

**CIVIL AVIATION AUTHORITY PAKISTAN**

**AIR NAVIGATION ORDER  
NO: 90.0011  
ISSUE: ONE**

**ADVANCED LICENCES AND RATINGS – AIR CREW  
(CPL, ATPL, IR)**

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1. **AUTHORITY**

This Air Navigation Order (ANO) is issued by the Director General, Civil Aviation Authority in pursuance of the powers vested in him under Rules 4, Rule 35 to Rule 44, Rule 58, Rule 340, Rule 342, Rule 347, Rule 348, Rule 354, Rule 355, Rule 357, Rule 359 and 360 of the Civil Aviation Rules, 1994 (CARs 94).

2. **SCOPE**

- 2.1. This ANO relates to the issue, renewal and revalidation of Commercial Pilot's Licence – Aeroplane and Helicopter.
- 2.2. This ANO relates to the issue, renewal and revalidation of Instrument Rating.
- 2.3. This ANO relates to the issue, renewal and revalidation of Airline Transport Pilot Licence – Aeroplane and Helicopter.
- 2.4. All persons desiring to pilot an aircraft registered in Pakistan shall comply with the instructions contained in this ANO, ANO 90.0001, ANO 90.0002, ANO 90.0003, ANO 90.0004, ANO 90.0010, other relevant ANOs, Air Safety Circulars (Lic) and instructions issued by the Licensing Authority from time to time.

3. **EFFECTIVE DATE**

- 3.1. This ANO shall come into force with immediate effect.

4. **DEFINITIONS**

- 4.1. '**Accepted/Acceptable**' means not objected to by the Authority as suitable for the purpose intended.
- 4.2. '**Aeroplane**' means a power-driven heavier than air aircraft deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;
- 4.3. '**Aircraft**' means a machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.
- 4.4. '**Aircraft Type**' means as used with respect to;
  - 4.4.1. licensing and operations of flight crew

- 4.4.2. type certification of aircraft
- 4.5. **`Aircraft - Category`** means classification of aircraft according to specified basic characteristics, e.g., aeroplane, helicopter, glider, free balloon.
- 4.6. **`Aircraft - Similar type of`** means all aircraft of the same basic design including modifications thereto except those modifications, which result in a change in handling or flight characteristics.
- 4.7. **`Approved by the Authority`** means documented by the Authority as suitable for the purpose intended.
- 4.8. **`Authority`** means the Civil Aviation Authority, Pakistan, established under section 3 of Civil Aviation Authority Ordinance 1982.
- 4.9. **`CAA`** means Civil Aviation Authority of Pakistan.
- 4.10. **`Crew Complement`** means the crew which forms the part of a cockpit as defined by the manufacturer of aircraft.
- 4.11. **“Co-Pilot (P-2)”** means a licensed pilot serving in any piloting capacity other than as pilot-in-command but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction.
- 4.12. **‘Commercial Air Transportation’** means the transportation by air of passengers, cargo or mail for remuneration or hire.
- 4.13. **‘Designated Check Pilot’** means an approved person who may conduct tests and checks on behalf of the CAA. His privileges may include those of a training pilot.
- 4.14. **‘Designated Examiner’** means a person authorized to conduct a skill test on behalf of the CAA where typically a CAA Inspector is required. Unlike the DCP, Designated Examiner is not a permanent position.
- 4.15. **‘Flight Instructor (FI)’** means a Flight Instructor who can conduct training of abnitiio pilots, within the scope of his privileges, on aircraft of weight category of 5700 KG and below.
- 4.16. **‘Flight Check’** means a test of practical Knowledge and Skill.
- 4.17. **‘Flying Training Organization (FTO)’** means a Flying Training Organization, an aviation training centre, approved by CAA and whose flying training acceptable to the CAA for the purpose of issue, renewal and revalidation of a Licence, Certificate, Rating or an Endorsement.
- 4.18. **‘Ground Training Organization (GTO)’** means a Ground Training Organization, an aviation training centre, approved by CAA and whose Ground Training is acceptable to the CAA for the purpose of issue,

renewal and revalidation of a Licence, Certificate, Rating or an Endorsement.

- 4.19. **‘Synthetic Flight Instructor (SFI)’** means Synthetic Flight Instructor who may conduct pilot type training on synthetic flight trainer for aircraft of weight category of above 5700 KG.
- 4.20. **‘Type Rating Instructor (TRI)’** means Type Rating Instructor who may conduct pilot type training on aircraft of weight category of above 5700 KG.
- 4.21. **‘Instrument’** means a device using an internal mechanism to show visually or aurally the attitude, altitude, or operation of an aircraft or aircraft part. It includes electronic devices for automatically controlling an aircraft in flight.
- 4.22. **‘Licensing Authority’** means the Authority, established by the Director General, Civil Aviation Authority, responsible for Licensing of Personnel under the CARs.
- 4.23. **‘Multi-pilot Operation Aircraft’ (MPA)** means an aircraft manufactured by the manufacturer for multi-pilot operation or certificated by the CAA for multi-pilot operation in accordance of nature and type of operation.
- 4.24. **‘Multi-Crew Cooperation’** means the methodologies and techniques used to operate a multi-crew aircraft.
- 4.25. **‘Pilot-in-Command (PIC/P-1)’** means the pilot responsible for the operation and the safety of the aircraft during flight time.
- 4.26. **‘Pilot Integrated Course’** means an integrated Pilot licence course comprising PPL, CPL, IR in continuation. The duration of the course shall begin from the date of the issuance of the Student Pilot Licence.
- 4.27. **‘Pilot Modular Course’** means courses for PPL, CPL and IR taken independently.
- 4.28. **‘Pilot-in-Command under Supervision (PICUS)’** means to fly, in accordance with the CAA approved procedure:
- 4.28.1. as Co-Pilot (Right seat for aeroplane and left seat for Helicopter) performing under the supervision of the pilot-in-command, the duties and function of a pilot-in-command; or
- 4.28.2. as Pilot-in-command under the supervision of qualified Instructor while receiving training for grant, renewal and/or re-validation of Private, Commercial, Airline Transport Pilot’s Licence or Instrument and Instructor rating.
- 4.29. **‘Rating’** means an authorization entered on or associated with a licence or certificate and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence.

- 4.30. **‘Solo’ means** when the person is the sole occupant of aircraft.
- 4.31. **‘Skill/Flight Test’** means flight check.

*Note: All words and terms used for various persons, aircraft and authorities in this ANO, shall be interpreted and construed as defined. In all other cases, they shall be construed as defined and used by the International Civil Aviation Organization.*

5. **ATTACHMENTS**

- 5.1. **APPENDIX ‘‘A’’:** Theory/Practical Syllabus (FRTOL)
- 5.2. **APPENDIX ‘‘B’’:** Theory Syllabus (CPL)
- 5.3. **APPENDIX ‘‘C’’:** Theory Syllabus (ATPL)
- 5.4. **APPENDIX ‘‘D’’:** Theory Syllabus (IR)
- 5.5. **APPENDIX ‘‘E’’:** Flying Hours Breakdown (PPL, CPL, ATPL & IR)
- 5.6. **APPENDIX ‘‘F’’:** Experience Requirement (Different A/C Weight)
- 5.7. **APPENDIX ‘‘G’’:** Multi-Crew Co-Operation Guide
- 5.8. **APPENDIX ‘‘H’’:** Dangerous Goods Guide

6. **COMMERCIAL PILOT LICENCE (AEROPLANE & HELICOPTER)**

6.1. **ELIGIBILITY**

6.1.1. **SPL:** Applicant shall have a valid Student Pilot or a valid Private Pilot Licence.

6.1.2. **AGE:** Applicant shall not be less than 18 years of age.

6.1.3. **MEDICAL:** Applicant shall hold a valid Class 1 Medical Certificate.

6.2. **LANGUAGE QUALIFICATION:** An applicant shall be capable of speaking, reading and understanding English language. The Flying training Organization (FTO) shall take the test and submit the result along with answer sheets to the Licensing Office. (Not required if SPL or PPL already issued)

6.3. **EDUCATION:** An applicant shall hold an educational qualification of at least Higher Secondary School Certificate or equivalent.

6.4. **SECURITY CLEARANCE:** Applicant shall have security clearance from local police, special branch and IB. SPL may be issued on receipt of any one of the clearances. Security Clearance Form CAAF-621 (in quadruplicate) and IB Performa (in duplicate) are to be filled and submitted in advance.

6.5. **NO OBJECTION CERTIFICATE (NOC):** Serving personnel from Armed Forces and Government Departments shall provide NOC from their Organization.

6.6. **FLIGHT RADIO TELEPHONE OPERATOR LICENCE (FRTOL)**

6.7. The applicant shall undergo the training for a Flight Radio Telephone Operator Licence; and FRTOL privileges shall be endorsed on the Commercial Pilot Licence. Refer to Appendix ``A''. (Training not required if FRTOL already issued)

6.7.1. The applicant shall demonstrate compliance with the holistic descriptors as explained below and as defined in ICAO Operational level 4 of the ICAO Language proficiency Rating scale as given in ICAO Annex 1.

6.7.2. **Holistic descriptors;**

6.7.3. The Proficient speakers shall:

6.7.3.1. Communicate effectively in voice-only (telephone/radio telephone) and in face to face situations.

6.7.3.2. Communicate on common, concrete and work related topics with accuracy and clarity.

6.7.3.3. Use appropriate communicative strategies to exchange messages and to recognize and resolve misunderstandings in a general or work related context. (For example to check, confirm or clarify information)

- 6.7.3.4. Handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
- 6.7.3.5. Use a dialect or accent which is intelligible to the aeronautical community.

6.8. **FLYING ORGANIZATION**

- 6.9. The Flying Organization conducting training for the issue of a Commercial Pilot Licence shall hold a valid approval from CAA as a Flying Training Organization (FTO). A Course once initiated in an FTO shall be completed in the same FTO. In exceptional circumstances and with a valid justification, the CAA may permit a change in the FTO.

7. **ICAO GUIDANCE MATERIAL**

- 7.1. The ICAO Training Manual (DOC 7192), Part B-5, contains guidance material for a course of training for the commercial pilot licence – aeroplane.

8. **CPL - AERONAUTICAL KNOWLEDGE (AEROPLANE)**

- 8.1. Refer to the Appendix ``B``.

9. **CPL - AERONAUTICAL EXPERIENCE (AEROPLANE)**

- 9.1. Refer to Appendix ``E``.
- 9.2. The applicant shall have completed not less than 200 hours of flight time in a Modular Course, or 150 hours in an Integrated Course as pilot of aeroplanes. The Licensing Authority shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which it has approved, is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be. Credit for such experience shall be limited to a maximum of 10 hours.
- 9.3. The applicant shall have completed in aeroplanes not less than:
  - 9.3.1. 100 hours as PIC in Modular Course and 70 hours as PIC in an Integrated Course.
  - 9.3.2. 20 hours of cross-country flight time as pilot-in-command including one Solo cross-country flight totaling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be made.
  - 9.3.3. 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time.
  - 9.3.4. 5 hours of night flight time including 5 take-offs and 5 landings as pilot-in-command.



9.4. When the applicant has flight time as a pilot of aircraft in other categories, the Licensing Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements can be reduced accordingly.

9.5. **FLIGHT INSTRUCTION (AEROPLANE)**

9.6. The applicant shall have received dual instruction in aeroplanes from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the commercial pilot:

9.6.1. Pre-flight operations, including mass and balance determination, aeroplane inspection and servicing.

9.6.2. Aerodrome and traffic pattern operations, collision avoidance precautions and procedures.

9.6.3. Control of the aeroplane by external visual reference.

9.6.4. Flight at critically slow airspeeds; spin recognition of, and recovery from, incipient and full stalls.

9.6.5. Flight at critically high airspeeds; recognition of, and recovery from, spiral dives.

9.6.6. Normal and cross-wind take-off and landings.

9.6.7. Maximum performance (short field and obstacle clearance) take-off; Soft field and short-field landings.

9.6.8. Basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments.

9.6.9. Cross-country flying using visual reference, dead-reckoning and radio navigation aids; diversion procedures.

9.6.10. Abnormal and emergency procedures and manoeuvres.

9.6.11. Operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

9.6.12. The applicant shall have received dual instruction in aeroplanes in night flying, including takeoffs, landings and navigation.

10. **CPL - SKILL TEST LEVEL (AEROPLANE)**

10.1. The applicant shall have demonstrated the ability to perform as pilot-in-command of an aeroplane, the procedures and manoeuvres with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot licence — aeroplane, and to:

- 10.1.1. Operate the aeroplane within its limitations.
- 10.1.2. Complete all manoeuvres with smoothness and accuracy.
- 10.1.3. Exercise good judgement and airmanship.
- 10.1.4. Apply aeronautical knowledge; and
- 10.1.5. Maintain control of the aeroplane at all times in a manner such that the successful outcome of a procedure or manoeuvre is never seriously in doubt.
- 10.2. For Skill test, also refer to Air Navigation Order 90.0004 (Licences & Ratings – Air Crew)
- 10.3. For a skill level test in a multi-crew cockpit, the other crew complement shall be qualified on the aircraft.
- 11. **CPL - AERONAUTICAL KNOWLEDGE (HELICOPTER)**
  - 11.1. Refer to Appendix ``B``.
- 12. **CPL - AERONAUTICAL EXPERIENCE (HELICOPTER)**
  - 12.1. Refer to Appendix ``E``.
  - 12.2. The applicant shall have completed not less than 200 hours of flight time in a Modular Course, or 150 hours in an Integrated Course as pilot of helicopters. The Licensing Authority shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which it has approved, is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be. Credit for such experience shall be limited to a maximum of 10 hours.
  - 12.3. The applicant shall have completed in helicopters not less than:
    - 12.3.1. 35 hours as pilot-in-command.
    - 12.3.2. 10 hours of cross-country flight time as pilot-in-command including one Solo cross-country flight in the course of which landings at two different points shall be made.
    - 12.3.3. 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time.
    - 12.3.4. 5 hours of night flight time including 5 take-offs and 5 landing patterns as pilot-in-command.
    - 12.3.5. When the applicant has flight time as a pilot of aircraft in other categories, the Licensing Authority shall determine whether such experience is acceptable and, if so, to what extent the experience requirement can be reduced accordingly.

12.4. **FLIGHT INSTRUCTION**

- 12.4.1. The applicant shall have received dual instruction in helicopters from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the commercial pilot:
  - 12.4.2. Pre-flight operations, including mass and balance determination, helicopter inspection and servicing.
  - 12.4.3. Aerodrome and traffic pattern operations, collision avoidance precautions and procedures.
  - 12.4.4. Control of the helicopter by external visual reference.
  - 12.4.5. Recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm.
  - 12.4.6. Ground maneuvering and run-ups; hovering; take-offs and landings — normal, out of wind and sloping ground; steep approaches.
  - 12.4.7. Take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops.
  - 12.4.8. Hovering out of ground effect; operations with external load, if applicable; flight at high altitude.
  - 12.4.9. Basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments.
  - 12.4.10. Cross-country flying using visual reference, dead-reckoning, and radio navigation aids; diversion procedures.
  - 12.4.11. Abnormal and emergency procedures, including simulated helicopter equipment malfunctions, autorotative approach, and landing.
  - 12.4.12. Operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.
  - 12.4.13. The applicant shall have received dual instruction in helicopters in night flying, including take-offs, landings and navigation.

**Note:** *The instrument experience and the night flying experience specified do not entitle the holder of a commercial pilot licence — helicopter to pilot helicopters under IFR unless Instrument rating is endorsed on the Licence.*

13. **CPL - SKILL TEST (HELICOPTER)**

- 13.1. The applicant shall have demonstrated the ability to perform as pilot-in-command of a helicopter, the procedures and maneuvers described with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot licence — helicopter, and to:
- 13.1.1. Operate the helicopter within its limitations.
  - 13.1.2. Complete all maneuvers with smoothness and accuracy.
  - 13.1.3. Exercise good judgment and airmanship.
  - 13.1.4. Apply aeronautical knowledge.
  - 13.1.5. Maintain control of the helicopter at all times in a manner such that the successful outcome of a procedure or maneuver is never seriously in doubt.
- 13.2. For Skill test, also refer to Air Navigation Order 90.0004 (Licences & Ratings – Air Crew).
- 13.3. For a skill level test in a multi-crew cockpit, the other crew complement shall be qualified on the aircraft.

14. **CPL - ERROR MARGINS (AEROPLANE & HELICOPTER)**

**Height**

Normal flight	± 100 feet
With simulated engine failure	± 150 feet
Tracking of radio aid	± 5°

**Heading**

Normal flight	± 10°
With simulated engine failure	± 15°

**Speed**

Take-off & approach	+ 5/- 0 Knots
Normal Flight	± 10 Knots
With simulated engine failure	+ 10/- 0 Knots

15. **CPL - EXAMINATIONS AND TESTS**

- 15.1. An applicant is eligible to appear in the written examination of Commercial Pilot Licence provided a Student Pilot Licence (SPL) has already been issued on the basis of meeting the CPL flying requirements based on previous experience or the applicant already holds a valid Private Pilot Licence.
- 15.2. Pass Commercial Pilot Examinations CPL-1 and CPL-2; and CPL-H if applicable.
- 15.3. Pass Type Technical (TT-1) examination.

- 15.4. Skill test by the CAA Inspector/Designated Examiner.
  - 15.5. An applicant who fails to pass a flight test may apply for a retest only when he has carried out the further study or training determined by the person who conducted the test.
  - 15.6. Unless otherwise approved by the CAA, the same examiner shall conduct the re-test.
  - 15.7. An applicant for initial issue and renewal of a Commercial Pilot Licence shall provide a suitable dual control aircraft or approved Synthetic Flight Trainer as applicable for the purpose of demonstration of his skill.
  - 15.8. The Commercial Pilot Licence skill test shall be conducted with the minimum flight crew complement specified in the aircraft flight manual and any additional crew required under an approved training and checking program of the operator.
  - 15.9. If the Commercial Pilot Licence skill test is conducted for issue or renewal of Instrument Rating, on single pilot operation aircraft, the Flight Inspector or DE conducting the test shall not, during the test, perform any duty essential to the operation of the aircraft.
  - 15.10. If the Commercial Pilot Licence is skill test conducted in an aircraft certificated for multi-pilot operation; and the Flight Inspector or DE conducting the test occupies a control seat, he shall during the test, perform all duties of a pilot not flying.
  - 15.11. Except for the CFIs, more than 02 consecutive Tests of the same applicant shall not be taken by the same Examiner.
16. **CPL - MULTI - CREW AIRCRAFT RATING**
- 16.1. A CPL holder shall be required to undergo an approved Multi-Crew Cooperation (MCC) course or pass a CAA MCC Examination before first Endorsement of a Multi-Crew aircraft.
17. **CPL - PRIVILEGES OF LICENCE**
- 17.1. Subject to validity of the licence, medical and currency, the holder of a Commercial Pilot Licence is authorized to:
    - 17.1.1. Exercise all the privileges of the Private Pilot Licence;
    - 17.1.2. Act as pilot-in-command in any Pakistan registered aircraft engaged in operations other than commercial air transportation for which he has the group 1 endorsement.
    - 17.1.3. Act as pilot-in-command in commercial air transport operation, a Pakistan registered aircraft certified for single-pilot operation, for which he has the group 1 endorsement.
    - 17.1.4. Act as co-pilot of a Pakistan registered aircraft in commercial air transportation required to be operated with a co-pilot.

- 17.1.5. A Commercial Pilot Licence holder employed in Commercial Air Transport Operation shall meet the additional requirements as prescribed in the Operations Manual by the operator.
- 17.1.6. A Commercial Pilot Licence holder shall not exercise privileges of the Licence on more than one aircraft, of weight category above 5700 Kg simultaneously in commercial air transport operations.
18. **CPL - MAINTENANCE OF LICENCE**
- 18.1. **CPL - VALIDITY**
- 18.1.1. A Commercial Pilot Licence shall be valid for 12 months.
- 18.2. **CPL - CURRENCY**
- 18.2.1. A Licence shall remain current subject to 3 take offs and 3 landings in the last 90 days.
- 18.2.2. A Type Rating shall remain current subject to 3 take offs and 3 landings in the last 90 days.
- 18.2.3. The Night currency shall remain valid subject to 3 night take offs and 3 night landings in the last 90 days.
- 18.2.4. Currency may be regained by flying with an Instructor deputed by the approved person.
- 18.2.5. Currency on a type of aircraft with similar performance and handling characteristics, as defined by the CAA Regulations, is acceptable provided an endorsement is also held for that type of aircraft.
- 18.3. **CPL - RENEWAL/REVALIDATION**
- 18.3.1. CPL shall be renewed subject to:
- 18.3.1.1. A minimum 06 hours of flying in the last 06 months as Pilot-in-Command, Pilot-in-Command under supervision or Co-Pilot ;
- 18.3.1.2. Or a flight check;
- 18.3.1.3. Or maintaining an ATPL Valid.
- 18.3.2. If all renewal requirements have been met prior to the expiry date, 30 days of grace period may be given for completion of documentation.
- 18.3.3. If a Licence has not been renewed upto 06 months after the expiry date, the Licence shall be renewed subject to:
- 18.3.3.1. An Oral Test;
- 18.3.3.2. And meeting all renewal requirements.

- 18.3.4. If a Licence has not been renewed between 06 months to 60 months after the expiry date, the Licence shall be renewed subject to:
  - 18.3.4.1. Passing the CPL-R.
  - 18.3.4.2. And meeting all renewal requirements.
- 18.3.5. If a Licence has not been renewed for 60 months after the expiry date, the Licence shall be renewed subject to:
  - 18.3.5.1. Passing the theoretical examinations for the Licence;
  - 18.3.5.2. And meeting all renewal requirements.

19. **CPL – LIMITATIONS OF LICENCE**

- 19.1. The holder of a CPL not endorsed with an Instrument Rating shall not act as Pilot-in-Command of an aircraft in other than Visual Meteorological Conditions.
- 19.2. The holder of a CPL shall not act as Pilot-in-Command of an aircraft engaged in formation flight unless he is certified in his Log Book as competent by a duly qualified Flight Instructor or other person duly approved by the CAA for this purpose.
- 19.3. The holder of CPL shall not act as Pilot-in-Command of an aircraft engaged in spinning practice unless the aircraft is certified for spinning and he has been certified in his Log Book by a duly qualified Flight Instructor as being competent to recover from fully developed spins.
- 19.4. The holder of CPL shall not act as Pilot-in-Command of an aircraft engaged in aerobatics flight unless the aircraft is certified for aerobatics; and he has been certified in his Log Book by an approved Flight Instructor or a person duly approved by the CAA as competent in the maneuvers to be performed.
- 19.5. The holder of a CPL shall not pilot an aircraft engaged in regular public transport operations and international charter if the licence holder has attained 60th birthday.
- 19.6. A CPL holder may exercise the privileges of the licence Up-to 65<sup>th</sup> birthday provided the person has passed a flight test with a Flight Inspector or an Approved Person within the preceding 12 months.
- 19.7. After attaining the 65<sup>th</sup> birthday, a CPL holder may exercise the privileges of Licence provided the person has passed a flight test with a Flight Inspector or an Approved Person within the previous 6 months.
- 19.8. Prior to operating as pilot of an aircraft engaged in Regular Public Transport Operations, the holder of a CPL shall meet the minimum experience appropriate to the type of aircraft. Refer to Appendix ``F``.

- 19.9. An aircraft specified for single pilot operation by the manufacturer shall be operated by one pilot. Where the Operator wishes to operate the same aircraft with two pilots (VIP/Terrain), the CAA may permit such operation provided the operator has formulated the required SOPs and operation details; and they are approved by the CAA.
20. **CPL - AIRWORTHINESS**
- 20.1.1. The aircraft used for training/operation shall have a valid C of A.
21. **CPL - LOGBOOK**
- 21.1.1. A holder of a Commercial Pilot Licence shall maintain a logbook in accordance with the CAA prescribed Regulations.
22. **CPL - FEE SCHEDULE**
- 22.1.1. As per CAA Licensing Fee schedule.
23. **CPL - DOCUMENTATION**
- 23.1.1. **FOR ISSUE OF CPL**
- 23.1.1.1. Application Form CAAF-600.
- 23.1.1.2. Medical Certificate CAA-43.
- 23.1.1.3. Security Clearance, if not already available with CAA.
- 23.1.1.4. NOC from Department, if applicable.
- 23.1.1.5. Photocopies of foreign Licences, if applicable.
- 23.1.1.6. 04 Colour photographs 1" X 1" (both ears visible, head uncovered) in an envelope with name at back of each photograph.
- 23.1.1.7. Type Technical (TT-1) Result, as applicable.
- 23.1.1.8. CPL Examination Result.
- 23.1.1.9. Photocopy of First and Last 3 pages of Logbook.
- 23.1.1.10. Flying Hours breakdown.
- 23.1.1.11. CPL Course Completion Certificate.
- 23.1.1.12. X-country Certificate.
- 23.1.1.13. Log book Certificate CAAF-603.
- 23.1.1.14. Copy of Skill Test Authorization by CAA.
- 23.1.1.15. Skill Test Report CAAF-602.
- 23.1.1.16. Fee Voucher/Authorization.



23.1.2. **FOR RENEWAL OR REVALIDATION OF CPL**

23.1.2.1. Application Form CAAF-601.

23.1.2.2. Skill Test CAAF-602.

23.1.2.3. Medical Certificate CAA-43.

23.1.2.4. Revalidation Examination result, if applicable.

23.1.2.5. Fee voucher/Authorization.



24. **AIRLINE TRANSPORT PILOT LICENCE (ATPL)  
(AEROPLANE & HELICOPTER)**

24.1. **ELIGIBILITY**

24.1.1. **SPL:** Applicant shall hold a valid SPL or PPL or CPL.

24.1.2. **AGE:** Applicant shall not be less than 21 years of age.

24.1.3. **MEDICAL:** Applicant shall hold a Class 1 Medical Certificate.

24.2. **LANGUAGE QUALIFICATION:** An applicant shall be capable of speaking, reading and understanding the English language. The Organization shall take the test and submit the result along with answer sheets to the CAA. (Not required if SPL or higher Licence already issued)

24.3. **EDUCATION:** An applicant shall hold an educational qualification of at least Higher Secondary School Certificate or equivalent.

24.4. **SECURITY CLEARANCE:** Applicant shall have security clearance from local police, special branch and IB. SPL may be issued on receipt of any one of the clearances. Security Clearance Form CAAF-621 (in quadruplicate) and IB Performa (in duplicate) are to be filled and submitted in advance.

24.5. **NO OBJECTION CERTIFICATE (NOC):** Serving personnel from Armed Forces and Government Departments shall provide NOC from their Organization.

24.6. **FLYING ORGANIZATION**

24.6.1. The flying organization conducting the skill test/experience training shall hold a valid approval from CAA as a Flying Training Organization (FTO).

24.7. **FLIGHT RADIO TELEPHONE OPERATOR LICENCE (FRTOL)**

24.7.1. The applicant shall undergo the training for a Flight Radio Telephone Operator Licence; and FRTOL privileges shall be endorsed on the Airline Transport Pilot Licence. Refer to Appendix 'A'. (Not required if FRTOL already issued)

24.7.2. The applicant shall demonstrate compliance with the holistic descriptors as explained below and as defined in ICAO Operational level 4 of the ICAO Language proficiency Rating scale as given in ICAO Annex 1.

24.7.3. **Holistic descriptors;**

24.7.4. The Proficient speakers shall:

24.7.4.1. Communicate effectively in voice-only (telephone/radio telephone) and in face to face situations.

- 24.7.4.2. Communicate on common, concrete and work related topics with accuracy and clarity.
  - 24.7.4.3. Use appropriate communicative strategies to exchange messages and to recognize and resolve misunderstandings. (For example to check, confirm, or clarify information) in a general or work related context.
  - 24.7.4.4. Handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
  - 24.7.4.5. Use a dialect or accent which is intelligible to the aeronautical community.
25. **ATPL - AERONAUTICAL KNOWLEDGE (AEROPLANE)**
- 25.1. Refer to Appendix 'C'.
26. **ATPL - AERONAUTICAL EXPERIENCE (AEROPLANE)**
- 26.1. Refer to Appendix 'E'.
  - 26.2. The aeronautical experience shall consist of not less than 1500 hours flight time as pilot of Aeroplane, being flight time which includes at least:
    - 26.2.1. 250 hours flight time as pilot-in-command (in aeroplane); or made up by not less than 100 hours as pilot-in-command; and the necessary additional flight time as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command provided the method of under-supervision employed is approved by the Licensing Authority.
    - 26.2.2. 200 hours cross-county flight time (Aeroplane or Helicopter), of which not less than 100 hours shall be as pilot-in-command or co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, provided that the method of under-supervision employed is approved by the Licensing Authority.
    - 26.2.3. 75 hours instrument time (in aeroplane), of which not more than 30 hours instrument ground time.
    - 26.2.4. 100 hours of night flight time as Pilot-in-Command or as Co-Pilot (in aeroplane).
  - 26.3. The pilot time under instruction in an approved synthetic flight trainer is acceptable as part of the total flight time requirement up to 100 hours of which not more than 25 hours shall have

been acquired in a flight procedure trainer or an approved basic instrument trainer.

- 26.4. Where the applicant has flight time as a pilot of aircraft in other categories, the Licensing authority shall determine whether such experience is acceptable and, if so, the extent to which the total flight time requirements can be reduced accordingly.
- 26.5. **Flight Instruction:** The applicant shall have received the dual flight instructions required for the issue of the Commercial Pilot Licence – aeroplane and for the issue of Instrument Rating – aeroplane.
- 26.6. The holder of Commercial pilot licence, when acting:
  - 26.6.1. As co-pilot of an aircraft required to be operated with a co-pilot, shall be entitled to be credited with not more than 50 per cent of the co-pilot flight time towards the total flight time requirement for issue of ATPL.
  - 26.6.2. As a co-pilot performing under the supervision of the pilot-in-command the functions and duties of a pilot-in-command, shall be entitled to be credited in full toward the total flight time requirement for issue of ATPL.

27. **ATPL - SKILL TEST (AEROPLANE)**

- 27.1. The applicant shall have demonstrated the ability to perform, as pilot-in-command of a multi-engine aircraft, the following procedures and manoeuvres:
  - 27.1.1. Pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan.
  - 27.1.2. Normal flight procedures and manoeuvres during all phases of flight.
  - 27.1.3. Procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions, including simulated engine failure, and covering at least the following.
    - 27.1.3.1. Transition to instrument flight on take-off.
    - 27.1.3.2. Standard instrument departures and arrivals.
    - 27.1.3.3. Holding procedures.
    - 27.1.3.4. Instrument approaches to specified minima.
    - 27.1.3.5. Missed approach procedures.
    - 27.1.3.6. Landing from instrument approaches.

- 27.1.4. Abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as power plant, systems and airframe; and
- 27.1.5. Procedures for crew incapacitation and crew coordination, including allocation of pilot tasks, crew co-operation and use of checklists.
- 27.2. The applicant shall have demonstrated the ability to perform the procedures and manoeuvres with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot licence – aeroplane, and to:
  - 27.2.1. Operate the aeroplane within its limitations.
  - 27.2.2. Complete all manoeuvres with smoothness and accuracy.
  - 27.2.3. Exercise good judgment and airmanship.
  - 27.2.4. Maintain control of the aeroplane at all times in a manner such that the successful outcome of a procedure or manoeuvre is never in doubt.
  - 27.2.5. Understand and apply crew co-ordination and incapacitation procedures; and
  - 27.2.6. Communicate effectively with the other flight crewmembers.
- 27.3. For Skill test, also refer to Air Navigation Order 90.0004 (Licences & Ratings – Air Crew)
- 27.4. For a skill level test in a multi-crew cockpit, the other crew complement shall be qualified on the aircraft.
- 28. **ATPL - PRIVILEGES (AEROPLANE)**
  - 28.1. Subject to compliance with the validity, decrease in medical fitness and the requirements of age curtailment, the privileges of the holder of an Airline Transport Pilot Licence – Aeroplane are:
    - 28.1.1. To exercise all the privileges of the holder of Private and Commercial Pilot Licence – aeroplane and of an Instrument Rating – aeroplane; and
    - 28.1.2. To act as pilot-in-command and co-pilot in aeroplane in air transportation.
    - 28.1.3. An ATPL - A holder employed in Commercial Air Transport Operation shall meet the additional requirements as prescribed in the Operations Manual by the operator.
    - 28.1.4. An ATPL – A holder shall not exercise privileges of the Licence on more than one aircraft, of weight category above 5700 KG, simultaneously in commercial air transport operations.

29. **ATPL - LIMITATIONS (AEROPLANE)**

- 29.1. The holder of an ATPL – A shall not act as Pilot-in-Command of an aeroplane engaged in formation flight unless he is certified on Log Book as competent by a duly qualified Flight Instructor or other person duly approved by the CAA for this purpose.
- 29.2. The holder of ATPL – A shall not act as Pilot-in-Command of an aeroplane engaged in spinning practice unless the aircraft is certified for spinning and he has been certified on his Log Book by a duly qualified Flight Instructor as being competent to recover from fully developed spins.
- 29.3. The holder of ATPL – A shall not act as Pilot-in-Command of an aeroplane engaged in aerobatics flight unless the aircraft is certified for aerobatics and he has been certified on his Log Book by an approved Flight Instructor or a person duly approved by the CAA for this purpose as competent in the maneuvers to be performed.
- 29.4. The holder of an ATPL-A shall not pilot an aircraft engaged in regular public transport operations and international charter if the licence holder has attained 60th birthday.
- 29.5. An ATPL-A holder may exercise the privileges of the licence Up-to 65<sup>th</sup> birthday provided the person has passed a flight test with a Flight Inspector or an Approved Person within the preceding 12 months.
- 29.6. Prior to operating as pilot of an aeroplane engaged in Regular Public Transport Operations, the holder of an ATPL – A shall meet the minimum experience requirement appropriate to the type of aeroplane. Refer to Appendix 'F'.
- 29.7. An aircraft specified for single pilot operation by the manufacturer shall be operated by one pilot. Where the Operator wishes to operate the same aircraft with two pilots (VIP/Terrain), the CAA may permit such operation provided the operator has formulated the required SOPs and operation details; and they are approved by the CAA.

30. **ATPL - AERONAUTICAL KNOWLEDGE (HELICOPTER)**

- 30.1. Refer to Appendix 'C'.

31. **ATPL - AERONAUTICAL EXPERIENCE (HELICOPTER)**

- 31.1. Refer to Appendix 'E'.
- 31.2. The applicant shall have completed not less than 1,000 hours of flight time as pilot of helicopters including not less than:
  - 31.2.1. 250 hours, either as pilot-in-command, or made up to not less than 100 hours as pilot-in-command; and the necessary additional flight time as co-pilot performing, under the supervision of the pilot-in-command, the duties,

and functions of a pilot-in-command in accordance with the method of supervision acceptable to the Licensing Authority.

- 31.2.2. 200 hours cross-county flight time (Aeroplane or Helicopter), of which not less than 100 hours shall be as pilot-in-command or co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, provided that the method of under-supervision employed is approved by the Licensing Authority.
- 31.2.3. 30 hours instrument time, of which not more than 10 hours may be instrument ground time.
- 31.2.4. 50 hours of night flight time as Pilot-in-Command or as Co-Pilot.

**Note:** *The instrument and night time during the training for an Airline Transport Pilot Licence – Helicopter does not authorize a pilot to operate under IFR unless he has an Instrument Rating endorsed on the licence.*

32. **ATPL - SKILL TEST (HELICOPTER)**

- 32.1. The applicant shall have demonstrated the ability to perform, as pilot-in-command of a multi-engine helicopter the following procedures and manoeuvres:
  - 32.1.1. Pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan.
  - 32.1.2. Normal flight procedures and manoeuvres during all phases of flight.
  - 32.1.3. Abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as power plant, systems and airframe.
  - 32.1.4. Procedures for crew incapacitation and crew co-ordination including allocation of pilot tasks, crew co-operation and use of checklists.
- 32.2. The applicant shall have demonstrated the ability to perform the procedures and manoeuvres with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot licence – helicopter, and to:
  - 32.2.1. Operate the helicopter within its limitations.
  - 32.2.2. Complete all manoeuvres with smoothness and accuracy.
  - 32.2.3. Exercise good judgment and airmanship.
  - 32.2.4. Apply aeronautical knowledge.



- 32.2.5. Maintain control of the helicopter at all times in a manner such that the successful outcome of a procedure or manoeuvres is never in doubt.
- 32.2.6. Understand and apply crew co-ordination and incapacitation procedures.
- 32.2.7. Communicate effectively with the other flight crewmembers.
- 32.3. For Skill test, also refer to Air Navigation Order 90.0004 (Licences & Ratings – Air Crew).
- 32.4. For a skill level test in a multi-crew cockpit, the other crew complement is to be qualified on the aircraft.
- 33. **ATPL - PRIVILEGES (HELICOPTER)**
  - 33.1. Subject to compliance with the validity, decrease in medical fitness and the requirements of age curtailment, the privileges of the holder of an Airline Transport Pilot Licence – Helicopter are:
    - 33.1.1. To exercise all the privileges of the holder of Private and Commercial Pilot Licence – helicopter; and
    - 33.1.2. To act as pilot-in-command and co-pilot of a helicopter(s) endorsed in the licence in air transportation.
    - 33.1.3. An ATPL -H holder employed in Commercial Air Transport Operation shall meet the additional requirements as prescribed in the Operations Manual by the operator.
    - 33.1.4. An ATPL - H holder shall not exercise privileges of the Licence on more than one aircraft, of weight category above 5700 Kg, simultaneously in commercial air transport operations.
- 34. **ATPL - LIMITATIONS (HELICOPTER)**
  - 34.1. The holder of an ATPL - H not endorsed with an Instrument Rating shall not act as Pilot-in-Command of a helicopter in other than Visual Meteorological Conditions.
  - 34.2. The holder of an ATPL – H shall not act as Pilot-in-Command of a Helicopter engaged in formation flight unless he is certified as competent by duly qualified Flight Instructor or other person duly approved by the Authority for this purpose.
  - 34.3. The holder of ATPL – H shall not act as Pilot-in-Command of a Helicopter engaged in scheduled International Air Services or non – scheduled International Air Transport Operations for remuneration or hire after he has attained the age of 60 years.
  - 34.4. The holder of an ATPL - H shall not pilot an aircraft engaged in regular public transport operations and international charter if the licence holder has attained 60th birthday.

- 34.5. An ATPL - H holder may exercise the privileges of the licence Up-to 65<sup>th</sup> birthday provided the person has passed a flight test with a Flight Inspector or an Approved Person within the preceding 12 months.
- 34.6. Prior to operating as pilot of an aeroplane engaged in Regular Public Transport Operations, the holder of an ATPL - H shall meet the minimum experience appropriate to the type of aircraft. Refer to Appendix ``F''.
- 34.7. An aircraft specified for one pilot operation by the manufacturer shall be operated by one pilot. Where the Operator wishes to operate the same aircraft with two pilots (VIP/Terrain), the CAA may permit such operation provided the operator has formulated the required SOPs and operation details; and they are approved by the CAA.

35. **ATPL - ERROR MARGINS (AEROPLANE & HELICOPTER)**

**Height**

- 35.1.1. Generally ± 100 feet
- 35.1.2. Starting a go-around at decision height +50/-0 feet
- 35.1.3. Minimum descent height/ MAP/altitude +50/-0 feet

**Tracking**

- 35.1.4. On radio aid ± 5<sup>o</sup>
- 35.1.5. Precision approach Half scale deflection, azimuth & glide path

**Heading**

- 35.1.6. All engines operating ± 5<sup>o</sup>
- 35.1.7. With simulated engine failure ± 10<sup>o</sup>

**Speed**

- 35.1.8. All engines operating ± 5Knots
- 35.1.9. With simulated engine failure + 10/- 0 Knots

36. **ATPL - EXAMINATIONS AND TESTS**

- 36.1. An applicant is eligible to appear in the written examination of the Airline Transport Pilot Licence provided the Student Pilot Licence (SPL) or Private Pilot Licence (PPL) or Commercial Pilot Licence (CPL) has already been issued and is valid; and the applicant has completed 100% of the required flying experience for the issue of the Airline Transport Pilot Licence.
- 36.2. Pass ATPL-1 and ATPL-2; and ATPL-H, if applicable.
- 36.3. Pass Type Technical TT-1 examination.
- 36.4. Skill test by the CAA Inspector/Designated Examiner on ME aircraft.

- 36.5. An applicant who fails to pass a flight test may apply for a retest only when he has carried out the further study or training determined by the person who conducted the test.
- 36.6. Unless otherwise approved by the CAA, the same examiner shall conduct the re-test.
- 36.7. An applicant for initial issue and renewal of Airline Transport Pilot Licence shall provide a suitable multi-engine dual control aircraft or approved Synthetic Flight Trainer as applicable for the purpose of demonstrating of his skill.
- 36.8. The Airline Transport Pilot Licence test shall be conducted with the minimum flight crew complement specified in the aircraft flight manual and any additional crew required under an approved training and checking program of the operator.
- 36.9. If the Airline Pilot Licence Test is conducted for issue or renewal of Instrument Rating, on single pilot operation aircraft, the Flight Inspector or DE conducting the test shall not, during the test, perform any duty essential to the operation of the aircraft.
- 36.10. If the Airline Transport Pilot Licence Test is conducted in an aircraft certificated for multi-pilot operation; and the Flight Inspector or DE conducting the test occupies a control seat, he shall during the test, perform all duties of a pilot not flying.
- 36.11. Except for the CFIs, more than 02 consecutive Tests of the same applicant shall not be taken by the same Examiner.
37. **ATPL - MULTI - CREW AIRCRAFT RATING**
- 37.1. An ATPL holder shall be required to undergo an approved Multi-Crew Cooperation course or pass an MCC Examination before first Endorsement of a Multi-Crew aircraft.
- 37.2. An ATPL holder to qualify as P-1 on a Multi-pilot aeroplane shall also undergo training in the Simulator from the P-2 seat in the following exercises:
- 37.2.1. Engine Cut at V1 or later on take off roll.
- 37.2.2. Go around with failed engine on final approach.
- 37.2.3. Failed Engine landing.
- 37.2.4. Evacuation.
- 37.2.5. Where the training is conducted on the aeroplane, a minimum of 06 landings shall be carried out on a training mission (with no passengers) by the under training P-1 pilot from the P-2 seat.
- 37.2.6. Currency from the P-1 seat shall also mean currency from P-2 seat.

38. **ATPL - MAINTENANCE OF LICENCE**

38.1. **ATPL - VALIDITY**

38.1.1. The Licence shall remain valid for 12 months subject to Medical.

38.2. **ATPL - CURRENCY**

38.2.1. A Licence shall remain current subject to 3 take offs and 3 landings in the last 90 days.

38.2.2. A Type Rating shall remain current subject to 3 take offs and 3 landings in the last 90 days.

38.2.3. Currency may be regained by flying with an Instructor deputed by the approved person.

38.2.4. Currency on a type of aircraft with similar performance and handling characteristics, as defined by the CAA Regulations, is acceptable provided an endorsement is also held for that type of aircraft.

38.3. **ATPL - RENEWAL/REVALIDATION**

38.3.1. An ATPL shall be renewed subject to:

38.3.1.1. An ATPL Skill test ( 02 Hours), or

38.3.1.2. A minimum 06 hours of flying in the last 06 months and IR Skill test (01 Hour);

38.3.2. If all renewal requirements have been met prior to the expiry date, 30 days of grace period may be given for completion of documentation.

38.3.3. If a Licence has not been renewed upto 06 months after the expiry date, the Licence shall be renewed subject to:

38.3.3.1. An Oral Test;

38.3.3.2. And meeting all renewal requirements.

38.3.4. If a Licence is renewed between 06 months to 60 months after the expiry date, the Licence shall be renewed subject to:

38.3.4.1. Passing the ATPL - R examination.

38.3.4.2. And meeting all renewal requirements.

38.3.5. If a Licence has not been renewed for 60 months after the expiry date, the Licence shall be renewed subject to:

38.3.5.1. Passing the theoretical examinations for the Licence.

38.3.5.2. And meeting all renewal requirements.

39. **ATPL - AIRWORTHINESS**

39.1.1. The aircraft used for training shall have a valid C of A.

40. **ATPL - LOGBOOK**

40.1.1. A holder of an Airline Transport Pilot shall maintain a logbook in accordance with the CAA prescribed Regulations.

41. **ATPL - FEE SCHEDULE**

41.1.1. As per the CAA Fee Schedule (personnel Licensing).

42. **ATPL - DOCUMENTATION**

42.1.1. **FOR ISSUE OF ATPL**

42.1.1.1. Application Form CAAF-600.

42.1.1.2. Medical Certificate CAA-43.

42.1.1.3. NOC (for Military/Govt. Departments).

42.1.1.4. Security Clearance, if not already available with CAA.

42.1.1.5. Education Certificates.

42.1.1.6. 04 coloured photographs 1" X 1" (both ears visible, head uncovered & blue background) in an envelope with name at back of each photograph.

42.1.1.7. Photocopy of foreign Licences, if applicable.

42.1.1.8. ATPL Examination Result.

42.1.1.9. TT-1 result or Course completion Certificate.

42.1.1.10. Photocopy of First and Last three pages of Logbook.

42.1.1.11. Flying Hours Breakdown (Exercise wise).

42.1.1.12. Course Certificates (military. Contracting states).

42.1.1.13. Copy of Skill Test Authorization by CAA.

42.1.1.14. Skill Test Report CAAF-602.

42.1.1.15. Fee Voucher/Authorization.

42.1.2. **FOR RENEWAL OR REVALIDATION OF ATPL**

42.1.2.1. Application Form CAAF-601.

42.1.2.2. Medical Certificate CAA-43.

42.1.2.3. Skill Test CAAF-602.

42.1.2.4. Revalidation Examination results, if applicable.

42.1.2.5. Fee voucher/Authorization.

43. **INSTRUMENT RATING (AEROPLANE & HELICOPTER)**
- 43.1. **ELIGIBILITY**
- 43.1.1. Applicant shall hold a valid PPL or a CPL or ATPL (H).
- 43.1.2. **MEDICAL:**
- 43.1.2.1. Applicant shall hold Class I Medical Assessment.
- 43.1.2.2. An applicants who holds a Private Pilot Licence with Class II Medical assessment, shall have established their hearing acuity on the basis of compliance with the hearing requirements for the issue of Class 1 Medical Assessment.
- 43.2. **FLYING ORGANIZATION**
- 43.2.1. The Flying Organization conducting training for the issue of an Instrument Rating shall hold a valid approval from CAA as a Flying Training Organization (FTO).
- 43.3. **VALIDITY**
- 43.3.1. The Instrument Rating will remain valid for 12 months subject to a valid Medical Certificate.
- 43.4. **GRADES OF INSTRUMENT RATING**
- 43.4.1. The grades of Instrument Rating are:
- 43.4.1.1. Multi – Engine Aeroplane;
- 43.4.1.2. Single – Engine Aeroplane;
- 43.4.1.3. Multi – Engine Helicopter;
- 43.4.1.4. Single – Engine Helicopter.
44. **IR - AERONAUTICAL KNOWLEDGE**
- 44.1. Refer to the Appendix ``D``.
45. **IR - AERONAUTICAL EXPERIENCE**
- 45.1. Refer to the Appendix ``E``.
- 45.2. The applicant shall have completed not less than:
- 45.2.1. 50 hours cross country flight time as Pilot-in-Command, of which at least 10 hours shall be on the aeroplane or helicopter for which the rating is sought.
- 45.2.2. 40 hours instrument time in aeroplane or helicopters of which not more than 20 hours on basic instrument flight trainer, or 30 hours where a flight simulator is used, may be instrument ground time.
- 45.3. **FLIGHT INSTRUCTION**
- 45.4. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the holder of an Instrument Rating:

- 45.4.1.1. Pre-flight procedures, including the use of the flight manual or equivalent document, and appropriate air traffic services documents in the preparation of an IFR flight plan.
- 45.4.1.2. Pre-flight inspection, use of checklists, taxiing and pre-takeoff checks.
- 45.4.2. Procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:
  - 45.4.2.1. Transition to instrument flight on take-off.
  - 45.4.2.2. Standard instrument departures and arrivals.
  - 45.4.2.3. En-route IFR procedures.
  - 45.4.2.4. Holding procedures.
  - 45.4.2.5. Instrument approaches to specified minima.
  - 45.4.2.6. Missed approach procedures.
  - 45.4.2.7. Landings from instrument approaches.
  - 45.4.2.8. In-flight manoeuvres and particular flight characteristics.
  - 45.4.2.9. If Instrument Rating – Multi-engine is sought, the applicant shall have received dual instrument flight instruction on Multi-engine aircraft. The Instructor shall ensure that the applicant has operational experience in the operation of the aircraft solely by reference to instruments with one engine inoperative or simulated inoperative.

46. **IR - SKILL TEST**

- 46.1. The applicant shall have demonstrated to a Flight Inspector or Designated Examiner(DE) the ability to perform the procedures and manoeuvres with the degree of competency appropriate to the privileges granted to the holder of an Instrument Rating – Aeroplane or Helicopter as appropriate, and to:
  - 46.1.1. Operate the aircraft within its limitation.
  - 46.1.2. Complete all manoeuvres with smoothness and accuracy.
  - 46.1.3. Exercise good judgment and airmanship.
  - 46.1.4. Apply aeronautical knowledge.
  - 46.1.5. Maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is never seriously in doubt.
- 46.2. The applicant shall have demonstrated the ability to operate multi-engine aircraft solely by reference to instruments with one engine inoperative, or simulated inoperative, if the Instrument Rating – Multi-engine is sought.

- 46.3. For Skill test, also refer to Air Navigation Order 90.0004 (Licences & Ratings – Air Crew)
- 46.4. For a skill level test in a multi-crew cockpit, the other crew complement shall be qualified on the aircraft.

47. **IR - ERROR MARGINS**

**Height**

Generally	± 100 feet
Starting a go-around at decision height	+50/-0 feet
Minimum descent height/ MAP/altitude	+50/-0 feet

**Tracking**

On radio aid	± 5 <sup>0</sup>
Precision approach	Half scale deflection, azimuth & glide path

**Heading**

All engines operating	± 5 <sup>0</sup>
With simulated engine failure	± 10 <sup>0</sup>

**Speed**

All engines operating	± 5 Knots
With simulated engine failure	+ 10/- 0 Knots

48. **IR - EXAMINATIONS AND TESTS**

- 48.1. An applicant shall be eligible to appear in the written examination of Instrument Rating provided a Private Pilot Licence (PPL) or a Commercial Pilot Licence (CPL) or an Airline Transport Pilot Licence (ATPL – Helicopter) has already been issued and is valid; and the applicant has completed at least 80% of the required flying experience for the issue of the Instrument Rating.
- 48.2. Pass Instrument Rating Examination IR-1.
- 48.3. Qualify Skill test by the CAA Inspector/Designated Examiner.
- 48.4. An applicant who fails to pass a flight test may apply for a retest only when he has carried out the further study or training determined by the person who conducted the test.
- 48.5. Unless otherwise approved by the CAA, the same examiner shall conduct the re-test.
- 48.6. An applicant for initial issue and renewal of an Instrument Rating shall provide a suitable dual control aircraft or approved Synthetic Flight Trainer as applicable for the purpose of demonstrating of his skill.



- 48.7. The Instrument Rating Test shall be conducted with the minimum flight crew complement specified in the aircraft flight manual and any additional crew required under an approved training and checking program of the operator.
- 48.8. If the Instrument Rating Test is conducted for issue or renewal of Instrument Rating, on single pilot operation aircraft, the Flight Inspector or DE conducting the test shall not, during the test, perform any duty essential to the operation of the aircraft.
- 48.9. If the Instrument Rating Test is conducted in an aircraft certificated for multi-pilot operation; and the Flight Inspector or DE conducting the test occupies a control seat, he shall during the test, perform all duties of a pilot not flying.
- 48.10. Except for the CFIs, more than 02 consecutive Tests of the same applicant shall not be taken by the same Examiner.

48.11. **ENDORSEMENT**

- 48.11.1. When the holder of a pilot licence satisfies the requirements for the issue or renewal of an Instrument Rating of a particular grade, the rating shall be endorsed on the Licence.
- 48.11.2. An Instrument Rating shall only be endorsed on a licence when proficiency has been satisfactorily demonstrated in the use of NDB/VOR and ILS.
- 48.11.3. For initial issue of an Instrument Rating of any grade, the applicant shall demonstrate his proficiency on ADF/VOR and ILS.
- 48.11.4. If proficiency has not been demonstrated on ILS during an Instrument Rating renewal flight check, the rating will be endorsed "Not valid for ILS." Where the aircraft is fitted with only one aid i.e. ADF or VOR, the rating endorsed on the licence shall be limited to "valid for ADF only" or "valid for VOR only."

49. **IR - PRIVILEGES OF RATING**

- 49.1. Subject to the specific Instrument Rating Endorsement (i.e. Single/Multi-engine), an Instrument Rating authorizes the holder of the licence on which the rating is endorsed:
  - 49.1.1. To act as pilot-in-command or to act as pilot-in-command under supervision, of an aircraft for which the licence is valid while the aircraft is flying under IFR; and
  - 49.1.2. To act as co-pilot of an aircraft for which the licence is valid while the aircraft is flying under IFR.
  - 49.1.3. An Instrument Rating holder employed in Commercial Air Transport Operation shall meet the additional

requirements as prescribed in the Operations Manual by the operator.

50. **IR - MAINTENANCE OF INSTRUMENT RATING**

50.1. **IR - VALIDITY**

50.1.1. An Instrument Rating shall remain valid for 12 months from the date of endorsement on the licence provided the licence is valid on which the rating is endorsed.

50.2. **IR - CURRENCY**

50.2.1. An Instrument Rating shall remain current subject to currency of Licence and its period of Validity.

50.3. **IR - RENEWAL/REVALIDATION**

50.3.1. An applicant for renewal of an Instrument Rating shall be required to submit a duly completed renewal application form to the Licensing Authority, accompanied by satisfactory evidence that he has passed the appropriate Instrument Rating renewal Flight or Simulator Check.

50.3.2. An Instrument Rating Check will include a check on the use of one non-precision approach and one precision approach.

50.3.3. If all renewal requirements have been met prior to the expiry date, 30 days of grace period may be given for completion of documentation.

50.3.4. If an Instrument Rating has not been renewed upto 06 months after the expiry date, the Instrument Rating shall be renewed subject to:

50.3.4.1. An Oral Test;

50.3.4.2. And meeting all renewal requirements.

50.3.5. If an Instrument Rating has not been renewed between 06 months to 60 months after the expiry date, the Licence or Instrument Rating shall be renewed subject to:

50.3.5.1. Passing the IR - R examination;

50.3.5.2. And meeting all renewal requirements.

50.3.6. If an Instrument Rating has not been renewed for 60 months after the expiry date, the Licence or Instrument Rating shall be renewed subject to:

50.3.6.1. Passing the IR - 1 for the Instrument rating.

50.3.6.2. And meeting all renewal requirements.

51. **IR - LIMITATIONS OF RATING**

51.1. If a holder of an Instrument Rating attempts the Instrument Rating renewal flight test and fails to satisfy the test requirements; he shall not exercise the privileges of Instrument Rating.

52. **IR - AIRWORTHINESS**

52.1.1. The aircraft used for training shall have a valid C of A.

53. **IR - FEE SCHEDULE**

53.1.1. As per the CAA Fee Schedule (Personnel Licensing).

54. **IR - DOCUMENTATION**

54.1.1. **FOR ISSUE OF IR**

54.1.1.1. Application Form CAAF-600.

54.1.1.2. Medical Certificate CAA-43.

54.1.1.3. IR Examination Result.

54.1.1.4. IF Hours breakdown.

54.1.1.5. Skill Test Authorization by CAA.

54.1.1.6. Skill Test Report CAAF-602.

54.1.1.7. Logbook Certificate CAAF-603.

54.1.1.8. Fee Voucher/Authorization.

54.1.2. **FOR RENEWAL OR REVALIDATION OF IR**

54.1.2.1. Application Form CAAF-601.

54.1.2.2. Skill Test CAAF-602.

54.1.2.3. Revalidation Examination result, if applicable.

54.1.2.4. Fee voucher/Authorization.

55. **CANCELLATION**

55.1. With the enforcement of this Air Navigation Order, old Licensing Air Navigation Orders ANO 91.0009, ANO 91.0010, ANO 91.0011, ANO 91.0019 and ANO 91.0020 shall stand canceled.

Date 10<sup>th</sup> October, 2004

--SD--

**(PERVEZ AKHTAR NAWAZ)**  
Air Marshal (Retd)  
Director General  
Civil Aviation Authority

**APPENDIX “A” TO ANO 90.0011**

**FLIGHT RADIO TELEPHONY OPERATOR LICENCE  
(THEORY & PRACTICAL SYLLABUS)**

**1. Type of Tests**

- 1.1.1. FRTOL Written Examination : FRTOL-1
- 1.1.2. FRTOL Practical Test : FRTOL-2

**2. FRTOL Syllabus (Written & Practical)**

- 2.1. Communication between aircraft and Air Traffic Services units that includes Ground Control, Tower, Approach, Area Control and Radar.
- 2.2. Knowledge of Standard Phraseology for communication.
- 2.3. Pronunciation of Standard Phraseology.
- 2.4. Pronunciation of phonetic letters.
- 2.5. Pronunciation of numerals.
- 2.6. Standard Phraseology, its application in VMC and circuit patterns.
- 2.7. Standard Phraseology, its application in IMC and Instrument Arrival/departure procedures
- 2.8. Definitions, functions and call signs of ATS units.
- 2.9. Contents and communication of position reports.
- 2.10. Ability to listen, write in abbreviated form and read back ATC messages and clearances.
- 2.11. ATC Clearances.
- 2.12. Radio communication failure (RCF), its procedure and application.
- 2.13. Establishment and continuation of communication
- 2.14. Transfer of communication
- 2.15. Distress messages and procedures.
- 2.16. Urgency messages and procedures.
- 2.17. Knowledge of frequency bands for communication (VHF, UHF, HF).
- 2.18. Knowledge of emergency frequencies.

**3. FRTOL Written Examination Details**

<b>Exam</b>	<b>Questions</b>	<b>Duration</b>	<b>Pass Marks</b>	<b>Validity</b>
FRTOL - 1	40 - 50	1: 30 Hours	70%	2 Years

**4. Recommended Study Material**

- 4.1. ICAO Manual of Radiotelephony (ICAO Document 9432-AN/925)

**APPENDIX “B” TO ANO 90.0011**

**COMMERCIAL PILOT LICENCE  
(AERONAUTICAL KNOWLEDGE)**

1. **Type of Papers**

- 1.1.1. CPL - Examination : CPL-1
- 1.1.2. CPL - Examination : CPL-2
- 1.1.3. CPL - Helicopters Examination : CPL-H
- 1.1.4. CPL - Revalidation Examination : CPL-R

2. **CPL -1 Syllabus**

2.1. **Air Law**

- 2.1.1. Rules and regulation relevant to the holder of a Commercial Pilot Licence – Aeroplane; rules of the air; appropriate air traffic services practices and procedures.

2.2. **Flight performance and planning**

- 2.2.1. Effects of loading and mass distribution on Aeroplane handling, flight characteristics and performance; mass and balance calculations.
- 2.2.2. Use and practical application of take off, landing and other performance data.
- 2.2.3. Pre-flight and en-route flight planning appropriate to operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures.

2.3. **Human performance and limitations.**

- 2.3.1. Human performance and limitations relevant to the Commercial Pilot – Aeroplane.

2.4. **Meteorology**

- 2.4.1. Interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry.

2.5. **Operational Procedures**

- 2.5.1. Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
- 2.5.2. Appropriate precautionary and emergency procedure.
- 2.5.3. Operational procedures for carriage of freight; potential hazards associated with dangerous goods.

- 2.5.3.1. Requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from Aeroplanes.
- 2.5.4. **Radiotelephony**
  - 2.5.4.1. Radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.
- 3. **CPL - 2 Syllabus**
  - 3.1. **Aircraft General Knowledge**
    - 3.1.1. Principles of operation and functioning of Aeroplane power plants, systems and instruments.
    - 3.1.2. Operating limitations of appropriate Aeroplane and power plants; relevant operational information from the flight manual or other appropriate documents.
    - 3.1.3. Use and serviceability check of equipment and systems of appropriate Aeroplanes.
    - 3.1.4. Maintenance procedures for airframes, systems and power plants of appropriate Aeroplanes.
  - 3.2. **Meteorology**
    - 3.2.1. Aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems, the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take off, en-route and landing conditions; hazardous weather avoidance.
  - 3.3. **Navigation**
    - 3.3.1. Air navigation, including the use of aeronautical charts instruments and navigation aids; and understanding of the principles and characteristics of appropriate navigation systems; operation of airborne equipment.
  - 3.4. **Principles of flight**
    - 3.4.1. Principles of flight relating to Aeroplanes.
- 4. **CPL - Helicopter Syllabus**
  - 4.1. **Principles of flight**
    - 4.1.1. Principles of flight relating to helicopters.
- 5. **CPL – Revalidation Syllabus**
  - 5.1. Civil Aviation Rules 1994 (from Rule 60 to 250)
- 6. **Examination Papers Details**

<b>Exam</b>	<b>Questions</b>	<b>Duration</b>	<b>Pass Marks</b>	<b>Validity</b>
CPL - 1	80 -100	3 Hours	70%	2 Years
CPL - 2	80 -100	3 Hours	70%	2 Years
CPL - H	40 - 50	1: 30 Hours	70%	2 Years
CPL - R	40 - 50	1: 30 Hour	70%	2 Year
CPL - R (ORAL)	As Req.	As Req.	70%	30 Days

7. **Recommended Study Material**

7.1. **CPL -1 Suggested Study Material**

- 7.1.1. Jeppesen Multi-Engine Manual or equivalent.
- 7.1.2. Civil Aviation Rules 1994 (from Rule 60 to 250)
- 7.1.3. Jeppesen Airway Manual
  - 7.1.3.1. Meteorology Section
  - 7.1.3.2. Tables and Codes Section
  - 7.1.3.3. Air Traffic Control Section
  - 7.1.3.4. Emergency Section
- 7.1.4. Dangerous Goods Guide (Appendix ``F'' to this ANO).
- 7.1.5. Multi-Crew Co-Operation Guide (Appendix ``G'' to this ANO)
- 7.1.6. FAA Questionnaire for CPL and CFI.

7.2. **CPL - 2 Suggested Study Material**

- 7.2.1. Jeppesen Multi-Engine Manual or equivalent.
- 7.2.2. FAA Questionnaire for CPL and CFI.

7.3. **CPL - H Suggested Study Material**

- 7.3.1. FAA Questionnaire for CPL and CFI (Helicopter).

7.4. **CPL - R Suggested Study Material**

- 7.5. Civil Aviation Rules 1994 (from Rule 60 to 250)

**Note: 1.** *Applicants are strongly recommended not to consult outdated study material by unrecognized authors/publishers.*

**Note: 2.** *Within Pakistan, the recommended study material/accessories may be obtained from the authorized Jeppesen rep at Terminal 1, JIAP, Karachi/any other location.*

**APPENDIX “C” TO ANO 90.0011**

**AIRLINE TRANSPORT PILOT LICENCE  
(AERONAUTICAL KNOWLEDGE)**

1. **Type of Papers**

- 1.1. ATPL Examination : ATPL-1
- 1.2. ATPL Examination : ATPL-2
- 1.3. ATPL Helicopters Examination : ATPL-H
- 1.4. ATPL Revalidation Examination : ATPL-R

2. **ATPL -1 Syllabus**

2.1. **Flight performance and planning**

- 2.1.1. Effects of loading and mass distribution on aeroplane handling, flight characteristics and performance; as and balance calculations.
- 2.1.2. Use of practical application of take-off, landing and other performance data, including procedures for cruise control.
- 2.1.3. Pre-flight and en-route operational flight planning; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures.

2.1.4. **Human performance and limitations**

- 2.1.4.1. Human performance and limitations relevant to the airline transport pilot licence-aeroplane.

2.1.5. **Operational procedures**

- 2.1.5.1. Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent and approach.
- 2.1.5.2. Precautionary and emergency procedures; safety practices associated with flight under IFR.
- 2.1.5.3. Operational procedures for carriage of freight and dangerous goods.
- 2.1.5.4. Requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aeroplanes.

2.1.6. **Principles of Flight**

- 2.1.6.1. Principles of flight relating to aeroplanes; subsonic aerodynamics; compressibility effects, maneuver boundary limits, wing design characteristics, effects



of supplementary lift and drag devices; relationships between lift, drag and thrust at various airspeeds and indifferent flight configuration.

2.1.7. **Radiotelephony**

2.1.7.1. Radiotelephony procedures and phraseology; action to be taken in case of communication failure.

3. **ATPL - 2 Syllabus**

3.1. **Aircraft general knowledge**

3.1.1. General characteristics and limitations of electrical, hydraulic, pressurization and other aeroplane systems; flight control systems, including auto-pilot and stability augmentation.

3.1.2. Principles of operation, handling procedures and operating limitations of aeroplane power-plants; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document.

3.1.3. Operating procedures and limitations of appropriate aeroplane; effects of atmospheric conditions on aeroplane performance.

3.1.4. Use and serviceable checks of equipment and systems of appropriate aeroplanes.

3.1.5. Flight instruments; compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments.

3.1.6. Maintenance procedures for airframes, systems and power-plants of appropriate aeroplanes.

3.2. **Meteorology**

3.2.1. Interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviation; us of, and procedures for obtaining, meteorological information, pre-flight and in-flight.

3.2.2. Aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation ; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions.

3.2.3. Causes, recognition and effects of engine and airframe icing; frontal zone perpetration procedures; hazardous weather avoidance.

3.2.4. Practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts; jet-streams.

3.3. **Navigation**

- 3.3.1. Air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for log-range flights.
- 3.3.2. Use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aeroplanes.
- 3.3.3. Use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids.
- 3.3.4. Principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment.
- 3.3.5. **Aviation Law**
- 3.3.6. Rules and regulation relevant to the holder of an airline pilot licence-aeroplane; rules of the air; appropriate air traffic practices and procedures.

4. **ATPL - H Syllabus**

4.1. **Principles of flight**

- 4.1.1. Principles of flight relating to helicopters.

5. **ATPL – Revalidation Syllabus**

5.1. **Operational Procedures**

- 5.1.1. Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent, and approach.
- 5.1.2. Precautionary and emergency procedures; safety practices associated with flight under IFR.
- 5.1.3. Operational procedures for carriage of freight and dangerous goods.
- 5.1.4. Requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aeroplanes.

6. **Examination Papers Details**

<b>Exam</b>	<b>Questions</b>	<b>Duration</b>	<b>Pass Marks</b>	<b>Validity</b>
ATPL - 1	80 -100	3 Hours	70%	3 Years
ATPL - 2	80 -100	3 Hours	70%	3 Years

ATPL - H	40 - 50	1:30 Hours	70%	3 Years
ATPL - R	40 - 50	1: 30 Hour	70%	3 Year
ATPL - R (ORAL)	As Req.	As Req.	70%	30 Days

7. **Recommended Study Material**

7.1. **ATPL - 1 Suggested Study Material**

- 7.1.1. Jeppesen Instrument Rating Manual or equivalent.
- 7.1.2. Jeppesen Airway Manual
  - 7.1.2.1. Introduction Section.
  - 7.1.2.2. Tables and Codes Section
  - 7.1.2.3. Air Traffic Control Section
  - 7.1.2.4. Emergency Section
- 7.1.3. Basic knowledge of Critical Point & Point of no return.
- 7.1.4. Dangerous Goods Guide (Appendix ``F'' to this ANO)
- 7.1.5. Multi-Crew Co-Operation Guide (Appendix ``G'' to this ANO)
- 7.1.6. FAA Questionnaire for CPL, CFI, ATPL and IR.

7.2. **ATPL - 2 Suggested Study Material**

- 7.2.1. Jeppesen Multi-Engine Manual or equivalent.
- 7.2.2. Jeppesen Instrument Rating Manual or equivalent.
- 7.2.3. Jeppesen Airway Manual
  - 7.2.3.1. Introduction Section.
  - 7.2.3.2. Tables and Codes Section
  - 7.2.3.3. Air Traffic Control Section
  - 7.2.3.4. Radio Aids Section.
  - 7.2.3.5. Metrology Section.
  - 7.2.3.6. Emergency Section
- 7.2.4. Civil Aviation Rules 1994 (from Rule 60 to 250)
- 7.2.5. FAA Questionnaire for ATPL and IR.

7.3. **ATPL - H Suggested Study Material**

- 7.3.1. FAA Questionnaire for ATPL (Helicopter).

7.4. **ATPL - R Suggested Study Material**

7.4.1. Jeppesen Airway Manual

7.4.1.1. Introduction Section.

7.4.1.2. Tables and Codes Section

7.4.1.3. Air Traffic Control Section

7.4.1.4. Emergency Section

7.4.2. Civil Aviation Rules 1994 (from Rule 60 to 250)

**Note: 1.** *Applicants are strongly recommended not to consult outdated study material by unrecognized authors/publishers.*

**Note: 2.** *Within Pakistan, the recommended study material/accessories may be obtained from the authorized Jeppesen rep at Terminal 1, JIAP, Karachi/any other location.*

**APPENDIX “D” TO ANO 90.0011**

**INSTRUMENT RATING  
(AERONAUTICAL KNOWLEDGE)**

1. **Type of Papers**

- 1.1. Instrument Rating Examination : IR-1
- 1.2. Instrument Rating Revalidation Examination : IR-R

2. **IR-1 Syllabus**

2.1.1. **Air Law**

Rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;

2.1.2. **Aircraft General Knowledge.**

2.1.2.1. Use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aeroplane under IFR and in instrument meteorological conditions; use and limitations of auto-pilot;

2.1.2.2. Compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effect; practices and procedures in the event of malfunction of various flight instruments;

2.1.3. **Flight Performance and planning.**

2.1.3.1. Pre-flight preparations and checks appropriate to flight under IFR.

2.1.3.2. Operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures.

2.1.4. **Human performance and limitations**

2.1.4.1. Human performance and limitations relevant to instrument flight in Aeroplane and helicopters;

2.1.5. **Meteorology**

2.1.5.1. Application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry.

2.1.5.2. Causes, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance.

2.1.6. **Navigation**

- 2.1.6.1. Practical air navigation using radio navigation aids;
- 2.1.6.2. Use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;

2.1.7. **Operational procedures**

- 2.1.7.1. Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent, and approach.
- 2.1.7.2. Precautionary and emergency procedures; safety practices associated with flight under IFR.

2.1.8. **Radiotelephony**

- 2.1.8.1. Radiotelephony procedures and phraseology as applied to aircraft operations under IFR; action to be

3. **IR – Revalidation Syllabus**

3.1. **Operational procedures**

- 3.1.1. Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent and approach.
- 3.1.2. Precautionary and emergency procedures; safety practices associated with flight under IFR.

4. **Examination Papers Details**

<b>Exam</b>	<b>Questions</b>	<b>Duration</b>	<b>Pass Marks</b>	<b>Validity</b>
IR - 1	80 - 100	3 Hours	70%	2 Years
IR - R	40 - 50	1: 30 Hour	70%	2 Year
IR – R (ORAL)	As Req.	As Req.	70%	30 Days

5. **Recommended Study Material**

5.1. **IR - 1 Suggested Study Material**

- 5.2. Jeppesen Instrument Rating Manual or equivalent.
- 5.3. Jeppesen Airway Manual
  - 5.3.1. Introduction Section.

- 5.3.2. Tables and Codes Section
- 5.3.3. Air Traffic Control Section
- 5.3.4. Radio Aids Section.
- 5.3.5. Metrology Section.
- 5.3.6. Emergency Section.
- 5.4. Civil Aviation Rules 1994 (from Rule 60 to 250)
- 5.5. FAA Questionnaire for IR.
- 5.6. **IR – R Suggested Study Material**
  - 5.6.1. Jeppesen Instrument Rating Manual or
  - 5.6.2. Jeppesen Airway Manual.
  - 5.6.3. Introduction Section.
  - 5.6.4. Tables and Codes Section.
  - 5.6.5. Air Traffic Control Section.
  - 5.6.6. Emergency Section.

- Note: 1.** *Applicants are strongly recommended not to consult outdated study material by unrecognized authors/publishers.*
- Note: 2.** *Within Pakistan, the recommended study material/accessories may be obtained from the authorized Jeppesen rep at Terminal 1, JIAP, Karachi/any other location.*

**APPENDIX "E" TO ANO 90.0011****FLYING HOURS BREAKDOWN COURSES**  
**(PPL, CPL, ATPL, IR)****PRIVATE PILOT LICENCE (AEROPLANE)****Integrated Course:** (within 8 months)

<b>Pre-requisite for PPL Course</b>	a) Licences: FRTOL & SPL
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<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	30	P-1/P-3/Solo	At the discretion of CFI (General flying, Circuits, Cross country)
Solo	10	P-1	Including 5 hours of Solo X-Country with one cross country totaling not less than 150 NM in the course of which two full stop landings at different aerodromes shall be made.
Total Hours	40 (Aeroplane)	P-1/P-3/Solo	May include upto 5 hours on approved simulator

**Modular Course:** (More than 8 months)

<b>Pre-requisite for PPL Course</b>	a) Licences: FRTOL & SPL
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<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	40	P-1/P-3/Solo	At the discretion of CFI (General flying, Circuits, Cross country)
Solo	10	P-1	Including 5 hours of Solo X-Country with one cross country totaling not less than 150 NM in the course of which two full stop landings at different aerodromes shall be made.
Total Hours	50 (Aeroplane)	P-1/ P-3/Solo	May include upto 5 hours on approved simulator

*Note: Minimum of 10 hours to be flown in the last 03 months before PPL issue.*





**PRIVATE PILOT LICENCE (HELICOPTERS)**

**Integrated Course:** (within 8 months)

<b>Pre-requisite for PPL Course</b>	a) Licences: FRTOL & SPL
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<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	30	P-1/P-3/Solo	At the discretion of CFI (General flying, Circuits, Cross country)
Solo	10	P-1	Including 5 hours of Solo X-Country with one cross country totaling not less than 100 NM in the course of which two full stop landings at different points shall be made.
Total Hours	40 (Helicopter)	P-1/P-3/Solo	May include upto 5 hours on approved simulator

**Modular Course:** (More than 8 months)

<b>Pre-requisite for PPL Course</b>	a) Licences: FRTOL & SPL
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*Note: Minimum of 10 hours to be flown in the last 03 months before PPL issue.*

<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	40	P-1/P-3/Solo	At the discretion of CFI (General flying, Circuits, Cross country)
Solo	10	P-1	Including 5 hours of Solo X-Country with one cross country totaling not less than 100 NM in the course of which two full stop landings at different points shall be made.
Total Hours	50 (Helicopter)	P-1/P-3/Solo	May include upto 5 hours on approved simulator

**COMMERCIAL PILOT LICENCE (AEROPLANE)****Integrated Course:** (within 10 months)

<b>Pre-requisite for CPL Course</b>		a) Licences: PPL	
<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	30	P-1/P-3	At the discretion of CFI. P-1/P-3/Solo hours as required for the exercises.
PIC	45	P-1	May include any Exercise/Solo.
X-Country	20	P-1	Including X-Country with one solo cross country totaling not less than 300 NM in the course of which two full stop landings at different points shall be made. May include Solo.
Instrument	10	P-3	May include upto 5 hours on approved simulator
Night	5	P-1	At least 05 take offs and 05 landings. May include Solo.
Total Hours	110 (Aeroplane)	P-1/P-3	Excluding PPL hours.

**Modular Course:** (more than 10 months)

<b>Pre-requisite for CPL Course</b>		a) Licences: PPL	
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*Note: Minimum of 25 hours to be flown in the last 06 months before CPL issue.*

<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	70	P-1/P-3	At the discretion of CFI. P-1/P-3/Solo hours as required for the exercises.
PIC	45	P-1	May include any Exercise/Solo.
X-Country	20	P-1	Including X-Country with one solo cross country totaling not less than 300 NM in the course of which two full stop landings at different points shall be made. May include Solo.
Instrument	10	P-3	May include upto 5 hours on approved simulator
Night	5	P-1	At least 05 take offs and 05 landings. May include Solo.

Total Hours	150 (Aeroplane)	P-1/P-3	Excluding PPL hours.
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**COMMERCIAL PILOT LICENCE (HELICOPTERS)****Integrated Course:** (Within 10 months)

<b>Pre-requisite for CPL Course</b>		a) Licences: PPL	
<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	55	P-1/P-3	At the discretion of CFI. P-1/P-3/Solo hours as required for the exercises.
PIC	20	P-1	May include any Exercise/Solo.
X-Country	10	P-1	Including solo Cross-Country with two full stop landings at different points shall be made. May include Solo.
Instrument	10	P-3	May include upto 5 hours on approved simulator
Night	5	P-1	At least 05 take offs and 05 landings. May include Solo.
Total Hours	100 (Helicopter)	P-1/P-3	Excluding PPL hours.

**Modular Course:** (More than 10 months)

<b>Pre-requisite for CPL Course</b>		a) Licences: PPL	
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*Note: Minimum of 25 hours to be flown in the last 06 months before CPL issue.*

<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
GF	105	P-1/P-3	At the discretion of CFI. P-1/P-3/Solo hours as required for the exercises.
PIC	20	P-1	May include any Exercise/Solo.
X-Country	10	P-1	Including solo Cross-country with two full stop landings at different points shall be made. May include Solo.
Instrument	10	P-3	May include upto 5 hours on approved simulator
Night	5	P-1	At least 05 take offs and 05 landings. May include Solo.
Total Hours	150 (Helicopter)	P-1/P-3	Excluding PPL hours.

**AIRLINE TRANSPORT PILOT LICENCE (AEROPLANE)**

<b>Pre-requisite for ATPL</b>	a) Licences: CPL & IR b) Requirement given below.
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<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
Pilot-in-command	250	P-1/P-2	Not less than 100 hours as PIC and remaining time may be as Co-pilot under supervision performing the duties and functions of PIC.
X-Country	200	P-1	Not less than 100 hours as PIC or as Co-pilot under supervision performing the duties and functions of PIC.
Simulator	100	P-1/P-2	Not more than 25 hours on flight procedure trainer or basic instrument flight trainer.
Instrument	75	P-1/P-2/P-3	Not more than 30 hours on instrument ground time.
Night	100	P-1/P-2	As PIC / Co-pilot
Total Hours	1500 (Aeroplanes)	P-1/P-2/P-3	-----

**AIRLINE TRANSPORT PILOT LICENCE (HELICOPTERS)**

<b>Pre-requisite for ATPL</b>	a) Licences: CPL & IR b) Requirement given below.
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*Note: The instrument and night time specified above do not entitle the holder of ATPL-Helicopter to pilot helicopters under IFR.*

<b>Exercise</b>	<b>Flying Hours: Min. Requirement</b>	<b>Logging</b>	<b>Remarks</b>
Pilot-in-command	250	P-1/P-2	Not less than 100 hours as PIC and remaining time may be as Co-pilot under supervision performing the duties and functions of PIC.
X-Country	200	P-1	Not less than 100 hours as PIC or as Co-pilot under supervision performing the duties and functions of PIC.
Simulator	100	P-1/P-2	Not more than 25 hours on flight procedure trainer or basic instrument flight trainer.
Instrument	30	P-1/P-2/P-3	Not more than 10 hours on instrument ground time.
Night	50	P-1/P-2	As PIC / Co-pilot
Total Hours	1000 (Helicopter)	P-1/P-2/P-3	-----

**INSTRUMENT RATING (AEROPLANE)****Integrated Course :** (Within 6 months)

<b>Pre-requisite for IR course</b>	a)Licences: PPL or CPL b)Experience: X-country: 50 hours (P-1) with a minimum of 10 hours on Aeroplane
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<b>Exercise</b>	<b>Flying Hours: Min. Requirements</b>	<b>Logging</b>	<b>Remarks</b>
Instrument P-3	20	P-3	
Instrument P-1	20	P-1 U/S	May be flown as IFR Cross Country.
Instrument time	40		May include 20 hours Instrument ground Time on an Approved flight simulator

**Modular Course:** (more than 6 months)

<b>Pre-requisite for IR course</b>	a)Licences: PPL or CPL b)Experience:X-country: 50 hours (P-1/Solo) with a minimum of 10 hours on aeroplane
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*.Note: Minimum of 10 hours to be flown in the last 03 months before Issue of IR*

<b>Exercise</b>	<b>Flying Hours: Min. Requirements</b>	<b>Logging</b>	<b>Remarks</b>
Instrument P-3	25	P-3	-
Instrument P-1	25	P-1 U/S	May be flown as IFR Cross Country.
Instrument time	50		May include 20 hours Instrument ground Time on an Approved simulator

**INSTRUMENT RATING (Helicopters)**

**Integrated Course :** (Within 6 months)

<b>Pre-requisite for IR course</b>	a)Licences: PPL(H) or CPL(H) or ATPL(H) b)Experience: X-country: 50 hours (P-1) with a minimum of 10 hours on helicopters
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<b>Exercise</b>	<b>Flying Hours: Min. Requirements</b>	<b>Logging</b>	<b>Remarks</b>
Instrument P-3	20	P-3	-
Instrument P-1	20	P-1 U/S	May be flown as IFR Cross Country.
Instrument time	40	P-1 U/S / P-2 /P-3	May include 30 hours Instrument ground Time on an Approved flight simulator

**Modular Course;** (More than 6 months)

*Note: Minimum of 10 hours to be flown in the last 03 months before Issue of IR.*

<b>Pre-requisite for IR course</b>	a)Licences: PPL(H) or CPL(H) or ATPL(H) b)Experience: X-country: 50 hours (P-1) with a minimum of 10 hours on helicopters
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<b>Exercise</b>	<b>Flying Hours: Min. Requirements</b>	<b>Logging</b>	<b>Remarks</b>
Instrument P-3	25	P-3	-
Instrument P-1	25	P-1 U/S	May be flown as IFR Cross Country.
Instrument time	50		May include 20 hours Instrument ground Time on an Approved simulator



**APPENDIX ``F'' TO ANO 90.0011**

**MINIMUM EXPERIENCE REQUIREMENT (PILOTS) FOR INITIAL  
POSITIONS ON DIFFERENT WEIGHT CATEGORY AIRCRAFT  
FOR REGULAR PUBLIC TRANSPORT OPERATIONS (RPT)**

1. Only Multi-pilot aircraft shall be employed in Regular Public Transport Operations.
2. The Crew utilization shall be in accordance with the criterion prescribed in this Air Navigation Order.
3. The Operator may prescribe a more stringent criterion in the Operations Manual which shall be Approved by the CAA (Flight Standards).
4. The Training Manual containing the detailed Training Policy and the Training Program, including the Under Supervision flying, shall be submitted to the CAA (Flight Standards) for approval before implementation.
5. The Training and Checking organization of the Operator shall include provision for making in each calendar year, but not at intervals of less than four months, of two checks of a nature sufficient to test the competency of the crew members.
6. If a pilot meets the experience criterion for P-1 and the experience is exclusively on turbo prop aeroplanes, the pilot shall be required to be initially trained and fly as P-2 for at least 50 hours on jet aeroplanes before the Jet PIC conversion.
7. Unless otherwise approved by the Authority, a pilot shall be employed to fly only one type of aeroplane in Regular Public Transport Operations simultaneously.
8. If an aircraft weight exceeds 5700 KG, the criterion prescribed in this Air Navigation Order shall also be applicable to the Charter/Cargo operations.

**RPT OPERATIONS – EXPERIENCE REQUIREMENTS**

<b>Aircraft Category</b>	<b>PIC</b>	<b>P-2</b>
<b>A</b> Multi-Pilot aircraft less than 5700 kg	a) ATPL a) Total: 1500 Hours b) Training as per CAA approved program.	a) CPL with IR. b) Training as per CAA approved program.
<b>B</b> Multi-Pilot aircraft 5700 kg or more and less than 40,000 kg	a) ATPL b) Total: 1500 hours. c) 500 hours as PIC of Multi-engine aircraft in Commercial Air Transport Operations; or equivalent PIC experience in military multi-pilot transport aircraft of weight Category B or higher weight.; or 500 hours as P-2 on weight Category B or higher in Commercial Air Transport Operations. d) Training as per CAA approved program.	a) CPL with IR. b) Training as per CAA approved program.
<b>C</b> Aircraft 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 500 hours as PIC in Commercial Air Transport Operations or equivalent experience in military multi-pilot transport aircraft of weight category B or higher weight; or 1000 hours as P-2 of weight category C or higher weight in Commercial Air Transport Operations. c) Training as per CAA approved program.	a) CPL with IR. b) Training as per CAA approved program with Minimum of 50 hours of Under Supervision flying.
<b>D</b> Aircraft of equal to or more than 100,000 kg and less than 200,000 kg	a) ATPL. b) Total Flying hours: 4000 hours or more with 500 hours as PIC on aircraft of weight. Category B or higher weight; or 1000 hours as P-2 of category C or higher weight, in Commercial Air Transport Operations. c) Training as per CAA approved program.	a) CPL with IR. b) Total flying: 1000 hours or more. c) Training as per CAA approved program with Minimum of 50 hours of Under Supervision flying.
<b>E</b> Aircraft of equal to or more than 200,000 kg	a) ATPL. b) Total Flying hours: 6000 hours with 1000 hours as PIC on aircraft of wt. category D or above or 1500 hours as P-2 on weight category D, or higher weight, in Commercial Air Transport Operations. c) Training as per CAA approved program.	a) ATPL Or CPL/IR with 2000 hours and; b) 500 hours on aircraft wt. category B or higher weight, in Commercial Air transport Operations. c) Training as per CAA approved program with Minimum of 50 hours of Under Supervision flying.

**APPENDIX ``G'' TO ANO 90.0011**

**MULTI-CREW COOPERATION GUIDE**

**AIM**

1. The aim of the multi-crew cooperation course is to become proficient in multi-crew co-operation (MCC) in order to operate safety multi-pilot multi-engine aeroplanes under IFR.

**INSTRUCTORS**

2. Instructors for MCC training should be thoroughly familiar with human factors and crew resource management (CRM). They should be current with the latest developments in human factors training and CRM techniques.

**MULTI - CREW COOPERATION TRAINING**

3. The objectives of MCC training are optimum decision making, communication, division of tasks use of checklists, mutual supervision, teamwork, and support throughout all phases of flight under normal, abnormal and emergency conditions. The training emphasizes the development of non-technical skills applicable to working in a multi-crew environment
4. The training should focus on teaching students the basics on the functioning of crewmembers as team in a multi-crew environment, not simply as a collection of technically competent individuals. The course should provide student with opportunities to practice the skills that are necessary to be effective team leaders and members. This requires training exercises, which include students as crewmember in the PF and PNF roles.
5. Students should be made familiar with inter-personal interfaces and how to make best use of crew co-operation techniques and their personal and leadership styles in a way that fosters crew effectiveness. Students should be made aware that their behavior during normal circumstances can have a powerful impact on crew functioning during high workload and stressful situations
6. Research strongly suggests that behavioral changes in any environment cannot be accomplished in a short period even if the training is very well designed. Trainees need time, awareness, practice and feedback, and continual reinforcement to learn lessons that will endure. In order to be effective, multi-crew co-operation training should be accomplished in several phases spread over a period.
7. In principle, the purposes of crew co-ordination procedures are to achieve the following aims.
  - a) The pilot-in-command fulfils his managing and decision-making functions irrespective whether he is PF or PNF.

- b) The tasks of PF and PNF are clearly specified and distributed in such a manner that the PF can direct his full attention to the handling and control of the aircraft.
- a) Crew Co-operation is effected in an orderly manner appropriate to the normal, abnormal or emergency situations encountered.
- b) Mutual supervision, information and support is ensured at all times

### **BASIC MULTI-CREW CO-OPERATION COURSE**

- 8. The contents of the basic MCC course should cover theoretical knowledge training, practice and feedback in:
  - a) Interfaces
    - ⇒ Examples of software, hardware, environment and live ware mismatches in practice
  - b) Leadership/ “**follower ship**” and authority
    - ⇒ Managerial and supervisory skills
    - ⇒ Assertiveness
    - ⇒ Barriers
    - ⇒ Cultural influence
    - ⇒ PF and PNF roles
    - ⇒ Professionalism
    - ⇒ Team responsibility
  - c) Personality, attitude and motivation
    - ⇒ Listening
    - ⇒ Conflict resolution
    - ⇒ Mediating
    - ⇒ Critique (pre-flight analyses and planning, ongoing review, post flight)
    - ⇒ Team building
  - d) Effective and clear communication during flight
    - ⇒ Listening
    - ⇒ Feedback
    - ⇒ Standard phraseologies
    - ⇒ Assertiveness
    - ⇒ Participation
  - e) Crew co-ordination procedures
    - ⇒ Flight techniques and cockpit procedures
    - ⇒ Standard phraseologies

⇒ Discipline

9. The use of checklists is of special importance for an orderly and safe conduct of the flights. Different philosophies have been developed for the use of checklists. Whichever philosophy is used depends on the complexity of the aircraft concerned, the situation presented, the flight crew composition and their operating experience and the operator's procedures as laid down in the Flight Operations Manual.
10. Mutual supervision, information and support
  - a) Any action in handling the aircraft should be performed by mutual supervision. The pilot responsible for the specific action or task (PF or PNF) should be advised when substantial deviations (flight, path, aircraft configuration etc.) are observed
  - b) Call-out procedures are essential, especially during take-off and approach, to indicate progress of the flight, systems status etc.
  - c) Operation of aircraft systems, setting of radios and navigation equipment etc. should not be performed without demand by the PF or without information to the PF and his confirmation.
11. The contents of paragraphs 3 and 4 can best be practiced by performing the exercises in simulated commercial air transport operations.
12. Practice and feedback of MCC with regard to L-L (Live ware – live ware) interface should also make provision for students for self and peer critique in order to improve communication, decision making and leadership skills. This phase is best accomplished through the use of simulators and video equipment. Video feedback is particularly effective because it allows participants to view themselves from a third-person perspective; this promotes acceptance of one's weak areas which encourages attitude and behavioral changes.

### **REINFORCEMENT**

13. No matter how effective the classroom curriculum interpersonal drills, LOFT exercises, and feedback techniques are a single exposure during the multi crew co-operation course for the initial issue of a multi-pilot aeroplane type rating will be insufficient. The attitudes and influences which contribute to ineffective crew co-operation are ubiquitous and may develop over a pilot's lifetime. Thus it will be necessary that the training of non-technical skills will be an integral part of all recurrent training for revalidation of a multi-pilot aeroplane type rating as well as of the training for the issue of further type ratings.

### **CONDUCT OF MCC EXERCISE**

14. The exercises should be accomplished as far as possible in simulated commercial air transport environments. The instruction should cover the following areas:

- a) Pre-flight preparation including documentation and computation of take-off performance data;
- b) Pre-flight checks including radio and navigation equipments check and setting;
- c) Before take-off checks including power plant checks, and take-off briefing by PF;
- d) Normal take-offs with different flap settings tasks of PF and PNF, call-outs;
- e) Rejected take-offs, crosswind take-offs, take-offs maximum take-off mass, engine failure after V1;
- f) Normal and abnormal operation of aircraft systems, use of checklists;
- g) Selected emergency procedures to include engine failure and fire, smoke control and removal wind shear during take-off and landing, emergency descent, incapacitation of a flight crew member;
- h) Early recognition of and reaction on approaching stall in differing aircraft configurations;
- i) Instrument flight procedures including holding procedures, precision approaches using raw navigation data, flight director and automatic pilot, one engine simulated inoperative approaches, non-precision and circling approaches, approach briefing by PF, setting of navigation equipments, call-out procedures during approaches, computation of approach and landing data
- j) Go-around, normal and with one engine simulated inoperative, rejected landing, support of the PF by the PNF,
- k) Landings, normal, crosswind and with one engine simulated inoperative, transition from instrument to visual flight on reaching decision height or minimum descent height/altitude.

**CERTIFICATE OF TRAINING**

15. Successful completion of MCC – training can be certified as below:

<b>CERTIFICATE OF COMPLETION OF A MCC – TRAINING</b>			
Applicant's last name:		First name:	
Type of Licence		Number:	
Multi-engine instrument Rating :		OR	Multi-engine instrument rating skill test
Issued on:		Passed on:	

Signature of applicant:
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<b>Training</b>			
<b>Multi-crew co-operation training received during period</b>			
from:	to:		Trg. Center/Operator
Location:		Signature of Head of Trg. center or authorized instructor*:	
Date:		Name in capital letters of authorized instructor:	

**DANGEROUS GOODS GUIDE**

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## SECTION - I.

### DEFINITIONS

#### 1. Definitions

- 1.1. When the following terms are used in this Appendix, they have the following meanings:
  - 1.1.1. **Cargo aircraft.** Any aircraft, other than a passenger aircraft, which is carrying goods or property.
  - 1.1.2. **Consignment.** One or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address.
  - 1.1.3. **Crew member.** A person assigned by an operator to duty on an aircraft during flight time.
  - 1.1.4. **Dangerous goods.** Articles or substances which are capable of posing significant risk to health, safety, or property when transported by air.
  - 1.1.5. **Dangerous goods accident.** An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property damage.
  - 1.1.6. **Dangerous goods incident.** An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation, or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants is also deemed to constitute a dangerous goods incident.
  - 1.1.7. **Exception.** A provision in this Appendix which excludes a specific item of dangerous goods from the requirements normally applicable to that item.
  - 1.1.8. **Exemption.** An authorization issued by an appropriate national authority providing relief from the provisions of this Appendix.
  - 1.1.9. **Flammable.** *Note. — The word flammable has the same meaning as inflammable in the English language.*
  - 1.1.10. **Flight crew member.** A licensed crew member charged with duties essential to the operation of an aircraft during flight time.

- 1.1.11. **Incompatible.** Describing dangerous goods which, if mixed, would be liable to cause a dangerous evolution of heat or gas or produce a corrosive substance.
- 1.1.12. **Operator.** A person, organization or enterprise engaged in or offering to engage in an aircraft operation.
- 1.1.13. **Overpack.** An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage. NOTE: A unit load device is not included in this definition.
- 1.1.14. **Package.** The complete product of the packing operation consisting of the packaging and its contents prepared for transport.
- 1.1.15. **Packaging.** Receptacles and any other components or materials necessary for the receptacle to perform its containment function and to ensure compliance with the packing requirements of this Annex.
- 1.1.16. **Packing.** The art and operation by which articles or substances are enveloped in wrappings and/or enclosed in packagings or otherwise secured.
- 1.1.17. **Passenger aircraft.** An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo.
- 1.1.18. **Pilot-in-command.** The pilot responsible for the operation and safety of the aircraft during flight time.
- 1.1.19. **Proper shipping name.** The name to be used to describe a particular article or substance in all shipping documents and notifications and, where appropriate, on packagings.
- 1.1.20. **Serious injury.** An injury which is sustained by a person in an accident and which:
  - 1.1.20.1. requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or
  - 1.1.20.2. results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
  - 1.1.20.3. involves lacerations which cause severe hemorrhage, nerve, muscle or tendon damage; or
  - 1.1.20.4. involves injury to any internal organ; or
  - 1.1.20.5. involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or

- 1.1.20.6. involves verified exposure to infectious substances or injurious radiation.
- 1.1.21. **State of Origin.** The State in the territory of which the cargo was first loaded on an aircraft.
- 1.1.22. **State of the Operator.** The State in which the operator has his principal place of business or, if he has no such place of business, his permanent residence.
- 1.1.23. **UN number.** The four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substances.
- 1.1.24. **Unit load device.** Any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo. Note: *An overpack is not included in this definition.*

## SECTION - II.

### APPLICABILITY

#### 2. **Applicability**

##### 2.1. **General applicability**

- 2.1.1. The Regulations shall be applicable to all international operations of civil aircraft.

##### 2.2. **Dangerous Goods Technical Instructions**

- 2.2.1. Detailed provisions contained in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284), shall be complied with by the operators of dangerous goods.

##### 2.3. **Domestic civil aircraft operations**

- 2.3.1. The compliance shall be applicable for all domestic civil aircraft operations.

##### 2.4. **Exceptions**

- 2.4.1. Articles and substances which would otherwise be classed as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating regulations, or for those specialized purposes identified in the Technical Instructions, shall be excepted from the provisions.
- 2.4.2. Where articles and substances intended as replacements for those described in 2.4.1 are carried on an aircraft, they shall be transported in accordance with the provisions of except as permitted in the Technical Instructions.

2.4.3. Specific articles and substances carried by passengers or crew members shall be excepted from the provisions of to the extent specified in the Technical Instructions.

2.5. **Surface transport**

2.5.1. Dangerous goods intended for air transport and prepared in accordance with this Appendix shall be accepted for surface transport to or from aerodromes.

**SECTION - III.**

**CLASSIFICATION**

3. **Classification**

3.1. The classification of an article or substance shall be in accordance with the provisions of the Technical Instructions.

***Note:** The detailed definitions of the classes of dangerous goods are contained in the Technical Instructions. These classes identify the potential risks associated with the transport of dangerous goods by air and are those recommended by the United Nations Committee of Experts on the Transport of Dangerous Goods.*

**SECTION - IV.**

**LIMITATION ON THE TRANSPORT**

**OF DANGEROUS GOODS BY AIR**

4. **Limitation on the Transport of Dangerous Goods by Air**

4.1. **Dangerous goods permitted for transport by air**

The transport of dangerous goods by air shall be forbidden except as established in this Appendix and the detailed specifications and procedures provided in the Technical Instructions.

4.2. **Dangerous goods forbidden for transport by air unless exempted**

4.2.1. The dangerous goods described hereunder shall be forbidden on aircraft unless exempted by the Director General.

4.2.1.1. articles and substances that are identified in the Technical Instructions as being forbidden for transport in normal circumstances; and

4.2.1.2. infected live animals.

4.3. **Dangerous goods forbidden for transport by air under any circumstances**

- 4.3.1. Articles and substances that are specifically identified by name or by generic description in the Technical Instructions as being forbidden for transport by air under any circumstances shall not be carried on any aircraft.

**SECTION - V.**

**PACKING**

5. **Packing**

5.1. **General requirements**

- 5.1.1. Dangerous goods shall be packed in accordance with the provisions of this Section and as provided for in the Technical Instructions.

5.2. **Packagings**

- 5.2.1. Packagings used for the transport of dangerous goods by air shall be of good quality and shall be constructed and securely closed so as to prevent leakage which might be caused in normal conditions of transport, by changes in temperature, humidity or pressure, or by vibration.
- 5.2.2. Packagings shall be suitable for the contents. Packagings in direct contact with dangerous goods shall be resistant to any chemical or other action of such goods.
- 5.2.3. Packagings shall meet the material and construction specifications in the Technical Instructions.
- 5.2.4. Packagings shall be tested in accordance with the provisions of the Technical Instructions.
- 5.2.5. Packagings for which retention of a liquid is a basic function, shall be capable of withstanding, without leaking, the pressure stated in the Technical Instructions.
- 5.2.6. Inner packagings shall be so packed, secured or cushioned as to prevent their breakage or leakage and to control their movement within the outer packaging(s) during normal conditions of air transport. Cushioning and absorbent materials shall not react dangerously with the contents of the receptacles.
- 5.2.7. No receptacle shall be re-used until it has been inspected and found free from corrosion or other damage. Where a receptacle is re-used, all necessary measures shall be taken to prevent contamination of subsequent contents.

- 5.2.8. If, because of the nature of their former contents, uncleaned empty receptacles may present a hazard, they shall be tightly closed and treated according to the hazard they constitute.
- 5.2.9. No harmful quantity of a dangerous substance shall adhere to the outside of packages.

## **SECTION - VI.**

### **LABELING AND MARKING**

#### **6. Labeling and Marking**

##### **6.1. Labels**

- 6.1.1. Unless otherwise provided for in the Technical Instructions, each package of dangerous goods shall be labeled with the appropriate labels and in accordance with the provisions set forth in those Instructions.

##### **6.2. Markings**

- 6.2.1. Unless otherwise provided for in the Technical Instructions, each package of dangerous goods shall be marked with the proper shipping name of its contents and, when assigned, the UN number and such other markings as may be specified in those Instructions.
- 6.2.2. Specification markings on packagings Unless otherwise provided for in the Technical Instructions, each packaging manufactured to a specification contained in those Instructions shall be so marked in accordance with the appropriate provisions of those Instructions and no packaging shall be marked with a packaging specification marking unless it meets the appropriate packaging specification contained in those Instructions.

##### **6.3. Languages to be used for markings**

- 6.3.1. English shall be used for the markings related to dangerous goods.

## **SECTION - VII.**

### **SHIPPER'S RESPONSIBILITIES**

#### **7. Shipper's Responsibilities**

##### **7.1. General requirements**

- 7.1.1. Before a person offers any package or overpack of dangerous goods for transport by air, that person shall ensure that the dangerous goods are not forbidden for transport by air and are properly classified, packed, marked, labeled and accompanied by a properly executed dangerous goods transport document, as specified in this Appendix and the Technical Instructions.

7.2. **Dangerous goods transport document**

7.2.1. Unless otherwise provided for in the Technical Instructions, the person who offers dangerous goods for transport by air shall complete, sign and provide to the operator a dangerous goods transport document, which shall contain the information required by those Instructions.

7.2.2. The transport document shall bear a declaration signed by the person who offers dangerous goods for transport indicating that the dangerous goods are fully and accurately described by their proper shipping names and that they are classified, packed, marked, labeled, and in proper condition for transport by air in accordance with the relevant regulations.

7.3. **Languages to be used**

7.3.1. English shall be used for the dangerous goods transport document.

**SECTION – VIII.**

**OPERATOR’S RESPONSIBILITIES**

8. **Operator’s Responsibilities**

8.1. **Acceptance for transport**

8.1.1. An operator shall not accept dangerous goods for transport by air:

8.1.1.1. unless the dangerous goods are accompanied by a completed dangerous goods transport document, except where the Technical Instructions indicate that such a document is not required; and

8.1.1.2. until the package, overpack or freight container containing the dangerous goods has been inspected in accordance with the acceptance procedures contained in the Technical Instructions.

8.2. **Acceptance checklist**

An operator shall develop and use an acceptance checklist as an aid to compliance with this Appendix.

8.3. **Inspection for damage or leakage**

8.3.1. Packages and overpacks containing dangerous goods and freight containers containing radioactive materials shall be inspected for evidence of leakage or damage before loading on an aircraft or into a unit load device. Leaking or damaged packages, overpacks or freight containers shall not be loaded on an aircraft.



- 8.3.2. A unit load device shall not be loaded aboard an aircraft unless the device has been inspected and found free from any evidence of leakage from, or damage to, any dangerous goods contained therein.
  - 8.3.3. Where any package of dangerous goods loaded on an aircraft appears to be damaged or leaking, the operator shall remove such package from the aircraft, or arrange for its removal by an appropriate authority or organization, and thereafter shall ensure that the remainder of the consignment is in a proper condition for transport by air and that no other package has been contaminated.
  - 8.3.4. Packages or overpacks containing dangerous goods and freight containers containing radioactive materials shall be inspected for signs of damage or leakage upon unloading from the aircraft or unit load device. If evidence of damage or leakage is found, the area where the dangerous goods or unit load device were stowed on the aircraft shall be inspected for damage or contamination.
- 8.4. **Loading restrictions in passenger cabin or on flight deck**
- 8.4.1. Dangerous goods shall not be carried in an aircraft cabin occupied by passengers or on the flight deck of an aircraft, except in circumstances permitted by the provisions of the Technical Instructions.
- 8.5. **Removal of contamination**
- 8.5.1. Any hazardous contamination found on an aircraft as a result of leakage or damage to dangerous goods shall be removed without delay.
  - 8.5.2. An aircraft which has been contaminated by radioactive materials shall immediately be taken out of service and not returned to service until the radiation level at any accessible surface and the non-fixed contamination are not more than the values specified in the Technical Instructions.
- 8.6. **Separation and segregation**
- 8.6.1. Packages containing dangerous goods which might react dangerously one with another shall not be stowed on an aircraft next to each other or in a position that would allow interaction between them in the event of leakage.
  - 8.6.2. Packages of poisons and infectious substances shall be stowed on an aircraft in accordance with the provisions of the Technical Instructions.
  - 8.6.3. Packages of radioactive materials shall be stowed on an aircraft so that they are separated from persons, live animals and undeveloped film, in accordance with the provisions in the Technical Instructions.

8.7. **Securing of dangerous goods cargo loads**

8.7.1. When dangerous goods subject to the provisions contained herein are loaded in an aircraft, the operator shall protect the dangerous goods from being damaged, and shall secure such goods in the aircraft in such a manner that will prevent any movement in flight which would change the orientation of the packages. For packages containing radioactive materials, the securing shall be adequate to ensure that the separation requirements of this Appendix are met at all times.

8.8. **Loading on cargo aircraft**

8.8.1. Except as otherwise provided in the Technical Instructions, packages of dangerous goods bearing the "Cargo aircraft only" label shall be loaded in such a manner that a crew member or other authorized person can see, handle and, where size and weight permit, separate such packages from other cargo in flight.

**SECTION - IX.**

**PROVISION OF INFORMATION**

9. **Provision of Information**

9.1. **Information to pilot-in-command**

9.1.1. The operator of an aircraft in which dangerous goods are to be carried shall provide the pilot-in-command as early as practicable before departure of the aircraft with written information as specified in the Technical Instructions.

9.2. **Information and instructions to flight crew members**

9.2.1. The operator shall provide such information in the Operations Manual as will enable the flight crew to carry out its responsibilities with regard to the transport of dangerous goods and shall provide instructions as to the action to be taken in the event of emergencies arising involving dangerous goods.

9.3. **Information to passengers**

9.3.1. Operators shall ensure that information is promulgated in such a manner that passengers are warned as to the types of goods which they are forbidden from transporting aboard an aircraft as checked baggage or carry-on articles.

9.4. **Information to other persons**

9.4.1. Operators, shippers or other organizations involved in the transport of dangerous goods by air shall provide such information to their personnel as will enable them to carry out their responsibilities with regard to the transport of dangerous goods and shall provide instructions as to the action to be

taken in the event of emergencies arising involving dangerous goods.

9.5. **Information from pilot-in-command to aerodrome authorities**

9.5.1. If an in-flight emergency occurs the pilot-in-command should inform the appropriate air traffic services unit, for the information of aerodrome authorities, of any dangerous goods on board. If the situation permits, the information should include the proper shipping names, class, subsidiary risks for which labels are required, the compatibility group for Class 1 and the quantity and location aboard the aircraft of the dangerous goods.

9.6. **Information in the event of an aircraft accident or incident**

9.6.1. The operator of an aircraft carrying dangerous goods which is involved in an aircraft accident shall, as soon as possible, inform the State in which the aircraft accident occurred of the dangerous goods carried, together with their proper shipping names, class, subsidiary risks for which labels are required, the compatibility group for Class 1 and the quantity and location on board the aircraft.

**SECTION - X.**

**ESTABLISHMENT OF TRAINING PROGRAMS**

10. **Establishment of Training Programs**

10.1. Operators shall establish Dangerous goods training programs as provided for in the Technical Instructions.

**SECTION - IX.**

**COMPLIANCE**

11. **Compliance**

11.1. **Inspection systems**

Director General shall establish inspection, surveillance and enforcement procedures with a view to achieving compliance with its dangerous goods regulations.

**SECTION - XII.**

**DANGEROUS GOODS ACCIDENT**

**AND INCIDENT REPORTING**

12. **Dangerous Goods Accident and Incident Reporting**

12.1. Procedures shall be established for investigating and compiling information concerning such accidents and incidents which involve

the transport of dangerous goods as determined by the Director General.

- 12.2. Reports on such accidents and incidents shall be made in accordance with the detailed provisions of the Technical Instructions.