



Republic of the Philippines
CIVIL AVIATION REGULATIONS (CAR)
PART 2
PERSONNEL LICENSING

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Republic of the Philippines
Department of Transportation and Communications

CIVIL AVIATION AUTHORITY OF THE PHILIPPINES

1300 MIA Road, Pasay City, Metro Manila
www.caap.gov.ph

BOARD RESOLUTION NO. 2011-025

WHEREAS, the Civil Aviation Authority of the Philippines (CAAP) was created by virtue of Republic Act 9497 which took effect on 23 March 2008;

WHEREAS, under Section 23, paragraph (j) of the same law, the Board is empowered to promulgate rules and regulations as may be necessary in the interest of safety in air commerce pertaining to the issuance of the airman's certificate including the licensing of operating and mechanical personnel, type certificate for aircraft, aircraft engines, propellers and appliances, airworthiness certificates, air carrier operating certificates, air agency certificates, navigation facility and aerodrome certificates; air traffic routes; radio and aeronautical telecommunications and air navigation aids; aircraft accident inquiries; aerodromes, both public and private-owned; construction of obstructions to aerodromes; height of buildings, antennae and other edifices; registration of aircraft; search and rescue; facilitation of air transports; operations of aircraft, both for domestic and international, including scheduled and non-scheduled; meteorology in relation to civil aviation; rules of the air; air traffic services; rules for prevention of collision of aircraft, identification of aircraft; rules for safe altitudes of flight; and such other rules and regulations, standards, governing other practices, methods and/or procedures as the Director General may find necessary and appropriate to provide adequately for safety regularity and efficiency in air commerce and air navigation;

WHEREAS, in the October 2009 ICAO-USOAP and 2010 EASA Audits, it was noted that portion of the Philippine Civil Aviation Regulations (PCAR) of 2008 is outdated and requires amendments/revisions;

WHEREAS, the CAAP Board of Directors, in its 03 March 2011 Board Meeting, approved the request of the Director General to initiate amendments and or revision of the Philippine Civil Aviation Regulations of 2008, subject to public consultations/hearings;

WHEREAS, the proposed PCARs cover the following regulatory/oversight functions:

- Part I General Policies, Procedures, Definitions
- Part II Personnel Licensing
- Part III Approved Training Organizations
- Part IV Aircraft Registration and Markings

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[Handwritten Signature] 05-27-2011

AIDA S. ROMULO
Chief, Central Records
and Archives Division

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AIDA S. ROMULO
Chief, Central Records
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- Part V Airworthiness
- Part VI Approved Maintenance Organizations
- Part VII Instruments and Organization
- Part VIII Operations
- Part IX Air Operator Certification and Administration
- Part X Commercial Air Transport by Foreign Air Carriers within Republic of the Philippines
- Part XI Aerial Work and Non-certificated Aircraft: Operating Limitations

WHEREAS, the Board finds the 2011 Revised Philippine Civil Aviation Regulation (PCAR) sufficient in form and substance, and fully comply with the standards set forth by FAA/ICAO/EASA;

WHEREFORE, RESOLVE, as it is hereby **RESOLVED**, that the 2011 Revised Philippine Civil Aviation Regulations Parts I to XI be **APPROVED**, and shall be valid and effective upon completion of the requisite publication and a copy filed with the University of the Philippines Law Center-Office of the National Administrative Register (UP-ONAR);

RESOLVED further that the Director General shall fully implement the approved, 2011 Revised PCAR Parts I to XI with the accompanying information campaign to the Philippine civil aviation industry.

Adopted this 11th day of April 2011 at the Department of Transportation and Communications, Columbia Tower, Mandaluyong City.

HON. JOSE P. DE JESUS
Chairman/Secretary, DOTC

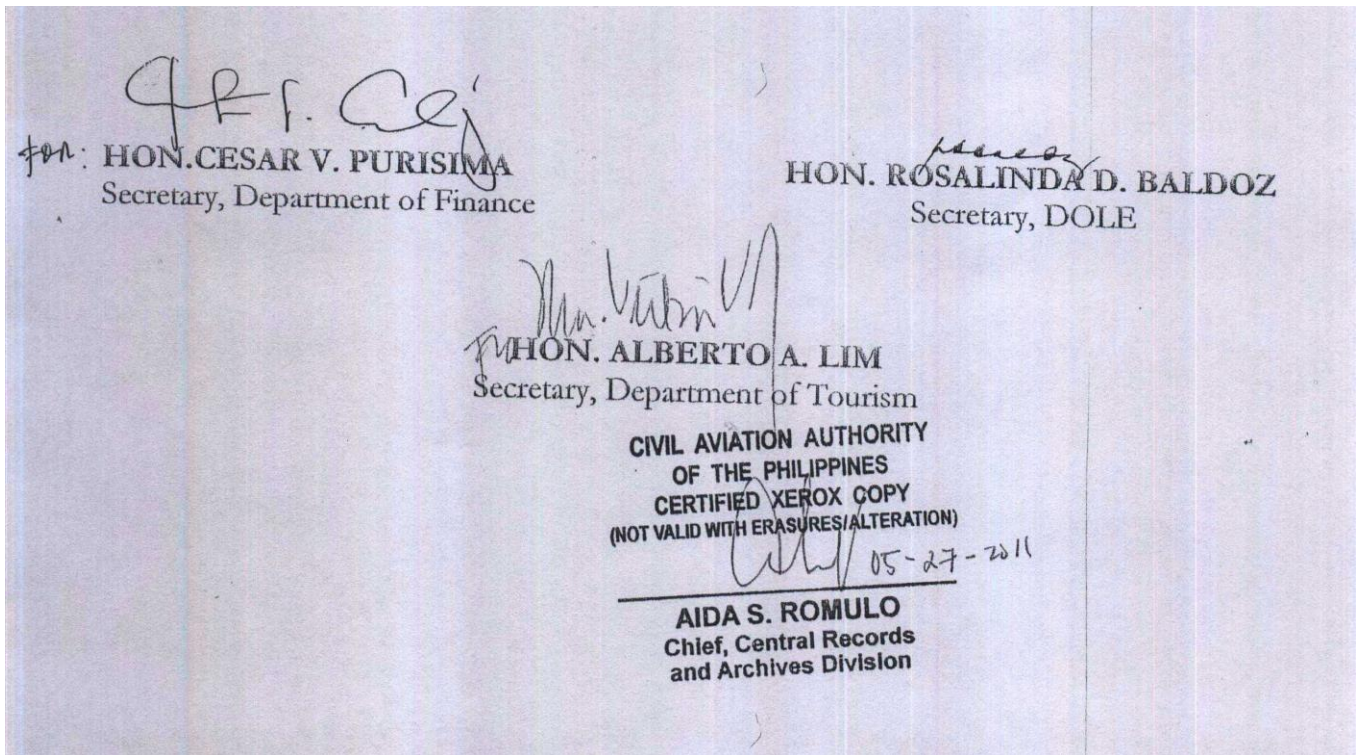
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HON. RAMON S. GUTIERREZ
Vice-Chairman/Director General, CAAP

HON. LEILA M. DE LIMA
Secretary, Department of Justice

[Signature]
HON. ALBERT F. DEL ROSARIO
Secretary, Department of Foreign Affairs

HON. JESSE M. ROBREDO
Secretary, DILG



RECORD OF AMENDMENTS

Amendment No.	Date	Subject	Incorporated By
Initial Issue	23 June 2008		Ruben F. Ciron
First Amendment	21 March 2011	<p>2.2.4.1 (d) (4) (iii) (E) Demonstration of knowledge and comprehension of the English Language on Validation Flight Crew Licenses</p> <p>2.3.1.5 Limitation of privileges of pilots who have attained their 60th birthday</p> <p>2.3.1.5.1 Curtailment of Privileges of Pilots who have attained their 65th Birthday</p> <p>2.3.3.4 (f) Amendment on Medical Fitness of Airlines Transport Pilot License – Airplane</p> <p>2.3.3.9 (f) Amendment on Medical Fitness of Airlines Transport Pilot License – Helicopter</p> <p>2.4.4 (f) Amendment on Medical Fitness of Flight Engineer License</p> <p>2.5.3 (f) Amendment on Medical Fitness of Flight Navigator License</p> <p>2.10.2.4.6. (b) Medical Requirements of Scheduled Commercial Air Operators</p>	Ramon S. Gutierrez
Second Amendment	01 August 2013	Inserted vertical bars on the previous amendments	LT GEN William K Hotchkiss III AFP (Ret)

Third Amendment	28 January 2014	<p>2.1.3 Abbreviations (12) (13)</p> <p>2.2.2.1 Licenses (i)</p> <p>2.2.2.4 Certificates (2)</p> <p>2.2.3 Validity of Licenses, Ratings, Authorizations and Certificates (f)</p> <p>2.2.6.2 Use of synthetic flight trainers</p> <p>2.2.10.4 Reinstatement of privileges of expired pilot licenses and ratings</p> <p>2.2.10.5 Reinstatement of privileges of expired AMT/AMS licenses and ratings</p> <p>2.2.11 Re-issue or reinstatement of a licenses, rating, authorizations or certificate</p> <p>2.3.1.5 Limitation of privileges of pilots who have attained their 60th birthday</p> <p>2.3.1.5.1 Curtailment of privileges of pilots who have attained their 65th birthday</p> <p>2.6.3.2 Eligibility requirements: general (6) (7) (8)</p> <p>2.6.3.3 AMS ratings (b)</p> <p>New subpart of 2.11</p> <p>New subpart of 2.12</p> <p>IS 2.11.3 New IS subpart</p> <p>2.3.3.1 Student Pilots</p>	LT GEN William K Hotchkiss III AFP (Ret)
Fourth Amendment	24 April 2014	2.2.7 Language Proficiency (c)	LT GEN William K Hotchkiss III AFP (Ret)
Fifth Amendment	20 June 2014	<p>2.11.4 Guidelines for the Additional Endorsement and Rating for Cabin Crew Member License</p> <p>2.3.1.5.1 Curtailment of Privileges of Pilots Who</p>	LT GEN William K Hotchkiss III AFP (Ret)

		Have Attained Their 65 th and 67 th Birthday	
Sixth Amendment	19 July 2014	Repeal of Paragraph 2 and 3 of the Philippine Civil Aviation Regulations Part 2 Subsection 2.2.4.2 (b) Conversion of Flight Crew License	LT GEN William K Hotchkiss III AFP (Ret)
Seventh Amendment	24 July 2014	2.3.3.4 Airline Transport Pilot License (c) (5)	LT GEN William K Hotchkiss III AFP (Ret)
Eighth Amendment	01 July 2016	New Part 2.13 2.2.7 Language Proficiency 2.3.2.4 Type Rating – Airplane and Helicopter and Powered-Lifts (c) (2) 2.3.3.5.2 Requirements (f) (1) (ii) 2.6.2.4 Knowledge Requirements (a) (5) (i) 2.7.5 Air Traffic Controller Rating Requirements (c) 2.8.3 Flight Operations Officer License (b) (1) (iv) and (d) (4) 2.10.1.3 Aviation Medical Examiners (AME) (g) and (k) 2.10.1.6 Decrease of Medical Fitness (b) 2.10.1.8 Medical Certificate (d) (1) 2.10.2.2.1 Certificate and Issue Renewal (d) 2.10.2.2.2 Physical and Mental Requirements (b) (6) and (aa) 2.10.2.3.2 Physical and Mental Requirements (b) (7) and (z) 2.10.2.4.2 Physical and Mental Requirements (x)	LT GEN William K Hotchkiss III AFP (Ret)
Ninth Amendment	06 January 2017	Repealing of Provisions in PCAR's Pertaining to the Issuance, Renewal or Re-	Capt. Jim C. Sydiongco

		<p>Issue of a Cabin Crew License.</p> <p>2.1.2 Definitions (6) 2.1.3 Abbreviations 2.2.2.1 Licenses (j)</p> <p>New PCAR Part 2.14 Air Traffic Safety Electronic Personnel License and Ratings</p> <p>IS 2.14.3.2 Appendix A: ATSEP License – Knowledge IS 2.14.3.4 Appendix B: ATSEP License – Skill Test IS 2.14.8.1 Appendix C: ATSEP Rating – Knowledge IS 2.14.8.3 Appendix D: ATSEP Rating – Skill Test</p> <p>2.2.2.5 Medical Fitness</p>	
Tenth Amendment	23 April 2018	<p>2.1.2 Definitions (a)</p> <ul style="list-style-type: none"> • Academic training • Accountable executive • Aerodynamic stall • Aeroplane upset • Angle of Attack (AOA) • Approach-to-stall • Approved training organization (ATO) • Assessment • Autoflight systems • Behaviour • Behavioural indicator • Bridge training • Competency-based training • Contributing factor • Core competencies 	Capt. Jim C. Sydiongco

		<ul style="list-style-type: none"> • Critical angle of attack • Critical system malfunctions • Developed upset • Developing upset • Energy • Energy state • Evidence-based training (EBT) • Fidelity level • First Indication of a stall • Flight crew member • Flight management system • Flight path • Flight simulation training device (FSTD) • Instructional systems design (ISD) • Instructor • Line-orientated flight training • Load factor • Manoeuvres • Manoeuvre-based training • Motion turnaround bumps • Negative training • On-aeroplane training • Performance criteria • Phase of flight • Post-stall regime • Practical training • Quality assurance (QA) • Quality management • Quality system • Scenario • Scenario-based training • Stall 	
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		<ul style="list-style-type: none"> • Stall Event • Stall recovery procedure • Stall warning • Startle • Stick pusher • Stick shaker • Stress (response) • Surprise • Threat management • Train-to-proficiency • Training event • Training objective • Transport category aeroplane • Unsafe situation • Wake encounter <p>2.1.3 Abbreviations (a)</p> <ul style="list-style-type: none"> • AOA – Angle of Attack • FIR – Flight Instructor Rating • IR – Instrument Rating • MER – Multi-Engine Rating • TR – Type-Rating • UPRT – Upset Prevention and Recovery Training <p>2.2.6.2 Use of Flight Simulation Training Devices (FSTD) (a), (b) and Note</p> <p>2.3.2.4 Type Ratings – Airplane and Helicopter and Powered-Lifts (b) (1) (v)</p> <p>2.3.3.3 Commercial Pilot License – Airplane (b) (1) (viii) and (d) (2) (iii), (4), (5)</p>	
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		<p>2.3.3.4 Airline Transport Pilot License – Airplane (b) (1) (viii)</p> <p>2.3.3.5.2 Requirements (f) (1) (ii)</p> <p>2.3.3.11 Instructor Ratings – Airplane and Helicopter (a) (4) & (5), (c) (1) (vii) and (d) (2) (i) (M)</p> <p>IS 2.3.2.4 Appendix A: Class/Type Rating [SP (A) and MP (A)] – Knowledge (a) (9)</p> <p>IS 2.3.3.3 Appendix C: Airplane Upset Prevention and Recovery Training (UPRT) for CPL and for MPL, ATPL, Type Rating, Instructor Rating (Airplane) and Instructor Authorization for Flight Simulation Training Device(s) (Airplane)</p>	
Eleventh Amendment	08 July 2020	<p>2.2.2.2 Ratings (c)</p> <p>2.7.4 Air Traffic Controller Categories/Ratings (a)</p>	Capt. Jim C. Sydiongco
Twelveth Amendment	04 January 2022	2.1.2 Definitions (Removed and transferred to PCAR Part 1 Appendix A: Definitions)	Capt. Jim C. Sydiongco
Thirteenth Amendment	18 May 2022	2.7.5 Air Traffic Controller Rating Requirements (e)	Capt. Jim C. Sydiongco

LIST OF EFFECTIVE PAGES

Part	Page	Amendment No.	Page Date
Part 2 Personnel Licensing			
Cover Page	i	Amendment 03	28 January 2014
Board Resolution	iii – v	Amendment 03	28 January 2014
Record of Amendments	vi – xii	Amendment 13	11 July 2022
List of Effective Pages	xiii – xix	Amendment 13	11 July 2022
Table of Contents	xx – xxvii	Amendment 13	11 July 2022
Introduction	xxviii	Original Issue	23 June 2008
Page			
	2.1-1	Amendment 12	11 July 2022
	2.1-2	Amendment 10	16 July 2018
	2.1-3	Amendment 10	16 July 2018
	2.1-4	Amendment 10	16 July 2018
	2.2-1	Amendment 09	06 January 2017
	2.2-2	Amendment 03	28 January 2014
	2.2-3	Amendment 11	15 January 2021
	2.2-4	Amendment 09	06 January 2017
	2.2-5	Amendment 03	28 January 2014
	2.2-6	Amendment 03	28 January 2014
	2.2-7	Amendment 03	28 January 2014
	2.2-8	Amendment 08	01 July 2016
	2.2-9	Amendment 03	28 January 2014
	2.2-10	Amendment 10	16 July 2018
	2.2-11	Amendment 08	01 July 2016
	2.2-12	Amendment 08	01 July 2016
	2.2-13	Amendment 03	28 January 2014
	2.2-14	Amendment 03	28 January 2014
	2.2-15	Amendment 03	28 January 2014
	2.2-16	Amendment 03	28 January 2014
	2.3-1	Amendment 03	28 January 2014

	2.3-2	Amendment 05	20 June 2014
	2.3-3	Amendment 03	28 January 2014
	2.3-4	Amendment 03	28 January 2014
	2.3-5	Amendment 10	16 July 2018
	2.3-6	Amendment 03	28 January 2014
	2.3-7	Amendment 03	28 January 2014
	2.3-8	Amendment 03	28 January 2014
	2.3-9	Amendment 03	28 January 2014
	2.3-10	Amendment 03	28 January 2014
	2.3-11	Amendment 03	28 January 2014
	2.3-12	Amendment 10	16 July 2018
	2.3-13	Amendment 10	16 July 2018
	2.3-14	Amendment 03	28 January 2014
	2.3-15	Amendment 10	16 July 2018
	2.3-16	Amendment 07	24 July 2014
	2.3-17	Amendment 03	28 January 2014
	2.3-18	Amendment 03	28 January 2014
	2.3-19	Amendment 03	28 January 2014
	2.3-20	Amendment 03	28 January 2014
	2.3-21	Amendment 10	16 July 2018
	2.3-22	Amendment 03	28 January 2014
	2.3-23	Amendment 03	28 January 2014
	2.3-24	Amendment 03	28 January 2014
	2.3-25	Amendment 03	28 January 2014
	2.3-26	Amendment 03	28 January 2014
	2.3-27	Amendment 03	28 January 2014
	2.3-28	Amendment 03	28 January 2014
	2.3-29	Amendment 03	28 January 2014
	2.3-30	Amendment 03	28 January 2014
	2.3-31	Amendment 03	28 January 2014
	2.3-32	Amendment 03	28 January 2014
	2.3-33	Amendment 03	28 January 2014
	2.3-34	Amendment 03	28 January 2014

	2.3-35	Amendment 03	28 January 2014
	2.3-36	Amendment 03	28 January 2014
	2.3-37	Amendment 10	16 July 2018
	2.3-38	Amendment 10	16 July 2018
	2.3-39	Amendment 10	16 July 2018
	2.3-40	Amendment 03	28 January 2014
	2.3-41	Amendment 03	28 January 2014
	2.3-42	Amendment 03	28 January 2014
	2.3-43	Amendment 03	28 January 2014
	2.3-44	Amendment 03	28 January 2014
	2.3-45	Amendment 03	28 January 2014
	2.3-46	Amendment 03	28 January 2014
	2.4-1	Amendment 03	28 January 2014
	2.4-2	Amendment 03	28 January 2014
	2.4-3	Amendment 03	28 January 2014
	2.4-4	Amendment 03	28 January 2014
	2.5-1	Amendment 03	28 January 2014
	2.5-2	Amendment 03	28 January 2014
	2.5-3	Amendment 03	28 January 2014
	2.5-4	Amendment 03	28 January 2014
	2.6-1	Amendment 03	28 January 2014
	2.6-2	Amendment 08	01 July 2016
	2.6-3	Amendment 03	28 January 2014
	2.6-4	Amendment 03	28 January 2014
	2.6-5	Amendment 03	28 January 2014
	2.6-6	Amendment 03	28 January 2014
	2.6-7	Amendment 08	01 July 2016
	2.6-8	Amendment 03	28 January 2014
	2.6-9	Amendment 03	28 January 2014
	2.6-10	Amendment 03	28 January 2014
	2.7-1	Amendment 03	28 January 2014
	2.7-2	Amendment 11	15 January 2021
	2.7-3	Amendment 03	28 January 2014

	2.7-4	Amendment 13	11 July 2022
	2.8-1	Amendment 08	01 July 2016
	2.8-2	Amendment 03	28 January 2014
	2.8-3	Amendment 08	01 July 2016
	2.8-4	Amendment 08	01 July 2016
	2.9-1	Amendment 08	01 July 2016
	2.9-2	Amendment 03	28 January 2014
	2.10-1	Amendment 08	01 July 2016
	2.10-2	Amendment 08	01 July 2016
	2.10-3	Amendment 08	01 July 2016
	2.10-4	Amendment 08	01 July 2016
	2.10-5	Amendment 03	28 January 2014
	2.10-6	Amendment 08	01 July 2016
	2.10-7	Amendment 08	01 July 2016
	2.10-8	Amendment 03	28 January 2014
	2.10-9	Amendment 03	28 January 2014
	2.10-10	Amendment 08	01 July 2016
	2.10-11	Amendment 03	28 January 2014
	2.10-12	Amendment 03	28 January 2014
	2.10-13	Amendment 08	01 July 2016
	2.10-14	Amendment 03	28 January 2014
	2.10-15	Amendment 03	28 January 2014
	2.10-16	Amendment 08	01 July 2016
	2.10-17	Amendment 03	28 January 2014
	2.10-18	Amendment 03	28 January 2014
	2.10-19	Amendment 03	28 January 2014
	2.10-20	Amendment 03	28 January 2014
	2.10-21	Amendment 08	01 July 2016
	2.10-22	Amendment 08	01 July 2016
	2.10-23	Amendment 08	01 July 2016
	2.10-24	Amendment 08	01 July 2016
	2.12-1	Amendment 08	01 July 2016
	2.12-2	Amendment 08	01 July 2016

	2.13-1	Amendment 08	01 July 2016
	2.13-2	Amendment 08	01 July 2016
	2.13-3	Amendment 08	01 July 2016
	2.13-4	Amendment 08	01 July 2016
	2.14-1	Amendment 09	06 January 2017
	2.14-2	Amendment 09	06 January 2017
	2.14-3	Amendment 09	06 January 2017
	2.14-4	Amendment 09	06 January 2017
	IS-1	Amendment 03	28 January 2014
	IS-2	Amendment 03	28 January 2014
	IS-3	Amendment 03	28 January 2014
	IS-4	Amendment 03	28 January 2014
	IS-5	Amendment 03	28 January 2014
	IS-6	Amendment 03	28 January 2014
	IS-7	Amendment 03	28 January 2014
	IS-8	Amendment 03	28 January 2014
	IS-9	Amendment 03	28 January 2014
	IS-10	Amendment 10	16 July 2018
	IS-11	Amendment 03	28 January 2014
	IS-12	Amendment 03	28 January 2014
	IS-13	Amendment 03	28 January 2014
	IS-14	Amendment 03	28 January 2014
	IS-15	Amendment 03	28 January 2014
	IS-16	Amendment 03	28 January 2014
	IS-17	Amendment 03	28 January 2014
	IS-18	Amendment 03	28 January 2014
	IS-19	Amendment 03	28 January 2014
	IS-20	Amendment 03	28 January 2014
	IS-21	Amendment 03	28 January 2014
	IS-22	Amendment 10	16 July 2018
	IS-23	Amendment 10	16 July 2018
	IS-24	Amendment 10	16 July 2018
	IS-25	Amendment 10	16 July 2018

	IS-26	Amendment 10	16 July 2018
	IS-27	Amendment 10	16 July 2018
	IS-28	Amendment 10	16 July 2018
	IS-29	Amendment 10	16 July 2018
	IS-30	Amendment 10	16 July 2018
	IS-31	Amendment 10	16 July 2018
	IS-32	Amendment 10	16 July 2018
	IS-33	Amendment 10	16 July 2018
	IS-34	Amendment 10	16 July 2018
	IS-35	Amendment 03	28 January 2014
	IS-36	Amendment 03	28 January 2014
	IS-37	Amendment 03	28 January 2014
	IS-38	Amendment 03	28 January 2014
	IS-39	Amendment 03	28 January 2014
	IS-40	Amendment 03	28 January 2014
	IS-41	Amendment 03	28 January 2014
	IS-42	Amendment 03	28 January 2014
	IS-43	Amendment 03	28 January 2014
	IS-44	Amendment 03	28 January 2014
	IS-45	Amendment 03	28 January 2014
	IS-46	Amendment 03	28 January 2014
	IS-47	Amendment 03	28 January 2014
	IS-48	Amendment 03	28 January 2014
	IS-49	Amendment 03	28 January 2014
	IS-50	Amendment 03	28 January 2014
	IS-51	Amendment 03	28 January 2014
	IS-52	Amendment 03	28 January 2014
	IS-53	Amendment 03	28 January 2014
	IS-54	Amendment 03	28 January 2014
	IS-55	Amendment 03	28 January 2014
	IS-56	Amendment 03	28 January 2014
	IS-57	Amendment 03	28 January 2014
	IS-58	Amendment 03	28 January 2014

	IS-59	Amendment 03	28 January 2014
	IS-60	Amendment 03	28 January 2014
	IS-61	Amendment 03	28 January 2014
	IS-62	Amendment 03	28 January 2014
	IS-63	Amendment 03	28 January 2014
	IS-64	Amendment 03	28 January 2014
	IS-65	Amendment 03	28 January 2014
	IS-66	Amendment 03	28 January 2014
	IS-67	Amendment 03	28 January 2014
	IS-68	Amendment 03	28 January 2014
	IS-69	Amendment 03	28 January 2014
	IS-70	Amendment 03	28 January 2014
	IS-71	Amendment 03	28 January 2014
	IS-72	Amendment 03	28 January 2014
	IS-73	Amendment 03	28 January 2014
	IS-74	Amendment 09	06 January 2017
	IS-75	Amendment 09	06 January 2017
	IS-76	Amendment 09	06 January 2017

CONTENTS

2.1	GENERAL	2.1-1
2.1.1	Applicability.....	2.1-1
2.1.2	RESERVED.....	2.1-1
2.1.3	Abbreviations.....	2.1-2
2.2	GENERAL LICENSING REQUIREMENTS	2.2-1
2.2.1	General.....	2.2-1
2.2.2	Licenses, Ratings, Authorizations and Certificates.....	2.2-1
2.2.2.1	Licenses.....	2.2-1
2.2.2.2	Ratings.....	2.2-2
2.2.2.3	Authorizations.....	2.2-3
2.2.2.4	Certifications.....	2.2-3
2.2.2.5	Medical Fitness.....	2.2-3
2.2.3	Validity of Licenses, Ratings, Authorizations and Certifications.....	2.2-4
2.2.4	Validation and Conversion of Foreign Licenses and Ratings.....	2.2-4
2.2.4.1	Validation of Flight Crew Licenses.....	2.2-4
2.2.4.2	Conversion of Flight Crew Licenses.....	2.2-6
2.2.4.3	Validation and Conversion of Flight Crew Licenses by Reliance upon the Licensing System of another Contracting State.....	2.2-7
2.2.4.4	Validation in Case of Leased, Chartered or Interchanged aircraft.....	2.2-8
2.2.4.5	Validation of Foreign Mechanics Licenses.....	2.2-8
2.2.5	Military Competence Special Rules.....	2.2-8
2.2.5.1	Military Pilots.....	2.2-8
2.2.5.2	Military Flight Engineers.....	2.2-8
2.2.5.3	Military Mechanics.....	2.2-8
2.2.5.4	Evidentiary Documents.....	2.2-9
2.2.6	Training and Testing Requirements.....	2.2-9
2.2.6.1	Approved Training.....	2.2-9
2.2.6.2	Use of Flight Simulation Training Devices (FSTD).....	2.2-10
2.2.6.3	Knowledge and Skill Tests and Checks: Time, Place, Designated Persons and Format.....	2.2-10
2.2.6.4	Knowledge and Skill Tests and Checks; Prerequisites and Passing Grades	2.2-10
2.2.6.5	Reliance on Training and Testing in another Contracting State.....	2.2-11

2.2.7	Language Proficiency.....	2.2-11
2.2.8	Recording of Flight Time.....	2.2-12
2.2.9	Format of the License.....	2.2-12
2.2.10	Suspension or Revocation of a Licenses, Rating, Authorization or Certificate.....	2.2-12
2.2.10.1	Suspension of Licenses, Rating, Authorizations or Validation Certificate....	2.2-12
2.2.10.2	Suspension of Medical Certificate.....	2.2-13
2.2.10.3	Revocation of Licenses, Ratings, Authorization or Certificate.....	2.2-13
2.2.10.4	Reinstatement of Privileges of Expired Pilot Licenses and Ratings.....	2.2-14
2.2.10.5	Reinstatement of Privileges of Expired AMT/AMS Licenses and Ratings....	2.2-14
2.2.11	Re-issue or Reinstatement of a License, Rating, Authorization or Certificate.....	2.2-15
2.3	Pilot Licenses, Categories, Ratings and Authorizations.....	2.3-1
2.3.1	General.....	2.3-1
2.3.1.1	Applicability.....	2.3-1
2.3.1.2	General Rule Concerning Pilot Licenses, Ratings and Authorizations.....	2.3-1
2.3.1.3	Authority to Act as a Flight Crew Member.....	2.3-1
2.3.1.4	Crediting of Flight Time.....	2.3-1
2.3.1.5	Limitation of Privileges of Pilots who have Attained their 60 th Birthday.....	2.3-2
2.3.1.5.1	Curtailment of Privileges of Pilots who have Attained their 65 th and 67 th Birthday.....	2.3-2
2.3.1.6	Recent Experience Requirements.....	2.3-3
2.3.2	Category, Class & Type Ratings and Category II/III Authorizations.....	2.3-3
2.3.2.1	General.....	2.3-3
2.3.2.2	Category Ratings.....	2.3-3
2.3.2.3	Class Ratings - Airplane, Helicopter and Powered - Lifts.....	2.3-4
2.3.2.4	Type Ratings - Airplane, Helicopter and Powered – Lifts.....	2.3-5
2.3.2.5	Category II and III Authorization.....	2.3-7
2.3.3	Pilot Licenses, Instrument and Instructor Ratings.....	2.3-7
2.3.3.1	Student Pilots.....	2.3-7
2.3.3.2	Private Pilot License – Airplane.....	2.3-8
2.3.3.3	Commercial Pilot License – Airplane.....	2.3-11
2.3.3.4	Airline Transport Pilot License – Airplane.....	2.3-14
2.3.3.5	Multi-crew Pilot License (MPL).....	2.3-18

2.3.3.5.1	General.....	2.3-18
2.3.3.5.2	Requirements.....	2.3-19
2.3.3.6	Instrument Rating – Airplane.....	2.3-22
2.3.3.7	Private Pilot License – Helicopter.....	2.3-25
2.3.3.8	Commercial Pilot License – Helicopter.....	2.3-27
2.3.3.9	Airline Transport Pilot License – Helicopter.....	2.3-31
2.3.3.10	Instrument Rating – Helicopter.....	2.3-34
2.3.3.11	Instructor Ratings– Airplane and Helicopter.....	2.3-37
2.3.3.12	Examiners.....	2.3-41
2.3.3.13	Glider Pilot License.....	2.3-41
2.3.3.14	Free Balloon Pilot License.....	2.3-43
2.4	Flight Engineer License and Ratings.....	2.4-1
2.4.1	Applicability.....	2.4-1
2.4.2	General.....	2.4-1
2.4.3	Type Rating – Flight Engineer.....	2.4-1
2.4.4	Flight Engineer License.....	2.4-2
2.5	Flight Navigator License	2.5-1
2.5.1	Applicability.....	2.5-1
2.5.2	General.....	2.5-1
2.5.3	Flight Navigator License.....	2.5-1
2.6	Aviation Maintenance Licensing.....	2.6-1
2.6.1	General.....	2.6-1
2.6.1.1	Applicability.....	2.6-1
2.6.2	Aviation Maintenance Technician (AMT).....	2.6-1
2.6.2.1	Applicability.....	2.6-1
2.6.2.2	Eligibility Requirements: General.....	2.6-1
2.6.2.3	Ratings.....	2.6-1
2.6.2.4	Knowledge Requirements.....	2.6-1
2.6.2.5	Knowledge Requirements for the Ratings.....	2.6-2
2.6.2.6	Skill Requirements.....	2.6-2
2.6.2.7	Experience Requirements.....	2.6-3
2.6.2.8	Privileges and Limitations.....	2.6-3
2.6.2.9	Duration of the License.....	2.6-4
2.6.2.10	Recent Experience Requirements.....	2.6-4

2.6.2.11	Display of License.....	2.6-5
2.6.2.12	Application for Additional Rating.....	2.6-5
2.6.2.13	Requirements for Renewal of Licenses.....	2.6-5
2.6.3	Aviation Maintenance Specialist (AMS).....	2.6-5
2.6.3.1	Applicability.....	2.6-5
2.6.3.2	Eligibility Requirements: General.....	2.6-5
2.6.3.3	AMS Ratings.....	2.6-6
2.6.3.4	Knowledge Requirements.....	2.6-7
2.6.3.5	Knowledge Requirements for the Ratings.....	2.6-7
2.6.3.6	Skill Requirements.....	2.6-8
2.6.3.7	Experience Requirements.....	2.6-8
2.6.3.8	Privileges and Limitations.....	2.6-9
2.6.3.9	Duration of the Licenses.....	2.6-9
2.6.3.10	Recent Experience Requirements.....	2.6-9
2.6.3.11	Display of License.....	2.6-10
2.6.3.12	Requirement of the Renewal of License.....	2.6-10
2.7	Air Traffic Controller Licenses, Categories and Ratings.....	2.7-1
2.7.1	Applicability.....	2.7-1
2.7.2	General.....	2.7-1
2.7.3	Air Traffic Controller License.....	2.7-1
2.7.4	Air Traffic Controller Categories/Ratings.....	2.7-2
2.7.5	Air Traffic Controller Rating Requirements.....	2.7-2
2.8	Flight Operations Officer License.....	2.8-1
2.8.1	Applicability.....	2.8-1
2.8.2	General.....	2.8-1
2.8.3	Flight Operations Officer License.....	2.8-1
2.9	Aeronautical Station Operation Licenses.....	2.9-1
2.9.1	Applicability.....	2.9-1
2.9.2	General.....	2.9-1
2.9.3	Aeronautical Station Operation Licenses.....	2.9-1
2.10	Medical Provisions for Licensing.....	2.10-1
2.10.1	General.....	2.10-1
2.10.1.1	Applicability.....	2.10-1
2.10.1.2	Medical Fitness.....	2.10-1

2.10.1.3	Aviation Medical Examiners (AME).....	2.10-1
2.10.1.4	Aviation Medical Examinations.....	2.10-2
2.10.1.5	Special Circumstances.....	2.10-2
2.10.1.6	Decrease of Medical Fitness.....	2.10-3
2.10.1.7	Use of Psychoactive substances.....	2.10-3
2.10.1.8	Medical Certificates.....	2.10-3
2.10.2	Medical Requirements.....	2.10-5
2.10.2.1	Requirements for Medical Certificate.....	2.10-5
2.10.2.1.1	General.....	2.10-5
2.10.2.1.2	Physical and Mental Requirements.....	2.10-5
2.10.2.1.3	Visual Acuity Test Requirements.....	2.10-5
2.10.2.1.4	Color Perception Requirements.....	2.10-5
2.10.2.1.5	Hearing Requirements.....	2.10-6
2.10.2.2	Class 1 Medical Certificate.....	2.10-6
2.10.2.2.1	Certificate Issue and Renewal.....	2.10-6
2.10.2.2.2	Physical and Mental Requirements.....	2.10-6
2.10.2.2.3	Visual Requirements.....	2.10-10
2.10.2.2.4	Hearing Requirements.....	2.10-12
2.10.2.3	Class 2 Medical Certificate.....	2.10-12
2.10.2.3.1	Certificate Issue and Renewal.....	2.10-12
2.10.2.3.2	Physical and Mental Requirements.....	2.10-12
2.10.2.3.3	Visual Requirements.....	2.10-16
2.10.2.3.4	Hearing Requirements.....	2.10-18
2.10.2.4	Class 3 Medical Certificate.....	2.10-18
2.10.2.4.1	Certificate Issue and Renewal.....	2.10-18
2.10.2.4.2	Physical and Mental Requirements.....	2.10-18
2.10.2.4.3	Visual Requirements.....	2.10-22
2.10.2.4.4	Hearing Requirements.....	2.10-23
2.10.2.4.5	Medical Requirements for Scheduled Commercial Air Transport Operators	2.10-24
2.10.2.4.6	Penalties.....	2.10-24
2.11	RESERVED.....	2.12-1
2.12	Ground Instructor License.....	2.12-1
2.12.1	General.....	2.12-1
2.12.2	Ground Instructors License.....	2.12-1

2.13	RPA Controller Certificate.....	2.13-1
2.13.1	Applicability.....	2.13-1
2.13.2	Application for RPA Controller Certificate.....	2.13-1
2.13.3	Eligibility for RPA Controller Certificate.....	2.13-1
2.13.4	Conditions as RPA Controller Certificate.....	2.13-1
2.13.5	RPA Controller Certificate: Contents.....	2.13-2
2.13.6	Validity of RPA Controller Certificate.....	2.13-2
2.13.7	Show Cause Notice to RPA Controller Certificate Holder.....	2.13-2
2.13.8	Cancellation of RPA Controller Certificate.....	2.13-3
2.13.9	Cancellation at Request of Holder.....	2.13-3
2.13.10	Validation of Foreign RPA Controller Certificate, License or Authorization...	2.13-3
2.14	AIR TRAFFIC SAFETY ELECTRONIC PERSONNEL LICENSE	
	AND RATINGS.....	2.14-1
2.14.1	Applicability.....	2.14-1
2.14.2	General.....	2.14-1
2.14.3	Requirements for the Issue of the License.....	2.14-1
2.14.3.1	Age.....	2.14-1
2.14.3.2	Knowledge.....	2.14-1
2.14.3.3	Experience.....	2.14-1
2.14.3.4	Skill.....	2.14-1
2.14.3.5	Medical Fitness.....	2.14-1
2.14.4	Privileges of the Holder of License.....	2.14-2
2.14.5	Validity of License.....	2.14-2
2.14.6	Requirements for the Renewal of License.....	2.14-2
2.14.7	ATSEP Rating.....	2.14-2
2.14.8	Requirements for ATSEP Ratings.....	2.14-3
2.14.8.1	Knowledge.....	2.14-3
2.14.8.2	Experience.....	2.14-3
2.14.8.3	Skill.....	2.14-3
2.14.9	Privileges of the Holder of Rating.....	2.14-3
2.14.10	Validity of Ratings.....	2.14-4
2.14.11	Requirements for the Re-Validation of Rating.....	2.14-4
IS 2.2.1	Issue, Renewal and Re-issue of Licenses, Ratings, Authorizations and Certificates.....	IS-2

IS 2.2.4.3	Appendix A: Procedures for Conversion of a PPL.....	IS-2
IS 2.2.4.3	Appendix B: Procedures for Conversion of a PPL/IR, CPL, CPL/IR, ATPL and Flight Engineer License.....	IS-2
IS 2.2.4.3	Appendix C: Procedures for Validation and Conversion of Flight Crew Licenses by Reliance upon the Licensing System of another Contracting State.....	IS-3
IS 2.2.5	Military Flight Crew and Mechanics.....	IS-3
IS 2.2.6	Appendix A: Prerequisites for a knowledge test.....	IS-5
IS 2.2.6	Appendix B: Prerequisites for a skill test.....	IS-5
IS 2.2.7	Language proficiency.....	IS-5
IS 2.2.8	Recording of flight time.....	IS-7
IS 2.2.9	Format of the license.....	IS-8
IS 2.3.2.4	Appendix A: Class/Type rating [SP(A) and MP(A)] – Knowledge.....	IS-9
IS 2.3.2.4	Appendix B: Flight instruction, skill test and proficiency check – CRM.....	IS-10
IS 2.3.3.1	Student pilots - Maneuvers and procedures for pre-solo flight training.....	IS-11
IS 2.3.3.2	Appendix A: Private pilot license (A) - Knowledge	IS-12
IS 2.3.3.2	Appendix B: Private pilot license (A) - Flight instruction and skill test.....	IS-13
IS 2.3.3.3	Appendix A: Commercial pilot license (A) – Knowledge.....	IS-16
IS 2.3.3.3	Appendix B: Commercial pilot license (A) - Flight instruction and skill test...	IS-19
IS 2.3.3.3	Appendix C: Airplane Upset Prevention and Recovery Training (UPRT) for CPL and for MPL, ATPL, Type Rating, Instructor Rating (Airplane) and Instructor Authorization for Flight Simulation Training Device(s) (Airplane)...	IS-22
IS 2.3.3.4	Appendix A: Airline transport pilot license (A) – Knowledge.....	IS-34
IS 2.3.3.4	Appendix B: Airline transport pilot license (A) - Flight Instruction and skill Test.....	IS-38
IS 2.3.3.5	Appendix A Multi-crew Pilot License Knowledge and Experience.....	IS-39
IS 2.3.3.5	Appendix B Multi-crew Pilot License Skills.....	IS-41
IS 2.3.3.6	Appendix A: Instrument rating (A and H) – Knowledge.....	IS-42
IS 2.3.3.6	Appendix B: Instrument rating (A and H) - Flight instruction, skill test and proficiency check.....	IS-45
IS 2.3.3.7	Appendix A: Private pilot license (H) – Knowledge.....	IS-46
IS 2.3.3.7	Appendix B: Private pilot license (H) – Flight instruction and skill test.....	IS-47
IS 2.3.3.8	Appendix A: Commercial pilot license (H) – Knowledge.....	IS-49
IS 2.3.3.8	Appendix B: Commercial pilot license (H) – Flight instruction and skill test	IS-52

IS 2.3.3.9	Appendix A: Airline transport pilot license (H) – Knowledge.....	IS-54
IS 2.3.3.9	Appendix B: Airline transport pilot license (H) - Flight Instruction and skill Test.....	IS-58
IS 2.3.3.11	Appendix A: Flight instructor (A and H) - Flight instruction, skill test and proficiency check.....	IS-59
IS 2.3.3.11	Appendix B: Flight instructor for instrument ratings (A and H) – Flight instruction, skill test and proficiency check.....	IS-63
IS 2.3.3.11	Appendix C: Instructor rating for additional type ratings – Flight instruction, skill test and proficiency check.....	IS-65
IS 2.3.3.11	Appendix D Instructor rating for Multi-Crew Pilot License – Flight Instruction, skill rest and proficiency check.....	IS-66
IS 2.3.3.12	Examiners.....	IS-68
IS 2.4.3	Type rating - Flight engineers - Flight Instruction, skill test and proficiency Check.....	IS-69
IS 2.6.2.6	Aviation Maintenance Technician (AMT) License Skill Test.....	IS-70
IS 2.6.2.6	(a) Skill requirements for the AMT Airframe rating.....	IS-71
IS 2.6.2.6	(b) Skill requirements for the AMT Power-plant rating.....	IS-71
IS 2.6.2.6	(c) Skill requirements for the AMS Avionics rating.....	IS-71
IS 2.10.1.3	Appendix A – Basic training in aviation medicine for AMEs.....	IS-72
IS 2.10.1.3	Appendix B – Advanced training in aviation medicine for AMEs.....	IS-72
IS 2.10.1.4	Application form for Medical Certificate.....	IS-72
IS 2.10.1.8	Medical Certificate.....	IS-73
IS 2.11.3	RESERVED.....	IS-73
IS 2.14.3.2	Appendix A: ATSEP License – Knowledge.....	IS-74
IS 2.14.3.4	Appendix B: ATSEP License – Skill Test.....	IS-75
IS 2.14.8.1	Appendix C: ATSEP Rating – Knowledge.....	IS-75
IS 2.14.8.3	Appendix C: ATSEP Rating – Skill Test.....	IS-76

Introduction

CAR Part 2 addresses the licensing of personnel. Article 32 of the Chicago Convention requires Republic of the Philippines to issue certificates of competency and licenses or validate such certificates or licenses issued by other Contracting States to the pilot of every aircraft and to other members of the operating crew of every aircraft engaged in international navigation.

The basis of this obligation is the goal of promoting and conducting safe and regular aircraft operations through the development and implementation of internationally acceptable certification and licensing processes. If the same process is extended to domestic operations, Republic of the Philippines can ensure the overall safety of aircraft operation through unification of licensing requirements.

ICAO Annex 1, Personnel Licensing, presents the broad international specifications for personnel licensing agreed upon by Contracting States. Most of the specifications in ICAO Annex 1 are not given in enough detail to satisfy the day-to-day management of a country's personnel licensing activities.

Part 2 of the Civil Aviation Regulations presents detailed requirements for the general rules of licensing and detailed requirements for the certification of airmen, pilots, non-pilot flight crew members, and airmen, such as mechanics, who are not flight crew.

Part 2 also presents medical standards for the granting of licenses and certification, and for the administration of medical examinations. The licensing and medical standards are based upon ICAO Annex 1.

2.1 GENERAL**2.1.1 APPLICABILITY**

Part 2 prescribes:

- (a) The requirements for issuing, renewal and re-issue of aviation personnel licenses, ratings, Authorizations and certificates:
- (b) the conditions under which those licenses, ratings, Authorizations and Certificates are necessary; and
- (c) the privileges and limitations granted to the holders of those licenses, ratings, Authorizations and certificates.

2.1.2 RESERVED

2.1.3 ABBREVIATIONS

(a) The following abbreviations are used in Part 2:

- (1) A – Airplane
- (2) ADS-B – Automatic Dependent Surveillance-Broadcast
- (3) AIP - Aeronautical Information Publication
- (4) AME - Aviation Medical Examiner
- (5) AMS - Aviation Maintenance Specialist
- (6) AMT - Aviation Maintenance Technician
- (7) AOA – Angle of Attack
- (8) AS – Airship
- (9) ATCO - Air Traffic Controller
- (10) ATS - Air Traffic Control Service
- (11) ATSEP – Air Traffic Safety Electronic Personnel
- (12) ATPL - Airline Transport Pilot License
- (13) B – Balloon
- (14) CAT II/III - Category II/III
- (15) CNS/ATM – Communications, Navigation, Surveillance Air Traffic Management
- (16) CPL - Commercial Pilot License
- (17) CRM - Crew Resource Management
- (18) DFEE - Designated Flight Engineer Examiner
- (19) DFNE - Designated Flight Navigator Examiner
- (20) DME – Distance Measuring Equipment
- (21) FE - Flight Engineer
- (22) FI - Flight Instructor
- (23) FIR – Flight Instructor Rating
- (24) FN - Flight Navigator
- (25) FOO - Flight Operations Officer
- (26) G – Glider
- (27) GBAS – Ground-Based Augmentation System
- (28) GNSS – Global Navigation Satellite System
- (29) GPS – Global Positioning System
- (30) IA - Inspection Authorization
- (31) IFR - Instrument Flight Rules
- (32) ILS - Instrument Landing System
- (33) IR – Instrument Rating
- (34) H – Helicopter

- (35) HMI – Human-Machine Interface
- (36) ICAO - International Civil Aviation Organization
- (37) MER – Multi-Engine Rating
- (38) MPA - Multi-pilot Airplane
- (39) MPH - Multi-pilot Helicopter
- (40) MPL - Multi-crew Pilot License
- (41) NDB – Non-Directional Beacon
- (42) NOTAM - Notice to airmen
- (43) PIC - Pilot-in-Command
- (44) PL - Powered-lift
- (45) PPL - Private Pilot License
- (46) RT – Radiotelephony
- (47) SBAS – Satellite-Based Augmentation System
- (48) SIC - Second-in-Command
- (49) SMC – System Monitoring and Control
- (50) SPA - Single-pilot Airplane
- (51) SPH - Single-pilot Helicopter
- (52) TR – Type-Rating
- (53) UPRT – Upset Prevention and Recovery Training
- (54) VFR - Visual Flight Rules
- (55) VOR – Very High Frequency Omni-Directional Radio

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2.2 GENERAL LICENSING REQUIREMENTS

2.2.1 GENERAL

- (a) A license, rating, Authorization and/or certificate will be issued, renewed or re-issued when the applicant complies with the requirements of Part 2.
- (b) *Privileges.* A license and/or certificate holder is not permitted to exercise privileges other than those granted by the license and/or certificate.
- (c) *Medical fitness.* An applicant for a flight crew or air traffic controller license shall hold a medical certificate issued in accordance with the provisions of this Part.

Implementing Standard: See IS 2.2.1 for detailed requirements for application for the issue, renewal and re-issue of licenses, ratings, authorizations and certificates.

2.2.2 LICENSES, RATINGS, AUTHORIZATIONS AND CERTIFICATES

2.2.2.1 LICENSES

The following licenses are issued under this Part to an applicant who satisfactorily accomplishes the requirements in this Part for the license sought:

- (a) Pilot licenses:
 - (1) Private pilot license (PPL);
 - (2) Commercial pilot license (CPL);
 - (3) Airline Transport pilot license (ATPL);
 - (4) Multi-crew Pilot License (MPL);
 - (5) Glider pilot license; and
 - (6) Free balloon pilot license.
- (b) Flight engineer license.
- (c) Flight navigator license.
- (d) Aviation maintenance technician license (AMT).
- (e) Aviation maintenance specialist license (AMS).
- (f) Air traffic controller license (ATCO).
- (g) Flight operations officer (Flight Dispatcher) license;
- (h) Aeronautical station operator.

Note: Flight radiotelephone operator

- (1) *Where the knowledge and skill of an applicant have been established as satisfactory in respect of the certification requirements for the radiotelephone operator's restricted certificate specified in the general radio regulations annex to the International Telecommunication Convention and the applicant has met the requirements that are pertinent to the operation of the radiotelephone on board an aircraft, a Contracting State may endorse a license already held by the applicant or issue a separate license as appropriate*
- (2) *Skill and knowledge requirements on radiotelephony procedures and phraseology have been developed as an integral part of all pilot airplane and helicopter licenses.*
- (i) Air Traffic Safety Electronic Personnel (ATSEP)

2.2.2.2 RATINGS

(a) The following ratings are placed on a pilot license when an applicant satisfactorily accomplishes the requirements in this Part for the rating sought:

(1) Category ratings in the following aircraft:

- (i) Airplane
- (ii) Helicopter
- (iii) Glider
- (iv) Free Balloon

(2) Class ratings in the following aircraft:

- (i) Single-engine land - airplane
- (ii) Single-engine sea - airplane
- (iii) Multi-engine land - airplane
- (iv) Multi-engine sea- airplane
- (v) A class rating may be issued for those helicopters certificated for single-pilot Operations and which have comparable handling, performance and other characteristics.

Note: A class rating or endorsement for High Performance Airplanes (HPA) requires additional knowledge, if the applicant has not completed the ATPL (A) knowledge requirements.

(3) Type ratings in the following aircraft:

- (i) Each type of aircraft certificated for operation with a minimum crew of at least two pilots;
- (ii) Each type of helicopter certificated for single-pilot except where a class rating has been established under (a)(2)(v); and
- (iii) Any aircraft considered necessary by the Authority.

Note: A type rating for High Performance Airplanes (HPA) requires additional knowledge, if the applicant has not completed the ATPL(A) knowledge requirements.

(4) Instrument ratings in the following aircraft:

- (i) Instrument — Airplane
- (ii) Instrument — Helicopter

(5) Instructor ratings:

- (i) Flight instructors
- (ii) Instructors for additional class/type/instrument ratings
- (iii) Ground Instructor

(b) The following ratings are placed on a flight engineer's license when an applicant satisfactorily accomplishes the requirements in this Part for the rating sought:

- (1) Type rating
- (2) Instructor rating

- (c) The following ratings are placed on an air traffic controller license when an applicant satisfactorily accomplishes the requirements in this Part for the rating sought:
- (1) Aerodrome control rating;
 - (2) Approach control procedural rating;
 - (3) Approach control surveillance rating;
 - (4) Approach precision radar control rating;
 - (5) Area control procedural rating; and
 - (6) Area control surveillance rating.
- (d) The following ratings are placed on an aviation maintenance technician license when an applicant satisfactorily accomplishes the requirements in this Part for the rating sought:
- (1) Airframe
 - (2) Powerplant
 - (3) Airframe and Powerplant

2.2.2.3 AUTHORIZATIONS

- (a) The following Authorizations are issued when an applicant satisfactorily accomplishes the requirements in this Part for the Authorization sought:
- (1) Student pilot Authorization
Note: if the State prefers, a license or certificate can be issued.
 - (2) Examiner Authorization
- (b) The following Authorizations are placed on a license when an applicant satisfactorily accomplishes the requirements in this Part for the Authorization sought:
- (1) Category II pilot Authorization
 - (2) Category III pilot Authorization
 - (3) Inspection Authorization

2.2.2.4 CERTIFICATES

- (a) The following certificates are issued when an applicant satisfactorily accomplishes the requirements in this Part for the certificate sought:
- (1) Medical certificate Class 1 for CPL, ATPL, Flight engineer and Flight navigator license
 - (2) Medical certificate of Class 2 for PPL, Glider, Free balloon pilot
 - (3) Medical certificate Class 3 for Air traffic controller license
 - (4) Validation certificates

2.2.2.5 MEDICAL FITNESS

- (a) The Authority shall apply, as part of its State safety programme, basic safety management principles to the medical assessment process of license holders, that as a minimum include:

- (1) routine analysis of in-flight incapacitation events and medical findings during medical assessments to identify areas of increased medical risk; and
 - (2) continuous re-evaluation of the medical assessment process to concentrate on identified areas of increased medical risk.
- (b) The Licensing Authority shall implement appropriate aviation-related health promotion for license holders subject to a Medical Assessment to reduce future medical risks to flight safety.

Note 1.— Standard 2.2.2.5 indicates how appropriate topics for health promotion activities may be determined.

Note 2.— Guidance on the subject is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 3.— Guidance on the relationship between the Licensing Authority and the implementation of Medical Assessment for license holders is contained in the Manual of Procedures for Establishment and Management of a State's Personnel Licensing System (Doc 9379).

2.2.3 VALIDITY OF LICENSES, RATINGS, AUTHORIZATIONS AND CERTIFICATES

- (a) The privileges granted by a license, or by related ratings, may not be exercised unless the holder maintains competency and meets the requirements for recent experience of this Part.
- (1) Maintenance of competency and recent experience requirements for pilot licenses and ratings shall be based on a systematic approach to accident prevention and should include a risk assessment process and analysis
 - (2) Maintenance of competency shall be indicated in the airman's personal license or record (e.g. logbook).
- (b) The maintenance of competency of flight crew members, engaged in commercial air transport operations, may be satisfactorily established by demonstration of skill during proficiency flight checks completed in accordance with Part 8.
- (c) The validity period of a license varies by the type of license. The date of validity of a license shall be endorsed on each license, so as to be easily identified by an inspecting authority.
- (d) The validity period of the ratings, Authorizations and medical certificates and the renewal/re-issue conditions are indicated in the relevant Subparts of Part 2.
- (e) Renewal of a license will take place within the validity period after initial issue of a rating, provided the ratings related to the license and the medical certificate are valid.

2.2.4 VALIDATION AND CONVERSION OF FOREIGN LICENSES AND RATINGS

2.2.4.1 VALIDATION OF FLIGHT CREW LICENSES

- (a) A person who holds a current and valid pilot license issued by another Contracting State in accordance with ICAO Annex 1 may apply for a validation of such license for use on aircraft registered in the Republic of the Philippines.
- (b) The Republic of the Philippines will verify the authenticity of the license, ratings Authorizations and the medical certificate with the state of license issue.

- (c) A validation certificate with PPL privileges, based upon at least a PPL, will be issued provided:
 - (1) The applicant for the validation certificate shall present to the Authority the foreign license.
 - (2) The applicant for the validation certificate shall hold a current medical certificate issued under Part 2 or a current medical certificate issued by the Contracting State that issued the applicant's pilot license provided that the foreign medical certificate meets the requirements of Part 2, relevant to the license held.
 - (3) The validation certificate will be valid provided the foreign license or in the case of a continuing license, the rating/medical certificate remains valid.
- (d) A validation certificate with PPL/IR. CPL. CPL/IR. ATPL or FE privileges, based upon the relevant license, will be issued provided the following requirements are met.
 - (1) The applicant for the validation certificate shall present to the Authority the foreign license and evidence of the experience required by presenting the record (e.g. logbook).
 - (2) The validation certificate will be valid for one year, provided the foreign license or in the case of a continuing license the rating/medical certificate remains valid.
 - (3) Ratings will only be validated together with the validation of a license.
 - (4) The applicant for the validation certificate shall:
 - (i) hold a current medical certificate issued under Part 2 or a current medical certificate issued by the Contracting State that issued the applicant's pilot license provided that the foreign medical certificate meets the requirements of Part 2, relevant to the license held;
 - (ii) complete a skill test for the relevant ratings in the license that he or she wants to be validated relevant to the privileges of the license held;
 - (iii) demonstrate to the satisfaction of the Authority the knowledge relevant to the license to be validated of:
 - (A) Air Law;
 - (B) Aeronautical Weather codes;
 - (C) Flight Performance and Planning; and
 - (D) Human Performance.
 - (E) Demonstrate a knowledge and comprehension of the English language as required by subpart 2.3.7
 - (F) While exercising the privileges of his license, a valid medical certificate, the license on which the validation is based and the certificate of validation shall be carried; and
 - (G) Comply with the experience requirements set out in the table below:

License	Experience	Validation Privileges
ATPL (A)	> 1 500 hours as PIC in multi-pilot certificated airplanes	Commercial air transport in multi-pilot airplanes as PIC

ATPL (H)	> 1 000 hours as PIC on multi-pilot helicopters	Commercial air transport in multi-pilot helicopters as PIC
ATPL (A) or CPL(A)/IR with ATPL (A) knowledge	> 500 hours as PIC or co-pilot on multi-pilot airplanes	Commercial air transport in multi-pilot airplanes as co-pilot
ATPL (H) or CPL(H)/IR with ATPL (H) knowledge	> 500 hours as PIC or co-pilot on multi-pilot helicopters	Commercial air transport in multi-pilot helicopters as co-pilot
CPL (A)/IR	> 1 000 hours as PIC in commercial air transport since gaining an IR	Commercial air transport in single-pilot airplanes as PIC
CPL (H)/IR	> 1 000 hours as PIC in commercial air transport since gaining an IR	Commercial air transport in single-pilot helicopters as PIC
CPL (A)	> 700 hours in airplanes other than gliders, including 200 hours in the activity role for which validation is sought, and 50 hours in the role in the last 12 months	Activities in airplanes other than commercial air transport
CPL (H)	> 700 hours in helicopters including 200 hours in the activity role for which validation is sought, and 50 hours in the role in the last 12 months	Activities in helicopters other than commercial air transport
PPL A / IR	> 100 hours PIC instrument flight time	Private flights under IFR
Flight engineer	> 1 500 hours as flight engineer on airplanes in commercial air transport	Commercial air transport in airplanes as flight engineer
Flight engineer	> 1 000 hours flight engineer on airplanes in other than commercial air transport	Other than commercial air transport in airplanes as flight engineer

*Note: The term multi-pilot is used to indicate experience in an aircraft required to be operated with a co-pilot. (For example, see ICAO Annex 1, paragraph 2.5.1.5).

>= Greater than

2.2.4.2 CONVERSION OF FLIGHT CREW LICENSES

- (a) Conversion of a foreign pilot license for issuance of a PPL by Republic of the Philippines. A person who holds a current and valid pilot license with at least PPL privileges issued by another Contracting State in accordance with ICAO Annex 1, may apply for a conversion and be issued with a PPL for use on aircraft registered in Republic of the Philippines provided the following requirements are met.

- (1) The holder shall:
 - (i) present to the Authority the foreign license, evidence of experience required by presenting the record (e.g. logbook) and current medical certificate;
 - (ii) present to the Authority evidence of language proficiency in English as specified in Subpart 2.2.7 or shall demonstrate the language proficiency skills as specified in Subpart 2.2.7;
 - (iii) present to the Authority a Class 2 medical certificate issued under this Part;
 - (iv) demonstrate to the satisfaction of the Authority the knowledge of Air Law; and
 - (v) complete a PPL skill test.
 - (2) The Republic of the Philippines will verify the authenticity license, ratings, Authorizations and the medical certificate with the State of license issue.
- (b) Conversion of PPL/IR. CPL; CPL/IR, ATPL and Flight Engineer licenses, which have been validated in accordance with Subpart 2.2.4.1: The holder of a current and valid foreign PPL/IR, CPL, CPL/IR, ATPL or Flight Engineer license issued by another Contracting State in accordance with ICAO Annex 1, and appropriate medical certificate, may apply for conversion to the appropriate license and ratings issued by Republic of the Philippines, provided the following requirements are met:
- (1) The applicant is the holder of a current validation certificate issued under Subpart 2.2.4.1;
 - (2) The applicant shall hold a medical certificate issued under this Part, appropriate to the level of license to be converted.
 - (3) Ratings listed on a person's foreign pilot license that have been validated in accordance with Subpart 2.2.4.1, may be placed on that person's converted license.

2.2.4.3 VALIDATION AND CONVERSION OF FLIGHT CREW LICENSES BY RELIANCE UPON THE LICENSING SYSTEM OF ANOTHER CONTRACTING STATE

- (a) Notwithstanding Subparts 2.2.4.1 and 2.2.4.2, the Authority may issue a validation certificate or a license with the applicable ratings to the holder of a current and valid foreign license, provided:
- (1) The license is issued by another Contracting State;
 - (2) The Authority is convinced that the license has been issued on the basis of at least Part 2; and
 - (3) There is an agreement between the Authority and the other Contracting State about recognition of licenses and, if applicable, keeping the licenses and ratings current and valid.
- (b) The applicant for the validation certificate or conversion shall present to the Authority the foreign license and evidence of the currency of the license by presenting the record (e.g. logbook).
- (c) The applicant shall hold a medical certificate relevant to the license to be converted or validated, provided that the foreign medical certificate meets the requirements of Part 2, which medical certificate shall be issued under Part 2, medical requirements.
- (d) If applicable, the applicant shall pass a knowledge test on Air Law.

Note: See ICAO Document 9379 for procedures related to validation or conversion. Implementing Standard: See IS 2.2.4.3 Appendices A, B and C for procedures for validation or conversion of flight crew licenses.

2.2.4.4 VALIDATION IN CASE OF LEASED, CHARTERED OR INTERCHANGED AIRCRAFT

- (a) The requirements stated in Subpart 2.2.4.1 shall not apply where aircraft, registered in Republic of the Philippines, are leased to, chartered by or interchanged by an operator of another Contracting State, provided that during the term of the lease the State of the Operator has accepted the responsibility for the technical and/or operations supervision in accordance with Article 83-bis of the ICAO Convention.
- (b) The licenses of the flight crew of the other Contracting State may be validated, provided that the privileges of the flight crew license validation are restricted for use during the lease, charter or interchange period only on nominated aircraft in specified operations not involving a Republic of the Philippines operator, directly or indirectly through a wet lease or other commercial arrangement.

Note: See ICAO Document 9379 for procedures related to validation.

2.2.4.5 VALIDATION OF FOREIGN MECHANICS LICENSES

- (a) The Authority may render valid a license issued by a foreign country on a reciprocal basis as an alternative to the issuance of its own license. It shall establish validity by suitable authorization to be carried with the former license accepting it as the equivalent of the latter. The validity of the authorization shall not extend beyond the period of validity of his foreign license.

2.2.5 MILITARY COMPETENCE SPECIAL RULES

2.2.5.1 MILITARY PILOTS

The holder of a military pilot license (or certificate) who meets the requirements of IS 2.2.5 may apply, on the basis of his or her military training, for:

- (a) a CPL;
- (b) a rating in the category and class of aircraft for which that military pilot is qualified;
- (c) an instrument rating with the appropriate category rating for which that military pilot is qualified; and a type rating, if appropriate.

2.2.5.2 MILITARY FLIGHT ENGINEERS

- (a) A rated military aircraft flight engineer, or a former rated military aircraft flight engineer, who meets the requirements of knowledge, skill and experience as required by Subpart 2.4 will be eligible for a flight engineer license, based on his/her military competency.
- (b) An aircraft type rating shall be placed on the flight engineer license, for which he/she is qualified.

2.2.5.3 MILITARY MECHANICS

- (a) General

A rated military aircraft mechanic or former rated military aircraft mechanic who applies for an Aviation Maintenance license is entitled to that license based on military competence in accordance with the provisions of this section.

- (b) To be eligible for the provisions of this section, the applicant must provide evidence that he is or was, within the preceding twelve-month period from the date of application, a member of the military and for aircraft mechanics, on active military duty as an aircraft mechanic.
- (c) An eligible military or former military applicant for an Aviation Maintenance license who has been appropriately trained and has at least 4 years practical experience in aircraft repair, alteration and inspection shall be issued that license if he satisfactorily passes the theoretical examinations for an Aviation Maintenance license and a practical examination administered by the Authority.
- (d) An eligible military or former military applicant for an Aviation Maintenance license who has been appropriately trained and has at least 10 years practical experience in aircraft repair, alteration and inspection shall be issued that license if he satisfactorily passes the CAR examinations and a practical examination administered by the Authority.

2.2.5.4 EVIDENTIARY DOCUMENTS

The following documents are satisfactory evidence for the purposes indicated -

- (a) To show that an applicant is a member of the armed forces, an official identification card issued to him by an armed force may be used.
- (b) To show the applicant's discharge or release from the armed forces, or his former membership therein, an original or certified true copy of a license of discharge or release may be used.
- (c) To show current or previous status as a rated military pilot on flying status with a Philippine Armed Force, one of the following may be used:
 - (1) An official Armed Force order to flight duty as a military pilot.
 - (2) An official Armed Force form or logbook showing military pilot status.
 - (3) An official order showing that the applicant graduated from an accredited pilot school and is or was rated as a military pilot.
- (d) To show practical experience as a military aircraft mechanic, applicable service records; and
- (e) To show appropriate training as a military aircraft mechanic, the certificates of training.

2.2.6 TRAINING AND TESTING REQUIREMENTS

2.2.6.1 APPROVED TRAINING

- (a) The Authority may provide for some reduction in the experience requirements for the issue of certain licenses and ratings prescribed in this Part when training is conducted within an Approved Training Organization under special curricula approved by the Authority.
- (b) Approved training shall provide a level of competency at least equal to that provided by the minimum experience requirements for personnel not receiving such approved training.

- (c) CAR Part 3 prescribes the requirements for certifying and administering Approved Training Organizations for conducting approved training.
- (d) The approval of a training organization by the Authority shall be dependent upon the applicant demonstrating compliance with the requirements of CAR Part 3.

Note: See ICAO Document 7192 Part B-5 and Doc 9379 for details on training

2.2.6.2 USE OF FLIGHT SIMULATION TRAINING DEVICES (FSTD)

- (a) Depending on the purpose (training, testing or checking) and on the type of license or rating sought (PPL, CPL, ATPL, MPL, IR, TR, MER, FIR) one or more of seven device types may be used. The device types differ in terms of fidelity of the 3 simulator feature categories, aircraft simulation, cueing simulation and environment simulation.
- (b) For the purpose of UPRT, which includes stall and engine and airframe icing, additional fidelities of the simulator feature aerodynamic flight and engine model, flight controls and forces, motion cueing and the IOS are required.
 - (1) A license holder shall be evaluated/checked in an SFT with the features and configuration similar to a particular type of aircraft used by the said license holder.
 - (2) A license holder shall be evaluated/checked in an SFT for the purpose of additional rating of Instrument Rating (IR) only.

Note. ICAO Doc. 9625 Manual of Criteria for the Qualification of Flight Simulation Training Devices, Fourth Edition 2015, provides guidance for the approval of FSTDs.

2.2.6.3 KNOWLEDGE AND SKILL TESTS AND CHECKS: TIME, PLACE, DESIGNATED PERSONS AND FORMAT

- (a) Knowledge and Skill Tests and Checks prescribed by or under Part 2 are given at times and places and by persons authorized and designated by the Authority.
- (b) The knowledge test will be performed in written or computer format, except for the knowledge test for an instructor rating or an additional instructor rating within the same aircraft category, which may be performed orally. In addition to the written knowledge test, candidates may be questioned orally during the skill test, as appropriate.

2.2.6.4 KNOWLEDGE AND SKILL TESTS AND CHECKS: PREREQUISITES AND PASSING GRADES

- (a) An applicant for a knowledge test or a skill test shall have received any required endorsement as specified in this part.

Note: The endorsement requirements may differ between licenses and will appear in each license section as applicable.

- (b) An applicant for a knowledge or skill test must receive written Authorization from the Authority to take the test.

- (c) An applicant shall show proper identification in the form of a Government issued identification document at the time of application that contains the applicant's: photograph, signature and date of birth.
- (d) The Authority will specify the minimum passing grades.
- (e) An applicant for a knowledge or skill test who fails that test may reapply for the test only after the applicant has received:
 - (1) The necessary training from an authorized instructor who has determined that the applicant is proficient to pass the test; and
 - (2) An endorsement from an authorized instructor who gave the applicant the additional training.

2.2.6.5 RELIANCE ON TRAINING AND TESTING IN ANOTHER CONTRACTING STATE

- (a) The Authority may rely on the training and/or testing system administered by another Contracting State as the basis for its own written or practical test requirement for airman licenses provided that the Authority has an agreement with the other Contracting State whose training and/or testing system is used.
- (b) The applicant shall apply for and receive written approval from the Authority prior to receiving training and/or testing in a system administered by another Contracting State.

2.2.7 LANGUAGE PROFICIENCY

- (a) Flight navigators required to use the radio telephone aboard an aircraft, air traffic controllers and aeronautical station operators shall demonstrate the ability to speak, read and understand the English language used for radio telephony communications.
- (b) All airplane, airship, helicopter and powered-lift pilots, air traffic controllers and aeronautical station operators shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements.
- (c) All airplane, airship, helicopter and powered-lift pilots, air traffic controllers and aeronautical station operators shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements as follows:
 - (1) those demonstrating language proficiency at the Operational Level (Level 4) shall no longer be evaluated.
 - (2) those demonstrating language proficiency at the Extended Level (Level 5) shall no longer be evaluated.
 - (3) those demonstrating language proficiency at the Expert Level (Level 6) shall be exempted from further language evaluation.
- (d) Flight engineers, and glider and free balloon pilots should have the ability to speak and understand the language used for radiotelephony communications.
- (e) Implementing Standard IS 2.2.7 contains the detailed requirements for language proficiency.

Note: ICAO DOC 9835 Manual on the Implementation of ICAO Language Proficiency Requirements is a guide to the implementation of the ICAO Language Proficiency Requirements.

2.2.8 RECORDING OF FLIGHT TIME

- (a) Each person shall document and record the following time in a manner acceptable to the Authority:
- (1) training and experience used to meet the requirements for a license, rating and Authorization of Part 2; and
 - (2) the experience required to show recent flight experience according to the requirements of Part 2.

Implementing Standard: see IS 2.2.8 for detailed recording requirements.

2.2.9 FORMAT OF THE LICENSE

- (a) The license format shall be in a form and manner prescribed by the Authority. The items required on the license are indicated in IS 2.2.9.

2.2.10 SUSPENSION OR REVOCATION OF A LICENSE, RATING, AUTHORIZATION/CERTIFICATE

Note: See also Subpart 1.2.1.7.

2.2.10.1 SUSPENSION OF A LICENSE, RATING AUTHORIZATION OR VALIDATION CERTIFICATE

If, in accordance with the Civil Aviation Law the Authority determines that the interests of safety require that a license, rating, Authorization or certificate must be suspended, the Authority may act as follows:

- (a) If the Authority discovers facts indicating either a lack of competency or lack of qualification, the Authority may, require an applicant for or the holder of any license, rating, Authorization, or validation certificate to retake all or part of the knowledge or practical tests required for any license, rating, Authorization, or validation certificate at issue, renewal or re-issue. The Authority may suspend the validity of any such license, rating, Authorization and/or validation certificate pending the results of such re-testing.
- (b) A person whose license, rating, Authorization, or certificate has been amended, modified, suspended, or revoked shall be provided with notice and an opportunity to be heard in accordance with Subpart 1.2.1.7.3.
- (c) After notifying the person involved, in writing, stating the reasons for such action, the Authority may also suspend the validity of any license, rating, Authorization and/or validation certificate in the following cases:
 - (1) during the investigation of an aircraft disaster or incident;
 - (2) in cases of proven misconduct, recklessness or excessive carelessness;
 - (3) if the holder has acted in contradiction to his or her privileges; and/or
 - (4) pending the investigation of a suspected violation of these regulations or the aviation law under which these regulations are effected.

- (d) Once the suspension is effective, the person involved shall immediately cease exercising the privileges of the affected license, certificate, rating, or Authorization. The person involved shall surrender to the Authority all licenses or validation certificates in his or her possession that are subject to the suspension within 8 days of receiving the notification of the order. If the person fails to surrender the documents under suspension, the Authority may revoke all such certificate(s) held by that person.
- (e) When a suspension is limited to one or more ratings mentioned on the license or validation certificate, the Authority shall provide the person involved with a new license or validation certificate omitting all ratings which are subject to the suspension.
- (f) The Authority may cancel a suspension in the following cases:
 - (1) if person under suspension has taken and passed the knowledge or practical tests required for any license, rating, or Authorization at issue indicated in (a);
 - (2) if the person involved has gained the required additional experience; or
 - (3) by revocation of the license, rating, Authorization and/or validation certificate.
- (g) Once the suspension has been cancelled, other than by revocation, the Authority shall issue the person involved a new license or validation certificate.

2.2.10.2 SUSPENSION OF A MEDICAL CERTIFICATE

- (a) In case of doubt concerning the medical fitness of the holder of a medical certificate, the Authority may determine that the person involved shall again repeat a complete or partial medical examination. and may suspend the validity of that medical certificate until the repeat examination is completed with favorable results.
- (b) The validity of a medical certificate may also be suspended in case of a temporary rejection on medical grounds.
- (c) The person holding the medical certificate will be notified in writing of a suspension stating the reasons for that suspension.
- (d) The person holding the suspended medical certificate shall surrender the medical certificate in his or her possession to the Authority within 8 days after the date of receiving the notification.
- (e) In cases in which the medical fitness of the person involved allows it, the Authority may provide the person with a suspended medical certificate of a particular class with a new medical certificate of a lower class.
- (f) A suspension may be lifted if the medical examination intended in (a) has been passed satisfactorily. If a suspension is lifted, the person involved shall receive a new medical certificate unless the medical certificate was revoked.

2.2.10.3 REVOCATION OF LICENSES, RATINGS, AUTHORIZATIONS OR CERTIFICATES

- (a) A license, rating, Authorization or certificate shall be revoked if the holder has lost the skills for exercising the privileges mentioned in the document or fails to meet the appropriate medical standards as shown by the results of a medical examination or a test.

- (b) A license, rating, Authorization and/or certificate may be revoked if the holder has made a statement contrary to the truth in obtaining or maintaining that license, rating Authorization or certificate, or has provided incorrect data at a medical examination and/or test required for the issue, maintenance or renewal of the license, rating, Authorization and certificate.
- (c) A license, rating, Authorization or certificate shall be revoked in case of proven misconduct, recklessness or excessive carelessness. The holder of the license will be notified in writing of the revocation with the reasons therefore.
- (d) A person who has had a license or certificate revoked shall be obliged to hand over to the Authority all the licenses or certificates in his or her possession applicable to the revocation within 8 days after the date of receiving notification from the Authority.
- (e) The person who has been denied the privilege to manipulate the controls of an aircraft by judgment of a court, shall be equally obliged to hand over to the Authority all licenses and certificates in his or her possession within 8 days after he or she has taken cognizance of the judgment or after it can be reasonably assumed that he or she has taken cognizance thereof.

2.2.10.4 REINSTATEMENT OF PRIVILEGES OF EXPIRED PILOT LICENSES AND RATINGS

- (a) No person who holds an expired pilot license or rating shall exercise the privileges of said license or ratings,
- (b) The holder of an expired Philippine issued pilot license and rating shall pass the Civil Aviation Regulations practical examinations and medical test required for renewal or reinstatement of the license.
- (c) Flight crewmembers seeking reinstatement of any license that has expired for more than twenty four (24) months shall complete an aircraft initial ground and flight training program, including instrument rating with additional condition as follows:
 - (1) For holders of a flight crewmember license other than an airline transport pilot license, training on any aircraft type is required;
 - (2) For holders of an airline transport pilot license and flight engineer license, training certification on a multi-engine and/or applicable type of aircraft should be presented.
 - (3) Except as provided, flight crewmember seeking reinstatement of an aircraft rating, other than a rating as part of a license re-issuance shall complete an initial ground and flight training program and pass a knowledge and skill test for that type of aircraft.

2.2.10.5 REINSTATEMENT OF PRIVILEGES OF EXPIRED AMT/AMS LICENSES AND RATINGS

- (a) No person who holds an expired AMT/AMS license or rating shall exercise the privileges of said license or rating;
- (b) Aviation Maintenance Technicians or Specialists who seek reinstatement of their licenses that had already expired shall comply with the following conditions:
 - (1) Within twenty four (24) months from expiration of license, he/she shall pass the Civil Aviation Regulations test given by the Authority.
 - (2) After twenty four (24) months from expiration of license, he/she shall pass the Civil Aviation Regulations test and must undergo the appropriate recurrent training from

an Approved Maintenance Organization (AMO) or any school or facility accredited by the Authority for such purpose.

- (3) After sixty (60) months from expiration of license, he/she shall comply with the requirements for the application for the initial application for AMT/AMS License.

2.2.11 RE-ISSUE OR REINSTATEMENT OF A LICENSE, RATING, AUTHORIZATION OR CERTIFICATE

Note: Re-issue of a license, rating, Authorization or certificate. *The administrative action taken after a license, rating, Authorization or certificate has lapsed that reissues the privileges of the license, rating, Authorization or certificate for a further specified period consequent upon the fulfillment of specified requirements. (PCAR 2.1.2 (a) (35))*

Note: Other airman license: *A person required by any part of these regulations to have an airman's license shall have it in their physical possession or readily accessible in the aircraft or at the work site when exercising the privileges of that license. (PCAR 1.2.1.1 (c))*

- (a) The following conditions qualifies for a reissue or reinstatement of the license, rating, authority or certificate:
 - (1) expired licenses;
 - (2) surrendered licenses;
 - (3) suspended licenses;
 - (4) revoked licenses;
 - (5) exchange of licenses to lower grade or different rating;
 - (6) and other similar conditions;

Note: *A license that has been suspended or revoked may be reissued or reinstated subject to the Director General's approval.*

- (b) Any person who holds a Philippine license, ratings authorization or certificate that has been surrendered, expired, or other similar conditions may apply for a reissue or reinstatement of such license for use provided he/she successfully complies with the requirements of the license;

Note: *A license that has been surrendered or has expired shall be considered as an "expired license"*

- (c) A person who holds an expired Philippine license, ratings authorization or certificate for LESS THAN thirty six (36) months must pass the knowledge test on the Air Law to be administered by the Authority prior to the re-issue of the said license;
- (d) A person who holds expired Philippine license, ratings, authorization or certificate for MORE THAN thirty six (36) months must undergo the same process as the initial or original license application, including passing the Air Law, ALL the theoretical or knowledge test of the license in question and skill test and oral test requirements to be administered by the Authority prior to the re-issue of the said license;
- (e) In addition to the requirements of PCAR 2.2.11 (c), a holder of an expired FLIGHT DISPATCHER LICENSE, rating, authorization or certificate for MORE THAN thirty six (36) months shall be required to undergo the appropriate refresher course for the said license.

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2.3 PILOT LICENSES, CATEGORIES, RATINGS AND AUTHORIZATIONS**2.3.1 GENERAL****2.3.1.1 APPLICABILITY**

This Section prescribes the requirements for the issue, renewal and re-issue, if applicable, of pilot licenses, ratings and Authorizations.

2.3.1.2 GENERAL RULE CONCERNING PILOT LICENSES, RATINGS AND AUTHORIZATIONS

- (a) An applicant shall, before being issued with any pilot license, rating or Authorization, meet such requirements in respect of age, knowledge, experience, flight instruction, skill, medical fitness and language proficiency as are specified for that license, rating or Authorization.
- (b) A person shall not act either as pilot-in-command or as co-pilot of an aircraft in any of the categories unless that person is the holder of a pilot license issued in accordance with the provisions of Part 2.
- (c) An applicant shall for renewal or re-issue of a license, rating or Authorization meet the requirements as are specified for that license, rating or Authorization.

2.3.1.3 AUTHORITY TO ACT AS A FLIGHT CREW MEMBER

- (a) A person shall not act as a flight crew member of an aircraft registered in the Republic of the Philippines unless a valid license or a validation certificate is held showing compliance with the specifications of this Part and appropriate to the duties to be performed by that person.
- (b) No person may act as the PIC or co-pilot of an aircraft unless that person holds the appropriate category, class and type rating for the aircraft to be flown.
- (c) A person shall not act as a flight crew member of an aircraft in the territory of the Republic of the Philippines unless a valid license or a validation certificate is held that has been issued by the State of Registry of that aircraft or by any other Contracting State and rendered valid by the state of registry of that aircraft.

Note: During a skill test, the applicant acts as PIC but the safety pilot will intervene in safety situations.

2.3.1.4 CREDITING OF FLIGHT TIME

- (a) A student pilot or the holder of a pilot license shall be entitled to be credited in full with all solo, dual instruction and pilot-in-command flight time towards the total flight time required for the initial issue of a pilot license or the issue of a higher grade of pilot license.
- (b) The holder of a pilot license, when acting as co-pilot at a pilot station of an aircraft certificated for operation by a single pilot but required by a Contracting State to be operated with a co-pilot, shall be entitled to be credited with not more than 50 percent of the co-pilot flight time towards the total flight time required for a higher grade of pilot license. The Authority may authorize that flight time be credited in full towards the total flight time required, provided the aircraft is equipped to be operated by a co-pilot and the aircraft is operated in a multi-pilot crew operation. The holder of a pilot license, when acting as co-pilot at a pilot station of an aircraft certificated to be

operated with a co-pilot, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot license.

- (c) The holder of a pilot license, when acting as pilot-in-command under supervision, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot license.

2.3.1.5 LIMITATION OF PRIVILEGES OF PILOTS WHO HAVE ATTAINED THEIR 60TH BIRTHDAY

- (a) No person who holds a pilot license under this Part shall serve as pilot-in-command on a Philippine-registered civil aircraft engaged in international commercial air transport (defined in Part 2.1.2) in a single pilot operation if that person reached 60th year of age.
- (b) No person who holds a pilot license issued under this Part shall serve as a pilot-in-command on a Philippine-registered civil aircraft engaged in commercial air transport in a multi-crew operation if that person reached 60th year of age unless the other pilot is younger than 60 years of age.

2.3.1.5.1 CURTAILMENT OF PRIVILEGES OF PILOTS WHO HAVE ATTAINED THEIR 65TH AND 67TH BIRTHDAY

- (a) No person who holds a pilot license under this Part shall serve as pilot-in-command or as co-pilot on a Philippine-registered civil aircraft engaged in international commercial air transport if that person has reached 65th years of age.
- (b) No person who holds a pilot license under this Part shall serve as pilot-in-command or as co-pilot on a Philippine-registered civil aircraft engaged in domestic commercial air transport if that person has reached 67th years of age.
- (c) No person under this Part shall be granted any flexibility in meeting the medical qualifications under any circumstances or medical conditions if that person has reached 65th years of age.
- (d) Any person beyond 67 years of age who holds a pilot license and a valid medical certificate under this Part may be allowed to fly as a pilot-in-command or co-pilot provided the flight is not in pursuance of commercial air transport operations, singly or collectively, and a mandatory CAAP medical examination every six (6) months is complied with.
- (e) For purposes of paragraph (a) (d) above and of other applicable PCAR provisions, all aircraft operations involving the transport of passengers, cargo or mail are presumed commercial air transport operations except in the following instances:
- (1) Training or demonstration flights of Approved Training Organizations;
 - (2) Corporate flights for the purpose of transporting the company's executives, employees and/or clients;
 - (3) The cargo on board is owned by the aircraft owner/operator.
- (f) Any person who claims that his/her flight is covered by the above exceptions shall present sufficient proof, documentary and/or testimonial, to prove the same when so required by the Authority.

2.3.1.6 RECENT EXPERIENCE REQUIREMENTS

- (a) A pilot shall not operate an aircraft carrying passengers as pilot-in-command or copilot to operate at the flight controls of a type or a variant of a type of aircraft during take-off and landing unless that pilot has operated the flight controls during at least three take-offs and landings within the preceding 90 days on the same type of aircraft or in the flight simulator approved for the purpose.
- (b) The holder of a license that does not include an instrument rating shall not act as PIC of an aircraft carrying passengers at night unless he or she has carried out at least three take-offs and three landings at night during the previous 90 days.
- (c) A pilot shall not act in the capacity of a cruise relief pilot in a type or variant of a type of aircraft unless, within the preceding 90 days that pilot has either:
 - (1) Operated as a PIC, CP or cruise relief pilot on the same type of aircraft; or
 - (2) Carried out flying skill refresher training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aircraft or in a flight simulator approved for the purpose, and has practiced approach and landing procedures, where the approach and landing procedure practice may be performed as the pilot who is not flying the aircraft.
- (d) Each person shall document and record the experience required, to show the recent flight experience.

2.3.2 CATEGORY, CLASS and TYPE RATINGS AND CATEGORY II / III AUTHORIZATIONS**2.3.2.1 GENERAL**

- (a) The holder of a pilot license shall not be permitted to act as pilot-in-command or as copilot of an airplane or helicopter unless the holder has received Authorization as follows:
 - (1) the appropriate class rating specified in this Part, or
 - (2) a type rating when required in accordance with this Part; and
 - (3) an authorization when required or permitted in accordance with this Part.
- (b) The applicant shall meet the appropriate requirements of this Part for the aircraft rating or authorization sought.
- (c) When an applicant demonstrates skill and knowledge for the initial issue or re-issue of a pilot license, the category and ratings appropriate to the class or type of aircraft used in the demonstration will be entered on the license.
- (d) For the purpose of training, testing or specific special purpose non-revenue, non-passenger carrying flights, special Authorization may be provided in writing to the license holder by the Authority in place of issuing the class or type rating in accordance with (a). This Authorization shall be limited in validity to the time needed to complete the specific flight.

2.3.2.2 CATEGORY RATINGS

- (a) The category of aircraft shall be endorsed on the license as a rating.
- (b) Any additional category rating endorsed on a pilot license shall indicate the level of licensing privileges at which the category rating is granted.

- (c) The holder of a pilot license seeking additional category ratings shall meet the requirements of this Part appropriate to the privileges for which the category rating is sought.

2.3.2.3 CLASS RATINGS - AIRPLANE AND HELICOPTER AND POWERED-LIFTS

(a) *Flight instruction.*

- (1) The applicant for a class rating shall have completed the flight instruction for the class rating on the subjects listed in IS 2.3.3.2 or 2.3.3.3 Appendix B (for airplane) or IS 2.3.3.6 or IS 2.3.3.7 Appendix B (for helicopter), as applicable.
- (2) Where applicable the flight instruction shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions including simulated engine failure.

(b) *Skill.*

- (1) The applicant for a class rating shall:
 - (i) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test;
 - (ii) pass the required skill test on the subjects listed in IS 2.3.3.2 or 2.3.3.3 Appendix B (for airplane) or IS 2.3.3.6 or IS 2.3.3.7 Appendix B (for helicopter), as applicable.
- (2) Where applicable the skill test shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions including simulated engine failure.

- (c) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a class rating are to act as a pilot on the class of aircraft specified in the rating.

- (d) *Validity:* Subject to compliance with the requirements specified in this Part, the validity period of:

- (1) a multi-engine class rating is 1 calendar year;
- (2) a single-engine class rating is 2 calendar years.

(e) *Renewal.*

- (1) For the renewal of a single-engine class rating the pilot shall:
 - (i) within the preceding 24 calendar months, complete a proficiency check on areas of operation listed in IS 2.3.3.2, Appendix B for PPL or IS 2.3.3.3 Appendix B for CPL (for airplane) or IS 2.3.3.6 Appendix B for PPL or IS 2.3.3.7 Appendix B for CPL (for helicopter), as applicable; or
 - (ii) have completed 12 hours flight time within the 12 months preceding the expiry date.
- (2) For the renewal of a multi-engine class rating the pilot shall:
 - (i) within the preceding 12 calendar months, complete a proficiency check on the subjects listed in IS 2.3.3.2 Appendix B for PPL or IS 2.3.3.3 Appendix B for CPL (for airplane) or IS 2.3.3.6 Appendix B for PPL or IS 2.3.3.7 Appendix B for CPL (for helicopter), as applicable; and
 - (ii) have completed 10 route sectors within the 3 months preceding the expiry date.

- (3) Where applicable the proficiency check shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure.
 - (4) If a pilot takes the proficiency check required in this section in the calendar month before or the calendar month after the month in which it is due, the pilot is considered to have taken it in the month in which it was due for the purpose of computing when the next proficiency check is due.
- (f) *Re-issue.* If the class rating has expired the applicant shall:
- (1) Have received refresher training from an authorized instructor with an endorsement that the person is prepared for the required skill test; and
 - (2) Pass the required skill test on the areas of operation listed in IS 2.3.3.2 Appendix B for PPL or IS 2.3.3.3 Appendix B for CPL (for airplane) or IS 2.3.3.6 Appendix B for PPL or IS 2.3.3.7 Appendix B for CPL (for helicopter), as applicable.
 - (3) Where applicable the skill test shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure.

2.3.2.4 TYPE RATINGS - AIRPLANE AND HELICOPTER AND POWERED-LIFTS

- (a) *Knowledge.* The applicant for a type rating shall have completed the theoretical knowledge instruction and demonstrated in a test the relevant knowledge subjects as listed in IS 2.3.2.4 Appendix A.
- (b) *Experience.*
- (1) An applicant for a type rating shall:
 - (i) have at least 100 hours as pilot-in-command applicable to the category of aircraft;
 - (ii) where applicable, have an instrument rating applicable to the category of aircraft;
 - (iii) have completed a CRM course as listed in IS 2.3.2.4 Appendix B; and
 - (iv) have demonstrated in a test, the ATPL knowledge on the basis of the requirements listed in Subpart 2.3.3.4 (b) (for airplane) or Subpart 2.3.3.8 (b) (for helicopter), as applicable.
 - (v) for the first type-rating –airplane-, have completed on-airplane upset recovery training as specified in IS 2.3.3.3 Appendix C.
- (c) *Flight instruction.*
- (1) The applicant for a type rating shall have completed the flight instruction for the type rating:
 - (i) for single-pilot aircraft: on the subjects listed in IS 2.3.3.2 or IS 2.3.3.3 Appendix B (for airplane) or IS 2.3.3.6 or IS 2.3.3.7 Appendix B for helicopter, as applicable; and
 - (ii) for multi-pilot aircraft: on the subjects listed in IS 2.3.3.4 Appendix B (for airplane) or 2.3.3.8 Appendix B (for helicopter), as applicable.
 - (2) Where applicable the flight instruction shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure and upset prevention and recovery training.

(d) *Skill.*

(1) The applicant for a type rating shall:

- (i) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test;
- (ii) pass the required skill test:
 - (A) for single pilot aircraft: on the subjects listed in IS 2.3.3.2 or IS 2.3.3.3 Appendix B (for airplane) or IS 2.3.3.6 or IS 2.3.3.7 Appendix B for helicopter, as applicable; and
 - (B) for multi-pilot aircraft on the subjects listed in IS 2.3.3.4 (for airplane) or IS 2.3.3.8 Appendix B (for helicopter), as applicable.

(2) Where applicable the skill test shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure.

(e) *Privileges.*

Subject to compliance with the requirements specified in this Part, the privileges of the holder of a type rating are to act as a pilot on the type of aircraft specified in the rating.

(1) When the skill test for a type rating has been performed under VFR the type rating will be issued limiting the privileges to VFR flight and such limitation will be endorsed on the rating.

(f) *Validity.* Subject to compliance with the requirements in this Part, the validity period of a type rating is 1 year.(g) *Renewal.* For the renewal of a type rating the pilot shall:

(1) within the preceding 12 calendar months, complete a proficiency check:

- (i) for single pilot aircraft: on the subjects listed in IS 2.3.3.2 or IS 2.3.3.3 Appendix B (for airplane) or IS 2.3.3.6 or IS 2.3.3.7 Appendix B for helicopter, as applicable: and
- (ii) for multi-pilot aircraft on the subjects listed in IS 2.3.3.4 Appendix B (for airplane) or IS 2.3.3.8 Appendix B (for helicopter), as applicable.

(2) have completed 10 route sectors within the 3 months preceding the expiry date.

(3) Where applicable the proficiency check shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure.

(4) If a pilot takes the proficiency check required in this section in the calendar month before or the calendar month after the month in which it is due, the pilot is considered to have taken it in the month in which it was due for the purpose of computing when the next proficiency check is due.

(h) *Re-issue.* If the type rating has been expired the applicant shall:

(1) have received refresher training from an authorized instructor with an endorsement that the person is prepared for the required skill test: and

(2) pass the required skill test:

- (i) for single pilot aircraft: on the subjects listed in IS 2.3.3.2 or IS 2.3.3.3 Appendix B (for airplane) or IS 2.3.3.6 or IS 2.3.3.7 Appendix B (for helicopter), as applicable: and

- (ii) for multi-pilot aircraft on the subjects listed in IS 2.3.3.4 Appendix B (for airplane) or IS 2.3.3.8 Appendix B (for helicopter), as applicable.
- (3) Where applicable the skill test shall include instrument procedures, including instrument approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure.

2.3.2.5 CATEGORY II AND III AUTHORIZATION

(a) *General.*

- (1) A person, not flying under Part 8, may not act as pilot of an aircraft during Category II or III operations unless that person holds a Category II or III pilot Authorization for that category, class or type of aircraft.
- (2) The applicant for a Category II or III pilot Authorization shall:
 - (i) hold a pilot license with an instrument rating or an ATPL; and
 - (ii) hold a category and class or type rating for the aircraft for which the Authorization is sought.
- (b) *Knowledge.* The applicant for a Category II or III pilot Authorization shall have completed the theoretical knowledge instruction and demonstrated in a test the knowledge subjects as listed in IS 2.3.2.4 Appendix A (Section 6).
- (c) *Experience.* The applicant for a Category II or III pilot Authorization shall have at least:
 - (1) 50 hours of night flight time as PIC;
 - (2) 75 hours of instrument time under actual or simulated instrument conditions; and
 - (3) 250 hours of cross-country flight time as PIC.
- (d) *Flight instruction.* The applicant for a Category II or III pilot Authorization shall have completed the flight instruction on the subjects listed in IS 2.3.3.4 Appendix B (Section 10) for airplane or IS 2.3.3.8 Appendix B (Section 9) for helicopter, as applicable.
- (e) *Skill.* The applicant for a Category II or III pilot Authorization shall pass a skill test including the subjects listed in IS 2.3.3.4 Appendix B (Section 10) for airplane or IS 2.3.3.8 Appendix B (Section 9) for helicopter, as applicable.
- (f) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of a Category II and III Authorization is 6 months.
- (g) *Renewal.* For the renewal of a Category II or III pilot Authorization the pilot shall have completed a proficiency check including the subjects listed in IS 2.3.3.4 Appendix B (Section 10) for airplane or IS 2.3.3.8 Appendix B (Section 9) for helicopter, as applicable.
- (h) *Re-issue.* If the Category II or the Category III have been expired the applicant shall:
 - (1) have received refresher training from an authorized instructor with an endorsement that the person is prepared for the required skill test; and
 - (2) pass the required skill test on the subjects listed in IS 2.3.3.4 Appendix B (Section 10) for airplane or IS 2.3.3.8 Appendix B (Section 9) for helicopter, as applicable.

2.3.3 PILOT LICENSES, INSTRUMENT AND INSTRUCTOR RATINGS

2.3.3.1 STUDENT PILOTS

- (a) The applicant for a student pilot Authorization shall be not less than 16 years of age.
- (b) The applicant can read, speak and understand English
- (c) The applicant must hold a current class 2 Medical Certificate
- (d) Pre-solo *flight instruction*. Prior to conducting a solo flight, a student pilot shall have:
 - (1) received and logged flight training for the maneuvers and procedures as listed in IS 2.3.3.1.
 - (2) demonstrated satisfactory proficiency and safety, as judged by an authorized instructor, on the maneuvers and procedures as listed in IS 2.3.3.1.
- (e) Solo *flight requirement*
 - (1) Holding at least a Class 2 Medical Certificate
 - (2) An Authorized student pilot had received and logged ground training from an authorized instructor on the following subject:
 - (i) Applicable sections of Part 2 and Part 8;
 - (ii) Airspace rules and procedures for the airport where the student will perform solo flight; and
 - (iii) Flight characteristics and operation for the make and model of aircraft to be flown.
 - (3) Must be authorized by a Flight Instructor.

2.3.3.2 PRIVATE PILOT LICENSE - AIRPLANE

- (a) *Age*. The applicant for a PPL(A) shall be not less than 17 years of age.
- (b) *Knowledge*. The applicant for a PPL(A) shall:
 - (1) Receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air law: rules and regulations relevant to the holder of a PPL(A); rules of the air; appropriate air traffic services practices and procedures
 - (ii) Aircraft general knowledge:
 - (A) Principles of operation of airplane powerplants, systems and instruments;
 - (B) Operating limitations of airplanes and powerplants: relevant operational information from the flight manual or other appropriate document;
 - (iii) Flight performance and planning:
 - (A) effects of loading and weight distribution on flight characteristics; weight and balance calculations;
 - (B) use and practical application of take-off, landing and other performance data;
 - (C) pre-flight and en-route flight planning appropriate to private operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; position reporting procedures; altimeter setting procedures; operations in areas of high-density traffic;
 - (iv) Human performance: human performance relevant to the PPL(A)
 - (v) Meteorology: application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry

- (vi) Navigation: practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;
 - (vii) Operational procedures:
 - (A) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (B) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and the operating hazards;
 - (viii) Principles of flight: principles of flight relating to airplanes;
 - (ix) Radiotelephony:
 - (A) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure;
 - (B) as listed in IS 2.3.3.2 Appendix A;
 - (2) have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge subjects;
 - (ii) certifies that the person is prepared for the required knowledge test; and
 - (3) pass the required knowledge test on the knowledge areas listed in IS 2.3.3.2 Appendix A.
- (c) *Experience*
- (1) The applicant for a PPL(A) shall have completed not less than 40 hours of flight time as pilot of airplanes, a total of 5 hours may have been completed in a flight simulator or flight procedures trainer.
 - (2) The applicant shall have completed in airplanes not less than 10 hours of solo flight time under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 270 km (150 nm) in the course of which full-stop landings at two different aerodromes shall be made.
 - (3) The holder of pilot licenses in other categories may be credited with 10 hours of the total flight time as pilot-in-command towards a PPL(A).
- (d) *Flight Instruction.*
- (1) The applicant for a PPL(A) shall receive and log not less than 20 hours of dual instruction from an authorized instructor on the subjects listed in IS 2.3.3.2 Appendix B. These 20 hours may include 5 hours completed in a flight simulator or flight procedures trainer. The 20 hours of dual instruction shall include at least 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.
 - (2) The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:
 - (i) pre-flight operations, including mass and balance determination, airplane inspection and servicing;
 - (ii) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
 - (iii) control of the airplane by external visual reference;

- (iv) flight at critically slow airspeeds; recognition of, and recovery from, incipient and full stalls;
 - (v) flight at critically high airspeeds; recognition of, and recovery from, spiral dives,
 - (vi) normal and cross-wind take-offs and landings;
 - (vii) maximum performance (short field and obstacle clearance take-offs, short field landings);
 - (viii) flight by reference solely to instruments, including the completion of a level 180 degrees turn;
 - (ix) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids;
 - (x) emergency operations, including simulated airplane equipment malfunctions; and
 - (xi) operations to, from and transmitting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology as further specified in IS 2.3.3.2 Appendix B.
- (3) If the privileges of the PPL(A) are to be exercised at night, the applicant shall have received 4 hours dual instruction in airplanes in night flying, including take-offs, landings and 1 hour of navigation and that information shall be endorsed on the license.

Note 1: Training can be performed by an individually authorized flight instructor, by an authorized flight instructor in a flying club, or in an Aviation Training Organization.

- (e) *Skill.* The applicant for a PPL(A) shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing a skill test the ability to perform as pilot in-command of an airplane, the areas of operation described in IS 2.3.3.2 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of a PPL(A), and to
 - (i) operate the airplane within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge; and
 - (v) maintain control of the airplane at all times in a manner such that the successful outcome of a procedure or maneuver is never seriously in doubt.
- (f) *Medical fitness.* The applicant for a PPL (A) shall hold a current Class 2 Medical Certificate.
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a PPL (A) shall be to act, but not for remuneration, as pilot in-command or co-pilot of any airplane engaged in non-revenue flights.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is 5 years. For renewal of the license see 2.2.3.

2.3.3.3 COMMERCIAL PILOT LICENSE - AIRPLANE

- (a) *Age.* The applicant for a CPL (A) shall be not less than 18 years of age.
- (b) *Knowledge.* The applicant for a CPL (A) shall:
 - (1) receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air law: rules and regulations relevant to the holder of a CPL (A); rules of the air; appropriate air traffic services practices and procedures
 - (ii) Aircraft general knowledge:
 - (A) principles of operation and functioning of airplane powerplants, systems and instruments;
 - (B) operating limitations of appropriate airplanes and powerplants; relevant operational information from the flight manual or other appropriate document;
 - (C) use and serviceability checks of equipment and systems of appropriate airplanes;
 - (D) maintenance procedures for airframes, systems and powerplants of appropriate airplanes;
 - (iii) Flight performance and planning:
 - (A) effects of loading and mass distribution on airplane handling, flight characteristics and performance; mass and balance calculations;
 - (B) use and practical application of take-off, landing and other performance data;
 - (C) 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;
 - (iv) Human performance: human performance relevant to the CPL (A);
 - (v) Meteorology:
 - (A) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
 - (B) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the moment 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;
 - (vi) Navigation: air navigation, including the use of aeronautical charts, instruments and navigation aids; understanding of the principles and characteristics of appropriate navigation systems; operation of air borne equipment
 - (vii) Operation procedures:
 - (A) use of aeronautical documentation such as AIR; NOTAM, aeronautical codes and abbreviations;
 - (B) appropriate precautionary and emergency procedures;
 - (C) operational procedures for carriage of freight; potential hazards associated with dangerous goods;

- (D) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from airplanes;
 - (viii) Principles of flight: principles of flight relating to airplanes, and upset prevention and recovery elements from IS 2.3.3.3 Appendix C;
 - (ix) Radiotelephony:
 - (A) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure:
 - (B) as further specified in IS 2.3.3.3 Appendix A.
 - (2) Have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge subjects:
 - (ii) certifies that the person is prepared for the required knowledge test: and
 - (3) Pass the required knowledge test on the knowledge subjects listed in IS 2.3.3.3 Appendix B.
- (c) *Experience.*
- (1) The applicant for a CPL(A) shall have completed not less than 200 hours of flight time, or 150 hours if completed during an Authority-approved training course provided for in an Approved Training Organization under Part 3, as a pilot of airplanes, of which 10 hours may have been completed in a flight simulator or flight procedures trainer.
 - (2) The applicant shall have completed in airplanes not less than:
 - (i) 100 hours as pilot-in-command or, in the case of a course of approved training, 70 hours as pilot-in-command;
 - (ii) 20 hours of cross-country flight time as pilot-in-command including a 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:
 - (iii) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time;
 - (iv) if the privileges of the license are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landings as pilot-in-command.
 - (3) The holder of a pilot license in another category may be credited towards the 200 hours of flight time as follows:
 - (i) 10 hours as PIC in a category other than helicopters; or
 - (ii) 30 hours as pilot-in-command holding a PPL(H) on helicopters; or
 - (iii) 100 hours as pilot-in-command holding a CPL(H) on helicopters.
 - (4) The applicant for a CPL(A) shall hold a PPL(A) issued under this Part.
- (d) *Flight Instruction.*
- (1) The applicant for a CPL(A) shall receive and log not less than 25 hours of dual instruction from an authorized instructor. These 25 hours may include 5 hours completed in a flight simulator or flight procedures trainer.
 - (2) 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:

- (i) pre-flight operations, including mass and balance determination, airplane inspection and servicing; aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
 - (ii) control of the airplane by external visual reference;
 - (iii) upset prevention training including flight at critically slow airspeeds, recognition of, and recovery from, incipient and full stalls, and on-airplane upset recovery training as specified in IS 2.3.3.3 Appendix C;
 - (iv) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;
 - (v) normal and cross-wind take-offs and landings;
 - (vi) maximum performance (short field and obstacle clearance take-offs, short field landings);
 - (vii) basic flight maneuvers and recovery from unusual attitudes by reference solely to basic flight instruments;
 - (viii) cross-country flying using visual reference, dead reckoning and radio navigation aids; diversion procedures
 - (ix) abnormal and emergency procedures and maneuvers; and
 - (x) operations to, from and transmitting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology as further specified in IS 2.3.3.3 Appendix B.
- (3) If the privileges of the CPL (A) are to be exercised at night, the applicant shall have received 4 hours dual instruction in airplanes in night flying, including take-offs, landings and 1 hour of navigation.
- (4) For airplane instructor ratings, have completed on-airplane recovery training as specified in IS 2.3.3.3 Appendix C.
- (5) For Flight Instructor (FI), have completed on-airplane upset prevention and recovery training as specified in IS 2.3.3.3 Appendix C.
- (e) *Skill*. The applicant for a CPL(A) shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) shall have demonstrated by passing a skill test the ability to perform as pilot-in-command of an airplane, the areas of operation described in IS 2.3.3.3 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of a CPL(A), and to
 - (i) operate the airplane within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge; and
 - (v) maintain control of the airplane at all times in a manner such that the successful outcome of a procedure or maneuver is never seriously in doubt.
- (f) *Medical fitness*. The applicant for a CPL (A) shall hold a current Class 1 Medical Certificate.
- (g) *Privileges*. Subject to compliance with the requirements specified in this Part, the privileges of the holder of a CPL(A) shall be:
- (1) to exercise all the privileges of the holder of a PPL(A);

- (2) to act as pilot-in-command in any airplane engaged in operations other than commercial air transportation;
 - (3) to act as pilot-in-command in commercial air transportation in any airplane certificated for single-pilot operation; and
 - (4) to act as co-pilot in commercial air transportation in airplanes required to be operated with a copilot.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is Five (5) year. For renewal of the license see 2.2.3.

2.3.3.4 AIRLINE TRANSPORT PILOT LICENSE - AIRPLANE

- (a) *Age.* The applicant for an ATPL (A) shall be not less than 21 years of age.
- (b) *Knowledge.* The applicant for an ATPL (A) shall:
- (1) receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air law: rules and regulations relevant to the holder of an ATPL(A); rules of the air, appropriate air traffic services practices and procedures
 - (ii) Aircraft general knowledge:
 - (A) general characteristics and limitations of electrical, hydraulic, pressurization and other airplane systems; flight control systems, including autopilot and stability augmentation;
 - (B) principles of operation, handling procedures and operating limitations of airplane powerplants; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document,
 - (C) operating procedures and limitations of appropriate airplanes; effects of atmospheric conditions on airplane performance,
 - (D) use and serviceability checks of equipment and systems of appropriate airplanes;
 - (E) 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;
 - (F) (maintenance procedures for airframes, systems and powerplants of appropriate airplanes;
 - (iii) Flight performance and planning:
 - (A) effects of loading and mass distribution on airplane handling, flight characteristics and performance; mass and balance calculations;
 - (B) use and practical application of take-off, landing and other performance data, including procedures for cruise control;
 - (C) 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
 - (iv) Human performance: human performance relevant to the ATPL(A)
 - (v) Meteorology:

- (A) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; pre-flight and in-flight; altimetry;
- (B) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the moment 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;
- (C) causes, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance;

(vi) Navigation:

- (A) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights; use, limitation and serviceability of avionics and instruments necessary for the control and navigation of airplanes;
- (B) use, accuracy and reliability of navigation systems used in departure, enroute, approach and landing phases of flight; identification of radio navigation aids;
- (C) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;

(vii) Operation procedures:

- (A) 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;
- (B) precautionary and emergency procedures; safety practices associated with flight under IFR
- (C) operational procedures for carriage of freight and dangerous goods;
- (D) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from airplanes;

(viii) Principles of flight: principles of flight relating to airplanes; 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 in different flight configuration and upset prevention and recovery elements from IS 2.3.3.3 Appendix C;

(ix) Radiotelephony: radiotelephony procedures and phraseology; action to be taken in case of communication failure; as further specified in IS 2.3.3.4 Appendix A

(c) *Experience.*

- (1) The applicant for an ATPL (A) shall have completed not less than 1,500 hours of flight time as a pilot of airplanes of which a maximum of 100 hours may have been completed in a flight simulator. The applicant shall have completed in airplanes not less than:
 - (i) 250 hours, either as pilot-in-command, 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 that the method of supervision employed is acceptable to the Authority;

- (ii) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as 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 supervision employed is acceptable to the Authority;
 - (iii) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and
 - (iv) 100 hours of night flight as pilot-in-command or as co-pilot.
- (2) Holders of a CPL(H) will be credited with 50% of their helicopter flight time as pilot-in-command towards the flight time required in paragraph (1) above.
- (3) The applicant shall have completed a CRM course on the subjects listed in IS2.3.2.4 Appendix B.
- (4) The applicant for an ATPL(A) shall be the holder of a CPL(A) with instrument and multi-engine rating issued under this Part.
- (5) Holders of MPL (A) shall have completed not less than:
- (i) 3,000 hours as pilot of airplanes of which a maximum of 100 hours may have been completed in a flight simulator. The applicant shall have completed in airlines not less than:
 - (A) 350 hours of pilot-in-command, or made up of not less than 10 hours as pilot-in-command and the necessary additional flight time as co-pilot performing under the supervision of pilot-in-command, the duties and functions of pilot-in-command.

Note: After completion of the required skill test, the applicant shall be issued ATPL with limitations: "For Multi-Crew Operations Only" and "For Supervised Line Flying Only".
 - (B) The applicant shall complete not less than 150 hours as pilot-in-command during Supervised Line Flying.

Note: After completion of not less than 150 hours as pilot-in-command during SLF, the applicant shall be issued ATPL with limitation: "For Multi-Crew Operation Only"
- (d) *Flight Instruction.* The applicant for an ATPL(A) shall have received the dual flight instruction required for the issue of the CPL(A) and the IR.
- (e) *Skill.* The applicant for an ATPL(A) shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing a skill test the ability to perform, as pilot-in command of a multi-engine airplane required to be operated with a co-pilot, the following procedures and maneuvers:
 - (i) pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;
 - (ii) normal flight procedures and maneuvers during all phases of flight;

- (iii) procedures and maneuvers for IFR operations under normal, abnormal and emergency conditions, including simulated engine failure, and covering at least the following:
 - (A) transition to instrument flight on take-off;
 - (B) standard instrument departures and arrivals;
 - (C) en-route IFR procedures and navigation;
 - (D) holding procedures;
 - (E) instrument approaches to specified minima;
 - (F) missed approach procedures;
 - (G) landings from instrument approaches;
 - (iv) abnormal and emergency procedures and maneuvers related to failures and malfunctions of equipment, such as powerplant, systems and airframe; and
 - (v) procedures for crew incapacitation and crew coordination, including allocation of pilot tasks, crew cooperation and use of checklists.
- (3) have demonstrated by passing a skill test the ability to perform the areas of operation described in IS 2.3.3.4 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of an ATPL(A), and to:
- (i) operate the airplane within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge; and
 - (v) maintain control of the airplane at all times in a manner such that the successful outcome of a procedure or maneuver is never in doubt;
 - (vi) understand and apply crew coordination and incapacitation procedures; and
 - (vii) communicate effectively with the other flight crew members
- (f) *Medical fitness.* The applicant for an ATPL(A) shall hold a current Class 1 Medical Certificate -, except for:
- (i) Check Airman Qualifications for Flight Simulation Training Device as provided for under 8.10.1.39 (b) (1); and
 - (ii) Check Airmen who have reached their 65th birthday or who do not have an appropriate medical certificate as provided for under 8.10.1.39 (d) and 8.10.1.1 (c).
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of an ATPL(A) shall be:
- (1) to exercise all the privileges of the holder of a PPL(A) and CPL(A) and of an IR(A); and
 - (2) to act as pilot-in-command and co-pilot in airplanes in air transportation.
 - (3) if authorized under this CAR, holder of an ATPL may instruct other pilots in air transportation service in aircraft or approved simulator training device of the category, class and type for which he is rated. To do so, he must be familiar with the operating procedures of the company for which he is providing pilot instruction. However, he may not instruct for more than 8 hours in one day, and not more than 36 hours in any 7-day period. He may instruct under this section only in aircraft

with functioning dual controls. Unless he has a valid flight instructor license, an airline transport pilot may instruct only as provided in this section.

- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is 5 years. For renewal of the license see Subpart 2.2.3.

2.3.3.5 MULTI-CREW PILOT LICENSE (MPL)

2.3.3.5.1 GENERAL

(a) Applicability

This section prescribes the requirements for the issuance of an MPL and ratings, the conditions under which those license and ratings are necessary, and the limitations upon those license and ratings.

(b) Eligibility requirement:

- (1) To be eligible for an MPL in the airplane category, the applicant shall have completed an approved training course. The training shall be competency-based and conducted in a multi-crew operational environment.
- (2) During the training, the applicant shall have acquired the knowledge, skills and attitudes required as the underpinning attributes for performing as a co-pilot of a turbine-powered air transport airplane certificated for operation with a minimum crew of at least two pilots.

(c) Assessment level:

- (1) The applicant for the MPL in the airplane category shall have satisfactorily demonstrated performance in all the nine competency units specified herein at the advanced level of competency and shall have demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the licensing requirements and piloting functions of the applicant.
- (2) The use of a flight simulation training device for acquiring the experience or performing any maneuver required during the demonstration of skill for the issue of a license or rating shall be approved by the Authority, which shall ensure that the flight simulation training device used is appropriate to the task.

(d) Competency units:

The nine competency units that an applicant has to demonstrate are as follows: The applicant shall:

- (1) Apply threat and error management (TEM) principles;
- (2) Perform airplane ground operations;
- (3) Perform take-off;
- (4) Perform climb
- (5) Perform cruise;
- (6) Perform descent
- (7) Perform approach;
- (8) Perform landing; and
- (9) Perform after-landing and airplane post-flight operations.

(e) Nationality:

Be a citizen of the Philippines or a citizen of a foreign country granting similar rights and privileges to citizens of the Philippines subject, however, to existing treaty or treaties and agreements entered into by the Philippine Government with foreign countries and subject further to security measures adopted by the Philippine Government.

2.3.3.5.2 REQUIREMENTS

- (a) *Age*. The applicant for a MPL shall be not less than 18 years of age.
- (b) *Language proficiency*. Be able to pass the ICAO English Proficiency Test at level 4 or above.
- (c) *Knowledge*. The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an ATPL (A) and appropriate to the category of aircraft intended to be included in the license, in at least the following subjects (see IS: 2.3.3.5 Appendix A). The applicant for an MPL shall:
 - (1) Receive and log ground training from an authorized instructor on the following subjects:
 - (i) *Air Law*: Rules and regulations relevant to the holder of an airline transport pilot license; rules of the air; appropriate air traffic services practices and procedures.
 - (ii) *Aircraft General Knowledge*:
 - (A) General characteristics and limitations of electrical, hydraulic, pressurization and other aircraft systems; flight control systems, including autopilot and stability augmentation.
 - (B) Principles of operation, handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document.
 - (C) Operating procedures and limitations of the relevant category of aircraft; effects of atmospheric conditions on aircraft performance in accordance to the relevant operational information from the flight manual.
 - (D) Use and serviceability checks of equipment and systems of appropriate aircraft.
 - (E) 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 and electronic display units.
 - (F) Maintenance procedures for airframes, systems and powerplants of appropriate aircraft.
 - (G) For helicopter and powered-lift, transmission (power-trains) where applicable;
 - (iii) *Flight Performance and Planning*:
 - (A) Effects of loading and mass distribution on aircraft handling.
 - (iv) *Human Performance*:
 - (A) Human performance including principles of threat and error management.
 - (v) *Meteorology*:

- (A) Interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight altimetry.
 - (B) 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.
 - (C) Causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance.
 - (D) In the case of airplane and powered-lift, practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts, and jet-streams.
- (vi) Navigation:
- (A) Air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights.
 - (B) Use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aircraft.
 - (C) Use, accuracy and reliability of navigation systems used in departure, enroute, approach and landing phases of flight; identification of radio navigation aids.
 - (D) Principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment.
- (vii) Operational Procedures:
- (A) Application of threat and error management to operational performance;
 - (B) Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (C) Precautionary and emergency procedures; safety practices;
 - (D) Operational procedures for carriage of freight and dangerous goods;
 - (E) Requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft;
 - (F) In the case of the helicopter, and if applicable, powered-lift, settling with power; ground resonance; retreating blade stall; dynamic roll-over and other operation hazards; safety procedures, associated with flight under VFR;
- (viii) Principles of flight
- (ix) Radiotelephony
- (A) Procedures and phraseology; action to be taken in case of communication failure.
- (d) *Skill*. The applicant for an MPL shall have demonstrated the skills:
- (1) Required for fulfilling all the competency units specified in this part as pilot flying and pilot not flying, to the level required to perform as a co-pilot of turbine

powered airplanes certificated for operation with a minimum crew of at least two pilots under VFR and IFR, and to:

- (2) Recognize and manage threats and errors;
- (3) Smoothly and accurately manually control the airplane within its limitations at all times, such that the successful outcome of a procedure or maneuver is assured;
- (4) Operate the airplane in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;
- (5) Perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight; and
- (6) Communicate effectively with other flight crew members and demonstrate the ability to effectively perform procedures for crew incapacitation, crew coordination, including allocation of pilot tasks, crew cooperation, adherence to standard operating procedures (SOPs) and use of checklists.
- (7) Progress in acquiring the skills above shall be continuously assessed.

Note: See IS: 2.3.3.5 Appendix B for MPL Skills requirements.

- (e) *Medical fitness.* The applicant for an MPL shall hold a current Class 1 Medical Certificate.
- (f) *Ratings.* Comply with the sections of this regulation that apply to the rating he seeks.
 - (1) Airplane rating: Aeronautical experience.
 - (i) An applicant for a Multi-crew pilot license with an airplane rating shall have completed an approved training course and shall have not less than 240 hours as pilot flying and pilot not flying of actual and simulated flight.
 - (ii) Flight experience in actual flight shall include not less than 40 hours of flight time, or 35 hours if completed during a course of approved training, as a pilot of airplanes appropriate to the class rating sought and shall include upset prevention and recovery training as specified in IS 2.3.3.3 Appendix C, night flying, cross-country and flight by reference solely to instruments.
 - (iii) The Licensing Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 40 hours or 35 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.
 - (iv) 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 of sub-paragraph
 - (v) above can be reduced accordingly.
 - (vi) In addition to meeting the above provisions, the applicant shall have gained, in a turbine-powered airplane certificated for operation with a minimum crew of at least two pilots, or in a flight simulation training device approved for that purpose by the Licensing Authority the experience necessary to achieve the advanced level of competency defined listed in Subpart 2.3.3.5.1 (c) and (d) above.
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of an MPL shall be:
 - (1) (i) to exercise all the privileges of the holder of a private pilot license in the appropriate airplane category provided the requirements have been met;

- (ii) to exercise the privileges of the instrument rating in a multi-crew operation; and
 - (iii) To act as co-pilot in an airplane required to be operated with a co-pilot.
- (2) Before exercising the privileges of the instrument rating in a single pilot operation, the license holder shall have demonstrated an ability to act as pilot-in-command in a single pilot operation exercised solely by reference to instruments.
- (3) Before exercising the privileges of a commercial pilot license in a single pilot operation, the license holder shall have:
- (i) completed 70 hours, either as pilot-in-command, or made up by not less than 10 hours as pilot-in-command and the necessary additional flight time as pilot in-command under supervision;
 - (ii) meet the requirements for the commercial pilot license.
- (4) Act as second-in-command/co-pilot in commercial air transportation in airplanes required to be operated with a co-pilot by the type certificate of the aircraft or the regulations under which the aircraft will be operated; and
- (5) When the holder of an airline transport pilot license in the airplane category has only previously held a MPL, the privileges of the license shall be limited to multi-crew operations unless the holder has met the requirements established. Any limitation of privileges shall be endorsed on the license.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is five (5) year. For renewal of the license see Subpart 2.2.3.

2.3.3.6 INSTRUMENT RATING - AIRPLANE

- (a) *General.* The holder of a pilot license shall not act either as pilot-in-command or as copilot of an aircraft under instrument flight rules (IFR) unless such holder has received proper Authorization from the Authority. Proper Authorization shall comprise an instrument rating appropriate to the aircraft category.
- (b) *Knowledge.* The applicant for an IR (A) shall:
- (1) receive and log ground training from an authorized instructor on the following subjects
 - (i) Air law: rules and regulations relevant to flight under IFR: related air traffic services practices and procedures;
 - (ii) Aircraft general knowledge:
 - (A) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of airplanes under IFR and in instrument meteorological conditions; use and limitations of autopilot;
 - (B) compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;
 - (iii) Flight performance and planning
 - (A) pre-flight preparations and checks appropriate to flight under IFR;
 - (B) operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures;
 - (iv) Human performance: human performance relevant to instrument flight in airplanes;

- (v) Meteorology:
 - (A) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry;
 - (B) causes, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance;
 - (vi) Navigation:
 - (A) practical air navigation using radio navigation aids;
 - (B) use accuracy and reliability of navigation systems used in departure, enroute, approach and landing phases of flight; identification of radio navigation aids;
 - (vii) Operation procedures
 - (A) 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;
 - (B) precautionary and emergency procedures; safety practices associated with flight under IFR
 - (viii) Radiotelephony:
 - (A) radiotelephony procedures and phraseology as applied to aircraft operations under IFR, action to be taken in case of communication failure;
 - (B) as listed in IS 2.3.3.6 Appendix A.
 - (2) have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge subjects;
 - (ii) certifies that the person is prepared for the required knowledge test; and
 - (3) pass the required knowledge test on the knowledge subjects listed in IS 2.3.3.6 Appendix A.
- (c) *Experience.*
- (1) The applicant for an IR (A) shall hold at least a PPL (A).
 - (2) The applicant shall have completed not less than:
 - (i) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the Authority, of which not less than 10 hours shall be in airplanes; and
 - (ii) 40 hours of instrument time in airplanes or helicopters of which not more than 20 hours, or 30 hours where a flight simulator is used, may be instrument ground time. The ground time shall be under the supervision of an authorized instructor.
- (d) *Flight Instruction.*
- (1) The applicant for an IR (A) shall have not less than 10 hours of the instrument flight time required in (c)(2)(ii) while receiving and logging dual instruction in airplanes from an authorized flight instructor, on the subjects listed in IS 2.3.3.6 Appendix B.
 - (2) 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:

- (i) 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;
 - (ii) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;
 - (iii) procedures and maneuvers for IFR operation under normal, abnormal and emergency conditions covering at least:
 - (A) transition to instrument flight on take-off;
 - (B) standard instrument departures and arrivals;
 - (C) en-route IFR procedures and navigation;
 - (D) holding procedures;
 - (E) instrument approaches to specified minima;
 - (F) missed approach procedures;
 - (G) landings from instrument approaches;
 - (iv) in flight maneuvers and particular flight characteristics.
- (3) If the privileges of the instrument rating are to be exercised on multi-engine airplanes, the applicant shall have received dual instrument flight instruction in such an airplane from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in the operation of the airplane solely by reference to instruments with one engine inoperative or simulated inoperative.
- (e) *Skill.* The applicant for an IR (A) shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing a skill test the ability to perform the areas of operation described in IS 2.3.3.6 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of an IR (A), and to:
 - (i) operate the airplane within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge; and
 - (v) maintain control of the airplane at all times in a manner such that the successful outcome of a procedure or maneuver is never seriously in doubt,
 - (vi) understand and apply crew coordination and incapacitation procedures, and
 - (vii) communicate effectively with the other flight crew members
 - (3) have demonstrated by passing a skill test the ability to operate multi-engine airplanes solely by reference to instruments with one engine inoperative, or simulated inoperative, described in IS 2.3.3.6 Appendix B, if the privileges of the instrument rating are to be exercised on such airplanes.
- (f) *Medical fitness.* Applicants who hold a PPL shall have established their hearing acuity on the basis of compliance with the hearing requirements for the issue of a Class 1 Medical Certificate.
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of an IR(A) shall be to pilot airplanes under IFR.

- (1) Before exercising the privileges on multi-engine airplanes the holder of the rating shall have complied with the requirements of (e) (3).
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of an IR (A) is 5 years.
- (i) *Renewal:*
 - (1) For the renewal of a single-engine instrument rating the applicant shall within the preceding 12 calendar months, complete proficiency check on the subjects listed in IS 2.3.3.6 Appendix B.
 - (2) For the renewal of a multi-engine instrument rating the applicant shall within the preceding 12 calendar months, complete proficiency check on the subjects listed in IS 2.3.3.6 Appendix B.
 - (3) If a pilot takes the proficiency check required in this section in the calendar month before or the calendar month after the month in which it is due; the pilot is considered to have taken it in the month in which it was due for the purpose of computing when the next proficiency check is due.
- (j) *Re-issue.* If the instrument rating has been expired the applicant shall:
 - (1) have received refresher training from an authorized instructor with an endorsement that the person is prepared for the required skill test; and
 - (2) pass the required skill test on the subjects listed in IS 2.3.3.6 Appendix B.

2.3.3.7 PRIVATE PILOT LICENSE - HELICOPTER

- (a) *Age.* The applicant for a PPL (H) shall be not less than 17 years of age.
- (b) *Knowledge.* The applicant for an PPL(H) shall
 - (1) receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air law: rules and regulations relevant to the holder of a PPL (H); rules of the air; appropriate air traffic services practices and procedures
 - (ii) Aircraft general knowledge:
 - (A) principles of operation of helicopter powerplants, transmission (powertrains), systems and instruments;
 - (B) operating limitations of helicopters and powerplants: relevant operational information from the flight manual;
 - (iii) Flight performance and planning:
 - (A) effects of loading and mass distribution on flight characteristics; mass and balance calculations;
 - (B) use and practical application of take-off, landing and other performance data;
 - (C) pre-flight and en-route flight planning appropriate to private operation under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; position reporting procedures; altimeter setting procedures; operations in areas of high-density traffic;
 - (iv) Human performance: human performance relevant to the PPL(H)
 - (v) Meteorology: application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry

- (vi) Navigation: practical aspects of air navigation and dead reckoning techniques; use of aeronautical charts:
 - (vii) Operational procedures:
 - (A) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations:
 - (B) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather and wake turbulence; settling with power, ground resonance, rollover and other operating hazards;
 - (viii) Principles of flight: principles of flight relating to helicopters;
 - (ix) Radiotelephony:
 - (A) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure;
 - (B) as further specified in IS 2.3.3.6 Appendix A.
 - (2) have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge subjects
 - (ii) certifies that the person is prepared for the required knowledge test; and
 - (3) pass the required knowledge test on the knowledge areas listed in IS 2.3.3.6 Appendix A
- (c) *Experience.*
- (1) The applicant for a PPL (H) shall have completed not less than 40 hours of flight time as pilot of airplanes, a total of 5 hours may have been completed in a flight simulator or flight procedures trainer.
 - (2) The applicant shall have completed in helicopter not less than 10 hours of solo flight time under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 180 km (100 nm) in the course of which landings at two different points shall be made.
 - (3) The holder of pilot licenses in other categories may be credited with 10 hours of the total flight time as pilot-in-command towards a PPL (H).
- (d) *Flight Instruction.*
- (1) The applicant for a PPL(H) shall receive and log not less than 20 hours of dual instruction from an authorized instructor on the subjects listed in IS 2.3.3.6 Appendix B. These 20 hours may include 5 hours completed in a flight simulator or flight procedures trainer. The 20 hours of dual instruction shall include at least 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 180 km (100 NM) in the course of which landings at two different points shall be made.
 - (2) The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:
 - (i) pre-flight operations. including mass and balance determination, helicopter inspection and servicing;
 - (ii) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
 - (iii) control of the helicopter by external visual reference;

- (iv) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm; ground maneuvering and run-ups; hovering; take-offs and landings — normal, out of wind and sloping ground;
 - (v) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;
 - (vi) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids including a flight of at least one hour;
 - (vii) emergency operations, including simulated helicopter equipment malfunctions; auto-rotative approach and landing; and
 - (viii) operations to, from and transmitting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology
 - (ix) as further specified in IS 2.3.3.6 Appendix B.
- (3) If the privileges of the PPL (H) are to be exercised at night, the applicant shall have received 4 hours dual instruction in helicopters in night flying, including takeoffs, landings and 1 hour of navigation.
- (e) *Skill.* The applicant for a PPL (H) shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing a skill test the ability to perform as pilot-in command of a helicopter, the areas of operation described in IS 2.3.3.6 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of a PPL(A), and to
 - (i) operate the helicopter within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge; and
 - (v) 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.
- (f) *Medical fitness.* The applicant for a PPL(H) shall hold a current Class 2 Medical Certificate.
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a PPL(H) shall be to act, but not for remuneration, as pilot in-command or co-pilot of any helicopter engaged in non-revenue flights.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is 5 years. For renewal of the license see 2.2.3.

2.3.3.8 COMMERCIAL PILOT LICENSE - HELICOPTER

- (a) *Age.* The applicant for a CPL(H) shall be not less than 18 years of age.
- (b) *Knowledge.* The applicant for an CPL(H) shall:
- (1) receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air law: rules and regulations relevant to the holder of a CPL (H); rules of the air; appropriate air traffic services practices and procedures

- (ii) Aircraft general knowledge
 - (A) principles of operation and functioning of helicopter powerplants, transmission (power-trains) systems and instruments;
 - (B) operating limitations of appropriate helicopters and powerplants; relevant operational information from the flight manual;
 - (C) use and serviceability checks of equipment and systems of appropriate helicopters;
 - (D) maintenance procedures for airframes, systems and powerplants of appropriate helicopters;
- (iii) Flight performance and planning:
 - (A) effects of loading and mass distribution, including external loads, on helicopter handling, flight characteristics and performance; mass and balance calculations;
 - (B) use and practical application of take-off, landing and other performance data;
 - (C) 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;
- (iv) Human performance: human performance relevant to the CPL (H);
- (v) Meteorology:
 - (A) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
 - (B) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the moment 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;
- (vi) Navigation: air navigation, including the use of aeronautical charts, instruments and navigation aids; understanding of the principles and characteristics of appropriate navigation systems; operation of air borne equipment.
- (vii) Operation procedures
 - (A) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (B) appropriate precautionary and emergency procedures; settling with power, ground resonance, roll-over and other operating hazards;
 - (C) operational procedures for carriage of freight, including external loads; potential hazards associated with dangerous goods;
 - (D) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from helicopters;
- (viii) Principles of flight: principles of flight relating to helicopters;
- (ix) Radiotelephony:
 - (A) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure; and

(B) as further specified in IS 2.3.3.8 Appendix A.

- (2) have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge subjects;
 - (ii) certifies that the person is prepared for the required knowledge test; and
- (3) pass the required knowledge test on the knowledge subjects listed in IS 2.3.3.8 Appendix A.

(c) *Experience.*

- (1) The applicant for a CPL(H) license shall have completed not less than 150 hours of flight time, or 100 hours if completed during an integrated course of approved training provided for in an Aviation Training Organization Part 3, as a pilot of helicopters, of which 10 hours may have been completed in a flight simulator or flight procedures trainer.
- (2) The applicant shall have completed in helicopters not less than:
 - (i) 35 hours as pilot-in-command;
 - (ii) 10 hours of cross-country flight time as pilot-in-command including a cross-country flight in the course of which full-stop landings at two different points shall be made;
 - (iii) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time;
 - (iv) if the privileges of the license are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landings as pilot-in-command.
- (3) The holder of a pilot license in the helicopter category may be credited towards the 150 hours of flight time as follows:
 - (i) 20 hours as pilot-in-command holding a PPL(A) in airplanes; or
 - (ii) 50 hours as pilot-in-command holding a CPL(A) in airplanes.
- (4) The applicant for a CPL (H) shall hold a PPL(H) under this Part.

(d) *Flight Instruction.*

- (1) The applicant for a CPL (H) shall have received and log not less than 30 hours of dual instruction in helicopters from an authorized flight instructor under Part 3 on the subjects listed in IS 2.3.3.8 Appendix B.
- (2) 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:
 - (i) Pre-flight operations. including mass and balance determination, helicopter inspection and servicing;
 - (ii) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
 - (iii) control of the helicopter by external visual reference;
 - (iv) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
 - (v) ground maneuvering and run-ups; hovering; take-offs and landings - normal, out of wind and sloping ground; steep approaches;

- (vi) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;
 - (vii) hovering out of ground effect; operations with external load, if applicable; flight at high altitude;
 - (viii) basic flight maneuvers and recovery from unusual attitudes by reference solely to basic flight instruments;
 - (ix) cross-country flying using visual reference, dead reckoning and radio navigation aids; diversion procedures
 - (x) abnormal and emergency procedures. including simulated helicopter equipment malfunctions; auto-rotative approach and landing; and
 - (xi) operations to, from and transmitting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology
 - (xii) as further specified in IS 2.3.3.8 Appendix B.
- (3) If the privileges of the license are to be exercised at night, the applicant shall have received dual instruction in helicopters in night flying, including take-offs, landings and navigation.
- (e) *Skill.* The applicant for a CPL (H) shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing a skill test the ability to perform as pilot-in command of an helicopter, the areas of operation described in IS 2.3.3.7 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of a CPL(H), and to
 - (i) operate the helicopter within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge; and
 - (v) 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.
- (f) *Medical fitness.* The applicant for a CPL(H) shall hold a current Class 1 Medical Certificate.
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a CPL(H) shall be:
- (1) to exercise all the privileges of the holder of a PPL(H);
 - (2) to act as pilot-in-command in any helicopter engaged in operations other than commercial air transportation;
 - (3) to act as pilot-in-command in commercial air transportation in any helicopter certificated for single-pilot operation; and
 - (4) to act as co-pilot in commercial air transportation in helicopters required to be operated with a copilot.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is 5 years. For renewal of the license see Subpart 2.2.3.

2.3.3.9 AIRLINE TRANSPORT PILOT LICENSE - HELICOPTER

- (a) *Age.* The applicant for an ATPL (H) shall be not less than 21 years of age.
- (b) *Knowledge.* The applicant for an ATPL(H) shall:
- (1) receive and log ground training from an authorized instructor on the following subjects
 - (i) Air law: rules and regulations relevant to the holder of an ATPL(H); rules of the air; appropriate air traffic services practices and procedures
 - (ii) Aircraft general knowledge:
 - (A) general characteristics and limitations of electrical, hydraulic and other helicopter systems; flight control systems, including autopilot and stability augmentation;
 - (B) principles of operation, handling procedures and operating limitations of helicopter powerplants; transmission (power-trains); effects of atmospheric conditions on helicopter performance; relevant operational information from the flight manual;
 - (C) operating procedures and limitations of appropriate helicopters; effects of atmospheric conditions on helicopter performance; relevant operational information from the flight manual;
 - (D) use and serviceability checks of equipment and systems of appropriate helicopters 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;
 - (E) maintenance procedures for airframes, systems and powerplants of appropriate helicopters;
 - (iii) Flight performance and planning:
 - (A) effects of loading and mass distribution, including external loads, on helicopter handling, flight characteristics and performance; mass and balance calculations;
 - (B) use and practical application of take-off, landing and other performance data, including procedures for cruise control;
 - (C) 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
 - (iv) Human performance: human performance relevant to the ATPL(H)
 - (v) Meteorology:
 - (A) interpretation and application of aeronautical meteorological reports. charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
 - (B) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the moment 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;
 - (C) causes, recognition and effects of engine, airframe and rotor icing; hazardous weather avoidance;
 - (vi) Navigation:

- (A) Air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
 - (B) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of helicopters;
 - (C) use, accuracy and reliability of navigation systems; identification of radio navigation aids;
 - (D) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;
- (vii) Operation procedures:
- (A) Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (B) precautionary and emergency procedures; settling with power, Ground resonance, retreating blade stall, dynamic roll-over and other operating hazards; safety practices associated with flight under VFR;
 - (C) operational procedures for carriage of freight, including external load, and dangerous goods;
 - (D) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from helicopters;
- (viii) Principles of flight: principles of flight relating to helicopters;
- (ix) Radiotelephony:
- (A) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure
 - (B) as further specified in IS 2.3.3.9 Appendix A.
- (2) have received an endorsement for the knowledge test from an authorized instructor who:
- (i) conducted the training on the knowledge subjects;
 - (ii) certifies that the person is prepared for the required knowledge test; and
- (3) pass the required knowledge test on the knowledge subjects listed in IS 2.3.3.9 Appendix A.
- (c) *Experience.*
- (1) The applicant for an ATPL (H) shall have completed not less than 1000 hours of flight time as a pilot of helicopters of which a maximum of 100 hours may have been completed in a flight simulator. The applicant shall have completed in helicopters not less than:
 - (i) 250 hours, either as pilot-in-command, 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 that the method of supervision employed is acceptable to the Authority;
 - (ii) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as 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 supervision employed is acceptable to the Authority;

- (iii) 30 hours of instrument time, of which not more than 10 hours may be instrument ground time; and
 - (iv) 50 hours of night flight as pilot-in-command or as co-pilot.
- (2) Holders of a CPL (A) will be credited with 50% of their airplane flight time as pilot in- command towards the flight time required in (1).
 - (3) The applicant shall have completed a CRM course on the subjects listed in IS2.3.2.4 Appendix B.
 - (4) The applicant for an ATPL (H) shall be the holder of a CPL (H) issued under this Part.
- (d) *Flight Instruction.* The applicant for an ATPL (H) shall have received the dual flight instruction required for the issue of the CPL (H).
 - (e) *Skill.* The applicant for a ATPL (H) shall:
 - (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing a skill test the ability to perform, as pilot-in command of a helicopter required to be operated with a co-pilot, the following procedures and maneuvers:
 - (i) pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;
 - (ii) normal flight procedures and maneuvers during all phases of flight;
 - (iii) if the IR is going to be part of the ATPL(H): procedures and maneuvers for IFR operations under normal, abnormal and emergency conditions, including simulated engine failure, and covering at least the following:
 - (A) transition to instrument flight on take-off;
 - (B) standard instrument departures and arrivals;
 - (C) en-route IFR procedures and navigation;
 - (D) holding procedures;
 - (E) instrument approaches to specified minima;
 - (F) missed approach procedures;
 - (G) landings from instrument approaches;
 - (iv) abnormal and emergency procedures and maneuvers related to failures and malfunctions of equipment. such as powerplant, systems and airframe; and
 - (v) procedures for crew incapacitation and crew coordination, including allocation of pilot tasks, crew cooperation and use of checklists.
 - (3) have demonstrated by passing a skill test the ability to perform the areas of operation described in IS 2.3.3.9 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of an ATPL(H), and to:
 - (i) operate the helicopter within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge;

- (v) 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;
 - (vi) understand and apply crew coordination and incapacitation procedures; and
 - (vii) communicate effectively with the other flight crew members
- (f) *Medical fitness.* The applicant for an ATPL (H) shall hold a current Class 1 Medical Certificate, except for:
- (1) Check Airman Qualifications for Flight Simulation Training Device as provided for under 8.10.1.39 (b) (1); and
 - (2) Check Airmen who have reached their 65th birthday or who do not have an appropriate medical certificate as provided for under 8.10.1.39 (d) and 8.10.1.1 (c).
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of an ATPL (H) shall be:
- (1) to exercise all the privileges of the holder of a PPL (H) and CPL (H); and
 - (2) to act as pilot-in-command and co-pilot in helicopters in air transportation.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is 5 years. For renewal of the license see Subpart 2.2.3.

2.3.3.10 INSTRUMENT RATING – HELICOPTER

- (a) *General.* The holder of a pilot license shall not act either as pilot-in-command or as copilot of an aircraft under instrument flight rules (IFR) unless such holder has received proper Authorization from the Authority. Proper Authorization shall comprise an instrument rating appropriate to the aircraft category.
- (b) *Knowledge.* The applicant for an IR (H) shall:
- (1) receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air law: rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;
 - (ii) Aircraft general knowledge:
 - (A) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of helicopters under IFR and in instrument meteorological conditions; use and limitations of autopilot;
 - (B) compasses, turning and acceleration errors; gyroscopic instruments operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;
 - (iii) Flight performance and planning:
 - (A) pre-flight preparations and checks appropriate to flight under IFR;
 - (B) operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures;
 - (iv) Human performance: human performance relevant to instrument flight in helicopters;
 - (v) Meteorology:

- (A) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations: use of, and procedures for obtaining, meteorological information; altimetry;
 - (B) causes, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance;
- (vi) Navigation:
- (A) practical air navigation using radio navigation aids,
 - (B) use; accuracy and reliability of navigation systems used in departure, enroute, approach and landing phases of flight; identification of radio navigation aids;
- (vii) Operation procedures:
- (A) 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;
 - (B) precautionary and emergency procedures; safety practices associated with flight under IFR:
- (viii) Radiotelephony:
- (A) radiotelephony procedures and phraseology as applied to aircraft operations under IFR; action to be taken in case of communication failure;
 - (B) as further specified in IS 2.3.3.5 Appendix A.
- (2) have received an endorsement for the knowledge test from an authorized instructor who:
- (i) conducted the training on the knowledge subjects;
 - (ii) certifies that the person is prepared for the required knowledge test; and
- (3) pass the required knowledge test on the knowledge subjects listed in IS 2.3.3.5 Appendix A.
- (c) *Experience.*
- (1) The applicant for an IR (H) shall hold a PPL (H), a CPL (H) or an ATPL (H).
 - (2) The applicant shall have completed not less than:
 - (i) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the Authority, of which not less than 10 hours shall be in helicopters; and
 - (ii) 40 hours of instrument time in helicopters or airplanes of which not more than 20 hours, or 30 hours where a flight simulator is used, may be instrument ground time. The ground time shall be under the supervision of an authorized instructor.
- (d) *Flight Instruction.*
- (1) The applicant for an IR(H) shall have gained not less than 10 hours of the instrument flight time required in (c)(2)(ii) while receiving and logging dual instruction in helicopters from an authorized flight instructor, on the subjects listed in IS 2.3.3.5 Appendix B.
 - (2) 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:

- (i) 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;
 - (ii) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;
 - (iii) procedures and maneuvers for IFR operation under normal, abnormal and emergency conditions covering at least:
 - (A) transition to instrument flight on take-off;
 - (B) standard instrument departures and arrivals;
 - (C) en-route IFR procedures and navigation;
 - (D) holding procedures;
 - (E) instrument approaches to specified minima;
 - (F) missed approach procedures;
 - (G) landings from instrument approaches;
 - (iv) in flight maneuvers and particular flight characteristics.
- (3) If the privileges of the instrument rating are to be exercised on multi-engine helicopters, the applicant shall have received dual instrument flight instruction in such an helicopter from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in the operation of the helicopter solely by reference to instruments with one engine inoperative or simulated in operative.
- (e) *Skill.* The applicant for an IR(H) shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing a skill test the ability to perform the areas of operation described in IS: 2.3.3.5 Appendix B, with a degree of competency appropriate to the privileges granted to the holder of an IR(H), and to:
 - (i) operate the helicopter within its limitations;
 - (ii) complete all maneuvers with smoothness and accuracy;
 - (iii) exercise good judgment and airmanship;
 - (iv) apply aeronautical knowledge; and
 - (v) 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.
- (f) *Medical fitness.* Applicants who hold a PPL shall have established their hearing acuity on the basis of compliance with the hearing requirements for the issue of a Class 1 Medical Certificate.
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of an IR(H) shall be to pilot helicopters under IFR.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the instrument rating is 5 years.
- (i) *Renewal.*
- (1) For the renewal of an IR(H) the applicant shall within the preceding 12 calendar months, complete a proficiency check on the subjects listed in IS 2.3.3.5 Appendix B.

- (2) If a pilot takes the proficiency check required in this section in the calendar month before or the calendar month after the month in which it is due, the pilot is considered to have taken it in the month in which it was due for the purpose of computing when the next proficiency check is due.
- (j) *Re-issue*. If the instrument rating has been expired the applicant shall:
 - (1) have received refresher training from an authorized instructor with an endorsement that the person is prepared for the required skill test; and
 - (2) pass the required skill test on the subjects listed in IS: 2.3.3.5 Appendix B.

2.3.3.11 INSTRUCTOR RATINGS - AIRPLANE AND HELICOPTER

- (a) *General*. The applicant for an instructor rating or Authorization - airplane or helicopter, shall
 - (1) hold at least the license and rating for which instruction is being given, in the appropriate category; and
 - (2) hold the license and rating necessary to act as the pilot-in-command of the aircraft on which the instruction is given; or
 - (3) hold a specific Authorization granted by the Authority.
 - (4) for airplane instructor ratings, have completed on-airplane recovery training as specified in IS 2.3.3.3 Appendix C.
 - (5) for Flight Instructor (FI), have completed on-airplane upset prevention and recovery training as specified in IS 2.3.3.3 Appendix C.
- (b) *Flight Instructors*
 - (1) *Age*. The applicant for a flight instructor rating (FI) shall be not less than 18 years of age.
 - (2) *Knowledge*:
 - (i) The applicant for an FI rating shall have met the knowledge requirements for the issue of a CPL as specified in Subparts 2.3.3.3 and 2.3.3.7, as applicable.
 - (ii) In addition, the applicant for an FI rating shall receive and log ground training from an authorized instructor on the following subjects:
 - (A) techniques of applied instruction;
 - (B) assessment of student performance in those subjects in which ground instruction is given;
 - (C) the learning process;
 - (D) elements of effective teaching;
 - (E) student evaluation and testing, training philosophies;
 - (F) training program development;
 - (G) lesson planning
 - (H) classroom instructional techniques;
 - (I) use of training aids;
 - (J) analysis and correction of student errors;
 - (K) human performance relevant to flight instruction; and

- (L) hazards involved in simulating system failures and malfunctions in the aircraft
- (iii) Have received an endorsement for the knowledge test from an authorized instructor who:
 - (A) conducted the training on the knowledge subjects;
 - (B) certifies that the person is prepared for the required knowledge test; and
- (iv) pass the required knowledge test on the knowledge subjects listed in (2).
 - (A) This test may be combined with the test under (5).
- (v) The holder of an FI rating, issued under this Part, applying for an additional Flattening is exempted from this paragraph (2).
- (3) *Experience*. The applicant for an FI rating shall have completed not less than 200 hours of flight time on single-pilot aircraft of the appropriate category.
- (4) *Flight Instruction*. The applicant for an FI rating shall, under the supervision of an instructor accepted by the Authority for that purpose
 - (i) have received instruction in flight instructional techniques including demonstration, student practices, recognition and correction of common student errors; and
 - (ii) have practiced instructional techniques in those flight maneuvers and procedures in which it is intended to provide flight instruction listed in IS: 2.3.3.11 Appendix A or B, as applicable.
- (5) *Skill*. The applicant for an FI rating shall:
 - (i) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (ii) pass the required skill test on the subjects listed in IS: 2.3.3.11 Appendix A or B, as applicable.
- (c) *Privileges*. Subject to compliance with the requirements specified in this Part,
 - (1) the privileges for the holder of an FI rating shall be:
 - (i) to supervise solo flights by student pilots;
 - (ii) to carry out flight instruction for the issue of a PPL;
 - (iii) to carry out flight instruction for the issue of a CPL if he or she has completed 500 hrs of flight time and 200 hours of flight instruction;
 - (iv) to carry out flight instruction for the issue of a single-engine class rating if he or she has 15 hrs on the applicable type in the preceding 12 months;
 - (v) to carry out flight instruction for the issue of a multi-engine class rating if he or she has 500 hrs flight time and 15 hours on the applicable type in the preceding 12 months; and
 - (vi) to carry out flight instruction for the issue of an instructor rating, if he or she has completed 500 hours of instruction in the appropriate category.
 - (vii) to carry out flight instruction for the on-airplane upset recovery as specified in IS 2.3.3.3 Appendix C, if he or she completed instructor training at an ATO for on-airplane upset recovery instruction.
 - (2) the privileges of the holder of a FI instrument rating shall be to carry out flight instruction for the issue of an IR, if he or she has completed 200 hours flight in

accordance with instrument flight rules and passed the test on the subjects listed in IS 2.3.3.11 Appendix B.

(d) *Instructor rating for additional type ratings:*

- (1) Subject to compliance with this Subpart, pilots having experience in accordance with paragraph (3) below, may apply for an instructor rating for additional type ratings.
- (2) Knowledge.
 - (i) The applicant for an instructor rating for additional type ratings shall receive and log ground training from an authorized instructor on the following subjects:
 - (A) techniques of applied instruction;
 - (B) assessment of student performance in those subjects in which ground instruction is given;
 - (C) the learning process;
 - (D) elements of effective teaching;
 - (E) student evaluation and testing, training philosophies;
 - (F) training program development;
 - (G) lesson planning;
 - (H) classroom instructional techniques;
 - (I) use of training aids;
 - (J) analysis and correction of student errors;
 - (K) human performance relevant to flight instruction; and
 - (L) hazards involved in simulating system failures and malfunctions in the aircraft;
 - (M) and upset prevention and recovery elements from IS 2.3.3.3 Appendix C.
 - (ii) shall have received an endorsement for the knowledge test from an authorized instructor who
 - (A) conducted the training on the knowledge subjects;
 - (B) certifies that the person is prepared for the required knowledge test; and
 - (iii) pass the required knowledge test on the subjects listed in (2) (i).
 - (A) The test may be combined with the test under (5).
 - (iv) The holder of an instructor rating for additional type ratings is exempted from this paragraph.
- (3) Experience:
 - (i) The applicant for an instructor rating for additional type ratings shall have completed:
 - (A) for single-pilot type rating instruction 500 hours of flight time as pilot-in command
 - (B) for multi-pilot type rating instruction 500 hours of flight time as pilot-in command on multi-pilot aircraft of the appropriate category including 30 route sectors in the preceding 12 months of which 15 sectors may have been completed in a flight simulator.

- (4) *Flight Instruction*: The applicant for an instructor rating for additional type ratings shall, under the supervision of an instructor accepted by the Authority for that purpose:
 - (i) have received instruction in instructional techniques including demonstration, student practices, recognition and correction of common student errors; and
 - (ii) have practiced instructional techniques in those flight maneuvers and procedures in which it is intended to provide instruction on the subjects listed in Appendix C for type rating instructor.
- (5) *Skill*. The applicant shall have demonstrated in a skill test, in the category and in type of aircraft for which instructor privileges are sought, the ability to instruct in those areas in which instruction is to be given, including pre-flight, post-flight and ground instruction as appropriate on the subjects listed in IS: 2.3.3.11 Appendix C for type rating instructor.
- (6) *Privileges*. Subject to compliance with the requirements specified in this Part, the privileges of the holder of a instructor rating are to carry out flight instruction for the issue of an additional type rating including CRM training in the appropriate category.
- (e) *Instructor Authorization for synthetic flight training*.
 - (1) Notwithstanding Subpart 2.3.3.11 (a), former holders of professional pilot licenses, having instructional experience can apply for an Authorization to provide flight instruction in a synthetic flight trainer, provided the applicant has at least two (2) years experience as instructor in synthetic flight trainers.
 - (2) *Skill*. The applicant shall have demonstrated in a skill test, in the category and in the class or type of aircraft for which instructor Authorization privileges are sought, the ability to instruct in those areas in which ground instruction is to be given.
 - (3) *Privileges*. Subject to compliance with the requirements specified in this Part, the privileges of the holder of an Authorization are to carry out synthetic flight training instruction for the issue of a class or type rating in the appropriate category.
- (f) *Validity*. Subject to compliance with the requirements specified in this Part, the validity period of instructor ratings and Authorization is five (5) years.
- (g) *Renewal*.
 - (1) For the renewal of an FI rating the applicant shall:
 - (i) have conducted at least 30 hours of flight instruction within the 12 months preceding the expiry date; or
 - (ii) within the preceding 24 calendar months complete a proficiency check on the subjects listed in IS: 2.3.3.11 Appendix A or B, as applicable.
 - (2) For the renewal of an instructor rating for additional class ratings the applicant shall:
 - (i) have conducted at least 30 hours of flight instruction within the 12 months preceding the expiry date; or
 - (ii) within the preceding 24 calendar months complete a proficiency check on the subjects listed in IS: 2.3.3.11 Appendix A.
 - (3) For the renewal of an instructor rating for additional type ratings the applicant shall:
 - (i) have conducted one simulator session of at least 3 hours or one air exercise of at least 1 hour of a type rating course in the preceding 12 months; and

- (ii) within the preceding 24 calendar months complete a proficiency check on the subjects listed in IS: 2.3.3.11 Appendix C.
- (4) For the renewal of an instructor Authorization for synthetic flight training the applicant shall:
 - (i) have conducted one simulator session of at least 3 hours of a type rating course in the preceding 12 months.
 - (5) If an instructor takes the proficiency check required in this section in the calendar month before or the calendar month after the month in which it is due, the instructor is considered to have taken it in the month in which it was due for the purpose of computing when the next proficiency check is due
- (h) *Re-issue*. If the instructor rating or Authorization has been expired the applicant shall:
 - (1) have received refresher training from an authorized instructor with an endorsement that the person is prepared for the required skill test; and
 - (2) pass the required skill test on the subjects listed in IS 2.3.3.11 Appendix A, B or C, as applicable.

2.3.3.12 EXAMINERS

- (a) *General*. Examiners shall hold at least the license and the rating for which they are authorized to conduct skill tests or proficiency checks and shall hold the privilege to instruct for this license or rating.
- (b) *Experience*. The applicant for the examiner's Authorization shall have 1,000 hours of flight time and 200 hours of flight instruction.
- (c) *Training*. The ground, flight and simulator training for Examiners shall include the subjects listed in IS: 2.3.3.12.
- (d) *Skill test*. The applicant for an examiner Authorization shall have conducted at least one skill test in the role of an examiner for which Authorization is sought, including briefing, conduct of the skill test, assessment of the applicant to whom the skill test is given, debriefing and recording/documentation. This skill test shall be supervised by an inspector of the Authority or by a senior examiner specifically authorized by the Authority for this purpose.
- (e) *Privileges*. Subject to compliance with the requirements specified in this Part, the privileges of the examiner's Authorization are to conduct skill tests and proficiency checks for a license and rating(s).
- (f) *Validity*. Subject to compliance with the requirements specified in this Part, the validity period of an examiner's Authorization is five (5) years. Re-Authorization will be at the discretion of the Authority.

2.3.3.13 GLIDER PILOT LICENSE

- (a) *Age*. The applicant for a glider pilot license shall be not less than 16 years of age.
- (b) *Knowledge*. The applicant for a glider pilot license shall:
 - (1) receive training on the knowledge subjects:
 - (i) Air law: rules and regulations relevant to the holder of a glider pilot license; rules of the air; appropriate air traffic services practices and procedures;
 - (ii) Aircraft general knowledge:

- (A) principles of operation of glider systems and instruments;
- (B) operating limitations of gliders; relevant operational information from the flight manual or other appropriate document;
- (iii) Flight performance and planning:
 - (A) effects of loading and mass distribution on flight characteristics; mass and balance considerations;
 - (B) use and practical application of launching, landing and other performance data;
 - (C) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;
- (iv) Human performance: human performance relevant to the glider pilot;
- (v) Meteorology: application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;
- (vi) Navigation: practical aspects of air navigation and dead-reckoning techniques, use of aeronautical charts;
- (vii) Operation procedures:
 - (A) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (B) different launch methods and associated procedures;
 - (C) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather and wake turbulence and other operating hazards;
- (viii) Principles of flight: principles of flight relating to gliders
- (2) pass the required knowledge test.
- (c) Experience.
 - (1) The applicant shall have completed not less than 6 hours of flight time as a pilot of gliders including 2 hours' solo flight time during which not less than 20 launches and landings have been performed.
 - (2) The applicant for a glider pilot license shall have gained, under appropriate supervision, Operational experience in a glider in at least the following areas:
 - (i) pre-flight operations, including glider assembly and inspection;
 - (ii) techniques and procedures for the launching method used, including appropriate airspeed limitations, emergency procedures and signals used;
 - (iii) traffic pattern operations, collision avoidance precautions and procedures;
 - (iv) control of the glider by external visual reference;
 - (v) flight throughout the flight envelope;
 - (vi) recognition of, and recovery from, incipient and full stalls and spiral dives;
 - (vii) normal and cross-wind launches, approaches and landings;
 - (viii) cross-country flying using visual reference and dead reckoning;
 - (ix) emergency procedures.

- (3) The holder of a pilot license in the airplane category may be credited with three (3) hours towards the six (6) hours of flight time required for the glider license.
- (d) *Skill.* The applicant for a glider pilot license shall have demonstrated by passing the required skill test the ability to perform as pilot-in-command of a glider, the procedures and maneuvers described in (c) with a degree of competency appropriate to the privileges granted to the holder of a glider pilot license, and to:
 - (1) operate the glider within its limitations;
 - (2) complete all maneuvers with smoothness and accuracy;
 - (3) exercise good judgment and airmanship;
 - (4) apply aeronautical knowledge; and
 - (5) Maintain control of the glider at all times in a manner such that the successful outcome of a procedure or maneuver is never seriously in doubt.
- (e) *Medical fitness.* The applicant of a glider pilot license shall hold a current Class 2 Medical Certificate.
- (f) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a glider pilot license shall be to act as pilot-in-command of any glider provided that the license holder has operational experience in the launching method used.
- (g) *Validity of the license.* Subject to compliance with the requirements specified in this Part, the validity period of the license is 5 years. For renewal of the license see Subpart 2.2.3.

2.3.3.14 FREE BALLOON PILOT LICENSE

- (a) *Age.* The applicant for a free balloon pilot license shall be not less than 16 years of age.
- (b) *Knowledge.* The applicant for a free balloon pilot license shall:
 - (1) receive training on the following knowledge subjects:
 - (i) Air law: rules and regulations relevant to the holder of a free balloon pilot license; rules of the air; appropriate air traffic services practices and procedures;
 - (ii) Aircraft general knowledge:
 - (A) principles of operation of free balloon systems and instruments;
 - (B) operating limitations of free balloons; relevant operational information from the flight manual or other appropriate document;
 - (C) physical properties and practical application of gases used in free balloons;
 - (iii) Flight performance and planning:
 - (A) effects of loading and mass distribution on flight characteristics; mass calculations;
 - (B) use and practical application of launching, landing and other performance data. including the effect of temperature;
 - (C) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;

- (iv) Human performance: human performance relevant to the free balloon pilot;
 - (v) Meteorology: application of elementary aeronautical meteorology; use of. And procedures for obtaining, meteorological information; altimetry;
 - (vi) Navigation: practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;
 - (vii) Operation procedures:
 - (A) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (B) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather and wake turbulence and other operating hazards;
 - (viii) Principles of flight: principles of flight relating to gliders
 - (ix) Radiotelephony: the applicant should have demonstrated a level of knowledge appropriate to the privileges to be granted to the holder of a free balloon pilot license, in radiotelephony procedures and phraseology as appropriate to VFR operations and on action to be taken in case of communication failure;
- (2) pass the required knowledge test.
- (c) *Experience.*
- (1) The applicant shall have completed not less than 16 hours of flight time as a pilot of free balloons including at least 8 launches and ascents of which one must be solo.
 - (2) The applicant for a free balloon pilot license shall have gained in free balloons under appropriate supervision operational experience.
 - (3) If the privileges of the license are to be exercised at night, the applicant shall have gained, under appropriate supervision, operational experience in free balloons in night flying.
- (d) *Skill.* The applicant for a free balloon pilot license shall have demonstrated by passing the required skill test the ability to perform as pilot-in-command of a free balloon, the procedures and maneuvers described in (c) with a degree of competency appropriate to the privileges granted to the holder of a free balloon pilot license, and to:
- (1) operate the free balloon within its limitations;
 - (2) complete all maneuvers with smoothness and accuracy;
 - (3) exercise good judgment and airmanship;
 - (4) apply aeronautical knowledge; and
 - (5) Maintain control of the free balloon at all times in a manner such that the successful outcome of a procedure or maneuver is never seriously in doubt.
- (e) *Medical fitness.* The applicant for a free balloon pilot license shall hold a current Class 2 Medical Certificate.
- (f) *Privileges.*
- (1) Subject to compliance with the requirements specified in this Part, the privileges of the holder of a free balloon pilot license shall be to act as a pilot-in-command of any free balloon provided that the license holder has operational experience in hot air or gas balloons, as appropriate.

- (2) Before exercising the privileges at night, the license holder shall have complied with the requirements as specified in (c) (3).
- (g) *Validity of the license.* Subject to compliance with the requirements specified in this Part, the validity period of the license is 5 years. For renewal of the license see Subpart 2.2.3.

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2.4 FLIGHT ENGINEER LICENSE AND RATINGS

2.4.1 APPLICABILITY

This section prescribes the requirements for the issue, renewal and re-issue of a flight engineers license and ratings.

2.4.2 GENERAL

- (a) A person shall not act as a flight engineer of an aircraft registered in Republic of the Philippines unless a valid license or a validation certificate is held showing compliance with the specifications of this Part and appropriate to the duties to be performed by that person.
- (b) For the purpose of training, testing or specific special purpose non-revenue, non passenger carrying flights, special Authorization may be provided in writing to the license holder by the Authority in place of issuing the class or type rating in accordance with this Part. This Authorization will be limited in validity to the time needed to complete the specific flight.
- (c) An applicant shall, before being issued with a flight engineer license, meet such requirements in respect of age, knowledge, experience, skill, medical fitness and language proficiency as are specified for that license or rating.
- (d) An applicant shall for renewal or re-issue of a license, rating or Authorization meet the requirements as are specified for that license, rating or Authorization.

2.4.3 TYPE RATING - FLIGHT ENGINEER

- (a) *Knowledge.* The applicant for a type rating shall have completed the theoretical knowledge instruction and demonstrated by passing a knowledge test the knowledge subjects as listed in IS: 2.3.2.4 Appendix A.
- (b) *Experience.* The applicant for a type rating shall:
 - (1) have at least 100 hours flight time in the performance of the duties of a flight engineer; and
 - (2) have completed a CRM course as listed in IS: 2.3.2.4 Appendix B.
- (c) *Flight instruction.* The applicant for a type rating shall have completed the flight instruction for the type rating on the subjects listed in IS: 2.4.3.
- (d) *Skill.* The applicant for a type rating shall:
 - (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) pass the required skill test on the subjects listed in IS: 2.4.3.
- (e) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a type rating are to act as flight engineer on the type of aircraft specified in the rating.
- (f) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of a type rating is 5 years.
- (g) *Renewal.* For the renewal of a type rating the flight engineer shall:
 - (1) within the preceding 12 calendar months complete a proficiency check on the subjects as listed in IS: 2.4.3 and

- (2) Have completed 10 route sectors.
 - (3) If a flight engineer takes the proficiency check required in this section in the calendar month before or the calendar month after the month in which it is due, the flight engineer is considered to have taken it in the month in which it was due for the purpose of computing when the next proficiency check is due.
- (h) *Re-issue*. If a type rating has been expired the applicant shall:
- (1) have received refresher training from an authorized instructor with an endorsement that the person is prepared for the required skill test; and
 - (2) pass the required skill test on the subjects listed in IS: 2.4.3.

2.4.4 FLIGHT ENGINEER LICENSE

- (a) *Age*. The applicant for a flight engineer license shall be not less than 18 years of age.
- (b) *Knowledge*. The applicant for a flight engineer license shall:
- (1) receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air law: rules and regulations relevant to the holder of a flight engineer license; rules and regulations governing the operation of civil aircraft pertinent to the duties of a flight engineer;
 - (ii) Aircraft general knowledge:
 - (A) basic principles of powerplants; gas turbines and/or piston engines; characteristics of fuels; fuel systems including fuel control; lubricants and lubrication systems; afterburners and injection systems, function and operation of engine ignition and starter systems;
 - (B) principles of operation; handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance;
 - (C) airframes; flight controls; structures; wheel assemblies; brakes and antiskid units; corrosion and fatigue life; identification of structural damage and defects;
 - (D) ice and rain protection systems;
 - (E) pressurization and air-conditioning systems; oxygen systems;
 - (F) hydraulic and pneumatic systems;
 - (G) basic electrical theory, electric systems (AC and DC); aircraft wiring systems; bonding and screening;
 - (H) principles of operation of instruments, compasses, autopilots, radio communication equipment, radio and radar navigation aids, flight management systems, displays and avionics;
 - (I) limitations of appropriate aircraft;
 - (J) fire protection, detection, suppression and extinguishing systems;
 - (K) use and serviceability checks of equipment and systems of appropriate aircraft;
 - (iii) Flight performance and planning:

- (A) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- (B) use and practical application of performance data including procedures for cruise control:
- (iv) Human performance: human performance relevant to the flight engineer;
- (v) Operational procedures:
 - (A) principles of maintenance; procedures for the maintenance of airworthiness; defect reporting; pre-flight inspections; precautionary procedures for fuelling and use of external power; installed equipment and cabin systems;
 - (B) normal, abnormal and emergency procedures;
 - (C) operational procedures for carriage of freight and dangerous goods;
- (vi) Principles of flight: fundamentals of aerodynamics;
- (vii) Radiotelephony: radiotelephony procedures and phraseology;
- (2) have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge subjects;
 - (ii) certifies that the person is prepared for the required knowledge test; and
- (3) pass the required knowledge test.
- (c) *Experience.*
 - (1) The applicant for a flight engineer license shall have completed under the supervision of a person accepted by the Authority for that purpose, not less than 100 hours of flight time in the performance of the duties of a flight engineer, of which 50 hours may have been completed in a flight simulator.
 - (2) The holder of a pilot license may be credited with 30 hours towards the 100 hours of flight time.
 - (3) The applicant shall have operational experience in the performance of the duties of a flight engineer, under the supervision of a flight engineer accepted by the Authority for that purpose, in at least the following areas:
 - (i) Normal procedures:
 - (A) pre-flight inspections
 - (B) fuelling procedures, fuel management
 - (C) inspection of maintenance documents
 - (D) normal flight deck procedures during all phases of flight
 - (E) crew coordination and procedures in case of crew incapacitation
 - (F) defect reporting
 - (ii) Abnormal and alternate (standby) procedures:
 - (A) recognition of abnormal functioning of aircraft systems
 - (B) use of abnormal and alternate (standby) procedures
 - (iii) Emergency procedures:

- (A) recognition of emergency conditions
 - (B) use of appropriate emergency procedures as further specified in IS: 2.4.3.
- (4) The applicant shall have completed a CRM course as listed in IS: 2.3.2.4 Appendix B.
- (d) *Flight instruction.* The applicant for a type rating shall have completed the flight instruction for the type rating on the subjects as listed in IS: 2.4.3.
- (e) *Skill.* The applicant for a flight engineer license shall:
- (1) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test; and
 - (2) have demonstrated by passing the required skill test, the ability to perform as flight engineer of an aircraft, the duties and procedures described in paragraph (c) (3) above with a degree of competency appropriate to the privileges granted to the holder of a flight engineer license, and to
 - (i) use aircraft systems within the aircraft's capabilities and limitations;
 - (ii) exercise good judgment and airmanship;
 - (iii) apply aeronautical knowledge;
 - (iv) perform all the duties as part of an integrated crew with the successful outcome never in doubt; and
 - (v) communicate effectively with the other flight crew members.
- (f) *Medical fitness.* The applicant for a flight engineer license shall hold a current Class 1 Medical Certificate, except for:
- (i) Check Airman Qualifications for Flight Simulation Training Device as provided for under 8.10.1.39 (b) (1); and
 - (ii) Check Airmen who have reached their 65th birthday or who do not have an appropriate medical certificate as provided for under 8.10.1.39 (d) and 8.10.1.1 (c).
- (g) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a flight engineer license shall be to act as flight engineer of any type of aircraft on which the holder has demonstrated a level of knowledge and skill, on the basis of those requirements specified in Subpart 2.4.4 (b) and (d) which are applicable to the safe operation of that type of aircraft.
- (h) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is five (5) years. For renewal of the license see Subpart 2.2.3.

2.5 FLIGHT NAVIGATOR LICENSE

2.5.1 APPLICABILITY

This section prescribes the requirements for the issue, renewal and re-issue of a flight navigator license.

2.5.2 GENERAL

- (a) An applicant shall, before being issued with a flight navigator license, meet such requirements in respect of age, knowledge; experience, skill, medical fitness and language proficiency as are specified for that license.
- (b) An applicant shall for renewal or re-issue of a license, rating or Authorization meet the requirements as are specified for that license.

2.5.3 FLIGHT NAVIGATOR LICENSE

- (a) *Age*. The applicant shall be not less than 18 years of age.
- (b) *Knowledge*.
 - (1) The applicant for a flight navigator license shall receive and log ground training from an authorized instructor on the following subjects:
 - (i) Air Law: rules and regulations relevant to the holder of a flight navigator license; appropriate air traffic services practices and procedures;
 - (ii) Flight performance and planning
 - (A) effects of loading and mass distribution on aircraft performance;
 - (B) use of take-off, landing and other performance data including procedures for cruise control;
 - (C) 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;
 - (iii) Human performance: human performance relevant to the flight navigator;
 - (iv) Meteorology
 - (A) Interpretation and practical application of aeronautical meteorological reports. charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; pre-flight and in flight; altimetry;
 - (B) 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;
 - (v) Navigation
 - (A) dead-reckoning; pressure-pattern and celestial navigation procedures, the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
 - (B) use; limitation and serviceability of avionics and instruments necessary for the navigation of the aircraft,

- (C) use, accuracy and reliability of navigation systems used in departure, enroute and approach phases of flight; identification of radio navigation aids;
 - (D) principles, characteristics and use of self-contained and external referenced navigation systems; operation of airborne equipment;
 - (E) the celestial sphere including the movement of heavenly bodies and their selection and identification for the purpose of observation and reduction of sights; calibration of sextants; the completion of navigation documentation;
 - (F) definitions, units and formulae used in air navigation;
 - (vi) Operational procedures: interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes, abbreviations, and instrument procedure charts for departure, en-route, descent and approach;
 - (vii) Principles of flight: principles of flight;
 - (viii) Radiotelephony: radiotelephony procedures and phraseology.
- (2) shall have received an endorsement for the knowledge test from an authorized instructor who:
- (A) conducted the training on the knowledge subjects,
 - (B) certifies that the person is prepared for the required knowledge test; and
- (3) pass the required knowledge test on the subjects listed in paragraph (b) (1).
- (c) *Experience*
- (1) The applicant shall have completed in the performance of the duties of a flight navigator, not less than 200 hours of flight time acceptable to the Authority, in aircraft engaged in cross-country flights, including not less than 30 hours by night.
 - (2) The holder of a pilot license may be credited with 30 hours towards the 200 hours of flight time.
 - (3) The applicant shall produce evidence of having satisfactorily determined the aircraft's position in flight, and used that information to navigate the aircraft, as follows:
 - (i) by night - not less than 25 times by celestial observations; and
 - (ii) by day - not less than 25 times by celestial observations in conjunction with self-contained or external-referenced navigation systems.
- (d) *Skill*. The applicant shall have demonstrated by passing the required skill test the ability to perform as flight navigator of an aircraft with a degree of competency appropriate to the privileges granted to the holder of a flight navigator license, and to:
- (1) exercise good judgment and airmanship;
 - (2) apply aeronautical knowledge;
 - (3) perform all duties as part of an integrated crew; and
 - (4) communicate effectively with the other flight crew members.

- (e) *Medical fitness.* The applicant shall hold a current Class 1 Medical Certificate, except for:
- (i) Check Airman Qualifications for Flight Simulation Training Device as provided for under 8.10.1.39 (b) (1); and
 - (ii) Check Airmen who have reached their 65th birthday or who do not have an appropriate medical certificate as provided for under 8.10.1.39 (d) and 8.10.1.1 (c).
- (f) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a flight navigator license shall be to act as flight navigator of any aircraft.
- (g) *Validity.* Subject to compliance with the requirements specified in this Part, the validity period of the license is five (5) years. The license shall become invalid when the flight navigator has ceased to exercise the privileges of the license for a period of 6 months. The license shall remain invalid until the flight navigator's ability to exercise the privileges of the license has been re-established. For renewal of the license see Subpart 2.2.3.

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2.6 AVIATION MAINTENANCE LICENSING**2.6.1 GENERAL****2.6.1.1 APPLICABILITY**

- (a) Subpart 2.6 prescribes the requirements for issuing the following licenses and associated ratings and/or authorizations for:
- (1) Aviation Maintenance Technician (AMT)
 - (2) Aviation Maintenance Specialist (AMS)

2.6.2 AVIATION MAINTENANCE TECHNICIAN (AMT)**2.6.2.1 APPLICABILITY**

- (a) This Subpart prescribes the requirements for issuance of an Aviation Maintenance Technician (AMT) license and associated ratings the conditions under which this license and ratings are necessary and the general operating rules and limitations of the holder of this license and ratings.

2.6.2.2 ELIGIBILITY REQUIREMENTS: GENERAL

- (a) An applicant for an AMT license and any associated rating shall
- (1) Be at least 18 years of age;
 - (2) Demonstrate the ability to read, write, speak, and understand the English language by reading and explaining appropriate maintenance publications and by writing defect and repair statements;
 - (3) Comply with the knowledge, experience, and competency requirements prescribed for the license and rating sought; and
 - (4) Pass all of the prescribed tests for the license and rating sought, within a period of 24 months.
- (b) A licensed AMT who applies for an additional rating must meet the requirements of Subpart 2.6.2.6 and, within a period of 24 months, pass the tests prescribed by Subparts 2.6.2.5 and 2.6.2.7 for the additional rating sought.

2.6.2.3 RATINGS

- (a) The following ratings are issued under this subpart:
- (1) Airframe
 - (2) Powerplant
 - (3) Airframe and Powerplant

2.6.2.4 KNOWLEDGE REQUIREMENTS

- (a) The applicant for an Aviation Maintenance Technician (AMT) license shall have pass a knowledge test covering at least the following areas:
- (1) Air law and airworthiness requirements:
 - (i) rules and regulations relevant to an Aviation Maintenance Technician (AMT) license holder including applicable airworthiness requirements governing

certification and continuing airworthiness of aircraft and approved aircraft maintenance organization procedures;

- (2) Natural science and aircraft general knowledge
 - (i) basic mathematics; units of measurement; fundamental principles and theory of physics and chemistry applicable to aircraft maintenance;
- (3) Aircraft engineering
 - (i) characteristics and applications of the materials of aircraft construction including principles of construction and functioning of aircraft structures, fastening techniques; powerplants and their associated systems, mechanical, fluid, electrical and electronic power sources, aircraft instrument and display systems, aircraft control systems, and airborne navigation and communication systems;
- (4) Aircraft maintenance:
 - (i) tasks required to ensure the continuing airworthiness of an aircraft including methods and procedures for the overhaul, repair, inspection, replacement, modification or defect rectification of aircraft structures, components and systems in accordance with the methods prescribed in the relevant Maintenance Manuals and the applicable requirements of airworthiness;
- (5) Human performance:
 - (i) human performance and limitations, including principles of threat and error management relevant to the duties of an aviation maintenance license holder;

2.6.2.5 KNOWLEDGE REQUIREMENTS FOR THE RATINGS

- (a) The applicant for an airframe rating shall pass a knowledge test covering at least the following areas:
 - (1) Airframe Maintenance practices and materials
 - (2) Airframe systems and structures-fixed wing
 - (3) Airframe systems and structures-rotary wing
 - (4) Systems and structures
- (b) The applicant for a powerplant rating shall pass a knowledge test covering at least the following areas:
 - (1) Piston engines
 - (2) Propellers
 - (3) Gas turbine engines
 - (4) Fuel systems
- (c) The applicant shall pass each section of the test before applying for the oral and practical tests prescribed by the Authority.

2.6.2.6 SKILL REQUIREMENTS

- (a) Each applicant for an AMT license or rating must pass an oral and a skill test on the license or rating he seeks. The tests cover the applicant's basic skill in performing practical projects on the subjects covered by the written test for the license or rating

and shall contain at least the subjects in the IS 2.6.2.6, appropriate to the license or rating sought.

2.6.2.7 EXPERIENCE REQUIREMENTS

- (a) An applicant for an AMT license and associated ratings may qualify by either practical experience or through training in an ATO.
- (b) Practical experience only. Each applicant for an AMT license and rating(s) relying solely on practical experience shall provide documentary evidence, acceptable to the Authority, of the following experience in the inspection, servicing and maintenance of aircraft or its components:
 - (1) Airframe rating - 30 months,
 - (2) Powerplant rating - 30 months;
 - (3) Airframe and Powerplant ratings - 60 months;
- (c) Approved Training. Each applicant for an AMT license relying on completion of training in an Approved Training Organization (ATO) shall provide documentary evidence, acceptable to the Authority, of the following training:
 - (1) Airframe rating - 24 months
 - (2) Powerplant rating - 24 months
 - (3) Airframe and Powerplant ratings - 30 months

2.6.2.8 PRIVILEGES AND LIMITATIONS

- (a) Except as specified in paragraphs (d), (e) and (f) of this subsection, a licensed AMT with A&P may perform or supervise the maintenance, preventive maintenance, or modification of, or after inspection, sign a maintenance release and a return to service for any aircraft, airframe aircraft engine, propeller, appliance, component, or part thereof for which he or she is rated, provided the licensed AMT has:
 - (1) Satisfactorily performed the work at an earlier date;
 - (2) Demonstrated the ability to perform the work to the satisfaction of the Authority;
 - (3) Received training acceptable to the Authority on the tasks to be performed; or
 - (4) Performed the work while working under the direct supervision of a licensed AMT who is appropriately rated and has-
 - (i) Had previous experience in the specific operation concerned; or
 - (ii) Received training acceptable to the Authority on the task to be performed.
- (b) Except as specified in paragraphs (d), (e) and (f) of this subsection, a licensed AMT with an Airframe rating may after he/she has performed the 100-hour inspection required by Part 8 of this chapter on an airframe, or any related part or appliance, and sign a maintenance release.
- (c) Except as specified in paragraphs (d), (e) and (f) of this subsection, a licensed AMT with a Powerplant rating may perform the 100-hour inspection required by Part 8 of this chapter on a powerplant or propeller or any related part or appliance, and sign a maintenance release.
- (d) An AMT with an Airframe or Powerplant rating may not

- (1) Supervise the maintenance, repair, or modification of, or approve and provide a maintenance release for any aircraft, airframe, aircraft engine, propeller, appliance, component or part thereof, for which he/she is rated unless he/she has satisfactorily performed the work concerned at an earlier date.
 - (2) Exercise the privileges of the license unless the licensed AMT understands the current instructions for continued airworthiness and the maintenance instructions for the specific operation concerned.
- (e) An AMT with an Airframe or Powerplant rating may
- (1) Perform or supervise under the direct supervision and control of an AMO, any repair or alteration of instruments.
 - (2) Sign a Maintenance Release for any aircraft, airframe, engine, propeller, appliance, component, or part thereof after completion of a major alteration or major repair.
- (f) A licensed mechanic shall not exercise the privileges of his license and ratings unless he is familiar with the current CAR, manufacturer's instructions and the maintenance manuals pertinent to the particular aircraft operation to be performed.

2.6.2.9 DURATION OF THE LICENSE

- (a) The duration of the AMT license is (5) years.
- (b) The holder of a license with an expiration date may not, after that date, exercise the privileges of that license.
- (c) The license shall remain valid as long as the holder thereof maintains his/her competency.

2.6.2.10 RECENT EXPERIENCE REQUIREMENTS

- (a) A licensed AMT may not exercise the privileges of his/her license or rating unless, within the preceding 24 months:
 - (1) The Authority has found that he/she is able to do that work; or
 - (2) For at least 6 months within the preceding 24 months-
 - (i) Served as an AMT under his/her license and rating;
 - (ii) Technically supervised other AMT's;
 - (iii) Provided aviation maintenance instruction or served as the direct supervisor of persons providing aviation maintenance instruction for an AMT course or program acceptable to the Authority;
 - (iv) Supervised the maintenance, preventive maintenance, or alteration of any aircraft, airframe, aircraft engine, propeller, appliance, component, or part thereof; or been engaged in any combination of paragraphs (a)(2)(i) through (a)(2)(iii) of this subsection; and
- (b) Has received appropriate recurrent training from an AMO within the preceding 24 months and is familiar both with current manufacturers and approved maintenance organization's instructions and the maintenance manuals pertinent to the particular aircraft operation to be performed.
 - (1) The requirements of recurrent training applies to all AME's when certifying aircraft or components used in commercial operations.

2.6.2.11 DISPLAY OF LICENSE

- (a) Each person who holds an AMT license shall keep it within the immediate area where he/she normally exercises the privileges of the license and shall present it for inspection upon the request of the Authority or law enforcement officer.

2.6.2.12 APPLICATION FOR ADDITIONAL RATING

- (a) An applicant for a rating subsequent to the original issuance of a mechanic license with approved rating shall meet the training, knowledge and experience requirements for the rating sought and pass a practical examination established by the Authority.

2.6.2.13 REQUIREMENTS FOR THE RENEWAL OF LICENSES

- (a) A holder of an aircraft mechanic license desiring to renew his license must accomplish and submit the following within 30 days prior to the expiry of his license:
- (1) Application for the renewal of license duly notarized;
 - (2) Certification or proof that the holder has rendered services in accordance with the provisions this Part from an AMO, AOC or an ATO, or any other person found acceptable in writing by the Authority, as applicable, in any case fully in compliance with this regulations.

2.6.3 AVIATION MAINTENANCE SPECIALIST (AMS)**2.6.3.1 APPLICABILITY**

- (a) This Subpart prescribes the requirements for issuance of Aviation Maintenance Specialist (AMS) licenses and ratings, the conditions under which this license and ratings are necessary and the general operating rules and limitations of the holder of this license and ratings.

2.6.3.2 ELIGIBILITY REQUIREMENTS: GENERAL

- (a) An applicant for an AMS license and any associated rating shall:
- (1) Be at least 18 years of age;
 - (2) Demonstrate the ability to read, write, speak, and understand the English language by reading and explaining appropriate maintenance publications and by writing defect and repair statements;
 - (3) Comply with the knowledge, experience, and competency requirements prescribed for the license and rating sought; and
 - (4) Pass all of the prescribed tests for the license and rating sought, within a period of 24 months.
 - (5) Be a citizen of the Philippines or a citizen of a foreign country granting similar rights and privileges to citizens of the Philippines subject, however, to existing treaty or treaties, and agreements, entered into by the Philippine Government with foreign countries, and subject, further, to security measures adopted by the Philippine Government.
 - (6) For AMS Specialized Service Rating be specially qualified to perform maintenance on aircraft or components thereof, appropriate to the job for which he/she was employed;

- (7) For AMS Specialized Service Rating be employed for a specific job requiring those special qualifications by an approved maintenance organization certificated under Part 6 allowed by its operating certificate and approved specific operating provisions to provide maintenance, preventive maintenance, or modifications to aircraft; and
 - (8) For AMS Specialized Service Rating be recommended for certification by his employer, to the satisfaction of the Authority, as able to satisfactorily maintain aircraft or components, appropriate to the job for which he is employed;
- (b) A licensed AMS who applies for an additional rating must meet the requirements of this Part and, within a period of 24 months, pass the tests prescribed by the Authority for the additional rating sought.

2.6.3.3 AMS RATINGS

- (a) The following ratings are issued under this subpart:
- (1) Limited Airframe:
 - (i) Fixed wing
 - (ii) Rotary wing
 - (iii) Aircraft Systems, Hydraulics
 - (iv) Aircraft Systems, Pneumatics
 - (v) Aircraft Emergency and Safety Equipment
 - (vi) Aircraft Structures, Sheet metal
 - (vii) Aircraft Structures, Composites
 - (viii) Aircraft Structures, Woodwork/Fabric
 - (2) Limited Powerplant:
 - (i) Piston
 - (ii) Propellers
 - (iii) Turbine
 - (iv) Fuel Systems
 - (3) Avionics
 - (i) Electrical
 - (ii) Instruments
 - (iii) AFCS Fixed wing
 - (iv) AFCS Rotary wing
 - (v) Navigation
 - (vi) Radio
 - (4) Specialized Services
 - (i) Welding
 - (ii) Non-destructive testing (subject to compliance with P.N.S. 146)
- (b) At no instance shall an AMS license be issued a Specialized Service rating in which the AMO has not been issued.

- (c) Ratings for an applicant employed by an AMO shall coincide with the approved specific operating provisions and the approved maintenance procedures manual that identifies the AMO's authorizations limited to the specific job for which the person is employed to perform, supervise, or sign a maintenance release.

Note: When employed by an AMO, an Aviation Maintenance Specialist (AMS) license should correspond to the specialty shop or group in which they perform, supervise, or sign a maintenance release an aeronautical product or aircraft. For example, Hydraulic component overhaul, landing gear overhaul, special inspections, non-destructive testing, turbine disc overhaul, etc.

2.6.3.4 KNOWLEDGE REQUIREMENTS

- (a) The applicant for an aviation maintenance Specialist license shall have pass a knowledge test covering at least the following areas related to the ratings sought:
- (1) Air law and airworthiness requirements:
 - (i) rules and regulations relevant to an Aviation Maintenance Technician (AMT) license holder including applicable airworthiness requirements governing certification and continuing airworthiness of aircraft and approved aircraft maintenance organization procedures;
 - (2) Natural science and aircraft general knowledge
 - (i) basic mathematics; units of measurement; fundamental principles and theory of physics and chemistry applicable to aircraft maintenance;
 - (3) Aircraft engineering
 - (i) characteristics and applications of the materials of aircraft construction including principles of construction and functioning of aircraft structures, fastening techniques; powerplants and their associated systems; mechanical; fluid; electrical and electronic power sources; aircraft instrument and display systems; aircraft control systems; and airborne navigation and communication systems;
 - (4) Aircraft maintenance :
 - (i) tasks required to ensure the continuing airworthiness of an aircraft including methods and procedures for the overhaul, repair, inspection, replacement, modification or defect rectification of aircraft structures, components and systems in accordance with the methods prescribed in the relevant Maintenance Manuals and the applicable requirements of airworthiness;
 - (5) Human performance:
 - (i) Human performance and limitations, including principles of threat and error management relevant to the duties of an aviation maintenance license holder;

2.6.3.5 KNOWLEDGE REQUIREMENTS FOR THE RATINGS

- (a) The applicant for the following ratings shall pass a knowledge test covering at least the following areas:
- (1) Limited Airframe:
 - (i) Airframe Maintenance practices and materials

- (ii) Airframe systems and structures-fixed wing
 - (iii) Airframe systems and structures-rotary wing
 - (iv) Systems and structures
- (2) Limited powerplant:
- (i) Piston engines
 - (ii) Propellers
 - (iii) Gas turbine engines
 - (iv) Fuel systems
- (3) Avionics :
- (i) Aircraft engineering and maintenance: Electrical and instrument
 - (A) Maintenance practices and materials
 - (B) Electrical and electronic fundamentals
 - (C) Digital techniques, computers and associated devices
 - (D) Aircraft electrical systems
 - (E) Aircraft instrument systems
 - (ii) Aircraft engineering and maintenance: Automatic flight control systems AFCS/Navigation/Radio
 - (A) Automatic flight control systems (AFCS): Fixed wing
 - (B) Automatic flight control systems (AFCS): Rotary wing
 - (C) Aircraft inertial navigation systems (INS)
 - (D) Aircraft radio and radio navigation systems
 - (iii) Specialized Services
 - (A) Welding
 - (B) Non-destructive testing (subject to compliance with P.N.S. 146)
- (b) The applicant shall pass each section of the test before applying for the theoretical and practical tests prescribed in this Part.

2.6.3.6 SKILL REQUIREMENTS

- (a) Each applicant for an AMS license or rating must pass an oral and a skill test on the license or rating he seeks. The tests cover the applicant's basic skill in performing practical projects on the subjects covered by the written test for the license or rating and shall contain at least the subjects in the IS 2.6.3.7, appropriate to the license or rating sought.

2.6.3.7 EXPERIENCE REQUIREMENTS

- (a) An applicant for an AMS license and associated ratings may qualify by either practical experience solely or through training in an ATO plus practical experience.
- (b) Practical experience only. Each applicant for an AMS license and rating(s) relying solely on practical experience shall provide documentary evidence, acceptable to the

Authority, of the following experience in the inspection, servicing and maintenance of aircraft or its components

- (1) Limited Airframe rating - 30 months,
 - (2) Limited Powerplant rating - 30 months;
 - (3) Avionics rating - 36 months,
- (c) Approved Training. Each applicant for an AMS license relying on completion of training in an Approved Training Organization shall provide documentary evidence acceptable to the Authority, of the following training:
- (1) Limited Airframe rating - 24 months
 - (2) Limited Powerplant rating - 24 months
 - (3) Avionics rating - 24 months in an ATO, plus 12 months practical work experience.

2.6.3.8 PRIVILEGES AND LIMITATIONS

- (a) A licensed AMS may perform or supervise the maintenance, preventive maintenance, or alteration of aircraft, airframes, aircraft engines, propellers, appliances, components, and parts appropriate to the designated specialty area for which the Aviation Maintenance Specialist (AMS) is licensed and rated.
- (b) An Aviation Maintenance Specialist (AMS) may not perform or supervise duties unless the aviation repair specialist understands the current instructions of the employing certificate holder and the instructions for continued airworthiness, which relate to the specific operations concerned.
- (c) A licensed AMS with an Avionics rating may inspect, repair, maintain, perform a function test and sign a maintenance release for avionics systems and related components.

2.6.3.9 DURATION OF THE LICENSE

- (a) The duration of the AMS license is (5) years.
- (b) The holder of a license with an expiration date may not, after that date, exercise the privileges of that license
- (c) Licenses shall remain valid as long as the holders thereof maintain their competency.

2.6.3.10 RECENT EXPERIENCE REQUIREMENTS

- (a) A licensed AMS may not exercise the privileges of his/her license or rating unless, within the preceding 24 months:
 - (1) The Authority has found that he/she is able to do that work; or
 - (2) for at least 6 months within the preceding 24 months-
 - (i) Served as an AMS under his/her license and rating;
 - (ii) Technically supervised other AMSs.
- (b) Has received appropriate recurrent training from an AMO within the preceding 24 months and is familiar both with current manufacturers and approved maintenance organization's instructions and the maintenance manuals pertinent to the particular operations to be performed.

2.6.3.11 DISPLAY OF LICENSE

- (a) Each person who holds an AMS license shall keep it within the immediate area where he/she normally exercises the privileges of the license and shall present it for inspection upon the request of the Authority or law enforcement officer.

2.6.3.12 REQUIREMENTS FOR THE RENEWAL OF LICENSE

- (a) A holder of an AMS license desiring to renew his license must accomplish and submit the following within 30 days prior to the expiry of his license:
 - (i) Application for the renewal of license duly notarized;
 - (ii) Certification or proof that the holder has rendered services during the previous 24 months in accordance with the provisions of this Part from an AMO, or any other person found acceptable in writing by the Authority, as applicable, in any case fully in compliance with this regulations.

2.7 AIR TRAFFIC CONTROLLER LICENSES, CATEGORIES AND RATINGS

2.7.1 APPLICABILITY

This section prescribes the requirements for the issue, renewal and re-issue of an air traffic controller license and ratings.

2.7.2 GENERAL

- (a) An applicant shall, before being issued with an air traffic controllers license, meet such requirements in respect of age, knowledge, experience, skill, medical fitness and language proficiency as are specified for that license or rating.
- (b) An applicant shall for renewal or re-issue of a license, rating or Authorization meet the requirements as are specified for that license, rating or Authorization.

2.7.3 AIR TRAFFIC CONTROLLER LICENSE

- (a) *Age*. The applicant for an air traffic controller license shall be not less than 21 years of age.
- (b) *Knowledge*. The applicant for an air traffic controller license shall
 - (1) receive an approved training course from an authorized instructor on the knowledge areas:
 - (i) Air law: rules and regulations relevant to the air traffic controller;
 - (ii) Air traffic control equipment: principles, use and limitations of equipment used in air traffic control;
 - (iii) General knowledge: principles of flight; principles of operation and functioning of aircraft, powerplants and systems; aircraft performances relevant to air traffic control operations;
 - (iv) Human performance: human performance relevant to air traffic control;
 - (v) Language: the language or languages nationally designated for use in air traffic control and ability to speak such language or languages without accent or impediment which would adversely affect radio communication;
 - (vi) Meteorology: aeronautical meteorology; use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry;
 - (vii) Navigation: principles of air navigation; principle, limitation and accuracy of navigation systems and visual aids;
 - (viii) Operational procedures: air traffic control, communication, radiotelephony and phraseology procedures (routine, non routine and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.
 - (2) have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge areas;
 - (ii) certifies that the person is prepared for the required knowledge test; and
 - (3) pass the required knowledge test.

- (c) *Experience* The applicant shall have completed an approved training course and not less than three months' satisfactory service engaged in the actual control of air traffic under the supervision of an appropriately rated air traffic controller. The experience requirements specified for air traffic controller ratings in Subpart 2.7.4 will be credited as part of the experience specified in this paragraph.
- (d) *Medical fitness*. The applicant for an air traffic controller license shall hold a current Class 3 Medical Certificate.
- (e) *Validity*. Subject to compliance with the requirement specified in this Part, the validity period of the license is five (5) years. For renewal of the license see Subpart 2.2.3.

2.7.4 AIR TRAFFIC CONTROLLER CATEGORIES/RATINGS

- (a) Air traffic controller ratings shall comprise the following categories:
 - (1) aerodrome control rating;
 - (2) approach control procedural rating;
 - (3) approach control surveillance rating;
 - (4) approach precision radar control rating;
 - (5) area control procedural rating; and
 - (6) area control surveillance rating.

Note: The World Meteorological Organization has specified requirements for personnel making meteorological observations which apply to air traffic controllers providing such a service.

2.7.5 AIR TRAFFIC CONTROLLER RATING REQUIREMENTS

- (a) *Knowledge*. The applicant for an air traffic controller rating shall
 - (1) receive an approved training course from an authorized instructor on the following subjects:
 - (i) aerodrome control rating:
 - (A) aerodrome layout; physical characteristics and visual aids;
 - (B) airspace structure;
 - (C) applicable rules, procedures and source of information;
 - (D) air navigation facilities;
 - (E) air traffic control equipment and its use;
 - (F) terrain and prominent landmarks;
 - (G) characteristics of air traffic;
 - (H) weather phenomena; and emergency and search and rescue plans;
 - (ii) approach control and area control ratings:
 - (A) airspace structure;
 - (B) applicable rules, procedures and source of information;
 - (C) air navigation facilities;
 - (D) air traffic control equipment and its use;

- (E) terrain and prominent landmarks;
 - (F) characteristics of air traffic and traffic flow;
 - (G) weather phenomena; and
 - (H) emergency and search and rescue plans; and
- (iii) approach radar, approach precision radar and area radar control ratings. The applicant shall meet the requirements specified in (ii) in so far as they affect the area of responsibility. and shall have demonstrated a level of knowledge appropriate to the privileges granted. in at least the following additional subjects:
- (A) principles, use and limitations of radar, other surveillance systems and associated equipment; and
 - (B) procedures for the provision of approach, precision approach or area radar control services, as appropriate, including procedures to ensure appropriate terrain clearance;
- (2) have received an endorsement for the knowledge test from an authorized instructor who:
- (i) conducted the training on the knowledge areas;
 - (ii) certifies that the person is prepared for the required knowledge test; and
- (3) pass the required knowledge test.
- (b) *Experience.*
- (1) The applicant for an air traffic controller license shall have:
- (i) satisfactorily completed an approved training course;
 - (ii) provided; satisfactorily, under the supervision of an appropriately rated air traffic controller:
 - (A) aerodrome control rating: an aerodrome control service, for a period of not less than 90 hours or one month, whichever is greater, at the unit for which the rating is sought;
 - (B) approach, approach radar, area or area radar control rating: the control service for which the rating is sought. for a period of not less than 180 hours or three months, whichever is greater, at the unit for which the rating is sought; and
 - (C) approach precision radar control rating: not less than 200 precision approaches of which not more than 100 shall have been carried out on a radar simulator approved for that purpose by the Authority. Not less than 50 of those precision approaches shall have been carried out at the unit and on the equipment for which the rating is sought; and
 - (iii) if the privileges of the approach radar control rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator (PPI) approaches on the surveillance equipment of the type in use at the unit for which the rating is sought and under the supervision of an appropriately rated approach radar controller.
- (2) The experience specified under (ii) shall have been completed within the 6-month period immediately preceding application.

- (c) *Skill.* The applicant shall have demonstrated by passing the required skill test, at a level appropriate to the privileges being granted, the skill, judgment and performance required to provide a safe, orderly and expeditious control service including the recognition and management of threats and errors.
- (d) *Privileges.*
- (1) Subject to compliance with the requirements specified in this Part, the privileges of the holder of an air traffic controller license
- (i) aerodrome control rating: to provide or to supervise the provision of aerodrome control service for the aerodrome for which the license holder is rated;
 - (ii) approach control rating: to provide or to supervise the provision of approach control service for the aerodrome or aerodromes for which the license holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service;
 - (iii) approach control rating: to provide or to supervise the provision of approach control service for the aerodrome or aerodromes for which the license holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service;
 - (iv) approach radar control rating: to provide and/or supervise the provision of approach control service with the use of radar or other surveillance systems for the aerodrome or aerodromes for which the license holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service:
 - (A) subject to compliance with the provisions of paragraph (b) (1) (iii), the privileges shall include the provision of surveillance radar approaches;
 - (v) approach precision radar control rating: to provide and/or supervise the provision of precision approach radar service at the aerodrome for which the license holder is rated;
 - (vi) area control rating: to provide and/or supervise the provision of area control service within the control area or portion thereof, for which the license holder is rated; and
 - (vii) area radar control rating: to provide and/or supervise the provision of area control service with the use of radar, within the control area or portion thereof. for which the license holder is rated.
- (2) Before exercising the privileges indicated in paragraph (d) (1), the license holder shall be familiar with all pertinent and current information.
- (e) *Validity of ratings.* A rating shall become invalid when an air traffic controller has ceased to exercise the privileges of the rating for a period of six (6) months. A rating shall remain invalid until the controller's ability to exercise the privileges of the rating has been re-established.

2.8 FLIGHT OPERATIONS OFFICER LICENSE

2.8.1 APPLICABILITY

This section prescribes the requirements for the issue, renewal and re-issue of a flight operations officer license.

2.8.2 GENERAL

- (a) An applicant shall, before being issued with a flight operations officer license; meet such requirements in respect of age; knowledge; experience; skill, medical fitness and language proficiency as are specified for that license.
- (b) An applicant shall for renewal or re-issue of a license meet the requirements as are specified for that license.

Note: The license can also be specified as Flight dispatcher license.

2.8.3 FLIGHT OPERATIONS OFFICER LICENSE

- (a) *Age.* The applicant for a flight operations officer license shall be not less than 21 years of age.
- (b) *Knowledge.* The applicant for a flight operations officer license shall
 - (1) receive an approved training course from an authorized instructor on the knowledge areas:
 - (i) Air Law: rules and regulations relevant to the holder of a flight operations officer license; appropriate air traffic services practices and procedures;
 - (ii) Aircraft general knowledge:
 - (A) principles of operation of airplane powerplants, systems and instruments
 - (B) operating limitations of airplanes and powerplants; and
 - (C) minimum equipment list;
 - (iii) Flight performance calculation and planning procedures:
 - (A) effects of loading and mass distribution on aircraft performance and flight characteristics; mass and balance calculations;
 - (B) operational flight planning; fuel consumption and endurance calculations; alternate airport selection procedures; en-route cruise control; extended range operation;
 - (C) preparation and filing of air traffic services flight plans; and
 - (D) basic principles of computer-assisted planning systems;
 - (iv) Human performance: human performance relevant to dispatch duties; including principles of threat and error management.
 - (v) Meteorology
 - (A) aeronautical meteorology; the moment 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;

- (B) interpretation and application of aeronautical meteorological reports, charts and forecasts, codes and abbreviations; use of, and procedures for obtaining, meteorological information;
 - (vi) Navigation: principles of air navigation with particular reference to instrument flight;
 - (vii) Operational procedures:
 - (A) use of aeronautical documentation;
 - (B) operational procedures for the carriage of freight and dangerous goods;
 - (C) procedures relating to aircraft accidents and incidents; emergency flight procedures;
 - (D) procedures relating to unlawful interference and sabotage of aircraft;
 - (viii) Principles of flight: principles of flight relating to the appropriate category of aircraft;
 - (ix) Radio communication: procedures for communicating with aircraft and relevant ground stations;
- (2) have received an endorsement for the knowledge test from an authorized instructor who:
- (i) conducted the training on the knowledge areas;
 - (ii) certifies that the person is prepared for the required knowledge test; and
- (3) pass the required knowledge test.
- (c) *Experience.*
- (1) The applicant for a flight operations officer license shall have gained the following experience:
- (i) a total of two (2) years' service in any one or in any combination of the capacities specified in (A) to (C) inclusive, provided that in any combination of experience the period serviced in any capacity shall be at least one year:
 - (A) a flight crew member in air transportation; or
 - (B) a meteorologist in an organization dispatching aircraft in air transportation;
or
 - (C) an air traffic controller; or a technical supervisor of flight operations officers or air transportation flight operations systems; or
 - (ii) at least one year as an assistant in the dispatching of air transport; or
 - (iii) have satisfactorily completed a course of approved training.
- (2) The applicant shall have served under the supervision of a flight operations officer for at least 90 working days within the 6 months immediately preceding the application.
- (d) *Skill.* The applicant shall have demonstrated the ability to:
- (1) make an accurate and operationally acceptable weather analysis from a series of daily weather maps and weather reports; provide an operationally valid briefing on weather conditions prevailing in the general neighborhood of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;

- (2) determine the optimum flight path for a given segment, and create accurate manual and/or computer generated flight plans;
 - (3) provide operating supervision and all other assistance to a flight in actual or simulated adverse weather conditions as appropriate to the duties of the holder of a flight operations officer license; and
 - (4) recognize and manage threat and errors.
- (e) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of a flight operations officer license shall be to serve in that capacity with responsibility for each area for which the applicant meets the requirements in CAR Part 8 and 9.
- (f) *Validity.* The validity period of the license is 5 year. A license shall become invalid when a flight operations officer has ceased to exercise the privileges of the license for a period of 6 months. A license shall remain invalid until the flight operations officer's ability to exercise the privileges of the license has been re-established. For renewal of the license see Subpart 2.2.3.

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2.9 AERONAUTICAL STATION OPERATOR LICENSES

2.9.1 APPLICABILITY

This section prescribes the requirements for the issue, renewal or re-issue of an aeronautical station operator license.

2.9.2 GENERAL

- (a) An applicant shall, before being issued with an aeronautical station operator license, meet such requirements in respect of age, knowledge, experience, skill, medical fitness and language proficiency as are specified for that license.
- (b) An applicant shall for renewal or re-issue of a license, rating or Authorization meet the requirements as are specified for that license.

2.9.3 AERONAUTICAL STATION OPERATOR LICENSE

- (a) *Age*. The applicant for an aeronautical station operator license shall be not less than 18 years of age.
- (b) *Knowledge*. The applicant for an aeronautical station operator license shall:
 - (1) receive and log ground training from an authorized instructor on the following subjects:
 - (i) General Knowledge: air traffic services provided within Republic of the Philippines;
 - (ii) Language: the language or languages nationally designated for use in air ground communications and ability to speak such language or languages without accent or impediment which would adversely affect radio communication;
 - (iii) Operational Procedures: radiotelephony procedures; phraseology; telecommunication network;
 - (iv) Rules and regulations: rules and regulations applicable to the aeronautical station operator;
 - (v) Telecommunication equipment: principles, use and limitations of telecommunication equipment in an aeronautical station
 - (2) have received an endorsement for the knowledge test from an authorized instructor who:
 - (i) conducted the training on the knowledge areas;
 - (ii) certifies that the person is prepared for the required knowledge test; and
 - (3) pass the required knowledge test.
- (c) *Experience*. The applicant for an aeronautical station operator license shall have:
 - (i) satisfactorily completed an approved training course within the 12-month period immediately preceding application, and have served satisfactorily under a qualified aeronautical station operator for not less than 2 months; or
 - (ii) satisfactorily served under a qualified aeronautical station operator for not less than 6 months during the 12-month period immediately preceding application.

- (d) *Skill.* The applicant for an aeronautical station operator license shall demonstrate; or have demonstrated; competency in:
- (i) operating the telecommunication equipment in use; and
 - (ii) transmitting and receiving radiotelephony messages with efficiency and accuracy.
- (e) *Privileges.* Subject to compliance with the requirements specified in this Part, the privileges of the holder of an aeronautical station operator license shall be to act as an operator in an aeronautical station. Before exercising the privileges of the license, the holder shall be familiar with all pertinent and current information regarding the types of equipment and operating procedures used at that aeronautical station.
- (f) *Validity:* The validity period of the license is five (5) years. A license shall become invalid when an aeronautical station operator has ceased to exercise the privileges of the license for a period of 6 months. A license shall remain invalid until the aeronautical station operator's ability to exercise the privileges of the license has been re-established. For renewal of the license see Subpart 2.2.3.

2.10 MEDICAL PROVISIONS FOR LICENSING**2.10.1 GENERAL**

- (a) Medical confidentiality shall be respected at all times.
- (b) All medical reports and records shall be securely held with accessibility restricted to authorized personnel.
- (c) When justified by operational considerations, the Chief of the Office of Flight Surgeon and Aviation Medicine shall determine to what extent pertinent medical information is presented to relevant officials of the Authority.

2.10.1.1 APPLICABILITY

- (a) This Section prescribes the requirements and procedures for issuing, renewing and re-issuing Class 1, Class 2 and Class 3 medical certificates.

2.10.1.2 MEDICAL FITNESS

- (a) The applicants for a flight crew license and air traffic controller license shall hold a medical certificate issued in accordance with this Part.
- (b) The flight crew members or air traffic controllers shall not exercise the privileges of their license unless they hold a current medical certificate appropriate to the license.

2.10.1.3 AVIATION MEDICAL EXAMINERS (AME)

- (a) Subject to compliance with the requirements specified in this Part, the Authority will designate and authorize qualified and licensed physicians in the practice of medicine, to be authorized as an AME and conduct medical examinations of fitness of applicants for the issue, renewal or re-issue of the licenses or ratings specified in this Part. AMEs may be designated outside of Republic of the Philippines.
- (b) AMEs shall have had, or shall receive:
 - (1) Basic training in aviation medicine for Class 2 and 3 medical examinations on the subjects listed in IS: 2.10.1.3 Appendix A, supported by a diploma or a certificate of completion; and
 - (2) Advance training in aviation medicine for Class 1 medical examinations on the subjects listed in IS: 2.10.1.3 Appendix B.
 - (3) Refresher training at regular intervals, not more than three years.
- (c) AMEs shall acquire practical knowledge and experience of the conditions in which the holders of licenses and ratings carry out their duties.
- (d) Prior to a designation, medical examiners shall demonstrate adequate competency in aviation medicine
- (e) The Authorization of an AME is valid for 3 years. The AME shall have completed at least 10 examinations for a medical certificate per year. Re-Authorization will be at the discretion of the Authority.
- (f) Having completed the medical examination of an applicant in accordance with this Section, the AME shall coordinate the results of the examination and submit a signed report to the Authority, detailing the results of the examination and evaluating the findings with regard to medical fitness. If the medical report is submitted to the

Authority in electronic format, adequate identification of the examiner shall be established.

- (g) The medical examiner shall be required to submit sufficient information to the Licensing Authority to enable that Authority to undertake Medical Assessments audits.

Note: The purpose of such auditing is to ensure that medical examiners meet applicable standards for good medical practice and aeromedical risk assessment. Guidance on aeromedical risk assessment is contained in the Handbook of Procedures of Aviation Medical Examination.

- (h) If the medical examination is carried out by a constituted group of AMEs, the head of the group will be appointed by the Authority, who will be responsible for coordinating the results of the examination, evaluating the findings with regard to the medical fitness, and signing the report.
- (i) The Authority will use the services of physicians experienced in the practice of aviation medicine, when it is necessary to evaluate reports submitted to the Authority by medical examiners.
- (j) The Authority retains the right to reconsider any action of an AME.
- (k) The competence of a medical examiner shall be evaluated periodically by the medical assessor.

2.10.1.4 AVIATION MEDICAL EXAMINATIONS

Applicants for licenses or ratings for which medical fitness is prescribed shall sign and furnish to the AME a declaration stating whether they have previously undergone such an examination and, if so, the date, place and result of the last examination. They shall indicate to the examiner whether a medical certificate has previously been refused, revoked or suspended and, if so, the reason for such refusal, revocation or suspension.

- (a) Each applicant for a medical certificate shall provide the AME with a personally certified statement of medical facts concerning personal, familial and hereditary history.
- (b) Each applicant for a medical certificate shall produce proof of identification.
- (c) Any false declaration to an AME made by an applicant for a license or rating shall be reported to the Authority for such action as may be considered appropriate.
- (d) The applicant shall complete the appropriate application form as detailed in IS: 2.10.1.4.

2.10.1.5 SPECIAL CIRCUMSTANCES

- (a) If the medical requirements prescribed in Part 2 for a particular license are not met, the appropriate medical certificate will not be issued, renewed or re-issued unless the following conditions are fulfilled:
- (1) Accredited medical conclusion indicates that in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise. Is such that exercise of the privileges of the license applied for is not likely to jeopardize flight safety;
 - (2) Relevant ability, skill and experience of the applicant and operational conditions have been given due consideration; and

- (3) The license is endorsed by the Authority with any special limitation or limitations when the safe performance of the license holder's duties is dependent on compliance with such limitation or limitations.
- (b) The AME shall report to the Authority any individual case where, in the AME's judgment, an applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the license being applied for, or held, is not likely to jeopardize flight safety.

2.10.1.6 DECREASE OF MEDICAL FITNESS

- (a) Holders of licenses provided for in this Part shall not exercise the privileges of their licenses and related ratings at any time when they are aware of any decrease in their medical fitness which might render them unable to safely and properly exercise these privileges.
- (b) The Authority shall ensure that license holders are provided with clear guidelines on medical conditions that may be relevant to flight safety and when to seek clarification or guidance from a medical examiner or Licensing Authority.

Note: Guidance on physical and mental conditions and treatment that are relevant to flight safety about which information may need to be forwarded to the Licensing Authority, is contained in the Handbook of Procedures of Aviation Medical Examination.

- (c) Holders of licenses provided for in this Part shall not exercise the privileges of their licenses and related ratings during any period in which their medical fitness has, from any cause, decreased to an extent that would have prevented the issue or renewal of their Medical Assessment.

2.10.1.7 USE OF PSYCHOACTIVE SUBSTANCES

- (a) Holders of licenses provided for in this Part shall not exercise the privileges of their licenses and related ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges.
- (b) Holders of licenses provided for in this Part shall not engage in any problematic use of substances.
- (c) Holders of licenses provided for in this Part who engage in any kind of problematic use of substances shall be identified and removed from their safety-critical functions. Return to the safety-critical functions may be considered after successful treatment or, in cases where no treatment is necessary, after cessation of the problematic use of substances and upon determination that the person's continued performance of the function is unlikely to jeopardize safety.
- (d) Random tests for effects of alcohol or psychoactive substances will be conducted by the Authority.

Note: See ICAO Manual on Prevention of Problematic Use of Substances in the Aviation Workplace (Doc 924)

2.10.1.8 MEDICAL CERTIFICATES

- (a) The medical certificate shall be in a form and manner prescribed by the Authority. The items required on the license are indicated in IS: 2.10.1.8.

(b) *Issue of medical certificates*

- (1) A medical certificate will be issued to any person who meets the medical requirements prescribed in this Subpart, based on medical examination and evaluation of the applicant's history and condition.
 - (i) The Authority will issue the Class 1 medical certificate.
 - (ii) The issue of Class 2 and 3 medical certificates may be delegated to the authorized Aviation Medical Examiner.
- (2) Each person to be issued a medical certificate shall undergo a medical examination based on the physical and mental requirements contained in this Subpart.
- (3) Any person who does not meet the medical requirements of this Subpart may apply for the discretionary issuance of a certificate under Subpart 2.10.1.5.

(c) *Validity:*

- (1) The validity period of the medical certificate is:
 - (i) 6 months for the Class 1 for ATPL.
 - (ii) 12 months for CPL, MPL, flight engineer license, flight navigator license and FOO license.
 - (iii) 24 months for the Class 2 for the PPL, SPL, glider pilot license and free balloon pilot license; and Class 3 for air traffic controller license.
 - (iv) When the holders have passed their 40th birthday:
 - (A) the 12-month interval specified for CPL, MPL, flight engineer license and flight navigator license will be reduced to 6 months; and
 - (B) the 24-month interval specified for the PPL, SPL, glider pilot license, free balloon pilot license and air traffic controller license will be reduced to 12 months.
 - (v) The period of validity of a medical certificate may be extended, at the discretion of the Licensing Authority, up to 45 days.
- (2) For initial issuance of the medical certificate, the period of validity shall begin on the date the medical examination is performed. For any renewal or re-issuance of a medical certificate, based on a medical examination that takes place during the period of validity of the current medical certificate, but no more than 28 days before its expiry date, the new period of validity shall begin on that date. For any renewal or re-issuance, based on a medical examination taking place after the expiry date or earlier than 28 days before the expiry date, the new period of validity shall begin on the date of the examination.
- (3) The period of validity of a Medical Assessment may be reduced when clinically indicated.

(d) *Renewal or re-issue of a medical certificate*

- (1) The level of medical fitness to be met for the renewal or re-issue of a medical certificate shall be same as that for the initial certificate except where otherwise specifically stated.
- (2) The renewal of the Class 1, 2 and 3 medical certificates may be delegated to the authorized Aviation Medical Examiner.
- (3) Re-issue of the Class 1 medical certificate will be done by the Authority.

(4) Re-issue of the Class 2 and 3 medical certificate may be delegated to the authorized Aviation Medical Examiner.

(e) *Limitation or denial*

(1) The Authority may for medical reasons justified and notified to the applicant limit or deny a medical certificate.

(f) *Suspension or revocation of a medical certificate*

(1) The Authority may in accordance with Subpart 2.2.10 suspend or revoke a medical certificate issued, if it is established that an applicant or a certificate holder has not met, or no longer meets the requirements of Part 2.

2.10.2 MEDICAL REQUIREMENTS

2.10.2.1 REQUIREMENTS FOR MEDICAL CERTIFICATES

2.10.2.1.1 GENERAL

An applicant for a Medical Certificate issued in accordance with this Part, shall undergo a medical examination based on the following requirements:

- (a) physical and mental;
- (b) visual and color perception; and
- (c) hearing.

2.10.2.1.2 PHYSICAL AND MENTAL REQUIREMENTS

An applicant for any class of Medical Assessment shall be required to be free from:

- (a) any abnormality; congenital or acquired; or
- (b) any active, latent, acute or chronic disability; or
- (c) any wound, injury or sequelae from operation; or
- (d) any effect or side-effect of any prescribed or non-prescribed therapeutic medication taken; such as would entail a degree of functional incapacity which is likely to interfere with the safe operation of an aircraft or with the safe performance of duties.

2.10.2.1.3 VISUAL ACUITY TEST REQUIREMENTS

- (a) Visual acuity tests must be conducted in an environment with a level of illumination that corresponds to ordinary office illumination (30-60cd/m²).
- (b) Visual acuity must be measured by means of a series of Landolt rings or similar optotypes, placed at a distance from the applicant appropriate to the method of testing adopted.

2.10.2.1.4 COLOR PERCEPTION REQUIREMENTS

- (a) The applicant shall be required to demonstrate the ability to perceive readily those colors the perception of which is necessary for the safe performance of duties.
- (b) The applicant shall be tested for the ability to correctly identify a series of pseudoisochromatic plates in daylight or in artificial light of the same color

temperature such as that provided by CIE standard illuminants C or D2 as specified by the International Commission of Illumination (CIE).

- (c) An applicant obtaining a satisfactory result as prescribed by the Authority shall be assessed as fit. An applicant failing to obtain a satisfactory result in such a test shall be assessed as unfit unless able to readily distinguish the colors used in air navigation and correctly identify aviation colored lights. Applicants who fail to meet these criteria shall be assessed as unfit except for Class 2 assessment with the following restriction: valid daytime only.

2.10.2.1.5 HEARING REQUIREMENTS

Hearing requirements are established in addition to the ear examination conducted during the medical examination for the physical and mental requirements.

- (a) The applicant shall be required to be free from any hearing defect that would interfere with the safe performance of duties in exercising the privileges of the license.

Note 1: The reference zero for calibration of pure-tone audiometers used for applying Subparts 2.10.2.2.4 (a) and 2.10.2.4.4 (a) is that of the International Organization for Standardization (ISO) Recommendation R389, 1964.

Note 2: The frequency composition of the background noise referred to in Subparts 2.10.2.4 (a)(1) and 2.10.2.4.4.(a)(1) is defined only to the extent that the frequency range 600 to 4 800 Hz is adequately represented.

Note 3: In the choice of speech material, aviation-type material is not to be used exclusively for the above tests. Lists of phonetically balanced words in use by a number of Contracting States have given satisfactory results.

Note 4: A quiet room for the purposes of testing the hearing requirements is a room in which the intensity of the background noise is less than 50 dB when measured on 'slow response of an 'A"-weighted sound level meter.

Note 5: For the purposes of hearing requirements, the sound level of an average conversational voice at point of output ranges from 85 to 95 dB.

2.10.2.2 CLASS 1 MEDICAL CERTIFICATE

2.10.2.2.1 CERTIFICATE ISSUE AND RENEWAL

- (a) An applicant for a CPL, MPL, ATPL, Flight Engineer or Flight Navigator license shall undergo an initial medical examination for the issue of a Class 1 Medical Certificate.
- (b) Except where otherwise stated in this subpart, holders of CPL, MPL, ATPL, Flight Engineer or Flight Navigator license shall have their Class 1 Medical Certificate renewed at intervals not exceeding those specified in Subpart 2.10.1.8 (c).
- (c) A Class 1 Medical Certificate will be issued when the applicant complies with the requirements of this Part
- (d) In alternate years, for Class 1 applicants under 40 years of age, the Licensing Authority may allow medical examiners to omit certain routine examination items related to the assessment of physical fitness, whilst increasing the emphasis on health education and prevention of ill health.

2.10.2.2.2 PHYSICAL AND MENTAL REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.
- (b) The applicant shall have no established medical history or clinical diagnosis of:
- (1) a psychosis;
 - (2) alcoholism;
 - (3) drug dependence;
 - (4) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
 - (5) a mental abnormality, or neurosis of a significant degree; such as might render the applicant unable to safely exercise the privileges of the license applied for or held, unless accredited medical conclusion indicates that in special circumstances, the applicant's failure to meet the requirement is such that exercise of the privileges of the license applied for is not likely to jeopardize flight safety.
 - (6) a depression being treated with antidepressant medication, unless the medical assessor, having access to the details of the case concerned, considers the applicant's condition as unlikely to interfere with the safe exercise of the applicant's license and rating privileges.
- (c) The applicant should have no established medical history or clinical diagnosis of any mental abnormality, personality disorder or neurosis which according to accredited medical conclusion, makes it likely that within two years of the examination the applicant will be unable to safely exercise the privileges of the license or rating applied for or held.

Note: A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

- (d) The applicant shall have no established medical history or clinical diagnosis of any of the following:
- (1) a progressive or non-progressive disease of the nervous system, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's license and rating privileges;
 - (2) epilepsy;
 - (3) any disturbance of consciousness without satisfactory medical explanation of cause;
- (e) Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's license and rating privileges shall be assessed as unfit.
- (f) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's license and rating privileges. A history of proven myocardial infarction shall be disqualifying.

Note: Such commonly occurring conditions as respiratory arrhythmia, occasional extra systoles which disappear on exercise, increase of pulse rate from excitement or exercise, or a slow pulse not associated with auriculoventricular dissociation may be regarded as being "within -normal" limits.

- (1) Electrocardiography shall form part of the heart examination for the first issue of a license and shall be included in re-examination of applicants between the ages of 30 and 40 no less frequently than every two years, and thereafter no less frequently than annually.

Note 1: The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.

Note 2: Guidance on resting and exercise electrocardiography is published in the Manual of Civil Aviation Medicine (Doc 8984).

- (2) An applicant who has undergone coronary bypass, grafting or angioplasty (with or without stenting) or other cardiac intervention or who suffers from any other potentially incapacitating cardiac condition shall be assessed unfit, unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practices and is assessed not likely to interfere with the safe exercise of the applicant's license or rating privileges.

- (g) The systolic and diastolic blood pressures shall be within normal limits.

Note 1: The use of drugs for control of high blood pressure is disqualifying except for those drugs the use of which, according to accredited medical conclusion is compatible with the safe exercise of the applicant's license and rating privileges.

Note 2: Extensive guidance on the subject is published in the Manual of Civil Aviation Medicine (Doc 8984).

- (h) There shall be no significant functional, nor structural abnormality of the circulatory tree.
- (i) There shall be no acute disability of the lungs, nor any active disease of the structures of the lungs, mediastinum or pleura. Radiography shall form a part of the medical examination in all doubtful clinical cases.

(1) Radiography should form a part of the initial chest examination and should be repeated periodically thereafter.

- (j) Any extensive mutilation of the chest wall with collapse of the thoracic cage and sequelae of surgical procedures resulting in decreased respiratory efficiency at altitude shall be assessed as unfit.
- (k) Cases of chronic obstructive pulmonary disease should be assessed as unfit if the condition is causing symptoms.
- (l) Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

Note 1: Guidance material on assessment of respiratory diseases is published in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2: Guidance material on hazards of the medications is published in the Manual of Civil Aviation Medicine (Doc 8984).

- (m) Cases of disabling disease with important impairment of function of the gastrointestinal tract or its adnexae shall be assessed as unfit.
- (n) The applicant shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.

- (o) Any sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, likely to cause incapacity in flight, in particular any obstructions due to structure or compression shall be assessed as unfit.
 - (1) An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexae, which has involved a total or partial excision or a diversion of any of these organs should be assessed as unfit until such time as the medical Authority designated for the purpose by Republic of the Philippines and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- (p) Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe exercise of the applicant's license and rating privileges shall be assessed as unfit.
- (q) Cases of insulin-treated diabetes mellitus shall be assessed as unfit. Proven cases of non-insulin-treated diabetes mellitus shall be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral antidiabetic medication, the use of which, according to the accredited medical conclusion are compatible with the safe exercise of the applicant's license and rating privileges.
- (r) Cases of severe and moderate enlargement of the spleen persistently below the costal margin shall be assessed as unfit.
 - (1) Possession of the sickle cell trait should not be a reason for disqualification unless there is positive medical evidence to the contrary.
 - (2) Cases in (r) due to a transient condition should be assessed as only temporarily unfit.
- (t) Cases presenting any signs of organic disease of the kidney shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit. Urine examination shall form part of the medical examination and shall contain no abnormal element considered by the medical examiner to be of pathological significance. Cases of affections of the urinary passages and of the genital organs shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit.
- (u) Any sequelae of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacity, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Compensated nephrectomy without hypertension or uremia may be assessed as fit.
 - (1) An applicant who has undergone a major surgical operation on the urinary system which has involved a total or partial excision or a diversion of any of its organs should be assessed as unfit until such time as the medical Authority designated for the purpose by Republic of the Philippines and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- (v) An applicant for the first issue of a license who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the AME, that the applicant has undergone adequate treatment.

- (w) Pregnancy shall be cause of temporary unfitness.
 - (1) In the absence of significant abnormalities, accredited medical conclusion may indicate fitness during the middle months of pregnancy.
- (x) Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her license until she has undergone reexamination and has been assessed as fit.
- (y) Any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or acquired disease shall be assessed as unfit. Functions after-effects of lesion affecting the bones, joints, muscles or tendons and certain anatomical defects compatible with the safe exercise of the applicants license and rating privileges may be assessed as fit.
- (z) Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's license or rating privileges.
- (aa) There shall be:
 - (1) no active pathological process, acute or chronic, of the internal ear or of the middle ear;
 - (2) no unhealed (unclosed) perforation of the tympanic membranes. A single dry perforation need not render the applicant unfit. Licenses shall not be issued or renewed in these circumstances unless the appropriate hearing requirements in Subpart 2.10.2.2.4 are complied with;
 - (3) no permanent obstruction of the Eustachian tubes;
 - (4) no permanent disturbances of the vestibular apparatus. Transient conditions may be assessed as temporarily unfit.

Note: The details of the hearing requirements are set out in Subpart 2.10.2.4.
- (bb) There shall be free nasal air entry on both sides. There shall be no serious malformation, nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract. Cases of speech defects and stuttering shall be assessed as unfit.

2.10.2.2.3 VISUAL REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The function of the eyes and their adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's license and rating privileges.
- (b) Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:
 - (1) such correcting lenses are worn during the exercise of the privileges of the license or rating applied for or held; and
 - (2) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's license.

Note: An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case an ophthalmic report is required at the discretion of the Authority. Both uncorrected and correct visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity; any decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

- (c) Applicants may use contact lenses to meet the requirement of (b) provided that:
- (1) the lenses are monofocal and non-tinted;
 - (2) the lenses are well tolerated; and
 - (3) a pair of suitable correcting spectacles is kept readily available during the exercise of the license privileges.

Note: Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

- (d) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses. *Note: If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.*

- (1) Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 shall be required to provide a full ophthalmic report prior to initial Medical certificate and every five years thereafter.

Note 1: The purpose of the required ophthalmic examination is (1) to ascertain normal visual performance and (2) to identify any significant pathology.

Note 2: Guidance on the assessment of monocular applicants under the provisions of Subpart 2.10.1.5 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

- (e) Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their license and rating privileges.
- (f) The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by paragraph (b), the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correcting already prescribed in accordance with (b); if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the license. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1: N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).

Note 2: Any applicant who needs near correction to meet this requirement will require 'look-over', bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable.

Note 3: Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

- (1) When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.
- (g) The applicant shall be required to have normal fields of vision.
- (h) The applicant shall be required to have normal binocular function.

Note: Defective stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia may not be disqualifying.

2.10.2.2.4 HEARING REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The applicant, tested on a pure-tone audiometer at first issue of license, not less than once every five years up to the age of 40 years, and thereafter not less than once every three years, shall not have a hearing loss in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz. However, an applicant with a hearing loss greater than the above may be declared fit provided that:
- (1) the applicant has a hearing performance in each ear separately equivalent to that of a normal person, against a background noise that will simulate the masking properties of flight deck noise upon speech and beacon signals; and
- (2) the applicant has the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2m from the examiner, with the back turned to the examiner.
- (b) Alternatively, other methods providing equivalent results to those specified in paragraph (a) shall be used.

2.10.2.3 CLASS 2 MEDICAL CERTIFICATE

2.10.2.3.1 CERTIFICATE ISSUE AND RENEWAL

- (a) An applicant for a PPL, SPL, FOO and a Glider Pilot license or a Free Balloon Pilot license shall undergo an initial medical examination for the issue of a Class 2 Medical Certificate.
- (b) Except where otherwise stated in this subpart, holders of a PPL, SPL, FOO and a Glider Pilot license or a Free Balloon Pilot license shall have their Class 2 Medical Certificate renewed at intervals not exceeding those specified in Subpart 2.10.1.8 (c).
- (c) A Class 2 Medical Certificate will be issued when the applicant complies with the requirements of this Part.

2.10.2.3.2 PHYSICAL AND MENTAL REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.
- (b) The applicant shall have no established medical history or clinical diagnosis of:
- (1) a psychosis;
 - (2) alcoholism;
 - (3) drug dependence;
 - (4) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
 - (5) a mental abnormality, or neurosis of a significant degree;
 - (6) such as might render the applicant unable to safely exercise the privileges of the license applied for or held, unless accredited medical conclusion indicates that in special circumstances, the applicant's failure to meet the requirement is such that exercise of the privileges of the license applied for is not likely to jeopardize flight safety; and
 - (7) a depression being treated with antidepressant medication, unless the medical assessor, having access to the details of the case concerned, considers the applicant's condition as unlikely to interfere with the safe exercise of the applicant's license and rating privileges.
- (c) The applicant should have no established medical history or clinical diagnosis of any mental abnormality, personality disorder or neurosis which according to accredited medical conclusion, makes it likely that within two years of the examination the applicant will be unable to safely exercise the privileges of the license or rating applied for or held.

Note: A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

- (d) The applicant shall have no established medical history or clinical diagnosis of any of the following:
- (1) a progressive or non-progressive disease of the nervous system, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's license and rating privileges;
 - (2) epilepsy;
 - (3) any disturbance of consciousness without satisfactory medical explanation of cause;
- (e) Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's license and rating privileges shall be assessed as unfit.
- (f) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's license and rating privileges. A history of proven myocardial infarction shall be disqualifying.

Note: Such commonly occurring conditions as respiratory arrhythmia, occasional extrasystoles which disappear on exercise, increase of pulse rate from excitement or exercise, or a slow pulse not associated with auriculoventricular dissociation may be regarded as being "within normal" limits.

- (1) Electrocardiography should form part of the heart examination for the first issue of a license, at the first re-examination after the ages 30 and 40, no less frequently than every two years, and thereafter no less frequently than annually.

Note 1: The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify *disqualification without further thoroughcardiovascular investigation*.

Note 2: *Guidance on resting and exercise electrocardiography is published in the Manual of Civil Aviation Medicine (Doc 8984).*

- (2) An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practices and is assessed not likely to interfere with the safe exercise of the applicant's license or rating privileges.
- (g) The systolic and diastolic blood pressures shall be within normal limits.
- Note 1: *The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which, according to accredited medical conclusion is compatible with the safe exercise of the applicant's license and rating privileges.*
- Note 2: *Extensive guidance on the subject is published in the Manual of Civil Aviation Medicine (Doc 8984).*
- (h) There shall be no significant functional nor structural abnormality of the circulatory tree. The presence of varicosities does not necessarily entail unfitness.
- (i) There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. Radiography shall form a part of the medical examination in all doubtful clinical cases.
- (1) Radiography should form a part of the initial chest examination and should be repeated periodically thereafter.
- (j) Any extensive mutilation of the chest wall with collapse of the thoracic cage and sequelae of surgical procedures resulting in decreased respiratory efficiency at altitude shall be assessed as unfit.
- (k) Cases of chronic obstructive pulmonary disease should be assessed as unfit if the condition is causing symptoms.
- (l) Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.
- Note 1: *Guidance material on assessment of respiratory diseases is published in the Manual of Civil Aviation Medicine (Doc 8984).*
- Note 2: *Guidance material on hazards of the medications is published in the Manual of Civil Aviation Medicine (Doc 8984).*
- (m) Cases of disabling disease with important impairment of function of the gastrointestinal tract or its adnexae shall be assessed as unfit.
- (n) The applicant shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.
- (o) Any sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, likely to cause incapacity in flight, in particular any obstructions due to structure or compression shall be assessed as unfit.

- (1) An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexae, which has involved a total or partial excision or a diversion of any of these organs should be assessed as unfit until such time as the medical Authority designated for the purpose by Republic of the Philippines and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- (p) Cases of insulin-treated diabetes mellitus shall be assessed as unfit. Proven cases of diabetes mellitus shown to be satisfactorily controlled without the use of any antidiabetic drug may be assessed as fit. The use of anti-diabetic drugs for the control of diabetes mellitus is disqualifying except for those oral drugs administered under conditions permitting appropriate medical supervision and control and which according to accredited medical conclusion, are compatible with the safe exercise of the applicant's license and rating privileges.
- (q) Cases of severe and moderate enlargement of the spleen persistently below the costal margin shall be assessed as unfit.
- (r) Cases of significant localized and generalized enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit, except in cases where accredited medical conclusion indicates that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges.
 - (1) Possession of the sickle cell trait should not be a reason for disqualification unless there is positive medical evidence to the contrary.
 - (2) Cases in (q) due to a transient condition should be assessed as only temporarily unfit.
- (s) Cases presenting any signs of organic disease of the kidney shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit. Urine examination shall form part of the medical examination and shall contain no abnormal element considered by the medical examiner to be of pathological significance. Cases of affections of the urinary passages and of the genital organs shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit.
- (t) Any sequelae of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacity, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Compensated nephrectomy without hypertension or uremia may be assessed as fit.
 - (1) An applicant who has undergone a major surgical operation on the urinary system which has involved a total or partial excision or a diversion of any of its organs should be assessed as unfit until such time as the medical Authority designated for the purpose by the Republic of the Philippines and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- (u) An applicant for the first issue of a license who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the AME, that the applicant has undergone adequate treatment.
- (v) Applicants who have a history of severe menstrual disturbances that have proved unamenable to treatment and that are likely to interfere with the safe exercise of the applicant's license and rating privileges shall be assessed as unfit.
 - (1) Applicants who have undergone gynaecological operations should be considered individually.

- (w) Pregnancy shall be cause of temporary unfitness.
- (1) In the absence of significant abnormalities, accredited medical conclusion may indicate fitness during the middle months of pregnancy.
- (x) Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her license until she has undergone reexamination and has been assessed as fit.
- (y) Any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or acquired disease shall be assessed as unfit. Certain qualifying functional after-effects of lesion affecting the bones, joints, muscles or tendons and certain anatomical defects compatible with the safe exercise of the applicants license and rating privileges may be assessed as fit.
- (z) Those who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's license or rating privileges.
- (aa) There shall be:
- (1) no active pathological process, acute or chronic, of the internal ear or of the middle ear;
- (2) no permanent disturbances of the vestibular apparatus. Transient conditions may be assessed as temporarily unfit.
- Note: The details of the hearing requirements are set out in 2.10.2.3.4.*
- (bb) There shall be no serious malformation nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract.

2.10.2.3.3 VISUAL REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The function of the eyes and their adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's license and rating privileges.
- (b) Distant visual acuity with or without correction shall be 6/12 or better in each eye separately, and binocular visual acuity shall be 6/9 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:
- (1) such correcting lenses are worn during the exercise of the privileges of the license or rating applied for or held; and
- (2) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's license.

Note: An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case an ophthalmic report is required at the discretion of the Authority. Both uncorrected and correct visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity; any decrease in best

corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

- (c) Applicants may use contact lenses to meet the requirement of paragraph (b) provided that:

- (1) the lenses are monofocal and non-tinted;
- (2) the lenses are well tolerated; and
- (3) a pair of suitable correcting spectacles is kept readily available during the exercise of the license privileges.

Note: Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

- (d) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

Note: If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

- (e) Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 should be required to provide a full ophthalmic report prior to initial Medical Certificate and every five years thereafter.

Note 1: The purpose of the required ophthalmic examination is (1) to ascertain normal visual performance; and (2) to identify any significant pathology.

Note 2: Guidance on the assessment of monocular applicants under the provisions of Subpart 2.10.1.5 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

- (f) Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their license and rating privileges.

- (g) The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by (b), the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correcting already prescribed in accordance with (b); if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the license. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1: N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).

Note 2: Any applicant who needs near correction to meet this requirement will require "look-over", bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable.

Note 3: Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

- (1) When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.
- (h) The applicant shall be required to have normal fields of vision.
- (i) The applicant shall be required to have normal binocular function.

Note: Defective stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia may not be disqualifying.

2.10.2.3.4 HEARING REQUIREMENTS

- (a) The medical examination shall be based on the following requirements:
 - (1) The applicant tested on a pure-tone audiometer at first issue of license, and every three (3) years after the age of 50 years, shall not have a hearing loss in either ear separately, of more than 35 dB at any of the frequencies 500, 1000 or 2000 Hz, or more than 50 dB at 3000 Hz. However, an applicant with a hearing loss greater than the above may be declared fit provided that:
 - (i) the applicant has hearing performance in each ear separately equivalent to that of a normal person, against a background noise that will simulate the masking properties of flight deck noise upon speech and beacon signals; and
 - (ii) the applicant has the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2m from the examiner, with the back turned to the examiner.
 - (2) Alternatively, other methods providing equivalent results to those specified in paragraph (1) shall be used.

2.10.2.4 CLASS 3 MEDICAL CERTIFICATE

2.10.2.4.1 CERTIFICATE ISSUE AND RENEWAL

- (a) An applicant for an Air Traffic Controller license shall undergo an initial medical examination for the issue of a Class 3 Medical Certificate.
- (b) Except where otherwise stated in this subpart, holders of an Air Traffic Controller license shall have their Class 3 Medical Certificate renewed at intervals not exceeding those specified in Subpart 2.10.1.8 (c).
- (c) A Class 3 Medical Certificate will be issued when the applicant complies with the requirements of this Part.

2.10.2.4.2 PHYSICAL AND MENTAL REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable to perform assigned duties safely.
- (b) The applicant shall have no established medical history or clinical diagnosis of:
 - (1) a psychosis;
 - (2) alcoholism;
 - (3) drug dependence,

- (4) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
- (5) a mental abnormality, or neurosis of a significant degree,
 - (i) such as might render the applicant unable to safely exercise the privileges of the license applied for or held, unless accredited medical conclusion indicates that in special circumstances, the applicant's failure to meet the requirement is such that exercise of the privileges of the license applied for is not likely to jeopardize flight safety.
- (c) The applicant should have no established medical history or clinical diagnosis of any mental abnormality, personality disorder or neurosis which according to accredited medical conclusion, makes it likely that within two years of the examination the applicant will be unable to safely exercise the privileges of the license or rating applied for or held.

Note: A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

- (d) The applicant shall have no established medical history or clinical diagnosis of any of the following:
 - (1) a progressive or non-progressive disease of the nervous system, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's license and rating privileges;
 - (2) epilepsy;
 - (3) any disturbance of consciousness without satisfactory medical explanation of cause;
- (e) Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's license and rating privileges shall be assessed as unfit.
- (f) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's license and rating privileges. An applicant indicated by accredited medical conclusion to have made a satisfactory recovery from myocardial infarction may be assessed as fit.

Note: Such commonly occurring conditions as respiratory arrhythmia, occasional extrasystoles which disappear on exercise, increase of pulse rate from excitement or exercise, or a slow pulse not associated with auriculoventricular dissociation may be regarded as being within "normal" limits.

- (1) Electrocardiography shall form part of the heart examination for the first issue of a license, and shall be included in re-examination of the applicant between the ages 30 and 40 no less frequently than every two years, and thereafter no less frequently than annually.

Note 1: The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.

Note 2: Guidance on resting and exercise electrocardiography is published in the Manual of Civil Aviation Medicine (Doc 8984).

- (2) An applicant who has undergone coronary bypass, grafting or angioplasty (with or without stenting) or other cardiac intervention or who suffers from any other potentially incapacitating cardiac condition shall be assessed unfit, unless the applicant's cardiac condition has been investigated and evaluated in accordance

with best medical practices and is assessed not likely to interfere with the safe exercise of the applicant's license or rating privileges.

- (g) The systolic and diastolic blood pressures shall be within normal limits.

Note 1: The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which, according to accredited medical conclusion is compatible with the safe exercise of the applicant's license and rating privileges.

Note 2: Extensive guidance on the subject is published in the Manual of Civil Aviation Medicine (Doc 8984).

- (h) There shall be no significant functional nor structural abnormality of the circulatory tree. The presence of varicosities does not necessarily entail unfitness.

- (i) There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. Radiography shall form a part of the medical examination in all doubtful clinical cases.

(1) Radiography should form a part of the initial chest examination and should be repeated periodically thereafter.

- (j) Cases of chronic obstructive pulmonary disease should be assessed as unfit if the condition is causing symptoms.

- (k) Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

Note 1: Guidance material on assessment of respiratory diseases is published in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2: Guidance material on hazards of the medications is published in the Manual of Civil Aviation Medicine (Doc 8984).

- (l) Cases of disabling disease with important impairment of function of the gastrointestinal tract or its adnexae shall be assessed as unfit.

- (m) The applicant shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.

- (n) Any sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, likely to cause incapacity in flight, in particular any obstructions due to structure or compression shall be assessed as unfit.

- (o) Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe exercise of the applicant's license and rating privileges shall be assessed as unfit.

- (p) Cases of insulin treated diabetes mellitus shall be assessed as unfit. Proven cases of diabetes mellitus shown to be satisfactorily controlled without the use of any antidiabetic drug may be assessed as fit. The use of anti-diabetic drugs for the control of diabetes mellitus is disqualifying except for those oral drugs administered under conditions permitting appropriate medical supervision and control and which according to accredited medical conclusion, are compatible with the safe exercise of the applicant's license and rating privileges.

- (q) Cases of significant localized and generalized enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit, except in cases where accredited medical conclusion indicates that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges.

(1) Cases in (q) due to a transient condition should be assessed as only temporarily unfit.

- (r) Cases presenting any signs of organic disease of the kidney shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit. Urine examination shall form part of the medical examination and shall contain no abnormal element considered by the medical examiner to be of pathological significance. Cases of affections of the urinary passages and of the genital organs shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit.
- (s) Any sequelae of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacity, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Compensated nephrectomy without hypertension or uremia may be assessed as fit.
- (t) An applicant for the first issue of a license who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the AME, that the applicant has undergone adequate treatment.
- (u) Applicants who have a history of severe menstrual disturbances that have proved unamenable to treatment and that are likely to interfere with the safe exercise of the applicant's license and rating privileges shall be assessed as unfit.
- (v) Pregnancy shall be cause of temporary unfitness:
 - (1) In the absence of significant abnormalities, accredited medical conclusion may indicate fitness during the middle months of pregnancy.
 - (2) Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her license until she has undergone reexamination and has been assessed as fit.
- (w) Any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or acquired disease shall be assessed as unfit. Functional after-effects of lesion affecting the bones, joints, muscles or tendons and certain anatomical defects compatible with the safe exercise of the applicants license and rating privileges may be assessed as fit.
- (x) Those who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's license or rating privileges.

Note: Early diagnosis and active management of HIV disease with antiretroviral therapy reduces morbidity and improves prognosis and thus increases the likelihood of a fit assessment.

- (y) There shall be:
 - (1) no active pathological process, acute or chronic, of the internal ear or of the middle ear;
 - (2) no unhealed (unclosed) perforations of the tympanic membrane. A single dry perforation need not render the applicant unfit. License shall not be issued or renewed in these circumstances unless the appropriate hearing requirements in Subpart 2.10.2.2.4 are complied with;
 - (3) no permanent obstruction of the Eustachian tubes; and
 - (4) no permanent disturbances of the vestibular apparatus. Transient conditions may be assessed as temporarily unfit.

Note: The details of the hearing requirements are set out in Subpart 2.10.2.4.4.

- (z) There shall be no serious malformation, nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract. Cases of speech defects and stuttering shall be assessed as unfit.

2.10.2.4.3 VISUAL REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The function of the eyes and their adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's license and rating privileges.
- (b) Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:
- (1) such correcting lenses are worn during the exercise of the privileges of the license or rating applied for or held; and
 - (2) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's license.

Note: An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise in which case an ophthalmic report is required at the discretion of the Authority. Both uncorrected and correct visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity; any decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

- (c) Applicants may use contact lenses to meet the requirement of (b) provided that:
- (1) the lenses are monofocal and non-tinted;
 - (2) the lenses are well tolerated; and
 - (3) a pair of suitable correcting spectacles is kept readily available during the exercise of the license privileges.

Note: Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

- (d) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

Note: If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

- (e) Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 should be required to provide a full ophthalmic report prior to initial Medical Certificate and every five years thereafter.

Note 1: The purpose of the required ophthalmic examination is 1) to ascertain normal visual performance and 2) to identify any significant pathology.

Note 2: Guidance on the assessment of monocular applicants under the provisions of 2.10.1.5 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

- (f) Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their license and rating privileges.
- (g) The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by (b), the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correcting already prescribed in accordance with (b); if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the license. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1: N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).

Note 2: Any applicant who needs near correction to meet this requirement will require "Look-over", bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable.

Note 3: Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

- (1) When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.
- (h) The applicant shall be required to have normal fields of vision.
- (i) The applicant shall be required to have normal binocular function.

Note: Defective stereopsis: abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia may not be disqualifying.

2.10.2.4.4 HEARING REQUIREMENTS

The medical examination shall be based on the following requirements.

- (a) The applicant, tested on a pure-tone audiometer at first issue of license, not less than once every five years up to the age of 40 years, and thereafter not less than once every three years, shall not have a hearing loss in either ear separately, of more than 35 dB at any of the frequencies 500, 1000 or 2000 Hz, or more than 50 dB at 3000 Hz. However, an applicant with a hearing loss greater than the above may be declared fit provided that:
- (1) the applicant has a hearing performance in each ear separately equivalent to that of a normal person, against a background noise that will simulate the that experienced in a typical air traffic control working environment; and
 - (2) the applicant has the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2m from the examiner, with the back turned to the examiner.

- (b) Alternatively, other methods providing equivalent results to those specified in (a) shall be used.

2.10.2.4.5 MEDICAL REQUIREMENTS FOR THE SCHEDULED COMMERCIAL AIR OPERATORS

The following general medical requirements shall apply to the scheduled commercial air operators' medical services:

- (a) A scheduled commercial air operator shall have a medical service in support of its operation whose head shall be at least an Aviation Medical Specialist.
- (b) A scheduled commercial air operator Medical Examiner shall not perform medical examination of airmen of the scheduled commercial air operator for the purpose of securing original or renewal of airmen licenses or rating(s). He shall be mainly concerned in keeping the flight crew members of the scheduled commercial air operator physically and mentally fit to perform flight duties at all times.

2.10.2.4.6 PENALTIES

Any person who violates any provisions of these rules and regulations shall be liable to the provisions and penalties prescribed in Chapter XI of the Civil Aviation Authority Act of 2008 (Republic Act No. 9497).

2.11 RESERVED**2.12 GROUND INSTRUCTOR LICENSE****2.12.1 GENERAL**

The applicant for an instructor rating or license – airplane or helicopter, shall:

- (a) Hold at least a valid commercial pilot license with instrument rating if instrument instructions is to be given or have completed the necessary (ATO) Approved Training Organization on the subjects/courses to be handled or otherwise established his competence to provide such instruction; and
- (b) Hold a specific authorization/license granted by the Authority

2.12.2 GROUND INSTRUCTORS LICENSE

- (a) *Age.* The applicant for a ground instructor rating or license shall be not less than 21 years of age.
- (b) *Knowledge:*
 - (1) The applicant for a ground instructor rating or license shall have met the knowledge requirements for the issuance of a CPL as specified in PCAR Part 2.3.3.3 and 2.3.3.8, as applicable;
 - (2) Must be able to read, speak, write and understand the English language;
 - (3) In addition, the applicant for a ground instructor license shall meet the requirements of 2.3.3.11(b)(2)(ii)(A) - (L) from an authorized instructor; and
 - (4) Has obtained instructional experience for at least twenty (20) hours certified by a currently licensed ground instructor by having presented each subject he/she is to teach, in its entirety, to a minimum of group of student class.
- (c) *Issuance.* For original issuance of ground instructor rating or license, the applicant shall submit the following:
 - (1) Certification or proof that he meets the eligibility requirements for a ground instructor;
 - (2) Passed the knowledge test for ground instructor; and
 - (3) Passed a practical examination on each subject he/she is to teach.
- (d) *Medical Fitness.* The applicant for a ground instructor rating or license shall be holder of a current Class 2 Medical Certificate
- (e) *Privileges.* Subject to compliance with the requirements specified in the existing aviation regulations on Ground Instruction, the privileges of the holder of a ground instructor license shall be:
 - (1) Except as provided in paragraph (c) of this section, provide a course of instruction in each subject for which he has passed the practical demonstration required.
 - (2) Provide instruction in an approved training program under PCAR Part 8 and Part 9 in which subjects for which he is qualified under that training program; and
 - (3) If rated on a higher horsepower single engine aircraft, provide instruction on all aircraft systems and subjects for aircraft of an equal or lower horsepower rating made by the same manufacturer.
 - (4) These provisions are not applicable to aircraft with a different propulsion system; that is, piston, turbo-propeller or turbojet.

- (f) *Validity.* Subject to compliance with the requirements specified in these Guidelines, the validity period of the license is 5 years. For renewal of the ground instructor see PCAR Part 2.2.3, and must present the evidence to the authority within thirty (30) days prior to the expiry of his/her license, that he/she has exercised the privileges of said license during its validity.

2.13 RPA CONTROLLER CERTIFICATE**2.13.1 APPLICABILITY**

- (a) This Subsection applies to all persons conducting Remotely Piloted Aircraft System for commercial operations.
- (b) This likewise applies to all persons conducting Remotely Piloted Aircraft System for non-commercial operations using Large RPAs or operating within the controlled or prohibited airspace in relation to PCAR Part 11.11.3 (c).

2.13.2 APPLICATION FOR RPA CONTROLLER CERTIFICATE

- (a) The application for RPA Controller's Certificate shall be made in writing, signed and sworn to by the applicant. The application shall also state the following:
 - (1) The date and place of filing;
 - (2) The name of applicant;
 - (3) The address of the applicant;
 - (4) The intended RPA to be controlled;
 - (5) Details of any flight crew license, air traffic control license or operations officer license that the applicant holds (include details of ratings, endorsements and qualifications);
 - (6) Details of applicant's experience in operating RPAs.
 - (7) Evidence of the completion of any training course in RPA operation that the applicant has undertaken.
- (b) The Authority may refuse to consider, or cease considering, the application until the applicant gives the information or a copy of it.

2.13.3 ELIGIBILITY FOR RPA CONTROLLER CERTIFICATE

- (a) No person is eligible for the issuance of an RPA Controller Certificate unless he or she:
 - (1) Has completed an RPAs training course as conducted by the RPA manufacturer in the operation of the type of RPA that he or she proposes to operate; and
 - (2) Has at least five (5) hours experience in operating RPAs outside controlled airspace.
 - (3) Has Passed RPAS Exam.
 - (4) Has passed the demonstration flight conducted by the authorized personnel of the Authority.

2.13.4 CONDITIONS AS RPA CONTROLLER CERTIFICATE

- (a) The Authority may impose a condition on the authorization of a person as a RPA controller in the interest of air navigation safety.
- (b) Without limiting the generality of paragraph (a), the following conditions may be imposed:
 - (1) Allow the person to control RPAs of only specified kinds; or

- (2) Limit the areas where he or she may control RPAs; or
- (3) Allow him or her to control RPAs only in VMC.

2.13.5 RPA CONTROLLER CERTIFICATE: CONTENTS

- (a) The RPA Controller Certificate shall contain the following information:
 - (1) Name of the person;
 - (2) Address;
 - (3) RPA Controller PEL Number;
 - (4) Conditions and Limitations;
 - (5) Type rating; and
 - (6) Period of validity.

2.13.6 VALIDITY OF RPA CONTROLLER CERTIFICATE

- (a) An RPA Controller Certificate issued by the Authority is effective for a period of five (5) years from date of issuance and remains valid until:
 - (1) The Authority amends, suspends, revokes or otherwise terminates the certificate;
 - (2) The RPA Controller surrenders it to the Authority.

2.13.7 SHOW CAUSE NOTICE TO RPA CONTROLLER CERTIFICATE HOLDER

- (a) The Authority may give a show cause notice to an RPA Controller Certificate Holder if there are reasonable grounds for believing that there are facts or circumstances that would justify the cancellation of the certification under PCAR Part 2 Subpart 2.13.8
- (b) A show cause notice shall include the following:
 - (1) tell the controller of the facts and circumstances that, in Authority's opinion, would justify the cancellation of the RPA Controller Certificate under PCAR Part 2 Subpart 2.13.8; and
 - (2) invite the controller to show in writing, within a reasonable time stated in the notice, why the RPA Controller Certificate should not be cancelled.
- (c) A show cause notice may state that the RPA Controller Certificate is suspended if the Authority reasonably considers that there may be a serious risk to air navigation safety if the certification were not to be suspended.
- (d) If a show cause notice states that the RPA Controller Certificate is suspended, the certification is suspended from when the notice is given to the holder.
- (e) The Authority may at any time revoke the suspension.
- (f) If the approval is suspended and the Authority has not dealt with it under PCAR Part 2 Subpart 2.13.8 within 90 days after the day it is suspended, the suspension lapses at the end of that period.

2.13.8 CANCELLATION OF RPA CONTROLLER CERTIFICATE

- (a) The Authority may cancel an RPA Controller certificate by written notice to the controller, if:
 - (1) The Authority has given to the controller a show cause notice under PCAR Part 2 Subpart 2.13.7 in relation to it;
 - (2) The Authority has taken into account any representation made, within the period stated in the notice, by or on behalf of the controller; and
 - (3) there are reasonable grounds for believing that the controller:
 - (i) has operated an RPA in contravention of these Subpart or of a condition of the certification; or
 - (ii) has operated the RPA negligently or carelessly; or
 - (iii) in operating the RPA, has recklessly endangered human life or property.
- (b) If the Authority has given a show cause notice under PCAR Part 2 Subpart 2.13.7 to an RPA Controller Certificate Holder, and it decides not to cancel the approval, the Authority shall:
 - (1) Inform the controller in writing of the decision; and/or
 - (2) Revoke the suspension if the controller's authorization is suspended under that regulation.

2.13.9 CANCELLATION AT REQUEST OF HOLDER

- (a) The Authority may cancel a RPA Controller Certificate if asked to do so in writing by the controller.
- (b) The cancellation takes effect upon the issuance by the Authority of such order cancelling the RPA Controller Certificate.

2.13.10 VALIDATION OF FOREIGN RPA CONTROLLER CERTIFICATE, LICENSE OR AUTHORIZATION

- (a) A person who holds a current and valid RPA Controller Certificate, License or Authorization issued by another Contracting State may apply for a validation of such license or authorization for use on Remotely Piloted Aircraft registered with the Authority.
- (b) The Authority shall verify with the authenticity of the license/authorization and ratings with the issuing state.
- (c) A validation certificate will be issued, provided:
 - (1) that the applicant shall present to the Authority the foreign issued license/authorization.
 - (2) that the foreign issued license/authorization is current and valid.
- (d) A validation certificate, based upon the relevant foreign issued license/authorization, will be issued provided the following requirements are met:
 - (1) The applicant for the validation certificate shall present to the Authority the foreign license/authorization and evidence of the experience required by PCAR Part 2; 2.13.3.

- (2) The validation certificate will be valid for one (1) year, provided that the foreign license/authorization are still current and valid.
- (3) The applicant for the validation certificate shall:
 - (i) have completed RPA training course conducted by the RPA manufacturer in the operation of the type of RPA that he or she proposes to operate;
 - (ii) have at least five (5) hours experience in operating RPAs.
 - (iii) pass the demonstration flight conducted by the authorized personnel of the Authority.

2.14 AIR TRAFFIC SAFETY ELECTRONIC PERSONNEL LICENSE AND RATINGS

2.14.1 APPLICABILITY

This section prescribes the requirements for the issuance of an Air Traffic Safety Electronic Personnel (ATSEP) license and ratings.

2.14.2 GENERAL

An applicant shall, before being issued with an ATSEP license, meet such requirements in respect of age, knowledge, experience, skill, medical fitness as specified for that license or rating.

2.14.3 REQUIREMENTS FOR THE ISSUE OF THE LICENSE

2.14.3.1 AGE.

The applicant shall be at least 21 years of age.

2.14.3.2 KNOWLEDGE.

The applicant for an ATSEP license shall:

- (i) have satisfactorily completed an approved training course conducted by an authorized instructor and/or acceptable to the Authority with at least knowledge subject as specified in IS 2.14.3.2 APPENDIX A;
- (ii) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required knowledge test; and
- (iii) have passed the required knowledge test on the knowledge subjects of item (i) of this Part.

2.14.3.3 EXPERIENCE.

The applicant for an ATSEP license shall have completed not less than Three Hundred Twenty (320) hours of Facility Familiarization Training in the preventive maintenance of an Air Navigation Facility Equipment under the supervision of an authorized instructor.

2.14.3.4 SKILL.

The applicant for an ATSEP license shall:

- (i) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required skill test as specified in IS 2.14.3.4 APPENDIX B; and
- (ii) have demonstrated, by passing a skill test, the ability to perform the privileges as specified in 2.14.4.(a) or (b) as appropriate.

2.14.3.5 MEDICAL FITNESS.

The applicant shall hold a current Class 3 Medical Certificate.

2.14.4 PRIVILEGES OF THE HOLDER OF LICENSE

Subject to compliance with the requirements specified in 2.14.3, the privileges of the holder of an ATSEP license shall:

- (a) except as specified in paragraphs (b) of this subsection and provided the licensed ATSEP has:
 - (1) Satisfactorily performed the work at an earlier date;
 - (2) Demonstrated the ability to perform the work to the satisfaction of the Authority;
 - (3) Received training acceptable to the Authority on the tasks to be performed; and
 - (4) Performed the work under the direction of a licensed ATSEP designated by the Authority:
 - (i) perform activities related to the establishments and/or improvement of air navigation facilities;
 - (ii) implement approved plans and design for the establishment and/or improvement of air navigation facilities;
 - (iii) formulate and/or implement standard procedures and regulations, and conduct evaluation of air navigation facilities; and
 - (iv) administer, manage, supervise, and/or train on the functional operation and maintenance of CNS/ATM systems.
- (b) operate and maintain a CNS/ATM system and equipment under the direct supervision of an appropriately rated ATSEP.

2.14.5 VALIDITY OF LICENSE

Subject to compliance of the requirements specified in 2.14.3, the license is valid for five (5) years from the date of issuance provided that the license holder shall:

- (a) continue to perform ATSEP functions within the Authority;
- (b) continue to exercise any of the Privileges as specified in 2.14.4; and
- (c) hold a current class 3 medical certificate.

2.14.6 REQUIREMENTS FOR THE RENEWAL OF LICENSES

A holder of an ATSEP license desiring to renew his/her license must accomplish and submit the following, within 30 days prior to the expiry of his/her license:

- (a) Application for the renewal of license;
- (b) current Class 3 medical certificate; and
- (c) Certification or proof that the holder continues to exercise any of the privileges of the license.

2.14.7 ATSEP RATING

ATSEP ratings are issued specific for each equipment type, brand and model, and shall comprise the following categories:

- (a) Communications Equipment Rating
- (b) Radio Navigational Aids Equipment Rating

- (c) Surveillance Equipment Rating
- (d) Data Processing System Rating

2.14.8 REQUIREMENTS for ATSEP RATINGS

2.14.8.1 KNOWLEDGE.

The applicant for an ATSEP rating shall:

- (i) have satisfactorily completed an approved training course conducted by an authorized instructor and/or acceptable to the Authority with at least subject areas as specified in IS 2.14.8.1 APPENDIX C
- (ii) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required written and/or oral test; and
- (iii) have demonstrated a required level of knowledge, through written and/or oral test, covering the areas specified in item (i) of this Part for a specific equipment for which the rating is sought.

2.14.8.2 EXPERIENCE.

The applicant for an ATSEP rating shall:

- (i) have rendered a service of at least one (1) year in the preventive and corrective maintenance of a specific equipment for which the rating is sought under the supervision of an appropriately rated ATSEP.

2.14.8.3 SKILL.

The applicant for an ATSEP rating shall:

- (i) have received an endorsement from an authorized instructor who certifies that the person is prepared for the required practical/skill test as specified in IS 2.14.8.3 APPENDIX D; and
- (ii) have demonstrated a level of skills, by passing a practical/skill test, appropriate to the privileges as specified in 2.14.9 for a specific equipment for which the rating is sought.

2.14.9 PRIVILEGES OF THE HOLDER OF RATING

Subject to compliance with the requirements specified in 2.14.8, the privileges of the holder of an ATSEP license with one or more ratings shall be to:

- (a) perform and/or supervise the operation, and maintenance of a specific equipment for which the license holder is rated;
- (b) conduct on-the-job training for a specific equipment; and
- (c) certify the reliability and recommend the return-to-service of a specific equipment for which the license holder is rated following a preventive and/or corrective maintenance procedures.

2.14.10 VALIDITY OF RATINGS

The rating shall become invalid when an ATSEP has ceased to exercise any of the privileges of the rating for at least one (1) year. A rating shall remain invalid until the ATSEP's ability to exercise the privileges of the rating has been re-validated.

2.14.11 REQUIREMENTS FOR THE RE-VALIDATION OF RATING

A holder of an ATSEP Rating desiring to re-validate his/her Rating shall:

- (a) hold a current Class 3 medical certificate; and
- (b) pass the skill test for the relevant ratings that he or she wants to be validated relevant to the privileges of the rating held and/or demonstrate to the satisfaction of the Authority the knowledge relevant to the rating to be validated.

**Republic of the Philippines
CIVIL AVIATION REGULATIONS
(CAR)**

**PART 2: IS
PERSONNEL LICENSING:
IMPLEMENTING STANDARDS**

IS 2.2.1 ISSUE, RENEWAL AND RE-ISSUE OF LICENSES, RATINGS, AUTHORIZATIONS AND CERTIFICATES

- (a) Issue, renewal and re-issue of licenses, ratings, Authorizations and certificates will take place when the applicant meets the requirements of Part 2 for issue, renewal and re-issue for these licenses, ratings, Authorizations and certificates.
- (b) Issue, renewal and re-issue of licenses, ratings, Authorizations and certificates will be performed by the Authority.
- (c) Notwithstanding (b), renewal of ratings and category II/III pilot Authorizations may be performed by the Examiner, when delegated by the Authority.
- (d) Notwithstanding (b), renewal of medical certificates may be performed by the AME, when delegated by the Authority.
- (e) Application for the issue, renewal and re-issue of licenses, ratings. Authorizations or certificates by the Authority shall be done by submitting to the Authority a properly filled out form, which form can be obtained from the Authority. This form must be submitted to the Authority at least 14 days before the expiry date.

IS 2.2.4.3 APPENDIX A: PROCEDURES FOR CONVERSION OF A PPL

- (a) The holder of a private pilot license issued by another Contracting State may directly apply for a conversion of his or her license, without prior holding a validation as is required for PPL/IR or professional licenses under Subpart 2.2.4.3 (b).
- (b) The applicant shall, before application for a conversion, complete the requirements of Subpart 2.2.4.3 (a).
- (c) Application for the issue of a conversion of a license issued by another Contracting State must be done by submitting to the Authority a properly filled out form, which form can be obtained from the Authority.
- (d) The application form for the issue of a conversion of a license issued by another Contracting State must be submitted to the Authority at least 14 days in advance of the date the conversion is desired.
- (e) The valid license from the other Contracting State and the record (e.g.) logbook must be presented to the Authority
- (f) The applicant shall hold a medical certificate relevant to the license applied for and this medical certificate will be issued by the Authority of Republic of the Philippines, when the applicant complies with the requirements of this Part.
- (g) The Authority, that issues a license based on a license issued by another Contracting State, remains responsible for the converted license.

IS 2.2.4.3 APPENDIX B: PROCEDURES FOR CONVERSION OF A PPL/R, CPL, CPL/IR, ATPL AND FLIGHT ENGINEER LICENSE

- (a) The applicant shall, before application for a conversion, complete the requirements of Subpart 2.2.4.3. (b).
- (b) Application for the conversion of a license issued by another Contracting State shall be made by submitting a properly filled out form to the Authority, which form can be obtained from the Authority.

- (c) The application form for the issue of a conversion of a license issued by another Contracting State must be submitted to the Authority at least 14 days in advance of the date the conversion is desired.
- (d) The valid license from the other Contracting State and the record (e.g. logbook) must be presented to the Authority.
- (e) The applicant shall hold a medical certificate relevant to the license applied for and this medical certificate will be issued by the Authority of Republic of the Philippines, when the applicant complies with the requirements of this Part.
- (f) The Authority, that issues a license based on a license issued by another Contracting State, remains responsible for the converted license.

IS 2.2.4.3 APPENDIX C: PROCEDURES FOR VALIDATION AND CONVERSION OF FLIGHT CREW LICENSES BY RELIANCE UPON THE LICENSING SYSTEM OF ANOTHER CONTRACTING STATE

- (a) The Authority that issues a license based on a license from another Contracting State remains responsible for the validation certificate and the converted license.
- (b) The Authority should, before making the agreement mentioned in Subpart 2.2.4.3 (a)(3) be convinced, that the other Contracting State issues licenses in conformity with at least this Part.
- (c) An inspector or experienced pilot from Republic of the Philippines, or from another Contracting State delegated by the Authority of Republic of the Philippines, must visit the other Contracting State to be convinced that the licensing system in the other Contracting State is in conformity with at least this Part. A report describing the bases for the decision shall be made to the Authority of Republic of the Philippines.
- (d) An Air Law test must be arranged if the Air Law system of Republic of the Philippines is different from the Air Law system from the other Contracting State.
- (e) Renewal and re-issue of the validation certificate or the converted licenses and ratings:
 - (1) when examiners are available in Republic of the Philippines to perform proficiency checks for the renewal of rating(s) or skill tests for the re-issue of the license or rating(s), these tests/checks will be performed by the authorized examiners of Republic of the Philippines;
 - (2) when examiners are not available in Republic of the Philippines to perform proficiency checks for the renewal of the rating(s) or skill test for the re-issue of the license or rating(s), the availability of examiners for these tests/checks from the other Contracting State can be arranged in the agreement mentioned in Subpart 2.2.4.3 (a)(3).
- (f) Application for the validation certificate and the conversion of a license from another Contracting State shall be done by submitting to the Authority a properly filled out form, which form can be obtained from the Authority.
- (g) The valid license from the other Contracting State and the record (e.g. logbook) must be presented to the Authority
- (h) The applicant shall hold a medical certificate relevant to the license applied for and this medical certificate will be issued by the Authority of Republic of the Philippines, when the applicant complies with the requirements of this Part.

IS 2.2.5 MILITARY FLIGHT CREW AND MECHANICS

- (i) Requirements for a military pilot to meet the requirements of Subpart 2.2.5.
- (ii) *Military pilots on active flying status within the past 12 months.* The holder of a military pilot license (or certificate) who has been on active flying status within the 12 months before applying shall:
 - (1) Pass a knowledge test on the appropriate parts of these regulations that apply to pilot privileges and limitations, air traffic and general operating rules, and accident reporting rules;
 - (2) Present documentation showing compliance with the requirements of paragraph (c) of this subsection for at least one aircraft category rating; and
 - (3) Present documentation showing that the applicant is or was, at any time during the 12 calendar months before the month of application the holder of a military pilot license (or certificate) on active flying status in an armed force of the Republic of the Philippines.
- (iii) *Aircraft category, class and type ratings.* The Authority may issue to the holder of a military pilot license (or certificate) an aircraft category, class or type rating to a commercial pilot license if the pilot present documentary evidence that shows satisfactory accomplishment of:
 - (1) A military pilot check and instrument proficiency check of the Republic of the Philippines in that aircraft category, class or type, if applicable, as PIC during the 12 calendar months before the month of application; and
 - (2) At least 10 hours of PIC time in that aircraft category, class or type, if applicable, during the 12 calendar months before the month of application.
- (iv) *Instrument rating.* The holder of a military pilot license (or certificate) may apply for an airplane or helicopter instrument rating to be added to his or her commercial pilot license if the pilot has, within the 12 calendar months preceding the month of application:
 - (1) Passed an instrument proficiency check by an armed force of the Republic of the Philippines in the aircraft category for the instrument rating sought; and
 - (2) Received Authorization from an armed force of the Republic of the Philippines to conduct IFR flights on airways in that aircraft category and class for the instrument rating sought.
- (v) *Aircraft type rating.* The Authority will issue an aircraft type rating only for aircraft types that the Authority has certified for civil operations.
- (vi) *Aircraft type rating placed on an airline transport pilot license.* The Authority may issue to the holder of a military pilot license (or certificate) who holds an airline transport pilot license an aircraft type rating provided that the pilot:
 - (1) Holds a category and type rating for that type of aircraft at the airline transport pilot license level; and
 - (2) Passed an official military pilot of the Republic of the Philippines check and instrument proficiency check in that type of aircraft as PIC during the 12 calendar months before the month of application.
- (vii) *Evidentiary documents.* The Authority may accept the following documents as satisfactory evidence of military pilot status.
 - (1) An official identification card issued to the pilot by an armed force to demonstrate membership in the armed forces.

- (2) An original or a copy of a certificate of discharge or release from an armed force of the Republic of the Philippines;
- (3) At least one of the following:
 - (i) An order of an armed force of the Republic of the Philippines to flight status as a military pilot
 - (ii) An armed force form or logbook showing military pilot status; or
 - (iii) an order showing that the applicant graduated from a military pilot school of the Republic of the Philippines and received a rating as a military pilot.
- (4) A certified armed force logbook or an appropriate official armed force form or summary to demonstrate flight time in military aircraft as a member of an armed force of the Republic of the Philippines.
- (5) An official armed force of Republic of the Philippines record of a military designation as PIC.
- (6) An official record of satisfactory accomplishment of an instrument proficiency check during the 12 calendar months preceding the month of application.

IS 2.2.6 APPENDIX A: PREREQUISITES FOR A KNOWLEDGE TEST

- (a) The applicant shall, before passing the knowledge test for a license or rating:
 - (1) have satisfactorily accomplished the required training;
 - (2) have an endorsement in his or her logbook or training record, that has been signed by an authorized instructor, who certifies that the applicant is prepared for the knowledge test.

IS 2.2.6 APPENDIX B: PREREQUISITES FOR A SKILL TEST

- (a) An applicant shall, before passing the skill test for a license or rating:
 - (1) have passed the required knowledge test within the 24-calendar-month period preceding the month the applicant completes the skill test;
 - (2) have satisfactorily accomplished the required training and obtained the experience prescribed by Part 2 for the license or rating sought;
 - (3) meet the prescribed age requirement of this Part for the issuance of the license or rating sought; and
 - (4) have an endorsement in his or her logbook or training record that has been signed by an authorized instructor, who certifies that the applicant is prepared for the required skill test.
- (b) An applicant for an airline transport pilot license may take the skill test for that license with a knowledge test report that has been completed within a period of seven (7) years before the application, provided the applicant is employed as a flight crew member by a certificate holder under Part 9 at the time of the skill test.

IS 2.2.7 LANGUAGE PROFICIENCY

- (a) General
 - (1) To meet the language proficiency requirements contained in Subpart 2.2.7, an applicant for a license or a license holder shall demonstrate, in a manner

acceptable to the Authority, compliance with the holistic descriptors in paragraph (b) below and with the Operational Level (Level 4) of the Language Proficiency Rating Scale as mentioned in paragraph c) below.

(b) Holistic descriptors: Proficient speakers shall:

- (1) communicate effectively in voice-only (telephone/radiotelephone) and in face-to-face situations;
- (2) communicate on common, concrete and work-related topics with accuracy and clarity;
- (3) use appropriate communicative strategies to exchange messages and to recognize and resolve misunderstandings (e.g. to check, confirm, or clarify information) in a general or work-related context;
- (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
- (5) use a dialect or accent which is intelligible to the aeronautical community.

(c) Rating scale:

Operational Level (Level 4)

- (1) Pronunciation: Pronunciation, stress, rhythm and intonation are influenced by the first language or regional variation but only sometimes interfere with understanding.
- (2) Structure: Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.
- (3) Vocabulary: Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.
- (4) Fluency: Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.
- (5) Comprehension: Comprehension is mostly accurate on common, concrete, and work related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.
- (6) Interactions: Responses are usually immediate, appropriate and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming or clarifying.

Extended Level (Level 5)

- (1) Pronunciation: Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.
- (2) Structure: Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.

- (3) Vocabulary: Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.
- (4) Fluency: Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.
- (5) Comprehension: Comprehension is accurate on common, concrete, and work related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.
- (6) Interactions: Responses are immediate, appropriate, and informative. Managers the speaker/listener relationship effectively.

Expert Level (Level 6)

- (1) Pronunciation: Pronunciation, stress, rhythm, and intonation, thought possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.
- (2) Structure: Both basic and complex grammatical structures and sentence patterns are consistently well controlled.
- (3) Vocabulary: Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.
- (4) Fluency: Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.
- (5) Comprehension: Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.
- (6) Interactions: Interacts with ease in nearly all situations Is sensitive to verbal and nonverbal cues, and responds to them appropriately.

IS 2.2.8 RECORDING OF FLIGHT TIME

The details in the records of flights flown as pilot shall contain the following items:

- (a) For the purpose of meeting the requirements of Subparts 2.2.6.1 and 2.3.1.6, each person shall enter the following information for each flight or lesson logged:
 - (1) Personal details:
 - (i) Name and address of the holder
 - (2) For each flight:
 - (i) Name of PIC
 - (ii) Date of flight
 - (iii) Place and time of departure and arrival
 - (iv) Type of aircraft and registration
 - (3) For each synthetic flight trainer session:
 - (i) Type and qualification number of flight trainer
 - (ii) Synthetic flight trainer instruction

- (iii) Date
- (iv) Total time of session
- (4) Pilot function:
 - (i) Solo
 - (ii) PIC
 - (iii) Co-pilot
 - (iv) Dual
 - (v) Flight instructor
- (b) Logging of flight time
 - (1) Logging of solo flight time:
 - (i) A student pilot may log as solo flight time only that flight time when the pilot is the sole occupant of the aircraft.
 - (2) Logging of PIC flight time:
 - (i) The applicant or the holder of a pilot license may log as PIC time all that flight time during which that person is:
 - (A) The sole manipulator of the controls of an aircraft for which the pilot is rated; and
 - (B) Acting as PIC of an aircraft on which more than one pilot is required under the type certification of the aircraft or the regulations under which the flight is conducted.
 - (ii) An authorized instructor may log as PIC time all of the flight time while acting as an authorized instructor.
 - (iii) A student pilot may log as PIC time all solo flight time and flight time as student pilot-in-command provided that such time is countersigned by the instructor.
 - (3) Logging of co-pilot time:
 - (i) A person may log co-pilot time only when occupying a pilot seat as co-pilot in an aircraft on which more than one pilot is required under the type certification of the aircraft or the regulations under which the flight is conducted.
 - (4) Logging of instrument flight time:
 - (i) A person may log instrument flight time only for that flight when the person operates the aircraft solely by reference to instruments under actual or simulated instrument flight conditions.
 - (5) Logging instruction time:
 - (i) A person may log instruction time when that person receives training from an authorized instructor in an aircraft or synthetic flight trainer.
 - (ii) The instruction time shall be logged in a record (e.g. logbook) and shall be endorsed by the authorized instructor.

IS 2.2.9 FORMAT OF THE LICENSE

- (a) The following details shall appear on the license:
 - (i) Name of State (in bold type);
 - (ii) Title of license (in very bold type);

- (iii) Serial number of the license, in Arabic numerals, given by the Authority issuing the license;
- (iv) Name of holder in full (in Roman alphabet also if script of national language is other than Roman and date of birth:
- (v) Address of holder:
- (vi) Nationality of holder;
- (vii) Signature of holder;
- (viii) Authority and, where appropriate, all conditions under which the license is issued;
- (ix) Certification concerning validity and Authorization;
- (x) Signature of officer issuing the license and the date of such issue;
- (xi) Seal or stamp of Authority issuing license;
- (xii) Ratings, e.g. category, class, type of aircraft, airframe, aerodrome control, etc.;
- (xiii) Remarks. i.e. special endorsements relating to limitations and endorsements for privileges;
- (xiv) Any other details desired by Republic of the Philippines in issuing the license.

IS 2.3.2.4 APPENDIX A: CLASS/TYPE RATING [SP (A) and MP (A)] - KNOWLEDGE

- (a) The knowledge instruction and test for the type rating for multi-pilot - airplane shall include the following subjects:
 - (1) Airplane structure and equipment, normal operation of systems and malfunctions
 - (i) Dimensions
 - (ii) Engine including auxiliary power unit
 - (iii) Fuel system
 - (iv) Pressurization and air-conditioning
 - (v) Ice protection. windshield wipers and rain repellent
 - (vi) Hydraulic systems
 - (vii) Landing gear
 - (viii) Flight controls, lift devices
 - (ix) Electrical power supply
 - (x) Flight instruments, communication, radar and navigation equipment
 - (xi) Cockpit, cabin and cargo compartment
 - (xii) Emergency equipment
 - (2) Limitations:
 - (i) General limitations
 - (ii) Engine limitations
 - (iii) System limitations
 - (iv) Minimum equipment list

- (3) Performance, flight planning and monitoring
- (4) Load, balance and servicing
 - (i) Load and balance
 - (ii) Servicing on the ground
- (5) Emergency procedures
- (6) Special requirements for extension of a type rating for instrument approaches down to a decision height of less than 200 ft (60m)
 - (i) Airborne and ground equipment: technical requirements, operational requirements, operational reliability, fail operational, fail-passive, equipment reliability, operating procedures, preparatory measures, operational downgrading, communications
 - (ii) Procedures and limitations: operational procedures, crew co-ordination
- (7) Special requirements for "glass cockpit" airplane with electronic flight instrument systems (e.g. EFTS; EICAS)
- (8) Flight Management systems (FMS)
- (9) Upset prevention and recovery elements from IS 2.3.3.3 Appendix C.

IS 2.3.2.4 APPENDIX B: FLIGHT INSTRUCTION, SKILL TEST AND PROFICIENCY CHECK - CRM

- (a) The flight instruction, skill test and proficiency for CRM for the multi-pilot type rating — airplane and helicopter shall include the following subjects:
 - (1) The training program:
 - (i) An initial indoctrination/awareness segment;
 - (ii) A method to provide recurrent practice and feedback; and
 - (iii) A method of providing continuing reinforcement
 - (2) Topics to be contained in an initial CRM training course:
 - (i) Communications processes and decision behavior;
 - (ii) Internal and external influences on interpersonal communications;
 - (iii) Barriers to communication;
 - (iv) Listening skills;
 - (v) Decision making skills
 - (vi) Effective briefings;
 - (vii) Developing open communications;
 - (viii) Inquiry, advocacy and assertion training;
 - (ix) Crew self-critique;
 - (x) Conflict resolution;
 - (xi) Team building and maintenance;
 - (xii) Leadership and followership training;
 - (xiii) Interpersonal relationships;

- (xiv) Workload management;
- (xv) Situational awareness
- (xvi) How to prepare, plan and monitor task completions;
- (xvii) Workload distribution;
- (xviii) Distraction avoidance;
- (xix) Individual factors; and
- (xx) Stress reduction.

IS 2.3.3.1 STUDENT PILOTS - MANEUVERS AND PROCEDURES FOR PRE-SOLO FLIGHT TRAINING

- (a) A student pilot who is receiving training for solo flight shall receive and log flight training for the following maneuvers and procedures, as applicable for each category and class rating:
 - (1) Proper flight preparation procedures, including pre-flight planning and preparation, powerplant operation and aircraft systems
 - (2) Taxiing, including run-ups
 - (3) Take-offs and landings, including normal and crosswind
 - (4) Straight and level flight and turns in both directions
 - (5) Climbs and climbing turns
 - (6) Airport traffic patterns including entry and departure procedures
 - (7) Collision avoidance, wind-shear avoidance and wake turbulence avoidance
 - (8) Descents, with and without turns, using high and low drag configurations
 - (9) Flight at various airspeeds from cruise to slow flight
 - (10) Stall entries from various flight attitudes and power combinations with recovery initiated at the first indication of a stall and recovery from a full stall
 - (11) Emergency procedures and equipment malfunctions
 - (12) Ground reference maneuvers
 - (13) Approaches to a landing area with simulated engine malfunctions
 - (14) Slips to a landing
 - (15) Go-around
- (b) Additional training for a helicopter:
 - (1) Approaches to the landing area
 - (2) Hovering and hovering turns
 - (3) Simulated emergency procedures, including autorotational descents with a power recovery and power recovery to hover
 - (4) Rapid decelerations
 - (5) Simulated one-engine-inoperative approaches and landings for multi-engine helicopters
- (c) Maneuvers and procedures for cross-country flight training in an airplane or rotorcraft:

- (1) Use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass
- (2) Use of aircraft performance charts pertaining to cross-country flight
- (3) Procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight
- (4) Recognition, avoidance and operational restrictions of hazardous terrain features in the geographical area where the student pilot will conduct cross-country flight
- (5) Use of radios for VFR navigation and two-way communications
- (6) Climbs at best angle and best rate
- (7) Control and maneuvering solely by reference to flight instruments, including straight and level flight, turns, descents, climbs, use of radio aids and ATC directives.

IS 2.3.3.2 APPENDIX A: PRIVATE PILOT LICENSE (A) - KNOWLEDGE

- (a) The knowledge instruction and test for the private pilot license - airplane shall include at least the following subjects:
 - (1) Air law
 - (i) Relevant parts of ICAO Convention and Annexes 2, 7, 8, 11 and 14
 - (ii) ICAO Document 4444: General provisions, Area control service, Approach control service, Aerodrome control service, Flight information and alerting service;
 - (iii) National law
 - (2) Aircraft General Knowledge
 - (i) Airframe: Airframe structure and loads
 - (ii) Powerplant: engines general, engine cooling, engine lubrication, ignition systems, carburetion, aero engine fuel, fuel systems, propellers, engine handling
 - (iii) Systems: electrical system, vacuum system
 - (iv) Instruments: Pitot/static system, Airspeed indicator, Altimeter, Vertical speed indicator, Gyroscopes, Turn indicator, Altitude indicator, Heading indicator, Magnetic compass, Engine instruments, Other instruments
 - (v) Airworthiness
 - (3) Flight Performance and Planning
 - (i) Mass and balance
 - (ii) Performance: Take-off, Landing, In-flight
 - (4) Human performance:
 - (i) Basic physiology: Concepts, Effects of partial pressure, Vision, Hearing, Motion sickness, Flying and health, Toxic hazards
 - (ii) Basic psychology: The information process, the central decision channel, stress; judgment and decision making
 - (5) Meteorology

- (i) The atmosphere. Pressure, density and temperature, Humidity and precipitation, Pressure and wind; Cloud information, Fog, mist and haze, Airmasses, Frontology, Ice accretion, Thunderstorms; Flight over mountainous areas, Climatology, Altimetry, The meteorological organization, Weather analysis and forecasting, Weather information for flight planning, Meteorological broadcasts for aviation
- (6) Navigation
- (i) Form of the earth, mapping, conformal orthomorphic projection (ICAO 1.500.000 chart), Direction, Airplane magnetism, Distances, Charts in practical navigation, Chart reference material/map reading, Principles of navigation, The navigation computer, Time, Flight planning, Practical navigation
 - (ii) Radio navigation: Ground direction finding (D/F), automatic direction finding (ADF), including associated beacons (non directional beacons (NDBs) and use of the radio magnetic indicator (RMI). VHF omni-directional range/distance measuring equipment (VOR/DME), GPS, Ground radar; Secondary surveillance radar
- (7) Operational Procedures
- (i) Relevant parts of ICAO Annex 6, Part II; Annex 12, 13 and 16 (relevant parts), Contravention of aviation regulations
- (8) Principles of Flight
- (i) The atmosphere, Airflow around a body, sub-sonic, Airflow about a two dimensional aerofoil; Three dimensional flow about an aerofoil; Distribution of the four forces, Flying controls, Trimming controls, Flaps and slats, The stall, Avoidance of spins, Stability, Load factor and maneuvers, Stress loads on the ground
- (9) Communications
- (i) Radio telephony and communications, Departure procedures, En-route procedures, Arrival and traffic pattern procedures, Communications failure, Distress and urgency procedures

IS 2.3.3.2 APPENDIX B: PRIVATE PILOT LICENSE (A) - FLIGHT INSTRUCTION AND SKILL TEST

- (a) The flight instruction and skill test for the single-engine and multi-engine private pilot license - airplane shall include at least the following areas of operation:

Note 1: When (SE) is indicated the item or paragraph is only for single-engine. When (ME) is indicated the item or paragraph is only for multi-engine. When nothing is indicated the item or paragraph is for single-engine and multi-engine.

Note 2: When (S) is indicated, the item is only for seaplanes. When (L) is indicated, the item is only for landplanes. When nothing is indicated the item is for land and seaplanes.

- (1) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks--
 - (i) Licenses and documents
 - (ii) Airworthiness requirements
 - (iii) Weather information

- (iv) Cross-country flight planning
 - (v) National airspace system
 - (vi) Performance and limitations
 - (vii) Operation of system
 - (viii) Principles of flight
 - (ix) Water and Seaplane Characteristics (S)
 - (x) Seaplane bases, maritime rules and aids to marine navigation (S)
 - (xi) Aeromedical factors
- (2) Pre-flight procedures: including the applicant's knowledge and performance of the following tasks--
- (i) Pre-flight inspection
 - (ii) Cockpit management
 - (iii) Engine Starting
 - (iv) Taxiing (L)
 - (v) Taxiing and Sailing (S)
 - (vi) Before take-off check
- (3) Aerodrome and seaplane operations: including the applicant's knowledge and performance of the following tasks--
- (i) Radio communications and ATC light signals
 - (ii) Traffic patterns
 - (iii) Aerodrome/Seaplane Base, runway and taxiway signs, markings and lighting
- (4) Take-offs, landings and go-rounds; including the applicant's knowledge and performance of the following tasks--
- (i) Normal and crosswind take-off and climb
 - (ii) Normal and crosswind approach and landing
 - (iii) Soft-field take-off and climb (SE) (L)
 - (iv) Soft-field approach and landing (SE) (L)
 - (v) Short-field [Confined area (S)] take-off and maximum performance climb
 - (vi) Short-field approach (Confined area (S)) and landing
 - (vii) Glassy Water take-off and climb (S)
 - (viii) Glassy water approach and landing (S)
 - (ix) Rough water take-off and climb (S)
 - (x) Rough water approach and landing (S)
 - (xi) Forward slip to a landing (SE)
 - (xii) Go-around /rejected landing
- (5) Performance maneuver: including the applicant's knowledge and performance of the following tasks--
- (i) Steep turns

- (6) Ground reference maneuvers; including the applicant's knowledge and performance of the following tasks--
 - (i) Rectangular course
 - (ii) S-turns
 - (iii) Turns around a point
- (7) Navigation: including the applicant's knowledge and performance of the following tasks--
 - (i) Pilotage and dead reckoning
 - (ii) Navigation systems and radar services
 - (iii) Diversion
 - (iv) Lost procedures
- (8) Slow flight and stalls; including the applicant's knowledge and performance of the following tasks--
 - (i) Maneuvering during slow flight
 - (ii) Power-off stalls
 - (iii) Power-on stalls
 - (iv) Spin awareness
- (9) Basic instrument maneuvers; including the applicant's knowledge and performance of the following tasks--
 - (i) Straight-and-level flight
 - (ii) Constant airspeed climbs
 - (iii) Constant airspeed descents
 - (iv) Turns to headings
 - (v) Recovery from unusual flight
 - (vi) Radio Communications, navigation systems/facilities and radar services; including the applicant's knowledge and performance of the following tasks--
- (10) Emergency operations; including the applicant's knowledge and performance of the following tasks--
 - (i) Emergency approach and landing
 - (ii) Emergency descent (ME)
 - (iii) Engine failure during take-off before VMC (simulated) (ME)
 - (iv) Engine failure after lift-off (simulated) (ME)
 - (v) Approach and landing with an inoperative engine (simulated) (ME)
 - (vi) Systems and equipment malfunctions
 - (vii) Emergency equipment and survival gear
- (11) Multi-engine operations (ME); including the applicant's knowledge and performance of the following tasks--
 - (i) Maneuvering with one engine inoperative
 - (ii) VMC demonstration

- (iii) Engine failure during flight (by reference to instruments)
- (iv) Instrument approach — one engine inoperative (by reference to instruments)
- (12) Night operation; including the applicant's knowledge and performance of the following tasks--
 - (i) Night preparation
- (13) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) After landing, parking and securing
 - (ii) Anchoring (S)
 - (iii) Docking and mooring (S)
 - (iv) Ramping/Beaching (S)

IS 2.3.3.3 APPENDIX A: COMMERCIAL PILOT LICENSE (A) — KNOWLEDGE

- (a) The knowledge instruction and test for the commercial pilot license — airplane shall include at least the following subjects:
 - (1) Air law
 - (i) International Agreements and Organizations: The Convention of Chicago; Other International agreements: IATA agreement; Tokyo and Warsaw Convention; PIC authority and responsibility regarding safety and security; Operators and pilots liabilities towards persons and goods on the ground, in case of damage and injury caused by the operation of the aircraft, Commercial practices and associated rules, dry and wet lease;
 - (ii) Relevant parts of ICAO Annexes: 1, 2, 7, 8, 9, 11 (and Doc 4444), 12, 13, 14, 15, 17;
 - (iii) Procedures for air navigation (PANS-OPS) - Aircraft Operations Doc 8168;
 - (iv) National law
 - (2) Aircraft general knowledge
 - (i) Airframe and systems, electrics, powerplant, emergency equipment
 - (A) Airframe and systems: Fuselage, Cockpit and cabin windows, Wings, Stabilizing surfaces, Landing Gear, Flight Controls, Hydraulics, Air driven systems (piston engines only), Air driven systems (turbopropeller and jet aircraft), Non-pneumatic operated de-ice and anti-ice systems, Fuel system;
 - (B) Electrics: Direct Current (DC), Alternating Current (AC), Semiconductors, Basic knowledge of computers; Basic radio propagation theory
 - (C) Powerplant: Piston Engine, Turbine Engine, Engine construction, Engine systems, Auxiliary Power Unit (APU)
 - (D) Emergency equipment: Doors and emergency exits, Smoke detection, Fire detection, Fire fighting equipment, Aircraft oxygen equipment, Emergency equipment
 - (ii) Instrumentation

- (A) Flight instruments: Air data instruments, Gyroscopic instruments, Magnetic Compass, Radio Altimeter, Electronic Flight Instrument System (EFIS),
 - (B) Automatic flight control system: Flight director, Autopilot, Yaw damper/Stability augmentation system,
 - (C) Warning and recording equipment: Warnings general; Stall warning,
 - (D) Powerplant and system monitoring instruments: Pressure gauge, Temperature gauge, RPM indicator, Consumption gauge, Fuel gauge, Torque meter, Flight hour meter, Vibration motoring, Remote (signal) transmission system, Electronic Displays
- (3) Flight performance and planning
- (i) Mass and balance: Center of gravity, Mass and balance limits
 - (ii) Loading: Terminology, Aircraft mass checks, Procedures for determining airplane mass and balance documentation; Effects of overloading;
 - (iii) Center of gravity: Basis of cg calculations (load and balance documentation), Calculation of cg; Securing of loading; Area load, running load, supporting
 - (iv) Performance of single-engine airplanes - Performance class B: Definitions of terms and speeds; Take-off and landing performance, Climb and cruise performance
 - (v) Performance of multi-engine airplanes: Definitions of terms and speeds; Importance of performance calculations; Elements of performance, Use of performance graphs and tabulated data
 - (vi) Flight planning and flight monitoring:
 - (A) Flight plan for cross country flights: Navigation plan, Fuel plan, Flight monitoring and in-flight re-planning, Radio communication and navigation aids;
 - (B) ICAO ATC flight plan: Types of flight plan, Completing the flight plan, Filling the flight plan, Closing the flight plan, Adherence to flight plan
 - (C) Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans, Radio planning practice
 - (D) Practical completion of a flight plan (flight plan, flight log, navigation log, ATC plan, etc.): Extraction of data
- (4) Human performance
- (i) Human factors basic concepts: Human factors in aviation, Accident statistics, Flight safety concepts
 - (ii) Basic aviation physiology: Basics of flight physiology, Man and environment: the sensory system; Health and Hygiene;
 - (iii) Basic aviation psychology: Human information processing; Human error and reliability; Decision making; Avoiding and managing errors: cockpit management; Personality; Human overload and underload, Advanced cockpit automation
- (5) Meteorology
- (i) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;

- (ii) Wind: Definition and measurement; General circulation; Turbulence; Variation of wind with height; Local winds; Standing waves;
 - (iii) Thermodynamics: Humidity;
 - (iv) Clouds and Fog: Cloud formation and description; Fog, mist, haze
 - (v) Precipitation
 - (vi) Airmasses and fronts: Types of airmasses; Fronts;
 - (vii) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions;
 - (viii) Climatology: Typical weather situations in mid-latitudes; Local seasonal weather and wind
 - (ix) Flight hazards: Icing, Turbulence; Wind-shear; Thunderstorms; Hazards in mountainous areas; Visibility reducing phenomena;
 - (x) Meteorological information: Observation, Weather charts, Information for flight planning
- (6) Navigation:
- (i) General Navigation: Basics of navigation: The solar system; The earth, Time and time conversions; Directions, Distance
 - (ii) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
 - (iii) Charts: General properties of miscellaneous types of projections; The representation of meridians; parallels; great circles and rhumb lines; The use of current aeronautical charts
 - (iv) Dead reckoning navigation (DR): Basics of dead reckoning; Use of the navigational computer; The triangle of velocities; Determination of DR position; Measurement of DR elements; Resolution of current DR problems; Measurements of maximum range, radius of action and point-of-safe-return and point-of-equal-time
 - (v) In-flight navigation: Use of visual observations and application to in-flight navigation; Navigation in climb and descent: Navigation in cruising flight, use of fixes to revise navigation data; Flight log (including navigation records);
 - (vi) Radio Navigation: Radio aids: Ground D/F (including classification of bearings); ADF (including associated beacons and use of the radio magnetic indicator); VOR and Doppler-VOR (including the use of the radio magnetic indicator); DME (distance measuring equipment); Basic radar principles: SSR (secondary surveillance radar and transponder); Self-contained and external referenced navigation systems: Satellite assisted navigation: GPS/GLONASS/DGPS
- (7) Operational procedures
- (i) ICAO Annex 6 Parts I, II and III (as applicable)
 - (ii) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Decompression of pressurized cabin; Windshear, microburst; Wake turbulence; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways;
- (8) Principles of flight:

- (i) Basics; laws and definitions; The two-dimensional airflow about an aerofoil: The coefficients; The three-dimensional airflow about an airplane; The total drag; The ground effect; The relation between the lift coefficient and the speed for constant lift; The stall; Climax augmentation; Means to decrease the CLCD ratio, increasing drag; The boundary layer;
 - (ii) Stability: Condition of equilibrium in stable horizontal flight; Methods of achieving balance; Longitudinal stability; Static directional stability; Static lateral stability; Dynamic lateral stability;
 - (iii) Control: General; Pitch control; Yaw control; Roll control; Interaction in different planes (yaw/roll); Means to reduce control forces; Mass balance; Trimming;
 - (iv) Limitations: Operating limitations; Maneuvering envelope; Gust envelope;
 - (v) Propellers: Conversion of engine torque to thrust; Engine failure or engine stop; Design feature for power absorption; Moments and couples due to propeller operation;
 - (vi) Flight mechanics: Forces acting on an airplane; Asymmetric thrust; Emergency descent; Wind-shear;
- (9) Radiotelephony:
- (i) VFR Communications: Definitions; General operating procedures; Relevant weather information terms (VFR); Action required to be taken in case of communication failure; distress and urgency procedures; General principles of VHF propagation and allocation of frequencies;
 - (ii) Morse code.

IS 2.3.3.3 APPENDIX B: COMMERCIAL PILOT LICENSE (A) - FLIGHT INSTRUCTION AND SKILL TEST

- (a) The flight instruction and skill test for the single-engine and multi-engine commercial pilot license -airplane shall include at least the following areas of operation:

Note 1: When (SE) is indicated the item or paragraph is only for single-engine. When (ME) is indicated the item or paragraph is only for multi-engine. When nothing is indicated the item or paragraph is for single-engine and multi-engine.

Note 2: When (S) is indicated, the item is only for seaplanes. When (L) is indicated, the item is only for landplanes. When nothing is indicated the item is for land and seaplanes.

- (1) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks:
- (i) Licenses and documents
 - (ii) Airworthiness requirements
 - (iii) Weather information
 - (iv) Cross-country flight planning
 - (v) National airspace system
 - (vi) Performance and limitations
 - (vii) Operation of system
 - (viii) Principles of flight (ME)

- (ix) Water and Seaplane characteristics (S)
 - (x) Seaplane bases, maritime rules and aids to marine navigation (S)
 - (xi) Aeromedical factors
- (2) Pre-flight procedures; including the applicant's knowledge and performance of the following tasks:
- (i) Pre-flight inspection
 - (ii) Cockpit management
 - (iii) Engine Starting
 - (iv) Taxiing (L)
 - (v) Taxiing and sailing (S)
 - (vi) Before take-off check
- (3) Aerodrome and seaplane base operations; including the applicant's knowledge and performance of the following tasks--
- (i) Radio communications and ATC light signals
 - (ii) Traffic patterns
 - (iii) Aerodrome/Seaplane base, runway and taxiway signs, markings and lighting
- (4) Take-off, landing, and go-around; including the applicant's knowledge and performance of the following tasks--
- (i) Normal and crosswind take-off and climb
 - (ii) Normal and crosswind approach and landing
 - (iii) Soft-field take-off and climb (SE)
 - (iv) Soft-field approach and landing (SE)
 - (v) Short-field (Confined area (S)) take-off and maximum performance climb
 - (vi) Short-field (Confined area (S)) approach and landing
 - (vii) Glassy water take-off and climb (S)
 - (viii) Glassy water approach and landing (S)
 - (ix) Rough water take-off and climb (S)
 - (x) Rough water approach and landing (S)
 - (xi) Power-off 180 degrees accuracy approach and landing (SE)
 - (xii) Go-around /rejected landing
- (5) Performance maneuvers: including the applicant's knowledge and performance of the following tasks--
- (i) Steep turns
 - (ii) Steep spiral (SE)
 - (iii) Chandelles (SE)
 - (iv) Lazy eights (SE)
- (6) Ground reference maneuvers; including the applicant's knowledge and performance of the following tasks--

- (i) Eights on pylons (SE)
- (7) Navigation; including the applicant's knowledge and performance of the following tasks:
 - (i) Pilotage and dead reckoning
 - (ii) Navigation systems and radar services
 - (iii) Diversion
 - (iv) Lost procedures
- (8) Slow flight and stalls; including the applicant's knowledge and performance of the following tasks-
 - (i) Maneuvering during slow flight
 - (ii) Power-off stalls
 - (iii) Power-on stalls
 - (iv) Spin awareness
- (9) Emergency operations; including the applicant's knowledge and performance of the following tasks--
 - (i) Emergency approach and landing
 - (ii) Emergency descent (ME)
 - (iii) Engine failure during take-off before VMC (simulated) (ME)
 - (iv) Engine failure after lift-off (simulated) (ME)
 - (v) Approach and landing with an inoperative engine (simulated) (ME)
 - (vi) Systems and equipment malfunctions
 - (vii) Emergency equipment and survival gear
- (10) High altitude operations: including the applicant's knowledge and performance of the following tasks--
 - (i) Supplemental oxygen
 - (ii) Pressurization
- (11) Multi-engine operations (ME): including the applicant's knowledge and performance of the following tasks--
 - (i) Maneuvering with one engine inoperative
 - (ii) VMC demonstration
 - (iii) Engine failure during flight (by reference to instruments)
 - (iv) Instrument approach — one engine inoperative (by reference to instruments)
- (12) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) After landing, parking and securing
 - (ii) Anchoring (S)
 - (iii) Docking and mooring (S)
 - (iv) Ramping/beaching (S)

IS 2.3.3.3 APPENDIX C: AIRPLANE UPSET PREVENTION AND RECOVERY TRAINING (UPRT) FOR CPL AND FOR MPL, ATPL, TYPE RATING, INSTRUCTOR RATING (AIRPLANE) AND INSTRUCTOR AUTHORIZATION FOR FLIGHT SIMULATION TRAINING DEVICE(S) (AIRPLANE)

(a) Definitions

- (1) Angle of attack (AOA). The angle between the oncoming air, or relative wind, and a defined reference line on the airplane or wing,
- (2) Approach-to-stall. Flight conditions bordered by the stall warning and stall.
- (3) Developed upset. A condition meeting the definition of an airplane upset.
- (4) Developing upset. Any time the airplane begins to unintentionally diverge from the intended flight path or airspeed.
- (5) Energy State. How much of each kind of energy (kinetic, potential or chemical) the airplane has available at any given time.
- (6) First indication of a stall. The initial aural, tactile or visual sign of an impending stall, which can be either naturally or synthetically induced.
- (7) Flight path. The trajectory or path of the travelling through the air over a given space of time.
- (8) Flight path management. An active manipulation, using either the airplanes automation or manual handling, to command the airplane flight controls to direct the airplane along a desired trajectory.
- (9) Load factor. The ratio of a specified load to the weight of the airplane, the former being expressed in terms of aerodynamic forces, propulsive forces, or ground reactions.
- (10) Manoeuvre-based training. Training that focuses on a single event or manoeuvre in isolation.
- (11) Negative transfer of training. Training which unintentionally introduces incorrect information or invalid concepts, which could actually decrease rather than increase safety.
- (12) Negative transfer of training. The application (and 'transfer') of what was learned in a training environment (i.e., a classroom, an FSTD) to normal practice, i.e. it describes the degree to which what was learned in training is applied to actual normal practices. In this context, negative transfer of training refers to the inappropriate generalization of knowledge and skill to a situation or setting in normal practice that does not equal the training situation or setting.
- (13) Post-stall regime. Flight conditions at an angle of attack greater than the critical angle of attack.
- (14) Scenario-based training. Training that incorporates manoeuvres into real-world experiences to cultivate practical flying skills in an operational environment.

- (15) Spin. 'Incipient spin' means a transient flight condition in the post-stall regime where an initial, uncommanded roll in excess of 45° has resulted from yaw asymmetry during a stall and which, if recovery action is not taken, will lead rapidly to a developing spin. Prompt recovery during this incipient spin stage will normally result in an overall heading change, from pre-stall conditions, of not more than 180°.

'Developing spin' means a flight condition in the post-stall regime where the airplane exhibits abnormal, but varying, rates of yaw and roll, together with changing pitch attitude, following an incipient spin but before the establishment of a developed spin. A developing spin follows an unrecovered incipient spin and will usually persist, in the absence of any recovery action, until a developed spin ensues. 'Developed spin' means a flight condition in the post-stall regime where airplane has achieved approximately constant pitch attitude, yaw rate and roll rate on a descending flight path. In action, to attaining a developed spin, the airplane is likely to have rolled through at least 540°.

Note: To summarize, the circumstances that must prevail before an airplane spins are: The airplane must be in a stalled condition and the airplane must yaw and/or roll.

- (16) Stall. A loss of lift caused by exceeding the airplane's critical angle of attack. A stalled condition can exist at any attitude and airspeed, and may be recognized by continuous stall warning activation accompanied by at least one of the following:
- buffeting, which could be heavy at times;
 - lack of pitch authority and/or roll control; and
 - inability to arrest the descent rate.
- (17) Stall Event. An occurrence whereby the airplane experiences conditions associated with an approach-to-stall or a stall.
- (18) Stall (event) recovery procedure. The manufacturer-approved airplane-specific stall recovery procedure. If an OEM-approved recovery procedure does not exist, the airplane-specific stall recovery procedure developed by the operator, based on the stall recovery template contained in IS 2.3.3.3 Appendix C, may be used.
- (19) Stall warning. A natural or synthetic indication provided when approaching a stall that may include one or more of the following indications:
- aerodynamic buffeting (some airplanes will buffet more than others);
 - reduced roll stability and aileron effectiveness;
 - visual or aural cues and warnings;
 - reduced elevator (pitch) authority;
 - inability to maintain altitude or arrest rate of descent; and
 - stick shaker activation (if installed).
- (20) Startle. The initial short-term, involuntary physiological and cognitive reactions to an unexpected event that commence the normal human stress response.
- (21) Stick pusher. A device that, automatically applies a nose down movement and pitch force to an airplane's control columns, to attempt to decrease the airplane's angle to attack. Device activation may occur before or after aerodynamic stall, depending on the airplane type.

Note: A stick pusher is not installed on all airplane types.

- (22) Stick shaker. A device that automatically vibrates the control column to warn the pilot of an approaching stall.

Note. A stick shaker is not installed on all airplane types.

- (23) Stress (response). The response to a threatening event that includes physiological, psychological and cognitive effects. These effects may range from positive to negative and can either enhance or degrade performance.

- (24) Surprise. The emotionally-based recognition of a difference in what was expected and what is actual.

- (25) Train-to-proficiency. Approved training designed to achieve end-state performance objectives, providing sufficient assurances that the trained individual is capable to consistently carry out specific tasks safely and effectively.

(b) Upset prevention and recovery training - UPRT			
(1) Upset <u>prevention</u> training in FSTDs or airplanes:			
The objective of upset prevention training is to enable pilots to prevent airplane upsets. Upset prevention training consist of ground training and flight instruction in FSTD or airplanes; it should use a combination of manoeuvre-based and scenario-based training. Scenario-based training may be used to introduce pilots to situations which, if not correctly managed, could lead to an upset condition. Relevant TEM and CRM aspects should be included in scenario-based training.			
In FSTDs instructors and pilots should understand the limitations of the device. To avoid negative training and negative transfer of training, instructors should ensure that the selected upset prevention scenarios and exercises take into consideration the limitations of the FSTD and the extent to which it represents the handling characteristics of the actual airplane. If it is determined that the FSTD is not suitable, the required training outcome should be achieved by other means.			
The upset prevention elements in Table 1 should be integrated into the flight instruction of CPL, MPL, ATPL and Type rating modules and phases, such that all the elements are covered.			
Core elements and components		Pre-Flight briefing	Flying Training
A.	Aerodynamics		
1.	General Aerodynamic Characteristics	X	X
2.	Aeroplane certification and limitations	X	X
3.	Aerodynamics (high and low altitude)	X	X
4.	Aeroplane performance (high and low altitude)	X	X
5.	AoA and stall awareness	X	X
6.	Aeroplane stability	X	X
7.	Control surface fundamentals	X	X
8.	Use of trim	X	X
9.	Icing and contamination effects	X	X
10.	Propeller slipstream (as applicable)	X	X
B.	Causes of and contributing factors to upsets		
1.	Environmental	X	X
2.	Pilot-induced	X	X
3.	Mechanical (aeroplane systems)	X	X
C.	Safety review of accidents and incidents relating to aeroplane upsets		

1.	Safety review of accidents and incidents relating to aeroplane upsets	X	X
D.	G-load management		
1.	Positive/negative/increasing/decreasing G-loads	X	X
2.	Lateral G awareness (sideslip)	X	X
3.	G-load management	X	X
E.	Energy management		
1.	Kinetic energy vs potential energy vs chemical energy (power)	X	X
F.	Flight path management		
1.	Relationship between pitch, power and performance	X	X
2.	Performance and effects of differing power plants	X	X
3.	Manual and automation inputs for guidance and control (if applicable)	X	X
4.	Class-specific characteristics of flight path management	X	X
5.	Management of g-arounds from various stages during the approach	X	X
6.	Automation management (if applicable)	X	X
7.	Proper use of rudder	X	X
G.	Recognition		
1.	Class-specific examples of instrumentation during developing and developed upset	X	X
2.	Pitch/power/roll/yaw	X	X
3.	Effective scanning (effective monitoring)	X	X
4.	Stall protection systems and cues	X	X
5.	Criteria for identifying stalls and upsets	X	X
H.	System malfunction (including immediate handling and subsequent operational considerations, as applicable)		
1.	Flight control defects	X	X
2.	Engine failure (partial or full)	X	X
3.	Instrument failures	X	X
4.	Loss of reliable airspeed	X	X
5.	Automation failures	X	X
6.	Stall protection system failures, including icing alerting systems	X	X
I.	Additional exercises, Flight path management, manual control		
1.	Manually controlled slow flight	X	X
2.	Steep turns	X	X
3.	Manually controlled loss of reliable airspeed	X	X
4.	Manually controlled instrument departure and arrival	X	X
5.	Visual approach	X	X
6.	Recovery from bounced landing	X	X
<p><i>Upset prevention training is delivered by personnel holding an instructor rating or authorization for synthetic flight training.</i></p> <p><i>Normally used for all exercises require during CPL, MPL, ATPL and Type rating training.</i></p> <p>This “normal” training envelope can be defined by the airplane certified flight envelope, operational parameters, and safety margins for student and instructor errors; e.g. for prevention training in airplanes:</p>			

<ul style="list-style-type: none"> • <i>bank angles</i>: Prevention training in airplane certified in the Normal category must respect the bank limitation of 60deg, and additionally consider sufficient margin for errors, to avoid exceeding the 60deg of bank; consequentially exercises exceeding 45deg of bank should not be planned; • <i>pitch attitude</i>: Excessive pitch attitudes beyond those attitudes normally flown during licensing training should be avoided; prevention training should stay within 25deg nose-high and 10deg nose-down; • <i>airspeed</i>: Prevention exercises should stay within an airspeed range of V_s to V_a; • <i>AOA</i>: Post-stall exercises should only flown in airplane certified at least for incipient spin; incipient spins should only be flown in airplane certified for developed spin.
(2) Upset <u>recovery</u> training:
<p>i) Upset recovery training in FSTDs for CPL, MPL, ATPL and Type Rating Upset recovery training assumes that prevention has failed and an upset has developed. It should be designed as manoeuvre-based training. The objective of upset recovery training is to enable pilots to recover from developed upsets and to build pilot resilience.</p> <p>Resilience can be increased by raising the level of competence (behaviors that mobilize the relevant knowledge, skills and attitudes) and by achieving the appropriate level of confidence (trust).</p> <p>Upset recovery training consist of ground training and flight instruction in an FSTD or an airplane.</p> <p>Ground training should comprise the elements in Table 2; flight instruction should comprise the exercises in Table 3.</p>

Table 2: Elements of upset recovery training

Core elements and components	
A.	Threat and Error Management (TEM) & Crew Resource Management (CRM)
1.	TEM framework
2.	Recognition of threats and errors of undesired aircraft states
3.	Management of threats and errors of undesired aircraft states
4.	Countermeasures of threats and errors of undesired aircraft states (early intervention and timely switching to undesired aircraft states management when necessary to prevent upsets)
5.	Situational awareness
6.	Aeroplane flight plan management, manual control
7.	Application of procedures
8.	Problem-solving decision-making
9.	Workload management
10.	Communication
11.	Leadership and teamwork
B.	Human factors – managing consequential psychological and physiological effects of developed upsets
1.	Active monitoring and checking
2.	Human information processing, cognitive effects
3.	Perceptual illusions (visual or physiological) and spatial disorientation, effects of G-loads
4.	Correct interpretation of upset attitudes and energy states
5.	Management of surprise and startle induced by upset attitudes
6.	Managing the effects of G-loads
7.	Understanding counter-intuitive behavior

8.	Distraction, inattention, fixation
C.	Application of recovery templates
1.	Recovery from nose-high attitudes at various bank angles
2.	Recovery from nose-low attitudes at various bank angles
D.	Application of the OEM stall recovery procedure or the stall recovery template

Table 3: Upset recovery exercises

Upset recovery exercises		Ground Training	Flight Instruction
1.	Timely and appropriate intervention	X	X
Application of OEM recommendations			
2.	Recovery from nose-high at various bank angles	X	X
3.	Recovery from nose-low at various bank angles; Including spiral dive	X	X
Application of the stall recovery SOPs			
4.	*Recovery from stall, including uncoordinated stalls (aggravating yaw)	X	X
5.	*Recovery from accelerated and secondary	X	X
6.	*Recovery from incipient spin	X	X
7.	Recovery from stall events, in the following configurations: - Take-off configuration; - Clean configuration low altitude; - Clean configuration near maximum operating altitude; and - Landing configuration during the approach phase.	X	X
*For on-airplane recovery training only			
Upset recovery courses should be designed with care to allow pilots to gradually increase their performance and build resilience. Pilots should not be required to perform maneuvers not listed in Table 3.			
(1) Stall recovery exercises			
To recover from stall events the stall recovery Standard Operating Procedures (SOPs) of the Original Equipment Manufacturer (OEM) should be used. Instructors or ATOs should therefore consult the OEM on whether any approved specific stall recovery procedures are available prior to using the recommended template in Table 4. The OEM procedures always take precedence over the recommendations.			
Note: Refer to Revision 3 of the APURTA on the ICAO website for a detailed explanation and rationale of the stall recovery template by the OEMs.			

Table 4: Recommended stall event recovery template

Stall Event Recovery Template			
Pilot Flying – Immediately do the following at first indication of a stall (aerodynamic buffeting, reduced roll stability and aileron effectiveness, visual or aural cues and warnings, reduced elevator (pitch) authority, inability to maintain altitude or arrest rate of descent, stick shaker activation (if installed)). – during any flight phases except at lift-off.			
Pilot Flying (PF)			Pilot Monitoring (PM)
1.	AUTOPILOT – DISCONNECT (a large out-of-trim condition could be encountered when the autopilot is disconnected)		MONITOR
2.	AUTOTHURST/AUTOTHROTTLE – OFF		

3.	a) NOSE DOWN PITCH CONTROL apply until stall warning is eliminated b) NOSE DOWN PITCH TRIM (as needed) (reduce the angle of attack (AOA) whilst accepting the resulting loss)		airspeed and attitude throughout the recovery and ANNOUNCE any continued divergence
4.	BANK – WINGS LEVEL		
5.	THRUST – ADJUST (as needed) (Thrust reduction for aeroplanes with underwing mounted engines may be needed)		
6.	SPEEDBRAKES/SPOILERS - RETRACT		
7.	When airspeed is sufficiently increasing – RECOVERY to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)		
(2) Nose-high and Nose-low recovery exercises			
Nose-high and nose-low recovery exercises should use the strategies recommended by the OEMs contained in Table 5 and 6 below.			
<i>Note: As the OEM procedures always take precedence over the recommendations, training providers should consult the respective OEM on whether any approved specific recovery procedures are available prior to using the templates.</i>			
<i>Note: Refer to revision 3 of the Airline Upset Prevention and Recovery Guide (APURTA) for a detailed explanation and rationale of nose-high and nose-low recovery strategies as recommended by the OEMs.</i>			

Table 5: Recommended nose-high recovery strategy

Nose-High recovery strategy template			
Either Pilot – Recognize and confirm the developing situation by announcing ‘nose high’			
Pilot Flying (PF)			Pilot Monitoring (PM)
1.	AUTOPILOT – DISCONNECT (A large out-of-trim condition could be encountered when the autopilot is disconnected)		MONITOR airspeed and attitude throughout the recovery and ANNOUNCE any continued divergence
2.	AUTOTHRUST/AUTOTHROTTLE - OFF		
3.	APPLY as much nose-down control input as required to obtain a nose-down pitch rate		
4.	THRUST – ADJUST (as needed) (Thrust reduction for aeroplanes with underwing mounted engines may be needed)		
5.	ROLL – ADJUST (if required) (Avoid exceeding 60-degree bank)		
6.	When airspeed is sufficiency increasing – RECOVERY to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)		
Note:			
(a) Recovery to level flight may require use of pitch trim.			
(b) If necessary, consider reducing thrust in aeroplanes with underwing-mounted engines to aid in achieving nose-down pitch rate.			
(c) WARNING: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.			

Table 6: Recommended nose-low recovery strategy

Nose-Low recovery strategy template			
Either Pilot – Recognize and confirm the developing situation by announcing ‘nose-low’ (if the autopilot or autothrust/autothrottle is responding correctly, it may not be appropriate to decrease the level of automation while assessing if the divergence is being stopped).			
Pilot Flying (PF)			Pilot Monitoring (PM)
1.	AUTOPILOT – DISCONNECT (A large out-of-trim condition could be encountered when the autopilot is disconnected)		MONITOR airspeed and attitude throughout the recovery and ANNOUNCE any continued divergence
2.	AUTOTHURST/AUTOTHROTTLE – OFF		
3.	RECOVERY form stall if required		
4.	ROLL in the shortest direction to wings level (It may be necessary to reduce the G-loading by applying forward control pressure to improve roll effectiveness)		
5.	THRUST AND DRAG – ADJUST (if required)		
6.	RECOVER to level flight (Avoid the secondary stall due to premature recovery or excessive G-loading)		
Note: (a) Recovery to level flight may require use of pitch trim. (b) WARNING: Excessive use of pitch trim or rudder may aggravate the upset situation or may result in high structural loads.			
ii) On-airplane upset recovery training			
The objective of on-airplane recovery training should be to build pilot resilience. Resilience can be increased by raising the level of competence (behaviors that mobilize the relevant knowledge, skills and attitude) and by achieving the appropriate level of confidence (trust).			
<i>Note: Upset recovery training should not be referred to as aerobatic flight. Although basic aerobatics do contribute to certain pilot competencies, such as airplane flight path management, manual control, and situational awareness, aerobatic manoeuvres do not serve the same training objectives as upset recovery training does. Simply put, the focus of basic aerobatics is on a sequence of prescribed manoeuvres, such as passing through defined attitudes and using perfect energy management. In contrast to basic aerobatics, upset recovery training focusses exactly on the contrary. The training focusses on applying correct and timely recovery strategies to return the airplane to safe flight, whilst building the pilot’s resilience against the associated psychological and physiological human factors (to better cope with the startle and surprise effect). Additionally, in the context of the subsequent pilot career in commercial air transport, it is of the utmost importance that the potential for negative transfer of training is avoided, i.e. single-engine piston airplanes behave differently compared to large transport airplanes.</i>			
The training objectives should enable pilots to:			
(1) apply effective strategies to recover from actual developed upsets;			
(2) manage psychological and physiological effects induced by all-attitude exposure;			

- (3) perform appropriate counter-intuitive actions whilst experiencing unusual accelerations, especially those experienced during deviations from normal 1G flight conditions.

Instructors should:

- (1) deliver training in a spirit of collaborative learning and ensure that pilots will experience the successful outcome of their actions. Success will allow pilots to build positive thinking and confidence in their ability to successfully recover from any developed nose-high or nose-low attitude, and from stalls. Such experience may positively contribute to resilience and consequentially reduce the level of stress in difficult situations. Lower stress levels will then allow problem-focused coping with the situation (including the application of TEM and CRM) and prevent or reduce emotional effects, such as attention-channeling and degraded information processing;
- (2) place emphasis on the differences in aerodynamic behavior and flight controls of large transport airplanes in comparison to training airplane to avoid negative transfer of training;
- (3) place emphasis on the correct application of:
 - (i) the stall recovery Standard Operating Procedures (SOPs) of the Original Equipment Manufacturers (OEMs), or the OEM recommended template, and to reduce the AOA whilst accepting the resulting altitude loss. The training should also emphasize the avoidance of secondary stalls during the recovery; and
 - (ii) the nose-high and nose-low recommendations of the OEM during nose-high attitudes (various bank angles) exercises.

Note: Transport airplanes are typically certified to withstand G-loadings in the range of -1 to +2.5G (or +3G in some business airplanes). As the on-airplane upset recovery training in an airplane is mainly focused on future airline pilots, instructors should ensure that student pilots are not exposed to G-loading outside this range to avoid negative transfer of training.

The on-airplane upset recovery training course shall be completed at an ATO and shall be designed according to the “train-to-proficiency” concept.

It shall comprise at least:

- (1) 5 hours of ground training
- (2) Pre-flight briefings and post-flight debriefings; and
- (3) 3 hours of all-attitude upset recovery flight instruction in an airplane qualified for the training task. Airplane used shall be certified for all pitch and bank attitudes and for developed spins.

Upon completion of the course, the applicant shall be issued with a certificate of completion and a logbook-entry by the ATO.

On-airplane upset recovery training objectives

In general, the training objectives are for the student pilot to be able to

- (1) recognize and confirm the situation;
- (2) apply an appropriate, effective and timely recovery action;
- (3) stay within the airspeed and G-loading envelope;
- (4) correctly recognize when recovered from the upset situation;
- (5) set safe parameters of heading, altitude and speed whilst re-establishing situational awareness;
- (6) identify the reasons for the airplane entering the upset situation and take appropriate corrective actions to prevent further upsets;

(7) become more confident about their skills and ability to recover from an upset situation.

The instructor should ensure that the training area remains well clear of traffic and significant weather.

on-airplane upset recovery exercises

Table 3 shows the list of upset recovery exercises.

In broad terms, there are six kinds of upset situations that should be addressed:

- (1) Nose-high with low airspeed at various bank-angles;
- (2) Nose-low with high airspeed at various bank angles, including spiral dive;
- (3) Airspeed stable with high bank angle;
- (4) Recovery from stall events, including uncoordinated stalls;
- (5) Recovery from accelerated and secondary stall;
- (6) Recovery from incipient spin.

(2) Instructor training

i) Instructor training for UPRT in FSTDs

It is of paramount importance that instructors have the specific competence to deliver UPRT in an FSTD, including the ability to demonstrate knowledge and understanding of the type-specific upset recovery procedures and recommendations developed by the Original Equipment Manufacturers (OEMs). Prior to conducting UPRT training instructors should:

- (a) be able to demonstrate application of the type-specific upset recovery procedures and recommendations developed by the OEMs;
- (b) understand the importance of applying type-specific OEMs procedures for recovery manoeuvres;
- (c) be able to distinguish between the applicable SOPs and the OEMs recommendations (if available);
- (d) understand the capabilities and limitations of the FSTD used for UPRT;
- (e) be aware of the potential of negative transfer of training that may exist when training outside the capabilities of the FSTD;
- (f) understand and be able to use the IOS of the FSTD in the context of effective UPRT delivery;
- (g) understand and be able to use the FSTD instructor tools available for providing accurate feedback on pilot performance;
- (h) understand the importance of adhering to the FSTD UPRT scenarios that have been validated by the training program developer; and
- (i) understand the missing critical human factor aspects due to the limitations of the FSTD and convey this to the student pilot(s) receiving the training.

ii) Instructor training for the on-airplane recovery training

Upset recovery training in the all-attitude/all-envelope environment of an airplane may require instructor performance beyond that experienced in normal operations. Moreover, the safety implications of poor upset recovery instructional technique or misleading information is more significant than in any other areas of pilot training. The unpredictable nature of pilot inputs, reactions and behavior requires fluency in response to a wide variety of potential situations requiring a time-constrained and accurate response. This specialized expertise cannot be acquired through routine flight operations alone but demands that instructor training provide routine flight appropriate degree of exposure necessary to develop a comprehensive understanding of the entire UPRT operating environment, as well as the airplane's limitations and capabilities.

Instructors for the on-airplane upset recovery training should therefore be trained-to-proficiency and remain current to ensure competence in airplane manoeuvring as well as being able to consistently employ effective intervention skills that may become necessary to maintain adequate margins of safety. Such interventions may be required with regard to airplane limitations, altitude, airspace, avoidance of collision, human performance and limitations of the instructor or the trainee or any other threats or errors that might reduce margins of safety. Instructors' training should therefore focus on risk/safety margin management, strong teaching skills with respect to human factors, trainee's psychophysiological reactions (startle and surprise), confidence building, and in-flight recovery skills.

Instructors should:

- (1) ensure that the training objectives of the upset recovery exercises are achieved;
- (2) understand that upset recovery exercises in an aeroplane build primarily resilience and confidence. In other words, the training serves mainly human factor training objectives and less flying skills training;
- (3) have knowledge and understanding of how
 - UPRT in an aeroplane and in an FSTD complement each other;
 - to ensure that negative transfer of training from light aeroplane to heavier transport category aeroplanes is avoided. This may be achieved by observing UPRT in an FSTD, especially in an type-specific FFS;
- (4) have knowledge and understanding of the upset prevention theoretical knowledge and flight instruction elements taught during the CPL, MPL, ATPL and Type rating to ensure continuity and consistency in delivering UPRT;
- (5) ensure that the risk mitigation procedure developed by the ATO are strictly adhered to in order to ensure that safety margins are maintained.

Instructors for on-airplane upset recovery training shall

- (1) have completed an on-airplane upset recovery instructor training course at an ATO;
- (2) have at least 500 hours of flight time as a pilot on airplanes, including 200 hours of flight instruction; and
- (3) shall be experienced in aerobatic flight.

The objectives of the on-airplane upset recovery instructor training is to train instructors to deliver training in accordance with the 'train-to-proficiency' concept and to manage safety.

Training should be both theoretical and practical. Practical elements should include the development of specific instructor skills, particularly in the area of teaching upset recovery techniques and strategies whilst exploring the associated physiological and psychological aspects.

Applicants for the flight instructor privilege of on-airplane upset recovery training should have passed a pre-entry flight assessment with an instructor holding the privilege to instruct in the on-airplane upset recovery training within 6 months preceding the start of the course, to assess their ability to undertake the course.

Instructor training should comprise

- (1) ground training on the elements of upset recovery training in Table 2 and the additional instructor upset recovery course elements in Table 7;
- (2) flight instruction on the upset recovery exercises in Table 3;

(3) additional instructor training elements in Table 7.

Table 7: Additional on-airplane upset recovery instructor training elements

Additional Instructor upset recovery course elements	
1.	Completion of a flight risk assessment
2.	Resilience and confidence-building strategies, managing startle and surprise
3.	Understanding the operating environment
4.	Understanding the limitations and type-specific characteristics of the aeroplane used for training
5.	Value and benefits of an instructor-led demonstration
6.	Energy management factors
7.	Workload management
8.	Instructor techniques to induce and manage startle and surprise
9.	Upset recognition and recovery strategies
10.	Disorientation
11.	Distraction
12.	Recognition of student pilot errors
13.	Intervention strategies
<p>During the training, the performance of the instructor shall be continuously assessed and recorded.</p> <p>Upon completion of the course, the applicant shall be issued with a certificate of completion and logbook-entry by the ATO.</p>	
<p>(3) Use of FSTDs for UPRT</p> <p>The use of an FSTD provides valuable training without the risks associated with airplane training. In order to avoid negative transfer of training, the capabilities of the specific FSTD to be used should be considered when designing and delivering the training program, especially when manoeuvre training could involve operation outside the normal flight envelope of the airplane, for example during aerodynamic stall.</p> <p>Type-specific content contained in the training program should be developed in consultation with the OEMs to avoid negative training or negative transfer of training.</p> <p>Some FSTDs may offer capabilities that could enhance the UPRT, such as Instructor Operating Station (IOS) feature, enhanced aerodynamic models and enhanced motion cueing. The value of such features in support of the training objectives may be considered.</p> <p>The FSTD used for upset recovery training should be qualified to ensure that the training task objectives can be achieved and negative transfer of training is avoided.</p> <p>A level C or D FFs is qualified for the upset recovery training task. Exercises Outside the Validated Training Envelope (VTE) should not be conducted. This is especially relevant for stall event training.</p> <p>Lower level FSTD (e.g. ICAO Type VI) may also qualify for the upset recovery training task if equivalency for the specific features needed for the task can be demonstrated through the conduct of a special evaluation. Once the lower level FSTD is deemed to qualify, the authority should enter the additional capability on the certificate using the wording 'upset recovery training'.</p> <p>Except for CPL and MPL, credit for on-airplane recovery training may be granted for recovery training in an FSTD, if it can be demonstrated that the FSTD is capable of delivering the same training results, by offering an appropriate level of fidelity; e.g. a motion of platform delivering sustained g-loading, aerodynamic modelling of the same AOA range (alpha-beta-envelope), stall behavior etc., to fully support the upset recovery training</p>	

objectives, in particular the psycho-physiological effects equivalent to the aircraft. Once the FSTD is deemed to qualify, the authority should enter the additional capability on the certificate using the wording 'credit for on-airplane upset recovery training'

(4) Additional guidance

Specific guidance on upset prevention training is available in the latest revisions of the ICAO Doc 10011 'Manual on Airplane Upset Prevention and Recovery Training' and in the 'Airplane Upset Prevention and Recovery Training Aid', available on the ICAO website.

IS 2.3.3.4 APPENDIX A: AIRLINE TRANSPORT PILOT LICENSE (A) — KNOWLEDGE

(a) The knowledge instruction and test for the airline transport pilot license — airplane shall include at least the following subjects:

(1) Air law

- (i) International Agreements and Organizations: The Convention of Chicago: Other International agreements: IATA agreement, Tokyo and Warsaw Convention: PIC authority and responsibility regarding safety and security: Operators and pilots liabilities towards persons and goods on the ground: in case of damage and injury caused by the operation of the aircraft; Commercial practices and associated rules: dry and wet lease;
- (ii) Relevant parts of ICAO Annexes: 1. 2. 7, 8, 9, 11 (and Doc 4444). 12, 13, 14, 15, 17.
- (iii) Procedures for air navigation (PANS-OPS) - Aircraft Operations Doc 8168;
- (iv) National law;

(2) Aircraft general knowledge

- (i) Airframe and systems, electrics, powerplant; emergency equipment
 - (A) Airframe and systems: Fuselage: Cockpit and cabin windows: Wings, Stabilizing surfaces: Landing Gear: Flight Controls; Hydraulics: Air driven systems (piston engines only): Air driven systems (turbopropeller and jet aircraft): Non-pneumatic operated de-ice and anti-ice systems; Fuel system;
 - (B) Electrics: Direct Current (DC); Alternating Current (AC): Semiconductors: Basic knowledge of computers: Basic radio propagation theory;
 - (C) Powerplant: Piston Engine: Turbine Engine: Engine construction: Engine systems, Auxiliary Power Unit (APU);
 - (D) Emergency equipment: Doors and emergency exits; Smoke detection; Fire detection; Fire fighting equipment; Aircraft oxygen equipment; Emergency equipment;
- (ii) Instrumentation
 - (A) Flight instruments: Air data instruments, Gyroscopic instruments; Magnetic Compass; Radio Altimeter; Electronic Flight Instrument System (EFIS); Flight Management System (FMS);
 - (B) Automatic flight control system: Flight director, Autopilot; Flight envelope protection; Yaw damper/Stability augmentation system, Automatic pitch trim; Thrust computation, Auto-thrust,

- (C) Warning and recording equipment: Warnings general; Altitude alert system; Ground proximity warning system (GPWS); Traffic collision avoidance system (TCAS), Overspeed warning; Stall warning, Flight data recorder; Cockpit voice recorder;
 - (D) Powerplant and system monitoring instruments: Pressure gauge, Temperature gauge, RPM indicator; Consumption gauge; Fuel gauge; Torque meter; Flight hour meter; Vibration motoring; Remote (signal)transmission system; Electronic Displays;
- (3) Flight performance and planning
- (i) Mass and balance: Center of gravity, Mass and balance limits;
 - (ii) Loading: Terminology; Aircraft mass checks; Procedures for determining airplane mass and balance documentation; Effects of overloading;
 - (iii) Center of gravity: Basis of cg calculations (load and balance documentation); Calculation of cg; Securing of loading; Area load; running load, supporting;
 - (iv) Performance of single-engine airplanes not certified under FAR/JAR 25 — Performance class B: Definitions of terms and speeds; Take-off and landing performance, Climb and cruise performance,
 - (v) Performance of multi-engine airplanes not certified under FAR/JAR 25 — Performance class B: Definitions of terms and speeds; Importance of performance calculations; Elements of performance, Use of performance graphs and tabulated data;
 - (vi) Performance of airplanes certified under FAR/JAR 25 — Performance class A: Take-off, Accelerate-stop distance, Initial Climb; Climb; Cruise; Descent and landing; Practical application of an airplane performance manual;
 - (vii) Flight planning and flight monitoring:
 - (A) Flight plan for cross country flights: Navigation plan; Fuel plan; Flight monitoring and in-flight re-planning; Radio communication and navigation aids;
 - (B) ICAO ATC flight plan: Types of flight plan; Completing the flight plan; Filling the flight plan; Closing the flight plan; Adherence to flight plan;
 - (C) Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans; Radio planning practice.
 - (viii) *IFR (airways) flight planning: Meteorological considerations; Selection of routes to destination and alternates; General flight planning tasks;*
 - (A) Jet airplanes flight planning: Additional flight planning aspects for jet airplanes (advanced flight planning); computerized flight planning;
 - (B) Practical completion of a flight plan (flight plan, flight log, nav log, ATC plan, etc.): Extraction of data;
- (4) Human performance
- (i) Human factors basic concepts: Human factors in aviation; Accident statistics; Flight safety concepts;
 - (ii) Basic aviation physiology: Basics of flight physiology; Man and environment: the sensory system; Health and Hygiene;
 - (iii) Basic aviation psychology: Human information processing; Human error and reliability; Decision making; Avoiding and managing errors: cockpit

management; Personality; Human overload and underload, Advanced cockpit automation

(5) Meteorology

- (i) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; International Standard Atmosphere (ISA); Altimetry;
- (ii) Wind: Definition and measurement; Primary cause of wind; General circulation; Turbulence; Variation of wind with height; Local winds; Jet streams; Standing waves;
- (iii) Thermodynamics: Humidity; Change of state of aggregation; Adiabatic processes
- (iv) Clouds and Fog: Cloud formation and description; Fog, mist, haze
- (v) Precipitation: Development; Types;
- (vi) Airmasses and fronts: Types of airmasses; Fronts;
- (vii) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions; Tropical revolving storms
- (viii) Climatology: Climatology zones; Tropical climatology; Typical weather situations in mid-latitudes; Local seasonal weather and wind
- (ix) Flight hazards: Icing, Turbulence; Wind-shear; Thunderstorms; Tornadoes; Low and high level inversions; Stratospheric conditions; Hazards in mountainous areas; Visibility reducing phenomena;
- (x) Meteorological information: Observation, Weather charts, Information for flight planning

(6) Navigation:

- (i) General Navigation: Basics of navigation: The solar system; The earth, Time and time conversions: Directions, Distance
- (ii) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
- (iii) Charts: General properties of miscellaneous types of projections; The representation of meridians, parallels, great circles and rhumb lines; The use of current aeronautical charts
- (iv) Dead reckoning navigation (DR): Basics of dead reckoning; Use of the navigational computer; The triangle of velocities; Determination of DR position; Measurement of DR elements; Resolution of current DR problems; Measurements of maximum range, radius of action and point-of-safe-return and point-of-equal-time
- (v) In-flight navigation: Use of visual observations and application to in-flight navigation; Navigation in climb and descent; Navigation in cruising flight, use of fixes to revise navigation data; Flight log (including navigation records); Purposes of FMS (flight management systems);
- (vi) Inertial navigation systems (INS): Principles and practical application; Alignment procedures; Accuracy, reliability, errors and coverage, INS operation;

- (vii) Radio Navigation: Radio aids: Ground D/F (including classification of bearings); ADF (including associated beacons and use of the radio magnetic indicator); VOR and Doppler VOR (including the use of the radio magnetic indicator); DME (distance measuring equipment); ILS (instrument landing system); MLS (Microwave landing system);
 - (viii) Basic radar principles: Pulse techniques and associated terms; Ground radar; Airborne weather radar; SSR (secondary surveillance radar and transponder); Use of radar observations and application to in-flight navigation;
 - (ix) Area navigation systems: General philosophy; Typical flight deck equipment and operation; Instrument indications; Types of area navigation system inputs; VOR/DME area navigation (RNAV); Flight director and autopilot coupling;
 - (x) Self-contained and external-referenced navigation systems: Doppler, Loran-C; Decca navigation system; Satellite assisted navigation: GPS/GLONASS/DGPS
- (7) Operational procedures
- (i) ICAO Annex 6 Parts I, II and III (as applicable); Navigation requirements for long-range flights;
 - (ii) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Decompression of pressurized cabin; Wind-shear, microburst; Wake turbulence; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways;
- (8) Principles of flight:
- (i) Basics, laws and definitions; The two-dimensional airflow about an aerofoil; The coefficients; The three-dimensional airflow about an airplane; The total drag; The ground effect; The relation between the lift coefficient and the speed for constant lift; The stall; Climax augmentation, Means to decrease the CLCD ratio, increasing drag; The boundary layer; Special circumstances,
 - (ii) Transonic aerodynamics: The Mach number definition, Normal shockwaves; Means to avoid the effects of exceeding M-CRIT
 - (iii) Supersonic aerodynamics: Oblique shockwaves
 - (iv) Stability: Condition of equilibrium in stable horizontal flight; Methods of achieving balance; Longitudinal stability; Static directional stability; Static lateral stability; Dynamic lateral stability;
 - (v) Control: General; Pitch control; Yaw control; Roll control; Interaction in different planes (yaw/roll); Means to reduce control forces; Mass balance; Trimming;
 - (vi) Limitations: Operating limitations, Maneuvering envelope; Gust envelope,
 - (vii) Propellers: Conversion of engine torque to thrust; Engine failure or engine stop; Design feature for power absorption; Moments and couples due to propeller operation;
 - (viii) Flight mechanics: Forces acting on an airplane; Asymmetric thrust; Emergency descent; Wind-shear;
- (9) Radiotelephony:
- (i) VFR Communications: Definitions; General operating procedures; Relevant weather information terms (VFR); Action required to be taken in case of

communication failure, distress and urgency procedures; General principles of VHF propagation and allocation of frequencies,

- (ii) IFR Communications: Definitions; General operating procedures; Action required to be taken in case of communication failure; Distress and urgency procedures; General principles of VHF propagation and allocation of frequencies;
- (iii) Morse code.

IS 2.3.3.4 APPENDIX B: AIRLINE TRANSPORT PILOT LICENSE (A) – FLIGHT INSTRUCTION AND SKILL TEST

- (a) The flight instruction and skill test for the airline transport pilot license - airplanes shall include CRM and at least the following areas of operation:
 - (1) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks--
 - (i) Equipment examination
 - (ii) Performance and limitations
 - (2) Pre-flight procedures: including the applicant's knowledge and performance of the following tasks--
 - (i) Pre-flight inspection
 - (ii) Powerplant start
 - (iii) Taxiing
 - (iv) Before takeoff checks
 - (3) Take-off and departure phase: including the applicant's knowledge and performance of the following tasks--
 - (i) Normal takeoffs with different flap settings. including expedited take-off
 - (ii) Instrument takeoff;
 - (iii) Powerplant failure during takeoff
 - (iv) Rejected takeoff
 - (v) Departure procedures
 - (4) In-flight maneuvers; including the applicant's knowledge and performance of the following tasks--
 - (i) Steep turns
 - (ii) Approach to stalls
 - (iii) Powerplant failure
 - (iv) Specific flight characteristics
 - (v) Recovery from unusual altitudes.
 - (5) Instrument procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) Standard terminal arrival/flight management system procedures
 - (ii) Holding procedures

- (iii) Precision instrument approaches
 - (iv) Non-precision instrument approaches
 - (v) Circling approach
 - (vi) Missed approach
- (6) Landings and approaches to landings; including the applicant's knowledge and performance of the following tasks--
- (i) Normal and crosswind approaches and landings
 - (ii) Landing from a precision approach
 - (iii) Approach and landing with (simulated) powerplant failure
 - (iv) Landing from a circling approach
 - (v) Rejected landing
 - (vi) Landing from a no-flap or a non-standard flap approach.
- (7) Normal and abnormal procedures
- (8) Emergency procedures
- (9) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
- (i) After landing procedures
 - (ii) Parking and securing

IS 2.3.3.5 Appendix 'A' MULTI-CREW PILOT LICENSE KNOWLEDGE AND EXPERIENCE

The applicant shall have completed a course of approved training covering all the knowledge and experience requirements specified herein:

- (a) Knowledge: The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an airline transport pilot license and appropriate to the category of aircraft intended to be included in the license, in at least the following subjects:
- (1) Meteorology
 - (2) Air law
 - (i) rules and regulations relevant to the holder of an airline transport pilot license; rules of the air; appropriate air traffic services practices and procedures;
 - (3) Aircraft general knowledge for airplanes, helicopters and powered-lifts
 - (i) general characteristics and limitations of electrical, hydraulic, pressurization and other aircraft systems; flight control systems, including autopilot and stability augmentation;
 - (ii) principles of operation, handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document;
 - (iii) operating procedures and limitations of the relevant category of aircraft; effects of atmospheric conditions on aircraft performance in accordance with the relevant operational information from the flight manual;

- (iv) use and serviceability checks of equipment and systems of appropriate aircraft;
 - (v) 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 and electronic display units;
 - (vi) maintenance procedures for airframes, systems and powerplants of appropriate aircraft;
 - (vii) for helicopters and powered-lifts, transmission (power trains) where applicable;
- (4) Flight performance, planning and loading
- (v) effects of loading and weight distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
 - (ii) use and practical application of take-off, landing and other performance data, including procedures for cruise control;
 - (iii) 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;
 - (iv) in the case of helicopters and powered-lifts, effects of external loading on handling;
- (5) Human performance
- (i) human performance including principles of threat and error management;
 - (ii) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
 - (iii) 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;
 - (iv) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
 - (v) in the case of airplanes and powered-lifts, practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts; jet streams;
- (6) Navigation
- (i) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
 - (ii) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aircraft;
 - (iii) use, accuracy and reliability of navigation systems used in departure, enroute, approach and landing phases of flight; identification of radio navigation aids;
 - (iv) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;
- (7) Operational procedures
- (i) application of threat and error management to operational performance;

- (ii) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (iii) precautionary and emergency procedures; safety practices;
 - (iv) operational procedures for carriage of freight and dangerous goods;
 - (v) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft;
 - (vi) in the case of helicopters, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC;
- (8) Principles of flight
- (i) principles of flight;
- (9) Radiotelephony
- (i) communication procedures and phraseology; action to be taken in case of communication failure.
 - (ii) In addition to the above subjects, the applicant for an airline transport pilot license applicable to the airplane or powered-lift category shall have met the knowledge requirements for the instrument rating.

IS 2.3.3.5 APPENDIX B: MULTI-CREW PILOT LICENSE SKILLS

- (a) The applicant shall have demonstrated the ability to perform, as pilot-in-command of an aircraft within the appropriate category required to be operated with a copilot, the following procedures and maneuvers:
- (1) pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;
 - (2) normal flight procedures and maneuvers during all phases of flight;
 - (3) abnormal and emergency procedures and maneuvers related to failures and malfunctions of equipment, such as powerplant, systems and airframe;
 - (4) procedures for crew incapacitation and crew coordination, including allocation of pilot tasks, crew cooperation and use of checklists; and
 - (5) in the case of airplanes and powered-lifts, procedures and maneuvers for instrument flight described the applicant shall have completed not less than:
 - (6) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the Licensing Authority, of which not less than 10 hours shall be in the aircraft category being sought; and
 - (7) 40 hours of instrument time in aircraft of which not more than 20 hours, or 30 hours where a flight simulator is used, may be instrument ground time. The ground time shall be under the supervision of an authorized instructor.
- (b) Flight instruction
- (1) The applicant shall have gained not less than 10 hours of instrument flight time while receiving dual instrument flight instruction in the aircraft category being sought, from a flight instructor authorized by the Authority. 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:

- (i) 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;
- (ii) pre-flight inspection, use of checklists, taxiing and pre take-off checks;
- (iii) procedures and maneuvers for LFR operation under normal, abnormal and emergency conditions covering at least:
 - (A) transition to instrument flight on take-off;
 - (B) standard instrument departures and arrivals;
 - (C) en-route IFR procedures;
 - (D) holding procedures;
 - (E) instrument approaches to specified minima;
 - (F) missed approach procedures;
 - (G) landings from instrument approaches;
 - (H) in-flight maneuvers and particular flight characteristics including simulated engine failure.
 - (I) In the case of an airplane, the applicant shall have demonstrated the ability to perform the procedures and maneuvers described as pilot-in-command of a multi-engine airplane.
- (2) The applicant shall have demonstrated the ability to perform the procedures and maneuvers described with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot license, and to:
 - (i) recognize and manage threats and errors;
 - (ii) smoothly and accurately, manually control the aircraft within its limitations at all times, such that the successful outcome of a procedure or maneuver is assured;
 - (iii) operate the aircraft in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;
 - (iv) perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight;
 - (v) exercise good judgment and airmanship, to include structured decision making and the maintenance of situational awareness; and
 - (vi) communicate effectively with other flight crew members and demonstrate the ability to effectively perform procedures for crew incapacitation, crew coordination, including allocation of pilot tasks, crew cooperation, adherence to standard operating procedures (SOPs) and use of checklists.

IS 2.3.3.6 APPENDIX A: INSTRUMENT RATING (A AND H) - KNOWLEDGE

- (a) The knowledge instruction and test for the instrument rating — airplane and helicopter shall include at least the following subjects:
 - (1) Air law
 - (i) International Agreements and Organizations: The Convention of Chicago; Other International agreements: IATA agreement, Tokyo and Warsaw Convention; PIC authority and responsibility regarding safety and security,

Operators and pilots liabilities towards persons and goods on the ground, in case of damage and injury caused by the operation of the aircraft, Commercial practices and associated rules: dry and wet lease

- (ii) Relevant parts of ICAO Annexes: 1, 2, 7; 8, 9, 11 (and Doc 4444), 12, 13, 14, 15;
 - (iii) Procedures for air navigation (PANS-OPS) - Aircraft Operations Doc 8168;
 - (iv) National law
- (2) Aircraft general knowledge
- (i) Airframe and systems, electrics, powerplant, emergency equipment
 - (A) Airframe and systems: Air driven systems (piston engines only), Air driven systems (turbo propeller and jet aircraft), Non-pneumatic operated de-ice and anti-ice systems, Fuel systems
 - (B) Electrics: Direct Current (DC), Basic radio propagation theory
 - (C) Flight instruments: Air data instruments, Gyroscopic instruments, Magnetic Compass, Radio Altimeter; Electronic Flight Instrument System (EFTS), Flight Management System (FMS)
 - (D) Automatic flight control system: Flight director; Autopilot; Yaw damper/Stability augmentation system;
 - (E) Warning and recording equipment: Warnings general; Stall warning;
- (3) Flight performance and planning
- (i) Flight planning and flight monitoring:
 - (A) Flight plan for cross country flights: Navigation plan, Fuel plan, Flight monitoring and in-flight re-planning, Radio communication and navigation aids;
 - (B) ICAO ATC flight plan: Types of flight plan, Completing the flight plan, Filling the flight plan, Closing the flight plan, Adherence to flight plan
 - (C) Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans, Radio planning practice
 - (D) IFR (airways) flight planning: Meteorological considerations, Selection of routes to destination and alternates, General flight planning tasks,
 - (E) Practical completion of a flight plan (flight plan, flight log, nay log, ATC plan, etc.): Extraction of data
- (4) Human performance
- (i) Human factors basic concepts: Human factors in aviation, Accident statistics, Flight safety concepts
 - (ii) Basic aviation physiology: Basics of flight physiology, Man and environment: the sensory system; Health and Hygiene;
 - (iii) Basic aviation psychology: Human information processing; Human error and reliability; Decision making; Avoiding and managing errors: cockpit management; Personality; Human overload and underload, Advanced cockpit automation
- (5) Meteorology
- (i) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;

- (ii) Wind: Definition and measurement: General circulation; Turbulence: Variation of wind with height; Local winds; Standing waves;
 - (iii) Thermodynamics: Humidity; Change of state of aggregation; Adiabatic processes
 - (iv) Clouds and Fog: Cloud formation and description; Fog, mist, haze
 - (v) Precipitation: Development and types of precipitation;
 - (vi) Airmasses and fronts: Types of airmasses; Fronts;
 - (vii) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions;
 - (viii) Climatology: Typical weather situations in mid-latitudes; Local seasonal weather and wind
 - (ix) Flight hazards: Icing, Turbulence; Wind-shear; Thunderstorms; Low and high level inversions; Hazards in mountainous areas;
 - (x) Meteorological information: Observation, Weather charts, Information for flight planning
- (6) Navigation:
- (i) General Navigation:
 - (ii) Charts: The use of current aeronautical charts
 - (iii) Radio Navigation: Radio aids: Ground D/F (including classification of bearings); ADF (including associated beacons and use of the radio magnetic indicator); VOR and Doppler-VOR (including the use of the radio magnetic indicator); DME (distance measuring equipment); ILS (instrument landing
 - (iv) system); MLS (Microwave landing system);
 - (v) Basic radar principles: Pulse techniques and associated terms; Ground radar; Airborne weather radar; SSR (secondary surveillance radar and transponder); Use of radar observations and application to in-flight navigation;
 - (vi) Area navigation systems: General philosophy; Typical flight deck equipment and operation; Instrument indications; Types of area navigation system inputs; VOR/DME area navigation (RNAV);
 - (vii) Self-contained and external-referenced navigation systems: Satellite assisted navigation: GPS/GLONASS/DGPS
- (7) Operational procedures
- (i) General
 - (ii) Special operational procedures and hazards: General
- (8) Radiotelephony:
- (i) IFR Communications: Definitions; General operating procedures; Action required to be taken in case of communication failure; distress and urgency procedures; General principles of VHF propagation and allocation of frequencies; Morse code.

IS 2.3.3.6 APPENDIX B: INSTRUMENT RATING (A AND H) - FLIGHT INSTRUCTION, SKILL TEST AND PROFICIENCY CHECK

- (a) The flight instruction, skill test and proficiency check for the instrument rating — airplane and helicopter shall include at least the following areas of operation:

Note: When (SE) is indicated the item or paragraph is only for single-engine. When (ME) is indicated the item or paragraphs is only for multi-engine. When nothing is indicated the item or paragraph is for single-engine and multi-engine.

- (1) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks--
 - (i) Weather information
 - (ii) Cross-country flight planning
- (2) Pre-flight procedures; including the applicant's knowledge and performance of the following tasks:
 - (i) Aircraft systems related to IFR operations
 - (ii) Aircraft flight instruments and navigation equipment
 - (iii) Instrument cockpit check
- (3) Air traffic control clearances and procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) Air traffic control clearances
 - (ii) Compliance with departure, en route and arrival procedures and clearances
 - (iii) Holding procedures
- (4) Flight by reference to instruments; including the applicant's knowledge and performance of the following tasks--
 - (i) Straight-and-level flight
 - (ii) Change of airspeed
 - (iii) Constant airspeed climbs and descents
 - (iv) Rate climbs and descents
 - (v) Timed turns to magnetic compass headings
 - (vi) Steep turns
 - (vii) Recovery from unusual flight attitudes
- (5) Navigation systems; including the applicant's knowledge and performance of the following tasks--
 - (i) Intercepting and tracking navigational systems and DME Arcs
- (6) Instrument approach procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) Non-precision instrument approach
 - (ii) Precision ILS instrument approach
 - (iii) Missed approach
 - (iv) Circling approach
 - (v) Landing from a straight-in or circling approach

- (7) Emergency operations; including the applicant's knowledge and performance of the following tasks--
 - (i) Loss of communications
 - (ii) One engine inoperative during straight-and-level flight and turns (ME)
 - (iii) One engine inoperative — instrument approach (ME)
 - (iv) Loss of gyro attitude and/or heading indicators
- (8) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) Checking instruments and equipment

IS 2.3.3.7 APPENDIX A: PRIVATE PILOT LICENSE (H) — KNOWLEDGE

- (a) The knowledge instruction and test for the private pilot license - helicopter shall include at least the following subjects:
 - (1) Air law
 - (i) Relevant parts of ICAO Convention and Annexes 2, 7, 8, 11 and 14
 - (ii) ICAO Document 4444: General provisions, Area control service, Approach control service, Aerodrome control service; Flight information and alerting service
 - (iii) National law:
 - (2) Aircraft General Knowledge
 - (i) Airframe: Rotors: Airframe structure and loads
 - (ii) Powerplant: Piston engine; Engines general, lubrication system; air cooling; ignition systems, engine fuel supply, engine performance, power augmentation devices, fuel, mixture, engine handling and manipulation. operational criteria,
 - (iii) Systems: electrical system, hydraulic system
 - (iv) Instruments: Pilot/static system, Airspeed indicator, Altimeter, Vertical speed indicator, Gyroscopes, Turn indicator, Altitude indicate, Heading indicator, Magnetic compass, Engine instruments, Other instruments
 - (v) Airworthiness
 - (3) Flight Performance and Planning
 - (i) Mass and balance
 - (ii) Performance: Take-off; Landing; In flight
 - (4) Human performance:
 - (i) Basic physiology: Concepts, Effects of partial pressure, Vision, Hearing; Motion sickness, Flying and health; Toxic hazards
 - (ii) Basic psychology: The information process, the central decision channel, stress, judgment and decision making
 - (5) Meteorology
 - (i) The atmosphere, Pressure, density and temperature, Humidity and precipitation, Pressure and wind, Cloud information, Fog, mist and haze, Airmasses, Frontology, Ice accretion, Thunderstorms, Flight over mountainous

areas, Climatology, Altimetry, The meteorological organization, Weather analysis and forecasting; Weather information for flight planning, Meteorological broadcasts for aviation

- (6) Navigation
 - (i) Form of the earth; Mapping, Conformal conic projection, Direction, Helicopter magnetism, Distances, Charts in practical navigation, Chart reference material/map reading, Principles of navigation; The navigation computer; Time; Flight planning, Practical navigation
- (7) Radio navigation: Ground directory finding (D/F), Automatic directory finding (ADF), including associated beacons (non directional beacons (NDBs)) and use of the radio magnetic indicator (RMI), VHF omni-directional range/distance measuring equipment (VOR/DME), GPS, Ground radar, Secondary surveillance radar
- (8) Operational Procedures
 - (i) Relevant parts of ICAO Annex 6. Part III. Annex 12, 13 and 16 (relevant parts), Contravention of aviation regulations
- (9) Principles of Flight
 - (i) The atmosphere. Airflow around a body; Subsonic flow about a two dimensional aerofoil, Three dimensional flow about an aerofoil, Rotor aerodynamics, Flying controls, Stability. Load factor and maneuvers, Stressloads on the ground, Helicopter specific hazards
- (10) Communications
 - (i) Radio telephony and communications, Departure procedures, En-route procedures, Arrival and traffic pattern procedures, Communications failure, Distress and urgency procedures.

IS 2.3.3.7 APPENDIX B: PRIVATE PILOT LICENSE (H) - FLIGHT INSTRUCTION AND SKILL TEST

- (a) The flight instruction and skill test for the private pilot license - helicopter shall include at least the following areas of operation:
 - (1) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks--
 - (i) Licenses and documents
 - (ii) Weather information
 - (iii) Cross-country flight planning
 - (iv) National airspace system
 - (v) Performance and limitations
 - (vi) Operation of system
 - (vii) Minimum equipment list
 - (viii) Aeromedical factors
 - (2) Pre-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) Pre-flight inspection

- (ii) Cockpit management
- (iii) Engine Starting and rotor engagement
- (iv) Before take-off check
- (3) Aerodrome and heliport operations; including the applicant's knowledge and performance of the following tasks--
 - (i) Radio communications and ATC light signals
 - (ii) Traffic patterns
 - (iii) Aerodrome and heliport markings and lighting
- (4) Hovering maneuvers; including the applicant's knowledge and performance of the following tasks--
 - (i) Vertical take-off and landing
 - (ii) Slope operations
 - (iii) Surface taxi
 - (iv) Hover taxi
 - (v) Air taxi
- (5) Take-off, landing, and go-around; including the applicant's knowledge and performance of the following tasks--
 - (i) Normal and crosswind take-off and climb
 - (ii) Normal and crosswind approach
 - (iii) Maximum performance take-off and climb
 - (iv) Steep approach
 - (v) Rolling take-off
 - (vi) Shallow approach and running/roll-on landing
 - (vii) Go-around
- (6) Performance maneuver; including the applicant's knowledge and performance of the following tasks--
 - (i) Rapid deceleration
 - (ii) Straight in autorotation
- (7) Navigation; including the applicant's knowledge and performance of the following tasks--
 - (i) Pilot age and dead reckoning
 - (ii) Radio navigation and radar services
 - (iii) Diversion
 - (iv) Lost procedures
- (8) Emergency operations; including the applicant's knowledge and performance of the following tasks--
 - (i) Power failure at a hover
 - (ii) Power failure at altitude
 - (iii) Systems and equipment malfunctions

- (iv) Settling-with-power
- (v) Low rotor RPM recovery
- (vi) Dynamic rollover
- (vii) Ground resonance
- (viii) Low G conditions
- (9) Emergency equipment and survival gear Night operation; including the applicant's knowledge and performance of the following tasks--
 - (i) Physiological aspects of night flying
 - (ii) Lighting and equipment for night flying
- (10) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) After landing and securing

IS 2.3.3.8 APPENDIX A: COMMERCIAL PILOT LICENSE (H) — KNOWLEDGE

- (a) The knowledge instruction and test for the commercial pilot license — helicopter shall include at least the following subjects:
 - (1) Air law
 - (i) International Agreements and Organizations: The Convention of Chicago; Other International agreements: IATA agreement, Tokyo and Warsaw Convention; PIC authority and responsibility regarding safety and security; Operators and pilots liabilities towards persons and goods on the ground; in case of damage and injury caused by the operation of the aircraft; Commercial practices and associated rules: dry and wet lease;
 - (ii) Relevant parts of ICAO Annexes: 1. 2.7. 8, 9, 11 (and Doc 4444). 12, 13, 14, 15, 17;
 - (iii) Procedures for air navigation (PANS-OPS) - Aircraft Operations Doc 8168;
 - (iv) National law;
 - (2) Aircraft general knowledge
 - (i) Airframe and systems, electrics, powerplant; emergency equipment
 - (A) Airframe and systems: Helicopter configurations; Controls and rotors; Cockpit and cabin; Landing Gear; Transmission systems; Rotor-brake; Inspection; Hydraulics; Air driven systems De-ice and anti-ice systems, Fuel system
 - (B) Electrics: Direct Current (DC); Alternating Current (AC); Semiconductors; Basic knowledge of computers; Basic radio propagation theory;
 - (C) Powerplant: Piston Engine; Turbine Engine; Engine construction; Engine systems, Auxiliary Power Unit (APU);
 - (D) Emergency equipment: Doors and emergency exits; Smoke detection; Fire detection; Fire fighting equipment; Aircraft oxygen equipment; Emergency equipment;
 - (ii) Instrumentation

- (A) Flight instruments: Air data instruments; Gyroscopic instruments; Magnetic Compass; Radio Altimeter; Electronic Flight Instrument System (EFIS); Flight Management System (FMS);
 - (B) Automatic flight control system: Flight director, Autopilot; Flight envelope protection: Yaw damper/Stability augmentation system;
 - (C) Warning and recording equipment: Warnings general: Altitude alert system: Ground proximity warning system (GPWS); Traffic collision avoidance system (TCAS), Overspeed warning; Flight data recorder; Cockpit voice recorder; Rotors and engine over/underspeed warning;
 - (D) Powerplant and system monitoring instruments: Pressure gauge, Temperature gauge, RPM indicator, Consumption gauge: Fuel gauge: Torque meter: Flight hour meter; Remote (signal) transmission system: Electronic Displays; Chip detection;
- (3) Flight performance and planning
- (i) Mass and balance: Center of gravity, Mass and balance limits;
 - (ii) Loading: Terminology: Aircraft mass checks: Procedures for determining helicopter mass and balance documentation; Effects of overloading;
 - (iii) Center of gravity: Basis of cg calculations (load and balance documentation); Calculation of cg; Securing of load, Area load, running load, supporting;
 - (iv) Performance: Airworthiness Requirements: Definitions of terms; Take off — Cruise - Landing Performance;
 - (v) Flight planning and flight monitoring:
 - (A) Flight plan for cross country flights: Navigation plan: Fuel plan; Flight monitoring and in-flight re-planning; Radio communication and navigation aids;
 - (B) ICAO ATC flight plan: Types of flight plan; Completing the flight plan; Filling the flight plan; Closing the flight plan; Adherence to flight plan;
 - (C) Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans; Radio planning practice;
 - (D) Practical completion of a flight plan (flight plan, flight log, nay log, ATC plan, etc.): Extraction of data;
 - (E) Offshore or remote area operation: Additional flight planning aspects for off shore or remote area operation; computerized flight planning;
- (4) Human performance
- (i) Human factors basic concepts: Human factors in aviation; Accident statistics; Flight safety concepts;
 - (ii) Basic aviation physiology: Basics of flight physiology; Man and environment: the sensory system; Health and Hygiene;
 - (iii) Basic aviation psychology: Human information processing; Human error and reliability; Decision making; Avoiding and managing errors: cockpit management; Personality; Human overload and underload, Advanced cockpit automation
- (5) Meteorology

- (i) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;
 - (ii) Wind: Definition and measurement; General circulation; Turbulence; Variation of wind with height; Local winds; Standing waves;
 - (iii) Thermodynamics: Humidity; Change of state of aggregation; Adiabatic processes
 - (iv) Clouds and Fog: Cloud formation and description; Fog, mist, haze
 - (v) Precipitation
 - (vi) Airmasses and fronts: Types of airmasses; Fronts;
 - (vii) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions; Tropical revolving storms
 - (viii) Climatology: Climatology zones; Tropical climatology; Typical weather situations in mid-latitudes; Local seasonal weather and wind
 - (ix) Flight hazards: Icing, Turbulence; Wind-shear; Thunderstorms; Tornadoes; Low and high level inversions; Stratospheric conditions; Hazards in mountainous areas;
 - (x) Meteorological information: Observation, Weather charts, Information for flight planning
- (6) Navigation:
- (i) General Navigation: Basics of navigation: The solar system; The earth Time and time conversions; Directions. Distance
 - (ii) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
 - (iii) Charts: General properties of miscellaneous types of projections; The representation of meridians, parallels, great circles and rhumb lines; The use of current aeronautical charts
 - (iv) Dead reckoning navigation (DR): Basics of dead reckoning; Use of the navigational computer; The triangle of velocities; Determination of DR position; Measurement of DR elements; Resolution of current DR problems; Measurements of maximum range, radius of action and point-of-safe-return and point-of-equal-time
 - (v) In-flight navigation: Use of visual observations and application to in-flight navigation; Navigation in climb and descent; Navigation in cruising flight, use of fixes to revise navigation data; Flight log (including navigation records); Purposes of FMS (flight management systems);
 - (vi) Radio Navigation: Radio aids: Ground D/F (including classification of bearings); ADF (including associated beacons and use of the radio magnetic indicator); VOR and Doppler VOR (including the use of the radio magnetic indicator); DME (distance measuring equipment);
 - (vii) Basic radar principles: Pulse techniques and associated terms; Ground radar; SSR (secondary surveillance radar and transponder); Use of radar observations and application to in-flight navigation;
 - (viii) Area navigation systems: Flight director and autopilot coupling;

- (ix) Self-contained and external-referenced navigation systems: Doppler; Loran-C; Decca navigation system; Satellite assisted navigation: GPS/GLONASS/DGPS
- (7) Operational procedures
 - (i) ICAO Annex 6 Parts II and III (as applicable);
 - (ii) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Windshear, microburst; Wake turbulence; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways; Rotor down wash; Operation influence by meteorological conditions;
- (8) Emergency procedures;
 - (i) Subsonic Aerodynamics: Basic laws and definitions; Derivation of lift; Drag; Distribution of forces — balance of couples; Stability; Blade-stall; Transonic effects on blades; Limitations; Performance degradation;
 - (ii) Helicopter aerodynamics: The helicopter and associated terminology; The forces diagram and associated terminology; Uniformity of rotor thrust along blade span; Helicopter controls; Rotor blade freedom of movement; Phase lag and advance angle; Vertical flight; Forces in balance; Transitional lift; Power requirements; Further aerodynamics of forward flight; Factors affecting cyclic stick limits; The flare — power flight; Settling with power (vortex ring); Blade sailing; Autorotation — vertical; Autorotation - forward flight; Stability; Control power; Power requirements — graphs;
- (9) Radiotelephony
 - (i) VFR Communications: Definitions; General operating procedures; Relevant weather information terms (VFR); Action required to be taken in case of communication failure; distress and urgency procedures; General principles of VHF propagation and allocation of frequencies;
 - (ii) Morse code.

IS 2.3.3.8 APPENDIX B: COMMERCIAL PILOT LICENSE (H) — FLIGHT INSTRUCTION AND SKILL TEST

- (a) The flight instruction and skill test for the commercial pilot license — helicopter shall include at least the following areas of operation:
 - (1) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks--
 - (i) Licenses and documents
 - (ii) Weather information
 - (iii) Cross-country flight planning
 - (iv) National airspace system
 - (v) Performance and limitations
 - (vi) Operation of system
 - (vii) Minimum equipment list
 - (viii) Aeromedical factors
 - (ix) Physiological aspects of night flying

- (x) Lighting and equipment for night flying
- (2) Pre-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) Pre-flight inspection
 - (ii) Cockpit management
 - (iii) Engine starting and rotor engagement
 - (iv) Before take-off check
- (3) Aerodrome and heliport operations; including the applicant's knowledge and performance of the following tasks:
 - (i) Radio communications and ATC light signals
 - (ii) Traffic patterns
 - (iii) Aerodrome and heliport markings and lighting
- (4) Hovering maneuvers; including the applicant's knowledge and performance of the following tasks--
 - (i) Vertical take-off and landing
 - (ii) Slope operations
 - (iii) Surface taxi
 - (iv) Hover taxi
 - (v) Air taxi
- (5) Take-off, landing and go-around; including the applicant's knowledge and performance of the following tasks--
 - (i) Normal and crosswind take-off and climb
 - (ii) Normal and crosswind approach and landing
 - (iii) Maximum performance take-off and climb
 - (iv) Steep approach
 - (v) Rolling take-off
 - (vi) Shallow approach and running/roll-on landing
 - (vii) Go-around
- (6) Performance maneuver; including the applicant's knowledge and performance of the following tasks--
 - (i) Rapid deceleration
 - (ii) 180 Degrees autorotation
- (7) Navigation; including the applicant's knowledge and performance of the following tasks--
 - (i) Pilotage and dead reckoning
 - (ii) Radio navigation and radar services
 - (iii) Diversion
 - (iv) Lost procedures

- (8) Emergency operations; including the applicant's knowledge and performance of the following tasks:
 - (i) Power failure at a hover
 - (ii) Power failure at altitude
 - (iii) Systems and equipment malfunctions
 - (iv) Settling-with-power
 - (v) Low rotor RPM recovery
 - (vi) Dynamic rollover
 - (vii) Ground resonance
 - (viii) Low G conditions
 - (ix) Emergency equipment and survival gear
- (9) Special operations; including the applicant's knowledge and performance of the following tasks--
 - (i) Confined area operation
 - (ii) Pinnacle/platform operations
- (10) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) After landing; parking and securing

IS 2.3.3.9 APPENDIX A: AIRLINE TRANSPORT PILOT LICENSE (H) - KNOWLEDGE

- (a) The knowledge instruction and test for the airline transport pilot license — helicopter shall include at least the following subjects:
 - (1) Air law
 - (i) International Agreements and Organizations: The Convention of Chicago; Other International agreements: IATA agreement, Tokyo and Warsaw Convention; PIC authority and responsibility regarding safety and security; Operators and pilots liabilities towards persons and goods on the ground; in case of damage and injury caused by the operation of the aircraft; Commercial practices and associated rules: dry and wet lease;
 - (ii) Relevant parts of ICAO Annexes: 1, 2, 7, 8, 9, 11 (and doc 4444), 12, 13, 14, 15 and 17;
 - (iii) Procedures for air navigation (PANS-OPS) - Aircraft Operations Doc 8168;
 - (iv) National law;
 - (2) Aircraft general knowledge
 - (i) Airframe and systems, electrics, powerplant; emergency equipment
 - (A) Airframe and systems: Helicopter configurations; Controls and rotors; Cockpit and cabin; Landing Gear; Transmission systems; Rotor-brake; Inspection; Hydraulics; Air driven systems, De-ice and anti-ice systems, Fuel system
 - (B) Electrics: Direct Current (DC); Alternating Current (AC); Semiconductors, Basic knowledge of computers Basic radio propagation theory;

- (C) Powerplant: Piston Engine; Turbine Engine; Engine construction; Engine systems, Auxiliary Power Unit (APU);
- (D) Emergency equipment: Doors and emergency exits; Smoke detection; Fire detection; Fire-fighting equipment; Aircraft oxygen equipment; Emergency equipment;
- (ii) Instrumentation
 - (A) Flight instruments: Air data instruments, Gyroscopic instruments, Magnetic Compass; Radio Altimeter; Electronic Flight Instrument System (EFIS); Flight Management System (FMS);
 - (B) Automatic flight control system: Flight director, Autopilot; Flight envelope protection; Yaw damper/Stability augmentation system;
 - (C) Warning and recording equipment: Warnings general; Altitude alert system; Ground proximity warning system (GPWS); Traffic collision avoidance system (TCAS), Overspeed warning; Flight data recorder; Cockpit voice recorder; Rotors and engine over/underspeed warning;
 - (D) Powerplant and system monitoring instruments: Pressure gauge, Temperature gauge, RPM indicator; Consumption gauge, Fuel gauge, Torque meter, Flight hour meter, Remote (signal) transmission system; Electronic Displays; Chip detection;
- (3) Flight performance and planning
 - (i) Mass and balance: Center of gravity, Mass and balance limits;
 - (ii) Loading: Terminology; Aircraft mass checks; Procedures for determining helicopter mass and balance documentation; Effects of overloading;
 - (iii) Center of gravity: Basis of cg calculations (load and balance documentation); Calculation of cg; Securing of load; Area load; running load, supporting;
 - (iv) Performance: Airworthiness Requirements; Definitions of terms; Take off — Cruise - Landing Performance;
 - (v) Flight planning and flight monitoring:
 - (A) Flight plan for cross country flights: Navigation plan; Fuel plan; Flight monitoring and in-flight re-planning; Radio communication and navigation aids;
 - (B) ICAO ATC flight plan: Types of flight plan; Completing the flight plan; Filling the flight plan; Closing the flight plan; Adherence to flight plan;
 - (C) Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans; Radio planning practice;
 - (D) IFR (airways) flight planning: Meteorological considerations; Selection of routes to destination and alternates; General flight planning tasks;
Note: This subsection is only part of the instruction, test or check when an instrument rating is required.
 - (E) Practical completion of a flight plan (flight plan, flight log, navigation log, ATC plan, etc.): Extraction of data;
 - (F) Offshore or remote area operation: Additional flight planning aspects for offshore or remote area operation; computerized flight planning;
- (4) Human performance

- (i) Human factors basic concepts: Human factors in aviation; Accident statistics; Flight safety concepts;
 - (ii) Basic aviation physiology: Basics of flight physiology; Man and environment: the sensory system; Health and Hygiene;
 - (iii) Basic aviation psychology: Human information processing; Human error and reliability; Decision making; Avoiding and managing errors: cockpit management; Personality; Human overload and underload, Advanced cockpit automation
- (5) Meteorology
- (i) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;
 - (ii) Wind: Definition and measurement; General circulation; Turbulence; Variation of wind with height; Local winds; Jet streams; Standing waves;
 - (iii) Thermodynamics: Humidity; Change of state of aggregation; Adiabatic processes
 - (iv) Clouds and Fog: Cloud formation and description; Fog, mist, haze
 - (v) Precipitation
 - (vi) Airmasses and fronts: Types of airmasses; Fronts;
 - (vii) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions; Tropical revolving storms
 - (viii) Climatology: Climatology zones; Tropical climatology; Typical weather situations in mid-latitudes; Local seasonal weather and wind
 - (ix) Flight hazards: Icing, Turbulence; Wind-shear; Thunderstorms; Tornadoes; Low and high level inversions; Stratospheric conditions; Hazards in mountainous areas;
 - (x) Meteorological information: Observation, Weather charts, Information for flight planning
- (6) Navigation:
- (i) General Navigation: Basics of navigation: The solar system; The earth Time and time conversions; Directions, Distance
 - (ii) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
 - (iii) Charts: General properties of miscellaneous types of projections; The representation of meridians, parallels, great circles and rhumb lines; The use of current aeronautical charts
 - (iv) Dead reckoning navigation (DR): Basics of dead reckoning; Use of the navigational computer; The triangle of velocities; Determination of DR position; Measurement of DR elements; Resolution of current DR problems; Measurements of maximum range, radius of action and point-of-safe-return and point-of-equal-time
 - (v) In-flight navigation: Use of visual observations and application to in-flight navigation; Navigation in climb and descent; Navigation in cruising flight, use of fixes to revise navigation data; Flight log (including navigation records); Purposes of FMS (flight management systems);

- (vi) Radio Navigation: Radio aids: Ground D/F (including classification of bearings); ADF (including associated beacons and use of the radio magnetic indicator); VOR and Doppler-VOR (including the use of the radio magnetic indicator); DME (distance measuring equipment); ILS (instrument landing system); MLS (Microwave landing system);
 - (vii) Basic radar principles: Pulse techniques and associated terms; Ground radar; Airborne weather radar; SSR (secondary surveillance radar and transponder); Use of radar observations and application to in-flight navigation;
 - (viii) Area navigation systems: General philosophy; Typical flight deck equipment and operation; Instrument indications; Types of area navigation system inputs; VOR/DME area navigation (RNAV); Flight director and autopilot coupling
 - (ix) Area navigation systems: General philosophy; Typical flight deck equipment and operation; Instrument indications; Types of area navigation system inputs; VOR/DME area navigation (RNAV); Flight director and autopilot coupling
Note: Typical flight deck equipment and operation: Instrument indications: and Types of area navigation system inputs are only part of the instruction, test or check when an instrument rating is required.
 - (x) Self-contained and external-referenced navigation systems: Doppler; Loran-C; Decca navigation system; Satellite assisted navigation: GPS/GLONASS/DGPS
- (7) Operational procedures
- (i) ICAO Annex 6 Parts I, II and III (as applicable);
 - (ii) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Windshear; microburst; Wake turbulence; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways;
- (8) Principles of flight:
- (i) Subsonic Aerodynamics: Basic laws and definitions; Derivation of lift; Drag; Distribution of forces — balance of couples; Stability; Blade-stall; Transonic effects on blades; Limitations; Performance degradation;
 - (ii) Helicopter aerodynamics: The helicopter and associated terminology; The forces diagram and associated terminology; Uniformity of rotor thrust along blade span; Helicopter controls; Rotor blade freedom of movement;; Phase lag and advance angle; Vertical flight; Forces in balance; Transitional lift; Power requirements; Further aerodynamics of forward flight; Factors affecting cyclic stick limits; The flare — power flight; Settling with power (vortex ring); Blade sailing; Autorotation — vertical; Autorotation - forward flight; Stability; Control power; Power requirements — graphs;
- (9) Radiotelephony:
- (i) VFR Communications: Definitions; General operating procedures; Relevant weather information terms (VFR); Action required to be taken in case of communication failure; distress and urgency procedures; General principles of VHF propagation and allocation of frequencies;
 - (ii) IFR Communications: Definitions; General operating procedures; Action required to be taken in case of communication failure; distress and urgency

procedures; General principles of VHF propagation and allocation of frequencies;

Note: This subsection is only part of the instruction, test or check when an instrument rating is required.

(iii) Morse code.

IS 2.3.3.9 APPENDIX B: AIRLINE TRANSPORT PILOT LICENSE (H) – FLIGHT INSTRUCTION AND SKILL TEST

(a) The flight instruction and skill test for the airline transport pilot license for helicopters shall include CRM and at least the following areas of operation:

(1) Pre-flight preparations and checks; including the applicant's knowledge and performance of the following tasks--

- (i) Equipment examination
- (ii) Performance and limitations

(2) Pre-flight procedures: including the applicant's knowledge and performance of the following tasks--

- (i) Pre-flight inspection
- (ii) Powerplant start
- (iii) Taxiing
- (iv) Pre-takeoff checks

(3) Takeoff and departure phase: including the applicant's knowledge and performance of the following tasks--

- (i) Normal and crosswind takeoff
- (ii) Instrument takeoff
- (iii) Powerplant failure during takeoff
- (iv) Rejected takeoff
- (v) Instrument departure

(4) In-flight maneuvers: including the applicant's knowledge and performance of the following tasks--

- (i) Steep turns
- (ii) Powerplant failure-multi-engine helicopter
- (iii) Powerplant failure-single-engine helicopter
- (iv) Recovery from unusual altitudes
- (v) Settling with power

(5) Instrument procedures: including the applicant's knowledge and performance of the following tasks--

- (i) Instrument arrival
- (ii) Holding
- (iii) Precision instrument approaches
- (iv) Non-precision instrument approaches

- (v) Missed approach
- (6) Landings and approaches to landings: including the applicant's knowledge and performance of the following tasks--
 - (i) Normal and crosswind approaches and landings
 - (ii) Approach and landing with simulated powerplant failure-multiengine helicopter
 - (iii) Rejected landing
- (7) Normal and abnormal procedures; including the applicant's knowledge and performance of the tasks.
- (8) Emergency procedures: including the applicant's knowledge and performance.
- (9) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) After landing procedures
 - (ii) Parking and securing

IS 2.3.3.11 APPENDIX A: FLIGHT INSTRUCTOR (A and H) - FLIGHT INSTRUCTION, SKILL TEST AND PROFICIENCY CHECK

- (a) The flight instruction, skill test and proficiency check for the flight instructor rating - airplane and helicopter shall include at least the following areas of operation:

Notes:

(1) When (SE) is indicated the item or paragraph is only for single-engine, when (ME) is indicated the item or paragraphs is only for multi-engine. When nothing is indicated the item or paragraph is for single-engine and multi-engine.

(2) When (A) is indicated the item or paragraph is only for Airplane. When (H) is indicated the item or paragraph is only for Helicopter. When nothing is indicated the item or the paragraph is for A and H.

(3) When (S) is indicated, the item is only for seaplanes, when (L) is indicated, the item is only for landplanes. When nothing is indicated the item is for land and seaplanes.

- (1) Fundamentals of instruction; including the applicant's knowledge and performance of the following tasks--
 - (i) The learning process
 - (ii) The teaching process
 - (iii) Teaching methods
 - (iv) Evaluation
 - (v) Flight instructor characteristics and responsibilities
 - (vi) Human factors
 - (vii) Planning instructional activity
- (2) Technical subject areas; including the applicant's knowledge and performance of the following tasks
 - (i) Aeromedical factors
 - (ii) Visual Scanning and collision avoidance

- (iii) Principles of flight
 - (iv) Aircraft flight controls
 - (v) Aircraft weight and balance
 - (vi) Navigation and flight planning
 - (vii) Night operations
 - (viii) High altitude operations (A)
 - (ix) Regulations and publications
 - (x) Use of minimum equipment list
 - (xi) National airspace system
 - (xii) Navigation aids and radar services (A)
 - (xiii) Logbook entries and license endorsements
 - (xiv) Water and seaplane characteristics (S)
 - (xv) Seaplane bases, rules and aids to marine navigation (S)
- (3) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks--
- (i) Licenses and documents
 - (ii) Weather information
 - (iii) Operation of systems (SE)
 - (iv) Performance and limitations (SE)
 - (v) Airworthiness requirements
- (4) Pre-flight lesson on a maneuver to be performed in flight: including the applicant's knowledge and performance of the following task--
- (i) Maneuver lesson
- (5) Pre-flight procedures: including the applicant's knowledge and performance of the following tasks--
- (i) Pre-flight inspection
 - (ii) Cockpit management
 - (iii) Engine starting (A)
 - (iv) Engine starting and rotor engagement (H)
 - (v) Taxiing (A)
 - (vi) Sailing (S)
 - (vii) Before take-off check
- (6) Aerodrome operations and Heliport operations: including the applicant's knowledge and performance of the following tasks--
- (i) Radio communications and ATC light signals
 - (ii) Traffic patterns
 - (iii) Aerodrome and runway markings and lighting (A)
 - (iv) Aerodrome and Heliport Markings and lighting

- (7) Take-off, landing and go-around (A): including the applicant's knowledge and performance of the following tasks--
- (i) Normal and crosswind take-off and climb
 - (ii) Take-off and maximum performance climb
 - (iii) Short field (Confined area (S)) take-off and maximum performance climb
 - (iv) Soft field take-off and climb (SE)
 - (v) Glossy water take-off and climb (S)
 - (vi) Rough water take-off and climb (S)
 - (vii) Normal and crosswind approach and landing
 - (viii) Slip to a landing (SE)
 - (ix) Go-around/rejected landing
 - (x) Short field (Confined area (S)) approach and landing
 - (xi) Glassy water approach and landing (S)
 - (xii) Rough water approach and landing (S)
 - (xiii) Soft field approach and landing (SE)
 - (xiv) Power-off 180 degrees accuracy approach and landing
- (8) Hovering Maneuvers (H); including the applicant's knowledge and performance of the following tasks--
- (i) Vertical take-off and landing
 - (ii) Surface taxi
 - (iii) Hover taxi
 - (iv) Air taxi
 - (v) Slope operation
- (9) Fundamentals of flight; including the applicant's knowledge and performance of the following tasks--
- (i) Straight-and-level flight
 - (ii) Level turns
 - (iii) Straight climbs and climbing turns
 - (iv) Straight descents and descending turns
- (10) Performance maneuvers (A); including the applicant's knowledge and performance of the following tasks--
- (i) Steep turns
 - (ii) Steep spirals (SE)
- (11) Performance maneuvers (H); including the applicant's knowledge and performance of the following tasks--
- (i) Rapid deceleration
 - (ii) Straight-in autorotation
 - (iii) 180 degrees autorotation

- (12) Ground reference maneuvers (A); including the applicant's knowledge and performance of the following tasks--
 - (i) Rectangular course
 - (ii) S-turns across a road
 - (iii) Turns around a point
- (13) Slow flight, stalls and spins (A); including the applicant's knowledge and performance of the following tasks--
 - (i) Maneuvering during slow flight
 - (ii) Power-on stalls (proficiency)
 - (iii) Power-off stalls (proficiency)
 - (iv) Crossed-control stalls (demonstration) (SE)
 - (v) Elevator trim stalls (demonstration) (SE)
 - (vi) Secondary stalls (demonstration) (SE)
 - (vii) Spins (SE)
- (14) Basic instrument maneuvers; including the applicant's knowledge and performance of the following tasks--
 - (i) Straight-and-level flight
 - (ii) Constant airspeed climbs
 - (iii) Constant airspeed descents
 - (iv) Turns to headings
 - (v) Recovery from unusual flight attitudes
- (15) Emergency operations (SE) (A); including the applicant's knowledge and performance of the following tasks--
 - (i) Emergency approach and landing (simulated)
 - (ii) Systems and equipment malfunctions
 - (iii) Emergency equipment and survival gear
- (16) (Emergency operations (ME) (A); including the applicant's knowledge and performance of the following tasks--
 - (i) Systems and equipment malfunctions
 - (ii) Engine failure during take-off before VMC
 - (iii) Engine failure after lift-off
 - (iv) Approach and landing with an inoperative engine
 - (v) Emergency descent
 - (vi) Emergency equipment and survival gear
- (17) Emergency operations (H); including the applicant's knowledge and performance of the following tasks--
 - (i) Power failure at a hover
 - (ii) Power failure at altitude
 - (iii) Settling-with-power

- (iv) Low rotor RPM recovery
 - (v) Anti-torque system failure
 - (vi) Dynamic rollover
 - (vii) Ground resonance
 - (viii) Low "G" conditions
 - (ix) Systems and equipment malfunctions
 - (x) Emergency equipment and survival gear
- (18) Multi-engine operations (ME) (A); including the applicant's knowledge and performance of the following tasks--
- (i) Operation of systems
 - (ii) Performance and limitations
 - (iii) Flight principles — engine inoperative
 - (iv) Maneuvering with one engine inoperative
 - (v) VMC demonstration
 - (vi) Demonstrating the effects of various airspeeds and configurations during engine inoperative performance
- (19) Special operations (H); including the applicant's knowledge and performance of the following tasks--
- (i) Confined area operation
 - (ii) Pinnacle/platform operation
- (20) Post-flight procedures; including the applicant's knowledge and performance of the following tasks--
- (i) Post-flight procedures
 - (ii) Anchoring
 - (iii) Docking and mooring
 - (iv) Beaching
 - (v) Ramping

IS 2.3.3.11 APPENDIX B: FLIGHT INSTRUCTOR FOR INSTRUMENT RATINGS (A and H) - FLIGHT INSTRUCTION, SKILL TEST and PROFICIENCY CHECK

- (a) The flight instruction, skill test and proficiency for the flight instructor for instrument ratings - airplane and helicopter shall include at least the following areas of operation:

Notes:(1) When (SE) is indicated the item or paragraph is only for single-engine. When (ME) is indicated the item or paragraphs is only for multi-engine. When nothing is indicated the item and paragraph are for single-engine and multi-engine.

(2) When (A) is indicated the item or paragraph is only for Airplane. When (H) is indicated the item or paragraph is only for Helicopter. When nothing is indicated the item and the paragraph are for A and H.

- (1) Fundamentals of instructing; including the applicant's knowledge and performance of the following tasks--

- (i) The learning process
 - (ii) Human behavior and effective communication
 - (iii) The teaching process
 - (iv) Teaching methods
 - (v) Critique and evaluation
 - (vi) Flight instructor characteristics and responsibilities
 - (vii) Planning instructional activity
- (2) Technical subject areas; including the applicant's knowledge and performance of the following tasks:
- (i) Aircraft flight instruments and navigation equipment
 - (ii) Aeromedical factors
 - (iii) Regulations and publications related to IFR operations
 - (iv) Logbook entries related to instrument instruction
- (3) Pre-flight preparation; including the applicant's knowledge and performance of the following tasks:
- (i) Weather information
 - (ii) Cross-country flight planning
 - (iii) Instrument cockpit check
- (4) Pre-flight lesson on a maneuver to be performed in flight; including the applicant's knowledge and performance of the following task:
- (i) Maneuver lesson
- (5) Air traffic control clearances and procedures; including the applicant's knowledge and performance of the following tasks-
- (i) Air traffic control clearances
 - (ii) Compliance with departure, en-route and arrival procedures and clearances
- (6) Flight by reference to instruments; including the applicant's knowledge and performance of the following tasks--
- (i) Straight-and-level flight
 - (ii) Turns
 - (iii) Change of airspeed in straight-and-level and turning flight
 - (iv) Constant airspeed climbs and descents
 - (v) Constant rate climbs and descents
 - (vi) Timed turns to magnetic compass headings
 - (vii) Steep turns
 - (viii) Recovery from unusual flight altitudes
- (7) Navigation systems; including the applicant's knowledge and performance of the following tasks:
- (i) Intercepting and tracking navigational systems and DME Arcs
 - (ii) Holding procedures

- (8) Instrument approach procedures; including the applicant's knowledge and performance of the following tasks--
 - (i) Non-precision instrument approach
 - (ii) Precision instrument approach
 - (iii) Missed approach
 - (iv) Circling approach (A)
 - (v) Landing from a straight-in approach
- (9) Emergency operations; including the applicant's knowledge and performance of the following tasks:
 - (i) Loss of communications
 - (ii) Loss of gyro attitude and heading indicators
 - (iii) Engine failure during straight-and-level flight and turns
 - (iv) Instrument approach — one engine inoperative
- (10) Post-flight procedures; including the applicant's knowledge and performance of the following task--
 - (i) Checking instruments and equipment

**IS 2.3.3.11 APPENDIX C: INSTRUCTOR RATING FOR ADDITIONAL TYPE RATINGS
- FLIGHT INSTRUCTION, SKILL TEST and PROFICIENCY CHECK**

- (a) The flight instruction, skill test and proficiency checks for instructors for additional type ratings -airplane and helicopter shall include at least the following areas of operation:

Note: When (A) is indicated the item or paragraph is only for Airplane. When (H) is indicated the item or paragraph is only for Helicopter. When nothing is indicated the item and the paragraph are for A and H.

- (1) Technical subject areas
 - (i) The content of the technical subject areas shall cover the areas as applicable to the aircraft class or type.
 - (ii) Flight simulator: including the applicant's knowledge and performance of the following tasks:
 - (A) Use of checklist, setting of radios/navigation aids
 - (B) Starting engines
 - (C) Take-off checks
 - (D) Instrument take-off, transition to instruments after lift off
 - (E) Engine failure during take-off between V1 and V2 (Airplane)
 - (F) Aborted take-off prior to reaching V1 (A)
 - (G) High mach buffeting, specific flight characteristics (if necessary) (A)
 - (H) Take-off with engine failure prior to TDP or DPATO or shortly after TDP or DPATO (Helicopter)
 - (I) Steep turns

- (J) Recovery from approach to stall/take-off, clean landing configuration (Airplane)
- (K) Instrument approach to required minimum decision height or minimum descent height/altitude, manual one engine simulated inoperative during approach and landing or go-around (Airplane)
- (L) Instrument approach to required minimum decision height or minimum descent height/altitude, autopilot one engine simulated inoperative during approach and landing or go-around (Helicopter)
- (M) Rejected landing and go-around
- (N) Crosswind landing
- (iii) Category II and II operations, if applicable: including the applicant's knowledge and performance of the following tasks--
 - (A) Precision approaches, automatic with auto-throttle and flight director go around caused by aircraft or ground equipment deficiencies
 - (B) Go-around caused by weather conditions
 - (C) Go-around at DH caused by offset position from centerline
 - (D) One of the CAT II/CAT III approaches must lead to a landing
- (iv) Aircraft: including the applicant's knowledge and performance of the following tasks--
 - (A) Familiarization with controls during outside checks
 - (B) Use of checklist, setting of radios and navigation aids, starting engines
 - (C) Taxiing
 - (D) Take-off
 - (E) Engine failure during take-off short after V₂, after reaching climb out attitude (Airplane)
 - (F) Engine failure during take-off short after TDP or DPATO after reaching climb out attitude (Helicopter)
 - (G) Other emergency procedures (if necessary)
 - (H) Instrument approaches to required minimum decision height, manual one engine out during approach and landing or go-around
 - (I) One engine simulated inoperative go-around from required minimum decision height
 - (J) One engine (critical) simulated inoperative landing

IS 2.3.3.11 APPENDIX D: INSTRUCTOR RATING FOR MULTI-CREW PILOT LICENSE – FLIGHT INSTRUCTION, SKILL TEST AND PROFICIENCY CHECK

In addition to the information outlined in IS: 2.3.3.11 Appendices A, B and C, the following applies to the MPL program:

(a) Flight Instructor Competencies

The nature of MPL training, with its emphasize on multi-crew operations, is such that instructors engaged in the delivery of that training need to meet minimum levels of competency. Organizations planning to deliver training for the issue of a MPL have a

responsibility to ensure that their instructors either have, or provide a means by which the instructors can achieve, the following competencies:

(b) Competencies:

- (1) For all instructors engaged in training for the MPL:
 - (i) Successful completion of an operators CRM course;
 - (ii) Understanding of the philosophy of multi-crew operations;
 - (iii) Use of a multi-crew flight check system; and
 - (iv) Use of operator specific SOPs.
- (2) For flight instructors engaged in training for the Core and Basic Stages;
 - (i) Current Flight Instructors Rating;
 - (ii) Current Command Instrument Rating,
 - (iii) Management of multiple students; and
 - (iv) Successful completion of an operator's multi-crew operations course.
- (3) For instructors engaged in training for the Intermediate and Advanced Stages:
 - (i) Hold, or have held, a Command (Multi-engine) Instrument Rating,
 - (ii) Hold, or have held, a Flight Instructors Rating, and
 - (iii) Hold, or have held, a Multi-engine Training Approval.

(c) Induction

The standardization of instructors is an essential for any MPL training organization. Induction training which covers the following aspects will provide a suitable level of initial standardization:

- (1) Structure and management chain of responsibility;
 - (i) This should provide the new instructor with a clear understanding of the hierarchy of the organization and the lines of communication and responsibility.
- (2) Instructor and trainee duties and responsibilities;
 - (i) Particular attention should be given to the conduct of in-flight procedures such as:
 - (A) multi-crew operations,
 - (B) emergency and non-normal procedure training.
 - (C) Multi-crew Operations;
- (3) Particular attention should be given to ensuring that instructors are cognizant of the differences in multi-crew training, and are familiar with the specific requirements of the organization with respect to multi-crew pilot training.
- (4) Threat and Error Management should:
 - (i) clearly address the need for TEM,
 - (ii) ensure that all instructors clearly understand the importance of applying TEM in training,
 - (iii) ensure that instructors understand how to deliver TEM training,
 - (iv) ensure that instructors are competent in the assessment of TEM.

- (5) Supervision;
 - (i) Address the need for supervision and the individual responsibilities of instructors.
 - (6) Operations Manual;
 - (i) Instructors should be left in no doubt as to the need for them to conduct all operations in accordance with the procedures laid down in the operations manual.
 - (7) Pre and post flight briefings procedures;
 - (i) In addition to addressing the policy on briefings, instructors should be given the opportunity to review and refresh their individual briefing techniques.
 - (8) Training procedures;
 - (i) Address the Operations Manual provisions on training including the use of Training Plans, Achievement Records etc.
 - (9) Recording procedures.
 - (i) Instructors should be given the opportunity to gain familiarity with the organizations recording methods. In particular attention should be made of the need for accurate Training Records, and the need to maintain up to date Achievement Records.
- (d) Recurrent Training
- Recurrent training represents the ongoing aspect of standardization and should reinforce many of the topics addressed during induction training. Accordingly, the following topics need to be part of any recurrent training program:
- (1) Instructor and trainee duties and responsibilities;
 - (i) Supervision;
 - (ii) Pre and post flight briefings procedures;
 - (iii) Training procedures; and
 - (iv) Recording procedures.
 - (2) In addition (under the guidance and supervision of senior staff) provision should be made for each instructor to evaluate their own flight instructional techniques and procedures to identify any weaknesses or deviations from the requirements of the Operations Manual.
- (e) Duty Roster Systems
- The requirements for instructor rostering will vary according to the size and complexity of the individual training organization. For small organizations a suitable roster system need be no more complex than a simple white board showing instructional and other duties with provision for the display of rest periods. Larger organizations will need to take a more detailed approach to their rostering, and may need to make use of a computerized system. Regardless of size, organizations will need to ensure that the rostering system makes provision for the inclusion of standardization/recurrent training undertaken by instructors.

IS 2.3.3.12 EXAMINERS

- (a) The ground training for examiners shall at least include:

- (1) Examiner duties, functions and responsibilities
 - (2) Applicable regulations and procedures;
 - (3) Appropriate methods, procedures and techniques for conducting the required tests and checks;
 - (4) Proper evaluation of student performance including the detection of:
 - (i) Improper and insufficient training, and
 - (ii) Personal characteristics of an applicant that could adversely affect safety;
 - (5) Appropriate corrective action in the case of unsatisfactory tests and checks; and
 - (6) Approved methods, procedures and limitations for performing the required normal, abnormal and emergency procedures in the aircraft.
- (b) The flight training shall include:
- (1) Training and practice in conducting flight evaluation (from the left and right pilot seats for pilot examiners) in the required normal, abnormal and emergency procedures to ensure competence to conduct the flight tests and checks;
 - (2) The potential results of improper, untimely or non-execution of safety measures during an evaluation; and
 - (3) The safety measures (to be taken from either pilot seat for pilot check examiners) for emergency situations that are likely to develop during an evaluation.
- (c) The flight training for examiners (simulator) shall include:
- (1) Training and practice in conducting flight checks in the required normal, abnormal and emergency procedures to ensure competence to conduct the evaluations tests and checks required by this Part (this training and practice shall be accomplished in a flight simulator, a flight procedures trainer or flight training device.
 - (2) Training in the operation of flight simulators, flight procedures trainers, or flight training devices, or in all three, to ensure competence to conduct the evaluations required by this Part.

IS 2.4.3 TYPE RATING - FLIGHT ENGINEERS - FLIGHT INSTRUCTION, SKILL TEST and PROFICIENCY CHECK

- (a) The flight instruction, skill test and proficiency check for the flight engineers license and type rating shall include CRM and at least the following areas of operation:
- (1) Pre-flight preparation: including the applicant's knowledge and performance of the following tasks--
 - (i) Equipment examination-systems knowledge
 - (ii) Aircraft handbooks; manuals, minimum equipment list (MEL), configuration deviation list (CDL) and operations specifications
 - (iii) Performance and limitations
 - (2) Pre-flight procedures; including the applicant's knowledge and performance of the following tasks:
 - (i) Pre-flight inspection and cockpit setup
 - (ii) Pre-flight inspection-exterior

- (3) Ground operations; including the applicant's knowledge and performance of the following tasks:
 - (i) Powerplant start
 - (ii) Taxi and pre-takeoff checks
- (4) Normal procedures: including the applicant's knowledge and performance of the following tasks:
 - (i) Take-off
 - (ii) In-flight
 - (iii) During approach and landing
 - (iv) Engine systems monitoring
- (5) Abnormal and emergency procedures; including the applicant's knowledge and performance of the following tasks:
 - (i) Take-off
 - (ii) In-flight
 - (iii) During approach and landing
 - (iv) Engine systems monitoring
- (6) Post-flight procedures
 - (i) After landing
 - (ii) Parking and securing

IS 2.6.2.6 AVIATION MAINTENANCE TECHNICIAN (AMT) LICENSE SKILL TEST

Each applicant for a Aviation Maintenance Technician (AMT) license or rating shall pass an oral and practical test appropriate to the rating(s) sought. The tests cover the applicants' skill in performing the practical projects on the subjects covered by the written test for that rating. The applicant will be provided with appropriate facilities, tools, materials and airworthiness data

- (a) The skill test for the AMT License shall test the applicant's knowledge and performance in at least the following areas of operation:
 - (1) basic electricity
 - (2) lines and fittings
 - (3) materials and processes
 - (4) ground operations and servicing
 - (5) cleaning and corrosion control
 - (6) mathematics
 - (7) maintenance forms and records
 - (8) maintenance publications
 - (9) physics
 - (10) mechanic privileges and limitations

IS 2.6.2.6 (a) SKILL REQUIREMENTS FOR THE AMT AIRFRAME RATING

- (a) The skill test for the airframe rating shall test the applicant's knowledge and performance in at least the following areas of operation:
- (1) assembly and rigging
 - (2) airframe inspection
 - (3) aircraft landing gear systems
 - (4) hydraulic and pneumatic systems
 - (5) cabin atmosphere control systems
 - (6) aircraft instrument systems
 - (7) communication and navigation systems
 - (8) fuel systems
 - (9) aircraft electrical systems
 - (10) position and warning systems
 - (11) ice and rain control systems
 - (12) fire protection systems
 - (13) Job/task documentation and control practices.

IS 2.6.2.6 (b) SKILL REQUIREMENTS FOR THE AMT POWERPLANT RATING

- (a) The skill test for the powerplant rating shall test the applicant's knowledge and performance in at least the following areas of operation:
- (1) powerplant electrical systems
 - (2) lubrication systems
 - (3) ignition and starting systems
 - (4) fuel metering
 - (5) engine fuel systems
 - (6) induction and engine airflow systems
 - (7) engine cooling systems
 - (8) engine exhaust and reverser systems
 - (9) propellers
 - (10) auxiliary power units
 - (11) Job/task documentation and control practices.

IS 2.6.3.6 (c) SKILL REQUIREMENTS FOR THE AMS AVIONICS RATING

- (a) The skill test for the avionics rating shall test the applicant's knowledge and performance in the basic workshop and maintenance practices in at least the following areas of operation:
- (1) Avionics — electrical
 - (2) Avionics — instrument

- (3) Avionics — autoflight
- (4) Avionics — radio
- (5) Repair, maintenance and function testing of aircraft systems/components — avionics
- (6) Job/task documentation and control practices.

IS 2.10.1.3 APPENDIX A- BASIC TRAINING IN AVIATION MEDICINE FOR AMEs

- (a) Basic training in aviation medicine
- (b) Physics of atmosphere and space
- (c) Basic aeronautical knowledge
- (d) Aviation Physiology
- (e) Ophthalmology
- (f) Otorinolaryngology
- (g) Cardiology and general medicine
- (h) Neurology
- (i) Psychiatry in aviation medicine
- (j) Psychology
- (k) Dentistry
- (l) Accidents, Escape and Survival
- (m) Legislation. rules and regulations
- (n) Air evacuation
- (o) Medicine and flying

IS 2.10.1.3 APPENDIX B - ADVANCED TRAINING IN AVIATION MEDICINE FOR AMEs

- (a) Pilot working environment
- (b) Aerospace physiology
- (c) Ophthalmology
- (d) Otorinolaryngology
- (e) Cardiology and general medicine
- (f) Neurology/Psychiatry
- (g) Human factors in aviation
- (h) Tropical medicine
- (i) Hygiene
- (j) Space medicine

IS 2.10.1.4 APPLICATION FORM FOR MEDICAL CERTIFICATE

(Application form to be implemented here from Guide for Aviation Medical Examiners.)

IS 2.10.1.8 MEDICAL CERTIFICATE

The following details shall appear on the medical certificate:

- (i) Name of State
- (ii) License No.
- (iii) Name of holder in full (in Roman alphabet also if script of national language is other than Roman):
- (iv) Date of birth
- (v) Address of holder
- (vi) Nationality of holder
- (vii) Signature of holder
- (viii) Medical certificate Class 1 or 2
- (ix) Issuing Authority
- (x) Validity
- (xi) Limitations
- (xii) Date of issue and signature of issuing officer.

Republic of the Philippines Initial Medical Examination		
Date:		
Date (YDM) of:	Last	Next
Extended Medical Examination		
Medical (general) examination		
Electrocardiogram		
Audiogram		

IS 2.11.3 RESERVED

IS 2.14.3.2 APPENDIX A: ATSEP LICENSE - KNOWLEDGE

The knowledge instruction and test for ATSEP license - shall include at least the following subjects as recommended in the ICAO Doc 7192 Part E-2:

(a) ATSEP GENERAL EXAM

- 1) Air Law
- 2) International and national organizations and standards
- 3) Familiarization with air traffic service and air space standards
- 4) Familiarization with CNS/ATM concepts
- 5) System Safety
- 6) Human Performance and Limitation

(b) COMMUNICATION SYSTEMS

- 1) Communication System Concepts
- 2) Radio Transmitters and Receivers
- 3) Communication Protocols
- 4) Networks
- 5) Types of Medium
- 6) Recorders
- 7) Safety aspects

(c) RADIO NAVIGATIONAL AIDS

- 1) Navigational Aids Concepts
- 2) Ground-Based Systems (NDB, VOR, DME, ILS, etc.)
- 3) Satellite-Based Navigation Systems (GNSS, GBAS, SBAS, GPS etc.)
- 4) On-board Navigation Architecture
- 5) Display Systems
- 6) Inertia Navigation
- 7) Vertical Navigation
- 8) Safety Aspects

(d) SURVEILLANCE

- 1) Surveillance System Concepts
- 2) Primary Surveillance
- 3) Surface Movement Radar
- 4) Secondary Surveillance
- 5) ADS-B
- 6) Human-Machine Interface
- 7) Safety Aspects

(e) DATA PROCESSING SYSTEM

- 1) User functional view

- 2) Data processing chain
 - 3) Software process
 - 4) Hardware Platform
 - 5) Data Essential Features
 - 6) Life Cycle
 - 7) Aviation Data Details Structure
 - 8) Safety Aspects
- (f) POWER SUPPLY
- 1) Power Distribution
 - 2) Uninterruptible Power Supply
 - 3) Engine Generator Set
 - 4) Batteries and Battery Stations
 - 5) Power Supply Network
 - 6) Safety Aspects

IS 2.14.3.4 APPENDIX B: ATSEP LICENSE – SKILL TEST

Each applicant for ATSEP License shall pass both oral and practical tests. The tests cover the applicant's skill in performing the practical projects on the subject covered by the written test.

The applicant will be provided with appropriate tools, materials and manuals.

The skill tests for the ATSEP License shall include, but not limited to:

- a) Use of Test Instruments
- b) Identification of electronic/electrical components
- c) Reading schematic Diagrams
- d) Troubleshooting analysis

IS 2.14.8.1 APPENDIX C: ATSEP RATING – KNOWLEDGE

The On-the-job training (OJT) instruction and test for ATSEP rating Experience requirement shall include at least the following subjects for each specific equipment:

- a) Environmental knowledge for the equipment or system.
Detailed view of the technical and operational environment of the system and equipment.
- b) Theoretical section of the equipment or system.
Familiarization with the system or equipment, in particular with the principles, descriptions, characteristics, performance standards and functionality of the hardware and software elements.
- c) Practical section enhanced by OJT on the equipment or system.
Work on live equipment under the supervision of an experienced ATSEP or instructor.

IS 2.14.8.3 APPENDIX D: ATSEP RATING – SKILL TEST

The applicant shall have successfully completed the system and equipment rating training and competency assessment.

The applicant shall have mastery on, but not limited to:

- a) Details of the different components of the equipment;
- b) Protocols used and the data flow;
- c) Parameters and error messages;
- d) Measurement and checking of different modules and their parameters;
- e) Procedures in performing unit replacement and calibration;
- f) Functionality of the Human Machine Interface (HMI) and System Monitoring & Control (SMC) and their operation.