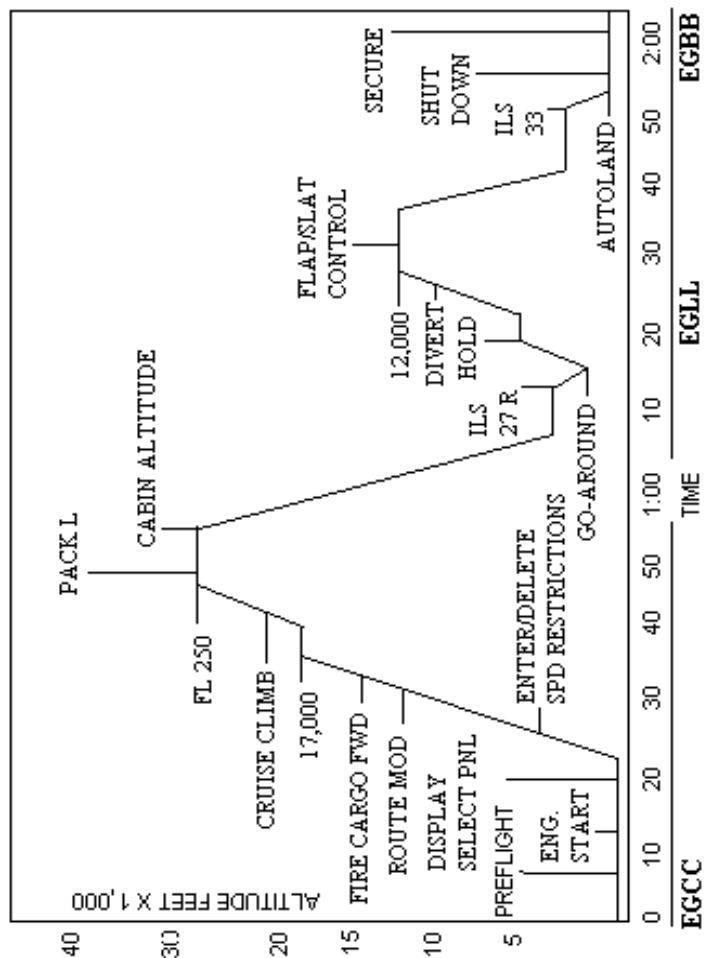
WEATHER

EGCC Wind calm Visibility 2 km / Light Snow Ceiling 1000 Overcast
Temperature 00C / Dew Point -20C Altimeter 1007 Mb RWY 23 R

EGLL Wind calm Visibility 1km Fog Ceiling 400 Overcast Temperature 08C Dew
Point 06 C I Altimeter 1006 Mb ILS RWY 27 R

EGBB Wind 020/10 Visibility 9 km Haze Ceiling 3000 Broken Temperature 09C
Dew Point 02C Altimeter 1008 Mb ILS RWY 33

CLEARANCE Pakistan 777 is cleared to London Heathrow *SANBIR* departure,
squawk 4465. Departure frequency 136.57.

PROFILE


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PREFLIGHT

Normal Procedures
FMC Preflight procedure
Manual route entry
Route SONEX direct DESIG L603 DOLAS
direct LAM
TO thrust limit as required
Enter or check climb derate of
CLB 2 – THRUST LIM page.

REFERENCE

FCOM NP.21
FCOM NP.21
FCOM

FCOM

ENGINE START

Normal procedures
Before Start procedures
FMC before Start procedures
After Start procedures
* Engine Anti-Ice required

FCOM NP.21
FCOM NP.21
FCOM NP.21
FCOM NP.21
FCOM SP

TAXI-OUT

Normal Procedures
Flaps 15 OR 5 take off

FCOM NP.21

TAKE OFF

Normal procedures
Use LNAV and VNAV for take off
DISPLAY SELECT PNL

FCOM NP.21,

FCOM 10

CLIMB

Normal Procedures
FMC Operations
Enter/delete speed restriction
Maintain 220 knots for traffic separation

FCOM NP.21
FCOM 11
FCOM 11

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CLIMB

IAS/MACH Selector (speed intervention)

Resume normal climb speed

Route modification

After DOLAS direct BANEM, join *N866* (to) *DIGSU*

CROSS SECTION OF N866 AND L10 to BPK

* FIRE CARGO FWD

QRH 8.14

CRUISE

Normal procedures

FCOM NP.21

*FMC Operations

FCOM 11

Cruise Climb

Climb and maintain FL 250 – Altitude Selector.

* PACK L

QRH 2.14

Arrival procedure

From present position direct to LAM and hold

SOUTH WEST on radial 266 left turn radar vector

ILS RWY 27 R approach (London Heathrow)

*CABIN ALTITUDE

QRH 2.1

Malfunction leads to a rapid descent.

FCTM 7

Be aware that Communications barriers are

present keep all informed of decisions and

intentions: First Officer Cabin ATC.

Additionally,

CRM considerations – Problem solving process

Use all resources to gather information

Be aware of time constraints

Discuss, propose, seek feedback, and take action.

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DESCENT

*Normal Procedures
 FMC Operations
 Amended missed approach clearance
 At 1000 AGL turn right direct to BUZAD
 climb 4000

REFERENCE

FCOM NP.21
 FCOM 11
 FCOM

APPROACH

* Normal Procedures
 ILS approach
 ILS RWY 27 R approach at London (EGLL)

REFERENCE

FCOM NP.21
 FCOM

GO-AROUND

*Normal procedures
 Go-around
 At 1000 AGL proceed direct to BUZAD climb and
 Maintain 4000
 Engine Failure during go-around
 CRM Consideration-Resource Management
 Obtained all required information
 Obtain assistance and coordinate information
 Engine in-flight start
 CRM Consideration-Situation awareness
 Prepare for route alteration
 PF and PM specific duties must be followed
 Address and resolve the problem
 Divert (Selection of an alternate)
 Divert to Birmingham (EGBB) – ALTN page
 New Cruise altitude
 Climb and maintain FL 120

FCOM NP.21
 FCOM NP 21,
 FCOM/QRH
 FCOM/QRH

FCOM
 FCOM

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Arrival procedure

GROVE 1A arrival ILS RWY 33 approach at

GO-AROUND

Birmingham (EGBB)

FLAP/SLAT CONTROL

Proceed direct to holding position GROVE
 (Radial 286 of HON VOR)

Hold at GROVE North West with right turn

REFERENCE

QRH 9.8

APPROACH

Normal Procedures

FCOM NP.21

After departing holding position GROVE descent
 maintain 2500 and heading 154 for ILS RWY 33
 approach (Birmingham) Radar Vector to the ILS
 RWY 33 approach at Birmingham.

Display an extended approach course D4.0 IBM
 (MAPLE) RWY 33 - ARRIVAL PAGE

LANDING

Normal procedures

FCOM NP.21

Automatic landing

FCOM

TAXI-IN

Normal Procedures

FCOM NP.21

SHUT DOWN

Normal Procedures

FCOM NP.21

SECURE

Normal Procedures

FCOM NP.21

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18.1.1 FFS

INTRODUCTION

The Full Flight Simulator Days are designed to include normal, supplementary normal and non-normal procedures as published in the Operations Manual. Each day's program has three parts: a one-hour briefing, a four-hour simulator period divided into two segments, and a debriefing. The four hour simulator period is designed for two pilots to each fly a two-hour segment. Immediately following each period, a debriefing consisting of a review of the trainee's performance will be conducted by the instructor. Items to study for the next period will be identified.

Each Day is organized in a "Phase of Flight" format that specifies training items to be completed and the sequence of presentation. Other information includes the weather and airplane information for calculating takeoff performance. Airfield information can be obtained from the approach charts. Each Day contains briefing items which are referenced to sections in the Operations Manual (FCOM) or the Flight Crew Training Manual (FCTM). You are expected to become thoroughly familiar with these items prior to each training period.

As much as practical, realism will be maintained during training. The instructor will act as Company dispatcher, ground crew, and ATC. Flights will be flown in real time except when repositioning is specified in the Day plan. These requirements do not preclude verbal instructions and comments when appropriate, and position freezing and repositioning to make more efficient use of available time.

The trainee is expected to demonstrate a satisfactory level of skill and knowledge in the performance of all maneuvers and procedures.

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GENERAL GUIDANCE TO INSTRUCTORS

The Full Flight Simulator Days include Normal, Supplementary and Non-Normal procedures as published in the Flight Crew Operating Manual (FCOM), and the Flight crew Training Manual (FCTM). Days culminate in the Pilot Proficiency Check (PPC).

Each Day's programmed has 3 parts; a one hour briefings a four hour simulator period (divided into 2x2 hour periods) wherein the Day will be repeated for each trainee, and a debriefing. At the end of the debriefing, the Instructor should identify those items to study for the next period.

Each Day is organized in a "Phase of Flight" format that specifies training items to be completed and the sequence of presentation. A loft type scenario, using airfields on PIA network, is used whenever practicable. Details of each Day are contained in this Guide, along with flight data to be used which includes weather, aircraft, and route information. Performance data should be supplied by the Instructor, and trainees will use standard Jeppesen charts throughout.

Each Day contains briefing items which are referenced to the FCOM or the FCTM. Trainees are expected to review and familiarize themselves with these items before each Day. For purposes of standardization, Instructors should closely adhere to the briefing notes, which are derived from the FCOM, FCTM, and general Boeing guidance.

As far as practicable, realism should be maintained during Full flight Simulator training. Headsets should be used, and all normal communications are to be expected. To this end, the Instructor should act as ATC, ground crew, cabin crew, and Company operations staff. Flights should be flown in real time whenever it impacts realism, the Instructor should advise trainees that repositioning is taking place, and he should provide reorientation guidance.

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Instructors will instruct and comment in real time, so the previous paragraph does not preclude verbal instructions and comments where appropriate, and the use of position or flight freeze facilities of the simulator is encouraged where they enhance training value.

The trainee is expected to demonstrate the required level of skill, experience, and knowledge in the performance of all the designated maneuvers and procedures. Though each trainee is required to pass a PPC at the end of Full Flight Simulator Training, his performance should be continuously evaluated throughout.

Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000 fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.

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18.1.1.1 FFS 1

DAY SUMMARY

This Day is a flight from Manchester (EGCC) to London Heathrow (EGLL). The crew performs a complete preflight. Normal procedures and a few non-normals will be practiced. Emphasis will be on familiarizing the student with manual flight characteristics and ground handling techniques of the airplane. Demonstrations will also be conducted to familiarize the crew with flight envelope protection features of the B-777.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
 - Initiate practice of manual flight characteristics of fly-by-wire, alert, envelope Protection systems, manual ILS, visual approaches, touch and go and full stop Landings.
 - Apply Crew Resource Management attributes while practicing selected normal and Non-normal procedures.
 - Improve skill level of previous training objectives.
 - Demonstrate required level of proficiency in aborted engine start, cruise, and Descent procedures.
- (*) Denotes proficiency item.

ROUTE OF FLIGHT
ORIGIN

Manchester (EGCC)

ROUTE
*EGCC SANBA1R SANBA UN859 HON L10
 DTY WCO EGLL*
DEPARTURE

SONEX ONE ROMEO (SONE 1R)

DESTINATION

London Heathrow (EGLL)

FLIGHT NUMBER

PK777

PERFORMANCE

GR WT	220,000 KGS	FLAPS	OPT
FUEL	20,000 KGS	CG	23%
ZFW	200,000 KGS	WIND	230/15
RESERVES	6,100 KGS	SLOPE	ZERO
CRZ ALT	15,000'	EO ACCEL HT	1,000
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000'

WEATHER
EGCC Wind 230/15 Visibility 20 km SKC Temperature 15°C Dew Point 10°C
 Altimeter 1013 Mb RWY 23 R.

EGLL Wind 270/20 Visibility 25 km SKC Temperature 25°C Dew Point 4°C
 Altimeter 1013 Mb ILS RWY 27 R.

CLEARANCE

 Pakistan 777 is cleared to London Heathrow *SANBA1R* departure. Squawk
 2550. Departure frequency 136.57.

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PREFLIGHT

Normal Procedures
Program FMC, Set trim, airspeeds
And mode Control Panel
Seat Position
Accomplish Checklists

REFERENCE

FCOM NP.21, FCTM
FCOM

FCOM

ENGINE START

Normal Procedures
Auto start – Hot Start
*ENG AUTO START R
Manual Start – Hung Start
*ABORTED ENG START L

FCOM NP.21

QRH 7.3, FCOM
FCOM SP.7
QRH 7.1, FCOM

TAXI-OUT

Normal Procedures
Taxi
Thrust/Jet blast
Tiller/rudder pedal steering
Turn radius/wing tip travel
Pavement width requirements
180 turns
Main/nose gear ground track
Taxi speed/ND GS display
Take off briefing

FCOM NP.21, FCTM

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TAKE OFF

Take off
LNAV/VNAV
Setting TO Thrust (auto throttle)
Rotation rate and target pitch attitude
Flap Retraction
Flap Maneuvering Speeds
Flight Mode Annunciates (FMAs)

REFERENCE

FCOM NP.21,FCTM
FCOM 11
FCOM
FCTM
FCTM

CLIMB REFERENCE

Normal Procedures
Climb (No autopilot)
Climb Speeds
Flight characteristics
Exercise roll rates, heading, and airspeed change
Trim requirements
Change roll and pitch modes.

FCOM NP.21

CRUISE

*Normal procedures
Econ cruise at 15,000 feet
Demonstration of:
Bank angle protection
Stall Protection
Stall and recovery
Auto throttle Wakeup
Unusual attitudes (Nose high/Nose low)
Recognition
Recovery

FCOM NP.21, FCTM

FCOM, FCTM

QRH, FCTM

QRH, FCTM

DESCENT

Demonstration of:
 Over-speed Protection
 *Normal Procedures
 LNAV/VNAV Descent Profile
 Engage autopilot
 Demonstrate autopilot override
 (Pitch/roll)
 Engage autopilot

APPROACH and LANDING

ILS auto land approach RWY 27 R
 (F/D off), full stop landing
 Approach Selection
 Intercept course to
 NAV radios, visual and Aural ID
 ILS Auto Tune
 Flap extension/maneuver speeds
 Note pitch attitudes and power settings
 At all flaps position
 FMAs
 Standard Callouts
 Flare and touchdown
 Autopilot and auto throttle disconnect
 Autopilot override (landing rollout)

REFERENCE

FCOM, FCTM

 FCOM NP.21, FCTM
 FCOM 4

 FCOM NP.21

 FCOM 11
 FCOM 11
 FCOM 11
 FCOM 11
 FCTM

 FCTM, SOP
 FCOM
 FCOM
 FCOM

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TAKE OFF

Normal Procedures

REFERENCE

FCOM NP.21,FCTM

APPROACH and LANDING

Manual, F/D, ILS approach RWY 27 R

Touch & go landing

FCOM, FCTM

Intercept Course to

FCOM

Landing flare

APPROACH and LANDING

Visual Traffic Pattern RWY 27 R

Touch & go Landing

QRH, FCTM

Pattern altitude/timing

Landing gear/Flaps extension

PAPI/VASI

Map Runway Display

Trend Vector

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APPROACH and LANDING

REFERENCE

*PRI FLIGHT COMPUTERS

QRH 9.22,

FCOM

Primary flight computers fail

Secondary/Direct Mode

FCOM

Reverse Procedures

PNF Callouts

FCTM

Visual traffic pattern RWY 27 R

Full Stop landing

QRH, FCTM

TAXI-IN and SHUTDOWN

Normal Procedures

FCOM

After landing

Shutdown

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18.1.1.2 FFS 2

DAY SUMMARY

This Day is a flight from London Heathrow (EGLL) to Manchester (EGCC) with a weather diversion required. Normal procedures and selected non-normal will be practiced. Emphasis will be on a loft exercise followed by visual approaches and landings.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
- Initiate practice of air conditioning pack failure, loss of cabin pressurization and hydraulic pump failure.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Improve skill level of previous training objectives.

ROUTE OF FLIGHT

ORIGIN	London Heathrow (EGLL) RWY 27 R
ROUTE	BPK N601 POL
DEPARTURE	BROOKMAN PARK SEVEN FOXTROT (BPK 7F)
DESTINATION	Manchester (EGCC)
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	240,000 KGS	FLAPS	opt
FUEL	30,000 KGS	CG	23%
ZFW	210,000 KGS	WIND	230/5
RESERVES	5,600 KGS	SLOPE	0
CRZ ALT	FL 310	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000'

WEATHER

EGLL Wind 230/05 Visibility 6 km Ceiling 1000 Overcast Temperatures 10C Dew Point 09C Altimeter 1012 Mb ILS RWY 27 R.

EGCC Wind 230/5 Visibility 4000m Ceiling 800 Overcast Temperature 14C Dew Point 11C Altimeter 1011 Mb ILS RWY 23 R.

EGLL Wind 260/ 15 Visibility 2000m Ceiling 500 Overcast Temperature 10C Dew Point 09 Altimeter 1011 Mb ILS RWY 27 R.

CLEARANCE

Pakistan 777 is cleared to Manchester (EGCC) BROOKMANS PARK SEVEN FOXTROT (BPK 7F) departure. Departure frequency 118.82, Squawk 1777.

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PREFLIGHT

Normal Procedures

REFERENCE

FCOM NP.21, FCTM

ENGINE START

Normal Procedures

FCOM NP.21

TAXI-OUT and TAKE OFF

Normal Procedures

FCOM NP.21, FCTM

CLIMB REFERENCE

LNAV and VNAV

FCOM NP.21, FCTM

PACK L

QRH 2.14

CRUISE

Normal Procedures

FCTM, FCOM NP 21

Econ Cruise at FL 310

CABIN ALTITUDE/rapid descent

FCOM, FCTM

EICAS message and flight check indications

Use of autopilot

Rapid descent to lowest safe altitude, or 10,000 feet

Level-off procedures

AIRWORK

Stall and recovery

QRH, FCTM

Upset recovery training

FCTM 7

DESCENT

LNAV/VNAV descent profile

FCOM 11

Descent Planning (FMC)

FCOM 11

Divert to EGLL

FMC New destination (Rte page)

FCOM 11

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HYD PRESS PR1 R

FCOM 13.3

APPROACH and LANDING

REFERENCE

Manual, F/D, ILS approach RWY 27 R

Full stop landing

FCOM NP.21, FCTM

FMC – Approach selection

FCOM 11,

Intercept course to

FCOM 11

Nav Radios

FCOM 11

ILS auto tune

Standard Callouts

FCTM

Flare and touchdown

Reversing techniques

TAKE OFF (ceiling 2000ft o/c)

Normal Procedures

FCOM NP.21, FCTM

APPROACH and LANDING

Visual traffic pattern RWY 27 R

FCOM NP.21

Touch & go landing

FCTM

Pattern altitude/timing

Landing gear/Flaps extension

PAP1/VAS1

Map runway Display

Trend Vector

APPROACH and LANDING

Visual traffic pattern RWY 27 R

FCOM NP.21

Touch & go landing

FCTM

Normal Procedures

APPROACH and LANDING

Visual traffic pattern RWY 27 R

FCOM NP.21

Touch & go landing

FCTM

Normal Procedures

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APPROACH and LANDING

Visual traffic pattern RWY 27 R

Crosswind, full stop landing

Normal Procedures

Crosswind

REFERENCE

FCOM NP.21, FCTM

FCTM

TAXI-IN and SHUTDOWN

Normal Procedures

FCOM NP.21

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18.1.1.3 FFS 3

DAY SUMMARY

This Day is a local flight at Manchester (EGCC). Normal procedures and selected non-normal will be practiced. Emphasis will be on rejected takeoff exercises, non-ILS approaches and the introduction of engine inoperative characteristics. Non-ILS instrument approaches will be accomplished using VNAV unless operators require the use of V/S. For operators using VNAV, at least one non-ILS instrument approach will be accomplished using V/S to demonstrate the capability in case VNAV is not available.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
- Initiate practice of rejected and crosswind takeoffs, engine-out procedures, and raw data ILS, VOR and circling approaches.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Improve skill level of previous training objectives.
- Demonstrate required level of proficiency in preflight, taxi-out, normal takeoff, raw data ILS, normal landing, main gear steering, engine-out landing (TAC on), fire, engine fire, ILS approach with engine inoperative (TAC on), Missed approach with engine inoperative (TAC on), and engine inoperative Visual traffic pattern and manual landing (TAC on).

(*) Denotes proficiency item.

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC)
	RWY 23 R
	Gate
ROUTE	SONEX DIRECT MCT VOR (Local Flying)
DEPARTURE	SONEX ONE ROMEO (SONE 1R)
DESTINATION	Manchester (EGCC)
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	205,000 KGS	FLAPS	OPT
FUEL	20,000 KG	CG	23%
ZFW	185,000 KGS	WIND	140/10
RESERVES	5,500 KGS	SLOPE	0
CRZ ALT	5,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRD	THR REDUCTION	1000'

WEATHER

EGCC Wind 140/10 Visibility 2000m Rain Ceiling 500 Overcast Temperature 15C Dew Point 14 C Altimeter 1015 Mb ILS RWY 23R.

CLEARANCE

Pakistan777 is cleared Manchester Airport (EGCC) SONEX ONE ROMEO departure. Climb and maintain 5000ft (Local Flying). Departure frequency 136.57, Squawk 0600.

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PREFLIGHT

Normal Procedures

REFERENCE

FCOM NP.21, FCTM

ENGINE START

*Normal Procedures

FCOM NP.21

Engine anti-ice use

FCOM, SP.3

TAXI-OUT

*Normal Procedures

FCOM NP.21, FCTM

*MAIN GEAR STEERING

QRH 14.9, FCOM

TAKE OFF

Normal procedures

FCOM NP.21

Crosswind consideration

Thrust reduction

FCOM, FCTM

Acceleration height

FCTM

Pattern airspeeds

FCTM

APPROACH and LANDING

HYD PRESS SYS C

QRH 13.4

Hydraulic System loss/leak

Review checklist effect of lost components

VOR approach RWY 23 R

FCOM NP.21, SP.4,

With procedure turn, full stop landing

FCTM

VNAV or V/S as per operator procedures

NON PRECISION APPROACH Procedure – VNAV FCOM SP.4,FCTM

Flight Pattern

FCOM

NP.21,FCTM

Use of autopilot recommended

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NON PRECISION APPROACH Procedure – VNAV

REFERENCE

Fly off from FAF

No waypoint modifications

Flap configuration and speeds

FCTM

Pacing

Use of speed intervention

LNAV and VNAV use

One of the following required for VNAV use;

Appropriate path with MAP at or before runway
threshold Glide path angle published on chart
and/or legs page

Published VNAV DA (H)

FMCS certified for instrument approach navigation
with radio or GPS

Updating. RNP vs. ANP-RNP manual entry (0.3 for GPS).

FMA annunciations

Discuss “on approach” logic

FCOM 11

Use of MDA(H) versus DA(H)

FCTM 5

If DA (H) is not published, the DA (H) may be
Considered to the equivalent Of the currently
applicable published MDA (H) provided the
principal Operations inspector grants this
authorization.

If required to use MDA (H) for the approach

Minimum altitude, the barometric minimums selector
should be set at MDA+50 feet to ensure that, if an
missed approach is initiated, descent below the
MDA (H) does not occur during the missed approach.

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Set MDA (H) or DA (H) on MCP

Raw data requirements

Set missed approach altitude

Autopilot disconnect

Flight director procedures

Visual flight path below DA (H) or MDA (H)

Manual landing

REFERENCE

FCTM 5

FCOM SP.4, FCTM 5

FCOM NP 21

NON-Precision Approach Procedures-V/S

FCOM SP.4, FCTM

(For information only)

Flight Pattern

FCOM NP.21, FCTM

Use of autopilot recommended

Fly off from FAF

No waypoint modification

Flap configuration and speeds

FCTM

Pacing

LNAV use

FMCS certified for instrument approach navigation

with radio or GPS Updating. RNP vs. ANP-RNP

manual entry (0.3 for GPS)

FMA annunciation

Discuss “on approach” logic

FCOM 11.31, FCTM

5

Set MDA (H) on MCP

The barometric minimums selector should be

set at MDA+50 feet To ensue that, if a missed

approach is initiated, descent below the MDA (H)

does not occur during the missed approach

Raw data requirements

FCTM

Path Guidance Techniques

FCOM SP.4, FCTM

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Monitor the VNAV path deviation indication
Use the altitude range is at step down fix or VDP
300 feet per NM altitude
Set missed approach altitude
Autopilot disconnect
Flight director procedures
Visual flight path below MDA (H)
Manual landing

REFERENCE

FCTM

TAKE OFF

Normal Procedures
Climb to pattern altitude

FCOM NP.21, FCTM

APPROACH and LANDING

Holding MCT
Holding entry
Next hold
Holding speed
Exiting methods
VOR approach RWY 23 R
Circle to land 05 L
VNAV or V/S per operator procedures

FCOM 11.43, FCTM

FCOM 11.43, FCTM

Non-Precision Circle Approach

Procedures-VNAV

Flight Pattern
Use of autopilot recommended
Fly off from FAF
No waypoint modifications
Flap configuration and speed
Use of speed intervention
LNAV and VNAV use

FCOM SP.4, FCTM

FCOM NP 21, FCTM

FCTM

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One of the following required for VNAV use: **REFERENCE**

Appropriate path with MAP at or before
runway threshold glide path angle published
on chart and/or legs page
Published VNAV DA (H)
FMCS certified for instrument approach navigation with
radio or GPS updating RNP vs. ANP-RNP manual
entry (0.3 for GPS).

Non-Precision Circle Approach

Discuss “on approach” logic **FCOM 11**
Set MDA (H) on MCP

For a circling approach, set barometric minimum
selector to MDA (H) then set the MCP altitude to
the next 10 foot increment above the MDA (H) and
circle at MCP altitude.

Raw data requirement	FCTM
Circling approach maneuvering	FCTM
Maintain visual contact during circle	
Airspeed during maneuvering normally requires	
CAT D (FAA) – 141 to 165 Knots	
CAT C (ICAO) – 136 to 180 knots	
Set missed approach altitude	FCOM SP.4, FCTM
Autopilot disconnect	
Flight director procedures	
Visual flight path below MDA (H)	
* Touch & go landing	FCOM NP.21, FCTM

Non-Precision Circle Approach

Procedures-V/S (for information only)	QRH, FCTM
Flight Pattern	QRH, FCTM
Use of autopilot recommended	

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Fly off from FAF

REFERENCE

No waypoint modification`

Flap configuration and speed

FCTM

Pacing

LNAV use

FMCS certified for instrument approach navigation

with radio or GPS updating. RNP vs. ANP-RNP manual entry (0.3 for GPS).

FMA annunciations

Discuss “on approach” logic

FCOM 11, FCTM 5

Set MDA (H) on MCP

Non-Precision Circle Approach

For a circling approach, set barometric minimums selector to MDA (H) then set the MCP altitude to the next 100 foot increment above the MDA (H) and circle at MCP altitude.

Raw data requirements

FCTM

Path Guidance Techniques

FCTM

Monitor the VNAV path deviation indication

Use the altitude range is at step-down fix or

VDP 300 feet per NM altitude.

Circle approach maneuvering

FCTM

Maintain visual contact during circle

Airspeed during maneuvering normally requires

CAT D (FAA) – 141 to 165 knots

CAT C (ICAO) – 136 to 180 knots

Set missed approach altitude

FCTM

Autopilot disconnect

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Flight director procedures

REFERENCE

Visual flight path below MDA (H)

*Touch and go landing

FCOM NP.21, FCTM

APPROACH and LANDING

RAW DATA, ILS approach RWY 23 R

FCOM NP.21,

Normal Procedures

FCOM NP.21, FCTM

* Manual Landing

TAKE OFF

* Normal takes off

FCOM NP.30, FCTM

Climb to pattern altitude

FIRE ENGINE L, R

QRH 8.2

APPROACH and LANDING

Engine out familiarization

FCTM

TAC off, TAC on

*Manual, F/D, ILS approach RWY 23 R

FCOM NP.20, .30,

*Missed approach

Engine inoperative

TAC on

APPROACH and LANDING

* Visual traffic pattern RWY 23 R

FCOM

Full stop landing

FCTM

*Manual landing

Engine inoperative

TAC on

Reversing techniques

Braking considerations

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RTO EXERCISES

RTO exercises
Review RTO procedures/consideration
Brake cooling
Review conditions and data for each exercise
CRM Consideration
Situational Awareness
Crosscheck available information
Awareness of available decision time
Distractions possible due to malfunctions

REFERENCE

FCTM
QRH
PERFORMANCE IN FLT
FCTM

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DAY SUMMARY

This Day is a local flight at Manchester (EGCC). Normal procedures and selected non-normal will be practiced. Emphasis is on crosswind take offs and landing and non-precision approaches. VNAV or V/S will be used on non-ILS approaches per operator procedures.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
- Initiate practice of engine fire on take off and localizer approaches.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Improve skill level of previous training objectives.

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC) RWY 23 R Gate -----				
ROUTE	SONEX DIRECT MCT VOR (Local Flying)				
DEPARTURE	SONEX	ONE	ROMEO	(SONE	1R)
DESTINATION	Manchester (EGCC)				
FLIGHT NUMBER	PIA777				

PERFORMANCE

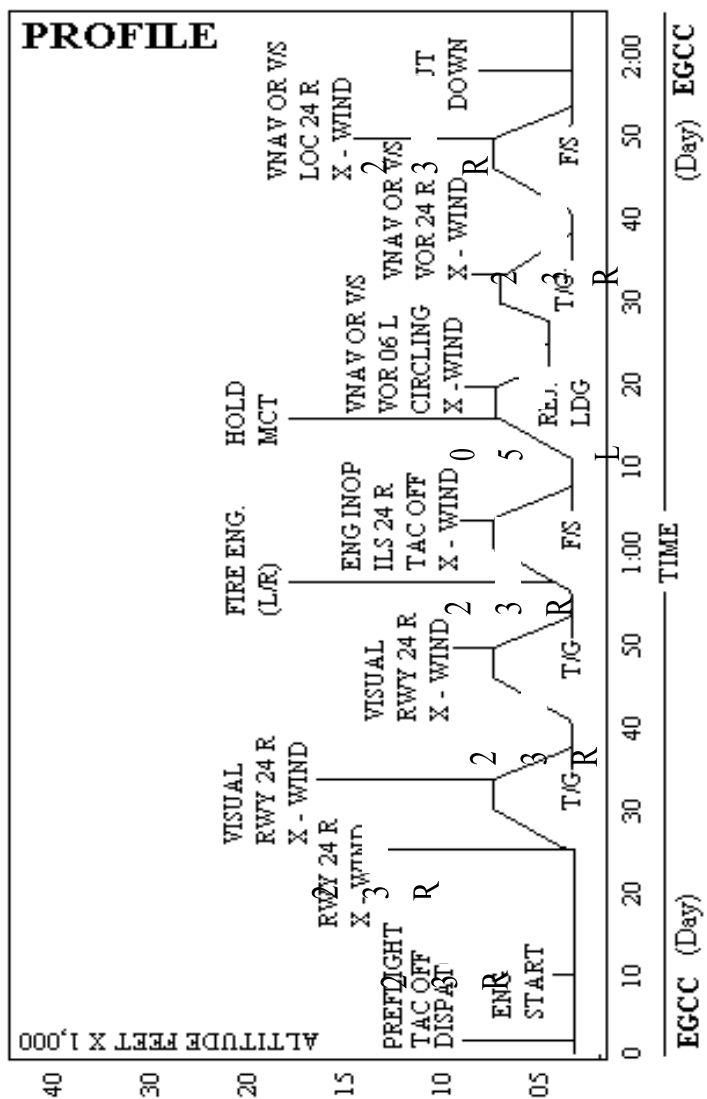
GRWT	210,000 KGS	FLAPS	OPT
FUEL	20,000 KGS	CG	23%
ZFW	190,000 KGS	WIND	310/15
RESERVES	5,300 KGS	SLOPE	0
CRZ ALT	3,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000'

WEATHER

EGCC Wind 310/15 Visibility 2000m Rain Ceiling 500 Overcast Temp 15C
 Dew Point 14 C Altimeter 1015 mb ILS RWY 23 R.

CLEARANCE

Pakistan777 is cleared to Manchester Airport (EGCC) SONEX ONE ROMEO
 (SONE 1R) Departure . Departure frequency 136.57, Squawk 1423.



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PREFLIGHT

Normal Procedures
Dispatch with thrust asymmetry
compensator (TAC) inoperative

REFERENCE

FCOM NP.21, FCTM

ENGINE START

Normal Procedures

FCOM NP.21

TAXI-OUT

Normal Procedures

FCOM NP.21, FCTM

TAKE OFF

Normal Procedures
Crosswind

FCOM NP.21
FCTM

APPROACH and LANDING

Visual traffic pattern RWY 23 R
Touch and go landing
Crosswind

FCOM NP.20, .30,
FCTM

APPROACH and LANDING

Visual traffic pattern RWY 23 R
Touch and go landing
Crosswind

FCOM NP.21,
FCTM

APPROACH and LANDING

FIRE ENGINE (L/R) during climb
ILS approach RWY 23 R, full stop landing
Engine inoperative

FCOM
FCOM NP.21,FCTM

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Crosswind

FCTM

TAC off

TAKE OFF

REFERENCE

Normal procedures

FCOM NP.21, FCTM

APPROACH and LANDING

Hold MCT

VOR approach RWY 23 R circle to land

FCOM NP.21.

RWY 05 L rejected landing

FCTM

VNAV or V/S per operator procedures

Crosswind landing

Rejected landing procedures

FCTM

APPROACH and LANDING

VOR approach RWY 23 R

FCOM NP.21,

Touch and go landing

FCTM

VNAV or V/S

Crosswind landing

APPROACH and LANDING

LOC approach RWY 23 R

FCOM NP.21,

Full stop landing

FCTM

VNAV or V/S per operator procedures

Crosswind landing

TAXI-IN and SHUTDOWN

Normal Procedures

FCOM NP.21

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DAY SUMMARY

This Day is a flight from Manchester (EGCC) to Karachi International Airport (OPKC) with an in-flight diversion required. Normal procedures and selected non-normal will be practiced. This flight emphasizes in-flight diversion considerations and procedures. Engine failure after VI characteristics and procedures will be introduced.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
- Initiate practice of TCAS, dual engine failure/stall, fuel jettison, and engine failure on takeoff after V 1.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Improve skill level of previous training objectives.
- Demonstrate required level of proficiency in climb, engine EEC mode, dual engine failure/stall, engine in-flight start, fuel jettison, takeoff with engine failure after V 1 (TAC on), climb with engine inoperative (TAC on), APU fire and passenger evacuation.

(*) Denotes proficiency item.

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC) RWY 23 R Gate -----
ROUTE	SONEX UL975 DESIG L603 DOLAS DIRECT ZDN G208 PG DOSTI
DEPARTURE	SONEX ONE ROMEO (SONE 1R)
DESTINATION	Karachi International Airport (OPKC)
ALTERNATE	OPNH ,ENROUTE ALT, EGLL, EDDF etc.
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	280,000 KGS	FLAPS	OPT
FUEL	60,000 KGS	CG	26%
ZFW	220,000 KGS	WIND	140/15
RESERVES	6,500 KGS	SLOPE	0
CRZ ALT	FL 310	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000

WEATHER

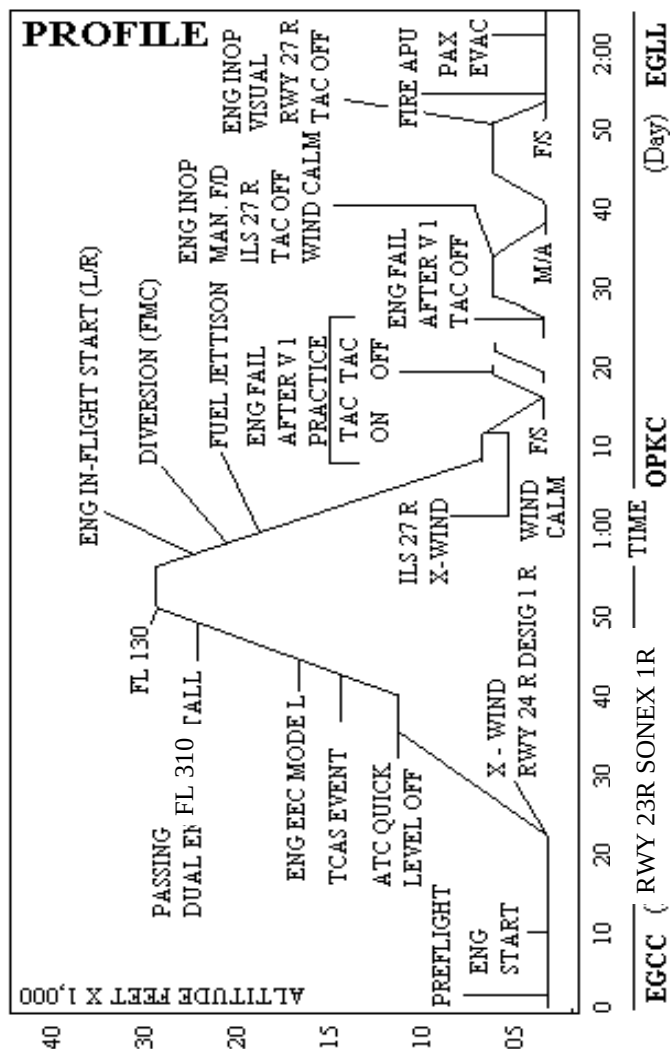
EGCC Wind 140/15 Visibility 550m Ceiling 2500 Broken 15000 Overcast
Temperature 20C Dew Point 19 C Altimeter 1019Mb.

OPKC Wind 050/10 Visibility 10 km Scattered 5000'. Temperature 31°C
/ Dew Point 21° C Altimeter 1011 Mb.

EGLL Wind 270/10 Visibility 10 km Ceiling 1000 Broken, 2500 Overcast
Temperature 14°C Dew Point 10°C Altimeter 1016Mb.

CLEARANCE

Pakistan777 is cleared to OPKC, SONEX ONE ROMEO
(SONE 1R). Departure. Departure frequency 136.57, squawk 4234.



PREFLIGHT

Normal Procedures

ENGINE START

Normal Procedures

TAXI-OUT and TAKE OFF

Normal Procedures

Crosswind takes off

Heavy Weight take off

Practice Take off abort with engine failure

BRAKE COOLING SCHEDULE

CLIMB

*Normal Procedures

ATC Quick Level off

Manual control versus MCP

TCAS event

*ENG EEC MODE L

FCOM

*DUAL ENG FAIL/STALL

Flight Deck indications

Drift down, if required

DESCENT

One engine restarts during

Dual Engine Fail/ Stall checklist

*ENG IN-FLIGHT START L, R

Second engine restarts

FMC status after in-flight start

FMC (diversion) CRM considerations

Workload management

Sequence tasks

Avoid work overload and do not be hurried.

REFERENCE

FCOM NP.21, FCTM

FCOM NP.21

FCOM NP.21, FCTM

FCTM

QRH-

FCOM NP.21, FCTM

FCTM

QRH 7.12,

QRH 7.2, FCTM 8.7

FCOM, FCTM

QRH

QRH 7.22, FCTM 8.8

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DESCENT

Diversion

*FUEL JETTISON

Level at 10,000 feet

APPROACH and LANDING

ILS approach RWY 27 R

Full stop landing

Crosswind landing

ENGINE FAILURE PRACTICE

Engine failure practice (wind calm)

*Take off with engine failure after VI (TAC on)

*Climb with engine failure (TAC on)

Take off with **Eng Svr Damage/Sep L, R**
after VI (TAC off)

Climb with engine failure (TAC off)

TAKE OFF

Engine Lim/Surge/ Stall after VI (TAC off)

Engine failure indications

Rudder required for directional control

Rotation rate and target pitch attitude

Flight director usage

Slip/skid indicator

APPROACH and LANDING

Engine inoperative, manual F/D,

missed approach (TAC off)

Trim requirements

Engine inoperative missed approach

Rudder requirement

LNAV

VNAV/FLCH

REFERENCE

FCOM

QRH 12.16

FCTM 8.19

FCOM NP.21,

FCTM

FCOM NP.21, FCTM

QRH 7.8

QRH, FCTM

FCOM

QRH 7, FCTM

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APPROACH and LANDING

Engine inoperative, visual traffic pattern,
 RWY 27 R full stop landing (TAC off)
 Rudder trim
 Traffic pattern
 Zero trim
 Reverser technique

REFERENCE

FCTM

TAXI-IN REFERENCE

*FIRE APU	QRH 8.1
*PASSENGER EVACUATION	QRH BACK COVER
Passenger evacuation, procedure	FCTM
Emergency exits – selection and use	
CRM considerations	
Communications – acquire information on airplane status	
First Officer	
Tower	
Cabin staff	
Resolve conflicting information	
Advocate course of action and communicate to all involved.	

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DAY SUMMARY

This Day is local flight at Manchester airport (EGCC) beginning with night conditions and terminating during day light (Wind shear Training). The crew performs a limited preflight while the instructor starts the engines and configures the overhead panel. Normal procedures and selected non-normal will be practiced. Emphasis will be on hydraulic failures, flight control failures, and wind shear. VNAV users will practice V/S non-ILS approach procedures.

The manual F/D VOR procedure turn approach is annotated as a Proficiency Check Requirement (*). If not performed satisfactorily, it will be included in the Day 9 Evaluation flight profile.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
- Initiate practice of hydraulic failure of two systems. Flaps/slats control failure, and wind shear exercise.
- Apply crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Improve skill level of previous training objectives.
- Demonstrate required level of proficiency in take off with crosswind take off with slippery runway, night take off, take off with wind shear, climb with wind shear, wind shear on approach, manual F/D VOR approach, engine imperative traffic pattern and landing, hydraulic failure (R+C) system, and flaps/slats control failure.

(*) Denotes proficiency item.

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC)
	RWY 23R
	Gate -----
ROUTE	SONEX DIRECT TO MCT VOR (Local Flying)
	SONEX ONE ROMEO (SONE 1R)
DEPARTURE	
	Manchester (EGCC)
DESTINATION	
	PIA777
FLIGHT NUMBER	

PERFORMANCE

GRWT	210,000 KGS	FLAPS	OPT/20
FUEL	20,000 KGS	CG	24%
ZFW	190,000 KGS	WIND	150/10
RESERVES	6,100 KGS	SLOPE	0
CRZ ALT	4,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000

WEATHER

EGCC Wind 150/10 Visibility 3000 m Light Snow Ceiling 600 Overcast
 Temperature 01C Dew Point 01C Altimeter 1012 mb ILS RWY 23 R.
 Braking action on taxiways and runways POOR / slush on taxiways.

CLEARANCE

Pakistan777 is cleared to Manchester Airport (EGCC) SONEX ONE ROMEO
 (SONE 1R) Departure. SONEX Direct MCT VOR. . Departure frequency
 136.57, squawk 1777.

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PREFLIGHT

Normal Procedures
 Program FMC, set trim, airspeeds
 and MCP panel
 Accomplish checklist
 Set lighting
 Instructor will configure overhead panel
 and start engines
 De-icing requirements

REFERENCE

FCOM NP.21, FCTM

 FCOM

 FCOM SP.3, FCTM

ENGINE START

Engine running
 Engine anti-ice

FCOM, SP.3

TAXI-OUT

Normal Procedures
 Taxi in adverse weather
 Engine anti-ice/run-up

FCTM
 FCOM SP.3

TAKE OFF

- * Crosswind take off
- * Take off on slippery runway
- * Night take off
- Adverse runway conditions take off

FCTM
 FCOM SP 16.1

APPROACH and LANDING

- * HYD PRESS SYS R+C
- Loss of Right and Center Hydraulic Systems
- Review FCOM for affected components

QRH 13.18, FCOM

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APPROACH and LANDING

REFERENCE

Slats hydraulic operations

Flaps hydraulic operations

Main landing gear hydraulic operation

Auto speed brake

Main gear steering

Auto brake

Normal and Alternate brakes

Right thrust reverser

Additional time required for flap/slat extension

Reduced flight control capability

Flaps 20 and VREF 30+20

(ensures go around performance)

Crosswind limit 20 knots

*Manual, F/D, VOR approach RWY 23 R

Procedure turn, full stop landing

FCTM

Non precision Approach Procedures - V/S

FCOM SP.4, FCTM

Flight pattern

FCOM NP.21, FCTM

Use of autopilot recommended

Fly off from FAF

No waypoint modifications

Flap configuration and speeds

FCTM

Pacing

LNAV use

FMC certified for instrument approach

navigation with radio or GPS Updating.

RNP Vs ANP-RNP manual entry (0.3 for GPS).

FMA annunciations

Discuss "on approach" logic

FCOM 11

Set MDA(H) on MCP

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APPROACH and LANDING

The barometric minimums selector should be set at MDA+50 feet to ensure that, if a missed approach is initiated, descent below the MDA(H) does not occur during the missed approach.

Raw data requirement

Path Guidance Techniques

Monitor the VNAV path deviation indication

Use the altitude range arc at step-down fix or VDP 300 feet per NM altitudes

Set missed approach altitude

Autopilot disconnect

Flight director procedures

Visual flight path below MDA (H)

Set minimums to LOC (G/S OUT)

Manual landing, flaps 20

CRM considerations

Promote group climate

Promote crew participation and interaction

Involve cabin staff

Problem solving process

REFERENCE

FCTM

FCOM SP.4, FCTM

FCTM

TAKE OFF

Normal takes off

Retract flaps, climb to 4,000 feet

APPROACH and LANDING

*FLAP/SLAT CONTROL

QRH 9.8, FCOM

Use of alternate Flap operation

flap 20 landing, VREF 20

Radar vector ILS approach RWY 23 R

Full stop landing

FCTM

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TAKE OFF

Take off, engine failure after VI
ENG FAIL L/R – after VI
TAC off – Directional control
Crosswind conditions

REFERENCE

FCOM NNM.2, FCTM
FCOM, QRH

FCTM

APPROACH and LANDING

Engine inop, radar vector, ILS approach
RWY 23 R missed approach
Crosswind conditions

FCTM

FCTM

APPROACH and LANDING

*Engine inop. Visual traffic pattern RWY 23 R
full stop landing
Crosswind conditions

FCTM

FCTM

WINDSHEAR TRAINING

Wind shear encounter on the runway and
after liftoff
Avoidance, precaution and recovery.
Wind shear recovery procedure
Wind shear indication
Use of pitch attitude and thrust
To control flight path versus airspeed
Do not change configuration
Respecting stick shaker
Go-around considerations
Use of the autopilot/flight director
Crew coordination
Report wind shear activity to ATC
*Take off wind shear near VR (practice)

FCOM, FCTM, QRH

FCOM, FCTM, QRH
FCOM

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TAKE OFF

*Take off, wind shear after liftoff
(Continue take off)

REFERENCE

QRH, FCTM

APPROACH and LANDING

* Autopilot, ILS approach RWY 23 R
Wind shear on final, missed approach
* Missed approach
Wind shear escape maneuver, automatic
Monitor system performance.

REFERENCE

FCTM

QRH, FCTM

APPROACH and LANDING

Visual traffic pattern RWY 23 R
Normal manual landing, full stop

FCOM NP.21,
FCTM

TAXI-IN and SHUTDOWN

Normal Procedures.

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18.1.1.7 FFS 7

DAY SUMMARY

This Day is a flight from London Heathrow (EGLL) to Manchester (EGCC) with a diversion required. The crew performs a limited preflight while the instructor starts the engines and configures the overhead panel. Normal procedures and selected non-normal will be practiced. Emphasis will be on a LOFT exercise followed by a diversion. Pilot incapacitation after missed approach at EGCC , A RECOGNITION IS REQUIRED BY REMAINING PILOT . DETAIL IS MENTION IN FCTM 1.39

Practice of Heavy weight TAKEOFF with engine fail at V1 and heavy WT both engine operative landing will be practiced later in the session. A TOGW of 260000kgs will be used. (Page 139 of this chapter)

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
- Initiate practice of electrical malfunction, Forced landing, cargo fire, and engine low oil pressure, PILOT INCAPACITATION. Heavy wt takeoff and landing.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Improve skill level of previous training objectives.

ROUTE OF FLIGHT

ORIGIN	London Heathrow (EGLL)
	RWY 27 R
	Gate -----
ROUTE	BPK UN601 POL
DEPARTURE	BROOKMANSPARK SEVEN FOXTROT (BPK 7F)
DESTINATION	Manchester (EGCC)
ALTERNATE	Birmingham (EGBB)
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	240,000 KGS	FLAPS	OPT
FUEL	30,000 KGS	CG	24%
ZFW	210,000 KGS	WIND	180°/ 15
RESERVES	6,100 KGS	SLOPE	0
CRZ ALT	16,000'	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRED	THR REDUCTION	1,000

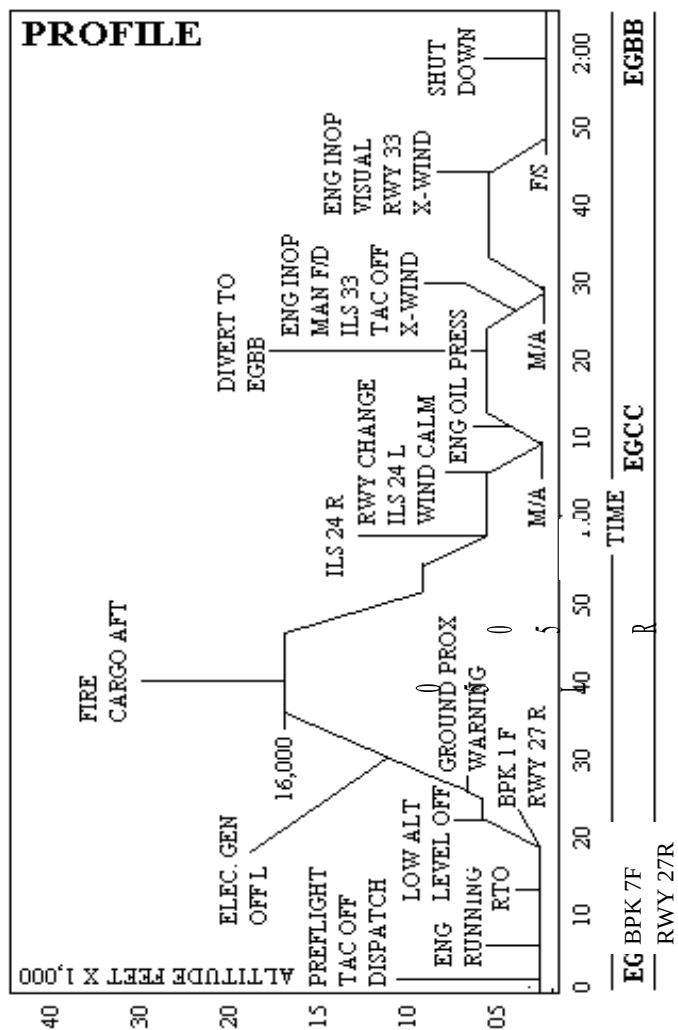
WEATHER

EGLL Wind 180/15 Visibility 3 km Ceiling 800 Broken 15,000 Overcast
 Temperature 10 C Dew Point 08 Altimeter 1015 Mb ILS RWY 27 R.

EGCC Wind calm Visibility 1 km Ceiling 300 Overcast Temperature 10 C
 Dew Point 09C Altimeter 1013 Mb.

EGBB Wind 330/10 Visibility 5 km. Scattered 10,000. Temperature 10
 C. Dew point 02. Altimeter 1010 Mb ILS RWY 33.

CLEARANCE Pakistan 777 is cleared to Manchester Airport (EGCC)
 BROOKMANSPARK SEVEN FOXTROT (BPK 7F) departure, squawk 4737.
 Departure frequency 118.82.



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PREFLIGHT

Normal Procedures

Program FMC, set trim, airspeeds,
and MCP Panel

FCOM NP.21, FCTM

Intercept course from

FCOM

Accomplish checklists

Dispatch with thrust asymmetry

Compensator (TAC) inoperative

Instructor will configure overhead panel and
start engines

ENGINE START

Engines running

FCOM NP.21

TAXI-OUT and TAKE OFF

Rejected take off procedure

QRH/FCTM

Normal procedures

FCOM NP.21, .30, FCTM

RWY 27R

Crosswind take off

LNAV at 400'

CLIMB

VNAV

FCOM NP.21, FCTM

Low altitude level-off

FCTM

Ground Prox Warning

QRH, FCOM, FCTM

ELEC GEN OFF L

QRH 6.5, FCOM

CRUISE

Normal Procedures

FCOM NP. 21/FCTM

Dual Eng Fail/Stall

QRH 7.2

Forced landing

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TAKE OFF

Normal procedure

REFERENCE

FCOM NP21

CRUISE

FIRE CARGO AFT

QRH 8.12

DESCENT

Normal Procedures

FCOM NP.21,FCTM

APPROACH and LANDING

ILS approach RWY 05L

FCOM NP.21, FCTM

TAC off

After localize and/or glideslope capture

Change to ILS RWY 05R

MCP Procedures

FCOM

The approach mode can be disengaged:

After localizer and/or glide slope are captured,
by pushing the approach switch a second time
above 1,500 feet radio altitude (AFDS reverts to
HDG HLD and V/S)

After localizer and/or glide slope are captured, by
engaging the TO/GA mode or disengaging the
autopilot and turning both flight director switches off:

FMC procedures

Reselect new approach ILS RWY 05R

ILS approach RWY 05R missed approach

PILOT INCAPACITATION

FCTM 1.39

ENG OIL PRESS L, R

QRH 7.30

Divert to EGBB

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APPROACH and LANDING

REFERENCE

Engine inop,

ILS approach RWY 33

Missed approach

TAC off

Crosswind

FCOM NP.21/FCTM

FCTM

APPROACH and LANDING

Engine inop, visual traffic pattern

RWY 33 full stop landing

TAC off

Crosswind landing

FCOM NP.21/QRH

FCTM

TAXI-IN and SHUTDOWN

Normal Procedures

FCOM NP.21

HEAVY WT TRAINING REQUIREMENT ,TOGW 260,000 KGS

1. TAKE OFF

Engine fails after V1 TAC OFF

Rudder required for directional control

Rotation rate and target pitch altitude

FD usage

ENG IN FLIGHT START.

FCTM ,FCOM NP 30,

QRH 7.22, FCOM

2. APPROACH and LANDING

Heavy WT Both Engine operative

ILS approach

Missed approach from DH

FCOM NP 20, 30

FCTM 6.14, QRH 0.4

3. VISUAL and TRAFFIC PATTERN

Normal manual landings

FCOM

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18.1.1.8 FFS 8 Pre-Rating

DAY SUMMARY

This Day is a flight from Manchester (EGCC) to London Heathrow (EGLL). The crew performs a complete preflight. Normal procedures and selected non-normal will be practiced. This flight is a review and proficiency enhancement flight in preparation for the Check Ride (Line Oriented Evaluation). VNAV or V/S will be used on non-ILS approaches per operator procedures.

Thrust limit and flap setting has to be calculated through TOGW analysis chart and inserted in FMS for optimum performance. The method is given in the SOP.

DAY OBJECTIVES

- Integrate selected normal and non-normal procedures.
- Initiate practice of electrical AC bus failure and wheel well fire.
- Apply Crew Resource Management attributes while practicing selected normal and non-normal procedures.
- Improve skill level of previous training objectives.
- *Demonstrate required level of proficiency in rejected takeoff, takeoff with crosswind and low ceiling and visibility, electric AC bus failure, smoke/fumes removal, wheel well fire, TCAS resolution advisory, loss of cabin altitude, rapid descent, unusual attitudes, holding, VOR approach, circling approach, rejected landing, ILS automatic landing, takeoff with engine failure after V 1 (TAC off), engine inoperative climb (TAC off), manual flight director engine inoperative ILS approach (TAC off), and engine inoperative missed approach (TAC off).

(*) Denotes proficiency item.

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC) RWY 23 R Gate -----
ROUTE	SONEX UL975 DESIG L603 DOLAS DIRECT LAM
DEPARTURE	SONEX ONE ROMEO (SONE 1R)
DESTINATION	London Heathrow (EGLL)
ALTERNATE	Manchester (EGCC)
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	210,000 KGS	FLAPS	Opt,15
FUEL	20,000 KGS	CG	23%
ZFW	190,000 KGS	WIND	320/15
RESERVES	5,400 KGS	SLOPE	0
CRZ ALT	FL 290	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	AS REQUIRD	THR REDUCTION	1,000

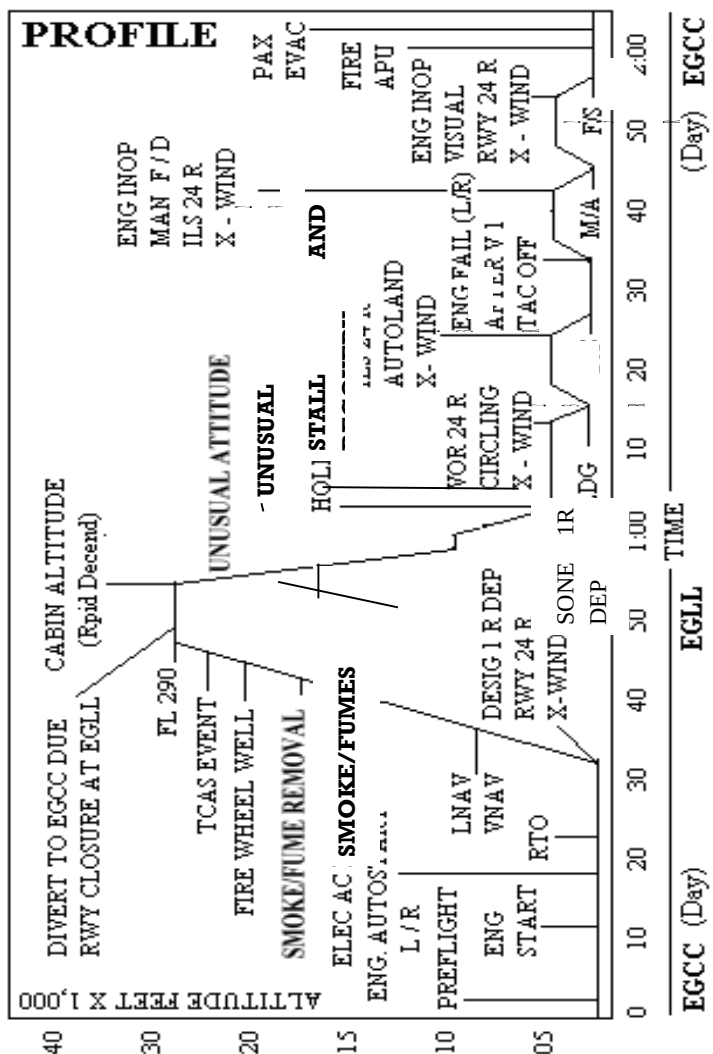
WEATHER

EGCC Wind 320/15 Visibility 3000m Ceiling 1200 Overcast Temperature 09C
 Dew Point 07 C Altimeter 1010 Mb ILS RWY 23 R.

EGLL Wind 270/10 Visibility 4 km Ceiling 800 Overcast Temperatures
 10 C Dew Point 07 C Altimeter 1011 Mb VOR RWY 27 R.

CLEARANCE

Pakistan 777 is cleared to London Heathrow Airport (EGLL). SONEX ONE ROMEO (SONE 1R) departure. Departure frequency 136.575, squawk 4737.



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PRE-FLIGHT

Normal Procedures
Departure/take off alternate

ENGINE START

Normal procedures
ENG AUTOSTART L, R
Engine anti-ice

REFERENCE

FCOM NP.21, FCTM

FCOM NP.21
QRH 7.3, FCOM
FCOM, SP3

TAXI-OUT and TAKE OFF

Normal Procedures
Engine anti-ice
Crosswind
*Rejected Take off procedures
*Take off with low visibility and ceiling

FCOM NP.21, FCTM
FCOM SP.3, FCTM

FCTM

CLIMB

Normal Procedures
LNAV/VNAV
*ELEC AC BUS L, R
*SMOKE/FUMES REMOVAL
*FIRE WHEEL WELL
TCAS event
FCTM

FCOM NP.21, FCTM

QRH 6.1
QRH 8.24
QRH 8.17
FCOM, QRH MAN 1.6,

CRUISE REFERENCE

Normal procedures
Divert to Manchester due London
RWY closure
* CABIN ALTITUDE/ rapid descent
EICAS message and flight deck indications
Use of autopilot

FCOM NP.21, FCTM

QRH 2.1, FCTM

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Rapid descent to lowest safe altitude, or 10,000 feet

REFERENCE

Level-off procedures

CRM Considerations – Captains authority

Emergency authority

Minimize risk

Control airplane, crew, and passengers.

DESCENT

* Unusual Attitude (nose high/nose low)

QRH, FCTM

Level off FL100

Stall and recovery

FCTM, QRH

APPROACH and LANDING

* Hold MCT

FCOM, FCTM

* VOR approach RWY 23 R circle to land

RWY 05 L rejected landing

FCTM

Crosswind landing

* Rejected landing procedure

FCTM

APPROACH and LANDING

ILS approach RWY 23 R

FCOM NP.21

* Auto land

FCTM

Crosswind landing

TAKE OFF

Take off, engine failure after VI

FCOM, FCTM

* ENG FAIL L, R

QRH 7.14,

Crosswind

TAC off

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* Climb engine inoperative

FCTM

APPROACH & LANDING

REFERENCE

* Manual F/D, ILS approach

FCOM NP.21

RWY 23 R

FCTM

Engine Inop

Crosswind

TAC off

* Missed approach

APPROACH and LANDING

Visual traffic pattern RWY 23 R

FCOM NP.21

Full stop landing

FCTM

Engine inop

Crosswind landing

TAC off

Engine inoperative landing

TAXI-IN and SHUTDOWN

Normal Procedures

FCOM NP.21

*FIRE APU

QRH 8.1, FCOM

*PASSENGER EVACUATION

QRH back cover

Passenger evacuation, procedure

FCTM 8.12

Emergency exits – selection and use

CRM considerations

Communications – acquire information on airplane status

First Officer

Tower

Cabin staff

Resolve conflicting information

Advocate course of action and communicate to all involved.

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18.1.1.9 FFS 9 Evaluation

EVALUATION SUMMARY

The simulator evaluation flight profile includes those procedures and maneuvers that can be evaluated in a motion visual simulator. The sequence may be changed and other non-normal procedures selected at the discretion of the check pilot.

The instructor will provide appropriate instructions, weather information and air traffic clearances and, insofar as possible, conduct the flight on a real time basis. VNAV or V/S will be used on non-ILS approaches per operator procedures. Simulator system faults will be removed after each full stop landing.

The crew will be expected to respond to instructions and situations as they would on a line flight and to use flight deck resources available (autopilot, auto throttle, etc.) unless specifically restricted by the instructor. Command qualities and crew coordination are a part of the evaluation.

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC) RWY 23 R Gate -----
ROUTE	<i>EGCC SANBIR SANBA PEDIG M605 DTYDCT WCO EGLL</i>
DEPARTURE	<i>POL5R</i>
DESTINATION	London Heathrow (EGLL)
ALTERNATE	Manchester (EGCC)
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	220,000 KGS	FLAPS	opt
FUEL	20,000 KGS	CG	24%
ZFW	200,000 KGS	WIND	220/15
RESERVES	5,400 KGS	SLOPE	0
CRZ ALT	FL 290	EO ACCEL HT	1,000'
COST INDEX	180	ACCEL HT	3,000'
THRUST LIM	As required	THR REDUCTION	1,000'

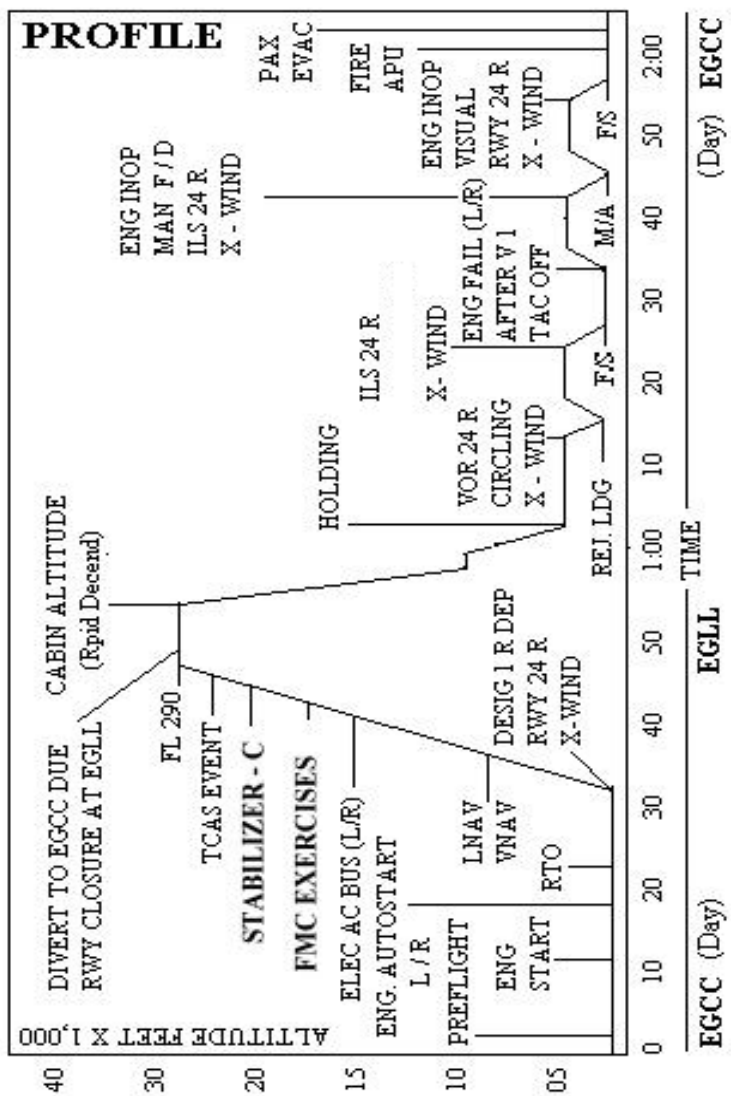
WEATHER

EGCC Wind 220/15 Visibility 3 km Ceiling 1200 Overcast Temperature 09C
 Dew Point 07 C Altimeter 1010 Mb ILS RWY 23 R.

EGLL Wind 270/10 Visibility 4 km Ceiling 800 Overcast Temperature
 10 C Dew Point 07 C Altimeter 1011 Mb VOR RWY 27 R.

CLEARANCE

Pakistan 777 is cleared to London Heathrow Airport (EGLL). SONEX ONE
 ROMEO (SONE 1R). Departure control 136.57, squawk 4737.



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18.1.1.10 FFS 10 Landing/recognition of Unstable Approaches & Recovery Training

LANDING TRAINING

OBJECTIVES

The purpose of the landing training is to fulfill Type Rating and Endorsement Requirements and to prepare the trainee for Line Training and to become proficient in the Landing Technique.

Varying wind conditions

Takeoff / landing in wind shear

Landing from “Steep” or “Shallow” Approaches

Recovery from Rejected Landing

Landing with one engine

X-wind Landing technique

Avoiding tail strikes

GENERAL

An *SFI/SFE* will conduct the landing training. One hour briefing will precede landing training session

The emphasis will be on crew coordination throughout with minimum of distractions for flight profiles enabling the trainee’s concentration to be focused on performing the necessary procedures.

DURATION

Each trainee will receive two hours of landing training in the simulator before commencing line training. RHS training for captains on following items:

- (3) Takeoff Engine Failure at V1
- (4) **ILS** approach single engine
- (4) Single Engine go around
- (5) Single Engine ILS APP & landing/evacuation

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PREPARATION

The trainee will demonstrate ability to perform all normal procedures.

Trainees are expected to study and understand related sections in FCTM prior to landing training.

Instructor will provide take off and landing data card (if applicable).

AREAS TO BE COVERED

Normal preflight procedures

Use of automation

Manual handling

Lesson Plan

UNSTABILIZED APPROACH RECOGNITION AND RECOVERY TRAINING

OBJECTIVES

This training is to imbed the concept of different energy states and its impact on stable approach. Any attempt to correct unstable approach ceases at 1000 ft AAL. Go-around becomes mandatory then.

DURATION

One hour per trainee

GUIDELINES TO INSTRUCTOR

This briefing and training can be carried out together with the landing session or separately.

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LANDING TRAINING & UNSTABLE APPROACHES (SIMULATOR)

Pre Session Briefing	Takeoff Data card / Bug Setting		
	Takeoff Technique		
	Effect of Head / Tail wind on APPR		
	Adverse Weather Landing Technique		
	Normal Landing Technique		
	X-Wind Landing Technique		
WEATHER	At Instructor's discretion		
Airport / Runway / Condition	EGCC 23R		DRY
RANK & NAME	DATE:	PLANNED TRG TIME 03:00 HOURS	ACTUAL TRG TIME
P-			
COMMENTS			
TRAINING AND CHECK FLIGHT CREW	SIGNATURE		TRAINEE'S SIGNATURE

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LANDING TRAINING (SIMULATOR)

NAME _____ P- _____ DATE ____ / ____ / ____

POSITION: () CM1 () CM2						
	Number of Attempts			Extra Attempts		
<u>TOW – 250,000 KGS</u>						
WIND:						
HEAD WIND 20 KTS						
HEAD WIND 30 KTS						
X-WIND (LEFT - 45°) 30 KTS						
X-WIND (RIGHT - 45°) 30 KTS						
X-WIND (90°) LEFT 30 KTS						
X-WIND (90°) RIGHT 30 KTS						
WIND SHEAR:						
TAKEOFF (HEAD WIND TO TAIL WIND)						
TAKEOFF (TAIL WIND TO HEAD WIND)						
DOWN BURST (TAKEOFF AND LANDING)						
VISUAL APPROACHES (USING VASI)						
STEEP APPROACH (ROD>1000 FPM, NO VASI)						
SHALLOW APP. (ROD<300 FPM, NO VASI)						
REJECT LANDING						
SINGLE ENG APPROACH (L ENG FAIL):						
X-WIND (90°) LEFT 30 KTS						
SINGLE ENG APPROACH (R ENG FAIL):						
X-WIND (90°) RIGHT 30 KTS						
EXTRA LANDINGS (CAPTAIN RHS)						
<u>TOW (LIGHT) – 197,000 KGS</u> HEAD WIND 30 KTS						
<u>TOW (HEAVY) – 325,000 KGS</u> HEAD WIND 30 KTS						
Note: 5. Each takeoff / landing will be marked with a “v” (tick). 6. A total number of about Twenty (20) landings will be practiced and marked in the boxes. Additional landings, if required, may be practiced if time permits. 7. The above landings practice is considered sufficient for a crew member to achieve a satisfactory standard. 8. Instructor to mention in comments if extra landings have been required.						

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DATE: _____

CAPT./FO : _____ P-NO: _____ AIRCRAFT: _____

Type of License & No. _____ Duration of Training 01Hours/trainee

- Recognition** of development of UA through.
 - Knowing and understanding the appropriate parameters and tolerances associated with an approach.
 - The dynamics involved e.g.; ATC, Fatigue Factor, Hurry Syndrome, Weather. Any malfunctions or abnormality.
 - Infringement of applicable tolerances necessitating a Go- Around.
- Controlling** a situation developing into a UA through manipulating aircraft controls or notifying ATC of company policy on stabilized approach.
- Action** necessitating a Go Around is the final step. A non-punitive time-honored maneuver which saves lives.
 - A It is essential to acknowledge the fact that all maneuvers required to control an unstable approach has a lower limit of 1000 feet AAL.
 - Practice Balked Landing

APPRO-ACHES	WIND EFFECT	ATC RESTRICTIONS	MALFUNCTION	TOPOGRAPHIC EFFECTS
ILS RNP Visual	1) Windshear 2) Increasing Tail wind 3) Micro Burst	1) 160 till 4nm 2) Late descent clearance	1) Flap asymmetry 2) CG limit	Mountain wave

Filling Instructions: Approach types and rest of the other scenarios must be filled in above table.

Comments of SFI/SFE _____

SIGNATURE OF TRAINEE

NAME & SIGNATURE OF SFI/SFE

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18.1.1.11 FFS 11 ETOPS/MNPS/EDTO(LOFT)

GENERAL

This gives crew members the opportunity to practice line operations (e.g. manoeuvres, operating skills, systems operation and the Company procedures) with a full crew compliment in realistic environment. Crew members learn to handle a variety of scripted real time scenarios which include routine, abnormal, and emergency situations. They also learn and practice Cockpit Resource Management skills, including crew coordination, judgment, decision making, and communication skills.

LESSON SUMMARY

The overall objective of ETOPS/LOFT is to improve total flight crew performance, thereby preventing incidence and accidents during operational flying.

This lesson consists of four-hour ETOPS/LOFT.

The session should contain the following phases:

- i) Briefing,
- ii) pre-flight planning documents and activities.
- iii) Flight time
- iv) De-briefing

LESSON OBJECTIVES

Complete introduction to ETOPS/LOFT

Practice diversion during ETOPS portion of flight

Consider fuel jettison, drift down and other non-normal checklist requirements.

Consider RVSM requirements.

Consider communication requirements.

CPDLC Training

ETOPS: Extended Range Twin Engine Operation

Twin engine aircraft over a route that contains a point further than sixty minutes still air flying time from an adequate airport at one engine out cruise speed under ISA condition.

MNPS: Minimum Navigation Performance Specification (FL-285-420)

SOTA: Shanon Oceanic Transition Area

OCA: Oceanic Control Area

TMI: Track Message Identification (01 to 365)

PM: Publish Minima

NAT: North Atlantic

GNE: Gross Navigation Error

RVSM: Reduce Vertical Separation Minimum (FL290-410)

RNP: Required Navigation Performance (Operation)

EEP: ETOPS Entry Point (Never Move)

ETP-CP: Equitime point /critical point (Move with headwind or tailwind etc.)
(Reference Weight (B-777) 324 tons – 120 MTS 850 nm SPD 0.84 M/320 kts)
316 tons for 180 MTS 1272 nm SPD 0.84 M/320 kts

ROUTE OF FLIGHT

ORIGIN	Manchester (EGCC)
	Gate -----
	RWY 23R
ROUTE	EGCC EKLAD1R EKLAD Y53 WAL L10 PENIL M144 BAGSO DCT DOGAL DCT 54N020W DCT 53N030W DCT 52N040W DCT 50N050W DCT ELSIR N316A TUSKY DCT PLYMM PARCH3 KJFK
DESTINATION	JFK
FLIGHT NUMBER	PIA777

PERFORMANCE

GRWT	263,584 KGS	FLAPS	opt
FUEL	58,984 KGS	CG	25%
ZFW	205,000 KGS	WIND	Calm
RESERVES	8,333 KGS	SLOPE	0
CRZ ALT	FL 340,360	EO ACCEL HT	1,000'
COST INDEX	30	ACCEL HT	3,000'
THRUST LIM	As required	THR REDUCTION	1,000'

CLEARANCE

Pakistan777 is cleared to the JFK, via the EKLAD1R Departure. Maintain Flight Level 60. Departure control frequency 134.12, squawk 4234.

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>>> EGCC (MANCHESTER RWY 05RL/23LR) <<< ETD 1220 UTC

TAF 100459Z 1006/1112 30004KT 9999 BKN008 TEMPO 1006/1009 BKN010
BECMG 1009/1012 BKN014 PROB30 TEMPO 1015/1018 SCT015 BECMG
1018/1021 BKN008 PROB30 1100/1109 4000 BR BKN004 BECMG
1109/1112 SCT015

>>> KJFK (JOHN F KENNEDY INTL) <<< ETA 1930 UTC

TAF 100536Z 1006/1112 03015KT P6SM OVC015 FM101700 02015G23KT
P6SM SCT015 OVC025 FM102300 02013KT P6SM SCT025 SCT150
FM110800 02012KT P6SM SCT150

>>> KBOS (GENERAL EDWARD LAWRENCE LOGAN) <<< ALTERNATE

TAF 100540Z 1006/1112 35014G22KT 1 1/2SM -SN BR OVC020 FM101000
36014KT P6SM OVC025 FM101300 36013G22KT P6SM OVC025 FM102100
36011KT P6SM SCT025 FM110000 01007KT P6SM FEW250 FM110500
01011KT P6SM SCT250 FM110900 01011G19KT P6SM SCT020

>>> EINN (SHANNON) <<< SNN SUITABLE 1154Z/1835Z

TAF 100500Z 1006/1106 VRB03KT 8000 OVC007 PROB40 TEMPO 1006/1010
4000 BR BKN004 BECMG 1010/1012 15007KT 9999 FEW008 BKN012
BECMG 1012/1014 FEW012 SCT020 TEMPO 1100/1106 5000 BR
BKN005

>>> CYYT (ST. JOHN'S INTL) <<< YYT SUITABLE 1635Z/1751Z

TAF 100538Z 1006/1106 35010KT P6SM SCT008 BKN040 TEMPO 1006/1018
2SM -SHSN BKN008 OVC040 BECMG 1015/1017 13012KT FM101800
13012KT P6SM BKN025 FM110000 15007KT 5SM -SN OVC020 FM110200
15007KT 1SM -SN OVC008 FM110400 15005KT 3/4SM -SN VV008

>>> EGBB (BIRMINGHAM) <<<

TAF 100458Z 1006/1106 26005KT 6000 BKN008 PROB30 1006/1008 4000
HZ BECMG 1008/1011 9999 FEW015 PROB40 TEMPO 1011/1106 9000
BKN012

>>> EGLL (LONDON HEATHROW RWY 09RL/27LR) <<<

TAF 100459Z 1006/1112 VRB03KT 6000 SCT018 TEMPO 1006/1010 4000

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BR PROB30 TEMPO 1006/1009 0800 FG BKN000 BECMG 1009/1012
9999 PROB30 TEMPO 1009/1011 BKN008 PROB30 1102/1106 8000
BKN014

>>> BIEG (EGILSSTADIR) <<<

TAF 100455Z 1006/1106 22025G40KT 9999 SCT030 BKN050 TX01/1006Z
TNM07/1106Z BECMG 1015/1018 22020KT

>>> BIKF (KEFLAVIK) <<<

TAF 100455Z 1006/1106 24035G50KT 8000 SHSN FEW015CB BKN030
TX00/1006Z TNM04/1106Z TEMPO 1006/1106 1000 SHSN BKN008CB
BECMG 1015/1018 22025G35KT

>>> BGSF (KANGERLUSSUAQ) <<<

TAF 100453Z 1006/1101 08008KT 9999 BKN090 TEMPO 1006/1101 BKN040

>>> LPLA (LAJES) <<<

TAF 100510Z 1006/1106 VRB03KT 9999 FEW025 PROB40 TEMPO 1110/1118
SCT020 BKN035

>>> CYQX (GANDER INTL) <<<

TAF 100538Z 1006/1106 31004KT P6SM FEW010 FM101000 33005KT P6SM
SCT010 TEMPO 1010/1015 3SM -SHSN BKN010 BECMG 1012/1014
15008KT FM101500 15008KT P6SM BKN010 BECMG 1019/1021 10008KT
FM110000 04008KT 5SM -SHSN BKN008 FM110500 29006KT 3SM -SN
BKN020

>>> CYR (GOOSE BAY) <<<

TAF 100530Z 1006/1106 24005KT P6SM FEW150 BKN200 FM101600
22010G20KT P6SM SCT030 BKN100 TEMPO 1018/1022 3SM -SN BKN030
OVC080 FM102200 29012G22KT P6SM -SHSN BKN030 TEMPO 1022/1105
5SM -SHSN BLSN FM110500 29010KT P6SM FEW050

>>> CYJT (STEPHENVILLE) <<<

TAF 100538Z 1006/1106 03006KT P6SM SKC BECMG 1010/1012 08010KT
FM101500 08010KT P6SM BKN025 FM102200 07008KT 5SM -SHSN
BKN020 OVC100 FM110300 VRB03KT 2SM -SHSN BKN008

>>> CYHZ (STANFIELD INTL) <<<

TAF 100538Z 1006/1106 03012KT P6SM FEW020 OVC120 TEMPO 1006/1010
4SM -SN OVC020 FM101000 02008KT 2SM -SN OVC010 TEMPO
1010/1022 6SM -SN SCT010 OVC040 BECMG 1016/1018 01008KT

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FM102200 36008KT P6SM BKN015 BECMG 1100/1102 35012G22KT
>>> KBGR (BANGOR INTL) <<<

TAF 100732Z 1008/1106 03007KT P6SM VCSH OVC035 FM101600 36005KT
P6SM BKN035 FM101800 36005KT P6SM SCT040 FM102100 01004KT
P6SM SCT250
>>> CYQB (JEAN LESAGE INTL) <<<

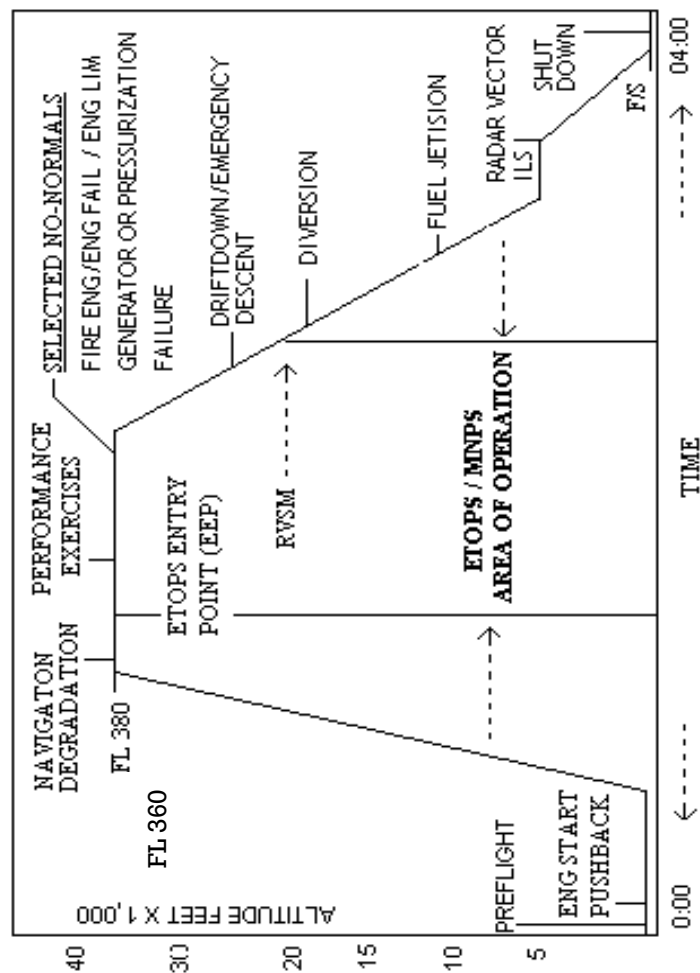
TAF 100538Z 1006/1106 06012KT P6SM OVC040 TEMPO 1006/1016 4SM
-SN OVC020 PROB30 1006/1016 2SM -SN OVC015 FM101600 24012KT
P6SM FEW030 BECMG 1020/1022 32008KT FM110000 33010KT P6SM
SKC BECMG 1104/1106 05005KT
>>> CYUL (PIERRE-ELLIOTT-TRUDEAU INTL) <<<

TAF 100538Z 1006/1106 01013KT P6SM OVC025 TEMPO 1006/1016 4SM
-SN OVC015 FM101600 21008KT P6SM FEW030 BECMG 1022/1024
31010KT FM110000 21005KT P6SM SKC BECMG 1101/1103 02010KT

>>> KIAD (WASHINGTON DULLES INTL) <<<

TAF 100714Z 1007/1112 01008KT P6SM -FZDZ OVC013 FM100800 01009KT
5SM BR OVC013 FM101400 36011KT P6SM OVC015 FM110100 01009KT
P6SM SCT015 FM110900 36006KT P6SM FEW250

PIA B777 ETOPS Training Profile



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PREFLIGHT

Normal procedures & ETOPS preparation

ENGINE START

Start & pushback clearance (tail right)

Normal Procedures

TAXI-OUT AND TAKE OFF

Normal procedures

Heavy Weight take off

CLIMB

Normal procedures

CRUISE

Complete normal cruise level off

Navigation Performance Degradation Exercises

Prior to entering MNPS area

RVSM requirement degradation exercise

Before ETOPS Entry Point (EEP)

Complete ETOPS company Operating procedures

Obtain weather updates for Enroute Alternates

Check FMS BRG/DIST to next alternate.

Send verification of ETOPS critical system checks

(Supports ETOPS supplemental maintenance programmed)

Confirm communication capability (HF, SATCOM)

CPDLC (Controller Pilot Data Link communication) Log in.

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Enter ETOPS segment of flight plan

Five minutes after EEP

FIRE ENG L or R, or

ENG FAIL L or R, or

ENG LIM (EGT overheat with thrust lever closed), or volcanic ash encounter.

PRESSURIZATION FAILURE

Complete non-normal checklist with non in-flight restart possible.

FMC

Drift down

RVSM consideration, turn away from track

As indicated on navigation chart RVSM rules

Determine new altitude capability

Determine Drift down airspeed and use VNAV for drift down

Diversion

ETOPS consideration

Chose ETOPS alternate

Obtain new clearance

Divert to alternate

Use FMC ALTN page

CRM Considerations

Workload management

Sequence tasks

Avoid work overload

Do not be hurried.

DESCENT

FUEL JETTISON

APPROACH and LANDING

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Radar Vectors, ILS approach RWY 11 (KEF),
Full stop landing

TAXI-IN

Normal procedures

SHUTDOWN

Normal Procedures

SECURE

Normal procedures

062003 EGGXZOX

(NAT-1/3 TRACKS FLS 340/390 INCLUSIVE

SEP 07/1130Z TO SEP 07/1900Z

PART ONE OF THREE PARTS-

A RESNO 55/20 55/30 54/40 53/50 RIKAL

EAST LVLS NIL

WEST LVLS 340 350 360 370 380 390

EUR RTS WEST NIL

NAR N438A N440A-

B DOGAL 54/20 54/30 53/40 52/50 TUDEP

EAST LVLS NIL

WEST LVLS 340 350 360 370 380 390

EUR RTS WEST NIL

NAR N398A N402A-

END OF PART ONE OF THREE PARTS)

(NAT-2/3 TRACKS FLS 340/390 INCLUSIVE

SEP 07/1130Z TO SEP 07/1900Z

PART TWO OF THREE PARTS-

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C NEBIN 5330/20 5330/30 5230/40 5130/50 UMESI
EAST LVLS NIL
WEST LVLS 350 360 370 380 390
EUR RTS WEST NIL
NAR N376A N384B-

D MALOT 53/20 53/30 52/40 51/50 ALLRY
EAST LVLS NIL
WEST LVLS 340 350 360 370 380 390
EUR RTS WEST NIL
NAR N356E N362A-

E TOBOR 5230/20 5230/30 5130/40 5030/50 BUDAR
EAST LVLS NIL
WEST LVLS 350 360 370 380 390
EUR RTS WEST NIL
NAR N336A N344A-

F LIMRI 52/20 52/30 51/40 50/50 ELSIR
EAST LVLS NIL
WEST LVLS 340 350 360 370 380 390
EUR RTS WEST NIL
NAR N316A N324A-
END OF PART TWO OF THREE PARTS)

(NAT-3/3 TRACKS FLS 340/390 INCLUSIVE
SEP 07/1130Z TO SEP 07/1900Z
PART THREE OF THREE PARTS-

G DINIM 51/20 51/30 50/40 49/50 JOOPY
EAST LVLS NIL
WEST LVLS 340 350 360 370 380 390

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EUR RTS WEST NIL
NAR N276C N280A-

REMARKS .

1. TMI IS 250 OPERATORS ARE REMINDED TO INCLUDE THE TMI NUMBER AS PART OF THE OCEANIC CLEARANCE READ BACK.

2. SEND RCL 90-30 MINUTES PRIOR TO OCEANIC ENTRY POINT.

3. PBCS OTS LEVELS 350-390. PBCS TRACKS AS FOLLOWS
TRACK B
TRACK C
TRACK D
TRACK E
TRACK F
END OF PBCS OTS

4. INCLUDE THE MAX LEVEL IN RCL. IF NO MAX LEVEL IS PROVIDED THE RCL LEVEL WILL BE CONSIDERED HIGHEST ACCEPTABLE FL THAT CAN BE MAINTAINED AT THE OCEANIC ENTRY POINT.

5. CLEARANCE MAY DIFFER FROM THE FLIGHT PLAN, FLY THE CLEARANCE.

6. STRATEGIC LATERAL OFFSET PROCEDURE SHOULD BE USED FOR ALL OCEANIC CROSSINGS. LEFT SLOP IS PROHIBITED.

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7. 10 MINUTES AFTER PASSING OEP SQUAWK 2000 UNLESS OTHERWISE INSTRUCTED.

8. NAVIGATION ERRORS CAN BE PREVENTED BY THE USE OF PROPER FMS WAYPOINT PROCEDURES.

9. ADS-C AND CPDLC ARE MANDATED FOR LEVELS 290-410 IN NAT AIRSPACE.

10. UK AIP. ENR 2.2.4.2 PARA 5.2 STATES THAT NAT OPERATORS SHALL FILE PRM'S.

11. OPERATORS SHOULD REFERENCE NAT DOC 007 CHAPTER 8 AND 13 FOR SPECIFIC NAT OCEANIC PROCEDURES.

12. DATA LINK EQUIPPED FLIGHTS NOT LOGGED ONTO DOMESTIC AIRSPACE, PRIOR TO ENTERING THE SHANWICK OCA, MUST INITIATE A LOGON TO EGGX 10-25 MINS PRIOR TO OCA ENTRY.
END OF PART THREE OF THREE PARTS)

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START OF CFP REF : 2770 - PIACCFK1 EGCC KJFK

FLIGHT PLAN PACKAGE PIACCFKMAN-JFK 07SEP23 FLIGHT PLAN REF ID 2770

 DISPATCH RELEASE MESSAGE

LOG NUMBER: 2770

BAY NO:..... CORD:.....

PIA:PIACCFK CAPTAIN: SECTOR:MAN-JFK REG: APBGY SDEP: 12:00 SARR:
 18:35 BLK-TIME: 6:35 FLT-TIME: 6:35 TTL.FUEL: 58984 TRIP: 47852 FOD: 10732 HOLD:
 3405 ALT: 4928 EST.TOGW: 263584 EST.LGWT: 215732 RESERVE FUEL: 8332 EST.ZFW: 205000
 RVD.ZFW:

 MINIMUM EQUIPMENT LIST ITEMS APPLICABLE FOR THIS AIRCRAFT

FOR C/F SNAGS MENTIONED IN TECH LOG,PLZ REF, MEL/CDL/DDG

 F.O.O NOTES TO CREW

EGCC 131.435 MHZ SWISSPORT MANCHESTER

KJFK

KBOS

ROUTE AND PROFILE

EKLAD Y53 WAL L10 PENIL M144 BAGSO DCT DOGAL/M083F360 DCT 54N020W DCT 53N030W
 DCT 52N040W DCT 50N050W DCT ELSIR/N0484F360 N316A TUSKY DCT PLYMM

ALTERNATE 1 ROUTE AND PROFILE

DCT MERIT DCT ORW

250

ALTERNATE 2 ROUTE AND PROFILE

0

FLIGHT PLAN ACCEPTED

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CAPTAIN

PREPARED BY FLIGHT OPERATIONS OFFICER

SHHOOD ALI Lic. 894

COMPUTER GENERATED FPL, FOO SIGNATURE NOT REQUIRED.

PPS FLIGHT PLAN

----- FLT# /DATE

ORG /DST ACFT/REG PLAN ID GRIB AVGWC/TD PIACCFK/07SEP23 EGCC/KJFK B77L /APBGY 2770
070600 -17 / 6.5

ETD:12:00/18:35:ETA

FMS ROUTE RT DIST 2921 GC DIST 2893 EGCC RW23R.EKLAD1R.EKLAD
EKLAD Y53 WAL L10 PENIL M144 BAGSO DCT DOGAL/M083F360 DCT 54N020W DCT 53N030W
DCT 52N040W DCT 50N050W DCT ELSIR/N0484F360 N316A TUSKY DCT PLYMM

PLYMM.PARCH3.RW22R KJFK

FL PROFILE

EGCC/FL360/

EQPTTYPE B777-200LR / ENGTYPE GE90-110B1L

PERFORMANCE SCHEDULE - 250/310/M.83 - CI 30 - M.83/310/250 APD FACTOR - 4.8 PC

PLANNED	FUEL	TIME	WEIGHTS PLAN		ACTUAL	STRUCTURAL OR PERF LIMIT	
TRIP	47852	6:35					
CONTINGE NCY	2393	0:20					
XHLD DEST	0	0:00	ZFW	205000	.....	MZFW	209106
ALTN KBOS	4928	0:42	RPF	58984	.....	FCAP	154229
XHLD ALTN			RPW	263984	.....	MRPW	340594
STD	3405	0:30	TOW	263584		MTOW	340194
HOLDING							
ADDITIONA L/BU	0	0:00	TIF	47852			

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MIN	58577	8:07	LDW	21573		MLDW	223167
RFEQUIRED				2			
EXTRA	7	0:00	FOD	10732			
TKOF FUEL	58584	8:07	RES	8332			
TAXI FUEL	400				FUEL ORDERED		
RAMP FUEL	58984	8:07			REASON		

----- | -----

BALLAST FUEL 0 INCL IN RAMP FUEL

----- | -----

BURNOFF ADJUSTMENT PER 1000 KGS DECREASE IN TAKEOFF WT - -143 KGS
BURNOFF ADJUSTMENT PER 1000 KGS INCREASE IN TAKEOFF WT - 167 KGS

RESTRICTED MAX TAKE OFF WEIGHT INFORMATION

A. B. C.
R.T.O.G.W 340194 MLDW 223167 MZFW 209106
TRIP FUEL 47852 T.O.FUEL 58584
LNDG LMT TOGW 271019 ZFW LMT TOGW 267690
ALTERNATE AIRPORTS SUMMARY

ALTN FL ETI ZFW TRIP RQDFOB NM
BOS/KBOS 250 0:42 205000 4928 8332 202
DCT MERIT DCT ORW

/ 0 0:00 205000 0 3405 0
ATC CLRNC:.. ..
EKLAD Y53 WAL L10 PENIL M144 BAGSO DCT DOGAL DCT 5420N
DCT 5330N DCT 5240N DCT 5050N DCT ELSIR N316A TUSKY DCT
PLYMM
EGCC/FL360/

ATIS - EGCC INFO
RWY . . . WIND . . / . . VIS . . . TEMP . . . QNH . . .
ATC CLRNC
.

ICAO : EGCC ELEV : 257			LAT : N53:21.2 LON : W002:16.5 REMAINING DISTANCE: 2921			TAKEOFF FUEL 58584				
POINT POINT FREQ	FIR NAME LATITUDE	AWY LONGITUDE	FL MORA TURB	OAT WC GS	TAS MACH GS	TR/T DIST TR/M	ETI TTLT WIND/VEC	ETO RTO ATO	SEGBO ACCBO FOB	AWID AGS ABRN
MCT03 SID WAYPOINT N53:19.6 W002:19.7	EGTT EKL1R N53:19.6	CLB 35 W002:19.7	VAR T 1 6	349 0.60 350	230 230	2 2 0:00 188/032	0 0:00 032	..... ..... .....	105 505 58479	.... .... ....
TH262 SID WAYPOINT N53:19.3 W002:20.8	EGTT EKL1R N53:19.3	CLB 35 W002:20.8	VAR T 1 6	349 0.60 350	247 247	1 3 0:00 188/032	0 0:00 032	..... ..... .....	53 558 58427	.... .... ....
TH274 SID WAYPOINT N53:19.3 W002:21.3	EGTT EKL1R N53:19.3	CLB 35 W002:21.3	VAR T 1 6	349 0.60 350	270 270	0 3 0:00 188/032	0 0:00 032	..... ..... .....	0 558 58427	.... .... ....
IXR25 SID WAYPOINT N53:19.5 W002:26.0	EGTT EKL1R N53:19.5	CLB 35 W002:26.0	VAR T 1 6	349 0.60 350	273 273	3 6 0:01 188/032	1 0:01 032	..... ..... .....	158 715 58269	.... .... ....
R253H SID WAYPOINT N53:19.0 W002:28.5	EGTT EKL1R N53:19.0	CLB 35 W002:28.5	VAR T 1 6	349 0.60 350	253 253	2 8 0:01 188/032	0 0:01 032	..... ..... .....	105 821 58164	.... .... ....
R253M SID WAYPOINT N53:17.5 W002:36.4	EGTT EKL1R N53:17.5	CLB 35 W002:36.4	VAR T 1 6	349 0.60 350	252 252	5 13 0:02 188/032	1 0:02 032	..... ..... .....	263 1083 57901	.... .... ....
R253P SID WAYPOINT N53:16.6 W002:41.2	EGTT EKL1R N53:16.6	CLB 35 W002:41.2	VAR T 1 6	349 0.60 350	252 252	3 16 0:03 188/032	1 0:03 032	..... ..... .....	158 1241 57743	.... .... ....
EKLAD SID WAYPOINT N53:15.2 W002:49.5	EGTT EKL1R N53:15.2	CLB 35 W002:49.5	VAR T 1 6	349 0.60 350	254 254	5 21 0:04 188/032	1 0:04 032	..... ..... .....	263 1504 57481	.... .... ....
WAL WALLASEY 114.10	EGTT Y53 N53:23.5	CLB 45 W003:08.1	VAR T 1 6	349 0.60 350	307 307	14 35 0:06 188/032	2 0:06 032	..... ..... .....	736 2240 56745	.... .... ....
PENIL PENIL N53:37.0 W003:39.8	EGTT L10 N53:37.0	CLB 45 W003:39.8	VAR T 1 6	349 0.60 350	306 306	23 58 0:10 188/032	4 0:10 032	..... ..... .....	1209 3449 55536	.... .... ....
BABRA BABRA N53:37.6 W003:56.7	EGTT M144 N53:37.6	CLB 45 W003:56.7	VAR T 1 6	349 0.60 350	274 275	10 68 0:12 188/032	2 0:12 032	..... ..... .....	526 3974 55010	.... .... ....
GIGTO GIGTO N53:38.0 W004:05.8	EGTT M144 N53:38.0	CLB 46 W004:05.8	VAR T 1 6	349 0.60 350	274 275	5 73 0:13 188/032	1 0:13 032	..... ..... .....	263 4237 54747	.... .... ....

POINT POINT FREQ	FIR NAME LATITUDE	AWY MORA LONGITUDE	FL WC TURB	OAT MACH GS	TAS MACH GS	TR/T TR/M	DIST TTLD WIND/VEC	ETI TTLT	ETO RTO ATO	SEGB0 ACCBO FOB	AWID AGS ABRN
UNDUX UNDUX	EGTT M144 N53:38.5	CLB W004:18.7	VAR T 1 6	349 0.60 350	274 275	8 1 188/032	1 0:14 032	..... ..... .....	420 4657 54327	..... ..... .....	..... ..... .....
SOPAX SOPAX	EGTT M144 N53:38.8	CLB W004:27.1	VAR T 1 6	349 0.60 350	274 275	5 1 188/032	1 0:15 032	..... ..... .....	263 4920 54064	..... ..... .....	..... ..... .....
RAMOX RAMOX	EGTT M144 N53:39.6	CLB W004:50.4	VAR T 1 6	349 0.60 350	273 274	14 2 100 0:17 188/032	2 0:17 032	..... ..... .....	736 5656 53328	..... ..... .....	..... ..... .....
-TOC- N53:39.9	M144 W004:58.8	CLB W004:58.8	VAR T 1 6	349 0.60 350	273 274	5 1 105 0:18 188/032	1 0:18 032	..... ..... .....	263 5919 53065	..... ..... .....	..... ..... .....
OGTUG OGTUG	EGTT M144 N53:40.2	360 W005:08.8	-54 H 21 6	480 0.83 459	273 274	6 1 111 0:19 196/070	1 0:19 070	..... ..... .....	101 6020 52964	..... ..... .....	..... ..... .....
BAGSO FIR BAGSO	EISN M144 N53:40.8	360 W005:30.0	-54 H 21 6	480 0.83 459	273 274	12 2 123 0:21 196/070	2 0:21 070	..... ..... .....	203 6223 52761	..... ..... .....	..... ..... .....
DOGAL DOGAL	EGGX DCT N54:00.0	360 W015:00.0	-53 H 5 6	481 0.83 476	277 278	337 42 460 1:03 190/049	42 1:03 049	..... ..... .....	5351 11574 47410	..... ..... .....	..... ..... .....
NAT HLA ENTRY											
5420N 54N020W	DCT N54:00.0	360 W020:00.0	-50 H 28 0	484 0.83 456	272 277	176 23 636 1:26 248/030	23 1:26 030	..... ..... .....	2904 14478 44506	..... ..... .....	..... ..... .....
E-ENT N53:57.1	DCT W020:49.1	360 W020:49.1	-50 H 23 0	483 0.83 460	264 272	29 4 665 1:30 320/024	4 1:30 024	..... ..... .....	463 14941 44043	..... ..... .....	..... ..... .....
5330N 53N030W	DCT N53:00.0	360 W030:00.0	-51 H 23 6	483 0.83 460	264 272	333 43 998 2:13 334/063	43 2:13 063	..... ..... .....	5317 20258 38726	..... ..... .....	..... ..... .....
ETP-1 N52:44.2	DCT W033:43.9	360 W033:43.9	-52 H 31 0	482 0.83 451	265 277	136 18 1134 2:31 312/038	18 2:31 038	..... ..... .....	2167 22426 36559	..... ..... .....	..... ..... .....
5240N 52N040W	DCT N52:00.0	360 W040:00.0	-50 H 31 0	482 0.83 451	265 277	234 31 1368 3:02 279/032	31 3:02 032	..... ..... .....	3729 26155 32830	..... ..... .....	..... ..... .....

POINT POINT FREQ	FIR NAME LATITUDE	AWY LONGITUDE	FL MORA	OAT WC TURB	TAS MACH GS	TR/T TR/M	DIST TTLD WIND/VEC	ETI TTLT	ETO RTO ATO	SEGB0 ACCBO FOB	AWID AGS ABRN
E-EXT	DCT	360	-50	483	256	129	18	.....	2056	....	
		11	H 40	0.83		1497	3:20	.....	28211	....	
	N51:26.6	W043:21.2	0	443	271	266/036		.....	30774	....	
5050N	DCT	360	-49	483	256	267	36	.....	4255	....	
50N050W		11	H 40	0.83		1764	3:56	.....	32466	....	
	N50:00.0	W050:00.0	0	443	271	239/040		.....	26518	....	
ELSIR	CZQX DCT	360	-48	483	250	83	11	.....	1312	....	
ELSIR		11	H 37	0.83		1847	4:07	.....	33778	....	
	N49:30.0	W052:00.0	0	446	267	230/039		.....	25206	....	
NAT HLA EXIT											
-FC1-	KZBW N316A	360	-47	484	246	356	45	.....	5247	....	
Fuel Check 1		31	H 14	0.83		2203	4:52	.....	39025	....	
	N46:47.8	W059:56.7	0	470	263	192/023		.....	19959	....	
TUSKY	KZBW N316A	360	-48	482	239	356	43	.....	4892	....	
TUSKY		28	T 11	0.83		2559	5:35	.....	43917	....	
	N43:33.9	W067:00.0	0	493	255	005/019		.....	15067	....	
PLYMM	KZNY DCT	360	-51	477	240	176	22	.....	2489	....	
STAR WAYPOINT		18	H 7	0.82		2735	5:57	.....	46406	....	
	N42:02.6	W070:25.6	0	470	256	286/010		.....	12578	....	
-TOD-	PARCH3	360	-50	477	247	41	7	.....	665	....	
		22	H 7	0.82		2776	6:04	.....	47071	....	
	N41:46.5	W071:16.3	0	470	260	281/009		.....	11913	....	
PVD	KZBW PARCH3 DSC	VAR	320	247	8	0		.....	-56	....	
STAR WAYPOINT		22	H 7	-----		2784	6:04	.....	47015	....	
	N41:43.5	W071:25.8	0	313	260	238/023		.....	11969	....	
TRAIT	KZBW PARCH3 DSC	VAR	320	220	34	7		.....	154	....	
STAR WAYPOINT		22	H 7	-----		2818	6:11	.....	47169	....	
	N41:17.1	W071:55.1	0	313	233	238/023		.....	11815	....	
PARCH	KZBW PARCH3 DSC	VAR	320	220	15	3		.....	68	....	
STAR WAYPOINT		31	H 7	-----		2833	6:14	.....	47237	....	
	N41:06.0	W072:07.2	0	313	233	238/023		.....	11747	....	
CCC	KZBW PARCH3 DSC	VAR	320	252	32	6		.....	145	....	
STAR WAYPOINT		31	H 7	-----		2865	6:20	.....	47382	....	
	N40:55.8	W072:47.9	0	313	265	238/023		.....	11603	....	
ROBER	KZBW PARCH3 DSC	VAR	320	216	18	4		.....	233	....	
STAR WAYPOINT		27	H 11	-----		2883	6:24	.....	47614	....	
	N40:41.1	W073:02.0	0	313	229	238/023		.....	11370	....	
CRAIL	KZNY PARCH3 DSC	VAR	320	270	14	4		.....	282	....	
STAR WAYPOINT		27	H 15	-----		2897	6:28	.....	47896	....	
	N40:41.2	W073:20.6	0	313	283	238/023		.....	11088	....	

POINT POINT FREQ	FIR NAME LATITUDE	AWY LONGITUDE	FL MORA W073:37.8	OAT WC TURB	TAS MACH GS	TR/T TR/M	DIST TTLD	ETI TTLT	ETO RTO ATO	SEGBO ACCBO FOB	AWID AGS ABRN
CAPIT STAR	KZNY WAYPOINT N40:45.6	PARCH3 27 W073:37.8	DSC 27 H 15 0	VAR H 15 0	320 ---- 313	289 302	14 2911 238/023	4 6:32	..... ..... .....	208 48104 10881	.... .... ....
KJFK 13ft	PARCH3 N40:38.4	27 W073:46.7	VAR H 15 0	320 ---- 313	223 2921 236	10 6:35 238/023	3 6:35	..... ..... .....	148 48252 10732	.... .... ....	

 ATIS - DESTINATION INFO

 RWY . . . WIND . . / . . VIS . . . TEMP . . . QNH TL

ATIS - ALTERNATE 1 INFO

 RWY . . . WIND . . / . . VIS . . . TEMP . . . QNH TL

Alternate KBOS DCT MERIT DCT ORW											
MERIT MERIT	KZBW WAYPOINT	DCT N41:22.9	DSC W073:08.2	VAR 0	418 0.68 437	033 046	54 2975 236/021	10 6:45	..... ..... .....	3172 51424 7560	.... .... ....
ORW STAR	KZBW WAYPOINT	DCT N41:33.4	DSC W072:00.0	VAR 0	416 ---- 431	078 091	52 3027 VAR/VAR	10 6:55	..... ..... .....	233 51658 7326	.... .... ....
JEWIT STAR	KZBW WAYPOINT	STAR N41:41.8	DSC W071:49.6	VAR 0	286 ---- 305	043 058	12 3039 VAR/VAR	2 6:57	..... ..... .....	62 51720 7264	.... .... ....
FOSTY STAR	KZBW WAYPOINT	STAR N41:50.6	DSC W071:38.5	VAR 0	304 ---- 319	043 058	12 3051 VAR/VAR	3 7:00	..... ..... .....	178 51898 7086	.... .... ....
HEFTY STAR	KZBW WAYPOINT	STAR N41:54.3	DSC W071:33.8	VAR 0	212 ---- 227	043 058	5 3056 VAR/VAR	1 7:01	..... ..... .....	57 51955 7030	.... .... ....
WOONS STAR	KZBW WAYPOINT	STAR N41:57.0	DSC W071:30.4	VAR 0	212 ---- 227	043 058	4 3060 VAR/VAR	1 7:02	..... ..... .....	45 52000 6984	.... .... ....
QUINC STAR	KZBW WAYPOINT	STAR N42:00.7	DSC W070:45.2	VAR 0	283 0.42 300	083 098	34 3094 263/017	7 7:09	..... ..... .....	790 52790 6194	.... .... ....

POINT POINT FREQ	FIR NAME LATITUDE	AWY STAR LONGITUDE	FL MORA W070:39.4	OAT WC TURB	TAS MACH GS	TR/T TR/M	DIST TTLD WIND/VEC	ETI TTLT	ETO RTO ATO	SEGB0 ACCBO FOB	AWID AGS ABRN
DUNKK STAR	KZBW WAYPOINT	STAR	DSC 17	VAR 0	202 219	046 061	6 3100 VAR/VAR	2 7:11	..... .....	76 52866 6118	.... .... ....
HAVRD STAR	KZBW WAYPOINT	STAR	DSC 17	VAR 0	202 219	316 331	7 3107 VAR/VAR	2 7:13	..... .....	89 52955 6029	.... .... ....
YAARD STAR	KZBW WAYPOINT	STAR	DSC 17	VAR 0	202 219	316 331	4 3111 VAR/VAR	1 7:14	..... .....	51 53006 5979	.... .... ....
BGDIG STAR	KZBW WAYPOINT	STAR	DSC 17	VAR 0	202 219	316 331	6 3117 VAR/VAR	2 7:16	..... .....	76 53082 5903	.... .... ....
PAARK STAR	KZBW WAYPOINT	STAR	DSC 17	VAR 0	202 219	316 331	4 3121 VAR/VAR	1 7:17	..... .....	51 53132 5852	.... .... ....
KBOS BOSTON/GENERAL	STAR N42:21.8	STAR	DSC 34 W071:00.4	VAR 0	256 251	346 001	2 3123 VAR/VAR	0 7:17	..... .....	47 53180 5805	.... .... ....

Climb :105 NM in 0:18 hrs 5919 Kg Descent:145 NM in 0:28 hrs 1181 Kg

ATIS - INFO									
RWY . . . WIND . . / . . VIS . . . TEMP . . . QNH TL									

DESTINATION ARRIVAL									
ELEVATION 257									
ETA/18:35 RETA/. . . . ATA/. . . . ON BLOCKS/. . . .									
----- ENROUTE WIND AND TEMPERATURE SUMMARY -----									
ROFOR EGCC/KJFK									
ENROUTE WINDS									
IDENT	FL 320		FL 340		FL 360		FL 380		FL 400
	W/V	TMP	W/V	TMP	W/V	TMP	W/V	TMP	W/V
MCT03	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
TH262	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
TH274	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
IXR25	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
R253H	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
R253M	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
R253P	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
EKLAD	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
WAL	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
PENIL	200/055	-42	200/059	-47	199/064	-54	198/066	-55	198/058
BABRA	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
GIGTO	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
UNUDX	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
SOPAX	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
RAMOX	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
-TOC-	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
OGTUG	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
BAGSO	193/058	-43	196/066	-48	196/070	-54	196/071	-55	196/061
DOGAL	209/058	-45	208/057	-50	214/044	-52	220/040	-51	220/026
54N020W	320/023	-44	324/024	-47	320/024	-50	315/023	-49	315/020
E-ENT	350/061	-43	350/066	-46	350/050	-50	349/045	-50	349/030
53N030W	321/039	-41	318/039	-46	320/044	-52	322/045	-53	322/048
ETP-1	296/031	-41	296/034	-46	297/038	-51	298/039	-52	298/041
52N040W	258/029	-41	257/029	-44	264/032	-50	272/032	-50	272/034
E-EXT	258/043	-41	256/044	-44	256/039	-49	257/037	-50	257/033
50N050W	232/046	-41	233/044	-45	233/040	-49	233/038	-49	233/033
ELSIK	230/047	-41	233/046	-44	230/039	-48	227/037	-48	227/030
-FC1-	091/012	-38	097/012	-41	100/012	-46	103/011	-47	103/011
TUSKY	296/018	-41	294/016	-45	324/014	-50	353/013	-51	353/010
PLYMM	258/016	-41	259/014	-46	297/009	-51	335/007	-52	335/005
-TOD-	255/016	-42	258/016	-47	284/011	-52	311/009	-53	311/007
PVD	255/016	-42	258/016	-47	284/011	-52	311/009	-53	311/007
TRAIT	242/022	-41	244/023	-46	264/014	-51	285/010	-52	285/006
PARCH	242/022	-41	244/023	-46	264/014	-51	285/010	-52	285/006
CCC	242/022	-41	244/023	-46	264/014	-51	285/010	-52	285/006
ROBER	242/022	-41	244/023	-46	264/014	-51	285/010	-52	285/006
CRAIL	242/022	-41	244/023	-46	264/014	-51	285/010	-52	285/006
CAPIT	230/023	-41	232/023	-46	215/014	-50	198/012	-51	198/008
DESCENT WIND									
FL300 228/024 FL240 228/015 FL180 228/023 FL100 234/024 FL050 228/024									
FIX MACH/CRUIS TIME 6:35 BRNOF 47852 ZFW 205000 FMA CI 30									
EGCC/FL360/									
ALT 2 KBOS FL 0 DIST 0 NM XXXX FUEL 0									

```
LOAD CONTROL ADVICE
FLT PIACCFKSECT MAN/JFK 07SEP23

REG APBGY CAPT
BURN OFF:          47852 KGS
TAKEOFF:           58584 KGS
TAXI:              400 KGS
BLOCK:            58984 KGS
BOX A:             340194 KGS
ZFW ACCEPTED:     205000 KGS
DISPATCHER NAME: SHHOOD ALI Lic. 894
```

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18.1.1.12 FFS 12 AWO(LVO/Cat-II/Cat-III)

LOW VISIBILITY OPERATIONS - Cat-II /Cat-III TRAINING

OBJECTIVE

To train the crew in procedures and techniques to conduct a safe and efficient takeoff, approach & landings in low visibility conditions; and to provide hands on practice in Category-II / Category-III conditions in the simulator.

ELEMENT AND DURATION

A briefing of one and a half (1½) hour will precede the SIM CAT-II/-III TRAINING.

SIM CAT-II / CAT-III TRAINING & EVALUATION Three (3) Hours.

TRAINING AIDS

- E-learning (LMS)
- White Board and Marker Pens
- CAT II /III Approach plates (applicable runway)
- Low Visibility Operations (FCTM, OM-A, SOP)

GENERAL

- Simulator Instructors will conduct the Low Visibility Operations Briefing in the Simulator's Briefing Room.
- The instructor will conduct the briefing and provide details on the exercises.
- A thorough and comprehensive briefing will reduce the need for coaching during the FFS session, which is rarely constructive, as it tends to distract the trainee from the exercise at hand. It is therefore imperative that whenever there is a need for extensive instruction during the exercise, the simulator should be frozen, and released after the instruction is completed.
- At the end of each session, de-briefing will be conducted by the Instructor, reviewing the performance of the Flight Crew with special emphasis on those maneuvers or procedures where the Flight Crew was found lacking.

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- The emphasis will be on crew CO-ORDINATION throughout, with the minimum of distractions for flight profiles etc. enabling the trainee's concentration to be focused on performing the necessary procedures.
- The development of improved all-weather landing capabilities has been accomplished without sacrificing either safety standards or good operating practice. Furthermore, the refinements of automatic flight control systems, including equipment redundancy and fail-operational design for CAT-II /CAT-III conditions, are available for all precision approaches and this contributes to higher levels of overall safety and operating efficiency.
- It is recommended to use the maximum available automatic capacity LAND 3 whenever an automatic precision approach is required, in order to reduce the effect of a component failure on the operational capability.

Initial Qualification

- Complete the Cat-II /Cat-III A/B Simulator Training.
- Successfully demonstrate ILS approaches in CAT II/CAT III A/B condition in the Simulator for his/her Evaluation.
- Demonstrate at least 1 ILS approach in under supervision flying (auto-land) using CAT-II/CAT-III A/B procedure in non-actual condition.
- The Captain/First Officer will be cleared to operate down to CAT-II/CAT-III A/B minima after completion of 100 hours on type followed by a CAT-II/CAT-III A/B simulator check or during first recurrent simulator training/check.

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CAT-III TRAINING

Pre Session Briefing	DH Philosophy			
	RVR Philosophy			
	Relationship between DH & RVR			
	Task Sharing			
	The decision process			
	Loss of references below DH			
	Minimum equipment			
	Cat II/ cat III Crew qualification requirements			
	CAT-II/CAT-III Certification			
	ATC Calls			
	Seat Position			
	Use of Taxi / Landing lights			
	CAT-II/CAT-III Briefing			
	Failure & associated actions			
	Down grading conditions			
	Auto Flight operating limitations			
	Aircraft requirements			
Approach & Runway lighting				
Weather	CALM	<400 MTRS	TEMP 2°C	QNH 1013
Airport/Runway/Condition	MANCHESTER 23R		DRY	
	TOM-230 T		Flaps – 30	CG – 25%
RANK & NAME		DATE:	PLND.TRG TIME 03:00	ACTUAL TRG TIME :
COMMENTS:				
NAME OF INSTRUCTOR		SIGNATURE		TRAINEE'S SIGNATURE

777 Full Flight Simulator Training Divisions, Flight Operations

Transition Training Record


 777 TRAINING RECORD
 LOW VISIBILITY OPERATION QUALIFICATION
 FES Lesson

NAME	P-NO	CREW POSITION/PRM	PLND TRG TIME 03 00	ACTUAL TRG TIME	TOTAL TIME

Training Item	Scheduled Repetitions	Actual Repetitions	Rating		Training Item	Scheduled Repetitions	Actual Repetitions	Rating	
			PF	PM				PF	PM
Briefing (cockpit prepared by Instructor)					LOC DEV below DH CAT III	1			
SMGS taxi	1				G/S DEV above DH CAT III	1			
Low visibility takeoff	1				CAT II/III App with Gnd Equipment Failure	1			
CAT II/III, ILS approach (approach light demonstration)	1				Auto landing with engine fail L/R (Full stop)	1			
Full stop landing (Auto land)	1				CAT II/III, ILS approach	1			
CAT-III, ILS approach	1				SINGLE SOURCE ILS (BELOW 300)	1			
Missed approach	1				SINGLE SOURCE ILS Radio Altimeter	1			
A/R, CAT-III, ILS approach	1				Other instrument failure scenarios	1			
Full stop landing	1				Plotting incursion	1			
Low visibility RTO (ENG FAIL, TAC ON)	2				Missed approach	2			
Low visibility takeoff (Engine failure after V _L , TAC off)	1				CAT-III, ILS approach	1			
ENG FAIL (L/R) TAC off	1				Rejected landing	1			
App with Eng Fail below AH	1				CAT-III, ILS approach	1			
Full Passive Approach with auto Pilot Disconnect below DH (300m or Less RVR)	1				Taxi-in				
CAT II/III Approach with Reverser to Higher Minimum	1				Shutdown				

Comments (Required for all items not scored satisfactorily):

DATE	INSTRUCTOR NAME (CAA INSTRUCTOR / DCPA / SIM INSTRUCTOR)	INSTRUCTOR SIGNATURE

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PREFLIGHT

Accomplished by the instructor

Complete all required CDU entries

NAV/RAD, MCP and flight instrument preflight.

ENGINE START

Fast start accomplished by the instructor

LOW VISIBILITY TAXI OUT AND TAKE OFF

Normal procedures

Taxi in low visibility condition – *As per SOP*

In taxi position RWY 23 R

Surface Movement Guidance and Control System (SMGCS)

Low Visibility Taxi Procedures

Bear in mind that, in very low RVR values, one would expect to see bright lights at a safe distance but not unlit or poorly lit obstacles, such as aircraft tails or wing tips. From certain angles, their navigation lights do not show up well. Since aircraft movement rates will be low in these conditions, taxi as slowly as necessary for safety. Do not hesitate to request from ATC the positions of other taxing aircraft or to ask for a “follow me” car.

Stop Bar lighting

Taxi routes, lighting, and surface markings

Low Visibility Take Off

A takeoff on Runway where the RVR is less than 400 m (EU - OPS1)

Consult concept and definition and flight crew procedure defined in SOP.

TAKEOFF RVR/VIS

The takeoff minima is mainly determined by the airport equipment installed (RWY lighting system, RVR measurement system), Weather at Destination &

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Alternate, Rejected Takeoff Consideration, Low visibility takeoff operations below landing minima, may require a takeoff alternate. When selecting a takeoff alternate, consideration should be given to unexpected events such as an engine failure or other non-normal situation that could affect landing minima at the takeoff alternate. Operators, who have authorization for engine inoperative Category II/III operations, may be authorized lower alternate minima. (Normally within one hour for Twin engine).

With proper crew training and appropriate runway lighting, takeoffs with RVR as low as 125m / 150m for category C / D respectively are authorized by PCAA.

With takeoff guidance systems and centreline lighting that meets FAA or ICAO criteria for Category III operations, takeoffs with visibility as low as 300ft/75m RVR may be authorized, NOT AVIALABLE ON B777 PIA AIRCRAFTS. Regulatory agencies may impose takeoff crosswind limits specifically for low visibility takeoffs.

All RVR readings must be equal to or greater than required takeoff minima. If the touchdown RVR system is inoperative, the pilot estimation of RVR may be authorized by regulatory agencies.

If it is necessary to reject the takeoff and visibility is very limited, directional control with reference to the runway lights will become progressively more difficult as speed is reduced.

As soon as the first red/white centreline lights pass under the nose of the aircraft, there is 3000'/900 m of runway left and ground speed should be in no case higher than 100 kts.

If all centreline lights are red, there is less than 1000'/300m of runway available.

DEMONSTRATION OF APPROACH LIGHTING

Autopilot, CAT II / III, ILS approach RWY 23 R, full stop landing

At the following RA heights, freeze the simulator to

Demonstrate approach lighting.

Show DAY and NIGHT conditions.

CAT I	449	(200') <i>BARO</i>	RVR 550m
CAT II		100' RA	RVR 350m
CAT IIIa		50' RA	RVR 200m
CAT IIIb	WITH OR WITHOUT DH, RVR 75m		

Seating Position

As a rule, it can be said that sitting 1 centimetre too low results in a reduction of the cut-off angle of 1 degree, corresponding to a loss of 10m of the visual segment from a height of 100 feet. Further lowering of the seat position will aggravate the situation because of a greater reduction of the visual segment. A pilot sitting too low will also have the tendency to pitch down the aircraft in order to acquire additional ground visibility.

This will usually lead to a very dangerous situation: Unstabilised aircraft with a high rate of descent.

Complete AUTOLAND and ROLLOUT.

APPROACH AND LANDING

Autopilot, CAT II/cat III ILS approach

RWY 23 R missed approach

Configuration

Flaps 20 or 30

Select auto brakes 2 or 3

Use of landing lights

APPROACH BRIEFING

Complete the approach preparation before arrival in the terminal area.

CAT II /CAT-III approach plate.

Radio altitude (R/A) vs. barometric altitude.

CAT II DA (H) – 100 feet /cat III DH OF 50 FT radio altitude (where authorized)

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Check that the marker beacon is selected on the audio panel. The course and glide slope signals are reliable only when their warning flags are not displayed, localizer and glide slope pointers are in view, and the ILS identifier is received. Confirm the published approach inbound course is set or displayed.

Prior to the start of an instrument approach, the pilot flying should brief the other pilot as to intentions in conducting the approach. Both pilots should review the approach procedure. All pertinent approach information, including minimums and missed approach procedures, should be reviewed and alternate courses of action considered.

As a guide, the approach briefing should include at least the following:

- Weather and NOTAMS at destination and alternate, as applicable.
- Type of approach and the validity of the charts to be used
- Navigation and communication frequencies to be used
- Minimum safe sector altitudes for that airport
- Approach procedure including courses and heading
- Vertical profile including all minimum altitudes, crossing altitudes and approach minimums
- Determination of the Missed Approach Point (MAP) and the missed approach procedure
- Other related crew actions such as tuning of radios, setting of course information, or other special requirements.
- Taxi routing to parking.
- Any appropriate information related to a non-normal procedure
- Management of AFDS.

APP mode should not be selected until:

- The ILS is tuned and identified
- The airplane is on an inbound intercept heading
- Both localizer and glide slope pointers appear on the attitude display in the proper position

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- Clearance for the approach has been received.

The glide slope may be captured before the localizer in some airplanes. The glide slope may be captured from either above or below. Glide slope capture does not occur if the intercept angle to the localizer is greater than 80°. The maximum intercept angle for the localizer is 120°. To avoid unwanted glide slope capture, LOC mode may be selected initially, followed by the APP mode. (Glide slope inhabited before localizer capture 04.10.15)

When using LNAV to intercept the final approach course, ensure raw data indicates localizer interception to avoid descending on the glide slope with LOC not captured. If needed, use HDG SEL/TRK SEL or HDG HOLD/TRK HOLD to establish an intercept heading to final approach course.

Standards callouts

DA (H) – MINS selector on RADIO ALTIMETER/ BARO

CAT II required equipment

Second-in-command duties during CAT II/CAT III approaches

The pilot monitoring should continue standard callouts during final approach and the pilot flying should acknowledge callouts.

IF NO AUTO CALLS (PM to make standard calls as define in AWOPS)

AUTOLAND PROCEDURE

Auto land status annunciator

Below 1500 FEET RADIO ALTITUDE

FLARE and ROLLOUT armed ASA display LAND 2/3

Autopilot control of the rudder

500 FEET TO 200 FEET RADIO ALTITUDE

(Crab angle >10°, 5° - 10° & <5°) Depending on the strength of the crosswind, the amount of forward slip induced is limited to 5°.

Runway align maneuver

Effect on control when reverting to manual landing

50 FEET RADIO ALTITUDE (60' to 40') FLARE ENGAGED GREEN (Flare capture)

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50-25 FEET RADIO ALTITUDE

A/T retards THRUST LEVERS & THRUST IDLE engage

PFD auto throttle FMA changes – SPD to IDLE

2 FEET RADIO ALTITUDE WINGS ARE LEVELLED

ROLLOUT CAPTURES

Roll out not demonstrated on contaminated runway and AFDS Roll-Out mode performance cannot be assured.

FLARE annunciation disappears at touchdown

ROLLOUT replaces LOC capture annunciation.

A/T disengages with reverse thrust.

Autopilot Missed Approach

GA switch

Flight Mode Annunciations

Pitch and roll commands activate in GA

Flap retraction

Missed approach waypoints

LNAV use

Missed approach

- Push TO/GA switch (AFDS)
- Flaps 20 (flaps 5 optional 1 engine)
- Go-around attitude
- Go-around thrust
- Positive rate of climb, gear up
- Above 400 feet select roll mode (AFDS)
- At flaps retraction altitude, set speed for desired flap setting
- Retract flaps on schedule
- After flap retraction, select FLCH or VNAV as required
- Verify tracking route and altitude capture
- After Takeoff checklist

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If an auto land annunciation changes or system fault occurs above ALERT HEIGHT that requires higher weather minimums (reversion to NO AUTOLAND), do not continue the approach below these higher minimums unless suitable visual reference with the runway environment is established.

Autopilots having failed operational capability are designed to safely continue an approach below ALERT HEIGHT after a single failure of an autopilot element. The autopilots protect against any probable system failure and safely land the airplane. AFDS design provides for an AH of at least 200 feet HAT but may be modified to a lower value by operators. The pilot should not interfere below AH unless it is clearly evident pilot action is required.

Alert Height

Is evaluated during aircraft certifications.

Alert heights are normally used for fail operational Category III operations. Alert height is a height above the runway, above which a Category III approach must be discontinued and a missed approach initiated if a specified failure occurs in one of the redundant parts of the Auto Landing System or in the relevant ground equipment.

Fail Operational

Fail operational refers to an AFDS capable of completing an ILS approach, auto land, and rollout following the failure of any single system component after passing alert height.

Fail Passive

Fail passive refers to an AFDS which in the event of a failure causes no significant deviation of airplane flight path or attitude. A DA (H) is used as approach minimums.

Recommended elements of a Stabilized Approach

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The following recommendations are consistent with criteria developed by the Flight Safety Foundation.

All approaches should be stabilized by 1,000 feet above airport elevation in instrument meteorological conditions (IMC). An approach is considered stabilized when all of the following criteria are met:

- The aircraft is on the correct flight path,
- Only small changes in heading/pitch are required to maintain the correct flight path,
- The aircraft speed is not more than VREF+10 knots indicated airspeed and not less than VREF,
- The aircraft is in the correct landing configuration
- Sink rate is no greater than 1,000 fpm; if an approach requires a sink rate greater than 1,000 fpm, a special briefing should be conducted.
- Power setting is appropriate for the aircraft configuration.
- All briefings and checklists have been conducted.

As the aircraft crosses the Runway Threshold it should be:

- Stabilized on target airspeed to within + 10 knots until arresting descent rate at flare.
- On a stabilized flight path using normal maneuvering
- Positioned to make a normal landing in the touchdown zone (the first 3,000 feet or first third of the runway, whichever is less).

Mandatory Missed Approach

On all instrument approaches, execute an immediate missed approach:

- If a navigation radio or flight instrument failure occurs which affects the ability to safely complete the approach in instrument conditions
- When on ILS final approach, in instrument conditions, and either the localizer or glide slope indicator shows full deflection

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- When the navigation instruments show significant disagreement and visual contact with the runway has not been made
- When on an RNP based approach, and an FMC alerting message indicates that ANP exceeds RNP
- When on a radar approach and radio communication is lost.

APPROACH AND LANDING

Autopilot, CAT-II /CAT-III ILS approach

RWY 23 R full stop landing

CONFIGURATION

Flaps 20 or 30

Select auto brakes 2 or 3

Use of landing lights

DECISION HEIGHT DA (H) RECOGNITION

DA (H) callouts – PM voice backup

RVR information and limitations

RA display/authorization/inoperative

CHARACTERISTICS OF ILS AND RUNWAY LIGHTING SYSTEMS

Runway lighting systems required for CAT-II/CAT-III

USE OF VISUAL CUES UNDER REDUCED RVR

Conditions required to descend below DA (H) or AH

Descent to runway/touchdown zone

Visual references

Approach light system

Threshold markings

REIL, VASI, TDZ marking/lights

RWY marking/lights

PROCEDURES/TECHNIQUES TO TRANSITION FROM NON-VISUAL TO VISUAL
FLIGHT UNDER REDUCED RVR

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PM procedures

Flare and touchdown

SMGCS taxi procedures.

LOW VISIBILITY / TAKE OFF

TAKEOFF WITH ENGINE FAILURE BEFORE & AFTER V1

TAKEOFF WITH SUDDEN REDUCTION OF RVR

TAKEOFF WITH LOSS OF LATERAL GUIDANCE

(Introduce Pilot Incapacitation during takeoff / landing)

In takeoff position RWY 23 R

TAC ON

LOW VISIBILITY REJECTED TAKE OFF (RTO), RVR < 400M

Timely engine failure recognition

Reasons for reject (high speed/low speed)

PM call out malfunction and 60 knots

Auto brake use

Speed brake use

ACTIONS AFTER STOPPING

Notify tower

Notify passengers/cabin crew

Perform non-normal checklist (if required)

Evacuate the airplane (if required)

Taxi clear of runway (if appropriate)

Review Brake cooling schedule

LOW VISIBILITY TAKE OFF, ENGINE FAILURE AFTER V1,

RVR < 400M

TAC on

ENGINE FAIL (L/R)

LOW VISIBILITY TAKE OFF, RVR < 400M

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APPROACH AND LANDING (MISSED APPROACH)

Autopilot, CAT-II/CAT-III ILS approach RWY 23 R

SINGLE SOURCE ILS

(Left and right ILS receivers fail)

EICAS ANNUNCIATIONS;

AUTOPILOT DISCONNECT

SINGLE SOURCE ILS

NO AUTOLAND

INSTRUMENT AND EQUIPMENT FAILURE WARNING SYSTEM

Autopilot disengages

Flight Director Bias out of view

Respective electronic display

PF, PM procedures

Positive monitoring

Non-normal procedures/indications/actions

APPROACH AND LANDING

Autopilot, CAT II/CAT III, ILS approach RWY 23 R full stop landing

A working knowledge of approach lighting systems and regulations as they apply to the required visual references is essential to safe and successful approaches. Touchdown RVR is normally controlling for Category I, II, and III approaches. For Category I and II approaches, mid and rollout RVR are normally advisory. For Category III operations mid and rollout RVR may be controlling. In some countries, visibility is used instead of RVR. (Approval from the regulatory agency is required to use visibility rather than RVR.)

CAT-II / CAT-III APPROACH & LANDING VISIBILITY REQUIREMENTS

CAT-II DA (H) – 100 FEET RADIO ALTITUDE & RVR 350m (where authorized)

CAT-III A DA (H) – 50 FEET RADIO ALTITUDE & RVR 200m (where authorized)

CAT-III B DA (H) WITH OR WITHOUT DH AND RVR 75m (where authorized)

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CAT-II / CAT-III AUTHORIZATION

Refer to concept and definition, flight crew procedure.

NOTAMS and ATIS for ILS performance and status or degradation Airplane condition: systems status and CAT II/CAT-III MEL status standard callouts per flight Crew training Manual Approach profile and go-around procedures.

Consideration of rollout conditions, including visibility, runway exiting, Use of landing lights. Refer to flight crew procedure

CAT-II/CAT-III APPROACH TECHNIQUES

Select auto brakes 2 or 3 (start APU at 10000 Optional)

Check winds (per regulatory authority)

Max. Headwind 25 knots

Max. Tailwind 10 knots

Max. Crosswind 25 knots

Flaps 30 or 20 (30 will be flatter for visibility)

Captain makes all CAT II/CAT-III approaches and landings

CAT-II/CAT-III OPERATIONS

Category II approaches may be conducted using the autopilot or flight director with HUDLS only (FAA), with one or two engine.

PIA POLICY. Auto Landing System should be serviceable for CAT-II approach & landing. (Check MEL, DDPG)

CAT-III APPROACH Auto landing system is mandatory

The following equipment must be operative for an automatic approach in

Category II

Conditions:

LAND 3 or LAND 2 annunciated and EICAS messages SGL SOURCE DISPLAY, SGL SOURCE RAD ALT or SGL SOURCE ILS not displayed.

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CAT-III OPERATIONS

CAT-III operation is based on an approach to touchdown using the automatic landing system. Normal operations should not require pilot intervention. However, pilot intervention should be anticipated in the event inadequate airplane performance is suspected. or when an automatic landing cannot be safely accomplished in the touchdown zone. Guard the controls on approach through the landing roll and be prepared to take over manually, if required.

The airplane is certified for CAT IIIB operations with two engines operating or with one engine operating for flaps 20 or flaps 30 landing.

CAT-IIIa / Auto land

For CAT IIIa operations the following equipment must be operative and LAND 3 or LAND 2 annunciated.

- 2 autoland status annunciators (ASA)
- EICAS message SGL SOURCE DISPLAY, SGL SOURCE RAD ALT or SINGLE SOURCE ILS not displayed.

CAT-IIIb / Auto land

For CAT-IIIb operation, visual reference is not normally a specific requirement for continuation of the approach to touchdown

CAT-IIIb operations require the following equipment to be operative and LAND 3 annunciated:

- Auto throttle engaged
- 2 auto land status annunciators
- - EICAS message SGL SOURCE DISPLAY, SGL SOURCE RAD ALT or SINGLE SOURCE ILS not displayed.

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Automatic Flight EICAS Messages

The following EICAS messages can be displayed.

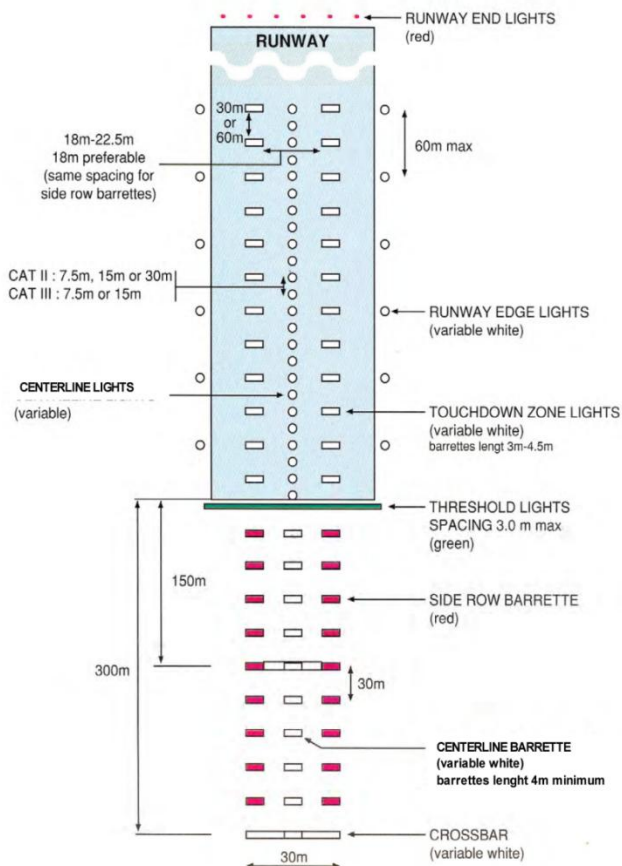
Message	Level	Aural	Condition
AUTOPILOT	Caution	Beeper	Autopilot is operating in a degraded mode. Engaged roll and / or pitch mode may have failed, or the autopilot has entered envelope protection.
AUTOPILOT DISC	Warning	Siren	Autopilot has disconnected.
AUTOTHROTTLE DISC	Caution	Beeper	Both auto throttles have disconnected.
AUTOTHROTTLE L, R	Advisory		Affected auto throttle is OFF or has failed.
NO AUTOLAND	Caution Advisory	Beeper	Auto land is not available. Message is a caution if fault occurs after LAND 3 or LAND 2 is annunciated, or approach has been selected but does not engage by 600 AGL. Message is an advisory if fault occurs before LAND 3 or LAND 2 is annunciated.
NO LAND 3	Caution Advisory	Beeper	Auto land system does not have redundancy for triple channel auto land. Message is a caution if fault occurs after LAND 3 is annunciated. Message is an advisory if fault occurs before LAND 3 is annunciated.

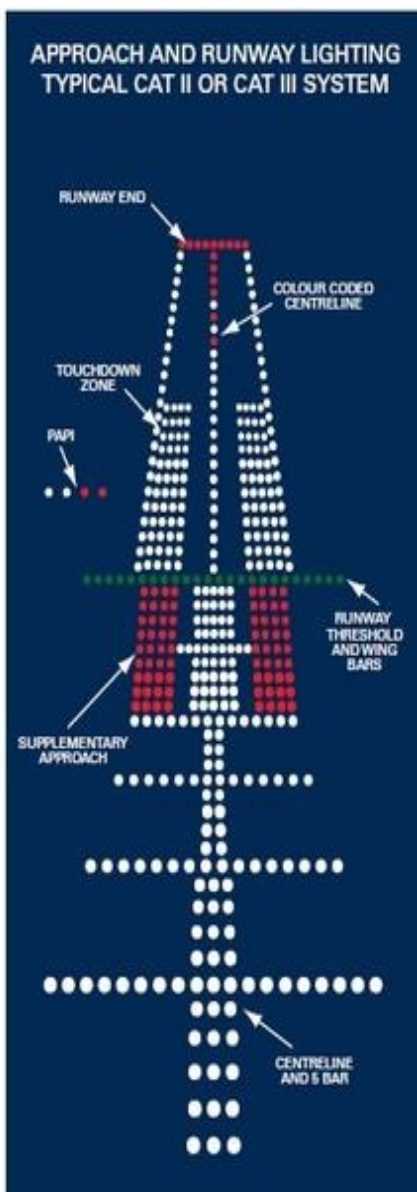
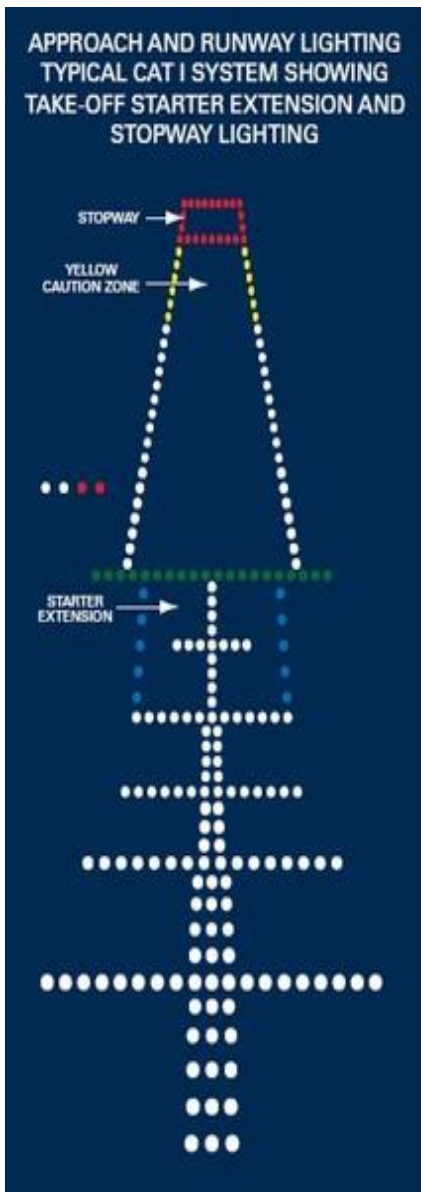
AFDS Faults

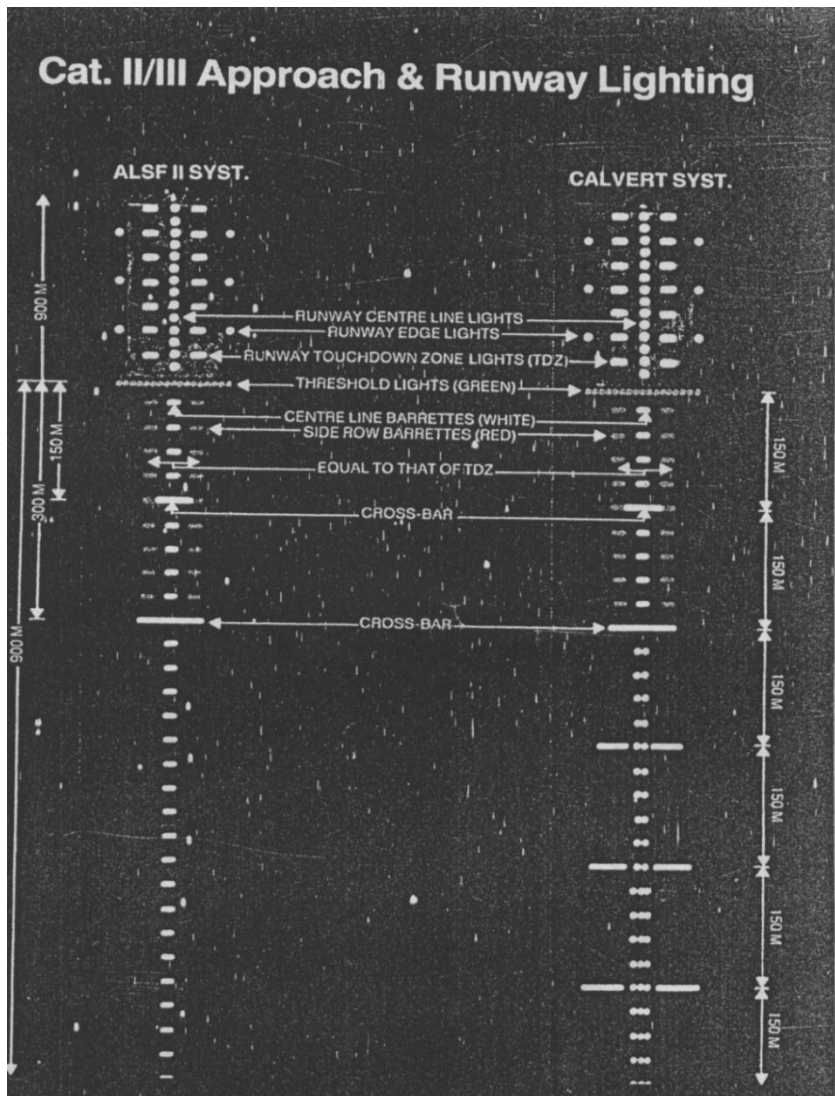
Consult the FCTM, Flight preparation and flight crew procedure (SOP).

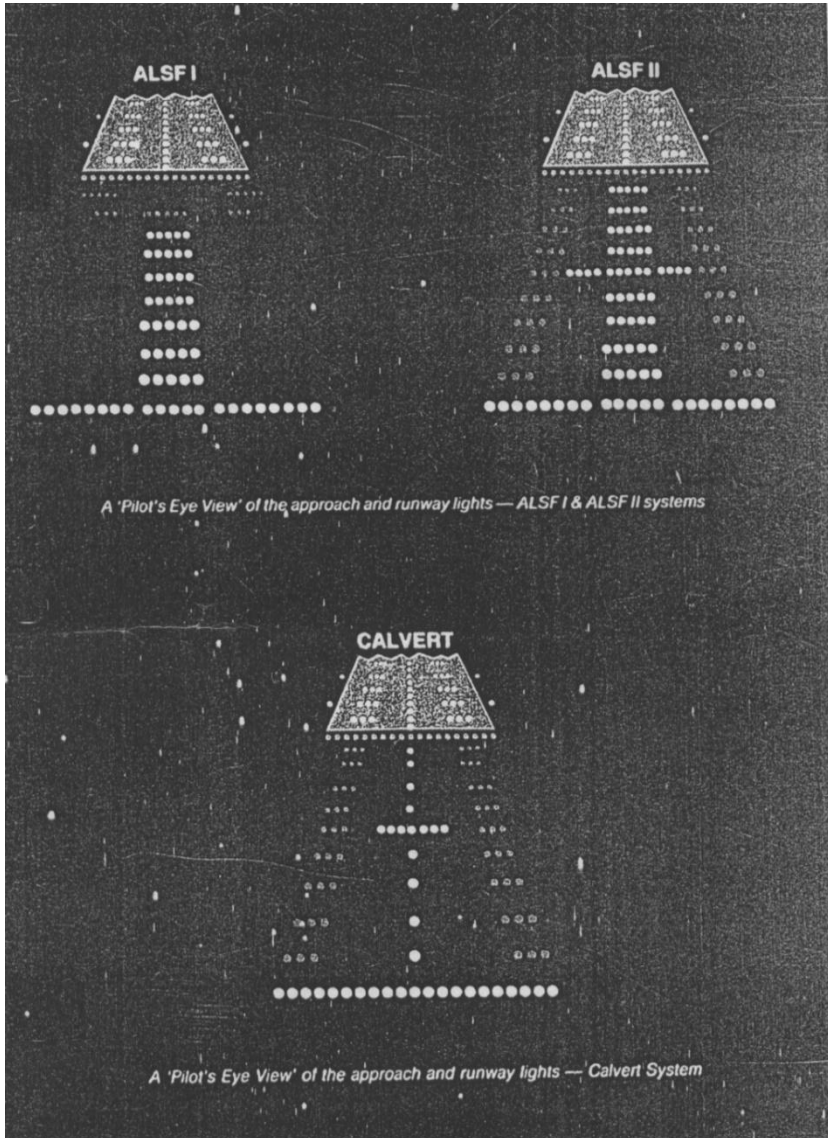
CAT II/III APPROVAL PROCESS

Figure 5.4 Runways lights / Approach light system



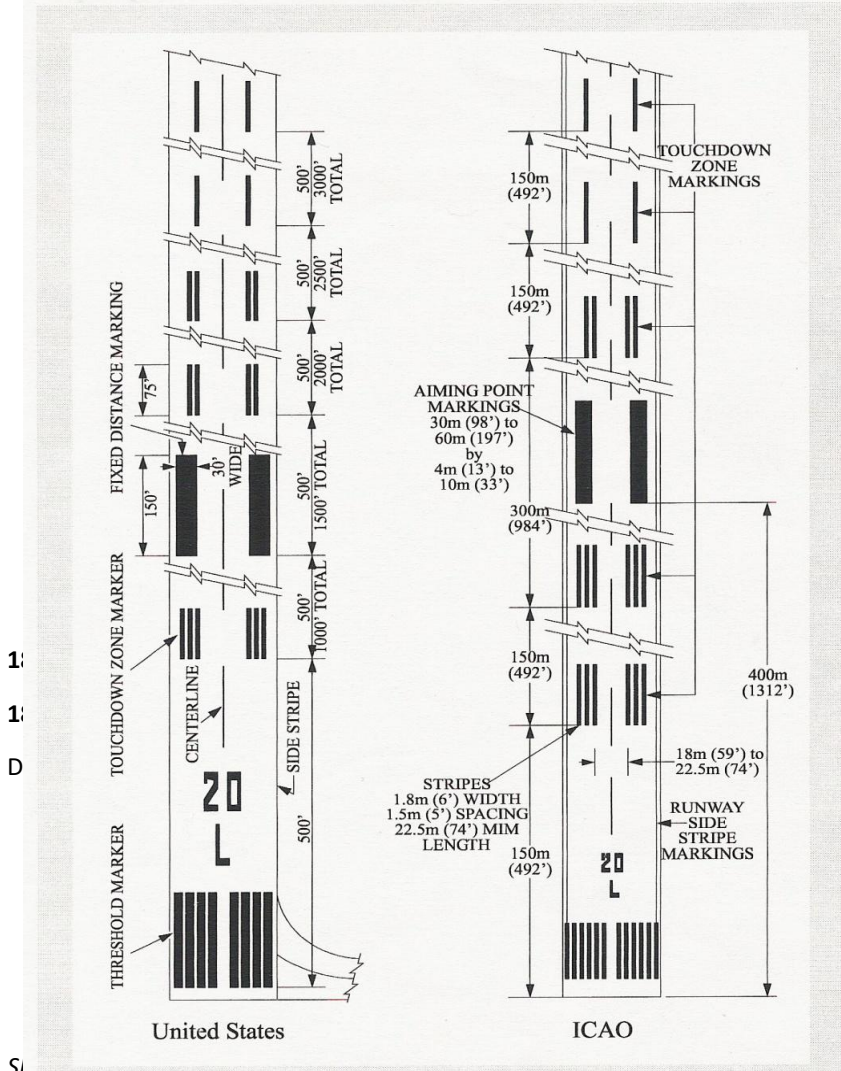






Landing Runway Markings (Typical)

The following runway markings are for runways served by a precision approach.



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CFIT simulator training should be given during initial transition and recurrent training. This training should follow a building block approach to learning. It is recognized that there are many contributing factors that may lead to the loss of vertical and horizontal situational awareness by the flight crew. Because of this, the flight crew cannot be exposed to all of the situations in the simulator that they may confront during their normal flight operations. However, a well-structured training program will include exposure to a sufficient number of contributing factors in each exercise to make the training as realistic as possible.

CFIT scenarios can be introduced during:

- A low-altitude level-off just after takeoff, with a radar vector turn toward high terrain, and no subsequent vectoring.
- An early enroute descent into a mountainous/hilly terminal area in an intensive communications environment or in adverse weather conditions during a non precision approach.
- A takeoff or missed approach with a low-altitude level off and a turn toward high terrain.

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Fig 1.

Exercise	Description	Training Objectives
1.	Insert a simulator "mountain*" in VFR conditions during flight on the downwind leg of the traffic pattern	Demonstrate GPWS warnings and proper response times and procedures for the escape maneuver.
2.	Insert a simulator "mountain*" in IMC during an appropriate phase of flight.	Demonstrate flight crew awareness and coordination in CFIT situations. Practice correct escape maneuver procedures.

* Invisible, rapidly rising terrain simulator feature.

The simulator training should include:

- A briefing.
- A minimum of two exercises. Refer to Figure 1.
- A critique.

Before the CFIT exercise:

- Review the need for crew awareness and coordination.
- Discuss the importance of knowing GPWS warnings and the requirement for rapid flight crew response to these warnings.
- Review CFIT traps.
- Review the escape maneuver/procedure and pilot techniques.

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APPROACH AND LANDING ACCIDENT REDUCTION (ALAR)

A stabilised approach provides a basis for a good landing, it provides the crew with the optimum conditions to flare, land, and stop the aircraft.
An approach must be stabilised by 1,000 ft in IMC and by 500 ft in VMC.

1. The aircraft must be on the correct flight path.
2. Only small changes in heading and pitch are required to maintain the correct flight path.
3. The aircraft speed is less than $V_{ref}+20$ kts, and less than $V_{ref} + 15$ kts at the threshold.
4. The aircraft is in the landing configuration.
5. Sink rate less than 1,000 feet per minute.
6. Power setting appropriate for configuration.
7. All briefings and checklists have been completed.
8. Instrument landing system (ILS) approaches - must be flown within the equivalent of one dot of the glideslope or localizer.
9. Visual approaches - wings must be level on final before 500 ft.
10. Circling approaches - wings must be level on final before 300 ft.

Unique approach procedures or abnormal conditions requiring a deviation from the above elements of a stabilised approach require a special briefing.

UPSET PREVENTION AND RECOVERY TECHNIQUE (UPRT)

For instructional purposes, several different airplane upset situations should be discussed. These include the following:

- Nose high, wings level.
- Nose low, wings level.
 - Low airspeed.
 - High airspeed.

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- High bank angles.

--Nose high.

--Nose low.

Airplanes that are designed with electronic flight control systems, commonly referred to as “fly-bywire” airplanes, have features that should minimize the possibility that the airplane would enter into an upset and assist the pilot in recovery, if it becomes necessary. But, when fly-by-wire airplanes are in the degraded flight control mode, the recovery techniques and aerodynamic principles discussed in this training aid are appropriate. Some environmental conditions can upset any airplane. But the basic principles of recognition and recovery techniques still apply, independent of flight control architecture.

Airplane autopilots and autothrottles are intended to be used when the airplane is within its normal flight regime. When an airplane has been upset, the autopilot and autothrottle must be disconnected as a prelude to initiating recovery techniques. Situational analysis of the energy state of the aircraft is also required. This analysis assesses the energy and trend. This includes but is not limited to altitude, airspeed, attitude, load factor, power setting, position of flight controls, position of drag and high-lift devices, and the rate of change. This analysis may cause the crew to make appropriate changes, such as use of speed brakes or lowering the landing gear for drag as necessary to aid in the recovery. In other words, manage the energy.

Note: Higher than normal control forces may be required to control the airplane attitude when recovering from upset situations. Be prepared to use a firm and continuous force on the control column and control wheel to complete the recovery.

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Guidance is given in B-777 FCTM (7.15) and B-777 QRH (MAN 1.7)

STALL AND RECOVERY

Recovery from stall requires a deliberate and smooth reduction in wing angle of attack. The elevator is the primary pitch control in all flight conditions, not thrust.

The present approach to stall technique being employed is focused on “powering” out of the near-stalled condition with emphasis on minimum loss of altitude. At high altitude this technique may be totally inadequate due to the lack of excess thrust. It is impossible to recover from a stalled condition without reducing the angle of attack and that will certainly result in a loss of altitude, regardless of how close the airplane is to the ground. Although the thrust vector may supplement the recovery it is not the primary control. At stall angles of attack, the drag is very high and thrust available may be marginal. Also, if the engine(s) are at idle, the acceleration could be very slow, thus extending the recovery.

Guidance is given in B-777 FCTM (7.8) and B-777 QRH (MAN 1.1)

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18.2 UNDER SUPERVISION LINE TRAINING

OBJECTIVE

The objective of Line Training is to allow the Trainee to practice Normal Line Procedures on the aircraft, and to achieve proficiency and confidence in these procedures.

The intent of Line Training is to assist the Pilot in line, route and airport qualification (as defined in the OM Part-D). Only routine operations in normal configuration are intended and no abnormal situations will be intentionally created.

The TRI/TRE will sign the aircraft load sheet and Flight Plan and take full responsibility for the safety of the aircraft, crew and passengers and the integrity of the operating schedule.

General

TRI and TRE are authorized to conduct the Line Training including first Six Takeoffs and Landings.

Needless to say the TRI/TRE must conduct himself in a professional, proficient and efficient manner in every aspect, so as to enhance the professional and executive capability of the Trainee.

Each exercise in Line Training will be covered, but the TRI/TRE will only sign off the particular exercise once a proficient level has been achieved. If proficiency is not achieved, then it is required that amplifying comments be made to fully identify the trainee's deficiencies in the comments section along with the exercise number.

The Line Training Lesson Plan contains asterisk (*) items, which are "For Discussion Only". The Instructor will sign off all such items only when proficient knowledge has been demonstrated by the trainee.

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Preparation

Trainees are expected to be familiar with B777 OPERATIONS MANUAL, FLIGHT CREW TRAINING MANUAL, FOM and DDG application.

The trainee is also expected to study and assimilate all the items in the Line Training Lesson Plan before commencement of Line Training.

Under Supervision Line Flying

Captains and First Officers undergoing transition training are required to undergo 50 Hours under supervision line flying with at-least six (06) sectors, in which all exercises and discussion items in the Lesson Plan must be satisfactorily completed.

Captains: On satisfactory completion of the exercises and items in the Lesson Plan, the Trainee will be put up for a “Pre-Final Command Route Check”. Fifty hours may include the “Pre-Final Command Route Check”.

On satisfactorily passing the “Pre-Final Command Route Check”, the Trainee will be put up for a “Final Command Route Check”.

First Officers: On satisfactory completion of the exercises and items in the Lesson Plan, and fifty hours of Line Training, the Trainee will be put up for a “Route Check”.

Capt F/O			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
1. FLIGHT BRIEFING				
A) Meteorology				
a) Departure Wx.				
b) Enroute/Emergency Alt. Wx				
c) Destination & Alternate Wx.				
B) NOTAMS				
a) Chart NOTAMS				
C) Flight Plan				
a) Company Routing				
b) Flight Level				
c) Fuel Requirements				
d) TOW Calculations				
e) ATC Flight Plan				
f) Alternate Requirements				
2. PRE FLIGHT				
a) Electrical Power Up & Down procedure (*)				
b) Preliminary Preflight Procedure				
c) Exterior Inspection				
d) Preflight Procedures Captain & F/O				
e) Door Operation				
f) Aircraft Documents				
g) TOW Calculation (EFB)				
h) FMS setup / Route, FPL Loading				
3. DEPARTURE BRIEFING				
a) Pushback & Start Procedure				
b) Taxi Out Procedure & RWY in use				
c) SID in use, Required NDB, VOR				

Capt F/O			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
d)	VHF Comm. Frequencies in use			
e)	Noise Abatement Procedure			
f)	Obstacle Requirements (MSA)			
g)	Runway Conditions / Wx Conditions			
h)	Restricted/Prohibited Areas			
i)	A/C status/MEL /DDG restriction on operations			
4. DEPARTURE/TAXI				
a)	Use of Electronic / Normal Checklist			
b)	Before Pushback & Start Procedures			
c)	Engine Start & After Start Procedures			
d)	Taxiing & Before T/O Procedures			
e)	Takeoff Flaps 5			
f)	Takeoff Flaps 15			
g)	Rolling Takeoff			
h)	Static Takeoff (*)			
i)	SID – LNAV & VNAV Departure			
j)	SID – MCP Departure			
k)	Runway Change during Taxi (*)			
5. ENROUTE PROCEDURES				
a)	During Climb Speed Intervention			
b)	Height Restrictions			
c)	During Climb Delete Climb Thrust Derate			
d)	FMC Operation			
e)	Route Changes & Modifications			
f)	Diversion & Fix Page Use			

Capt F/O			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
g) Holding Page – Present Position Holding, Modify Hold & Exit Hold				
h) Determine ETA, Fuel Remaining for Destination and Alt/Enroute Diversion				
i) Data Link Communication				
j) “EFB use				
k) Enroute Weather Radar usage procedures				
6. DESCENT				
a) Descent forecast wind “FMS”				
b) Descent Preparations				
c) Destination and Alt Wx				
d) Insertion of STAR				
e) Vref Speed				
f) Holding Time Calculations				
g) Descent Planning				
h) Descent Forecast Page & Descent Prediction (*)				
i) Approach Briefing				
j) Runway Change FMC Operation and Approach Procedure (*)				
k) Use of Auto Brake				
l) Minimum Fuel Advisory				
m) Descent Speed Schedule				
7. APPROACHES				
a) Manual Flight Director ILS Approach				
b) ILS Autoland Approach using CAT-II/CAT-III A/B procedures (Minimum one sector)				

Capt F/O			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
c) RNAV Approach - Using LNAV/VNAV				
8. LANDINGS				
a) Flaps 30 Landing				
b) Flaps 20 Landing				
c) Cross Wind Landing Technique(*)				
d) Contaminated Rwy. Ldg. Technique(*)				
9. PM DUTIES (02 Sectors)				
a)				
b)				
10. ITEMS FOR DISCUSSION				
a) Cabin Altitude – CRM Considerations				
b) Tail Strike				
c) L or R FMC Fail – Use Alt. Navigation				
d) VOR Approach – Using VNAV/V/S or FPA				
e) RNP/RVSM/RNAV/P-RNAV				
f) FMS Position Update				
g) ADIRU/SAARU Inoperative				
h) Fuel Imbalance & Fuel Jettison				
i) Jeppesen ATC and EMERGENCY				
j) Max Altitude / Optimum Altitude/Recommended Altitude				
k) Engine Out Drift Down Procedure				
l) Step Climb				
m) Buffet Margin				
n) TCAS Event				
o) GPWS / WINDSHEAR / UNRELIABLE AIRSPEED				

Capt F/O			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
p)	Determination of Max TOW on contaminated runways			
q)	Contaminated runway effect on V1, VR, V2 & reduced thrust			
r)	Consulting performance graphs			
	EFB training – MAP, documents, TOW, NOTAM, MEL, insertion of Airport (not in database), Video/surveillance Camera			
s)	CFIT			
t)	Adverse Weather Procedures (*)			
u)	Anti-Ice Use / On GRD deicing procedure – Holdover time (*)			
v)	Flight in Severe Turbulence (*) (Avoidance, Precaution & Recovery)			
11. CRM SKILLS				
a)	Decision making/Teamwork/Human factors (*)			
b)	Communication/Assertiveness			
c)	Situational Awareness			
d)	Threat & Error Management (SMS) (*)			
e)	Evacuation (*)			

Instructor's Remarks/Evaluation

[illegible]

18.3 TYPE TECHNICAL REFRESHER

B-777 TYPE TECHNICAL REFRESHER SYLLABUS (LMS CONTENTS)

REFRESHER WINTER-1	
PHASE	CONTENTS
PHASE-A OCT-DEC (ODD YEAR) Est. Time= 8:09:50	- LVO/All Weather Operation - Adverse Weather (Winter) - TCAS - Instrument System
PHASE-B JAN-MAR (EVEN YEAR) Est. Time = 6:47:07 + Extra Time	- Volcanic Ash - Bleed Air - NAT HLA - B-777 Differences - Air System - AOC/OPS Spec. - Ice & Rain Protection - Recent Bulletins - UPRT - GRF
REFRESHER SUMMER-1	
PHASE	CONTENTS
PHASE-A APR-JUN (ODD YEAR) Est. Time = 8:44:48	- Aircraft General - Landing Gear System - Oxygen - Hydraulics - LVO/All Weather Operation - Adverse Weather (Hot) - TCAS
PHASE-B JUL-SEP (ODD YEAR) Est. Time = 6:24:44 + Extra Time	- ETOPS - GRF - B-777 DIFFERENCES - AOC/OPS SPEC. - Recent Bulletins - Aircraft Performance - Crew Incapacitation - UPRT

REFRESHER WINTER -2	
PHASE	CONTENTS
PHASE-A OCT-DEC (EVEN YEAR) Est. Time = 7:54:50	- LVO/All Weather Operation - Adverse Weather (Winter) - TCAS - FMS
PHASE-B JAN-MAR (ODD YEAR) Est. Time = 7:52:22 + Extra Time	- Volcanic Ash - NAT HLA - B-777 Differences - AOC/OPS Spec. - Recent Bulletins - Auto Flight System - Communication System - UPRT - GRF
REFRESHER SUMMER -2	
PHASE	CONTENTS
PHASE-A APR-JUN (EVEN YEAR) Est. Time = 7:22:18	- Fire Detection & Protection - Fuel System - APU - Power Plant - LVO/All Weather Operation - Adverse Weather (Hot) - TCAS
PHASE-B JUL-SEP (EVEN YEAR) Est. Time = 6:24:44 + Extra Time	- ETOPS - GRF - B-777 DIFFERENCES - AOC/OPS Spec. - Recent Bulletins - Airplane Type Performance - Crew Incapacitation - UPRT

18.4 RECURRENT SIMULATOR TRAINING

18.4.1 JAN-JUNE ODD

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (January to June - odd)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G		THRUST REDUCTION	1000 FT
TOTAL FUEL	71300 KGS	TAKEOFF FLAPS	15	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	265900 KGS	CRUISE ALTITUDE	FL340	TAKEOFF THRUST	ASSUMED TEMP ____°C
RESERVE FUEL	8100 KGS	COST INDEX	180	MEL "B" SNAG	TAC U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPLA	RUNWAY IN USE 36R		BRAKING ACTION GOOD	
WEATHER: Instructor's discretion					
ATC: OPLA ZARAZA ZARAF DCT JHANG A488 SITAX M875 AMDAR A486 TMD A86 ODIVA B824 URL G3 ARISA M185 IN L109 OFCKA M809 LEP M804 KOLJA M811 DEGUL UN872 PAM UL980 XAMAN L980 LOGAN LOGA1H EGLL					
DESTINATION AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 27L/R		BRAKING ACTION MEDIUM	
WEATHER: Instructor's discretion					
ALTERNATE AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: EGLL BPKSK BPK L10 BUZAD T420 WELIN N57 TNT DAYN2A EGCC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome.					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level-off altitude, in order to reduce frequency of unnecessary TCAS „RA“ activation.					
Instructor and trainee are requested to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREAS	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

FLIGHT OPERATIONS TRAINING DIVISION		RECURRENT TRAINING (January to June - odd)		DAY- 1 (Training Session)	
DISCUSSION ITEMS			GRADE		REFERENCE
			PF	PNF	
1. WIND SHEAR / CB / SEVERE TURB.					FCTM
2. STALL AND RECOVERY					FCTM
3. STEP CLIMB					FCTM
4. FUEL JETTISON					FCTM/QRH
5. TECHNICAL BULLETINS/MEL-DDPG					FCOM
6. NOISE ABATEMENT PROCEDURE					JEPPESEN
SESSION DETAIL					
1. PREFLIGHT AND FMS INITIALIZATION					FCOM, NP
2. ENG START MALFUNCTIONS (M1)					QRH, FCOM
3. TAXI OUT - MAIN GEAR STEERING FAULT					FCTM (REF MEL)
4. T/O, CLIMB, LVL OFF/GPWS (M2)					FCOM NP, FCTM
5. TCAS EVENT (M)					FCTM
6. ELEC GEN DRIVE (L/R)					FCTM, QRH
7. CABIN ALT AUTO (DURING CLIMB MAN CONT)					QRH
8. CABIN ALTITUDE (RAPID DESCENT) (M1)					QRH
9. DIVERT TO UTST/UTTT NPA (M)					FCTM
10. G/A FROM MDA(H)/ ENG FAIL (M)					FCTM, FCOM
11. ILS APP 25 CAT-1, LANDING					FCOM, FCTM
12. T/O ENGINE FIRE (UN-EXTINGUISHABLE)					QRH, FCTM
13. VISUAL CIRCUIT LANDING					FCOM, NP, FCTM
14. PAX EVACUATION (M1)					QRH, FCTM
INSTRUCTOR DISCRETION					
1.					
2.					
3.					
R.H.S TRAINING FOR CAPTAINS					
1. TAKEOFF ENGINE FAILURE AT V1					FCTM
2. SINGLE ENGINE ILS APPROACH					FCTM
3. SINGLE ENGINE GO-AROUND FROM DA (H)					FCTM
4. SINGLE ENGINE ILS APPROACH & LANDING					FCTM
5. PAX EVACUATION					FCTM
RESOURCE MANAGEMENT (M)					
1. THREAT & ERROR MANAGEMENT (TEM)					OM
2. CREW COMMUNICATION					OM
a. BETWEEN COCKPIT & CABIN/GROUND					OM
b. DURING NORMAL PROCEDURES					OM
c. DURING NON-NORMAL PROCEDURES					OM
d. USE OF STANDARD TERMINOLOGY					OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capt's) / (Jul-Dec – FOs)			

PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (January to June - odd)		DAY-2 (Evaluation/Check Session)	
NAME:		P.NO		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G		THRUST REDUCTION	FLAPS 5/ 1000ft
TOTAL FUEL	59500 KGS	TAKEOFF FLAPS	15	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	253700 KGS	CRUISE ALTITUDE	FL350	TAKEOFF THRUST	ASSUME TEMP ____°C
RESERVE FUEL	8600 KGS	COST INDEX	180	MEL "B" SNAG	ENG AUTOSTART US
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 27L/R		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC:EGLL BPK7F BPK Q295 BRAIN M197 REDFA UL620 TULIP UY12 SPY UN873 JUIST UP729 DOSUR P729 TALSA P730 CDA M611 KOLJA M864 TU L169 IN M166 FE T568 OLUPI T573 PENIR T531 GUTAN A368 URL B824 ODIVA A66 TMD A466 AMDAR M875 TAPIS L509 INDEK J121 MENEL MENE1C OPLA					
DESTINATION AIRPORT	ICAO CODE OPLA	RUNWAY IN USE 36R		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPMT	RUNWAY IN USE 36		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPLA LEMO4B LEMOM J166 MOLTA J138 MT DCT OPMT					
SESSION OBJECTIVE					
1. To demonstrate required level of proficiency while performing selected normal and non-normal procedure in sim. The sequence and maneuvers/exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction;; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome (CRM concepts).					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainee are requested to carry updated iPads					
OVERALL STANDARD ☐ HIGH ☐ AVERAGE ☐ MARGINAL ☐ REMEDIAL REQUIRED					
COMMENTS:					
RAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (January to June - odd)	DAY-2 (Evaluation/Check Session)		
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
			PF	PNF	
1.	LOW VISIBILITY PROCEDURE				FCTM
2.	CARGO FIRE				FCTM
3.	FIRE WHEEL WELL				FCTM/FCOM
4.	GPWS (CFIT)				FCTM/FCOM
5.	DRIFT DOWN PROCEDURE				FCTM
6.	VOLCANIC ASH				QRH/FCTM
7.	MOST FREQUENT FDM EVENTS				FDM DATA
SESSION DETAIL					
1.	PREFLIGHT AND FMS INITIALIZATION				FCOM, NP
2.	START MALFUNCTIONS (M1)				FCTM, QRH
3.	REJECTED T/O < V1 ENG FAIL/ FIRE (M)				FCTM
4.	TAKE OFF QUICK LEVEL OFF, THEN GPWS EVENT (M2)				FCTM, QRH
5.	TCAS, JET UPSET RECOVERY (M)				FCOM, FCTM, QRH
6.	STALL & RECOVERY (CLEAN/T-OFF/LDG) (M1)				FCTM, QRH
7.	PACK OVERHEAT, SLOW DECOMPRESSION, EMERGENCY DESCENT (M1)				FCTM, QRH
8.	FMC WORK DIVERT TO EGCC				FCTM
9.	NPA, GO-AROUND				FCTM
10.	ENG. STALL/OVER LIMIT VISUAL CIRCUIT TO LAND				FCOM, QRH, FCTM
11.	T/O WINDSHEAR, (AVOIDANCE RECOVERY) (M2)				FCTM
12.	ENG. FIRE ILS APP, LANDING				FCTM, QRH
13.	PAX EVACUATION (M1)				FCOM, QRH
14.	MANUAL FLIGHT				FCTM
15.	DISCONTINUED APPROACH MANEUVER				CPCT CIRCULAR
LOW VISIBILITY PROCEDURE CAT-II / IIIa/b					
1.	TAKEOFF RVR 125/150 M				FCTM
2.	REJECTED TAKEOFF < 80 KTS/V (M)				FCTM
3.	TAKEOFF, CAT-II / IIIa/b APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL				FCTM
4.	CAT-II / IIIa/b APPROACHES FAILURES NECESSITATING GO AROUND				FCTM
5.	CAPTAIN INCAPACITATION (FOR FO ONLY) (M1)				FCTM
6.	CAT-II / IIIa/b APPROACHES WITH AUTO LAND				FCTM
RESOURCE MANAGEMENT (M)					
1.	CREW COORDINATION				OM
2.	FLIGHT DECK MANAGEMENT				OM
3.	PROCEDURAL EXECUTION & ADHERENCE				OM
4.	DECISION MAKING / PROBLEM RESOLVING				OM
5.	AIRMANSHIP				OM
6.	SITUATIONAL AWARENESS				OM
7.	AIRCRAFT TECHNICAL KNOWLEDGE				OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capt's) (Jul-Dec – FOs)			

18.4.2 JULY-DEC ODD

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (July to December - Odd)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G	---	THRUST REDUCTION	1000 FT
TOTAL FUEL	20700 KGS	TAKEOFF FLAPS	05	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	215300 KGS	CRUISE ALTITUDE	FL390	TAKEOFF THRUST TO2	ASSUMED TEMP ____ °C
RESERVE FUEL	8600 KGS	COST INDEX	180	MEL "B" SNAG	ENG AUTOSTART U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPKC BADU1D BADUL J112 LEMOM LEMO2A OPLA					
DESTINATION AIRPORT	ICAO CODE OPLA	RUNWAY IN USE 36R		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
ATC: OPLA LEMO4B LEMOM J112 NH NH2A OPKC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis.					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome .					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS „RA“ activation.					
Instructor and trainees are requested to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD		☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (July to December - Odd)		DAY- 1 (Training Session)	
DISCUSSION ITEMS			GRADE		REFERENCE
			PF	PNF	
1. START ABORT					QRH
2. MANUAL START/AUTO START					FCTM
3. REJECTED TAKEOFF					FCTM
4. GPWS					FCTM
5. RAPID DESCENT					FCTM
6. WINDSHEAR /CB/SEVER TURB					FCTM
SESSION DETAIL					
1. PREFLIGHT AND FMS INITIALIZATION					FCOM NP
2. START MALFUNCTIONS (M1)					QRH, FCOM SP
3. TAXI OUT - MAIN GEAR STEERING (UNLOCK)					FCTM (REF MEL)
4. RTO (LOW/HIGH SPEED) (M)					FCTM
5. GPWS EVENT (M2)					FCOM, FCTM
6. CLIMB – GEN R/L FAIL (Recover)					QRH
7. TCAS EVENT (M)					FCOM, FCTM
8. CLIMB – FWD OUT FLOW VALVE MANUAL					QRH, FCOM
9. ENGINE FAIL DRIFT DOWN PROCEDURE					FCOM
10. SINGLE ENGINE NPA G/A FROM MDA/DA (H) (M)					FCOM
11. SE ILS APPROACH (LANDING) (M)					FCOM/FCTM
12. VISUAL CIRCUIT TO LAND					FCOM, FCTM
INSTRUCTOR DISCRETION					
1.					
2.					
3.					
R.H.S TRAINING FOR CAPTAINS					
1. TAKEOFF ENGINE FAILURE AT V1					FCTM
2. SINGLE ENGINE ILS APPROACH					FCTM
3. SINGLE ENGINE GO-AROUND FROM DA (H)					FCTM
4. SINGLE ENGINE ILS APPROACH & LANDING					FCTM
5. PAX EVACUATION					FCTM
RESOURCE MANAGEMENT (M)					
CREW COMMUNICATION					OM
a. BETWEEN COCKPIT & CABIN					OM
b. DURING NORMAL PROCEDURES					OM
c. DURING NON-NORMAL PROCEDURES					OM
d. USE OF STANDARD TERMINOLOGY					OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capts)/ (Jul-Dec – FOs)			

PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (July to December - Odd)		DAY-2 (Evaluation/Check Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G		THRUST REDUCTION	1000 FT
TOTAL FUEL	19400 KGS	TAKEOFF FLAPS	05	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	214000 KGS	CRUISE ALTITUDE	FL380	TAKEOFF THRUST TO2	ASSUMED TEMP ____ °C
RESERVE FUEL	7600 KGS	COST INDEX	180	MEL "B" SNAG	APU BLEED U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE OPLA	RUNWAY IN USE 36R		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: OPLA LEMO4A LEMOM J112 NH NH2A OPKC					
DESTINATION AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE OPLA	RUNWAY IN USE 36R		BRAKING ACTION GOOD	
ATC: OPKC BADU3A BADUL J112 LEMOM LEMO2A OPLA					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome .					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are requested to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD ☐ HIGH ☐ AVERAGE ☐ MARGINAL ☐ REMEDIAL REQUIRED					
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (July to December – Odd)		DAY- 2 (Evaluation/Check Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS		GRADE		REFERENCE	
		PF	PNF		
1.	LOW VIS PROCEDURE			FCTM	
2.	STARTER SHAFT FAILURE			FCOM	
3.	CABIN ALTITUDE			FCTM	
4.	ENGINE FAIL <VI REJECTED T/O			FCTM	
5.	TCAS			FCTM	
6.	CAT-II/CAT-IIIa/b APP			FCTM	
7.	AUTO BRAKES/USAGE			FCTM	
8.	MOST FREQUENT FDM EVENTS			FDM DATA	
SESSION DETAIL					
1.	PREFLIGHT AND FMS INITIALIZATION			FCOM NP,	
2.	START MALFUNCTIONS (M1)			FCOM, SP, MEL	
3.	TAXI OUT – PF CDU U/S (LOW VIS TAXI)			FCTM	
4.	T/O ENG FAIL <V1 (REJECTED T/O) (M)			FCTM	
5.	T/O QUICK LEVEL OFF/GPWS EVENT (M2)			FCTM, QRH	
6.	TCAS EVENT/JET UPSET RECOVERY (M)			FCOM, FCTM, QRH	
7.	STALL RECOVERY (CLEAN/T-OFF/LDG) (M1)			FCTM, QRH	
8.	CLIMB – FL380 – SLOW DECOMPRESSION			FCTM, QRH	
9.	RAPID DESCENT TO FL 100			FCTM, QRH	
10.	FL100 HYD PRESS R+C			FCOM, QRH	
11.	ILS APPROACH 36R LANDING (M)			FCTM, FCOM	
12.	T/O ENG FIRE/ SINGLE ENGINE ILS36R - G/A (M)			FCTM, QRH.	
13.	NPA 36R (M)			FCTM	
14.	REPOSITION FOR LDG WINDSHEAR AVOIDANCE & RECOVERY (M2)			FCTM, QRH	
15.	MANUAL FLIGHT			FCTM	
16.	DISCONTINUED APPROACH MANEUVER			CPCT CIRCULAR	
LOW VISIBILITY PROCEDURE / CAT-II/IIIa/b					
1.	TAKEOFF RVR 125/150 M			FCTM	
2.	REJECTED TAKEOFF <80 KTS/V1			FCTM	
3.	TAKEOFF, CAT-II / IIIa/b APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL			FCTM	
4.	CAT-II / IIIa/b APPROACHES FAILURES NECESSITATING GO AROUND			FCTM	
5.	CAPTAIN INCAPACITATION			FCTM	
6.	CAT-II / IIIa/b APPROACHES WITH AUTO LAND			FCTM	
RESOURCE MANAGEMENT (M)					
CREW COMMUNICATION				OM	
a. BETWEEN COCKPIT & CABIN				OM	
b. DURING NORMAL PROCEDURES				OM	
c. DURING NON-NORMAL PROCEDURES				OM	
d. USE OF STANDARD TERMINOLOGY				OM	
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Cpts)/ (Jul-Dec – FOs)			

18.4.3 JAN-JUNE EVEN

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (Jan to June - Even)		DAY- 1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G		THRUST REDUCTION	1000 FT
TOTAL FUEL	16900 KGS	TAKEOFF FLAPS	15	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	211100 KGS	CRUISE ALTITUDE	FL310	TAKEOFF THRUST TO2	ASSUME TEMP ____°C
RESERVE FUEL	9000 KGS	COST INDEX	180	MEL "B" SNAG	ENG START VALVE INOP
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 05L		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: EGCC DESI1S DESIG L603 LAMSO LAMS2A EHAM					
DESTINATION AIRPORT	ICAO CODE EHAM	RUNWAY IN USE 18L/C		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: EHAM KUDA1S WOODY N872 NIK UY131 MPOIL MOP18W LFPG					
ALTERNATE AIRPORT	ICAO CODE LFPG	RUNWAY IN USE 08L/R		BRAKING ACTION GOOD	
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome.					
6. The sequence of Non-normal procedures/TOWG for subsequent Take-offs will be at the discretion of the Check Pilot.					
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS „RA“ activation.					
Instructor and trainees are requested to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED	
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR		LIC. NO

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (Jan to June - Even)		DAY- 1 (Training Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS		GRADE		REFERENCE	
		PF	PNF		
1. HUNG START				QRH	
2. NOSE WHEEL STEERING FAILURE				FCTM	
3. REJECTED TAKEOFF (contaminated runway)				FCTM	
4. CABIN ALTITUDE – AUTO/MANUAL CONTROL				FCTM/QRH	
5. WINDSHEAR/CB/SEVERE TURBULENCE				FCTM	
6. TAKEOFF ENG STALL				FCTM/QRH	
7. EVACUATION				FCTM/QRH	
SESSION DETAIL					
1. PREFLIGHT AND FMS INITIALIZATION				FCOM, FCTM	
2. ABORTED ENGINE START/HUNG START (M1)				QRH, FCOM, MEL/DDPG	
3. TAXI – BRAKE SOURCE (RESTORE)				FCTM, FCOM	
4. RTO (HIGH/LOW SPEED) (M)				FCTM	
5. TAKE-OFF – TCAS EVENT (M)				FCOM, FCTM	
6. CLIMB FL310, JET UPSET (M)				FCOM, FCTM	
7. DUAL ENGINE FAILURE (ONE RESTORE)				QRH, FCTM,	
8. NPA TO MDA/DA (H) GO-AROUND (M)				QRH, FCOM	
9. SE ILS APPROACH (LDG) (M)				FCTM, FCOM	
10. T/O PRI-FLT COMPUTER (RESET)				FCTM, QRH	
11. NOSE GEAR COLLAPSE				FCTM, QRH	
12. PAX EVACUATION (M1)				FCTM, QRH	
INSTRUCTOR DISCRETION					
1.					
2.					
3.					
R.H.S TRAINING FOR CAPTAINS					
1. TAKEOFF ENGINE FAILURE AT V1				FCTM	
2. SINGLE ENGINE ILS APPROACH				FCTM	
3. SINGLE ENGINE GO-AROUND FROM DA (H)				FCTM	
4. SINGLE ENGINE ILS APPROACH & LANDING				FCTM	
5. PAX. EVACUATION				FCTM	
RESOURCE MANAGEMENT					
1. THREAT & ERROR MANAGEMENT (TEM)				OM	
2. CREW COMMUNICATION				OM	
a. BETWEEN COCKPIT & CABIN				OM	
b. DURING NORMAL PROCEDURES				OM	
c. DURING NON-NORMAL PROCEDURES				OM	
d. USE OF STANDARD PHRASEOLOGY				OM	
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capts)/ (Jul-Dec – FOs)			

PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (Jan to June - Even)		DAY-2 (Evaluation/Check Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS	TIME PF	TIME PNF	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G	---	THRUST REDUCTION	1000 FT
TOTAL FUEL	17400 KGS	TAKEOFF FLAPS	05	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	212100 KGS	CRUISE ALTITUDE	FL300	TAKEOFF THRUST TQ2	ASSUME TEMP ____ °C
RESERVE FUEL	7900 KGS	COST INDEX	180	MEL "B" SNAG	APU U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE EHAM	RUNWAY IN USE 18L/C	BRAKING ACTION GOOD		
WEATHER: INSTRUCTOR'S DISCRETION					
ATC DEPARTURE: EHAM BERG3E BERGI UL602 MIMVA L602 NALAX L46 LIBSO ROSU1G EGCC					
DESTINATION AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R	BRAKING ACTION GOOD		
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: EGCC LIST2S LISTO UL612 HON BNN4A EGLL					
ALTERNATE AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 27L/R	BRAKING ACTION GOOD		
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome.					
6. The sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are requested to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD		☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (Jan to June - Even)		DAY- 2 (Evaluation/Check Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
			PF	PNF	
1. LOW VISIBILITY PROCEDURES/CAT-II / IIIa/b					QRH
2. ENG START – STARTER VALVE DOES NOT OPEN					FCTM
3. WINDSHEAR					FCTM
4. CARGO SMOKE					FCTM/QRH
5. TAKE OFF TAIL STRIKE					QRH, FCTM
7. MOST FREQUENT FDM EVENTS					FDM DATA
SESSION DETAIL					
1. PREFLIGHT AND FMS INITIALIZATION					FCOM , FCTM
2. START MALFUNCTION – STARTER VALVE DOES NOT OPEN (M1)					FCOM, QRH,MEL/DDPG
3. TAXI – LDG GEAR FAULT (RESTORE)					QRH
4. TAKEOFF ENG FAIL BEFORE V1 (REJECTED TAKEOFF) (M)					FCTM, QRH
5. TAKEOFF ENG FIRE AFTER V1 (M)					FCOM, FCTM
6. ILS G/A ILS CAT-I LAND (M)					FCOM, FCTM
7. REPOSITION LDG WINDSHEAR RECOVERY (M2)					FCTM, QRH
8. TAKEOFF – GPWS EVENT (M2)					FCTM, QRH
9. TCAS EVENT/JET UPSET (M)					FCTM, QRH
10.STALL RECOVERY (CLEAN/T-OFF/LDG) (M1)					FCTM, QRH
11. FL 100 CARGO SMOKE (LANDING)					FCTM, QRH
12. PAX EVACUATION (M1)					FCTM, QRH
13. MANUAL FLIGHT					FCTM
15. DISCONTINUED APPROACH MANEUVER					CPCT CIRCULAR
LOW VISIBILITY PROCEDURE CAT-II / IIIa/b					
1. TAKEOFF RVR 125/150 M					FCTM
2. REJECTED TAKEOFF <80 KTS/V1					FCTM
3. TAKEOFF, CAT-II / IIIa/b APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL					FCTM
4. CAT-II/IIIa/b APPROACHES FAILURES NECESSITATING GO AROUND					FCTM
5. CAPTAIN INCAPACITATION (M1)					FCTM
6. CAT-II / IIIa/b APPROACHES WITH AUTO LAND					FCTM
RESOURCE MANAGEMENT					
1. THREAT & ERROR MANAGEMENT (TEM)					OM
2. CREW COMMUNICATION					OM
a. BETWEEN COCKPIT & CABIN					OM
b. DURING NORMAL PROCEDURES					OM
c. DURING NON-NORMAL PROCEDURES					OM
d. USE OF STANDARD PHRASEOLOGY					OM
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capts)/ (Jul-Dec – FOs)			

18.4.4 JULY-DEC EVEN

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (JUL to DEC - Even)		DAY-1 (Training Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G		THRUST REDUCTION	1000 FT
TOTAL FUEL	20300 KGS	TAKEOFF FLAPS	15	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	214900 KGS	CRUISE ALTITUDE	FL320	TAKEOFF THRUST TQ2	ASSUME TEMP ____°C
RESERVE FUEL	10900 KGS	COST INDEX	180	MEL "B" SNAG	TAC US
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE LMC	RUNWAY IN USE 35L/R		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: LMC AOS6L AOSTA UM729 MOLUS DCT UNKIR UM962 TINIL TINI8W LFPG					
DESTINATION AIRPORT	ICAO CODE LFPG	RUNWAY IN USE 26L/R		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE LMC	RUNWAY IN USE 35L/R		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: LFPG OKAS2B OKASI UL612 MILPA UM135 TOP TOP1R LMC					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome (CRM concepts).					
6. The sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
7. Aircraft type / variant qualification /Operations Requirements/Specifications					
8. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS „RA“ activation.					
Instructor and trainees are requested to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA		BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD		☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:					
TRAINEE'S SIGNATURE		NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	
				LIC. NO	

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (JUL to DEC - Even)		DAY- 1 (Training Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS		GRADE		REFERENCE	
		PF	PNF		
1.	NEW DEVELOPMENT IN FLIGHT PLNG & NAV			FCTM	
2.	T/O PERFORMANCE WET/CONTAMINATED RWY			FCTM/FPPM/OM	
3.	TAKEOFF DIFFERENT FLAP SELECTIONS			FCTM	
4.	VOLCANIC ASH			QRH/FCTM	
5.	DUAL ENGINE FAILURE			FCTM/QRH	
6.	FUEL JETTISON			FCTM/QRH	
SESSION DETAIL					
1.	PREFLIGHT AND FMS INITIALIZATION (M1)			FCOM NP	
2.	ENG START MALFUNCTIONS			QRH, FCOM SP	
3.	TAXI OUT – BRAKE PROBLEMS			FCTM (REF MEL)	
4.	T/ OFF – RTO (HIGH/LOW SPEED) (M)			FCTM	
5.	TCAS EVENT (M)			FCTM	
6.	DUAL ENGINE FAILURE (ONE ENG. RESTORE)			FCTM,QRH	
7.	FMC WORK DIVERT TO LIMC			QRH	
8.	NPA TO MDA/DA(H) GO-AROUND (M)			FCOM	
9.	SE ILS LANDING (M)			FCTM	
10.	T/O WINDSHEAR (Avoidance & recovery) (M2)			FCOM SP, FCTM	
11.	REPOSITION ON FINAL-WINDSHEAR ON APP. G/A (RESTORE) (M2)			FCTM, QRH	
12.	CARGO FIRE UNCONTROLLABLE (LAND BACK)			FCTM, QRH	
13.	PAX EVACUATION (M1)			QRH	
14.	T/O PILOT INCAPACITATION LANDING (F/O ONLY) (M1)			FCTM	
INSTRUCTOR DISCRETION					
1.					
2.					
3.					
R.H.S TRAINING FOR CAPTAINS					
1.	TAKEOFF ENGINE FAILURE AT V1			FCTM	
2.	SINGLE ENGINE ILS APPROACH			FCTM	
3.	SINGLE ENGINE GO-AROUND FROM DA (H)			FCTM	
4.	SINGLE ENGINE ILS APPROACH & LANDING			FCTM	
5.	PAX EVACUATION			FCTM	
RESOURCE MANAGEMENT (M)					
1.	THREAT & ERROR MANAGEMENT (TEM)			OM	
2.	IMPORTANCE OF FLYING DOCUMENTS			SAFETY BULLETINS	
3.	FLIGHT DECK MANAGEMENT			OM	
4.	DECISION MAKING / PROBLEM RESOLVING			OM	
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – CAPTs)/ (Jul-Dec – FOs)			

PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (JUL to DEC - Even)		DAY- 2 (Evaluation/Check Session)	
NAME:		P.NO:		CREW POSITION ☐ CAPT ☐ F/O ☐ I.P	
DATE	LOCATION	TOTAL SESSION TIME 04:00 HOURS		TIME PF	TIME PNF
AIRCRAFT DATA					
ZERO FUEL WT	195000 KGS	C.G	---	THRUST REDUCTION	1000R
TOTAL FUEL	24400 KGS	TAKEOFF FLAPS	15	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	219000 KGS	CRUISE ALTITUDE	FL330	TAKEOFF THRUST TQ2	ASSUME TEMP ____°C
RESERVE FUEL	13600 KGS	COST INDEX	180	MEL "B" SNAG	ENG AUTOSTART U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE LFPG	RUNWAY IN USE 26L/R		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: LFPG ERIX2E ERIXU UN860 ETAMO UN855 PPG UP84 ALBER ALBE 1W LEBL					
DESTINATION AIRPORT	ICAO CODE LEBL	RUNWAY IN USE 25L/R		BRAKING ACTION GOOD	
WEATHER: INSTRUCTOR'S DISCRETION					
ALTERNATE AIRPORT	ICAO CODE LFPG	RUNWAY IN USE 26L/R		BRAKING ACTION MEDIUM	
WEATHER: INSTRUCTOR'S DISCRETION					
ATC: LEBL OKAB2P OKABI UN861 FISTO UY156 FOUCCO UT181 POI UT182 ROMGO ROMG7P					
SESSION OBJECTIVE					
1. To demonstrate required level of proficiency while performing selected normal and non-normal procedure in simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome (CRM concepts).					
6. The sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainees are requested to carry updated iPads					
SESSION EVALUATION					
EVALUATION AREA	BELOW	MARGINAL	AVERAGE	HIGH	
PROCEDURES & SYSTEM KNOWLEDGE					
FLYING SKILL					
CREW RESOURCE MANAGEMENT					
OVERALL STANDARD ☐ HIGH ☐ AVERAGE ☐ MARGINAL ☐ REMEDIAL REQUIRED					
COMMENTS:					
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR		LIC. NO

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PIA FLIGHT OPERATIONS TRAINING DIVISION		B-777 RECURRENT TRAINING (JUL to DEC - Even)		DAY- 2 (Evaluation/Check Session)	
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					
DISCUSSION ITEMS			GRADE		REFERENCE
			PF	PNF	
1. BOMB THREAT					OM
2. TAXI OUT - ADVERSE WEATHER CONDITION					FCTM/FCOM
3. ENGINE SEPARATION AFTER TAKEOFF					FCTM/FCOM
4. AIRCRAFT TECHNICAL KNOWLEDGE					FCTM/FCOM
5. HIGH ALTITUDE UPSET RECOVERY					FCTM/FCOM
6. MOST FREQUENT FDM EVENTS					FDM DATA
SESSION DETAIL					
1. PREFLIGHT AND FMS INITIALIZATION					FCOM NP, FCTM
2. ENG START MALFUNCTION(S) (M1)					FCOM, SP
3. TAXI - ADVERSE WEATHER A/I PROCEDURE					FCTM, FCOM
4. REJECTED T/O < V1 (ENG FAIL/ FIRE) (M)					FCTM, FCOM
5. TAKE OFF / GPWS EVENT (M2)					FCTM
6. TCAS EVENT/ JET UPSET (M)					FCTM, QRH
7. CABIN ALTITUDE (EMERGENCY DESCENT) (M1)					FCTM, QRH
8. FMC WORK DIVERT TO LFPG					FCOM
9. HYD PRESS R+C					FCTM, QRH
10. NPA LANDING (M)					FCOM, FCTM
11. T/O ENGINE FIRE AT V1 (M)					FCTM, QRH
12. SE ILS GO AROUND (M)					FCOM, FCTM
13. ILS APP, CAT-I, LANDING (M)					FCTM, FCOM
14. REPOSITION FOR LDG WINDSHEAR AVOIDANCE & RECOVERY (M2)					FCTM, QRH
15. MANUAL FLIGHT					FCTM
16. DISCONTINUED APPROACH MANEUVER					CPCT CIRCULAR
LOW VISIBILITY PROCEDURE CAT-II/ IIIa/b					
1. TAKEOFF RVR 125/150 M					FCTM
2. REJECTED TAKEOFF <80 KTS/V1					FCTM
3. TAKEOFF - CAT-II / IIIa/b APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL					FCTM
4. CAT-II / IIIa/b APPROACHES FAILURES NECESSITATING GO AROUND					FCTM
5. CAPTAIN INCAPACITATION					FCTM
6. CAT-II / IIIa/b APPROACHES WITH AUTO LAND					FCTM
RESOURCE MANAGEMENT (M)					
1. CREW COORDINATION					OM
2. FLIGHT DECK MANAGEMENT					OM
3. PROCEDURAL EXECUTION & ADHERENCE					OM
6. DECISION MAKING / PROBLEM RESOLVING					OM
5. AIRMANSHIP					OM
6. JEPPESEN KNOWLEDGE					JEP
LEGEND					
M: Mandatory Item	M1: Once a Year Mandatory Item	M2: Cyclic Mandatory Item Conditional (Jan-Jun – Capts)/ (Jul-Dec – FOs)			

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18.5 SEAT CONVERSION

18.5.1 SEAT CONVERSION SIMULATOR TRAINING

NAME OF TRAINEE:		P.NO:		LOCATION	
		LIC TYPE & #		TOTAL SESSION TIME	04 HOURS
NAME OF PNF/PM:		P.NO:		TIME PF	
		LIC TYPE & #		TIME PNF	

AIRCRAFT DATA					
ZERO FUEL WT	210000 KGS	C.G	26%	THRUST REDUCTION	1000 FT
TOTAL FUEL	72000 KGS	TAKEOFF FLAPS	15	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	282000 KGS	CRUISE ALTITUDE	FL320	TAKEOFF THRUST	ASSUMED TEMP 45°C
RESERVE FUEL	10000 KGS	COST INDEX	180	MEL "B" SNAG	TAC U/S

SESSION DATA AND WEATHER			
DEPARTURE AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L	BRAKING ACTION GOOD
WEATHER: VIS 6000 M TEMP 20°C D.P 10°C WIND 330/10 QNH 1010 mb DEPARTURE RWY25L ATC: MELO3A MELOM G208 PG L124 KEBUD UL124 PEKES T215 ANK UL125 RADAL T210 RUS R661 ZAJ UL125 TBZ UR660 ERZ UW704 CRM UL746 ODERO L621 REVDA P193 CND M747 BALBI L746 EVRIK L850 BUDOP NORAH PATAK LALES L602 VARIK UL602 RKN UM20 GORLO UL980 LOGAN LAM3A EGLL			
DESTINATION AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 27R	BRAKING ACTION MEDIUM
WEATHER: 800 OVERCAST LIGHT RAIN VIS 5KM TEMP 05°C D.P 04°C WIND 250/7 QNH 1009 mb ARRIVAL RW27R ATC: LAM3A RWY 27R			
ALTERNATE AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R	BRAKING ACTION GOOD
WEATHER: 800 OVERCAST VIS 4000 M, TEMP 10°C D.P 08°C WIND 330/10 QNH 1010 mb ARRIVAL RWY 23R VOR APPROACH ATC: INTERCEPT AIRWAY UY70➔GOLES, ROSUN 1F ARR, DCT MCT VOR AND HOLD, FOR VOR APP 23R			

SESSION OBJECTIVE
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis
3. Simulator system faults will be removed after full stop landing.
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.
5. Command qualities and crew co-ordination are part of the desired learning outcome.
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.
Instructor and trainee are requested to carry updated iPads
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME.

Day 1 Cont'd on page 2

PCAA Approval No. HQCAA/1076/038/FSAC/2536, dated 15th October, 2018
 Page 2 of 10 – FF51 (Day 1) of B-777 Conversion Simulator Training Syllabus from P1 to P2

DISCUSSION ITEMS	GRADE		REFERENCE	
	PF	PNF		
1. WIND SHEAR / CB / SEVERE TURB.			FCTM	
2. STALL AND RECOVERY			FCTM	
3. RECALL ITEMS			FCTM	
4. STEP CLIMB			FCTM	
5. FUEL JETTISON			FCTM/QRH	
6. TECHNICAL BULLETINS			FCOM	
SESSION DETAIL				
1. PREFLIGHT AND FMS INITIALIZATION			FCOM NP	
2. ENG START MALFUNCTIONS			QRH, FCOM	
3. TAXI OUT - MAIN GEAR STEERING FAULT			FCTM (REF MEL)	
4. T/O, CLIMB, L-NAV, V-NAV FLCH, V/S			FCOM NP, FCTM	
5. ELEC GEN DRIVE (L)			QRH	
6. TCAS EVENT			FCTM, QRH	
7. CABIN ALT AUTO (DURING CLIMB MAN CONT)			QRH	
8. CABIN ALTITUDE (RAPID DESCENT)			QRH	
9. ENGINE FAILURE DURING RAPID DESCENT			FCTM	
10. ENGINE IN-FLIGHT START			FCTM	
11. DIVERT BACK TO OPKC			FCTM, FCOM	
11. VOR APP RWY 25L			FCOM SP, NP, FCTM	
12. T/O ENGINE STALL/ FAILURE (TAC-OFF)			QRH, FCTM	
13. ILS APP 25L CAT-1, G/A FROM DA(H)			FCOM NP, FCTM	
14. RAW DATA VISUAL CIRCUIT			FCTM, QRH	
15. APU FIRE			QRH	
16. PAX EVACUATION			FCTM	
INSTRUCTOR'S DISCRETION				
1.				
2.				
3.				
RESOURCE MANAGEMENT				
1. THREAT & ERROR MANAGEMENT (TEM)			OM	
2. AIRCRAFT TECHNICAL KNOWLEDGE			OM	
3. CREW COMMUNICATION			OM	
a. BETWEEN COCKPIT & CABIN			OM	
b. DURING NORMAL PROCEDURES			OM	
c. DURING NON-NORMAL PROCEDURES			OM	
d. USE OF STANDARD TERMINOLOGY			OM	
SESSION EVALUATION				
EVALUATION AREAS	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CREW RESOURCE MANAGEMENT				
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:				
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	LIC. NO	
			Type of Instr.	

NAME OF TRAINEE:		P.NO:		LOCATION	
		LIC TYPE & #		TOTAL SESSION TIME	04 HOURS
NAME OF PNF/PM:		P.NO:		TIME PF	
		LIC TYPE & #		TIME PNF	
AIRCRAFT DATA					
ZERO FUEL WT	210000 KGS	C.G	26%	THRUST REDUCTION	FLAPS 5/ 1000ft
TOTAL FUEL	65000 KGS	TAKEOFF FLAPS	15	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	275000 KGS	CRUISE ALTITUDE	FL310	TAKEOFF THRUST	ASSUME TEMP 45°C
RESERVE FUEL	5400 KGS	COST INDEX	180	MEL "B" SNAG	ENG AUTOSTART U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R		BRAKING ACTION MEDIUM	
WEATHER: 1000' OVERCAST DRIZZLE VIS 1000 M TEMP 05°C D.P 04°C WIND 330/07 QNH 1013mb DEPARTURE RWY23R					
ATC: SONE1R SONEX UL975 DESIG UL603 BASNO UL620 BIRKA UZ21 OMELO L620 ROMIS PITOK BADOR L620 DINRO N743 UDROS UM859 KARDE UL851 TBN UP146 SIBVU UL125 ZAJ R661 RUS UT211 YZD UL124 KEBUD G208 PG G210 DOSTI DOST2A OPKC					
DESTINATION AIRPORT	ICAO CODE OPKC	RUNWAY IN USE 25L		BRAKING ACTION GOOD	
WEATHER: VIS 4000 M, TEMP 25°C D.P 20°C WIND 250/07 QNH 1009 (RAIN) ARRIVAL RWY25L ILS APPROACH					
ATC: DOST2A RWY 25L					
ALTERNATE AIRPORT	ICAO CODE OPNH	RUNWAY IN USE 20		BRAKING ACTION GOOD	
WEATHER: 800' OVERCAST VIS 4000 M, TEMP 15°C D.P 04°C WIND 330/07 QNH 1013 mb ARRIVAL RWY 20 VOR APPROACH					
ATC: J112 NH VOR RWY20					
SESSION OBJECTIVE					
1. To demonstrate required level of proficiency while performing selected normal and non-normal procedure in simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome (CRM concepts).					
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainee are requested to carry updated iPads					
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME.					

Page 4 of 10 – FF52 (Day 2) of B-777 Conversion Simulator Training Syllabus from P1 to P2

DISCUSSION ITEMS	GRADE		REFERENCE	
	PF	PNF		
1. LOW VISIBILITY PROCEDURE			FCTM	
2. CARGO FIRE			FCTM	
3. EFIS CONTROL PANEL			FCTM/FCOM	
4. FIRE WHEEL WELL			FCTM/FCOM	
5. GPWS (CFIT)			FCTM/FCOM	
6. DRIFT DOWN PROCEDURE			FCTM	
SESSION DETAIL				
1. PREFLIGHT AND FMS INITIALIZATION			FCOM NP	
2. START MALFUNCTIONS			FCTM, FCOM	
3. TAXI OUT – BRAKES/NOSE WHEEL FAILURE			FCTM	
4. REJECTED T/O < V1 ENG FAIL/ FIRE			FCTM	
5. TAKE OFF QUICK LEVEL OF, THEN GPWS EVENT			FCOM, FCTM	
6. ELECTRICAL PROBLEMS DURING CLIMB			FCTM, QRH	
7. PACK OVERHEAT			FCTM, QRH	
8. FMC WORK DIVERT TO EGCC			FCOM	
9. RNAV APP RWY 23 L LANDING			FCOM, QRH, FCTM	
10 T/O ENGINE FAILURE AT V1 (TAC-OFF)			FCTM, QRH	
11. S/E ILS APP 23R , (RADAR VECTOR), G/A			FCOM NP , FCTM	
12. ILS APP 23R CAT-I (RADAR VECTOR) LANDING			FCOM NP , FCTM	
13. WINDSHEAR (AVOIDANCE & RECOVERY) TAKEOFF / APPROACH			FCTM, QRH, FCOM	
14. LANDING (SHORT VECTOR/ VISUAL CIRCUIT)			FCTM	
INSTRUCTOR'S DISCRETION				
1.				
2.				
3.				
SESSION EVALUATION				
EVALUATION AREAS	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CREW RESOURCE MANAGEMENT				
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:				
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	LIC. NO	
			Type of Instr.	

NAME OF TRAINEE:		P.NO:		LOCATION	
		LIC TYPE & #		TOTAL SESSION TIME	04 HOURS
NAME OF PNF/PM:		P.NO:		TIME PF	
		LIC TYPE & #		TIME PNF	
AIRCRAFT DATA					
ZERO FUEL WT	190000 KGS	C.G	25%	THRUST REDUCTION	1000 FT
TOTAL FUEL	23000 KGS	TAKEOFF FLAPS	5	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	213000 KGS	CRUISE ALTITUDE	FL150	TAKEOFF THRUST TO2	ASSUME TEMP 45°C
RESERVE FUEL	10000 KGS	COST INDEX	180	MEL "B" SNAG	TAC U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R	BRAKING ACTION GOOD		
WEATHER: 400' OVERCAST VIS 1500 M TEMP 05°C D.P 01°C WIND 330/07 QNH 1013 mb DEPARTURE RWY23R					
ATC: LIST2R LISTO L612 HON BNN4A					
DESTINATION AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 27R	BRAKING ACTION MEDIUM		
WEATHER: 800' OVERCAST DZ VIS 2000 M TEMP 08°C D.P 06°C WIND 250/7 QNH 1009 mb (RAIN) ARRIVAL RWY 27R ILS APPROACH					
ATC: BNN4A RWY 27R					
ALTERNATE AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R	BRAKING ACTION GOOD		
WEATHER: 800' OVERCAST VIS 4000 M, TEMP 10°C D.P 05°C WIND 330/07 QNH 1013 mb ARRIVAL RWY 23R					
ATC: INTERCEPT AIRWAYS UY70 → GOLES, ROSUN 1F ARR, DIRECT MCT VOR AND HOLD, FOR VOR APP 23R					
SESSION OBJECTIVE					
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome (CRM concepts).					
6. The sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
7. Aircraft type / variant qualification /Operations Requirements/Specifications					
8. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.					
Instructor and trainee are requested to carry updated iPads					
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME					

DISCUSSION ITEMS	GRADE		REFERENCE	
	PF	PNF		
1. NEW DEVELOPMENT IN FLIGHT PLNG & NAV			FCTM	
2. T/O PERFORMANCE WET/CONTAMINATED RWY			FCTM/OM/FPPM	
3. TAKEOFF DIFFERENT FLAP SELECTIONS			FCTM	
4. DUAL ENGINE FAILURE			FCTM/QRH	
5. NOISE ABATEMENT			JEPPESEN MANUAL	
SESSION DETAIL				
1. PREFLIGHT AND FMS INITIALIZATION			FCOM NP	
2. ENG START MALFUNCTIONS			QRH, FCOM SP	
3. TAXI OUT - MALFUNCTIONS			FCTM (REF MEL)	
4. T/ OFF – QUICK LEVEL OFF			FCTM	
5. ELECTRICAL A/C BUS FAULT			FCOM, QRH	
6. TCAS EVENT			QRH	
7. STALL & RECOVERY (HIGH LEVEL & APP TO LDG)			FCOM, FCTM, QRH	
8. FMC WORK DIVERT TO MANCHESTER (EGCC)			QRH	
9. VOR APP RWY 23R WINDSHEAR ON APP. & GO-AROUND			FCOM	
10. CARGO FIRE UNCONTROLLABLE (LAND BACK)			FCTM, QRH	
11. T/O ENGINE FIRE AT V1 UN-CONTROLLABLE (CAPTAIN INCAPACITATED)			QRH	
12. ILS 23R LAND			FCOM, FCTM	
13. PAX EVACUATION			QRH	
INSTRUCTOR'S DISCRETION				
1.				
2.				
3.				
SESSION EVALUATION				
EVALUATION AREAS	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CREW RESOURCE MANAGEMENT				
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:				
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR		SIGNATURE OF INSTRUCTOR	LIC. NO
				Type of Instr.

NAME OF TRAINEE:		P.NO:		LOCATION	
		LIC TYPE & #		TOTAL SESSION TIME	04 HOURS
NAME OF PNF/PM:		P.NO:		TIME PF	
		LIC TYPE & #		TIME PNF	
AIRCRAFT DATA					
ZERO FUEL WT	190000 KGS	C.G	25%	THRUST REDUCTION	FLAPS 5/ 1000ft
TOTAL FUEL	20000 KGS	TAKEOFF FLAPS	5	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	210000 KGS	CRUISE ALTITUDE	FL120	TAKEOFF THRUST TO2	ASSUME TEMP 45°C
RESERVE FUEL	5400 KGS	COST INDEX	180	MEL "C" SNAG	ENG AUTOSTART U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 09L		BRAKING ACTION MEDIUM	
WEATHER: 1000' OVERCAST RAIN VIS 1000 M TEMP 01°C D.P 01°C WIND 150/07 QNH 1013 mb DEPARTURE RWY09L. RUNWAY CONDITION WET, BRAKING ACTION MEDIUM					
ATC: BUZA 3K BUZAD T420 TNT DAYN2A					
DESTINATION AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R		BRAKING ACTION GOOD	
WEATHER: 800' OVERCAST VIS 4000 M, TEMP 10°C D.P 08°C WIND 250/07 QNH 1009 mb ARRIVAL RWY 23R VOR APPROACH					
ATC: DAYN2A RWY 23R					
ALTERNATE AIRPORT	ICAO CODE EGBB	RUNWAY IN USE 33		BRAKING ACTION MEDIUM	
WEATHER: 800' OVERCAST L'DZ VIS 4000 M, TEMP 01°C D.P 10°C WIND 330/07 QNH 1013 mb ARRIVAL RWY 33					
ATC: LISTO VEGAR CHASE1C RWY 33 RNAV APPROACH					
SESSION OBJECTIVE					
1. To demonstrate required level of proficiency while performing selected normal and non-normal procedure in simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome (CRM concepts).					
6. The sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainee are requested to carry updated iPads					
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME.					

Page 6 of 10 - 1121 (2017-01-01) Conversion of the Rating Scale from F to 1-2

DISCUSSION ITEMS	GRADE		REFERENCE	
	PF	PNF		
1. BOMB THREAT			OM	
2. TAXI OUT - ADVERSE WEATHER CONDITION			FCTM/FCOM	
3. ENGINE SEPARATION AFTER TAKEOFF			FCTM/FCOM	
4. MEL - DDPG			MEL	
SESSION DETAIL				
1. PREFLIGHT AND FMS INITIALIZATION			FCOM NP, FCTM	
2. ENG START MALFUNCTION(S)			FCOM, SP	
3. TAXI - ADVERSE WEATHER A/I PROCEDURE			FCTM, FCOM	
4. REJECTED T/O > V1 (ENG FAIL/ FIRE)			FCTM, FCOM	
5. TAKE OFF / GPWS EVENT			FCTM	
6. PACK FAULT			FCTM, QRH	
7. CABIN ALTITUDE (RAPID DESCENT)			FCTM, QRH	
8. FMC WORK DIVERT TO EGBB			FCOM	
9. HYD PRESS R+C			FCTM, QRH	
10. RNAV APP RWY 33 LANDING			FCOM SP NP ,FCTM	
11. T/O ENGINE FAILURE AT V1 (TAC-OFF)			FCTM	
12. NDB ILS APP 33, RADAR VECTOR, GO AROUND			FCOM NP FCTM	
13. NDB ILS APP 33, CAT-I. LANDING			FCTM, FCOM	
14. APU FIRE			FCTM	
15. PASSENGER EVACUATION			FCTM, FCOM	
LOW VISIBILITY PROCEDURE / CAT-IIIa/b				
1. TAKEOFF RVR 125/150 M			FCTM	
2. REJECTED TAKEOFF <80 KTS/V1			FCTM	
3. TAKEOFF - CAT-IIIa/b/ APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL			FCTM	
4. CAT-IIIa/b APPROACHES FAILURES NECESSITATING GO AROUND			FCTM	
5. CAPTAIN INCAPACITATION			FCTM	
6. CAT-IIIa/b CAT-II APPROACHES WITH AUTO LAND			FCTM	
RESOURCE MANAGEMENT				
1. CREW COORDINATION			OM	
2. FLIGHT DECK MANAGEMENT			OM	
3. PROCEDURAL EXECUTION & ADHERENCE			OM	
4. DECISION MAKING / PROBLEM RESOLVING			OM	
5. AIRMANSHIP			OM	
6. JEPPESEN KNOWLEDGE			JEP	
SESSION EVALUATION				
EVALUATION AREAS	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CREW RESOURCE MANAGEMENT				
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:				
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR		LIC. NO
				Type of Instr.

NAME OF TRAINEE:		P.NO:		LOCATION	
		LIC TYPE & #		TOTAL SESSION TIME	04 HOURS
NAME OF PNF/PM:		P.NO:		TIME PF	
		LIC TYPE & #		TIME PNF	
AIRCRAFT DATA					
ZERO FUEL WT	190000 KGS	C.G	25%	THRUST REDUCTION	FLAPS 5/ 1000ft
TOTAL FUEL	20000 KGS	TAKEOFF FLAPS	5	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	210000 KGS	CRUISE ALTITUDE	FL120	TAKEOFF THRUST TO2	ASSUME TEMP 45°C
RESERVE FUEL	5400 KGS	COST INDEX	180	MEL "C" SNAG	ENG AUTOSTART U/S
SESSION DATA AND WEATHER					
DEPARTURE AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 09L		BRAKING ACTION MEDIUM	
WEATHER: 1000' OVERCAST RAIN VIS 1000 M TEMP 01°C D.P 01°C WIND 150/07 QNH 1013 mb DEPARTURE RWY09L. RUNWAY CONDITION WET, BRAKING ACTION MEDIUM					
ATC: BUZA 3K BUZAD T420 TNT DAYN2A					
DESTINATION AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R		BRAKING ACTION GOOD	
WEATHER: 800' OVERCAST VIS 4000 M, TEMP 10°C D.P 08°C WIND 250/07 QNH 1009 mb ARRIVAL RWY 23R VOR APPROACH					
ATC: DAYN2A RWY 23R					
ALTERNATE AIRPORT	ICAO CODE EGBB	RUNWAY IN USE 33		BRAKING ACTION MEDIUM	
WEATHER: 800' OVERCAST L'DZ VIS 4000 M, TEMP 01°C D.P 10°C WIND 330/07 QNH 1013 mb ARRIVAL RWY 33					
ATC: LISTO VEGAR CHASE1C RWY 33 RNAV APPROACH					
SESSION OBJECTIVE					
1. To demonstrate required level of proficiency while performing selected normal and non-normal procedure in simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.					
2. The instructor will provide appropriate instruction:, weather information and air traffic clearances, as far as possible conduct the flight on a real time basis					
3. Simulator system faults will be removed after full stop landing.					
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.					
5. Command qualities and crew co-ordination are part of the desired learning outcome (CRM concepts).					
6. The sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.					
Instructor and trainee are requested to carry updated iPads					
NOTE: BRIEFING AND DISCUSSION ITEMS MUST BE CONDUCTED IN THE BRIEFING ROOM AT LEAST 01:30 HRS BEFORE SESSION TIME.					

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DISCUSSION ITEMS	GRADE		REFERENCE	
	PF	PNF		
1. BOMB THREAT			OM	
2. TAXI OUT - ADVERSE WEATHER CONDITION			FCTM/FCOM	
3. ENGINE SEPARATION AFTER TAKEOFF			FCTM/FCOM	
4. MEL - DDPG			MEL	
SESSION DETAIL				
1. PREFLIGHT AND FMS INITIALIZATION			FCOM NP, FCTM	
2. ENG START MALFUNCTION(S)			FCOM, SP	
3. TAXI - ADVERSE WEATHER A/I PROCEDURE			FCTM, FCOM	
4. REJECTED T/O > V1 (ENG FAIL/ FIRE)			FCTM, FCOM	
5. TAKE OFF / GPWS EVENT			FCTM	
6. PACK FAULT			FCTM, QRH	
7. CABIN ALTITUDE (RAPID DESCENT)			FCTM, QRH	
8. FMC WORK DIVERT TO EGBB			FCOM	
9. HYD PRESS R+C			FCTM, QRH	
10. RNAV APP RWY 33 LANDING			FCOM SP NP ,FCTM	
11. T/O ENGINE FAILURE AT V1 (TAC-OFF)			FCTM	
12. NDB ILS APP 33, RADAR VECTOR, GO AROUND			FCOM NP FCTM	
13. NDB ILS APP 33, CAT-I. LANDING			FCTM, FCOM	
14. APU FIRE			FCTM	
15. PASSENGER EVACUATION			FCTM, FCOM	
LOW VISIBILITY PROCEDURE / CAT-IIIa/b				
1. TAKEOFF RVR 125/150 M			FCTM	
2. REJECTED TAKEOFF <80 KTS/V1			FCTM	
3. TAKEOFF - CAT-IIIa/b/ APPROACHES WITH FAILURE ACTION ABOVE 1000 AAL			FCTM	
4. CAT-IIIa/b APPROACHES FAILURES NECESSITATING GO AROUND			FCTM	
5. CAPTAIN INCAPACITATION			FCTM	
6. CAT-IIIa/b CAT-II APPROACHES WITH AUTO LAND			FCTM	
RESOURCE MANAGEMENT				
1. CREW COORDINATION			OM	
2. FLIGHT DECK MANAGEMENT			OM	
3. PROCEDURAL EXECUTION & ADHERENCE			OM	
4. DECISION MAKING / PROBLEM RESOLVING			OM	
5. AIRMANSHIP			OM	
6. JEPPESEN KNOWLEDGE			JEP	
SESSION EVALUATION				
EVALUATION AREAS	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CREW RESOURCE MANAGEMENT				
OVERALL STANDARD	☐ HIGH	☐ AVERAGE	☐ MARGINAL	☐ REMEDIAL REQUIRED
COMMENTS:				
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	LIC. NO	
			Type of Instr.	

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DISCUSSION ITEMS	GRADE		REFERENCE	
	PF	PNF		
1. PERSONAL DOCUMENTS				
2. A/C PERFORMANCE/QRH/MEL CONSULTATION			FPPM/QRH/MEL	
3. A/C TECH/JEPPESEN KNOWLEDGE (ORAL)			FCOM/JEPPESEN	
4. GPWS			FCTM	
5. WINDSHEAR /CB/SEVER TURB			FCTM	
6. DRIFT DOWN PROCEDURE			FCTM	
SESSION DETAIL				
1. PREFLIGHT AND FMS INITIALIZATION			FCOM NP	
2. START MALFUNCTIONS			QRH, FCOM SP	
3. TAXI OUT - MAIN GEAR STEERING (MALF)			FCTM (REF MEL)	
4. TAKEOFF RTO (Lo/Hi Sod) (Dry/Contaminated)			FCTM	
5. TAKE-OFF IN LVTO CONDITION WITH ENG. FAIL b/w V1 & V2			FCOM NP, FCTM	
6. CLIMB – GEN R FAIL			QRH	
7. TCAS EVENT			FCTM/QRH	
8. STALL RECOVERY/UPSET PREVENTION & RECOVERY			FCTM/QRH	
9. EMERGENCY DESCENT & DIVER TO EGLL			FCTM, QRH, FCOM	
10. VOR APPR RWY27L FOLLOWED BY G/A			FCOM	
11. ILS APPROACH 27R WITH LANDING			QRH	
12. TAKE-OFF & GPWS ACTIVATION & RECOVERY			FCTM/FCOM/QRH	
13. REPOSITION - TAKE-OFF WITH WINDSHEAR			FCOM/QRH	
14. ILS CATEGORY IIa/b APP ASSOCIATED WITH FAILURES & G/A & LANDINGS			FCTM/SOP	
15. T/O ENG FIRE (CAPTAIN INCAPACITATION) RADAR VECTOR ILS 27L LANDING & EVACUATION			FCOM/FCTM	
INSTRUCTOR'S DISCRETION				
1.				
2.				
3.				
RESOURCE MANAGEMENT				
CREW COMMUNICATION			OM	
a. BETWEEN COCKPIT & CABIN			OM	
b. DURING NORMAL PROCEDURES			OM	
c. DURING NON-NORMAL PROCEDURES			OM	
d. USE OF STANDARD TERMINOLOGY			OM	
SESSION EVALUATION				
EVALUATION AREAS	BELOW	MARGINAL	AVERAGE	HIGH
PROCEDURES & SYSTEM KNOWLEDGE				
FLYING SKILL				
CREW RESOURCE MANAGEMENT				
OVERALL PERFORMANCE ☐ SATISFACTORY ☐ UNSATISFACTORY				
COMMENTS:				
TRAINEE'S SIGNATURE	NAME OF INSTRUCTOR	SIGNATURE OF INSTRUCTOR	LIC. NO	
			Type of Instr.	

NAME OF TRAINEE:		P.NO:		LOCATION	
		LIC TYPE & #		TOTAL SESSION TIME	
NAME OF PNF/PM:		P.NO:		TIME PF	
		LIC TYPE & #		TIME PNF	

AIRCRAFT DATA					
ZERO FUEL WT	190000 KGS	C.G	25%	THRUST REDUCTION	1000 FT
TOTAL FUEL	20000 KGS	TAKEOFF FLAPS	5	ACC HEIGHT 2/1 ENG	3000/ 1000 FT
TAKEOFF WT	210000 KGS	CRUISE ALTITUDE	FL150	TAKEOFF THRUST TO2	ASSUMED TEMP 45°C
RESERVE FUEL	10000 KGS	COST INDEX	180	MEL "B" SNAG	ENG AUTOSTART U/S

SESSION DATA AND WEATHER			
DEPARTURE AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 27R	BRAKING ACTION GOOD
WEATHER: VIS 1200 M TEMP 15°C D.P 06°C WIND 120/05 QNH 1013.2 mb DEPARTURE RWY09L			
ATC: BUZA3K BUZAD T420 TNT DAYN2A			
DESTINATION AIRPORT	ICAO CODE EGCC	RUNWAY IN USE 23R	BRAKING ACTION MEDIUM
WEATHER: 800' OVERCAST L'RAIN VIS 5KM TEMP 10°C D.P 08°C WIND 250/7 QNH 1010 mb ARRIVAL RWY 23R ILS APPROACH			
ATC: DAYN2A RWY 23R			
ALTERNATE AIRPORT	ICAO CODE EGLL	RUNWAY IN USE 27R	BRAKING ACTION GOOD
WEATHER: 800' OVERCAST VIS 4000 M, TEMP 10°C D.P 08°C WIND 330/10 QNH 1010 mb ARRIVAL RWY 27R ILS APPROACH			
ATC: LAM3A RWY 27R			

SESSION OBJECTIVE	
1. This flight profile includes those procedures and maneuvers that can be practiced to improve skill level in a simulator. The sequence and maneuvers / exercises may be changed and selected at the discretion of the Check Pilot.	
2. The instructor will provide appropriate instruction;; weather information and air traffic clearances, as far as possible conduct the flight on a real time basis	
3. Simulator system faults will be removed after full stop landing.	
4. The crew will be expected to respond to instructions and situations as they would on line flight, and to use flight deck resources available (autopilot, auto throttle etc.) unless specifically restricted by the instructor.	
5. Command qualities and crew co-ordination are part of the desired learning outcome.	
6. The Sequence of Non-normal procedures/TOGW for subsequent Take-offs will be at the discretion of the Check Pilot.	
7. Instructors to ensure that during intermediate/final level off vertical speed is reduced to 1000fpm when 1000 ft to level off altitude, in order to reduce frequency of unnecessary TCAS 'RA' activation.	
Instructor and trainee are requested to carry updated iPads	

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18.6 SEAT CONVERSION LINE TRAINING

18.6.1 UNDER SUPERVISION CONVERSION LINE TRAINING PROGRAM FROM P1 TO P2

Objective:

The objective of this conversion Training is to allow the Trainee to practice Normal Line Procedures on the aircraft from Right Hand Seat, and to achieve proficiency and confidence in these procedures in the capacity of P2. Only routine operations in normal configuration are intended and no abnormal situations will be intentionally created.

The DCP or TRI/TRE will sign the aircraft load sheet and Flight Plan and take full responsibility for the safety of the aircraft, crew and passengers and the integrity of the operating schedule.

General:

Each exercise in this Training Program will be covered, but the Instructor will only sign off the particular exercise once a proficient level has been achieved. If proficiency is not achieved, then it is required that amplifying comments be made to fully identify the trainee's deficiencies in the comments section along with the exercise number.

The Training Lesson Plan contains asterisk (*) items, which are "For Discussion Only". The Instructor will sign off all such items only when proficient knowledge has been demonstrated by the trainee.

Preparation:

Trainee is expected to be familiar with B777 OPERATIONS MANUAL, FLIGHT CREW TRAINING MANUAL, OM and DDG/MEL application.

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The trainee is also expected to study and assimilate all the items in the syllabus before commencement of this Training Program.

UNDER SUPERVISION LINE FLYING:

Pilots undergoing this training are required to complete 25 Hours of under supervision line flying, in which all exercises and discussion items in the Lesson Plan must be satisfactorily completed.

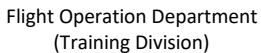
Upon satisfactory completion of the exercises and items in the Lesson Plan, and 25 hours of the Flight Training, the Trainee will be put up for a “Route Check”.

Co-Pilot / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
1. FLIGHT BRIEFING				
A) METEOROLOGY				
a) Departure Wx.				
b) Enroute/Emergency Alt. Wx				
c) Destination & Alternate Wx.				
B) NOTAMS				
C) Flight Plan				
a) Company Routing				
b) Flight Level				
c) Fuel Requirements				
d) TOW Calculations				
e) ATC Flight Plan				
f) Alternate Requirements				
2. PRE-FLIGHT				
a) Preliminary Preflight Procedure				
b) Aircraft Documents				
c) Exterior Inspection				
d) Preflight Procedures (F/O)				
e) TOW Calculation (EFB)				
f) FMS setup / Route, FPL Loading				
3. DEPARTURE BRIEFING				
a) Aircraft status / MEL /DDG restriction on operations				
b) Required SID, RWY, NAVAIDS&FREQ in use				

Co-Pilot / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
c) Push back and Start up Procedures				
d) Noise Abatement Procedures				
e) Com Failure Procedures				
f) Runway Conditions / Wx Conditions				
g) Restricted/Prohibited Areas				
4. DEPARTURE/TAXI				
a) Use of Electronic / Normal Checklist				
b) Before Pushback & Start Procedures				
c) Engine Start & After Start Procedures				
d) Taxiing & Before T/O Procedures				
e) Takeoff Flaps 5 and/or 15				
f) SID – LNAV&VNAV Departure				
5. ENROUTE PROCEDURES				
a) FMC Operation				
b) Route Changes & Modifications				
c) Determine ETA, Fuel Remaining for Destination and Alt/Enroute Diversion				
d) Data Link Communication (if applicable)				
e) “EFB” use				
6. DESCENT				
a) Descent forecast winds “FMS”				
b) Descent Preparations / Planning				

Co-Pilot / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
c)	Destination and Alt Wx			
d)	Insertion of STAR / Vref speeds			
e)	Approach Briefing			
f)	Minimum Fuel Advisory(*)			
g)	Descent Speed Schedule			
7. APPROACHES				
a)	Manual ILS Approach using F/D only			
b)	ILSAutoland CAT-III a/b (minimum 01 sector)			
d)	RNAV Approach - Using LNAV/VNAV			
8. LANDINGS				
a)	Flaps 30 Landing			
b)	Contaminated Rwy./Cross wind Ldg. Technique(*)			
9. PNF DUTIES (02 Sectors)				
a)				
b)				
10. ITEMS FOR DISCUSSION ONLY				
a)	Cabin Altitude – CRM Considerations			
b)	Tail Strike			
c)	L or R FMC Fail – Use Alt. Navigation			
d)	RNP/RVSM/RNAV/P-RNAV			
e)	FMS Position Update			
f)	JeppesenATC and EMERGENCY			

Co-Pilot / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
g) Chart NOTAMS				
h) Engine Out Drift Down Procedures				
i) TCAS Event				
j) Contaminated runway effect on V1, VR, V2 & reduced thrust				
k) Determination of Max TOW on contaminated runways				
l) Electrical Power Up & Down procedure				
m) Consulting performance graphs				
n) CFIT				
o) Descent Forecast Page & Descent Prediction				
11. ADVERSE WEATHER PROCEDURES				
a) Flight in Severe Turbulence (*)				
b) Windshear (*)				
c) Anti/De-icing Procedure in air and on ground(*)				
d) Avoidance, Prevention and Precautions				
12. CRM SKILLS				
a) Decision Making / Teamwork / Human Factors (*)				
b) Communication/Assertiveness				



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Co-Pilot / FO			Instructor's Name & Signature	Flight No/Date
P #	Lic #	Ref. #		
c) Situational Awareness				

[illegible]

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18.7 DIFFERENCES (PIA FLEET)

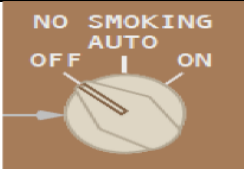
Some salient differences are mentioned in this document.

For complete details, please refer to current FCOM.

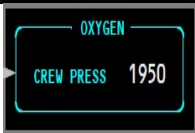
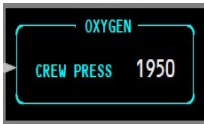
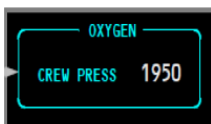
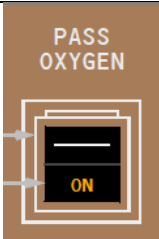
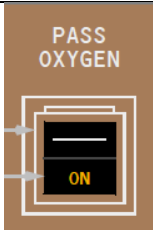
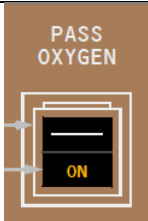
	B777-200ER AP-BGJ AP-BGK AP-BGL AP-BHX AP-BMG AP-BMH	B777-200LR AP-BGY AP-BGZ	B777-300ER AP-BHV AP-BHW AP-BID AP-BMS
Seat Config,	AP-BGJ, K, L & BHX 35C/294Y & 15JS AP-BMG & H 25C/282Y & 14JS	35C/275Y & 16JS	AP-BHV, W & BID 35C/358Y & 16JS AP-BMS 18C/424Y & 18JS

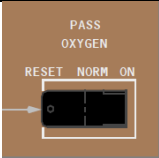
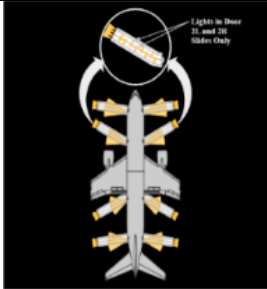
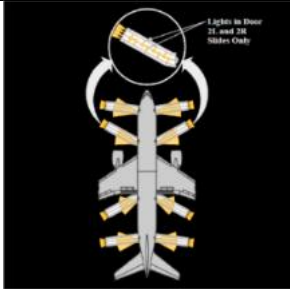
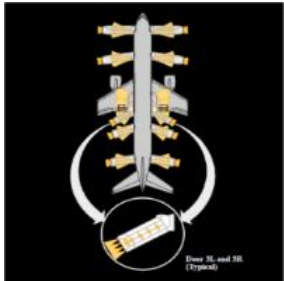
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FCOM chapter 1 Airplane General, Emergency Equipment, Doors, Windows - Controls and Indicators

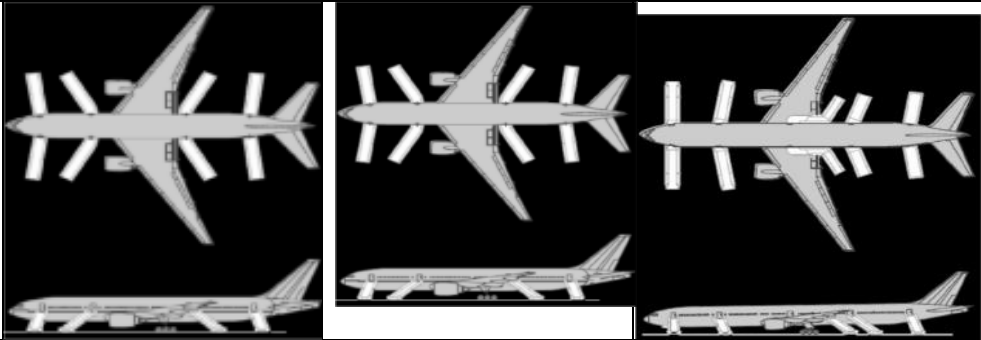
Principal Dimensions			
Wingspan	60.93m	64.80m	64.80m
Body	62.94m	62.94m	73.08m
Signs and Lighting			

FCOM chapter 2 Air Systems

Oxygen Indications			
			AP-BMS 
Passenger Oxygen Switch			 AP-BMS

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Exterior Emergency Lighting			
Passenger Oxygen System	The passenger oxygen system is supplied by individual chemical oxygen generators.	The passenger oxygen system is supplied by individual chemical oxygen generators.	The passenger oxygen system is supplied by individual chemical oxygen generators. AP-BMS

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			The passenger oxygen system is supplied by a gaseous oxygen system.
Crew Rest	AP-BMG & H A flight crew rest (FCR) area is located forward of the door 1L. A lower crew rest area is located in the forward section of the aft cargo area.	AP-BGY & Z A door 1 overhead flight crew rest area is located in the forward part of the airplane near door 1. A door 3 overhead flight attendant rest area is located in the aft part of the airplane in the overhead above door 3.	AP-BMS A door 1 overhead flight crew rest area is located in the forward part of the airplane near door 1. A door 5 overhead flight attendant rest area is located in the aft part of the airplane in the overhead between doors 4 and 5.

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Evacuation Slide/Rafts			
Forward Cargo Air Conditioning Control			

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FCOM chapter 7 Engines, APU

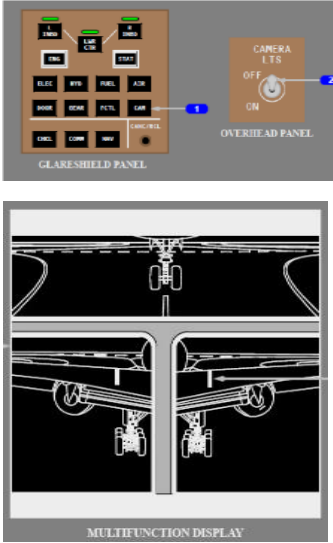
Engine: General Electric Model	GE90–94B	GE90–110B1L	GE90–115BL

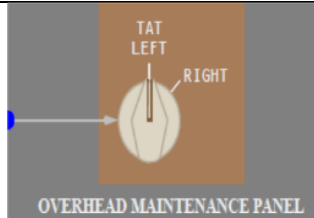
FCOM Chapter 8 Fire Protection

	AP-BMG, AP-BMH The flight deck crew rest compartment has a fire detection system, but no fire extinguishing system. AP-BMG, AP-BMH		

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	The lower crew rest compartment has a fire detection system and a manually activated fire extinguishing system.		

FCOM chapter 10 Flight Instruments, Displays - Controls and Indicators

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Ground Maneuver Camera System			

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Total Air Temperature (TAT) Selector			AP-BMS
			 OVERHEAD MAINTENANCE PANEL
Typical ND Map Displays			

Transponder Panel

AP-BGJ - AP-BID



AP-BMG, AP-BMH



AP-BMS



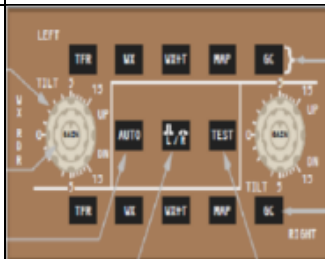
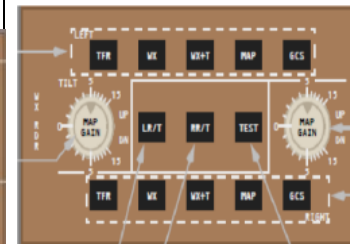
Weather Radar Panel



AP-BMG, AP-BMH



AP-BMS



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FCOM chapter 14 Landing Gear:

Semi-Lever Gear			The Semi-Lever Gear (SLG) consists of an additional hydraulic actuator that connects the forward end of each main gear truck to the shock strut. During takeoff, the actuator locks to restrict rotation of the main gear truck and allow takeoff rotation about the aft wheel axle, thereby improving airplane performance capability. During landing, the SLG hydraulic struts act as dampers to reduce the landing loads on the MLG and aircraft structure.
Tail Skid			The airplane is equipped with a tail skid system. The tail skid extends for takeoff and landing and retracts during flight. It helps protect the pressurized part of the airplane from contact with the runway. The tail skid uses the main landing gear actuation system.

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FCOM Chapter 15 Warning Systems -System Description

Obstacle and Terrain Display	When airplane is higher than 2,000 feet above terrain, density based on obstacle height, peaks height, and airplane altitude. AP-BMG & H. Terrain more than 2,000 feet below airplane altitude or within 200 feet of the nearest airport runway elevation is not displayed.	When airplane is higher than 2,000 feet above terrain, density based on obstacle height, peaks height, and airplane altitude:	When airplane is higher than 2,000 feet above terrain, density based on obstacle height, peaks height, and airplane altitude:
Approaching MCP Selected Altitude	At 900 feet prior to reaching the selected altitude a c-chord sounds and a highlighted white box is displayed around the selected altitude and the current altitude on the PFD.	At 900 feet prior to reaching the selected altitude a c-chord sounds and a highlighted white box is displayed around the selected altitude and the current altitude on the PFD.	At 900 feet prior to reaching the selected altitude a c-chord sounds and a highlighted white box is displayed around the selected altitude and the current altitude on the PFD.

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	AP-BMG & H. At 900 feet prior to reaching the selected altitude a highlighted white box is displayed around the selected altitude and the current altitude on the PFD.		

