THE CIVIL AVIATION (PERSONNEL LICENSING) REGULATIONS, 2005

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THE CIVIL AVIATION (PERSONNEL LICENSING) REGULATIONS, 2005

(Under section 61 of the Civil Aviation Authority Act, Cap 354)

IN EXERCISE of the powers conferred upon the Minister by section 61 of the Civil Aviation Authority Act, these Regulations are made this …… day of …….. 2005.

PART 1 - PRELIMINARY

Citation

1. These Regulations may be cited as the Civil Aviation (Personnel Licensing) Regulations, 2005.

Application

2. (1) These Regulations shall apply to all applicants for issue, renewal, reissue and validation of licences, ratings, authoristion and certificates.

(2) A licence certificate holder shall not exercise privileges other than those granted by the licence certificate.

(3) An applicant for a flight crew or air traffic controller licence and cabin crew certificate shall hold a medical certificate issued in accordance with the provisions of these Regulations.

(4) Those Regulations addressing persons licensed under any Part of these Regulations apply also to any person who engages in an operation governed by any Part of these Regulations without the appropriate licence, operations specification, or similar document required as part of the certification.

Interpretation

3. In these Regulations, unless the context otherwise requires -

"accredited medical conclusion" means the conclusion reached by one or more medical experts acceptable to the Authority for the purposes of the case concerned, in consultation with other experts as necessary;

"aeronautical experience" means pilot time obtained in an aircraft, approved flight simulator, or approved flight-training device for meeting the training and flight time requirements of these Regulations;

"aeroplane" means a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixe d under given conditions of flight;

"air traffic control service" means a service provided for the purpose of-

(a) preventing collisions-

(i) between aircraft: and

(ii) on the manoeuvring area, between aircraft and obstructions ; and

(b) expediting and maintaining an orderly flow of traffic;

"air traffic control (ATC) unit" means persons and equipment responsible for providing ATC services such as aerodrome control tower, approach control and area control centre;

"aircraft" means any machine that can derive support in the atmosphere from the reactions of the air, other than the reactions of the air against the earth's surface, and includes all flying

machines, aeroplanes, gliders, seaplanes, rotorcrafts, airships, balloons, gyroplanes, helicopters, ornithopters and other similar machines, but excludes state aircraft;

"aircraft category" means classification of aircraft according to specified basic characteristics such as aeroplane, rotorcraft, glider and lighter than air and powered lift aircraft;

"aircraft type" means all aircraft of the same basic design;

"airframe" means the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces including rotors but excluding propellers and rotating airfoils of a powerplant, and landing gear of an aircraft and their accessories and controls;

"airman" means-

(a) any individual who engages as the person in command or as a pilot, licensed maintenance engineer or as member of the crew or who navigates an aircraft while the aircraft is underway;

(b) any individual in charge of the inspection, maintenance, overhauling or repair of aircraft and any individual in charge of the inspection, maintenance, overhauling or repair of air craft, aircraft engine, propellers, or appliances;

(c) any individual who serves in the capacity of flight; or

(d) an air traffic controller;

"appliance" means any instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, powerplant, or propeller;

"approved by the Authority" means approved by the Authority directly or in accordance with a procedure approved by the Authority;

"Approved Maintenance Organisation (AMO)" means an organisation approved to perform specific aircraft maintenance activities by the Authority; these activities may include the inspection, overhaul, maintenance, repair or modification and release to service of aircraft or aircraft component;

"authorised instructor" means a person who-

(a) holds a valid ground instructor licence issued under these Regulations when conducting ground training;

(b) holds a current flight instructor licence issued under these Regulations when conducting ground training or flight training; or

(c) is authorised by the Authority to provide ground training or flight training under these Regulations and the Civil Aviation (Aviation Training Organisations) Regulations;

"balloon" means a non-power-driven lighter-than-air aircraft;

"cabin crew member" means a crew member who performs in the interest of safety of passengers, duties assigned by the operator or the pilot in command of the aircraft, but who shall not act as a flight crew member;

"Category II (CAT II) operations" means, a precision instrument approach and landing with a decision height lower than 60m (200) Ft), but not lower than 30m (100 Ft), and a runway visual range not less than 350m;

"Category IIIA (CAT IIIA) operations" means, a precision instrument approach and landing with-

(a) a decision height lower than 30m (100Ft) or no decision; and

(b) a runway visual range not less than 200m ;

"Category IIIB (CAT IIIB) operations" means, a precision instrument approach and landing with-

(a) a decision height lower than 15m (50Ft) or no decision height ; and

(b) a runway visual range less than 200m but not less than 50m;

"Category IIIC (CAT IIIC) operations means a precision instrument approach and landing with no decision height and no runway visual range limitations;

"check pilot" means a pilot approved by the Authority who has the appropriate training, experience, and demonstrated ability to evaluate and certify to the knowledge and skills of other pilot; evaluation is made on the basis of various checks conducted as modules in a specified operator's Authority-approved training program; a check pilot is authorized to conduct proficiency or competency checks, line checks, and special qualification checks; to supervise the re-establishment of landing currency; and to supervise any initial operating experience requirements prescribed by the applicable laws of Uganda or the Authority; a check pilot may conduct flight training in the operator's approved program;

"Contracting State" means a State that is signatory to the Convention on International Civil Aviation (Chicago Convention);

"course" means a program of instruction to obtain an airman license, rating, qualification, authorisation, or currency;

"Crew Resource Management" means a program designed to improve the safety of flight operations by optimising the safe, efficient, and effective use of human resources, hardware, and information through improved crew communication and co-ordination;

"critical engine" means the engine whose failure would most adversely affect the performance or handling qualities of an aircraft;

"cross country flight" means any flight during the course of which the aircraft is more than 30 nautical miles from the aerodrome of departure;

"designated medical examiner" means a person qualified and licensed in the practice of medicine, designated by the Authority to conduct medical examinations of fitness of applicants and issue reports for the issue or renewal of the licences or certificate or ratings specified in these Regulations;

"evaluator" means a person employed by a certified Aviation Training Organisation who performs tests for licensing, added ratings, authorisations, and proficiency checks that are authorised by the certificate holder's training specification, and who is authorised by the Authority to administer such checks and tests;

"examiner" means any person authorised by the Authority to conduct a pilot proficiency test, a practical test for an airman license or rating, or a knowledge test under these Regulations;

"facility" means a physical plant, including land, buildings, and equipment, which provides the means for the performance of maintenance, preventive maintenance, or modifications of any article;

"flight crew member" means a licensed crew member charged with duties essential to the operation of an aircraft during flight time.

"flight plan" means specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft;

"flight simulator" means a device that-

(a) is a full-size aircraft cockpit replica of a specific type of aircraft, or make, model, and series of aircraft;

(b) includes the hardware and software necessary to represent the aircraft in ground operations and flight operations;

(c) uses a force cueing system that provides cues at least equivalent to those cues provided by a 3 degree freedom of motion system;

(d) uses a visual system that provides at least a 45 degree horizontal field of view and a 30 degree vertical field of view simultaneously for each pilot; and

(e) has been evaluated, qualified, and approved by the Authority;

"flight time-aeroplanes and glider" means the total time from the moment an aeroplane or a glider moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight; flight time is synonymous with the term "block to block" or "chock to chock" time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight;

"flight time-helicopter" means the total time from the moment a helicopter rotor blades start turning until the moment a helicopter comes to rest at the end of the flight and the rotor blades are stopped;

"flight time-airships or free balloon" means the total time from the moment an airship or free balloon first becomes detached from the surface until the moment when it next becomes attached thereto or comes to rest thereon;

"flight training device" means a device that-

(a) is a full-size replica of the instruments, equipment, panels, and controls of an aircraft, or set of aircraft, open or in an enclosed cockpit, including the hardware and software for the systems installed, that is necessary to simulate the aircraft in ground and flight operations;

(b) need not have a force (motion) cueing or visual system; and

(c) has been evaluated, qualified, and approved by the Authority;

for purposes of this definition, a set of aircraft are those that share similar performance characteristics, such as similar airspeed and altitude operating envelopes, similar handling characteristics, and the same number and type of propulsion systems;

"glider" means a non-power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces, which remain fixed under given conditions of flight;

"glider port" means a defined area on land (including any buildings, installations and equipment) intended to be used wholly or in part for the launching, landing, surface movement of gliders and the dropping of the towline";

"heavier-than-air aircraft" means any aircraft deriving its lift in flight chiefly from aerodynamic forces;

"helicopter" means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axis;

"heliport" means an aerodrome or defined area on a structure intended to be used wholly or in part for the arrival, departure, and surface movement of helicopters;

"housing" means buildings, hangars, and other structures to accommodate the necessary equipment and materials of a maintenance organisation that-

(a) provide working space for the performance of maintenance, preventive maintenance, or modifications for which the maintenance organisation is certificated and rated; and

(b) provide structures for the proper protection of aircraft, airframes, aircraft engines, propellers, appliances, components, parts, and subassemblies thereof during disassembly, cleaning, inspection, repair, modification, assembly, and testing; and

(c) provide for the proper storage, segregation, and protection of materials, parts, and supplies;

"inspection" means the examination of an aircraft or aircraft component to establish conformity with a standard approved by the Authority;

"instrument approach procedure" means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or enroute obstacle clearance criteria apply;

"instrument time" means time in which cockpit instruments are used as the sole means for navigation and control;

"instrument training" means training which is received from an authorised instructor under actual or simulated instrument meteorological conditions;

"knowledge test" means a test on the aeronautical knowledge areas required for an airman license or rating that can be administered in written form or by a computer;

"licensed aircraft maintenance engineer (LAME)" means a person licensed by the Authority to perform defined maintenance upon aircraft or aircraft components;

"licensed aircraft maintenance engineer (LAME) course" means a training course for LAME maintenance ratings in airframe, powerplant and avionics;
"lighter-than-air aircraft" means any aircraft supported chiefly by its buoyancy in the air;
"maintenance" means tasks required to ensure the continued airworthiness of an aircraft or aircraft component including any one or combination of overhaul, repair, inspection, replacement, modification, and defect rectification;
"maintenance control manual" means a manual containing procedures, instructions and guidance for use by maintenance and concerned operational personnel in the execution of their duties;
"major modification" means a modification as described in the Civil Aviation (Airworthiness) Regulations;
"major repair" means a repair as described in the Civil Aviation (Airworthiness) Regulations;
"Minister" means the Minister for the time being responsible for civil aviation;
"modification" means the alteration of an aircraft or aircraft component in conformity with an approved standard;
"operations manual" means a manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties;
"operations specifications" means a document containing the terms, conditions and limitations applicable to the AOC holder's certificate";
"Pilot-in-command (PIC)" means the pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight;
"pilot time" means that time a person-

(a) serves as a required pilot;
(b) receives training from an authorised instructor in an aircraft, approved flight simulator, or approved flight training device; or
(c) gives training as an authorised instructor in an aircraft, approved flight simulator, or approved flight-training device;

"powered-lift" means a heavier-than-air aircraft capable of vertical takeoff, vertical landing, and low speed flight that depends principally on engine driven lift devices or engine thrust for lift during these flight regimes and on non-rotating airfoil(s) for lift during horizontal flight;
"powerplant" means an engine that is used or intended to be used for propelling aircraft, and it includes turbo superchargers, appurtenances, and accessories necessary for its functioning, but does not include propellers;
"practical test" means a competency test on the areas of operations for a license, certificate, rating, or authorisation that is conducted by having the applicant respond to questions and demonstrate manoeuvres in flight, in an approved flight simulator, or in an approved flight training device, or in a combination of these;
"pressurised aircraft" means for airman-licensing purposes, means an aircraft that has a service ceiling or maximum operating altitude, whichever is lower, 25,000 feet above means sea level;
"preventive maintenance" means maintenance as described in the Civil Aviation (Airworthiness) Regulations;
"propeller" means for a device for propelling an aircraft that has blades on a powerplant driven shaft and that, when rotated, produces by its action on the air, a thrust approximately perpendicular to its plane of rotation, it includes control components normally supplied by its manufacturer, but does not include main and auxiliary rotors or rotating airfoils of powerplants;
"psychoactive substance" means alcohol, opioids, cannabinoids, sedatives and hynotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded;
"psychosis" means a mental disorder in which the individual has manifested delusions, hallucinations, grossly bizarre or disorganised behaviour, or other commonly accepted symptoms of this condition; or the individual may reasonably be expected to manifest delusions, hallucinations, grossly bizarre or disorganised behaviour, or other commonly accepted symptoms of this condition;

"rating" means an authorisation entered on or associated with a license or certificate and forming part thereof, stating special conditions, privileges or limitations pertaining to such license or certificate;

"repair" means the restoration of an aircraft or aircraft component to a serviceable condition in conformity with an approved standard;

"rest period" means a period free of all restraint, duty or responsibility as specified by the authority for an AOC holder conducting commercial air transport operations;

"co-pilot" means a licensed pilot serving in a piloting capacity other than as pilot-in-command, but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction;

"solo flight" means a flight during which a student pilot is the sole occupant of the aircraft";

"solo flight time" means flight time during which a student pilot is the sole occupant of the aircraft;

"specific operating provisions" means a document describing the ratings (class or limited) in detail and shall contain reference material and process specifications used in performing repair work, along with any limitations applied to an approved maintenance organisation;

"substance" means alcohol, sedatives, hypnotics, anxiolytics, hallucinogens, opioids, cannabis, inhalants, central nervous system stimulants such as cocaine, amphetamines, and similarly acting sympathomimetics, phencyclidine or similarly acting arylcyclohexylamines, and other psychoactive drugs and chemicals;

"substance abuse" means any of the following-

(a) the use of a substance in a situation in which that use was physically hazardous, if there has been at any other time an instance of the use of a substance also in a situation in which that use was physically hazardous;

(b) a verified positive drug test result acquired under an anti-drug program or internal program of a State government; or

(c) misuse of a substance that the Authority, based on case history and qualified medical judgment relating to the substance involved, finds that it makes the applicant unable to safely perform the duties or exercise the privileges of the airman license applied for or held; or may reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the applicant unable to perform those duties or exercise those privileges;

"substance dependence" means a condition in which a person is dependent on a substance, other than tobacco or ordinary xanthine-containing beverages, as evidenced by increased tolerance; manifestation of withdrawal symptoms; impaired control of use; or continued use despite damage to physical health or impairment of social, personal, or occupational functioning;

"training program" means a program that consists of course(s), courseware, facilities, flight training equipment, and personnel necessary to accomplish a specific training objective, it may include a core curriculum and a specialty curriculum;

"training time" means the time spent receiving from an authorised instructor flight training, ground training, or simulated flight training in an approved flight simulator or approved flight-training device;

"training to proficiency" means the process of the check pilot administering each prescribed manoeuvre and procedure to a pilot as necessary until it is performed successfully during the training period;

Acronyms

4. The following acronyms are used throughout these Regulations-

ADF - Automatic Direction Finder
AGL - Above Ground Level
AME - Aviation Medical Examiner
AMO - Approved Maintenance Organisation

AOC - Air Operator Certificate
ARS - Aviation Repair Specialist
ATC - Air Traffic Control
ATO - Aviation Training Organisation
CAT - Category
dB - decibels
DME - DesignatedMedical Examiner
ICAO - International Civil Aviation Organisation
ILS - Instrument Landing System
IFR - Instrument Flight Rules
GNSS - Global Navigation Satellite System
LAME - Licensed Maintenance Engineer
MSL - Mean Sea Level
NDT - Non-destructive testing
NOTAM - Notice to Airmen
PIC - Pilot In Command
PMA - Parts Manufacturing Authorisation
RAIM - Receiver Autonomous Integrity Monitoring
RFM - Rotorcraft Flight Manual
RVR - Runway Visual Range
SIC - Second In Command
TSO - Technical Standard Order
V1 - Takeoff decision speed.
VFR - Visual Flight Rules

PART II – LICENCES, CERTIFICATION, RATINGS AND AUTHORISATIONS

Licenses and certificates issued

5. The Authority may issue the following licences and certificates under these Regulations-
   (a) Pilot licences, including-
      (i) Student Pilot Licence;
      (ii) Private Pilot Licence;
      (iii) Commercial Pilot Licence: and
      (iv) Airline transport pilot licence;
   (b) Ground instructor licence;
   (c) Flight engineer licence;
   (d) Air traffic controller licence;
   (e) Aircraft maintenance engineer licence;
   (f) Flight operations officer licence;
   (g) Flight radio telephony operator licence;
   (h) Cabin crew member certificate.

Ratings issued

6. (1) The Authority may issue the following ratings for pilots-
   (a) Category ratings in the following aircraft-
      (i) Aeroplane;
      (ii) Rotorcraft;
      (iii) Glider;
      (iv) Lighter-than-air; and
      (v) Powered lift;
   (b) Class ratings in the following aeroplanes-

(i) single-engine, land;
(ii) single-engine, sea;
(iii) multi-engine, land; and
(iv) multi-engine, sea;

(c) Class ratings in the following rotorcraft-
(i) helicopter; and
(ii) gyroplane.

(d) Class ratings in the following lighter-than-air aircraft-
(i) airship;
(ii) free balloon;

(e) Type ratings in the following aircraft-
(i) aircraft certificated for at least two pilots;
(ii) each type of helicopter;
(iii) any aircraft considered necessary by the Authority**;**

(f) Instrument ratings in the following aircraft-
(i) instrument – Aeroplane;
(ii) instrument – Helicopter;

(g) flight instructor rating.

(2) The Authority may place the category, class, or type rating on a pilot licence when issuing that licence, provided the rating reflects the appropriate category, class, or type of aircraft used to demonstrate skill and knowledge for its issuance and the aircraft type is registered in Uganda.

(3) The Authority may issue the following ratings for flight engineers-
(a) reciprocating engine powered including type rating;
(b) turbo propeller powered including type rating; and
(c) turbojet powered including type rating.

(4) The Authority may issue the following ratings for air traffic controllers-
(a) Aerodrome control;
(b) Approach Control;
(c) Approach Radar Control;
(d) Area control; and
(e) Area radar control;

(5) (a) The Authority may issue the following categories without type ratings for LAMEs-
(i) Category A - Aeroplane
(ii) Category C - Piston engines
(iii) Category C - Gas Turbine engines
(iv) Category 'A' and 'C' - Piston Engined Rotorcraft;
(v) Category 'A' and 'C' - Turbine Engined Rotorcraft;
(vi) Category X - Electrical;
(vii) Category X - Instruments;
(viii) Category X - Automatic Pilots – aeroplanes
(ix) Category X - Automatic Pilots - rotorcraft
(x) Combined Category X - Instruments and Automatic Pilots;
(xi) Category X - Compass Compensation and Adjustments;
(xii) Category R – Radio

(b) The Authority may issue type ratings for LAMEs in the following categories-
(i) Category A Aeroplanes-
(a) Composite Material Aeroplanes Not Exceeding 5700kg MTOM:
(b) Wooden and wood and Metal Aeroplanes-
An aeroplane where the primary structures is manufactured from wood or combinations of wood and metal;

(c) Unpressurized aeroplanes not exceeding 2730kg MTOM;
(d) Pressurized aeroplanes not exceeding 2730kg MTOM
(e) Unpressurized aeroplanes not exceeding 5700kg MTOM;
(f) Pressurised aeroplanes not exceeding 5700kg MTOM;
(g) Unpressurized aeroplanes exceeding 5700kg MTOM but excluding aeroplanes defined in (xi);
(h) Pressurised aeroplanes exceeding 5700kg MTOM but excluding those aeroplanes defined in (xvi) ;

(ii) Category C Engines
(a) Diesel Engines in Aeroplanes
(b) Piston Engines in Aeroplanes excluding diesel engines;
(c) Gas-turbine engines in Aeroplanes not exceeding 22.25 KN (5000lbf) static thrust including where so endorsed the associated APU installations;
(d) Gas-turbine engines in Aeroplanes exceeding 22.25 KN (5000lbs) static thrust including where so endorsed the associated APU installations;
(e) Propeller turbine engines in aeroplanes including where so endorsed the associated APU installations-

(iii) Category 'A' and 'C' - Rotorcraft;
(a) Piston engine rotorcraft
(b) Turbine engine rotorcraft not exceeding 2730kg MTOM.
(c) Turbine engine rotorcraft above 2730kg MTOM but below 5700kg MTOM.

(iv) Category X - Electrical
(a) Aircraft in which the main generation System output is dc (including alternators having self contained rectifier system) and in which secondary alternators having an individual power rating not exceeding 1.5 KVA may be fitted.
(b) Aircraft in which the main generation system output is dc and which have installed "frequency wild" alternators with an individual power rating exceeding 1.5KVA for auxiliary services.
(c) Aircraft in which the main generation system output is "frequency wild" ac and dc power is supplied from transformer rectifier Units.
(d) Aircraft in which the main generation system output is constant speed drive units, or variable speed constant frequency (VSCF) generator/converter systems, and dc power is supplied from transformer rectifier units.

(v) Category X - Instruments
(a) General aircraft instrument systems but excluding instruments installed on any aircraft which has installed a Flight Director System;
(b) Flight Director Systems with air driven gyroscopes (attitudes);
(c) Flight Director Systems with electrical driven gyroscopes (attitudes);

(vi) Category X – Automatic Pilots (Aeroplanes)
(a) Non-Radio-Coupled Automatic Pilots ;
(b) Radio-Coupled Automatic Pilots ;

(vii) Category X – Automatic Pilots (Rotorcraft)
(a) Non-Radio Coupled Automatic Pilots;
(b) Radio-Coupled Automatic Pilots);

(viii) Combined Category X – Instruments and Automatic Pilots;
Includes all equipments and systems installed in an aircraft appropriately registered excluding compass compensation;

(ix) Category X - compass

Compass Compensation and Adjustment;

(x) Category R – Radio ;

(a) Airborne Communication and Airborne Navigation Systems;

(b) Airborne Radar Systems

(xi) Aircraft of 13610kg (30,000 lbs) MTOM or greater for which maintenance has to be carried out and certified under the company approval.

Authorisations issued.

7. (1) The Authority may issue the following authorisations under these Regulations-

(a) Category II operations pilot authorisation;

(b) Category III operations pilot authorisation; and

(c) Parachute rigger authorization

(2) The Authority may issue the following authorisations for aviation repair specialists -

(a) propellers;

(b) welding;

(c) non destructive testing;

(d) computer;

(e) accessory;

(f) instrument;

(g) component; or

(h) any other authorisation as determined by the Authority

.

Duration of licences, ratings, and authorisations

8. (1) The Authority shall issue licences with a specific expiry date except as specifically provided by this part.

(2) Except for an aviation repair specialist authorisation, all authorisations and ratings issued under these regulations are valid for the term issued by the Authority, but in any case not more than 12 months.

(3) An aviation repair specialist authorisation issued on the basis of employment with a specified employer, shall be valid for the term of employment of that specialist.

(4) A student Pilot Licence shall be valid for-

(a) a holder who is less than forty years of age, from the date the licence is issued or renewed the by Authority for a period of the remainder of the twenty four months validity of the holder's medical certificate;

(b) a holder who is forty years of age or more, from the date the licence is issued or renewed by the Authority for a period of the remainder of the twelve month validity of the holder's medical certificate.

(5) A private pilot licence (PPL) with an aeroplane or rotorcraft or lighter than air category rating shall be valid -

(a) For a holder who is less than forty years of age, from the date the licence is issued or renewed by the Authority for a period of the remainder of the twenty four month validity of the holder's medical certificate.

(b) For a holder who is forty years of age or more, from the date the licence is issued or renewed by the authority for a period of the remainder of the twelve month validity of the holder's medical certificate.

(6) A commercial pilot licence(CPL) with an aeroplane or rotorcraft category rating shall be valid -

(a) for a holder who is less than forty years of age, from the date the licence is issued or renewed by the Authority for a period of the remainder of the twelve months validity of the holder's medical certificate;

(b) for a holder who is forty years of age or more, from the date the licence is issued by the Authority for a period of the remainder of the six month

validity of the holder's medical certificate.

(7) An airline transport pilot licence (ATPL) with an aeroplane or rotorcraft category rating shall be valid -

(a) for a holder who is forty years of age, from the date the licence is issued, or renewed by the Authority for a period of the remainder of the twelve month validity of the holder's medical certificate;

(b) for a holder who is forty years of age or more, from the date the licence is issued by the Authority for a period of the remainder of the six month validity of the holder's medical certificate.

(8) A flight engineer licence shall be valid from the date the licence is issued or renewed by the Authority for a period of the remainder of the twelve month validity of the holder's medical certificate.

(9) A flight radio telephony operator license shall be valid for a period of twenty four months from the date of issuance or renewal.

(10) A flight operations officer licence shall be valid for a period of twelve months from the date of issuance or renewal.

(11) A cabin crew member certificate shall be valid from the date of issue or renewal of the certificate by the Authority for a period of the remainder of the twelve months validity of the holder's medical certificate.

(12) An aircraft maintenance engineer licence is valid for a period of twelve months from the date of issuance or renewal

(13) A flight instructor rating shall valid for a period of twelve months from the date of the instructor flight test or renewal.

(14) A ground instructor licence shall be valid for a period of twenty four months from the date of issuance or renewal

(15) An Air Traffic Controller Licence shall in case of a holder who is-

(a) less than forty years of age, be valid from the date the licence is issued or renewed for the period of the remainder of twenty-four months validity of the holder's medical certificates; or

(b) forty years of age or more, be valid from the date the licence is issued or renewed for a period of the reminder of twelve months validity of the holder's medical certificate.

(16) The Authority may issue authorization for a period of up to twelve months.

Validity of licences

9. (1) A holder of a licence shall not exercise the privileges granted by that licence, or by related ratings, unless the holder maintains competency and meets the requirements for recent experience established by the Authority.

(2) The Authority shall ensure that other Contracting States are able to confirm the validity of the licence.

(3) 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 these Regulations.

(4) Maintenance of competency may be satisfactorily recorded in the operator's records, or in the flight crew member's personal log book or license.

(5) Flight crew members may in lieu of maintaining competency in an aircraft demonstrate their continuing competency in synthetic flight training devices approved by the Authority

(6) A report of medical fitness obtained in accordance with these Regulations shall be submitted to the Authority at intervals of not more than-

(a) twenty four months for the private pilot licence – aeroplane;

(b) twelve months for the commercial pilot licence – aeroplane;
(c) twelve months for the airline transport pilot licence – aeroplane;
(d) twenty four months for the private pilot licence – helicopter;
(e) twelve months for the commercial pilot licence – helicopter;
(f) twelve months for the airline transport pilot licence – helicopter;
(g) twenty four months for the glider pilot licence;
(h) twenty four months for the free balloon pilot licence;
(i) twelve months for the flight engineer licence;
(j) twenty four months for the air traffic controller licence; and
(k) twelve months for the cabin crew member certificate.

(7) Where a holder of an airline transport pilot licence; aeroplane and helicopter has passed his or her fortieth birthday, the twelve-month interval period specified in sub regulation (6) shall be reduced to six months.

(8) Where a holder has passed his or her fortieth birthday, the twenty four month interval specified for the private pilot licence- aeroplane and helicopter, glider pilot licence, free balloon pilot licence, and air traffic controller licence shall be reduced to twelve months and the twelve month interval specified for the commercial pilot licence - aeroplane and helicopter shall be reduced to six months.

Deferral of medical examination

10. (1) The prescribed re-examination of a licence holder operating in an area distant from a designated medical examination facility may be deferred at the discretion of the Authority, provided that such deferment shall only be made as an exception and shall not exceed-
(a) a single period of six months in the case of a flight crew member of an aircraft engaged in non-commercial operations;
(b) two consecutive periods each of three months in the case of a flight crew member of an aircraft engaged in commercial operations, provided that in each case a favourable medical report is obtained after examination by a medical examiner designated by the contracting state in which the applicant is situated;
(c) in the case of a private pilot, a single period not exceeding twelve months where the medical examination is carried out by an examiner designated by the Contracting State in which the applicant is situated.

(2) For a deferral granted under sub regulations (1)(b) or (c), a report of the medical examination shall be sent to the Authority for the licence to be renewed.

Gynaecological conditions and pregnancy.

11. An applicant for a licence or certificate under paragraphs (a),(c), (d) and (h) of regulation 5 shall, where applicable, be subject to the requirements relating to gynecological conditions or pregnancy as specified in Part VIII on medical standards and certification.

Curtailment of privileges of pilots of sixty years of age

12. A pilot licence holder shall not act as PIC or co-pilot of an aircraft engaged in scheduled or non-scheduled commercial air transport operation if the licence holder is or above sixty years of age.

PART III - VALIDATION AND CONVERSION OF FOREIGN LICENCES AND RECOGNITION OF MILITARY QUALIFICATIONS

Validation of certificate and ratings issued on the basis of a foreign pilot licence.

13. (1) A person who holds a current licence issued by another Contracting State may apply for and may be issued a validation certificate with the appropriate ratings, unless otherwise, if the applicant -

(a) is not under an order of revocation or suspension by the country that issued the pilot licence;
(b) holds a licence that does not contain an endorsement stating that the applicant has not met all of the standards of ICAO for that licence;
(c) does not currently hold a pilot licence issued by the Authority
(d) holds a current medical certificate issued by the contracting state that issued the applicant's pilot licence
(e) is able to read, speak, write and understand the English language; and
(f) except as the Authority may decide, passing air law, flight rules and procedures examinations.

(2) The Authority may place upon a certificate of validation privileges not beyond those granted by a foreign licence.

(3) A person who receives a certificate of validation under this regulation-
(a) shall be limited to the privileges placed on the licence validation by the Authority
(b) shall be subject to the limitations and restrictions on the person's licence issued by the Authority and foreign pilot licence when exercising the privileges of that pilot licence in an aircraft registered in Uganda; and
(c) shall not exercise the privileges of the pilot licence validation issued by the Authority when the person's foreign pilot has been revoked or suspended.

(4) An applicant for a certificate of validation shall use only one foreign pilot licence validation as a basis for obtaining a pilot licence issued by the authority.

(5) An applicant for a certificate of validation shall provide a foreign pilot licence and medical certificate in the English language or accompanied by an English language transcription that has been signed by an official or representative of the foreign aviation authority that issued the foreign pilot licence.

(6) The Authority shall place upon a certificate of validation, the pilot's foreign number and country of issuance.

(7) The Authority may render valid a pilot licence issued by foreign Contracting State for use in private flight subject to passing a flight test on the relevant class rating.

Conversion of pilot licences based on foreign licences

14. (1) A person who holds a current pilot licence issued by another Contracting State may apply and be issued with an equivalent licence with the appropriate ratings, if that person-
(a) is not under an order of revocation or suspension by the country that issued the licence;
(b) holds a licence which meets all ICAO standards for that licence;
(c) holds a valid Medical Assessment/Certificate issued by the contracting State that issued the licence; and
(d) is able to read, speak, write, and understand English language.

(2) An applicant for a pilot licence under this regulation shall submit the licence and Medical Assessment/Certificate in the English language or accompanied by an English language transcription that has been signed by an official or representative of the foreign authority that issued that licence.

(3) The applicant shall be required to have met the applicable aeronautical experience requirements.

(4) In addition to the requirements of sub-regulations (1), (2) and (3) the applicant shall be required to pass -

(a) for ATPL-
(i) the Medical Assessment Class I;
(ii) the composite paper comprising of Uganda air law, meteorology, Aircraft General Knowledge, Flight Planning, Radio Aids, Navigation, Flight Performance

and Planning, Human Performance, Operational Procedures, Principles of flight and R/t knowledge

(iii) an initial instrument rating flight test;

(b) for CPL;

(i) the Medical Assessment Class I;

(ii) the composite pa per comprising of Uganda air law, meteorology, Aircraft General Knowledge, Flight Planning, Radio Aids, Navigation, Flight Performance and Planning, Human Performance, Operational Procedures, Principles of flight and R/t knowledge

(iii) an initial instrument rating flight test if the rating is to be included in the licence;

(c) for PPL;

(i) the Medical Assessment Class II;

(ii) the composite paper comprising of Uganda air law, meteorology, Aircraft General Knowledge, Flight Planning, Radio Aids, Navigation, Flight Performance and Planning, Human Performance, Operational Procedures, Principles of Flight and R/T knowledge and Meteorology.

(5) An applicant for a CPL or ATPL shall not be eligible for grant of a licence unless there is an inclusion of the aircraft rating of either Part I or Part II of the licence for PIC or co-pilot respectively.

(6) The Authority may transfer a type rating from a foreign licence for the purpose of conversion of CPL or ATPL provided-

(a) the aircraft type is endorsed on a foreign licence

(b) the pilot is current on the aircraft type and

(c) the type of aircraft is registered in Uganda.

(7) The applicant for conversion who fails the knowledge test in three consecutive attempts shall be disqualified for further testing until a period of one month has elapsed from the date on which the last test was made.

(8) The Authority shall prescribe the minimum grade for the knowledge test.

(9) The applicant shall be required to have passed the composite paper for conversion of a foreign licence within a period of six months preceding the date of the application for the licence.

Recognition of military pilot or former military pilot qualifications

15. (1) Except for a rated military pilot or former rated military pilot who has been removed from flying status for lack of proficiency, or because of disciplinary action involving aircraft operations, a rated military pilot or former rated military pilot who meets the requirements of these regulations may apply, on the basis of the pilot's military training, for-

(a) a commercial pilot licence;

(b) an aircraft rating in the category and class of aircraft for which that military pilot is qualified;

(c) an instrument rating with the appropriate aircraft rating for which that military pilot is qualified; and

(d) a type rating, if appropriate.

(2) The Authority may issue to a rated military pilot or former rated military pilot an aircraft category, class, or type rating to a commercial pilot licence if the pilot presents documentary evidence that shows satisfactory accomplishment of compliance with requirements of these regulations.

Conversion of flight engineer licence

16. (1) A person who holds a current flight engineer licence issued by another Contracting State may apply and be issued with an equivalent licence with the appropriate ratings, if that person-

(a) is not under an order of revocation or suspension by the country that issued the licence;
(b) holds a licence which meets all the ICAO standards for that licence;
(c) holds a valid Medical Certificate issued by the Contracting State that issued the licence; and
(d) is able to read, speak, write, and understand English language.

(2) An applicant for a flight engineers licence pursuant to this regulation shall submit the licence and Medical Certificate in the English language or accompanied by an English language transcription that has been signed by an official or representative of the foreign authority that issued that licence.

(3) The applicant shall be required to meet the applicable aeronautical experience requirements.

(4) In addition to the requirements of sub regulations (1), (2) and (3) the applicant shall be required to pass -

(a) the Medical Certificate Class I;
(b) the composite paper comprising of Uganda air law, meteorology, aircraft general knowledge, flight performance and planning, human performance, operational procedures, principles of flight and radiotelephony.

(5) The Authority may transfer a type rating from a foreign licence for the purpose of conversion of flight engineer licence provided-

(a) the aircraft type is endorsed on a foreign licence
(b) the flight engineer is current on the aircraft type and
(c) the type of aircraft is registered in Uganda

(6) The applicant for conversion who fails the knowledge test in three consecutive attempts shall be disqualified for further testing until a period of one month has elapsed from the date in which the last test was made.

(7) The Authority shall prescribe the minimum passing grade for the knowledge test.

(8) The applicant shall be required to have passed the composite paper for conversion for a foreign licence within a period of six months preceding the date of the application for the licence.

Validation of AMEL

17. (1) A person who holds a current and valid AMEL issued by another Contracting State may apply for and may be issued a certificate of validation with the appropriate rating, if the applicant-

(a) is not under an order of revocation or suspension by the country that issued the licence;
(b) holds a licence that does not contain an endorsement stating that the applicant has not met all of the standards of ICAO for that licence;
(c) does not currently hold a licence issued by the Authority; and
(d) is able to read, speak, write, and understand the English language;

(2) The Authority may place upon a certificate of validation privileges not beyond those granted by a foreign licence.

(3) A person who receives a certificate of validation under this Regulation shall-

(a) be limited to the privileges placed on the certificate;
(b) be subject to the limitations and restrictions on the certificate and foreign AMEL when exercising the privileges of that certificate on an aircraft registered in Uganda; and
(c) not exercise the privileges of the certificate when the person's foreign licence has been revoked or suspended.

(4) The applicant for the certificate of validation shall present to the Authority the foreign licence and evidence of the experience required by presenting a valid record.

(5) The certificate of validation will be valid for a maximum of 6 months, provided the foreign licence or in the case of continuing licence the rating remains valid.

(6) The applicant for the certificate of validation shall, unless decided otherwise by the Authority-

(a) complete a skill test – for the relevant ratings in the licence that he wants to be validated relevant to the privileges of the licence held;

(b) demonstrate to the satisfaction of the Authority the knowledge, relevant to the licence to be validated, of air law; and

(c) demonstrate to the satisfaction of the Authority the knowledge, relevant to the licence to be validated of-

(i) relevant aircraft maintenance principles; and

(ii) human performance

Conversion of foreign AMEL

18. (1) A person who holds a current AMEL issued by another Contracting State may apply and be issued an equivalent licence with the appropriate ratings, if the applicant-

(a) is not under an order of revocation or suspension by the country that issued the licence;

(b) holds a licence which meets all the ICAO standards for that licence;

(c) is able to read, speak, write and understand the English language.

(2) An applicant for an AMEL under this regulation shall submit his licence in the English language or accompanied by an English transcription that has been signed by an official or representative of the foreign authority that issued the licence.

(3) The applicant shall be required to meet the applicable aeronautical experience requirements specified under these regulations.

(4) In addition to the requirements of sub regulations (1), and (2) and (3) the applicant shall be required to pass a knowledge test on-

(a) air law; and

(b) a composite paper comprising of subjects required for initial issue of a category and rating sought.

(5) The Authority may transfer a type rating from a foreign licence for the purpose of conversion of AMEL provided-

(a) the aircraft type is endorse on a foreign licence;

(b) the LAME is current on the aircraft type; and

(c) the type of aircraft is registered in Uganda

(6) The applicant for conversion who fails the knowledge test shall be disqualified for further testing until after a proven practical experience of one month is gained.

(7) The Authority shall prescribe the minimum passing grade for the knowledge test.

(8) The applicant shall be required to have passed the air law and composite paper for conversion of a foreign licence within a period of sic months preceding the date of the application for the licence

(9) The Authority may verify the authenticity of the foreign licence, ratings and authorizations presented for conversion with the State of issue.

PART IV - GENERAL TESTING AND TRAINING REQUIREMENTS

Knowledge test: prerequisites and passing grades.

19. (1) An applicant for a knowledge test shall have-

(a) received an endorsement from an authorised instructor certifying that the applicant accomplished a ground-training required by these Regulations for the licence or rating sought and is prepared for the knowledge test; and

(b) proper identification at the time of taking the test that includes the applicant's-

(i) photograph;

(ii) name;

(iii) signature;

(iv) date of birth, which shows that the applicant meets or will meet the age requirements of these Regulations for the licence sought before the expiry date of the airman knowledge test report; and

(v) actual residential address, and the mailing address.

(2) The Authority shall specify the minimum passing grade for the knowledge test and the validity of the knowledge test result.

Practical tests: prerequisites for flight crew.

20. (1) To be eligible for a practical test, an applicant shall meet all applicable requirements for the licence or rating sought.

(2) If an applicant does not complete all increments of a practical test for a licence or rating in one day, the applicant shall complete all remaining increments of the test not more than sixty days after that date.

(3) If an applicant does not satisfactorily complete all increments of the practical test for a licence or a rating within sixty days after beginning the test, the applicant shall retake the entire practical test, including those increments satisfactorily completed.

(4) Except as provided in sub regulation (5), to be eligible for a practical test for a licence or rating issued under these Regulations, an applicant shall-

(a) pass the required knowledge test for issue of a licence within the twenty-four month period preceding the month the applicant completes the practical test, if a knowledge test is required;

(b) pass the required knowledge test for the type rating within six months preceding the month the applicant completes the practical test;

(c) present the knowledge test report at the time of the application for the practical test, if a knowledge test is required;

(d) have satisfactorily accomplished the required training and obtained the aeronautical experience prescribed by these Regulations for the licence or rating sought;

(e) meet the prescribed age requirement of these Regulations for the issuance of the licence or rating sought; and

(f) have an endorsement in the applicant's logbook or training record that has been signed by an authorised instructor who certifies that the applicant-

(i) has received and logged training time within sixty days preceding the date of application in preparation for the practical test;

(ii) is prepared for the required practical test; and

(iii) has demonstrated satisfactory knowledge of the subject areas in which the applicant was deficient on the airman knowledge test.

(5) An applicant for an airline transport pilot licence or an additional rating to an airline transport pilot licence may take the practical test for that licence or rating with an expired knowledge test report, provided that the applicant is employed as a flight crew member by an AOC holder at the time of the practical test and has satisfactorily accomplished that operator's approved-

(a) PIC aircraft qualification training program that is appropriate to the licence and rating sought; and

(b) qualification training requirements appropriate to the licence and rating sought.

Practical test: general requirements for flight crew

21. (1) The Authority shall determine an applicant's ability to hold a licence or rating issued under these Regulation based upon the applicant's ability to safely perform the following during a practical test-

(a) perform the tasks specified in the areas of operation for the licence or rating sought within the prescribed standards;

(b) demonstrate mastery of the aircraft with the successful outcome of each task-
(i) never seriously in doubt for the private pilot and commercial pilot licence tests; and
(ii) never in doubt for the airline transport pilot licence and aircraft type rating tests;
(c) demonstrate sound judgement; and
(d) demonstrate single-pilot competence if the aircraft is type certified for single-pilot operations.

(2) An applicant who fails any area of operation, fails the practical test and is not eligible for a licence or rating sought.

(3) The examiner or the applicant may discontinue a practical test at any time-
(a) when the applicant fails one or more of the areas of operation; or
(b) due to inclement weather conditions, aircraft airworthiness concerns or any other safety-of-flight concern.

(4) If a practical test is discontinued, the Authority may give the applicant credit for those areas of operation already passed, but only if the applicant-
(a) passes the remainder of the practical test within the sixty-day period after the date the practical test was begun;
(b) presents to the examiner for the retest the original test report or the discontinuance form prescribed by the Authority as appropriate; and
satisfactorily accomplishes any additional training needed and obtains the appropriate instructor endorsements, if additional training is required.

Practical tests: required aircraft and equipment.

22. (1) Except when permitted to accomplish the entire flight increment of the practical test in an approved flight simulator or an approved flight training device, an applicant for a licence or rating issued under these Regulations shall provide an aircraft with the necessary equipment and controls, including an aircraft registered in Uganda for each required test that-
(a) is of the category, class, and type, if applicable, applicable to the licence or rating sought; and
(b) has a certificate of airworthiness.

(2) An applicant for a practical test shall use an aircraft that has-
(a) the equipment for each area of operation required for the practical test;
(b) no prescribed operating limitations that prohibit its use in any of the areas of operation required for the practical test;
(c) except as provided in sub regulation (5), at least two pilot stations with adequate visibility for each person to operate the aircraft safely; and
(d) cockpit and outside visibility adequate to evaluate the performance of the applicant when an additional jump seat is provided for the examiner.

(3) An applicant for a practical test shall use an aircraft, other than a lighter-than-air aircraft, that has engine power controls and flight controls that are easily reached and operable in a conventional manner by both pilots, unless the examiner determines that the practical test can be conducted safely in the aircraft without the controls being easily reached.

(4) An applicant for a practical test that involves manoeuvring an aircraft solely by reference to instruments shall provide an aircraft with-
(a) equipment on board the aircraft that permits the applicant to pass the areas of operation that apply to the rating sought; and
(b) a device that prevents the applicant from having visual reference outside the aircraft, but does not prevent the examiner from having visual reference outside the aircraft, and is otherwise acceptable to the

Authority.

(5) An applicant may complete a practical test in an aircraft having a single set of controls, provided-

(a) the examiner agrees to conduct the test;

(b) the test does not involve a demonstration of instrument skills; and

(c) the proficiency of the applicant can be observed by an examiner who is in a position to observe the applicant.

Retesting after failure.

23. (1) An applicant for a knowledge or practical test who fails that test may reapply for the test only after the applicant has received-

(a) the necessary training from an authorised instructor who has determined that the applicant is proficient to pass the test; and

(b) an endorsement from an authorised instructor who gave the applicant the additional training.

(2) An applicant for a flight instructor licence with an aeroplane category rating or, for a flight instructor licence with a glider category rating, who has failed the practical test due to deficiencies in instructional proficiency on stall awareness, spin entry, spins, or spin recovery shall-

(a) comply with the requirements of sub regulation (1) before being retested;

(b) bring to the retest an aircraft that is of the appropriate aircraft category for the rating sought and is certified for spins; and

(c) demonstrate satisfactory instructional proficiency on stall awareness, spin entry, spins, and spin recovery to an examiner during the retest.

Records of training time .

24. (1) An person shall document and record the following time in a manner acceptable to the Authority-

(a) training and aeronautical experience used to meet the requirements for a licence, rating, qualification, authorisation, or flight review of these Regulations; and

(b) the aeronautical experience required to show recent flight experience requirements of these Regulations.

(2) For the purposes of meeting the requirements of this Regulation, a person shall enter the following information for each flight or lesson logged-

(a) General-

(i) date;

(ii) total flight time;

(iii) location where the aircraft departed and arrived, or for lessons in an approved flight simulator or an approved flight training device, the location where the lesson occurred;

(iv) type and identification of aircraft, approved flight simulator, or approved flight training device, as appropriate; and

(v) the name of a safety pilot, if required by the Civil Aviation (Operation of Aircraft) Regulations.

(vi) the name of the authorised instructor

(b) Type of pilot experience or training-

(i) solo;

(ii) PIC;

(iii) co-pilot;

(iv) flight and ground training received from an authorised instructor; and

(v) training received in an approved flight simulator or

approved flight training device from an authorised instructor.

(c) Conditions of flight-

(i) day or night;

(ii) actual instrument; and

(iii) simulated instrument conditions in flight, an approved flight simulator, or an approved flight training device.

(3) The pilot time described in this regulation may be used to-

(a) apply for a licence or rating issued under these Regulations; or

(b) satisfy the recent flight experience requirements of the Civil Aviation (Operation of Aircraft) Regulations.

(4) Except for a student pilot acting as PIC of an airship requiring more than one flight crew member, a pilot may log as solo flight time only that flight time when the pilot is the sole occupant of the aircraft.

(5) A private or commercial pilot may log PIC time only for that flight time during which that person is -

(a) the sole manipulator of the controls of an aircraft for which the pilot is rated;

(b) acting as PIC of an aircraft on which more than one pilot is required ; or

(c) a sole occupant.

(6) An airline transport pilot may log as PIC time all of the flight time while acting as PIC of an operation requiring an airline transport pilot licence.

(7) An authorised instructor may log as PIC time all flight time while acting as an authorised instructor.

(8) A student pilot may log PIC time when the student pilot-

(a) is the sole occupant of the aircraft or is performing functions of the PIC of an airship requiring more than one flight crew member; or

(b) has a current solo flight endorsement as required under regulation 35; or

(c) is undergoing training for a pilot licence or rating.

(9) A person may log co-pilot flight time only for that flight time during which that person-

(a) is qualified in accordance with the co-pilot requirements of the Civil Aviation (Operation of Aircraft) Regulations, and occupies a crew member station in an aircraft that requires more than one pilot by the aircraft's type certificate; or

(b) holds the appropriate category, class, and instrument rating (if an instrument rating is required for the flight) for the aircraft being flown, and more than one pilot is required under the type certification of aircraft.

(10) A person may log instrument flight time only for that flight time when that person operates the aircraft solely by reference to instruments under actual or simulated instrument flight conditions.

(11) An authorised instructor may log instrument flight time when conducting instrument flight instruction in actual instrument flight conditions.

(12) For the purposes of logging instrument flight time to meet the recent instrument experience requirements of the Civil Aviation (Operation of Aircraft) Regulations, the following information shall be recorded in a person's logbook-

(a) the location and type of each instrument approach accomplished; and

(b) the name of the safety pilot, if required.

(13) An approved flight simulator or approved flight training device may be used by a person to log instrument flight time, provided an authorised instructor is present during the simulated flight.

(14) A person may log training time when that person receives training from an authorised instructor in an aircraft, approved flight simulator, or approved flight training device.

(15) The training time shall be logged in a logbook and shall-

(a) be endorsed in a legible manner by the authorised instructor; and

(b) include a description of the training given, the length of the training lesson, and the instructor's signature, licence number, and licence expiry date.

Flight training received from flight instructors not licensed by the Authority.

25. (1) A person may credit flight training toward the requirements of a pilot licence or rating if that person received the training from-

(a) a flight instructor of an armed force in a program for training military pilots of either-

(i) Uganda; or

(ii) another Contracting State, provided that such Contracting State's civil aviation authority has recognized and endorsed such experience in a form and manner acceptable to the Authority; or

(b) a flight instructor authorised to give such training by the licensing authority of a Contracting State, provided that the flight training is given outside Uganda.

(2) A flight instructor specified in sub regulation (1) is authorised to give only the endorsements to show the training given.

Limitations on the use of flight simulators and flight training devices.

26. (1) No airman shall receive credit for use of any flight simulator or flight training device for satisfying any training, testing, or checking requirement of this regulation unless that flight simulator or flight training device is approved by the Authority for-

(a) the training, testing, and checking for which it is used;

(b) each particular manoeuvre, procedure, or crew member function performed; and

(c) the representation of the specific category and class of aircraft, type of aircraft, particular variation within the type of aircraft, or set of aircraft for certain flight training devic es.

Use of an approved flight simulator or an approved flight training device for a pilot licence or rating

27. (1) Where an approved flight simulator or approved flight training device is used for accomplishing any of the training and the required practical test for a pilot licence with an aeroplane category, class, and type rating, if applicable, the applicant, approved flight simulator, and approved flight training device are subject to the following requirements-

(a) some or all of the limitations of paragraphs (*b*) to (*k*);

(b) the flight simulator or flight training device shall be conducted in accordance with an approved course at an ATO certified under the Civil Aviation (Aviation Training Organisations) Regulations;

(c) to complete all training and testing, except preflight inspection for an additional aeroplane rating without limitations when using a flight simulator-

(i) the flight simulator must be approved as Level C or Level D; and

(ii) the applicant must meet at least one of the following-

(aa) hold a type rating for a turbojet or turbofan aeroplane of the same class of aeroplane for which the type rating is sought, or have been appointed by a military service as a PIC of an aeroplane of the same class of aeroplane for which the type rating is sought, if a type rating in a turbojet or turbofan aeroplane is sought;

(bb) hold a type rating for a turbo propeller aeroplane of the same class of aeroplane for which the type rating is sought, or have been designated by a military service as a PIC of an aeroplane of the same class of aeroplane for which the type rating is sought, if a type rating in a turbo propeller aeroplane is sought;

(cc) have at least two thousand hours of flight time, of which five hundred hours is in turbine-powered aeroplanes of the same class of aeroplane for which the type rating is sought;

(dd) have at least five hundred hours of flight time in the same type aeroplane as the aeroplane for which the rating is sought; or

(ee) have at least one thousand hours of flight time in at least two different aeroplanes requiring a type rating;

(d) subject to the limitation of paragraph *(e)*, an applicant who does not meet the requirements of paragraph *(c)* may complete all training and testing except for preflight inspection for a pilot licence or rating when using a flight simulator if-

(i) the flight simulator is approved as Level C or Level D; and

(ii) the applicant meets at least one of the following-

(aa) holds a type rating in a propeller-driven aeroplane if a type rating in a propeller driven aeroplane is sought, or holds a type rating in a turbojet or turbofan aeroplane if a type rating in a turbojet or turbofan aeroplane is sought; or

(bb) the twelfth month preceding the date on which the applicant completes the practical test for an additional aeroplane rating, has logged-

(1) at least hundred hours of flight time in aeroplanes of the same class for which the type rating is sought and which requires a type rating; and

(2) at least twenty five hours of flight time in aeroplanes of the same type for which the rating is sought.

(e) an applicant meeting only the requirements of paragraph *(d)* shall be issued a type rating with a limitation;

(f) the limitation on a type rating licence issued under the provisions of paragraph (*e)* shall state, " co-pilot only";

(g) an applicant who has been issued a pilot licence with the type rating limitation specified in paragraph *(e)* -

(i) shall not act as PIC of that aeroplane for which the rating was obtained under the provisions of this Regulation until the limitation is removed from the pilot certificate; and

(ii) may have the limitation removed by accomplishing fifteen hours of supervised operating experience as PIC under the supervision of a qualified and current PIC, in the seat normally occupied by the PIC, in the same type of aeroplane to which the limitation applies.

(h) an applicant who does not meet the requirements of paragraph *(c)* or *(d)* may be issued a rating after successful completion of one of the following requirements-

(i) compliance with paragraph *(b)* and the following tasks, which shall be successfully completed on a static aeroplane or in flight, as appropriate-

(aa) preflight inspection;

(bb) normal takeoff;

(cc) normal ILS approach;
(dd) missed approach; and
(ee) normal landing; or

(ii) compliance with paragraphs (i) to (k)

(i) an applicant who does not meet the requirements of paragraphs (c), (d), or (h) shall be issued a licence or rating with a limitation.

(j) the limitation on a type rating issued under the provisions of paragraph (i) shall state, "Co-pilot only"

(k) an applicant who has been issued a pilot licence with a type rating limitation specified in paragrapg (i)-

(a) shall not act as PIC of that aeroplane for which the rating was obtained under this regulation until the limitation is removed from the pilot licence; and

(b) may have the limitation removed by accomplishing twenty five hours of supervised operating experience as PIC under the supervision of a qualified and current PIC, in the seat normally occupied by the PIC, in that aeroplane of the same type to which the limitation applies.

(2) Where an approved flight simulator or approved flight training device is used for accomplishing any of the training and the required practical test for a pilot licence with a rotorcraft-helicopter class and type rating, if applicable, the applicant, approved flight simulator, and approved flight training device shall be subject to the following requirements-

(a) some or all of the limitations of paragraphs (b) to (i);

(b) the use of an approved flight simulator or an approved flight training device permitted by this regulation shall be conducted in accordance with an approved course at an ATO certified under the Civil Aviation (Aviation Training Organisations) Regulations;

(c) the applicant must meet at least one of the following if a type rating is sought in a turbine-powered helicopter-

(i) hold a type rating in a turbine-powered helicopter or have been appointed by a military service as a PIC of a turbine-powered helicopter-

(ii) have at least two thousand hours of flight time that includes at least five hundred hours in turbine-powered helicopters;

(iii) have at least five hundred hours of flight time in turbine-powered helicopters; or

(iv) have at least one thousand hours of flight time in at least two different turbine-powered helicopters.

(d) Subject to the limitation of paragraph (e), an applicant who does not meet the requirements of paragraph (c) may complete all training and testing except for preflight inspection for a pilot licence or rating when using a flight simulator if -

(i) the flight simulator is approved as Level C or Level D; and

(ii) the applicant meets at least one of the following-

(aa) holds a type rating in a turbine-powered helicopter if a type rating in a turbine-powered helicopter is sought; or

(bb) within twelve months preceding the datethe month in which the applicant completes the practical test for an additional helicopter rating, has logged at least twenty five hours of flight time in helicopters of the same type for which the rating is sought.

(e) An applicant who meets only the requirements of paragraph (d) shall be issued a rating with a limitation.

(f) The limitation on a type rating issued under the provisions of paragraph (e) shall state, "co-pilot."

(g) An applicant who is issued a pilot licence with the limitation specified in paragraph (f) -

(i) shall not act as PIC of that helicopter for which the rating was obtained under the provisions of this regulation until the limitation is removed from the pilot licence; and

(ii) may have the limitation removed by accomplishing fifteen hours of supervised operating experience as PIC under the supervision of a qualified and current PIC, in the seat normally occupied by the PIC, in the same type of helicopter to which the limitation applies.

(h) An applicant who does not meet the requirements of paragraph (c) or (d) may be issued a rating after successful completion of one of the following requirements-

(i) compliance with paragraphs (a) and (b) and the following tasks, which must be successfully completed on a static helicopter or in flight, as appropriate-

(aa) pre-flight inspection;

(bb) normal takeoff;

(cc) normal ILS approach;

(dd) missed approach; and

(ee) normal landing.

(ii) compliance with paragraphs (a), (b), and (i) to (k)

(i) An applicant who does not meet the requirements of paragraphs (c), (d), or (h) shall be issued a type rating with a limitation.

(j) The limitation on a type rating issued under the provisions of (i) shall state, "Co-pilot."

(k) An applicant who has been issued a pilot licence with the type rating limitation specified in paragraph (j) -

(i) shall not act as PIC of that helicopter for which the rating was obtained under the provisions of this Regulation until the limitation is removed from the pilot licence; and

(ii) may have the limitation removed by accomplishing twenty five hours of supervised operating experience as PIC under the supervision of a qualified and current PIC, in the seat normally occupied by the PIC, in that helicopter of the same type as to which the limitation applies.

(3) Where an approved flight simulator or approved flight training device is used for accomplishing any of the training and the required practical test for a pilot licence with a powered-lift category and type rating, if applicable, the applicant, approved flight simulator, and approved flight training device shall be subject to the following requirements-

(a) comply with the applicable requirements of sub regulation (1), except as shown below -

(b) the applicant shall meet at least one of the following if a type rating is sought in a turbine powered-lift-

(i) hold a type rating in a turbine powered-lift or have been appointed by a military service as a PIC of a turbine powered-lift;

(ii) have at least two thousand hours of flight time that includes at least five hundred hours in turbine powered-lifts;

(iii) have at least five hundred hours of flight time in turbine powered-lifts; or

(iv) have at least one thousand hours of flight time in at least two different

turbine powered-lifts.

(c) subject to the limitation described in sub regulation (1)(k), an applicant who does not meet the requirements of sub regulation (1)(b) may complete all training and testing (except for preflight inspection) for a rating when using a flight simulator if-

(i) the flight simulator is approved as Level C or Level D; and

(ii) the applicant meets at least one of the following-

(aa) holds a type rating in a turbine powered-lift if a type rating in a turbine powered-lift is sought; or

(bb) within twelve months preceding the date on which the applicant completes the practical test for an additional powered-lift rating, has logged at least twenty five hours of flight time in powered-lifts of the same type for which the rating is sought.

PART V - CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS AND GROUND INSTRUCTORS

Aircraft Ratings and Pilot Authorisations

Instrument rating requirements.

28. (1) An applicant for an instrument rating shall-

(a) hold a pilot licence with an aircraft category class and type rating for the instrument rating sought;

(b) receive a logbook or training record endorsement from an authorised instructor certifying that the person is prepared to take the required practical test;

(c) pass the required knowledge test on the aeronautical knowledge areas, unless the applicant already holds an instrument rating in another category; and

(d) pass the required practical test on the areas of operation in-

(i) the aircraft category, class, and type appropriate to the rating sought; or

(ii) a flight simulator or a flight training device appropriate to the rating sought and approved for the specific manoeuvre or procedure performed.

(2) An applicant for an instrument rating shall have received and logged ground training from an authorised instructor on the areas of aeronautical knowledge that apply to the instrument rating sought, including-

(a) the provisions of these Regulations that apply to flight operations under IFR;

(b) appropriate information in advisory material published by the Authority that applies to flight operations under IFR;

(c) air traffic control system and procedures for instrument flight operations;

(d) IFR navigation and approaches by use of navigation systems;

(e) use of IFR en route and instrument approach procedure charts;

(f) procurement and use of aviation weather reports and forecasts and the elements of forecasting weather trends based on that information;

(g) personal observation of weather conditions;

(h) safe and efficient operation of aircraft under instrument flight rules and conditions;

(i) recognition of critical weather situations and windshear avoidance.

(j) Aeronautical decision making and judgement; and

(k) crew resource management, including crew communication and co-ordination.

(3) An applicant for an instrument rating shall receive and log training from an authorised instructor in an aircraft, or in an approved flight simulator or approved flight training device that includes the following areas of operation-

(a) preflight preparation;
(b) preflight procedures;
(c) air traffic control clearances and procedures;
(d) flight by reference to instruments;
(e) navigation systems;
(f) instrument approach procedures;
(g) emergency operations; and
(h) post flight procedures.

(4) An applicant for an instrument rating shall have logged the following-

(a) at least fifty hours of cross-country flight time as PIC, of which at least ten hours shall be in aeroplanes; and

(b) a total of forty hours of actual or simulated instrument time on the areas of operation of this Regulation, to include-

(i) at least twenty hours of instrument flight training from an authorised instructor in the aircraft category for which the instrument rating is sought;

(ii) at least three hours of instrument training that is appropriate to the instrument rating sought from an authorised instructor in preparation for the practical test within the sixty days preceding the date of the test;

(iii) for an instrument - aeroplane rating, instrument training on cross-country flight procedures specific to aeroplanes that includes at least one cross-country flight in an aeroplane that is performed under IFR, and consists of -

(aa) a distance of at least two hundred and fifty nautical miles along airways or ATC-directed routing;
(bb) an instrument approach to at least two airports; and
(cc) three different kinds of approaches with the use of navigation systems;

(iv) for an instrument - helicopter rating, instrument training specific to helicopters on cross-country flight procedures that includes at least one cross-country flight in a helicopter that is performed under IFR, and consists of-

(aa) a distance of at least one hundred nautical miles along airways or ATC-directed routing;
(bb) an instrument approach to at least two airports; and
(cc) three different kinds of approaches with the use of navigation systems; and

(v) for an instrument - powered-lift rating, instrument training specific to a powered-lift on cross-country flight procedures that includes at least one cross-country flight in a powered-lift that is performed under IFR and consists of-

(aa) a distance of at least two hundred and fifty nautical miles along airways or ATC-directed routing;
(bb) an instrument approach to at least two airports; and
(cc) three different kinds of approaches with the use of navigation systems.

(5) If the instrument training was provided by an authorised instructor in an approved flight simulator or an approved flight training device, an applicant may perform-

(a) a maximum of thirty hours in that flight simulator or flight training device if the training was accomplished in accordance with a training program approved under the Civil Aviation (Aviation Training Organisations)

Regulations; or

(b) a maximum of twenty hours in that flight simulator or flight training device if the training was not accomplished in accordance with a training program approved under the Civil Aviation (Aviation Training Organisations) Regulations.

(6) A holder of an instrument rating who wishes to use GNSS equipment in IFR operations may apply to the Authority to have the appropriate additional privileges of the instrument rating endorsed on his or her pilot licence.

(7) An applicant for a GNSS endorsement on an instrument rating shall have received training in the areas specified in the First Schedule.

(8) A pilot shall not carry out an instrument approach procedure under IFR using GNSS equipment unless a flight examiner certifies in the pilot's logbook that competency in the use of that type and model of GNSS unit has been satisfactorily demonstrated.

(9) A flight examiner shall endorse a pilot logbook for the class of GNSS unit if the pilot has satisfactorily completed a flight test demonstrating adequate proficiency with all the aspects of the GNSS equipment.

Category rating.

29. A pilot seeking a category rating-

(a) shall have received the required training and possess the aeronautical experience prescribed by this regulation for the aircraft category and, if applicable, class and type rating sought;

(b) shall have an endorsement in that pilot's logbook or training record from an authorised instructor that the applicant has been found competent in the following areas, as appropriate to the pilot licence for the aircraft category and, if applicable, class and type rating sought-

(i) aeronautical knowledge areas; and

(ii) areas of operation; and

(c) shall pass a knowledge test that is appropriate to the pilot licence for the aircraft category and, if applicable, the class rating sought.

Class rating.

30. A pilot seeking an additional class rating-

(a) shall have an endorsement in that pilot's logbook or training record from an authorised instructor that the applicant has been found competent in the following areas, as appropriate to the pilot licence and for the aircraft class rating sought-

(i) aeronautical knowledge area; and

(ii) areas of operation.

(b) shall pass the practical test applicable to the pilot licence for the aircraft class rating sought;

(c) need not meet the training time requirements prescribed by these Regulations for the aircraft class rating sought; and

(d) need not take an additional knowledge test, provided the applicant holds an aeroplane, rotorcraft, powered-lift, or airship rating at that pilot licence level.

Type rating.

31. (1) To act as a PIC of any of the following aircraft, a pilot shall hold a type rating for that aircraft-

(a) aircraft certificated for at least two pilots;

(b) any aircraft considered necessary by the Authority;

(c) each type of helicopter.

(2) Except as provided in sub regulation (3), a person shall not shall act as PIC of a tailwheel aeroplane unless that person has-

(a) received and logged flight training from an authorised instructor in a tailwheel aeroplane on the manoeuvres and procedures listed in paragraph (b); and

(b) received an endorsement in the person's logbook from an authorised instructor who found the person proficient in the operation of a tailwheel aeroplane, to include at least normal and crosswind takeoffs and landings, wheel landings (unless the manufacturer has recommended against such landings), and go-around procedure;

(c) passed the practical test applicable to the pilot licence for the aircraft category, class, and type rating sought;

(d) except as provided for in sub regulations (3) and (4), shall perform the practical test under instrument flight rules;

(e) taken a knowledge test on the aircraft type rating sought; and

(f) in the case of a pilot employed by an AOC holder, has-

(i) met the appropriate requirements of paragraphs (a), (d) and (e) for the aircraft type rating sought; and

(ii) received an endorsement in the pilot's flight training record from the AOC holder certifying that the applicant has completed the AOC holder's approved ground and flight training program appropriate to the aircraft type rating sought.

(3) An applicant for a type rating in a multiengine, single-pilot station aeroplane shall meet the requirements of sub regulation (2) in a dual pilot station version of that multiengine aeroplane.

(4) An applicant for a type rating in a single-engine, single-pilot station aeroplane may meet the requirements of sub regulation (2) in a dual pilot station version of that single-engine aeroplane.

(5) Unless the Authority requires certain or all tasks to be performed, the examiner who conducts the practical test may waive any of the tasks for which the Authority approves waiver authority.

Category II and III operations pilot authorisation requirements.

32. (1) An applicant for a Category II or Category III operations pilot authorisation shall-

(a) hold a pilot licence with an instrument rating or an airline transport pilot licence;

(b) hold a category and class rating, and type rating, for the aircraft for which the authorisation is sought; and

(c) complete the practical test requirements.

(2) An applicant for a Category II or Category III operations pilot authorisation shall have at least-

(a) fifty hours of night flight time as PIC;

(b) seventy-five hours of instrument time under actual or simulated instrument conditions that may include not more than-

(i) a combination of twenty-five hours of simulated instrument flight time in an approved flight simulator or an approved flight training device; or

(ii) forty hours of simulated instrument flight time if accomplished in an approved course conducted by an appropriately rated aviation training organisation certified under the Civil Aviation (Aviation Training Organisations) Regulations and

(c) two hundred fifty hours of cross-country flight time as PIC.

(3) Upon passing a practical test for a Category II or III operations pilot authorisation, a pilot may renew that authorisation for each type of aircraft for which the pilot holds the authorisation.

(4) The Authority may not renew a Category II or Category III operations pilot authorisation for a specific type aircraft for which an authorisation is held beyond twelve months from the date the applicant passed a practical test in that type of aircraft.

(5) Where the holder of a Category II or Category III operations pilot authorisation passes the practical test for a renewal in the month before the authorisation expires, the Authority will consider that the holder passed it on the date the authorisation expired.

(6) The Authority may issue a Category II or Category III pilot authorisation by way of a letter, as a part of an applicant's instrument rating or airline transport pilot licence.

(7) Upon original issue the authorisation shall contain the following limitations-

(a) for Category II operations, five hundred metres RVR and a one hundred and fifty feet decision height; and

(b) for Category III operations, as specified in the authorisation document.

(8) To remove the limitations on a Category II or Category III pilot authorisation-

(a) a Category II operations limitation holder may remove the limitation by showing that, since the beginning of the sixth preceding month, the holder has made three Category II operations ILS approaches with a one hundred and fifty foot - decision height to a landing under actual or simulated instrument conditions; or

(b) a Category III operations limitation holder may remove the limitation by showing experience as specified in the authorisation.

(9) An authorisation holder or an applicant for an authorisation may use a flight simulator or flight training device if it is approved by the Authority for such use, to meet the experience requirement of sub regulation (11), or for the practical test required by these Regulations for a Category II or a Category III operations pilot authorisation, as applicable.

(10) An applicant for the following authorisations shall pass a practical test-

(a) issuance or renewal of a Category II operations pilot authorisation; and

(b) the addition of another type aircraft to a Category II operations pilot authorisation.

(11) To be eligible for the practical test for an authorisation under this regulation, an applicant shall-

(a) meet the requirements of this regulation ;and

(b) if the applicant has not passed a practical test for this authorisation within the twelve months preceding the date of the test-

(i) meet the requirements of the Civil Aviation (Operation of Aircraft) Regulations; and

(ii) have performed at least six ILS approaches within the six calendar months preceding the date of the test, of which at least three of the approaches shall have been conducted without the use of an approach coupler.

(12) An applicant shall accomplish the approaches specified in sub regulation (11)(b)(ii)-

(a) under actual or simulated instrument flight conditions;

(b) to the minimum decision height for the ILS approach in the type aircraft in which the practical test is to be conducted, except that the approaches need not be conducted to the decision height authorised for Category II operations;

(c) in an aircraft of the same category and class, and type, as applicable, as the aircraft in which the practical test is to be conducted or in an approved flight simulator that-

(i) represents an aircraft of the same category and class, and type, as applicable, as the aircraft in which the authorisation is sought; and

(ii) is used in accordance with an approved course conducted by an aviation training organisation certified under the Civil Aviation

(Aviation Training Organisations) Regulations.

(13) The flight time acquired in meeting the requirements of sub regulation (11)(b)(ii) may be used to meet the requirements of sub regulation (11)(b)(i)

(14) A Category II practical test shall consist of an oral increment and a flight increment.

(15) In the oral increment of the Category II operations practical test, an applicant shall demonstrate knowledge of the following-

(a) required landing distance;

(b) recognition of the decision height;

(c) missed approach procedures and techniques using computed or fixed altitude guidance displays

(d) use and limitations of RVR;

(e) use of visual clues, their availability or limitations, and altitude at which they are normally discernible at reduced RVR;

(f) procedures and techniques related to transition from non visual to visual flight during a final approach under reduced RVR;

(g) effects of vertical and horizontal windshear;

(h) characteristics and limitations of the ILS and runway lighting system;

(i) characteristics and limitations of the flight director system, auto approach coupler, including (split axis type if equipped), auto throttle system (if equipped), and other required Category II operations equipment;

(j) assigned duties of the co-pilot during Category II approaches, unless the aircraft for which authorisation is sought does not require an co-pilot; and

(k) instrument and equipment failure warning systems.

(16) The following requirements apply to the flight increment of the Category II operations practical test-

(a) The flight increment shall be conducted in an aircraft of the same category, class, and type, as applicable, as the aircraft in which the authorisation is sought or in an approved flight simulator that-

(i) represents an aircraft of the same category and class, and type, as applicable, as the aircraft in which the authorisation is sought; and

(ii) is used in accordance with an approved course conduct is used in accordance with an approved course conducted by an ATO certified under the Civil Aviation (Aviation Training Organisations) Regulations ;

(b) the flight increment shall consist of at least two ILS approaches to one hundred feet above including at least one landing and one missed approach;

(c) all approaches performed during the flight increment shall be made with the use of an approved flight control guidance system, except if an approved auto approach coupler is installed, at least one approach shall be hand flown using flight director commands ;

(d) if a multiengine aeroplane with the performance capability to execute a missed approach with one engine inoperative is used for the practical test, the flight increment shall include the performance of one missed approach with an engine, which shall be the most critical engine, if applicable, set at idle or zero thrust before reaching the middle marker.

(e) if an approved multi-engine flight simulator or approved multiengine flight training device is used for the practical test, the applicant shall execute a missed approach with the most critical engine, if applicable, failed-

(i) for an authorisation for an aircraft that requires a type rating, the

applicant shall pass a practical test in co-ordination with a co-pilot who holds a type rating in the aircraft in which the authorisation is sought.

(ii) Authority's inspector or evaluator may conduct oral questioning at any time during a practical test.

(17) The Authority shall require that an applicant pass a practical test for-

(a) issuance or renewal of a Category III operations pilot authorisation; or

(b) the addition of another type of aircraft to a Category III operations pilot authorisation.

(18) To be eligible for the practical test an applicant shall-

(a) meet the requirements of this regulation; and

(b) if the applicant has not passed a practical test for this authorisation during the twelve months preceding the month of the test-

(i) meet the requirements of the Civil Aviation (Operation of Aircraft) Regulations; and

(ii) have performed at least six ILS approaches during the six months preceding the month of the test, of which at least three of the approaches shall have been conducted without the use of an approach coupler.

(19) An applicant shall conduct the approaches specified in sub regulation (16)(b)(ii) under actual or simulated instrument flight conditions-

(a) to the alert height or decision height for the ILS approach in the type of aircraft in which the practical test is to be conducted;

(b) not necessarily to the decision height authorised for Category III operations;

(c) to the alert height or decision height, as applicable, authorised for Category III operations only if conducted in an approved flight simulator or approved flight training device; and

(d) in an aircraft of the same category and class, and type, as applicable , as the aircraft in which the practical test is to be conducted or in an approved flight simulator that-

(i) represents an aircraft of the same category and class, and type, as applicable, as the aircraft for which the authorisation is sought; and

(ii) is used in accordance with an approved course conducted by an aviation training organisation certified under the Civil Aviation (Aviation Training Organisations) Regulations.

(20) A Category III operations pilot authorisation applicant shall demonstrate knowledge of the following-

(a) required landing distance;

(b) determination and recognition of the alert height or decision height, as applicable, including use of a radio altimeter;

(c) recognition of and proper reaction to significant failures encountered prior to and after reaching the alert height or decision height, as applicable;

(d) missed approach procedures and techniques using computed or fixed attitude guidance displays and expected height loss as they relate to manual go-around or automatic go-around, and initiation altitude, as applicable;

(e) use and limitations of RVR, including determination of controlling RVR and required transmissometers;

(f) use, availability, or limitations of visual cues and the altitude at

which they are normally discernible at reduced RVR readings including-

(i) unexpected deterioration of conditions to less than minimum RVR during approach, flare, and rollout;

(ii) demonstration of expected visual references with weather at minimum conditions;

(iii) the expected sequence of visual cues during an approach in which visibility is at or above landing minima; and

(iv) procedures and techniques for making a transition from instrument reference flight to visual flight during a final approach under reduced RVR;

(g) effects of vertical and horizontal windshear;

(h) characteristics and limitations of the ILS and runway lighting system;

(i) characteristics and limitations of the flight director system auto approach coupler, including split axis type if equipped, auto throttle system, if equipped, and other Category III operations equipment;

(j) assigned duties of the co-pilot during Category III operations, unless the aircraft for which authorisation is sought does not require a co-pilot;

(k) recognition of the limits of acceptable aircraft position and flight path tracking during approach, flare, and, if applicable, rollout; and

(l) recognition of, and reaction to, airborne or ground system faults or abnormalities, particularly after passing alert height or decision height, as applicable.

(21)A Category III operations pilot authorisation applicant may conduct the practical test in an aircraft of the same category and class, and type, as applicable, as the aircraft for which the authorisation is sought, or in an approved flight simulator that—

(a)represents an aircraft of the same category and class, and type, as applicable, as the aircraft in which the authorisation is sought; and

(b)is used in accordance with an approved course conducted by an aviation training organisation certified under the Civil Aviation (Aviation Training Organisations) Regulations.

(22) A Category III operations practical test shall consist of at least two ILS approaches to one hundred feet above ground level, including one landing and one missed approach initiated from a very low altitude that may result in a touchdown during the go-around manoeuvre.

(23) An applicant for Category III operations pilot authorisation shall perform all approaches during the practical test with the approved automatic landing system or an equivalent la nding system approved by the Authority.

(24) If a multiengine aircraft with the performance capability to execute a missed approach with one engine inoperative is used for Category III operations pilot authorisation practical test, the practical test sha ll include the performance of one missed approach with the most critical engine, if applicable, set at an idle or zero thrust before reaching the middle or outer marker.

(25) If an approved multiengine flight simulator or approved multiengine flight training device is used for the Category III operations pilot authorisation practical test, the applicant shall execute a missed approach with an engine, which shall be the most critical engine, if applicable, failed.

(26) For a Category III operations pilot authorisation for an aircraft that requires a type rating-

(a) the applicant shall pass a practical test in co-ordination with an co-pilot who holds a type rating in the aircraft in which the authorisation is sought; and

(b) subject to the limitations of this sub regulation, for Category IIIB operations predicated on the use of a fail-passive rollout control system, the applicant shall execute at least one manual rollout using visual reference or a combination of visual and instrument references.

(27) The applicant shall initiate the manoeuvre referenced in sub regulation 26(b) by a fail-passive disconnect of the rollout control system-

(a) after main gear touchdown;

(b) prior to nose gear touchdown;

(c) in conditions representative of the most adverse lateral touchdown displacement allowing a safe landing on the runway; and

(d) in weather conditions anticipated in Category III B operations.

(28) The Authority inspector or evaluator may conduct oral questioning at any time during the Category III operations pilot authorisation practical test.

Student Pilots

Eligibility requirements for a student pilot licence.

33. To be eligible to be issued with a student pilot licence, an applicant shall-

(a) be at least seventeen years of age for a licence other than the operation of a glider or balloon;

(b) be at least sixteen years of age for the operation of a glider or balloon; and

(c) be able to read, speak, write, and understand the English language.

(d) be in possession of a valid Class 2 medical certificate issued under these Regulations.

Solo requirements for student pilots .

34. (1) A holder of a student pilot licence may not operate an aircraft in solo flight unless that student has met the requirements of this regulation.

(2) A student pilot shall be required to pass an aeronautical knowledge test on the following subjects-

(a) applicable sections of these Regulations and the Civil Aviation (Operation of Aircraft) Regulations;

(b) airspace structures and procedures for the airport where the student will perform solo flight; and

(c) flight characteristics and operational limitations for the make and model of aircraft to be flown.

(3) The student's authorised instructor shall-

(a) administer the test; and

(b) at the conclusion of the test, review all incorrect answers with the student before authorising that student to conduct a solo flight.

(4) Prior to conducting a solo flight, a student pilot shall have:-

(a) received and logged flight training for the manoeuvres and procedures of this Regulation that are appropriate to the make and model of aircraft to be flown; and

(b) demonstrated satisfactory proficiency and safety, as judged by an authorised instructor, on the manoeuvres and procedures required by this regulation in the make and model of aircraft or similar make and model of aircraft to be flown.

(5) A student pilot who is receiving training for solo flight shall receive and log flight training for the required manoeuvres and procedures, including the following as applicable, for each category and class rating-

(a) proper flight preparation procedures, including preflight planning and preparation, engine operation, and aircraft systems.

(b) taxiing or surface operations, including runups;
(c) takeoffs and landings, including normal and crosswind;
(d) straight and level flight, and turns in both directions;
(e) climbs and climbing turns;
(f) airport traffic patterns, including entry and departure procedures;
(g) collision avoidance, windshear avoidance, and wake turbulence avoidance;
(h) descents , with and without turns, using high and low drag configurations;
(i) flight at various airspeeds from cruise to slow flight;
(j) 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;
(k) emergency procedures and equipment malfunctions;
(l) ground reference manoeuvres;
(m) approaches to a landing area with simulated engine malfunctions;
(n) slips to a landing; and
(o) go-arounds.

(6) A holder of student pilot licence who is receiving training for solo flight shall receive and log flight training for the following additional manoeuvres and procedures, as applicable, as indicated for each category and class rating-

(a) in a multiengine airplane-
(i) proper flight preparation procedures, including pre-flight planning and preparation, powerplant operation, and aircraft systems;
(ii) taxiing or surface operations, including runups;
(iii) takeoffs and landings, including normal and crosswind;
(iv) straight and level flight, and turns in both directions;
(v) climbs and climbing turns;
(vi) airport traffic patterns, including entry and departure procedures;
(vii) collision avoidance, windshear avoidance, and wake turbulence avoidance;
(viii) descents, with and without turns, using high and low drag configurations;
(ix) flight at various airspeeds from cruise to slow flight;
(x) stall entries from various flight attitudes and power combinations with recover initiated at the first indication of a stall, and recovery from a full stall;
(xi) emergency procedures and equipment malfunctions;
(xii) ground reference manoeuvres;
(xiii) approaches to a landing area with simulated engine malfunctions; and
(xiv) go-arounds.

(b) in a helicopter -
(i) approaches to the landing area;
(ii) hovering and hovering turns;
(iii) simulated emergency procedures, including autorotational descents with a power recovery and power recovery to a hover;
(iv) rapid decelerations; and
simulated one -engine -inoperative approaches and landings for multiengine helicopters.

(c) in a gyroplane -
(i) approaches to the landing area;
(ii) high rates of descent with power on and with simulated power off, and recovery from those flight configurations; and.

(iii) simulated emergency procedures, including simulated power-off landings and simulated power failure during departures

(d) in a powered-lift-

(i) approaches to the landing area;

(ii) hovering and hovering turns; and

(iii) for multiengine powered-lifts, simulated one-engine-inoperative approaches and landings.

(e) in a glider-

(i) the applicable manoeuvres and procedures shown in paragraph (a) ;

(ii) launches, including normal and crosswind;

(iii) inspection of towline rigging and review of signals and release procedures;

(iv) aerotow, ground tow, or self-launch procedures;

(v) procedures for disassembly and assembly of the glider;

(vi) slips to a landing;

(vii) procedures and techniques for thermalling; and

(viii) emergency operations, including towline break procedures.

(f) in an airship-

(i) rigging, ballasting, and controlling pressure in the ballonets, and superheating; and

(ii) landings with positive and with negative static trim.

(g) in a balloon-

(i) layout and assembly procedures;

(ii) ascents and descents;

(iii) landing and recovery procedures;

(iv) operation of hot air or gas source, ballast, valves, vents, and rip panels, as appropriate;

(v) use of deflation valves or rip panels for simulating an emergency;

(vi) the effects of wind on climb and approach angles; and

(vii) obstruction detection and avoidance techniques.

General limitations for student pilots.

35. (1) A holder of a student pilot licence may not act as PIC of an aircraft-

(a) that is carrying a passenger;

(b) that is carrying property for compensation or hire;

(c) that is operated for compensation or hire;

(d) in furtherance of a business;

(e) on an international flight;

(f) when the flight cannot be made with visual reference to the surface; or

(g) in a manner contrary to any limitations placed in the pilot's logbook by an authorised instructor.

(2) A holder of student pilot licence may not act as a required pilot flight crew member on any aircraft for which more than one pilot is required by the aircraft type certificate or by these Regulations under which the flight is conducted, except when receiving flight training from an authorised instructor on board an airship, and no person other than a required flight crew member is carried on the airship.

(3) A student pilot may not operate an aircraft in solo flight unless that student pilot has received within the ninety days preceding the date of the flight an endorsement made in

the student's logbook from an authorised instructor for the specific make and model of aircraft to be flown.

Solo cross-country flight requirements.

36. (1) Except as provided in sub regulation (4), a holder of a student pilot licence shall meet the requirements of this regulation before-

(a) conducting a solo cross-country flight, or any flight greater than twenty five nautical miles from the airport from where the flight originated; and

(b) making a solo flight and landing at any location other than the airport of origin.

(2) Except as provided in sub regulation (4), a student pilot who seeks solo cross-country flight privileges shall-

(a) have received flight training from an authorised instructor on the manoeuvres and procedures of this regulation that are appropriate to the make and model of aircraft for which solo cross-country privileges are sought;

(b) have demonstrated cross-country proficiency on the appropriate manoeuvres and procedures of this regulation to an authorised instructor;

(c) have satisfactorily accomplished the pre-solo flight manoeuvres and procedures required by this regulation in the make and model of aircraft or similar make and model of aircraft for which solo cross-country privileges are sought; and

(d) comply with any limitations included in the instructor's endorsement that are required by sub regulation (5).

(3) A holder of a student pilot licence who seeks solo cross-country flight privileges shall be required to have received ground and flight training from an authorised instructor on the cross-country manoeuvres and procedures listed in this regulation that are appropriate to the aircraft to be flown.

(4) A student pilot shall obtain an endorsement from an authorised instructor to make solo flights, subject to the following conditions-

(a) a student pilot may make solo flights to another airport that is within twenty-five nautical miles from the airport where the student pilot normally receives training, provided-

(b) the authorised instructor who makes the endorsement gave the student pilot flight training at the other airport, and that training included flight in both directions over the route, entering and exiting the traffic pattern, and takeoffs and landings at the other airport;

(c) the student pilot has a current solo flight endorsement in accordance with regulation 35(3);

(d) the instructor has determined that the student pilot is proficient to make the flight; and

(e) the purpose of the flight is to practice takeoffs and landings at that other airport;

(f) a student pilot may make repeated specific solo cross-country flights to another airport that is within fifty nautical miles of the airport from which the flight originated, provided-

(i) the authorised instructor who gave the endorsement gave the student flight training in both directions over the route, including entering and exiting the traffic patterns, takeoffs, and landings at the airport to be used;

(ii) the student has current solo flight endorsements in accordance with regulation 35(3), and

(iii) the student has a current solo cross-country flight endorsement in accordance with sub regulation (5), except that separate endorsements are not required for each flight made under this sub regulation.

(5) Except as specified in sub regulation (4)(b), a student pilot shall have a solo cross-country endorsement placed in the student pilot's log book by the authorised instructor who conducted the training for each make and model aircraft the student will fly on each cross-country flight.

(6) A student pilot who is receiving training for cross-country flight shall receive and log flight training in the following manoeuvres and procedures-

(a) in an aeroplane or rotorcraft-

(i) use of aeronautical charts for VFR navigation using pilotage and dead reckoning with the aid of a magnetic compass;

(ii) use of aircraft performance charts pertaining to cross-country flight;

(iii) procurement and analysis of aeronautical weather reports and forecasts, including recognition of critical weather situations and estimating visibility while in flight;

(iv) recognition, avoidance, and operational restrictions of hazardous terrain features in the geographical area where the student pilot will conduct cross-country flight;

(v) use of radios for VFR navigation and two-way communications;

(vi) climbs at best angle and best rate; and

(vii) control and manoeuvring solely by reference to flight instruments, including straight and level flight, turns, descents, climbs, use of radio aids, and ATC clearances;

(b) in a powered-lift-

(i) the manouvres and procedures specified in paragraph (a) as applicable, and

(ii) takeoff, approach, and landing procedures that include high-altitude, steep, and shallow takeoffs, approaches, and landings.

(c) in a glider-

(i) the manouvres and procedure specified in paragraph (a) , as applicable; and

(ii) landings accomplished without the use of the altimeter from at least two thousand feet above the surface; and

(iii) recognition of weather and upper air conditions favourable for cross-country soaring, ascending flight, descending flight, and altitude control.

(d) in an airship-

(i) the manouvres and procedures specified in paragraph (a), as applicable; and

(ii) control of air pressure with regard to ascending and descending flight and altitude control;

(iii) control of the airship solely by reference to flight instruments; and recognition of weather and upper air conditions conducive for the direction of cross-country flight.

Private Pilot licence(PPL)

General eligibility requirements: PPL.

37. An applicant for a PPL, shall-

(a) be at least seventeen years of age for a rating other than the operation of glider or balloon;

(b) be able to read, speak, write, and understand the English language.;

(c) receive an endorsement for the knowledge test from an authorised instructor who-

(i) conducted the training or reviewed the person's home study on the aeronautical knowledge areas

listed in Second Schedule, that apply to the aircraft rating sought; and

(ii) certified that the person is prepared for the required knowledge test;

(d) be in possession of a valid Class 2 medical certificate issued under these Regulation;

(e) pass the required knowledge test on the aeronautical knowledge areas listed in the Second Schedule.

(f) receive flight training and a logbook endorsement from an authorised instructor who-

(i) conducted the training in the areas of operation listed in paragraph (c) (i) , that apply to the aircraft rating sought; and

(ii) certified that the person is prepared for the required practical test;

(g) meet the aeronautical experience requirements of this sub regulation that apply to the aircraft rating sought before applying for the practical test;

(h) pass a practical test on the areas of operation listed in regulation 39 and that apply to the aircraft rating sought; and.

(i) comply with the appropriate provisions of these Regulations that apply to the aircraft category and class rating sought.

Aeronautical knowledge : PPL

38. (1) An applicant for a private pilot licence shall receive and log ground training from an authorised instructor on the aeronautical knowledge areas of sub regulation (2) that apply to the aircraft category and class rating sought.

(2) The aeronautical knowledge areas applicable to any relevant aircraft category and class rating shall be as specified in the Second Schedule.

Flight proficiency: PPL

39. An applicant for a private pilot licence shall receive and log ground and flight training from an authorised instructor on the following areas of operation-

(a) for all categories and class ratings, as applicable -

(i) preflight preparation;

(ii) preflight procedures;

(iii) airport and seaplane base operations;

(iv) takeoffs, landings, and go-arounds;

(v) performance manoeuvres;

(vi) ground reference manoeuvres;

(vii) navigation;

(viii) slow flight and stalls;

(ix) basic instrument manoeuvres;

(x) emergency operations;

(xi) night operations; and

(xii) post flight procedures;

(b) for the category and class ratings shown below, the applicable areas of operation shown in paragraph (a) and-

(i) aeroplane category rating with a multi-engine class rating: multi-engine operations;

(ii) rotorcraft category rating with a helicopter class rating-

(aa) airport and heliport operations; and

(bb) hovering manoeuvres;

(iii) for rotorcraft category rating with a gyroplane class rating: flight at slow airspeeds;

(iv) powered-lift category rating-

(aa) airport and heliport operations; and

(bb) hovering manoeuvres;

(v) glider category rating -

(aa) airport and glider port operations;

(bb) launches and landings;
(cc) performance speeds; and
(dd) soaring techniques; and

(vi) for lighter-than-air category rating with a balloon class rating launches and landings.

Aeronautical experience : Private Pilots Licence

40. (1) An applicant for a PPL shall have completed not less than 40 hours of flight time as pilot of aeroplanes, a total of 5 hours may have been completed in a flight simulator or flight procedures trainer.

(2) The applicant shall have completed in aeroplanes 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 totalling not less than 270 km (150 NM) in the course of which full-stop landings at two difference aerodromes shall be made.

(3) 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 totalling not less than 180 km (100 NM) in the course of which landings at two different points shall be made.

(4) The holder of pilot licences in other categories may be credited with 10 hours of the total flight time as pilot-in-command towards a PPL.

Private pilot licence: privileges and limitations: required crew members.

41. (1) Except as provided in sub regulations (2) to (6), a holder of a private pilot licence shall not act as a required crew member of an aircraft-

(a) carrying passengers or property for compensation or hire; or

(b) operated for compensation or hire.

(2) A holder of a private pilot licence may, for compensation or hire, act as a required crew member of an aircraft in connection with any business or employment if-

(a) the flight is only incidental to that business or employment; and

(b) the aircraft does not carry passengers or property for compensation or hire.

(3) A holder of a private pilot licence may act as a required crew member of an aircraft used in a passenger-carrying flight sponsored by a charitable organisation described in paragraph (g), and for which the passengers make a donation to the organisation, when the following requirements are met-

(a) the sponsor of the flight notifies the Authority with jurisdiction over the area concerned at least seven days before the event and submits-

(i) a signed letter from the sponsor that shows the name of the sponsor, the purpose of the charitable event, the date and time of the event, and the location of the event; and

(ii) a photocopy of each required crew member's pilot licence, medical certificate, and logbook entries that show the pilot has a valid licence and has logged at least two hundred hours of flight time;

(b) the flight is conducted from a public airport that is adequate for the aircraft to be used, or from another airport that has been approved by the Authority for the operation;

(c) no aerobatic or formation flights are conducted;

(d) each aircraft used for the charitable event holds a valid certificate of airworthiness;

(e) each aircraft used for the charitable event is airworthy and complies with the applicable requirements of the Civil Aviation (Operation of Aircraft) Regulations;

(f) each flight for the charitable event is made during day visual flight rules conditions; and

(g) the charitable organisation is an organisation identified as such by the appropriate authority of the Gove rnment.

(4) A holder of a private pilot licence may be reimbursed for aircraft operating expenses that are directly related to search and rescue operations, provided the expenses involve only fuel, oil, airport expenditures, or rental fees, and the operation is sanctioned and under the direction and control of-

(i) a Government agency; or

(ii) an organisation that conducts search and rescue operations.

(5) A private pilot who is an aircraft salesman and who has at least two hundred hours of logged flight time may demonstrate an aircraft in flight to a prospective buyer.

(6) A holder of a private pilot licence shall not pay less than the pro rata share of the operating expenses of a flight with passengers, provided the expenses involve only fuel, oil, airport expenditures, or rental fees.

(7) Except as provided in sub regulations (2) to (6), no holder of a private pilot licence shall, for compensation or hire, act as co-pilot of an aircraft that is type certified for more than one pilot.

Limitations on private pilot licence with balloon rating.

42. (1) Where an applicant for a private pilot licence with a balloon rating takes a practical test in a balloon with an airborne heater-

(a) the Authority shall place upon the pilot licence a limitation restricting the exercise of the privileges of that licence to a balloon with an airborne heater; and

(b) the pilot may remove the limitation by obtaining the required aeronautical experience in a gas balloon and receiving a logbook endorsement from an authorised instructor who attests to the person's accomplishment of the required aeronautical experience and ability to satisfactorily operate a gas balloon.

(2) Where an applicant for a private pilot licence with a balloon rating takes a practical test in a gas balloon-

(a) the Authority shall place upon the pilot licence a limitation restricting the exercise of the privilege of that licence to a gas balloon; and

(b) the pilot may remove the limitation by obtaining the required aeronautical experience in a balloon with an airborne heater and receiving a logbook endorsement from an authorised instructor who attests to the pilot's accomplishment of the required aeronautical experience and ability to satisfactorily operate a balloon with an airborne heater.

Renewal of private pilot licence

43. A private pilot licence may be renewed if the holder of the licence has logged not less than five hours as pilot in command on each category, class or type rating sought within the twelve months preceding the date of application for renewal.

Commercial Pilot Licence (CPL)

General eligibility requirements: CPL

44. (1) An applicant for a commercial pilot licence, shall-

(a) be at least eighteen years of age;

(b) be able to read, speak, write, and understand the English language;

(c) receive a logbook endorsement from an authorised instructor who-
(i) conducted the required ground training or reviewed the person's home study on the aeronautical knowledge areas required in regulation 45, that apply to the aircraft category and class rating sought; and
(ii) certified that the person is prepared for the required knowledge test that applies to the aircraft category and class rating sought.
(d) pass the required knowledge test on the aeronautical knowledge areas required in regulation 45;
(e) receive the required training and a logbook endorsement from an authorised instructor who-
(i) conducted the training on the areas of operation listed in regulation 45 that apply to the aircraft category and class rating sought; and
(ii) certified that the person is prepared for the required practical test.
(f) be in possession of a Class 1 medical certificate issued under these Regulations;
(g) meet the aeronautical experience requirements of the applicable provisions of these Regulations that apply to the aircraft category and class rating sought before applying for the practical test;
(h) pass the required practical test on the areas of operation listed in regulation 46;
(i) requirements, that apply to the aircraft category and class rating sought;
(j) hold a private pilot licence issued under these Regulations or meet the requirements of regulation 15, pertaining to military licences; and
(k) comply with all sections of these Regulations which apply to the aircraft category and class rating sought.

Aeronautical knowledge requirements : CPL.

45. (1) An applicant for a commercial pilot licence shall receive and log ground training from an authorised instructor on the required aeronautical knowledge areas specified in sub regulation (2), that apply to the aircraft category and class rating sought.
(2) The aeronautical knowledge areas applicable to any relevant aircraft category and class rating shall be as specified in the Third Schedule.

Flight training proficiency requirements: CPL.

46. (1) An applicant for a commercial pilot licence shall receive and log ground and flight training from an authorised instructor on the following areas of operation of this regulation that apply to the aircraft category and class rating sought;
(a) For all categories and class ratings, as applicable -
(i) preflight preparation;
(ii) preflight procedures;
(iii) airport and seaplane base operations;
(iv) takeoffs, landings, and go-arounds;
(v) performance manoeuvres;
(vi) ground reference manoeuvres;
(vii) navigation;
(viii) slow flight and stalls;
(ix) emergency operations;
(x) high-altitude operations; and
(xi) post flight procedures.
(b) in addition to the areas of operation specified in paragraph (a), the applicable areas of operation for specific category and class ratings are as follows-
(i) for the aeroplane category rating with a multiengine class rating multiengine operations;

(ii) for a rotorcraft category rating with a helicopter class rating:
(aa) airport and heliport operations;
(bb) hovering manoeuvres; and
(cc) special operations.
(iii) for a rotorcraft category rating with a gyroplane class rating flight at slow airspeeds;
(iv) for a powered-lift category rating-
(aa) hovering manoeuvres; and
(bb) special operations.
(v) for a glider category rating-
(aa) launches and landings; and
(bb) soaring techniques.
(vi) for a lighter-than-air category rating with an airship class rating-
(aa) fundamentals of instructing;
(bb) technical subjects; and
(cc) preflight lesson on a manoeuvre to be performed in flight;
(vii) for a lighter-than-air category rating with a balloon class rating;
(aa) fundamentals of instructing;
(bb) technical subjects;
(cc) preflight lesson on a manoeuvre to be performed in flight; and
(dd) launches and landings.

Aeronautical experience: CPL.

47. (1) The applicant for a CPL shall have completed not less than 200 hours of flight time, or 150 hours if completed during an integrated course of approved training provided for in an aviation training organisation under the Civil Aviation (Aviation Training Organisations) Regulations, as a pilot of aeroplanes, of which 10 hours may have been completed in a flight simulator or flight procedures trainer.

(2) The applicant shall have completed in aeroplanes 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 totalling 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 licence are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landings as pilot-in-command.

(3) A holder of a pilot licence 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) An applicant for a CPL(H) licence 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 Organisation under Civil Aviation(Aviation Training Organisation) Regulations, as a pilot of helicopters, of which 10 hours may have been completed in a flight simulator or flight procedures trainer.

(5) 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 licence are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landings as pilot-in-command.

(6) The holder of a pilot licence 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 in aeroplanes; or

(ii) 50 hours as pilot-in-command holding a CPL in aeroplanes.

Commercial pilot licence privileges.

48. (1) A holder of a commercial pilot licence shall exercise all the privileges of the holder of a private pilot licence as stipulated in regulation 41.

(2) A holder of a commercial pilot licence may act as PIC of an aircraft for compensation or hire, including the carriage of persons or property for compensation or hire, provided the pilot is qualified in accordance with the applicable parts of these Regulations.

(3) A holder of a commercial pilot licence with an instructor rating for lighter-than-air category ratings may-

(a) for an airship-

(i) give flight and ground training in an airship for the issuance of a licence or rating; and

(ii) act as PIC of an airship under IFR;

(b) for a balloon give flight and ground training in a balloon for the issuance of a licence or rating.

Commercial pilot licence limitations

49. (1) The Authority shall issue to an applicant for a commercial pilot licence with an aeroplane category or powered-lift category rating who does not hold an instrument rating in the same category and class, a commercial pilot licence that contains the limitation, "The carriage of passengers for hire in aeroplane category or powered-lifts category, on cross-country flights in excess of fifty nautical miles or at night is prohibited".

(2) A pilot may remove the limitation specified in sub regulation (1) by satisfactorily accomplishing the requirements listed in regulation 28, for an instrument rating in the same category and class of aircraft that has the limitation.

(3) Where an applicant for a commercial pilot licence with a balloon rating takes a practical test in a balloon with an airborne heater-

(a) the Authority shall place on the pilot licence a limitation restricting the exercise of the privileges of that licence to a balloon with an airborne heater; and

(b) the Authority may, on the request of the pilot, remove the limitation specified in paragraph (a), upon the pilot obtaining the required aeronautical experience in a gas balloon and receiving a logbook endorsement from an authorised instructor who attests to the pilot's accomplishment of the required aeronautical experience and ability to satisfactorily operate a gas balloon.

(4) Where an applicant for a commercial pilot licence with a balloon rating takes a practical test in a gas balloon-

(a) the Authority shall place up on the pilot licence a limitation restricting the exercise of the privileges of that licence to a gas balloon; and

(b) the Authority may, upon the request of the pilot, remove the limitation

specified in paragraph (a), on the pilot obtaining the required aeronautical experience in a balloon with an airborne heater and receiving a logbook endorsement from an authorised instructor who attests to the person's accomplishment of the required aeronautical experience and ability to satisfactorily operate a balloon with an airborne heater.

Renewal of commercial pilot licence

50. A holder of a commercial pilot licence may apply for renewal of the licence if the holder of the licence has logged not less than six hours as PIC or co-pilot and has done six take offs six landings within the six months preceding the date of application for renewal.

Airline Transport Pilots Licence (ATPL)

Eligibility requirements: ATPL

51. To be eligible for an airline transport pilot licence, a person shall-

(a) be at least twenty one years of age;

(b) be able to read, speak, write, and understand the English language;

(c) meet at least one of the following requirements-

(i) hold a valid and current commercial pilot licence and an instrument rating;

(ii) meet the military experience requirements under regulation 15 to qualify for a commercial pilot licence, and an instrument rating if the person is a rated military pilot or former rated military pilot; or

(iii) hold either a foreign airline transport pilot licence or a foreign commercial pilot licence and an instrument rating issued by another Contracting State.

(d) meet the applicable aeronautical experience requirements of these regulations before applying for the practical test;

(e) pass a knowledge test on the applicable aeronautical knowledge areas of regulation 52,that apply to the aircraft category and class rating sought; and

(f) pass the practical test on the applicable areas of operation specified in regulation 53, that apply to the aircraft category and class rating sought; and

(g) be in possession of a valid Class 1 medical certificate issued under these Regulations.

Aeronautical knowledge: ATPL

52. (1) The Authority shall administer a knowledge test for an airline transport pilot licence based on the aeronautical knowledge areas appropriate to the aircraft category and class rating sought.

(2) An applicant for an ATPL shall receive and log ground training from an authorised instructor in the areas of aeronautical knowledge specified in the Fourth Schedule.

Flight proficiency for an airline transport pilot licence.

53. An applicant for an airline transport pilot licence shall receive and log ground and flight training from an authorised instructor on the areas of operation of this regulation that apply to the aircraft category and class rating sought, as follows-

(a) preflight preparation;

(b) preflight procedures;

(c) takeoff and departure phase;

(d) in-flight manoeuvres;

(e) instrument procedures;

(f) landings and approaches to landings;

(g) normal and abnormal procedures;

(h) emergency procedures; and

(i) post-flight procedures.

Aeronautical experience: ATPL.

54. (1) The applicant for an ATPL 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-

(a) 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;

(b) 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;

(c) 30 hours of instrument time, of which not more than 10 hours may be instrument ground time; and

(d) 50 hours of night flight as pilot-in-command or as co-pilot.

(2) holder of a CPL(A) will be credited with 50% of his or her aeroplane flight time as pilot-in-command towards the flight time required in sub regulation (1).

(3) The applicant shall have completed a crew resource management course.

Aeronautical experience rotorcraft category and helicopter class rating.

55. An applicant for an airline transport pilot licence with a rotorcraft category and helicopter class rating, shall have at least one thousand hours of total time as a pilot that includes at least-

(a) five hundred hours of cross-country flight time;

(b) one hundred hours of night flight time, of which fifteen hours are in helicopters;

(c) two hundred hours of flight time in helicopters, which includes at least seventy-five hours as a PIC, or as a co-pilot performing the duties and functions of a PIC under the supervision of a PIC, or any combination thereof;

(d) seventy hours of instrument flight time in actual or simulated instrument meteorological conditions, of which at least fifty hours are obtained in flight with at least twenty-five hours in helicopters as a PIC, or as a co-pilot performing the duties and functions of a PIC under the supervision of a PIC, or any combination thereof; and

(e) not more than one of the following in an approved flight simulator or approved flight training device representing a rotorcraft-

(f) twenty-five hours of simulated instrument time;

(g) fifty hours of simulated instrument time if the training was accomplished in a course conducted by an aviation training organisation certificated under the Civil Aviation (Aviation Training Organisations) Regulations.

Aeronautical experience: powered-lift flight time.

56. (1) An applicant for an airline transport pilot licence with a powered-lift category rating shall have at least one thousand five hundred hours of total time as a pilot, that includes at least-

(a) five hundred hours of cross-country flight time;

(b) one hundred hours of night flight time;

(c) two hundred and fifty hours in a powered-lift as a PIC, or as a co-pilot performing the duties and functions of a PIC under the supervision of a PIC, or any combination thereof, which includes at least-

(i) one hundred hours of cross-country flight time; and

(ii) twenty-five hours of night flight time.

(d) seventy-five hours of instrument flight time, in actual or simulated instrument conditions, subject to the following-

(i) except as provided in sub paragraph (ii), an applicant may not receive credit for more than a total of twenty-five hours of simulated instrument time in a flight simulator or flight training device;

(ii) a maximum of fifty hours of training in a flight simulator or flight training device may be credited toward the instrument flight time requirements of this paragraph if the training was accomplished in a course conducted by a training centre certified under the Civil Aviation (Aviation Training Organisation) Regulations; and

(iii) training in a flight simulator or flight training device must be accomplished in a flight simulator or flight training device that represents a powered-lift.

(2) An applicant for an ATPL may be credited with less than one hundred hours of the total aeronautical experience requirements of sub regulation (1) obtained in a flight simulator or flight training device that represents a powered lift, if the aeronautical experience was obtained in an approved course conducted by a training centre certificated under the Civil Aviation (Aviation Training Organisations) Regulations.

Additional aircraft category, class and type ratings.

57. An applicant for additional aircraft category, class and type rating shall-

(a) meet the applicable eligibility requirements;

(b) pass a knowledge test on the applicable aeronautical knowledge areas;

(c) meet the applicable aeronautical experience requirements; and

(d) pass the practical test on the areas of operation.

Airline transport pilot licence privileges.

58. (1) A holder of a current and valid airline transport pilot licence shall exercise the same privileges as those of a holder of a commercial pilot licence as stipulated in regulation 48.

(2) A holder of an airline transport pilot licence may instruct pilots within an AOC holder's approved training program in aircraft of the category, class, and type, as applicable, for which the airline transport pilot is rated, and in flight simulators of those aircraft, and endorse the logbook or other training record of the person to whom training has been given.

(3) A holder of an airline transport pilot licence may not instruct in aircraft, approved flight simulators, and except for briefing and debriefing times flight training devices-

(a) for more than eight hours in any twenty four-consecutive-hour period; or

(b) for more than thirty six hours in any seven-consecutive-day period.

(4) A holder of an airline transport pilot licence may not instruct in Category II or Category III operations unless he or she has been trained and successfully tested under Category II or Category III operations, as applicable

Renewal of airline transport pilot licence

59. A holder of an airline transport pilot licence may apply for renewal of the licence if the holder of the licence has logged not less than six hours as PIC or co-pilot within the six months preceding the date of application for renewal.

Instrument rating

General eligibility requirements: instrument rating

60. (1) A holder of a pilot licence shall not act either as pilot in command or as co-pilot of

an aircraft under instrument flight rules (IFR) unless such holder has received an instrument rating appropriate to the aircraft category.

(2) An applicant for a private pilot licence shall-

(a) be at least seventeen years of age for a rating other than the operation of glider or balloon;

(b) be able to read, speak, write, and understand the English language.;

(c) receive an endorsement for the knowledge test from an authorised instructor who-

(i) conducted the training or reviewed the person's aeronautical knowledge areas; listed in regulation 38, that apply to the aircraft rating sought; and

(ii) certified that the person is prepared for the required knowledge test;

(d) be in possession of a valid Class 2 medical certificate issued under these Regulations;

(e) pass the required knowledge test on the aeronautical knowledge areas specified in the Fifth Schedule;

(f) receive flight training and a logbook endorsement from an authorised instructor who-

(i) conducted the training in the areas of operation listed regulation 37 that apply to the aircraft rating sought; and

(ii) certified that the person is prepared for the required practical test;

(g) meet the aeronautical experience requirements of this subpart that apply to the aircraft rating sought before applying for the practical test;

(h) pass a practical test on the areas of operation listed in regulation 39 that apply to the aircraft rating sought; and

(i) comply with the appropriate provisions of these Regulations that apply to the aircraft category and class rating sought.

Aeronautical knowledge : Instrument rating

61. The applicant for an instrument rating (A) shall receive and log ground training from an authorised instructor on the following subjects-

(a) airlaw- rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;

(b) aircraft general knowledge -

(i) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aeroplanes and IFR and in instrument meteorological conditions; use and limitations of autopilot;

(ii) compasses, turning and acceleration errors, gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;

(c) Flight performance and planning-

(i) pre-flight preparations and checks appropriate to flight under IFR;

(ii) operational flight planning; preparation and filling of air traffic services flight plans under IFR; altimeter setting procedures;

(d) Human performance

(e) Human performance relevant to instrument flight in aeroplanes;

(f) Meteorology-

(i) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts, codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry;

(ii) precautionary and emergency procedures; safety practices associated with flight under IFR;

(g) Radiotelephony-

(i) radiotelephony procedures and phraseology as applied to aircraft operations under IFR; action to be taken in case of communication failure;

(ii) as further specified in the Fifth Schedule .

(h) human performance relevant to flight instruction;

(i) hazards involved in simulating system failures and malfunctions in the aircraft;

(2) The applicant shall have received an endorsement for the knowledge test from an authorised instructor who-

(i) conducted the training on the knowledge subjects;

(ii) certifies that the person is prepared for the required knowledge test; and pass the required knowledge test on the knowledge subjects listed in the Fifth Schedule.

Flight proficiency: instrument rating

62. (1) The applicant for an Instrument Rating (A) shall have not less than 10 hours of the instrument flight time required in sub regulation (2) (c) (ii) while receiving and logging dual instruction in aeroplanes from an authorised flight instructor, on the subjects listed in the Fifth Schedule.

(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-

(a) 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;

(b) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;

(c) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least-

(i) transition to instrument fight on take-off;

(ii) standard instrument departures and arrivals;

(iii) en-route IFR procedures and navigations;

(iv) holding procedures;

(v) instrument approaches to specified minima;

(vi) missed approach procedures;

(vii) landings from instrument approaches;

Aeronautical experience : instrument rating

63. (1) An applicant for an Instrument Rating shall hold a PPL or a CPL.

(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 aeroplanes; and

(ii) 40 hours in instrument time in aeroplanes 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;

Instrument rating: privileges and limitations

64. (1) A holder of an instrument rating is entitled to act as pilot of an aeroplane flying in accordance with instrument flight rules.

(2) To exercise the privileges of the rating, the holder shall, if carrying out an instrument approach procedure under IFR, have certified in his or her pilot logbook by a flight examiner that the holder has satisfactorily demonstrated competency on that approach aid or system;

(3) The approach aids or systems that may be endorsed are Automatic Direction-Finder (ADF), Very High Frequency Omni-directional Radio Range (VOR), GNSS, ILS and in the case of GNSS, the class of each GNSS unit demonstrated shall be recorded.

(4) The holder of a current instrument rating shall not exercise the privileges of the rating unless-

(a) the holder of the rating, if carrying out an instrument approach procedure under IFR has, within the immediately preceding three months, performed in flight or in an approved flight training device, an authorized instrument approach procedure using a similar type of navigation system; or

(b) the pilot is conducting an IFR operation under the authority of-

(i) an air operator certificate; or

(ii) an air service licence, where the operator satisfies the Authority that its pilots have an equivalent level of instrument rating competency and the pilot only conducts the IFR operation in an aircraft operated under the authority of the certificate of licence, as the case may be.

(5) For the purposes of this sub regulation-

(a) ILS shall be deemed to be similar types of navigation systems;

(b) VOR, Non-Directional Radio Beacon (NDB) and localizer shall be deemed to be similar types of navigation systems; and

(c) in the case of GNSS, only an approach using GNSS shall comply with the requirements in this regulation.

Flight Instructors Rating

Eligibility requirements: flight instructor

65. (1) To be eligible for a flight instructor rating a person shall-

(a) be at least eighteen years of age;

(b) be able to read, speak, write, and understand the English language;

(c) hold either a commercial pilot licence or airline transport pilot licence with-

(i) an aircraft category and class rating that is appropriate to the flight instructor rating sought; and

(ii) an instrument rating, if the person holds a commercial pilot licence and is applying for a flight instructor licence with-

(aa) an aeroplane category and single-engine class rating;

(bb) an aeroplane category and multiengine class rating;

(cc) a powered-lift rating; or

(dd) an instrument rating;

(d) receive a logbook endorsement from an authorised instructor on the fundamentals of instructing listed in regulation 66 appropriate to the required knowledge test;

(e) pass a knowledge test on the areas listed in regulation 66;

(f) receive a logbook endorsement from an authorised instructor on the areas of operation listed in regulation 67, appropriate to the flight instructor rating sought;

(g) pass the required practical test on the areas of operations listed in regulation 67 , that is appropriate to the flight instructor rating sought in-

(i) an aircraft that is representative of the category and class of aircraft for the aircraft rating sought; or

(ii) an approved flight simulator or approved flight training device that is representative of the category and class of aircraft for the rating

sought, and used in accordance with an approved course at an aviation training organisation certificated under the Civil Aviation (Aviation Training Organisations) Regulations, (Pilot Training)

(h) accomplish the following for a flight instructor licence with an aeroplane or a glider rating-

(i) receive a logbook endorsement from an authorised instructor indicating that the applicant is competent and possesses instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures after receiving flight training in those training areas in an aeroplane or glider, as appropriate, that is certificated for spins;

(ii) demonstrate instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures;

(iii) log at least fifteen hours as PIC in the category and class of aircraft that is appropriate to the flight instructor rating sought; and

(iv) comply with the appropriate sections that apply to the flight instructor rating sought.

(2) Regarding the requirement of sub regulation (1)(h) (ii), the Authority may accept the endorsement specified in sub regulation (1)(h) (i) as satisfactory evidence of instructional proficiency in stall awareness, spin entry, spins, and spin recovery procedures for the practical test, provided that the practical test is not a retest as a result of the applicant failing the previous test for deficiencies in those knowledge or skill areas.

(3) If the retest referred in sub regulation (2) is the result of deficiencies in the ability of an applicant to demonstrate the requisite knowledge or skill, the applicant shall demonstrate the knowledge and skill to an examiner in an aeroplane or glider, as appropriate, that is certificated for spins.

Aeronautical knowledge: flight instructor

66. (1) Subject to sub regulation (2), an applicant for a flight instructor rating shall receive and log ground training from an authorised instructor on-

(a) the fundamentals of instructing, including-

(i) the learning process;

(ii) elements of effective teaching;

(iii) student evaluation and testing;

(iv) course development;

(v) lesson planning;

(vi) classroom training techniques;

(vii) human performance relevant to flight instruction; and

(viii) hazards involved in simulating system failures and malfunctions in the aircraft.

(b) the aeronautical knowledge areas for a private and commercial pilot licence applicable to the aircraft category for which flight instructor privileges are sought; and

(c) the aeronautical knowledge areas for the instrument rating applicable to the category for which instrument flight instructor privileges are sought.

(2) The following persons do not need to comply with sub regulation (1)-

(a) a holder of a ground instructor licence issued under this regulation;

(b) a holder of a current teacher's certificate issued by a relevant authority that authorises the person to teach at the secondary school level or higher.

Flight instructor: areas of operation for flight proficiency.

67. (1) An applicant for a flight instructor licence shall receive and log flight and ground training from an authorised instructor, and obtain an endorsement that the applicant is proficient to pass a practical test on the areas of operation , that apply to the flight instructor rating sought-

(a) For each category rating and class rating, as applicable -
  (i) fundamentals of instructing;
  (ii) technical subject areas;
  (iii) preflight preparation;
  (iv) preflight lesson on a manoeuvre to be performed in flight;
  (v) preflight procedures;
  (vi) airport and seaplane base operations;
  (vii) takeoffs, landings;
  (viii) and go-arounds;
  (ix) fundamentals of flight;
  (x) performance manoeuvres;
  (xi) ground reference manoeuvres;
  (xii) slow flight, stalls, and spins;
  (xiii) basic instrument manoeuvres;
  (xiv) emergency operations; and
  (xv) post flight procedures.

(b) for an aeroplane category rating with a multiengine class rating: multiengine operations;

(c) for a rotorcraft category rating with a helicopter class rating-
  (i) airport and heliport operations;
  (ii) hovering manoeuvres; and
  (iii) special operations;

(d) for a rotorcraft category rating with a gyroplane class rating: flight at slow airspeeds;

(e) for a powered-lift category rating-
  (i) hovering manoeuvres; and
  (ii) special operations.

(f) for a glider category rating-
  (i) airport and gliderport operations;
  (ii) launches, landings, and go-arounds;
  (iii) performance speeds;
  (iv) soaring techniques; and
  (v) slow flight, stalls, and spins.

(g) for an instrument rating with the appropriate aircraft category and class rating-
  (i) air traffic control clearances and procedures;
  (ii) flight by reference to instruments;
  (iii) navigation aids; and
  (iv) instrument approach procedures.

(2) An applicant may accomplish the flight training required by this regulation-
  (a) in an aircraft that is representative of the category and class of aircraft for the rating sought; or
  (b) in a flight simulator or flight training device representative of the category and class of aircraft for the rating sought, and used in accordance with an approved course at an aviation training organisation certified under the Civil Aviation (Aviation Training Organisations) Regulations.

Flight instructor records.

68. A holder of a flight instructor rating shall-
  (a) sign the logbook of each person to whom that instructor has given flight training or ground training;
  (b) maintain a record in a logbook or a separate document that contains the following-
    (i) the name of each person whose logbook or student pilot licence that

instructor has endorsed for solo flight privileges, and the date of the endorsement;

(ii) the name of each person that instructor has endorsed for a knowledge test or practical test, and a record of the kind of test, the date, and the results; and

(c) retain the records required by this regulation for at least three years from the date of giving the flight training or ground training.

Additional category flight instructor ratings.

69. An applicant for an additional categoryon flight instructor rating shall-

(a) meet the eligibility requirements listed in 66 that apply to the flight instructor rating sought; and

(b) not be required to pass the knowledge test on the areas listed in regulation 67.

Flight instructor rating privileges.

70. A flight instructor is authorised within the limitations of that person's pilot licence and ratings, to give training and endorsements that are required for, and relate to-

(a) a pilot licence;
(b) a flight instructor rating;
(c) a ground instructor licence;
(d) an aircraft rating;
(e) an instrument rating;
(f) a flight review, operating privilege, or recency of experience requirement;
(g) a practical test; and
(h) knowledge test.

Flight instructor rating limitations and qualifications.

71. (1) A holder of a flight instructor licence shall observe the limitations and qualifications specified in this regulation.

(2) In any twenty consecutive-hour period, a flight instructor may not conduct more than eight hours of flight training.

(3) A flight instructor shall not conduct flight training in any aircraft for which the flight instructor does not hold-

(a) a valid pilot licence and flight instructor rating with the applicable category and class rating; and

(b) a type-rating;

(c) for instrument flight training or for training for a type rating not limited to visual flight rules, an instrument rating.

(4) A flight instructor shall not endorse a-

(a) student pilot's licence or logbook for solo flight privileges, unless that flight instructor has-

(i) given that student the flight training required for solo flight privileges required by this subpart;

(ii) determined that the student is prepared to conduct the flight safely under known circumstances, subject to any limitations listed in the student's logbook that the instructor considers necessary for the safety of the flight;

(iii) given that student pilot training in the make and model of aircraft or a similar make and model of aircraft in which the solo flight is to be flown; and

(iv) (endorsed the student pilot's logbook for the specific make and model aircraft to be flown;

(b) student pilot's licence and logbook for a solo cross-country flight, unless that flight instructor has determined that-

(i) the student's flight preparation, planning, equipment, and proposed procedures are adequate for the proposed flight under the existing conditions and within any limitations listed in the logbook that the instructor considers necessary for the safety of the flight; and

(ii) the student has the appropriate solo cross-country endorsement for the make and model of aircraft to be flown;

(c) student pilot's licence and logbook for solo flight in a Class B airspace area or at an airport within Class B airspace unless that flight instructor has-

(i) given that student ground and flight training in that Class B airspace or at that airport; and

(ii) determined that the student is proficient to operate the aircraft safely;

(d) logbook of a pilot for a flight review, unless that instructor has conducted a review of that pilot in accordance with the requirements of regulation 24; and

(e) logbook of a pilot for an instrument proficiency check, unless that instructor has tested that pilot in accordance with the requirements of Civil Aviation (Operation of Aircraft) Regulations.

(5) A flight instructor shall not give training required for the issuance of a licence or rating in a multiengine aeroplane, a helicopter, or a powered-lift unless that flight instructor has at least five flight hours of PIC time in the specific make and model of multiengine aeroplane, helicopter, or powered-lift, as appropriate.

(6) A flight instructor shall not provide instruction to another pilot who has never held a flight instructor licence unless that flight instructor-

(a) holds a current ground or flight instructor licence with the appropriate rating, has held that licence for at least twenty four months, and has given at least forty hours of ground training; or

(b) holds a current ground or flight instructor licence with the appropriate rating, and has given at least one hundred hours of ground training in a course which has been approved by the Authority.

(c) meets the eligibility requirements prescribed in regulation 65.

(d) for training in preparation for an aeroplane, rotorcraft, or powered-lift rating, has given at least two hundred hours of flight training as a flight instructor; and

(e) for training in preparation for a glider rating, has given at least eighty hours of flight training as a flight instructor.

(7) A flight instructor shall not make any self-endorsement for a licence, rating, flight review, authorisation, operating privilege, practical test, or knowledge test that is required by these Regulations.

(8) A flight instructor shall not give training in Category II or Category III operations unless the flight instructor has been trained and tested in Category II or Category III operations as applicable.

Renewal of flight instructor rating.

72. (1) A flight instructor rating may be renewed for an additional twelve months if the holder-

(a) passes a practical test for-

(i) renewal of the flight instructor licence; or

(ii) an additional flight instructor rating; or

(b) presents to the Authority -

(i) a record of training students that shows that within twelve months preceding the date of application for a renewal of licence the flight instructor has endorsed at least five students for a practical test for a rating, and at least eighty percent of those students passed that test on the first attempt;

(ii) a record that shows that within the twelve, preceding service as a company check pilot, chief flight instructor, check airman, or flight instructor in, or in a position involving the regular evaluation of pilots; or

(iii) a certificate showing that the pilot has successfully completed an approved flight instructor refresher course consisting of ground training or flight training, or both, within the ninety days preceding the date of the expiry of the flight instructor licence.

(2) The Authority shall consider that the flight instructor accomplished the renewal requirement in the month due; and shall renew the current flight instructor licence twelve months from the date of expiry of the licence date.

(3) A flight instructor may accomplish the practical test required by sub regulation (1)(a) in an approved course conducted by an aviation training organisation certificated under the Civil Aviation (Aviation Training Organisations) Regulations.

Expired flight instructor licences and ratings.

73. A holder of an expired flight instructor licence may have that a licence renewed by passing the practical test prescribed in this subpart.

PART VI – LICENSING OF FLIGHT CREW MEMBERS OTHER THAN PILOTS

Eligibility requirements: ground instructor.

74. (1) An applicant for a ground instructor rating shall-

(a) be at least eighteen years of age;

(b) be able to read, speak, write, and understand the english language;

(c) pass a knowledge test on the fundamentals of instructing to include-

(iv) the learning process;

(v) elements of effective teaching;

(vi) student evaluation and testing;

(vii) course development;

(viii) lesson planning; and

(ix) classroom training techniques; and

(d) pass a knowledge test on the aeronautical knowledge areas specified in regulation 38,45,52.

(2) The knowledge test specified in sub regulation (1)(d) shall not be required if the applicant-

(a) holds a ground instructor rating or flight instructor rating issued under these Regulations; or

(b) holds a current teacher's certificate issued by a national authority that authorises the person to teach at the secondary school level or higher.

Ground instructor privileges.

75. (1) A holder of a ground instructor rating may exercise the privileges appropriate to the rating as follows-

(a) for a ground instructor rating, is authorised to provide -

(i) ground training in the aeronautical knowledge areas required for the issue of an appropriate licence or rating;

(ii) ground training required for any flight review; and

(iii) a recommendation for a knowledge test required for the issuance of any licence.

(b) for an instrument ground instructor rating, is authorised to provide-

(i) ground training in the aeronautical knowledge areas required for the issuance of an instrument rating;

(ii) ground training required for an instrument proficiency check; and
(iii) a recommendation for a knowledge test required for the issuance of an instrument rating.

(2) A person who holds a ground instructor licence is authorised, within the limitations of the ratings on the ground instructor licence, to endorse the logbook or other training record of a person to whom the holder has provided the training or recommendation specified in sub regulation (1).

Currency requirements

76. A holder of a ground instructor licence shall not perform the duties of a ground instructor unless, within the twelve preceding months the person has served for at least three months as a ground instructor.

Examiners

Examiners : general requirements

77. *(1) General*. Examiners shall hold the licence and the rating for which they are authorized to conduct skill tests or proficiency checks and shall hold the privilege to instruct for this licence or rating.

(2) Experience. The applicant for the flight examiner's authorization shall have 1000 hours of flight time and 200 hours of flight instruction.

(3) Training. The ground, flight and simulator training for Examiners shall include the subjects listed in regulation 78.

(4) 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.

(5) Privileges. Subject to compliance with the requirements specified in these regulations, the privileges of the examiner's authorization are to conduct skill tests and proficiency checks for a licence and rating(s).

(6) Validity. Subject to compliance with the requirements specified in these regulations, the validity period of an examiner's authorization is 1 year. Re-authorization will be at the discretion of the authority.

Flight examiner training requirements

78. (1) The ground training for examiners shall at least include:
(a) Examiner duties, functions and responsibilities
(b) Applicable regulations and procedures;
(c) Appropriate methods, procedures and techniques for conducting the required tests and checks;
(d) 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;
(e) Appropriate corrective action in the case of unsatisfactory tests and checks; and
(f) Approved methods, procedures and limitations for performing the required normal, abnormal and emergency procedures in the aircraft.

(2) The flight training shall include -
(a) 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;

(b) the potential results of improper, untimely or non-execution of safety measures during an evaluation; and

(c) 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.

(3) The flight training for examiners (simulator) shall include:

(a) 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 these regulations (this training and practice shall be accomplished in a flight simulator, a flight procedures trainer or flight training device.

(b) 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 these regulations.

PART VII – LICENSING OF FLIGHT CREW MEMBERS OTHER THAN PILOTS

Flight Engineers Licenses

Licences and ratings required.

79. (1) A person shall not act as a flight engineer of an aircraft registered in Uganda unless that person holds a flight engineer licence with appropriate ratings.

Flight engineer licence: general eligibility requirements.

80. An applicant for a flight engineer licence shall-

(a) be at least eighteen years of age;

(b) be able to read, speak, write, and understand the english language; and

(c) comply with the requirements of these Regulations that apply to the rating sought; and

(d) possess a valid Class 1 medical certificate issued under these Regulations.

Additional aircraft ratings.

81. An applicant for an additional aircraft class, category or type rating flight engineer licence shall-

(a) pass the knowledge test and practical test that is appropriate to the class category or type of aircraft for which an additional rating is sought; or

(b) satisfactorily complete an approved flight engineer training program that is appropriate to the additional class rating sought.

Knowledge requirements : flight engineer licence .

82. (1) An applicant for a flight engineer licence shall pass a knowledge test on the following-

(a) the regulations issued under the Civil Aviation Authority Act that apply to a flight engineer;

(b) the theory of flight and aerodynamics;

(c) basic meteorology with respect to engine operations; and

(d) centre of gravity computations.

(2) An applicant for the original or additio nal issue of a flight engineer type rating shall pass a knowledge test for that aeroplane type on the following-

(a) Aeroplane structure and equipment, normal operation of systems and malfunctions-

(i) Dimensions ;

(ii) Engine including auxiliary power unit;

(iii) Fuel system;

(iv) Pressurisation 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;

(b) Limitations -
(i) General limitations;
(ii) Engine limitations;
(iii) System limitations;
(iv) Minimum equipment list;

(c) Performance, flight planning and monitoring;
(d) Load, balance and servicing;
(e) Load and balance;
(f) Servicing on the ground;
(g) Emergency procedures;
(h) 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
(j) Procedures and limitations: operational procedures, crew co-ordination;
(k) Special requirements for "glass cockpit" aeroplane with electronic flight instrument systems (e.g. EFIS, EICAS);
(l) Flight Management systems (FMS);

(3) Before taking the knowledge tests prescribed in sub regulations (1) and (2) , an applicant for a flight engineer licence shall present satisfactory evidence of having completed one of the experience requirements of regulation 83, "Aeronautical experience requirements."

(4) An applicant may take the knowledge tests before acquiring the flight training required by regulation 83.

(5) Except as provided in sub regulation (6), an applicant for a flight engineer licence or rating shall have passed the knowledge tests required by sub regulations (1) and (2) within the twenty four months the beginning of the 24th calendar month before the month in which the practical test is taken.

(6) An applicant who within the period ending twenty four calendar months after passing the knowledge test, is employed as a flight crew member or LAME by an AOC holder need not comply with the time limit set in sub regulation (5) if the applicant-

(a) is employed by such an AOC holder at the time of the practical test; and
(b) if employed as a flight crew member, has completed initial training, and, if appropriate, transition, upgrade, recurrent training or if employed as an LAME, meets the recency of experience requirements of Civil Aviation (Airworthiness) Regulations.

(7) An AOC holder may, when authorised by the Authority, provide as part of an approved training program a knowledge test that it may administer to satisfy the test required for an additional rating under sub regulation (2).

Aeronautical experience requirements : flight engineer.

83. (1) Except as otherwise specified herein, an applicant for a flight engineer licence shall obtain and log the flight time used to satisfy the aeronautical experience requirements of sub regulation (2) on an aeroplane on which a flight engineer is required by these Regulations.

(2) An applicant for a flight engineer licence with a type rating shall present, for the type rating sought, satisfactory evidence of one of the following, including the practical experience with the aircraft described in sub regulation (1)-

(a) at least three years of practical experience in aircraft and aircraft engine maintenance and at least five hours of flight training in the duties of a flight engineer; or

(b) graduation from at least a two and half-years specialised aeronautical training course in maintaining aircraft and aircraft engines and at least six months of practical experience in maintaining aircraft and aircraft engines and at least five hours of flight training in the duties of a flight engineer; or

(c) a degree in aeronautical or avionics engineering from a college, university, or engineering school acceptable to the Authority; at least one year of practical experience in maintaining and engines aircraft and at least five hours of flight training in the duties of a flight engineer; or

(d) a degree in electrical, or mechanical engineering from a college, university, or engineering school acceptable to the Authority at least one year of practical experience in maintaining aircraft and engines and at least five hours of flight training in the duties of a flight engineer;

(e) at least a commercial pilot licence with an instrument rating and at least five hours of flight training in the duties of a flight engineer; or

(f) at least two hundred hours of flight time in a transport category aeroplane as PIC or a co-pilot performing the functions of a PIC under the supervision of a PIC; or

(g) at least one hundred hours of flight time as a flight engineer; or

(h) within the ninety-day period before application, successful completion of an approved flight engineer ground and flight course of instruction.

Skill requirements.

84. An applicant for a flight engineer licence with a type rating shall-

(a) pass a practical test on the duties of a flight engineer-

(i) in the type of aircraft for which a rating is sought; and

(ii) only on an aircraft specified in regulation 81 or an approved flight simulator replicating such an aircraft;

(b) show satisfactorily performance in preflight inspection, servicing, starting, pre-takeoff, and post-landing procedures;

(c) while in flight, show satisfactorily performance of the normal duties and procedures relating to the aeroplane, aeroplane engines, propellers, if appropriate, systems, and appliances; and

(d) while in flight, in an aeroplane simulator, or in an approved training device, show satisfactorily performance on emergency duties and procedures and recognise and take appropriate action for malfunctions of the aeroplane, engines, propellers, if appropriate, systems and appliances.

PART VIII – LICENCES AND RATINGS FOR PERSONNEL OTHER THAN FLIGHT CREW MEMBERS

Air Traffic Controllers

Required licences and ratings or qualifications

85. (1) A person shall not act as an air traffic controller of an aircraft unless that person holds an air traffic controller licence issued under these Regulations

(2) A licence to act as an air traffic controller shall include-

(a) one or more ratings as specified in regulation 6 (4) specifying the type of air traffic control service which the holder of the licence is competent to provide;

(b) a list of the places at which, and the type of radar equipment, if any, with the aid of which the licence holder may provide the service;

(3) Where during a continuous period of six months the holder of an air traffic controller licence has not at any time provided at a particular place the type of air traffic control service specified in the rating, the rating shall cease to be valid for that place at the end of the six months period and upon a rating ceasing to be valid as specified for a place, in the holder of the air traffic controller licence shall forthwith inform the Authority to that effect and shall forward the licence to the Authority to enable it to be endorsed accordingly;

(4) An air traffic controller licence shall not be valid unless the holder of the licence has signed his or her name on the licence in ink with his or her ordinary signature.

General eligibility requirements: ATC licence

86. An applicant for an air traffic controller licence shall -

(a) be at least 21 years of age except that for an air traffic controller licence be at least eighteen years;

(b) be able to read, write, and understand the english language and speak it without impediment of speech that would interfere with two way radio conversation; and

(c) comply with the knowledge requirements of regulation 87.

Knowledge requirements: air traffic controller licence.

87. (1) An applicant for the air traffic controller licence or air traffic controller rating shall have demonstrated a level of knowledge appropriate to the privileges being sought in at least the following subjects in so far as they affect the area of responsibility-

(a) aerodrome Control rating-

(i) the Civil Aviation (Rules of the Air and Air Traffic Control) Regulations ;
(ii) aerodrome layout, physical characteristics and visual aids;
(iii) airspace structure;
(iv) applicable air traffic rules and procedures;
(v) applicable aerodrome rules, procedures and source of information;
(vi) air navigation and aids to air navigation;
(vii) air traffic control equipment and its use;
(viii) terrain and prominent landmarks;
(ix) aircraft recognition and air traffic characteristics;
(x) aviation meteorology;
(xi) emergency procedures;
(xii) search and rescue procedures;
(xiii) aeronautical information service;
(xiv) principles of flight; and
(xv) aeronautical telecommunications.
(xvi) GNSS procedures

(b) Approach Control and Area Control ratings-

(i) the Civil Aviation (Rules of the Air and Air Traffic Control) Regulations;
(ii) airspace structure;
(iii) air traffic control rules and procedures;
(iv) applicable rules, procedures and source of information;
(v) air navigation and aids to air navigation;
(vi) air traffic control equipment and its use;
(vii) terrain and prominent landmarks;
(viii) characteristics of air traffic and traffic flow;

(ix) aviation meteorology;
(x) emergency procedures; and
(xi) search and rescue procedures;

(c) Approach Radar and Area Radar Control Ratings-
the applicant shall meet the requirements specified in paragraph (b) in so far as they affect the area of responsibility, and shall have demonstrated a level of knowledge being appropriate to the privileges being sought , in at least the following additional subjects;

(i) principles, use and limitation of radar, other surveillance systems and associated equipment; and
(ii) procedures for the provision of approach or area radar control services, as appropriate, including procedures to ensure appropriate terrain clearance.

(2) An applicant for an air traffic controller licence shall have passed the diploma course in air traffic control conducted at an aviation training organisation or its equivalent and recognized by ICAO and covering the following subjects-

(a) air law: rules and regulations relevant to the air traffic controller;
(b) Air traffic control equipment: principles, use and limitations of equipment used in air traffic control;
(c) general knowledge: principles of flight; principles of operation and functioning of aircraft, powerplants and systems; aircraft performances relevant to air traffic control operations;
(d) human performance: human performance relevant to air traffic control;
(e) 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;
(f) meteorology: aeronautical meteorology; use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry;
(g) Navigation: principles of air navigation; principle, limitation and accuracy of navigation systems and visual aids;
(h) Operational procedures-
(i) air traffic control, communication, radiotelephony and phraseology procedures (routine, non routine and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.
(ii) have received an endorsement for the knowledge test from an authorized instructor who-
(aa) conducted the training on the knowledge areas;
(bb) certifies that the person is prepared for the required knowledge test; and
(cc) pass the required knowledge test.

(3) An air traffic controller who provides area control services and approach control services in an ATS unit for purposes of GNSS non-precision instrument approaches, shall have completed training in the following-

(a) description of GNSS;
(b) GNSS availability and integrity;
(c) current GNSS approvals;
(d) the RAIM integrity concept;
(e) GNSS equipment airworthiness requirements;
(f) GNSS equipment operational requirements;
(g) IFR primary means approval;
(h) Non-RAIM operations requirements;
(i) RAIM holes;

(j) Stand-alone GNSS procedures;
(k) Overlay GNSS procedures;
(l) Restrictions on GNSS procedures;
(m) GNSS distance information; and
(n) Lateral separation procedures.

Skill requirements: Operating positions.

88. An applicant for an air traffic controller licence and rating shall pass a practical test at a level appropriate to the privileges being sought on-

(a) air traffic facility equipment and its use;
(b) weather reporting procedures and use of reports; and
(c) each of the following procedures that are applicable to that operating position-
(i) the airport, including rules, equipment, runways, taxiways, and obstructions;
(ii) the terrain features, visual checkpoints, and obstructions within the lateral boundaries of the surface areas of airspace applicable;
(iii) traffic patterns and associated procedures for use of preferential runways and noise abatement;
(iv) operational agreements;
(v) the centre, alternate airports, and those airways, routes, reporting points and air navigation aids used for terminal air traffic control;
(vi) search and rescue procedures;
(vii) terminal air traffic control procedures and phraseology;
(viii) holding procedures, prescribed instrument approach, and departure procedures;
(ix) radar alignment and technical operation;
(x) the application of the prescribed radar and non-radar separation standards as appropriate; and
(xi) area and enroute air traffic control procedures.

Skill requirements validation.

89. (1) An applicant for a unit rating at an air traffic control shall have passed a practical test on each area listed in regulation 87 applicable to each operating position at the control unit at which the rating is sought.

Privileges and limitations.

90. (1) A holder of an air traffic controller licence which includes ratings of two or more of the classes specified in sub regulation (2) shall not at any one time perform the function specified in respect of more than one of these ratings-

Provided that the functions of any one of the following groups of ratings may be exercised at the same time-

(a) the aerodrome control rating and the approach control rating;
(b) approach control rating and area control rating
(c) approach control rating and the approach radar control rating except that if the functions of the approach radar control rating the service being provided is a surveillance radar approach terminating at a point less than two nautical miles from the point of intersection of the glide patch with the runway, the two functions shall not be exercised at the same time
(d) the area control rating and the area radar control rating;

(2) The following ratings may be included in an air traffic controller's licence other than a student air traffic controller's licence and, subject to the provisions of this sub regulation and of the licence privileges and, the inclusion of a rating in a licence shall have the limitations respectively specified as follows-

(a) an aerodrome control rating shall entitle the holder of the licence at any aerodrome for which the rating is valid, to provide or to supervise the provision of air traffic control service for any aircraft on the manoeuvring area or apron of that aerodrome or which is flying in the vicinity of the aerodrome traffic zone by visual reference to the surface;

(b) an approach control rating shall entitle the holder of the licence, at any aerodrome for which the rating to provide or to supervise the provision of air traffic control service for any aircraft which is flying in the control zone or terminal control area of the aerodrome whether or not the aircraft is flying by visual reference to the surface;

(c) an approach radar control rating shall entitle the holder of the licence, at any aerodrome for which the rating is valid, to provide and or supervise the provision of air traffic control service with the aid of any type of surveillance radar equipment for which the rating is valid for aircraft flying in circumstances specified in this sub regulation;

(d) an approach precision radar control rating shall entitle the holder of the licence to provide or supervise the provision of precision approach radar service with the aid of any type of precision approach radar equipment for which the rating is valid at the aerodrome for which the licence holder is rated;

(e) an area control rating shall entitle the holder of the licence, at any place for which the rating is valid, to provide or supervise the provision of air traffic control service for any aircraft in flight within a flight information region, controlled airspace or within airspace which has been notified as an advisory area or an advisory route;

(f) an area radar control rating shall entitle the holder of the licence, at any place for which the rating is valid, to provide and or supervise the provision of air traffic control service with the aid of any type of surveillance radar equipment for which the rating is valid for aircraft flying in circumstances specified in this sub regulation.

(3) Before exercising the privileges indicated in sub regulation (2), the air traffic controller licence holder shall be familiar with all pertinent and current information and shall indicate by signing his name indicating the time in Universal Time Co-ordinated (UTC) in the appropriate ATC log book.

(4) A person shall not provide any air traffic control service at any aerodrome at which air traffic control service is required to be provided by or under the Rules of the air and air Traffic Control specified in the Civil Aviation Operation of Aircraft Regulations or at a Government aerodrome or at any other place at which air traffic control service is provided unless he does so under and in accordance with the terms of -

(a) a valid student air traffic controller's licence granted under these Regulations and he is supervised in accordance with sub regulation (5); or

(b) a valid air traffic controller's licence so granted authorizing the air traffic controller to provide that type of service at the aerodrome or other place; or

(c) a valid air traffic controller licence so granted which does not authorize the air traffic controller to provide that type of service at the aerodrome or other place, but he is supervised by a person who is present at the time and who is the holder of a valid air traffic controller licence so granted which authorizes him to provide at that aerodrome or other place the type of air traffic control service which is being provided.

(5) A holder of an air traffic controller licence is not entitled to perform any of the functions specified in sub regulation (1) in respect of a rating at any of the places referred to in sub regulation (4) unless his or her licence includes that rating and the rating is valid for the place at which, and the type of radar equipment, if any, with the aid of which, the functions are performed.

(6) Nothing in this regulation shall prohibit the holder of a valid air traffic controller licence from providing at any place for which the licence includes a valid rating but not valid at that place, information to aircraft in flight in the interests of safety.

Maximum working hours.

91. (1) Except in an emergency, a licensed air traffic controller shall not perform any duties twenty four consecutive hours during each seven consecutive days.

(2) An air traffic controller may not serve or be required to serve-

(a) for more than ten consecutive hours; or

(b) for more than ten hours during a period of twenty four consecutive hours,

unless that air traffic controller had a rest period of at least eight hours at or before the end of the ten hours of duty.

Air traffic controller's responsibilities over fatigue

92. A person holding an air traffic controller's licence shall not act as an air traffic controller if he or she knows or suspects that he or she is suffering from or, having regard to the circumstances of the period of duty to be undertaken, is likely to suffer from, such fatigue as may endanger the safety of any aircraft to which an air traffic control service may be provided.

Prohibition of unlicensed air traffic controllers

93. (1) A person shall not provide any type of air traffic service at any aerodrome at which air traffic control service is required to be provided under the Civil Aviation (Rules of the Air and Air Traffic Control) Regulations or at any other place, not being an aerodrome, at which air traffic control service is provided, whether or not under the direction of the Director General or a visiting force, unless he does so in accordance with the terms of-

(a) a valid air traffic controller's licence so granted authorising him to provide that type of service at that aerodrome or other places;

(b) a valid air traffic controller's licence so granted which does not authorise him or her to provide that type of service at the aerodrome or other place, but he or she is supervised by a person who is present at the time and who is the holder of a valid air traffic controller's licence so granted which authorises him or her to provide at that aerodrome or other place the type of air traffic control service which is being provided;

(c) his or her appointment as an air traffic control trainee and he or she is supervised by a person who is present at the time and who is the holder of a valid air traffic controller's licence so granted which authorises him to provide that type of service at any aerodrome or at a place at which air traffic control service is provided-

(i) that such licence shall not be required by any person who acts in the course of his duty as a member of any of Uganda, military or air force or a visiting force.

(ii) the holder of a licence shall not be entitled to perform any of the functions specified in regulations 87 in respect of a rating at any of the places referred to in this sub-regulation unless-

(aa) his or her licence includes that rating and the rating is valid for the place at which, and the type of radar equipment, if any, with the aid of which functions are performed; or

(bb) he or she is supervised by a person who is present at the time and who is the holder of a valid air traffic controller's licence granted under these Regulations which authorises him or her to provide at that aerodrome or other place the type of air traffic control service which is being provided.

(2) Nothing in this regulation shall prohibit the holder of a valid air traffic Controller's licence from providing at any place for which the licence includes a valid rating, information to aircraft in flight in the interests of safety.

Incapacity of air traffic controller.

94. (1) A holder of an air traffic controller licence granted under regulation 86 of who-

(a) suffers any personal injury or illness involving incapacity to undertake the functions to which the licence relates for a period of twenty or more consecutive days; or

(b) in the case of a woman has reason to believe that she is pregnant;

shall inform the Authority in writing of such illness, injury or pregnancy as soon as possible.

(2) An air traffic controller licence shall be deemed to be suspended as soon as a period of twenty days of such injury or illness as referred to in sub regulation (1) (a) has elapsed and suspension of the licence shall cease-

(a) upon the holder being medically examined under arrangements made by the Authority and pronounced fit to resume functions under the licence; or

(b) upon the Authority exempting the licence holder from the requirement ofr a medical examination subject to such conditions as the Authority may think fit.

(3) Upon the pregnancy of the holder of an air traffic controller licence being confirmed, the holder of the licence shall continue to exercise the privileges of the licence until the pregnancy is thirty weeks provided the pregnancy is a normal pregnancy and the licence holder-

(a) attends all ante-natal checks as required by the licence holder's doctor;

(b) advises the doctor that she is an air traffic controller therefore any minor abnormality may be significant;

(c) excuses herself from her duties as soon as she feels unwell or a complication of pregnancy develops, and informs the Authority in writing of such complications as soon as practicable;

(4) The Authority shall, upon receiving notice under sub regulation (3) (c) suspend a holder's licence until she has been examined by an approved medical examiner and pronounced fit to resume her functions under the licence.

(5) In the case of a normal pregnancy, the holder of an air traffic controller licence shall be declared unfit to exercise the privileges of her licence and her licence suspended after thirty weeks of pregnancy, until six weeks after delivery or termination of the pregnancy, and the holder has been examined by a doctor and pronounced fit to resume her functions under the licence;

(6) Notwithstanding sub regulations (3) and (5), a holder of an air traffic controller licence who has a history of gynaecological problems and has not responded to treatment or requires medication that interferes with the safe performance of functions under the licence, shall be declared unfit upon becoming pregnant, and her licence shall be suspended until she has been examined after delivery or termination of pregnancy by an approved medical examiner and pronounced fit to resume her functions under the licence.

Renewal.

95. An air traffic controller licence may be renewed by the Authority from time to time upon the Authority of air traffic controller licence being satisfied that the applicant is fit and qualified person.

Flight operations officers

General eligibility requirements.

96. An applicant for a flight operations licence shall-

(a) be at least twenty one years of age;

(b) be able to read, speak, write, and understand the english language; and

(c) comply with the knowledge requirements, experience or training requirements and skill requirements for flight dispatchers as contained in these Regulations.

Knowledge requirements : flight operations officer.

97. (1) An applicant for a flight operations officer licence shall pass a knowledge test covering the following areas-

(a) rules and regulations relevant to the holder of a flight operations officer licence, appropriate air traffic services practices and procedures;

(b) principles of operation of aeroplane powerplants, systems and instruments;

(c) operating limitations of aeroplanes and powerplants;

(d) minimum equipment list;

(e) effects of loading and mass distribution on aircraft performance and flight characteristics; mass and balance calculations;

(f) operational flight planning, fuel consumption and endurance calculations, alternate airport selection procedures, en-route cruise control; extended range operation;

(g) preparation and filing of air traffic services flight plans;

(h) basic principles of computer-assisted planning systems;

(i) human performance relevant to dispatch duties;

(j) aeronautical meteorology, 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;

(k) interpretation and application of aeronautical meteorological reports, charts and forecasts, codes and abbreviations, use of, and procedures for obtaining, meteorological information;
(l) principals of air navigation with particular reference to instrument flight;
(m) use of aeronautical documentation;
(n) operational procedures for the carriage of freight and dangerous goods; procedures relating to aircraft accidents and incidents; emergency flight procedures;
(o) procedures relating to unlawful interference and sabotage of aircraft;
(p) principles of flight relating to the appropriate category of aircraft, and
(q) procedures for communicating with aircraft and relevant ground stations.

(2) An applicant for a flight operations officer licence may submit evidence of satisfactory completion of a knowledge test within twelve months from the date of the test as a basis upon which an applicant will be eligible to take the practical test.

Experience or training requirements.

98. (1) An applicant for a flight operations officer licence shall present documentary evidence satisfactory to the Authority that he or she has the experience or training as follows-

(a) a total of two years' service in any one or in any combination of the capacities specified in sub paragraphs (i), (ii), (iii) inclusive, provided that in any combination of experience the period served in any capacity shall be at least one year-
(i) a flight crew member in commercial air transport; or
(ii) a meteorologist in an organization flight operations officer or a technical supervisor of flight operations officers or commercial air transport flight operations systems; or aircraft in commercial air transport; or
(iii) an air traffic controller;

(b) at least one year as an assistant in the dispatching of aircraft used in commercial air transport; or

(c) have satisfactorily completed a course of approved training as a flight operations officer;

(2) An applicant shall have served under the supervision of a flight operations officer for at least ninety days within the six months immediately preceding the application.

Licence holder privileges.

99. Subject to compliance with the requirements specified in this part, the privileges of a holder of a flight dispatcher licence shall be to serve in that capacity with responsibility for each area for which the applicant meets the requirements specified in the Civil Aviation (Operation of Aircraft) Regulations.

Skill requirements

100. The applicant shall have demonstrated the ability to-

(a) 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 neighbourhood of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;

(b) determine the optimum flight path for a given segment, and create accurate manual and or computer generated flight plans; and

(c) 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 licence.

Renewal of flight operations officerlicence.
101. A flight operations officers licence may be renewed if the holder the licence has dispatched five aircraft in the ninety days preceding the date of application for renewal of the expiry, using the privileges of the licence.

Aircraft Maintenance Engineers Licence

General eligibility requirements: LAME.
102. (1) An applicant for an aircraft maintenance engineer licence and any associated rating shall-
(a) be at least eighteen years of age;
(b) be able to read, write, speak, and understand the english language by reading and explaining appropriate maintenance publications and by writing defect and repair statements;
(c) comply with the knowledge, experience, and competency requirements prescribed for the rating sought; and
(d) pass all of the prescribed tests for the rating sought, within twelve months. preceding the application
(2) A LAME who applies for an additional rating shall meet the requirements of regulation 103 and 104.

Knowledge and skill requirements.
103. An applicant for an aircraft maintenance engineers licence shall have the level of knowledge and skill in the subjects specified in the Sixth Schedule.

Experience requirements.
104. (1) Except as specified in sub-regulation (2), an applicant for the grant or extension of a licence in Categories A, C, X and R must show confirmed minimum specific periods of aviation maintenance engineering experience totalling 3 years**.**
(2) An applicant for Category 'X' – Compass Compensation and Adjustment shall hold a Licence without Type Rating (LWTRs) in both Categories 'A' and 'C' or 'X' or 'R' and shall have a minimum of 6 months engineering experience relating to the maintenance of operating aircraft in the 2 years preceding the date of application with a minimum of six compass swings.
(3) Applicants must demonstrate the following minimum experience gained whilst maintaining operating aircraft and not in component workshops or on static or non-flying aircraft-
(a) for a Category 'A' and/or 'C' LWTR, 24 months relating to Airframe Engine maintenance, 12 months of which must be in the 2 years immediately preceding the date of application; or
(b) for any Category 'R' and/or 'X' LWTR (excluding Category 'X' – Compass Compensation and Adjustment), 24 months related to avionic systems, 12 months of which must be in the 2 years immediately preceding the date of application; and
(c) 6 months, within the 12 months referred to in (a) and (b), relevant to the specific LWTR for which application is being made.
(4) Where an applicant for Category 'X' Electrical holds a valid Licence which includes both Category 'A' and Category 'C' LWTR sub divisions, the experience in sub-regulation (2) (b) above need not be complied with and the applicant need show only the 6 months experience relevant to the LWTR required in paragraph (c).
(5) An applicant for a LWTR in one Category holding a valid licence in another Category the experience requirement of sub-regulations (2)(a) and (2)(b) may be reduced dependent on the total practical experience accumulated while holding that licence and training attended

but in any case shall demonstrate the experience requirements of sub-regulation (2)(c) and (5) any of the periods specified above may be concurrent.

(6) Subject to sub-regulation (7) extension of a licence to include a type rating -

(a) does not normally require a period of general experience additional to that required for the relevant LWTR, which must be held before a type rating is granted; and

(b) shall require satisfactory Record of Experience, gained within the three years before the application, appropriate to the Type applied submitted as part of the application for a Type Rating.

(7) An application for a type rating from a holder of a LWTR which was gained following successful completion of an approved ab-initio course shall show confirmed evidence that he or she has obtained at least 12 months relevant aircraft engineering experience with an organisation engaged in the maintenance of operational aircraft in addition to that gained during the course.

Privileges and limitations.

105. (1) Except as specified in sub regulations (4) and (5), a LAME may perform or supervise the maintenance, preventive maintenance , or modification of, or after inspection, approve for return to service, any aircraft, airframe, aircraft engine, propeller, appliance, component, or part thereof, for which the LAME is rated, provided the LAME has-

(a) satisfactorily performed the work at an earlier date;

(b) demonstrated the ability to perform the work to the satisfaction of the Authority;

(c) received training acceptable to the Authority on the tasks to be performed; or

(d) performed the work while working under the direct supervision of a LAME or an aviation repair specialist who is appropriately authorised and has-

(i) previous experience in the specific operation concerned.

(ii) received training acceptable to the Authority on the task to be performed.

(2) Except as specified in sub regulation (4), a LAME with an airframe rating may, after he or she has performed the one hundred hour or other scheduled inspection required by the Civil Aviation (Operation of Aircraft) Regulations on an airframe, or any related part or appliance, approve and return it to service.

(3) Except as specified in sub regulations (4) and (5), a LAME with an engine rating may perform the one hundred hour inspection or other scheduled inspection required by the Civil Aviation (Operation of Aircraft) Regulations on an engine or propeller or any related part or appliance, and approve and return it to service.

(4) Except as specified in sub regulation (5) a LAME with electrical, instruments, autopilots, compasses, radio systems rating shall inspect, repair and maintain functional tests and return to service the relevant systems and components.

(5) A LAME with an airframe or engine or electrical, instruments, autopilots, compasses, radio systems rating shall not supervise the maintenance, preventive maintenance, or modification of, or approve and return to service, any aircraft, airframe, aircraft engine, propeller, appliance, component, or part thereof, for which the LAME is rated unless the LAME has satisfactorily performed the work concerned at an earlier date.

Recent experience requirements.

106. A LAME shall not exercise the privileges of an aircraft maintenance engineer licence or rating unless, within the preceding twenty four months -

(a) the Authority has found that the LAME is able to do the work specified in regulation 104; or

(b) for total of at least six months within the preceding twenty four months, the

LAME has functioned in at least two of the following capacities-

(i) served as an LAME under the LAMEs licence and rating;

(ii) technically supervised other LAMEs;

(iii) provided aviation maintenance instruction or served as the direct supervisor of persons providing aviation maintenance instruction for an LAME course or program acceptable to the Authority; or

(iv) supervised the maintenance, preventive maintenance, or alteration of any aircraft, airframe, aircraft engine, propeller, appliance, component, or part thereof.

Renewal of aircraft maintenance engineers licence

107. An aircraft maintenance engineers licence may be renewed by the authority upon the authority being satisfied that the applicant meets the necessary requirements.

Aviation Repair Specialist Authorisation

Aviation repair specialists authorisations: eligibility.

108. An applicant for an aviation repair specialist authorisation shall-

(a) be at least eighteen years of age;

(b) be able to read, write, speak, and understand the english language by reading and explaining appropriate maintenance publications and by writing defect and repair statements;

(c) be specially qualified to perform maintenance on aircraft or components thereof, appropriate to the job for which the aviation repair specialist was employed;

(d) be employed for a specific job requiring those special qualifications by an approved maintenance organisation certificated under the Civil Aviation (Approved Maintenance Organisation) Regulations, that is required by its operating certificate or approved operating specifications to provide maintenance, preventive maintenance, or modifications to aircraft approved with a continuous maintenance program according to its maintenance control manual;

(e) be recommended for certification by the aviation repair specialist's employer, to the satisfaction of the Authority, as able to satisfactorily maintain aircraft or components, appropriate to the job for which he or she is employed; and

(f) have either-

(i) at least eighteen months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools, and equipment generally used in the maintenance duties of the specific job for which the person is to be employed and certificated; or

(ii) completed formal training that is acceptable to the Authority and is specifically designed to qualify the applicant for the job on which the applicant is to be employed.

Authorisation requirements.

109. (1) An authorisation for an applicant employed by an approved maintenance organisation shall be concurrent with the rating issued to the approved maintenance organisation limited to the specific job for which the applicant is employed to perform, supervise, or approve for return to service.

(2) An applicant for an aviation repair specialist authorisation in respect of airframe or engine or avionics shall not be issued with that authorisation for purposes of circumventing the process of obtaining aircraft maintenance engineers licence.

Privileges and limitations.

110. (1) An aviation repair specialist may perform or supervise the maintenance, preventive maintenance, or alteration of aircraft, airframes, aircraft engines, propellers, appliances, components, and parts appropriate to the designated speciality area for which the aviation repair specialist is authorised and rated, but only in connection with employment by an AMO approved under the Civil Aviation (Approved Maintenance Organisation) Regulations.

(2) An aviation repair specialist may not perform or supervise duties unless the aviation repair specialist understands the current instructions of the employing approved maintenance organisation and the instructions for continued airworthiness, which relate to the specific operating provisions concerned.

Display of authorisation

111. A person who holds an aviation repair specialist or authorisation shall keep it within the immediate area where the person normally exercises the privileges of the authorisation and shall present it for inspection upon the request of the Authority, or any other person authorised by the laws of Uganda to receive such information.

Surrender of authorisation

112. A holder of an aviation repair specialist authorisation shall surrender that authorisation to the Authority when it is suspended, revoked or at the time the holder of the authorisation leaves the employment of the approved maintenance organisation.

Parachute Riggers Authorisation

General eligibility requirements: parachute riggers authorisation.

113. To be eligible for a parachute rigger authorisation, a person shall-

(a) be at least eighteen years of age;

(b) be able to read, speak, write, and understand the English language; and

(c) comply with the provisions of these Regulations that apply to the authorisation and type rating that person seeks.

Authorisation required.

114. (1) No person may pack, maintain, or alter any personnel-carrying parachute intended for emergency use in connection with an aircraft registered in Uganda unless that person holds an appropriate current licence and type rating issued under these Regulations and complies with regulations 115, 116, and 117.

(2) Except as allowed by sub regulation (3), no person may pack, maintain, or alter any main parachute of a dual parachute pack to be used for intentional jumping from a civil aircraft registered in Uganda unless he or she has an appropriate valid licence issued under these Regulations.

(3) A person who does not hold a parachute rigger authorisation may pack the main parachute of a dual parachute pack that is to be used by him or her for intentional jumping.

(4) A person who holds a parachute rigger authorisation shall present it for inspection upon the request of the Authority.

Parachute rigger authorisation: experience, knowledge, and skill requirements.

115. Except as provided in regulation 116, an applicant for a parachute rigger authorisation shall-

(a) present evidence satisfactory to the Authority that the applicant has packed at least twenty parachutes of each type for which the applicant seeks a rating, in accordance with the

manufacturer's instructions and under the supervision of a licensed parachute rigger holding a rating for that type or a person holding an appropriate military rating;

(b) pass a knowledge test, with respect to a parachute applicable to at least one type parachute appropriate to the rating sought, on-

(i) construction, packing, and maintenance;

(ii) the parachute manufacturer's instructions; and

(iii) the Regulations pertaining to parachute rigging and

(c) pass an oral and practical test showing the ability to pack and maintain at least one type of parachute appropriate to the rating sought.

Current or former military parachute riggers: special authorization requirement.

116. Notwithstanding regulation 115, the Authority may grant to an applicant for a parachute rigger authorisation that authorisation if he or she passes a knowledge test on the regulations pertaining to parachute to rigging and presents satisfactory documentary evidence that the applicant-

(a) is a member or civilian employee of the military, is a civilian employee of a regular armed force of a foreign country, or has, within the twelve months preceding the date of application for an authorisation applies, been honourably discharged or released from any status covered by this paragraph;

(b) is serving, or has served within the twelve months preceding the date of the application, for a, authorisation as a parachute rigger for such an armed force; and

(c) has the experience required by regulation 115.

Privileges.

117. (1) A holder of parachute rigger authorisation may-

(a) pack, maintain, or alter any type of parachute for which the holder of the licence is rated; and

(b) supervise other persons in packing, maintaining, or altering any type of parachute for which the holder of the licence is rated.

(2) An authorised parachute rigger need not comply with regulations 115, 116 and 117 in packing, maintaining, or altering if authorised the main parachute of a dual parachute pack to be used for intentional jumping.

Facilities and equipment requirements.

118. A holder of a parachute rigger authorisation shall not exercise the privileges of his or her authorisation unless that authorisation holder has at least the following facilities and equipment available-

(a) a smooth top table at least three feet wide by forty feet long;

(b) suitable housing that is adequately heated, lighted, and ventilated for drying and airing parachutes;

(c) enough packing tools and other equipment to pack and maintain the types of parachutes serviced; and

(d) adequate housing facilities to perform applicable duties and to protect tools and equipment.

Performance standards

119. A holder of a parachute rigger authorisation shall not-

(a) pack, maintain, or alter any parachute unless he or she is rated for that type;

(b) pack a parachute that is not safe for emergency use;

(c) pack a parachute that has not been thoroughly dried and aired;

(d) alter a parachute in a manner that is not specifically authorised by the Authority or the manufacturer;

(e) pack, maintain, or alter a parachute in any manner that deviates from procedures approved by the Authority or the manufacturer of the parachute; or

(f) exercise the privileges of the licence and type rating unless he or she understands the current manufacturer's instructions for the operation involved and has performed duties under the licence for at least ninety days within the preceding twelve months; or shown to the Authority the ability to perform those duties.

Records.

120. (1) A holder of a parachute rigger authorisation shall keep a record of the packing, maintenance, and alteration of parachutes performed or supervision of those activities.

(2) An authorised parachute rigger who packs a parachute shall enter on the parachute packing record attached to the parachute, the date and place of the packing, a notation of any defects found during any inspection, and shall sign that record with name and licence number.

(3) The record required by sub regulation (1) shall contain, with respect to each parachute worked on, a statement of-

(i) its type and make;

(ii) its serial number;

(iii) the name and address of its owner or user;

(iv) the kind and extent of the work performed;

(v) the date when, and the place where the work was performed; and

(vi) the results of any drop tests made with it.

(4) A person who makes a record under sub regulation (1) shall keep that record for at least two years after the date the record is made.

Seal.

121. (1) An authorised parachute rigger shall have a seal with an identifying mark prescribed by the Authority, and a seal press.

(2) After packing a parachute, the parachute rigger shall seal the pack with his or her seal referred to sub regulation (1) in accordance with the manufacturer's recommendation for that type of parachute.

Cabin Crew member certificate

Required certificate, rating or qualification.

122. (1) A person shall not act as a cabin crew unless that person holds-

(d) a cabin crew member certificate; and

(e) a rating for cabin crew of the specific aircraft to which that person is assigned, or has qualified for the operating position at which that person is acting and is under the supervision of a cabin crew examiner.

(2) In this regulation, "operating position" means a cabin crew function performed within or directly related to the duties performed on board the aircraft and included in the minimum cabin crew number for a certified type aircraft.

General eligibility requirements.

123. An applicant for cabin crew certificate under these Regulations shall-

(a) be at least eighteen years of age;

(b) be able to read, speak, and understand the english language sufficiently to adequately carry out the responsibilities of a cabin crew member; and

(c) have completed a course of training approved by the Authority;

(d) have passed a knowledge test.
(e) be in possession of class I medical certificate.

Knowledge requirement: cabin crew

124. An applicant for a cabin crew certificate shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a cabin crew certificate, in the following subjects-

(a) Fire and smoke training-
  (i) emphasis on the responsibility of cabin crew to deal promptly with emergencies involving fire and smoke and, in particular, emphasis on the importance of identifying the actual source of the fire;
  (ii) The importance of informing the flight crew immediately, as well as the specific actions necessary for co-ordination and assistance, when fire or smoke is discovered;
  (iii) The necessity for frequent checking of potential fire-risk areas including toilets, and the associated smoke detectors;
  (iv) The classification of fires and the appropriate type of extinguishing agents and procedures for particular fire situations, the techniques of application of extinguishing agents, the consequences of misapplication, and of use in a confined space; and
  (v) The general procedures of ground based emergency services at aerodromes.

(b) water survival training to include the actual donning and use of personal flotation equipment in water by each cabin crew member, before first operating on an aeroplane fitted with life-rafts or other similar equipment, training must be given on the use of this equipment, as well as actual practice in water.

(c) survival training appropriate to the areas of operation, (e.g. polar, desert, jungle or sea).

(d) medical aspects and first aid to include-
  (i) Instruction on first aid and the use of first-aid kits;
  (ii) First aid associated with survival training and appropriate hygiene; and
  (iii) The physiological effects of flying and with particular emphasis on hypoxia.

(e) passenger handling to include the following-
  (i) advice on the recognition and management of passengers who are, or become, intoxicated with alcohol or are under the influence of drugs or are aggressive;
  (ii) methods used to motivate passengers and the crowd control necessary to expedite an aeroplane evacuation;
  (iii) regulations covering the safe stowage of cabin baggage (including cabin service items) and the risk of it becoming a hazard to occupants of the cabin or otherwise obstructing or damaging safety equipment or aeroplane exits;
  (iv) the importance of correct seat allocation with reference to aeroplane mass and balance; particular emphasis shall also be given on the seating of disabled passengers, and the necessity of seating able-bodied passengers adjacent to unsupervised exits;
  (v) duties to be undertaken in the event of encountering turbulence including securing the cabin;
  (vi) precautions to be taken when live animals are carried in the cabin;
  (vii) dangerous goods training as prescribed in Civil Aviation (Operation of Aircraft) Regulations and Civil Aviation (Air Operator Certification and Administration) Regulations; and
  (viii) security procedures, including the provisions of Civil Aviation (Operation of Aircraft) Regulations and Civil Aviation (Air Operator Certification and Administration) Regulations;

(f) communication - emphasis shall be placed on the importance of effective communication between cabin crew and flight crew including technique, common language and terminology.

(g) discipline and responsibilities. An operator shall ensure that each cabin crew member receives training on-

(i) the importance of cabin crew performing their duties in accordance with the Operations Manual;

(ii) continuing competence and fitness to operate as a cabin crew member with special regard to flight and duty time limitations and rest requirements;

(iii) an awareness of the aviation regulations relating to cabin crew and the role of the Authority;

(iv) general knowledge of relevant aviation terminology, theory of flight, passenger distribution, meteorology and areas of operation;

(v) pre-flight briefing of the cabin crew and the provision of necessary safety information with regard to their specific duties;

(vi) The importance of ensuring that relevant documents and manuals are kept up-todate with amendments provided by the operator;

(vii) the importance of identifying when cabin crew members have the authority and responsibility to initiate an evacuation and other emergency procedures; and

(viii) the importance of safety duties and responsibilities and the need to respond promptly and effectively to emergency situations.

(h) crew resource management. An operator shall ensure that appropriate Civil Aviation (Operation of Aircraft) Regulations are included in the training of cabin crew members.

Privileges of certificate holder

125. The privileges of a holder of a cabin crew member certificate shall be to act as a cabin crew member in aircraft of types specified in the certificate when such aircraft are engaged in commercial transport operations.

Skill requirements: cabin crew

126. An applicant for a cabin crew member shall pass a knowledge and practical test approved or given by the Authority.

Renewal of cabin crew member certificate.

127. A cabin crew member certificate remains current only if the holder has successfully completed the annual proficiency assessment and a class 1 medical examination.

PART XIII – AVIATION MEDICAL STANDARDS AND CERTIFICATION

Medical certificates issued by the Authority.

128. The Authority may issue the following classes of medical certificates that are intended to indicate the minimum medical qualification-

(a) Class 1, for exercise of commercial privileges as a flight crew member;

(b) Class 2, for the exercise of private pilot or cabin crew members or air traffic controller privileges.

Aviation medical examination designation and qualifications.

129. (1) The Authority may designate a medical doctor who meets the qualifications specified in sub-regulation (2) as an aviation medical examiner to conduct medical examinations for fitness of applicants for the issue or renewal of licences or certificates specified in these Regulations.

(2) For a medical doctor to be designated as an aviation medical examiner, he or she shall-

(a) be qualified and licensed in the practice of medicine;

(b) have obtained aviation medicine training at an institution recognised by the Authority ; and

(c) be knowledgeable of the conditions in which the holders of licences and ratings carry out their duties.

Delegation of authority.

130. (1) The Authority may delegate to an aviation medical examiner the authority to-

(a) accept applications for physical examinations necessary for issuance of medical certificate under these Regulations;

(b) examine applicants for and holders of medical certificates to determine whether they meet applicable medical standards; and

(c) recommend issuance, renewal, denial or withdrawal of medical certificates, or special authorizations to an applicant based on meeting or failing to meet applicable medical standards.

(2) The Authority may appoint an aviation medical examiner to review medical records submitted to the Authority by aviation medical examiners 's, re-evaluate applicants and holders of medical certificates for fitness and on occasion to visit and review the applicants' files held by an aviation medical examiner.

(3) The Authority shall retain the right to reconsider any action of an aviation medical examiner.

Medical Certification Procedures

Medical records.

131. (1) An applicant for a medical certificate shall, in a form and manner prescribed by the Authority, sign and furnish the medical examiner with a personally certified statement of medical facts concerning personal, familial, and hereditary history that is as complete and accurate as the applicant's knowledge permits.

(2) Whenever the aviation medical examiner finds that additional medical information or history is needed, the aviation medical examiner shall request that the applicant furnish that information, or authorize any clinic, hospital, physician, or other person to release to the aviation medical examiner all available information or records concerning that history.

(3) Where an applicant for a medical certificate fails, within a reasonable period to provide the requested medical information or history, or fails to authorise the release so requested, the Authority shall deny the application as well as suspend, modify or revoke all medical certificates held by the applicant.

(4) Where a medical certificate is suspended or modified under sub regulation (3), that suspension or modification shall remain in effect until-

(a) the holder provides the requested information, history, or authorisation to the Authority; and

(b) the Authority determines that the holder meets the medical standards.

Aviation medical examiner submission of signed medical evaluation report.

132. (1) An aviation medical examiner who is authorised to conduct a medical examination under these Regulations shall sign the required report and medical assessment and submit directly to the Authority the full details of that evaluation in the form and manner prescribed by the Authority.

(2) An aviation medical examiner shall report to the Authority any individual case where in the his or her judgment, an applicant has failed to meet any requirement under these Regulations.

Issue of medical assessment.

133. (1) An aviation medical examiner shall issue the applicable medical assessment to any person who meets the medical standards prescribed in this part, based on medical examination and evaluation of the applicant's history and condition.

(2) A person to be issued with a medical assessment shall undergo a medical examination based on the physical and mental standards contained in this part.

Denial of medical certificate.

134. (1) A person shall not hold or be issued with a medical certificate if that person suffers from any disease or disability that could render that person likely to become suddenly unable to either perform assigned duties safely or operate an aircraft safely.

(2) The denial of the medical certificate is effective-

(a) upon the date of the medical evaluation that determined the applicant was not in conformity with the physical and mental standards specified in these Regulations; and

(b) until such time that the applicant is again determined by the Authority to be fit to exercise the privileges through-

(ii) an accredited medical conclusion;

(iii) a special flight test; or

(iv) with respect to a transient condition, until a subsequent satisfactory report is acceptable to the Authority.

(3) An applicant who is denied a medical assessment by an aviation medical examiner may, within thirty days after the date of the denial, apply in writing to the Authority for reconsideration of that denial.

(4) Where the applicant does not apply for reconsideration during the thirty day period after the date of the denial, the Authority shall consider that the applicant has withdrawn the application for a medical certificate.

Issue of special medical certificate.

135. (1) The Authority may issue a special medical certificate to an applicant who does not meet the applicable standards for the medical certificate sought if the applicant shows to the satisfaction of the Authority that-

(a) an accredited medical conclusion indicates that in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise, is such that the exercise of the privileges of the licence applied for is not likely to jeopardize flight safety; and

(b) relevant ability, skill, and experience of the applicant and operational conditions have been given due consideration.

(2) The Authority shall issue a medical limitation on a licence when the Authority or an aviation medical examiner determines the safe performance of the licence holder's duties is dependent on compliance with such a limitation.

Duration of medical certificate.

136. (1) A Class 1 medical certificate issued to an applicant who is-

(a) under the age of forty years shall be valid for twelve months from the date issue of examination shown on the certificate; and

(b) forty years of age or more shall be valid for six months from the date of issuance of the certificate.

(2) A Class 2 medical certificate issued to an applicant under-

(a) the age of forty shall be valid for twenty four months from the date of issuance of the certificate

(b) forty years of age or more shall be valid for twelve months from the date of issuance of the certificate.

(3) A Class 3 medical assessment issued to an applicant who is -

(a) under the age of forty years shall be valid for twenty four months from the date of issuance of the medical assessment; and

(b) forty years of age or more shall be valid for twelve months from the date of issuance of the medical assessment.

Renewal of medical certificate.

137. (1) The requirements for the renewal of a medical certificate are the same as those for the initial certificate except where otherwise specifically stated.

(2) When required to obtain or renew correcting lenses, the applicant shall advise the aviation medical examiner conducting the medical examination of the new prescription, including revised reading distances-

(a) for Class 1 medical certificates, for the visual cockpit tasks relevant to the types of aircraft in which the applicant is likely to function; and

(b) for Class 2 medical certificates, for the duties the applicant is to perform.

Medical requirements.

138. No person may hold nor be issued a medical certificate who-

(a) has any organic, functional or structural disease, defect or limitation (active, latent, acute or chronic);

(b) has any wound, injury or sequelae from operation; or

(c) uses any prescribed or non-prescribed medication or other treatment that, based on the case history and appropriate, qualified medical judgement relating to the condition(s) involved, the Authority finds -

(i) makes the person unable to safely perform the duties or exercise the privileges of the licence or rating applied for or held; or

(ii) may reasonably be expected, for the maximum duration of the airman medical certificate applied for or held, to make the applicant unable to perform those duties or exercise those privileges.

Mental standards

139. No person may hold nor be issued with a medical certificate if that person who has an established medical history or clinical diagnosis of -

(a) a personality disorder that is severe enough to have repeatedly manifested itself by overt acts;

(b) a psychosis, provided that a history of acute toxic psychosis need not be regarded as disqualifying, provided that the person has suffered no permanent impairment;

(c) a bipolar manic-depressive disorder;

(d) substance dependence, except where there is established clinical evidence, satisfactory to the Authority, of recovery, including sustained total abstinence from the substance for not less than the preceding two years; or

(e) other personality disorders, neurosis of significant degree, or other mental condition which, according to accredited medical conclusion, makes it likely that within two years of examination the applicant will be unable to safely exercise the privileges of the licence or rating applied for or held.

Issuance of medical certificate to persons under oral drugs

140. A Medical Certificate may be issued to an applicant where oral drugs are administered under conditions permitting appropriate medical supervision and control and which, according to an accredited medical conclusion, are compatible with the safe exercise of the applicant's licence and rating privileges.

Visual requirements: general.

141. A person holding or being issued a medical certificate shall have-

(a) normally functioning eyes and adnexae;

(b) normal fields of vision, normal binocular function; and

(c) no active pathological condition, acute or chronic, nor sequelae of surgery or trauma of the eyes or their adnexae, which is likely to jeopardise flight safety.

Vision testing requirements.

142. (1) The corrected and uncorrected visual acuity must be measured and recorded at each examination.

(2) An applicant who uses contact lenses need not have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

(3) The test for visual acuity must comply with the following-

(a) for a visual acuity test in a lighted room, use a test illumination level of approximately 50 lx, normally corresponding to a brightness of 30 cd per square metre;

(b) visual acuity shall be measured by means of a series of optotypes of Landolt, or similar optotypes, placed at a distance of six metres from the candidate, or five metres as appropriate.

(4) The Authority, at its discretion, may require a separate ophthalmic report before issuance of a medical certificate.

(5) Those conditions which indicate a need to obtain an ophthalmic report include-

(a) a substantial decrease in the uncorrected visual acuity;

(b) any decrease in best corrected visual acuity; and

(c) the occurrence of eye disease, eye injury or eye surgery.

Acceptability of correcting lenses.

143. (1) A person may meet the visual acuity fitness for near or distant vision by using correcting lenses.

(2) Correcting spectacles may be used, provided that-

(a) not more than one pair of correcting spectacles is used to demonstrate compliance with visual acuity requirements;

(b) single-vision near correction lenses (full lenses of one power only, appropriate to reading) may not be used for both near and distance vision; and

(c) in order to read the instruments and a chart or manual held in the hand, and to make use of distant vision through the windscreen without removing the lenses, the spectacles may be, as appropriate-

(i) lookover;

(ii) bifocal; or

(iii) trifocal.

(3) An applicant may use contact lenses to meet the distance vision acuity requirement provided that the lenses are-

(a) monofocal;

(b) non-tinted; and

(c) well tolerated.

(4) A person issued with a medical certificate that requires correcting lenses or spectacles shall have a limitation placed on that document requiring him or her, while exercising the privileges of the licence or certificate, to, as appropriate-

(a) wear the distant-correction lenses at all times;

(b) have readily available and use the near-correction spectacles as necessary to accomplish near vision functions; and

(c) have a second pair of suitable spectacles, distant or near-correction, as appropriate, available for immediate use.

Distance vision requirements.

144. (1) A person issued with a medical assessment shall have a distant visual acuity, with or without correcting lenses, of at least 6/9 (20/30) with binocular visual activity of 6/6 (20/20) or better for class 1 or 2 medical certificates;

(2) Uncorrected distance visual acuity is not a limiting factor.

(3) An applicant with a large refractive error shall use contact lenses or high-index spectacle lenses.

(4) Where spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

(5) An applicant whose uncorrected distant visual acuity in either eye is worse than 6/60 shall provide a full ophthalmic report prior to initial medical evaluation and every five years thereafter.

(6) An applicant who has undergone surgery affecting the refractive status of the eye shall be free of those sequelae likely to interfere with the safe exercise of their airman licence privileges.

Near vision requirements.

145. (1) Each person issued a medical certificate shall meet the following minimum visual standards for near visual acuity to read, with or without corrective lenses-

(a) N14 chart or its equivalent at a distance of 100 cm, with "N14" referring to "Times Roman" font; and

(b) N5 chart at a distance of 30 to 50 cm as selected by the applicant, with "N5" referring to "Times Roman" font.

(2) Where these near-vision requirements are met only by the use of near-correction and the applicant also needs distant-correction, both corrections must be added to a pair of spectacles to be used to meet the requirements.

(3) When required to obtain or renew correcting lenses, the applicant shall advise the aviation medical examiner of reading distances for the duties the applicant is to perform.

(4) When required to obtain or renew correcting lenses, the applicant shall advise the aviation medical examiner of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

Colour perception requirements.

146. (1) An applicant shall demonstrate the ability to perceive readily those colours the perception of which is necessary for the safe performance of duties.

(2) The applicant shall be able to correctly identify a series of pseudoisochromatic plates (tables) in daylight or in artificial light of the same colour temperature such as that provided by Illuminant "C" or "D65" as specified by the International Commission on Illumination (CIE).

(3) An applicant failing to obtain a satisfactory score in such a test may nevertheless be assessed as fit provided the applicant is able to readily and correctly identify aviation coloured lights displayed by means of a recognized colour perception lantern in a special test conducted by the AME.

(4) An applicant unable to satisfactorily complete the special test provided in sub regulation (3) shall only be eligible for a Class 2 medical assessment with the following restriction: "Valid for Day Operations Only;" and shall be advised that any sunglasses worn during the exercise of airman privileges must be non-polarizing and of a neutral grey tint.

Auditory requirements.

147. (1) An applicant, tested on a pure-tone audiometer at first issue of licence, not less than once every five years up to the age of forty 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.

(2) An applicant with a hearing loss greater than the above may be declared fit provided that-

(a) 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

(b) the applicant has the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of two metres from the examiner, with the back turned to the examiner.

(3) Other methods providing equivalent results to those specified in sub regulations (1) and (2) shall be used.

Cardiovascular: general.

148. (1) A person shall not hold or be issued a medical certificate if he or she has any abnormality of the heart, congenital or acquired, which is likely to jeopardise flight safety.

(2) 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.

(3) A person shall not hold nor be issued a medical certificate having an established medical history or clinical diagnosis of any of the following cardiovascular conditions-

(a) myocardial infarction;

(b) angina pectoris;

(c) coronary heart disease that has required treatment or, if untreated, that has been symptomatic or clinically significant;

(d) cardiac valve replacement;

(e) permanent cardiac pacemaker implantation; or heart replacement.

Blood pressure and circulation.

149. A person shall not hold or be issued a medical certificate if that person has-

(a) systolic and diastolic blood pressures outside normal limits; or

(b) a significant functional or structural abnormality of the circulatory tree, although the presence of varicosities does not necessarily entail unfitness.

Electro-cardiography examination.

150. (1) A person holding or being issued a medical certificate shall demonstrate an absence of myocardial infarction and other clinically significant abnormality on an electrocardiographic examination-

(a) for Class 2 and class 3 medical certificates-

(i) at the first application; and

(ii) at the first re-examination after the age or forty;

(iii) thereafter every five years; and

(iv) in all doubtful cases; and

(b) for Class 1 medical certificates -

(i) at the first application; then

(ii) every two years after reaching the thirtieth birthday; and

(iii) every year after reaching the fortieth birthday.

Neurological requirements.

151. (1) A person shall not hold or be issued a medical certificate if that person has -

(a) any neurological disorder, disturbance of consciousness, or neurological condition which is likely to jeopardise flight safety; or

(b) an established medical history or clinical diagnosis of any of the following neurological conditions -

(i) epilepsy;

(ii) a disturbance of consciousness without satisfactory medical explanation of the cause; or

(iii) a transient loss of control of nervous system functions without satisfactory medical explanation of the cause.

(2) Unless there is an accredited medical conclusion indicating that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges, the following medical conditions are also disqualifying-

(a) progressive or non-progressive disease of the nervous system; and

(b) a head injury, the anticipated effects of which could interfere with the safe exercise of the applicant's licence and rating privileges.

Respiratory capability.

152. (1) No person may hold or be issued a medical certificate if he or she has an established medical history or clinical diagnosis of -

(a) acute disability of the lungs or any active disease of the structures of the lungs, mediastinum or pleura;

(b) active pulmonary tuberculosis;

(c) any extensive mutilation of the chest wall with collapse of the thoracic cage; and

(d) sequelae of surgical procedures resulting in decreased respiratory efficiency at altitude.

(2) Unless there is an accredited medical conclusion indicating that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges, the following medical conditions are also disqualifying -

(a) quiescent or healed lesions which are known to be tuberculosis, or are presumably tuberculosis in origin; and

(b) pulmonary emphysema causing symptoms.

Radiology (X-ray) evaluation.

153. A radiography evaluation shall be accomplished during the initial chest examination and be conducted as necessary in subsequent medical examinations where there are historical chest cavity issues, symptoms or doubtful clinical cases.

Vestibular apparatus

154. (1) No person may hold or be issued a medical certificate if he or she has an established medical history or clinical diagnosis of any of the following medical conditions -

(a) active acute or chronic pathological process, of the internal ear or of the middle ear;

(b) a disease or condition of the middle or internal ear, nose, oral cavity, pharynx, or larynx that-

(i) interferes with, or is aggravated by, flying or may reasonably be expected to do so; or

(ii) interferes with, or may reasonably be expected to interfere with, clear and effective speech communication;

(c) a disease or condition manifested by, or that may reasonably be expected to be manifested by, vertigo or a disturbance of equilibrium;
(d) permanent disturbances of the vestibular apparatus; or
(e) permanent obstruction to eustachian tubes.

(2) Unless there is an accredited medical conclusion indicating that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges, the following medical conditions shall also be disqualifying-

(a) acute or chronic impairment of nasal air entry on either side;
(b) serious malformation or serious, acute or chronic affection of the buccal cavity or upper respiratory tract; or
(c) unhealed (unclosed) perforation of the tympanic membranes, although a single dry perforation need not render the applicant unfit.

Bones, muscles and tendons.

155. (1) A person shall not hold or be issued a medical certificate having an established medical history or clinical diagnosis of
any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or acquired disease.

(2) The functional after-effects of lesion affecting the bones, joints, muscles or tendons and certain anatomical defects may be assessed as fit.

Endocrine system.

156. (1) A person shall not hold or be issued a medical certificate if he or she has an established medical history or clinical diagnosis of any metabolic, nutritional or endocrine disorders likely to interfere with safe conduct of flight.

(2) A Class 2 medical certificate may be issued to an applicant where oral drugs are administered under conditions permitting appropriate medical supervision and control and which, according to an accredited medical conclusion, are compatible with the safe exercise of the applicant's licence and rating privileges.

(3) For Class 1 medical certificates, cases of severe and moderate enlargement of the spleen persistently below the costal margin shall be assessed as unfit.

Gastrointestinal and digestive tract.

157. (1) A person shall not hold or be issued a medical certificate if he or she has an established medical history or clinical diagnosis of any of the following medical conditions-

(a) disabling disease with important impairment of function of the gastrointestinal tract or its adnexae;
(b) sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, likely to cause incapacity in flight, in particular obstructions due to stricture or compression; or
(c) hernias that might cause incapacitating symptoms.

(2) Unless there is an accredited medical conclusion indicating that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges, an applicant who has undergone a major surgical operation on the biliary passages of the digestive tract or its adnexae which has involved a total or partial excision or a diversion of any of these organs that may cause incapacity in flight shall be assessed as unfit.

Kidneys and urinary tract.

158. (1) A person shall not hold or be issued a medical certificate if he or she has an established medical history or clinical diagnosis of any of the following medical conditions-

(a) urine containing abnormal element considered to be of pathological

significance;

(b) cases of abnormality of the urinary passages or the genital organs; or

(c) 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.

(2) Compensated nephrectomy without hypertension or uraemia may be assessed as fit.

(3) Unless there is an accredited medical conclusion indicating that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges, the following medical conditions are also disqualifying-

(a) any signs of organic disease of the kidney; or

(b) a major surgical operation on the urinary system that has involved a total or partial excision or a diversion of any of its organs which may cause incapacity in flight.

Lymphatic glands or disease of the blood.

159. Unless there is an accredited medical conclusion indicating that the condition is not likely to affect the safe exercise of the applicant's license and rating privileges, the following medical conditions are disqualifying-

(a) significant localised or generalised enlargement of the lymphatic glands;

(b) diseases of the blood, including sickle cell anaemia, although possession of the sickle cell trait shall not be a reason for disqualification unless there is positive medical evidence to the contrary.

Gynaecological conditions.

160. An applicants who has:-

(a) 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 licence and rating privileges shall be assessed as unfit ; and

(b) undergone gynaecological operations should be considered individually.

Pregnancy.

161. (1) Except for class 3 medical assessment, pregnancy shall be a cause of temporary unfitness.

(2) In the absence of a significant abnormality, an accredited medical conclusion may indicate fitness during the middle months of pregnancy.

(3) Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-examination and has been assessed as fit.

Speech defects.

162. For a Class 2 medical certificate, cases of speech defects and stuttering shall be assessed as unfit.

Syphilis.

163. An applicant seeking first issuance of a medical certificate who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that the applicant has undergone adequate treatment.

PART X – GENERAL ADMINISTRATIVE RULES GOVERNING TESTING, LICENCES, AND CERTIFICATES

Display of licences and certificates

164. (1) A pilot of an aircraft registered in Uganda shall have in his or her physical possession or readily accessible in the aircraft a valid pilot license or special purpose authorisation issued under these Regulations.

(2) A pilot of a foreign registered aircraft shall have in his or her physical possession or readily accessible in the aircraft a valid pilot licence.

(3) A person who holds a flight instructor licence shall have that licence, or other documentation acceptable to the Authority, in that person's physical possession or readily accessible in the aircraft when exercising the privileges of that license.

(4) A person required by these Regulations to have a licence shall have that licence in their physical possession or readily accessible in the aircraft or at the work site when exercising the privileges of that licence.

(5) A person required by any part of these regulations to have a current medical certificate shall have it in their physical possession or readily accessible in the aircraft or at the work site when exercising the privileges of the licence which requires that medical certificate.

(6) A holder of Aviation Training Organisation certificate shall display that certificate in a place in the school that is normally accessible to the public and that is not obscured.

(7) A holder of a Training Centre certificate shall prominently display that certificate in a place accessible to the public in the principal business office of the training centre.

(8) An owner or operator of an aircraft shall display a certificate of airworthiness of the aircraft in the cabin of the aircraft or at the entrance to the aircraft flight deck.

(9) A holder of an Approved Maintenance Organization (AMO) certificate shall prominently display that certificate in a place accessible to the public in the principal business office of the AMO.

Drug and alcohol testing and reporting

165. (1) Any person who performs any function requiring a licence, rating, qualification, or authorisation prescribed by the regulations directly or by contract under the provisions of these regulations may be tested for drug or alcohol usage.

(2) Any person who refuses to submit to a test to indicate the percentage by weight of alcohol in the blood, when requested by a law enforcement officer or the Authority, or refuses to furnish or to authorise the release of the test results requested by the authority shall-

(a) be denied any licence, certificate, rating, qualification, or authorisation issued under these regulations for a period of up to one year from the date of that refusal; or

(b) have their licence, certificate, rating, qualification, or authorisation issued under these regulations suspended or revoked.

(3) A person who refuses to submit to a test to indicate the presence of narcotic drugs, marijuana, or depressant or stimulant drugs or substances in the body, when requested by law enforcement officer or the Authority, or refuses to furnish or to authorise the release of the test results requested by the Authority shall-

(a) be denied any licence, certificate, rating, qualification, or authorisation issued under these regulations for a period of up to one year from the date of that refusal; or

(b) have their licence, certificate, rating, qualification, or authorisation issued under these regulations suspended or revoked.

(4) A person who is convicted for the violation of any local or national statute relating to the growing, processing, manufacture, sale, disposition, possession, manufacture, sale, disposition,

possession, transportation, or importation of narcotic drugs, marijuana, or depressant or stimulant drugs or substances, shall-

(a) be denied any licence, certificate, rating, qualification, or authorisation issued under these regulations for a period of up to one year after the date of conviction; or

(b) have their licence, certificate, rating, qualification, or authorisation issued under these regulations suspended or revoked.

Inspection of licences and certificates.

166. A person who holds a pilot or crew member license, medical certificate, or authorisation required by these Regulations shall present it for inspection upon a request from the Authority or any national or local law enforcement officer.

Change of Name.

167. (1) A holder of a licence or certificate issued under these Regulations may apply to change the name on a license or certificate.

(2) The holder shall include with any such request, the current license or certificate and a court order, or other legal document verifying the name change.

(3) The Authority may change the licence, certificate or authorisation and issue a replacement of the licence.

(4) The Authority shall return to the airman the original documents specified in sub regulation (2) and retain copies thereof and return the replaced licence, certificate or authorisation with the appropriate endorsement.

Change of Address.

168. (1) A holder of a licence, certificate, or authorisation issued under these Regulations shall notify the Authority of the intended change of the residential or mailing address or both at least fourteen days before the change

(2) A person who does not notify the Authority of the change within the time frame specified in sub regulation (1) shall not exercise the privileges of the licence.

Removal of limitations on licence, rating, or authorisation

169. The Authority may remove a limitation placed on a person's licence, rating or authorisation under these Regulations provided that person demonstrates to an examiner or inspector satisfactory proficiency in the area of operation to which the limitation applies, or otherwise shows compliance with conditions to remove the limitation, as applicable.

Replacement of a lost or destroyed pilot or medical certificate or knowledge test report.

170. A person may apply to the Authority in the prescribed form for replacement of the following documents issued under these Regulations-

(a) a pilot license;

(b) a medical certificate; and

(c) a knowledge test report.

Voluntary surrender or exchange of licence.

171. A holder of a licence or certificate issued under these Regulations may voluntarily surrender it for-

(a) cancellation;

(b) issuance of a lower grade licence; or

(c)another licence with specific ratings deleted.

Prohibition on performance during medical deficiency.

172. A person who holds a current medical certificate issued under these Regulations shall not act in a capacity for which that medical certificate is required while that person-

(a) knows or has reason to know of any medical condition that would make the person unable to meet the requirements for the required medical certificate; or

(b) is taking medication or receiving other treatment for a medical condition that results in the person being unable to meet the requirements for the required medical certificate.

PART XI – EXEMPTIONS

Exemptions

173. (1) The Authority may exempt any aircraft or persons or classes of aircraft or persons from any of the provisions of these Regulations, either absolutely or subject to certain conditions as the Authority may determine.

(2) Any interested person may apply to the Authority for an exemption from these Regulations.

(3) Only the Authority may issue exemptions.

(4) No person may take or cause to be taken any action not in compliance with these Regulations unless the Authority has issued an exemption to that person.

(5) Exemptions will only be granted in accordance with this regulation.

Application for exemption

174. (1) An application for an exemption shall be submitted at least 60 days in advance of the proposed effective date, to obtain timely review.

(2) The application shall contain the following-

(a) Name of applicant;

(b) street address and mailing address, if different;

(c) telephone number;

(d) fax number if available;

(e) email address if available; and

(f) the agent for all purposes related to the application.

(g) a citation of the specific requirement from which the applicant seeks relief;

(h) an explanation of why the exemption is needed;

(i) a description of the type of operations to be conducted under the proposed exemption;

(j) the proposed duration of the exemption;

(k) an explanation of how the exemption would be in the public interest, that is, benefit the public as a whole;

(l) a detailed description of the alternative means by which the applicant will ensure a level of safety equivalent to that established by the regulation in question;

(m) discussion of any known safety concerns with the requirement, including a review of information about any relevant accidents or incidents of which the applicant is aware; and

(n) if the applicant seeks to operate under the proposed exemption outside

of Uganda's airspace, indicate whether the exemption would contravene any provision of the standards and recommended practices of the International Civil Aviation Organization (ICAO) as well as the Regulations pertaining to the airspace in which the operation will occur;

(o) if the applicant seeks emergency processing, the application must contain supporting facts and reasons that the application was not timely filed, and the reasons it is an emergency.

(3) The Authority may deny an application if the Authority finds that the applicant has not justified the failure to apply in a timely manner.

(4) If the applicant is not a citizen or legal resident of Uganda, the application must specify a Ugandan agent for service.

Decision of Authority

175. (1) The Authority shall notify the applicant in writing of its decision to grant or refuse the application for exemption.

(2) An exemption granted under these Regulations shall-

(a) specify the duration of the exemption and any conditions or limitations of the exemption;

(b) be published in the *Gazette*.

PART XII - ENFORCEMENT

Suspension, revocation etc of certificate, licence

176. (1) The Authority may, where it considers it to be in the public interest, suspend provisionally, pending further investigation, or re-examine the original certification basis of any certificate, licence, approval, permission, exemption or other document issued or granted under these Regulations.

(2) The Authority may, upon the completion of an investigation which has shown sufficient ground to its satisfaction and where it considers it to be in the public interest, revoke, suspend, or vary any certificate, licence, approval, permission, exemption or other document issued or granted under these Regulations.

(3) The Authority may, where it considers it to be in the public interest, prevent any person or aircraft from flying.

(4) The holder or any person having possession or custody of any certificate, licence, approval, permission, exemption or other document which has been revoked, suspended or varied under these regulations shall surrender it to the Authority within 14 days from the date of revocation, suspension or variation.

(5) The breach of any condition subject to which any certificate, licence, approval, permission, exemption or any other document, other than a licence issued in respect of an aerodrome, has been granted or issued under these Regulations shall render the document invalid during the continuance of the breach.

Use and retention of certificates, licenses and records.

177. (1) A person shall not-

(a) use any certificate, licence, approval, permission, exemption or other document issued or required by or under these regulations which has been forged, altered, revoked, or suspended, or to which he or she is not entitled;

(b) forge or alter any certificate, licence, approval, permission, exemption or other document issued or required by or under these regulations;

(c) lend any certificate, licence, approval, permission, exemption or other document issued or required by or under these regulations to any other person; or

(d) make any false representation for the purpose of procuring for himself or any other person the grant issue renewal or variation of any such certificate, licence, approval, permission or exemption or other document.

(2) During the period for which it is required under these Regulations to be preserved, a person shall not mutilate, alter, render illegible or destroy any logbook or other record, or any entry made therein, required by or under these Regulations to be maintained, or knowingly make, or procure or assist in the making of, any false entry in any such log-book or record, or wilfully omit to make a material entry in such log-book or record.

(3) All entries in log-books and records required to be maintained by or under these regulations shall be made in a permanent and indelible material.

(4) A person shall not make in a loadsheet any entry which is incorrect in any material particular, or omit to make a material entry into such load sheet.

(5) A person shall not issue any certificate or licence or exempt any person from such regulations for the purposes of these Regulations unless he or she is competent, qualified and authorized to do so under these regulations.

(6) A person shall not issue any certificate or licence of the kind referred to in sub regulation (5) or exempt any person from such certificate or licence unless he or she, being competent, qualified and authorized, has satisfied himself or herself that all statements in the certificate are correct.

Reports of violations

178. Any person who knows of a violation of the Civil Aviation Authority Act, any amendment thereto, or any rule, regulation, or order issued thereunder, should report it to the Authority; the Authority will determine the nature and type of any additional investigation or enforcement action that need to be taken.

Enforcement of direction

179. Any person who fails to comply with any direction given to him or her by the Authority or by any person authorized by the Authority under any provision of these Regulations shall be deemed for the purposes of these Regulations to have contravened that provision.

Offences and penalties.

180.(1) A person who contravenes any provision specified as an "A" provision in the Seventh Schedule commits an offence and is liable on conviction to a fine not exceeding one million five hundred shillings or to imprisonment for a term not exceeding one year or to both.

(2) A person who contravenes any provision specified as a "B" provision in the second schedule to these Regulations commits an offence and is liable on conviction to a fine not exceeding three million shillings or to imprisonment for a term not exceeding one year or to both.

(3) A person who contravenes any provision of the se Regulations, not being a provision referred to in sub regulation (1) or (2) commits an offence and is liable on conviction to a fine not exceeding six hundred thousand shillings or its equivalent.

(4) If any provision of these Regulations is contravened in relation to an aircraft, the operator of that aircraft and the pilot-in-command of the aircraft, shall, without prejudice to the liability of any other person under these Regulations for that contravention, be deemed for the purposes of these Regulations to have contravened

that provision unless he or she proves that the contravention occurred without his or her consent or connivance and that he or she exercised all due diligence to prevent the contravention.

(5) If it is proved that an act or omission of any person which would otherwise have been a contravention by that person of a provision of these Regulations was due to any cause not avoidable by the exercise of reasonable care by that person, that act or omission shall be deemed not to be a contravention by that person of that provision.

(6) Where a person is charged with contravening a provision of these Regulations by reason of his or her having been a member of the flight crew of an aircraft on a flight for the purpose of public transport, the flight shall be treated. without prejudice to the liability of any other person under these Regulations, as not having been for that purpose if he proves that he neither knew nor had reason to know that the flight was for that purpose.

Extra-territorial application of Regulations

181. Except where the context otherwise requires, the provisions of these Regulations-

(a) in so far as they apply (whether by express reference or otherwise) to aircraft registered in Uganda, shall apply to such aircraft wherever they may be;

(b) in so far as they apply (whether by express reference or otherwise) to other aircraft, shall apply to such aircraft when they are within Uganda;

(c) in so far as they prohibit, require or regulate (whether by express reference or otherwise) the doing of anything by any person in, or by any of the crew of, any aircraft registered in Uganda, shall apply to such persons and crew, wherever they may be; and

(d) in so far as they prohibit, require or regulate (whether by express reference or otherwise) the doing of anything in relation to any aircraft registered in Uganda by other persons shall, where such persons are citizens of Uganda, apply to them wherever they may be.

Power to inspect and copy documents and records

182. An authorised person shall have the power to inspect and copy any certificate, licence, log book, document or record which he or she has the power under these Regulations to require to be produced to him or her.

Revocation of S.I No. 66 of 2001

183. The Civil Aviation (Air Navigation) Regulations, 2001 are revoked.

FIRST SCHEDULE

Reg. 26(7)

GPS TRAINING SYLLABUS

(a) Every operator of an aircraft approved for use in domestic and international commercial air transport operations shall establish and maintain a ground and flight training program that-
  (i) is designed to ensure that each person who receives training, acquires the competence to perform the person's assigned duties; and
  (ii) is approved by the Authority

(b) The operator's ground and flight training program shall include a detailed syllabus on GNSS and RNAV systems training, comprising the following-
  (i) General training
    (aa) to qualify for use of RNAV systems on IFR operations, the operator shall have an approved flight crew training and qualifications program for use of the system
    (bb) flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in an approved synthetic training device
    (cc) the qualification check shall be conducted by an approved check pilot.

(c) Training shall be in the following areas-
  (i) pre-flight
  (ii) normal operation of the system
  (iii) procedures for manually updating system
  (iv) methods of monitoring and cross checking system;
  (v) operation in area of compass unreliability;
  (vi) malfunction procedures
  (vii) terminal procedures
  (viii) waypoint symbology, plotting procedures, record keeping duties/practices; and
  (ix) post flight.

(d) To qualify for approval to conduct GNSS approaches in IFR, the operator shall have a flight crew training program approved by the Authority.

(e) Flight crew shall have completed the appropriate ground and flight training and have completed an in-flight check, or an equivalent check in an approved synthetic training device prior to conducting GNSS approaches

(f) This qualification check shall be conducted by an approved check pilot

(g) where pilots are required to use more than one type of GNSS equipment for approach, the operator shall ensure that the training units have been determined by the Authority to be sufficiently similar.

(h) the operator shall ensure that the ground training includes "hands on" training using a desk top simulator, a computer-based simulation of the unit to be used, a static in-aircraft unit or any other ground training device approved by the authority for the purpose.

(i) Ground training – non-integrated receivers – the air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas-
  (i) Knowledge in respect of the following-
    (aa) GNSS components and aircraft equipment
    (bb) composition of the satellite constellation;
    (cc) the minimum number of satellites required for 2-D and 3-D navigation;
    (dd) the basic concept of satellite ranging
    (ee) factors affecting the accuracy of GNSS signals
    (ff) the WGS-84 reference datum and the effect of using any other datum;

(gg) human factors applicable to the use of GNSS equipment and how errors may be reduced or eliminated;
(hh) air operator standard operating procedures for using GNSS units;
(ii) procedures for reporting GNSS equipment problems and database errors

(ii) Ability to perform the following operational tasks-
(aa) select appropriate operational modes
(bb) recall categories of information contained in the airborne navigation database
(cc) predict RAIM availability;
(dd) enter and verify user defined waypoints
(ee) recall and verify airborne navigation database waypoints;
(ff) interpret/longitude, distance and bearing to waypoint, Course Deviation Indicator (CDI), Desired Track (DTK), Track Made Good (TMG), Actual Track (TK), cross track error and any other information appropriate for the equipment used;
(gg) intercept and maintain GNSS defined tracks;
(hh) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for the next waypoint and destination;
(ii) recognition of waypoint passage;
(jj) use of "DIRECT TO" function;
(kk) link the en route portion of the GNSS flight plan to the approach;
(ll) conduct Standard Instrument Departures (SIDs), Standard Terminal Arrival Routes (STARs), terminal area procedures and holds;
(mm) retrieve, verify and conduct GNSS stand-alone approaches; and
(nn) conduct GNSS missed approaches.

(iii) Ability to conduct the following operational and serviceability checks-
(aa) Airborne navigation database currency and area of operation;
(bb) receiver serviceability;
(cc) RAIM status;
(dd) CDI sensitivity
(ee) position indication, number of satellite acquired; and
(ff) satellite position information (if available)

(iv) Ability to recognize and take appropriate action for all GNSS warnings an messages including, where applicable-
(aa) "LOSS OF RAIM"
(bb) "2-D NAVIGATION";
(cc) "IN DEAD RECKONING MODE";
(dd) "DATABASE OUT OF DATE";
(ee) "GNSS FAIL";
(ff) "BARAMETRIC INPUT FAIL"
(gg) "POWER/BATTERY LOW" or "FAIL";
(hh) "PARALLEL OFFSET ON"; and
(ii) "SATELLITE FAIL".

(v) Ground training – Receivers Integrated into Flight Management Systems – the operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas-
(aa) Knowledge in respect of the following-
(i) GNSS and theory of operation, including-
✍✍GNSS components and aircraft equipment
✍✍Composition of the satellite constellation;

- ✍✍The minimum number of satellites required for 2-D and 3-D navigation
- ✍✍The basic concept of satellite ranging
- ✍✍Factors affecting the accuracy of GNSS signals; and
- ✍✍The WGS-84 reference datum and the effect of using any other datum; and

(ii) human factors applicable to the use of GNSS equipment and how errors may be reduced or eliminated by maintaining situational awareness.

(bb) Ability to perform the following operations tasks-

(i) predict RAIM availability;

(ii) link en route portion of GNSS flight plan to approach

(iii) conduct GNSS stand-alone approaches; and

(iv) conduct GNSS missed approaches

(cc) Ability to conduct the following operational and serviceability checks-

(i) RAIM status;

(ii) CDI sensitivity; and

(iii) number of satellites acquire and satellite position information (if available)

(dd) Ability to recognize and take appropriate action for all GNSS warnings and messages including, where applicable-

(i) "LOSS OF RAIM";

(ii) "2-D NAVIGATION";

(iii) "GNSS FAIL";

(iv) "BAROMETRIC INPUT FAIL"; and

(v) "SATELLITE FAIL".

(vi) Flight training

(a) Pilots shall complete flight training in the use of GNSS for approach and other associated duties for each flight crew position they are authorized to occupy.

(b) Flight training may be completed in an aircraft, in an approved synthetic training device that is equipped with the same model of GNSS receiver or on another model of GNSS receiver that has been approved by the Authority as sufficiently similar for flight training purposes that is already installed in the aircraft.

(c) Flight training shall be conducted by a designated training pilot who has previously completed the air operator ground training program approved by the Authority and has demonstrated proficiency in the use of the same model of NSS receiver, or another model of GNSS receiver that has determined by the Authority to be sufficiently similar for flight training purposes.

(d) Before a pilot is assigned as pilot-in-command of an IFR operation using GNSS for an instrument approach, the following requirements shall be complied with-

(i) within the preceding 90 days, whilst under the direct supervision of a designated training pilot, the pilot shall conduct a minimum of ten GNSS approaches of which-

- ✍✍Five approaches are conducted in actual or simulated instrument meteorological conditions (IMC) to the prescribed landing minima;
- ✍✍Three approaches including a published missed approach, at least two of which are conducted in actual or simulated IMC; and
- ✍✍Two approaches are conducted using different initial approach waypoints (IAWPs);

(ii) completion of all the requirements listed in shall be recorded in the pilot's training file together with the following information-

- ✍✍the registration and type of aircraft (or type of simulator) that was used for the GNSS approaches;
- ✍✍the manufacturer and model number of the GNSS equipment used;
- ✍✍the date, name and number of all approaches conducted (in total) under Instrument Meteorological Conditions (IMC) with missed approaches and from the Intermediate Approach Waypoint (IAWP); and
- ✍✍certification by the designated training pilot attesting to the training given to the pilot;

(iii) the pilot shall successfully demonstrate his or her proficiency in GNSS operations as part of a proficiency check or as a separate check ride conducted by an approved operator check pilot or a Civil Aviation Authority (CAA) inspector and shall be certified as proficient; and

(iv) currency requirements shall be complied with by conducting GNSS instrument approaches during the proficiency check.

SECOND SCHEDULE

Regs. 36(2), 58(2)(C)

PART A

PRIVATE PILOT LICENCE AEROPLANES– KNOWLEDGE

The knowledge instruction and test for the private pilot licence – aeroplane shall include at least the following subjects:

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

  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 organisation, Weather analysis and forecasting, Weather information for flight planning, Meteorological broadcasts for aviation
- Navigation
  1) Form of the earth, mapping, conformal orthomorphic projection (ICAO 1.500.000 chart), Direction, Aeroplane magnetism, Distances, Charts in practical navigation, Chart reference material/map reading, Principles of navigation, The navigation computer, Time, Flight planning, Practical navigation
  2) 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 omnidirectional range/distance

measuring equipment (VOR/DME), GPS, Ground radar, Secondary surveillance radar

- Operational Procedures

  Relevant parts of ICAO Annex 6, Part II, Annex 12, 13 and 16 (relevant parts), Contravention of aviation regulations

- Principles of Flight

  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 manoeuvres, Stress loads on the ground

- Communications

  Radio telephony and communications, Departure procedures, En-route procedures, Arrival and traffic pattern procedures, Communications failure, Distress and urgency procedures

PART B

PRIVATE PILOT LICENCE HELICOPTER – KNOWLEDGE

The knowledge instruction and test for the private pilot licence - helicopter shall include at least the following subjects:

- Air law
  1) Relevant parts of ICAO Convention and Annexes 2, 7, 8, 11 and 14
  2) ICAO Document 4444: General provisions, Area control service, Approach control service, Aerodrome control service, Flight information and alerting service
  3) National law;
- Aircraft General Knowledge
  1) Airframe: Rotors; Airframe structure and loads
  2) 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,
  3) Systems: electrical system, hydraulic system
  4) Instruments: Pitot/static system, Airspeed indicator, Altimeter, Vertical speed indicator, Gyroscopes, Turn indicator, Altitude indicate, Heading indicator, Magnetic compass, Engine instruments, Other instruments
  5) Airworthiness
- Flight Performance and Planning
  1) Mass and balance
  2) Performance: Take-off, Landing, In flight
- Human performance:
  1) Basic physiology: Concepts, Effects of partial pressure, Vision, Hearing, Motion sickness, Flying and health, Toxic hazards
  2) Basic psychology: The information process, the central decision channel, stress, judgement and decision making
- Meteorology

  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 organisation, Weather analysis and forecasting, Weather information for flight planning, Meteorological broadcasts for aviation
- Navigation

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

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 omnidirectional range/distance measuring equipment (VOR/DME), GPS, Ground radar, Secondary surveillance radar

- Operational Procedures

  Relevant parts of ICAO Annex 6, Part III, Annex 12, 13 and 16 (relevant parts), Contravention of aviation regulations

- Principles of Flight

  The atmosphere, Airflow around a body, Sub-sonic, Airflow about a two dimensional aerofoil, Three dimensional flow about an aerofoil, Rotor aerodynamics, Flying controls, Stability, Load factor and manoeuvres, Stress loads on the ground, Helicopter specific hazards

- Communications

  Radio telephony and communications, Departure procedures, En-route procedures, Arrival and traffic pattern procedures, Communications failure, Distress and urgency procedures

THIRD SCHEDULE

Reg. 43 (2)

PART A

COMMERCIAL PILOT LICENCE - AEROPLANE

The knowledge instruction and test for the commercial pilot licence – aeroplane shall include at least the following subjects:

- Air law

1) International Agreements and Organisations: 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;
2) Relevant parts of ICAO Annexes: 1. 2, 7, 8, 9, 11 (and doc 4444), 12, 13, 14, 15, 17;
3) Procedures for air navigation – aircraft operations Doc 8168;
4) National law

- Aircraft general knowledge
  1) Airframe and systems, electrics, powerplant, emergency equipment
     . Airframe and systems: Fuselage, Cockpit and cabin windows, Wings, Stabilising 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;
     . Electrics: Direct Current (DC), Alternating Current (AC), Semiconductors, Basic knowledge of computers; Basic radio propagation theory
     . Powerplant: Piston Engine, Turbine Engine, Engine construction, Engine systems, Auxiliary Power Unit (APU)
     . Emergency equipment: Doors and emergency exits, Smoke detection, Fire detection, Fire fighting equipment, Aircraft oxygen equipment, Emergency equipment
  2) Instrumentation
     . Flight instruments: Air data instruments, Gyroscopic instruments, Magnetic Compass, Radio Altimeter, Electronic Flight Instrument System (EFIS),
     . Automatic flight control system: Flight director, Autopilot, Yaw damper/Stability augmentation system,
     . Warning and recording equipment: Warnings general; Stall warning,
     . 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
- Flight performance and planning
  1) Mass and balance:Centre of gravity, Mass and balance limits
  2) Loading: Terminology, Aircraft mass checks, Procedures for determining aeroplane mass and balance documentation; Effects of overloading;
  3) Centre of gravity: Basis of cg calculations (load and balance documentation), Calculation of cg; Securing of loading; Area load, running load, supporting
  4) Performance of single-engine aeroplanes – Performance class B: Definitions of terms and speeds; Take-off and landing performance, Climb and cruise performance
  5) Performance of multi-engine aeroplanes: Definitions of terms and speeds; Importance of performance calculations; Elements of performance, Use of performance graphs and tabulated data
  6) Flight planning and flight monitoring:
     . Flight plan for cross country flights: Navigation plan, Fuel plan, Flight monitoring and in-flight replanning, Radio communication and navigation aids;
     . ICAO ATC flight plan: Types of flight plan, Completing the flight plan, Filling the flight plan, Closing the flight plan, Adherence to flight plan

. Practic al flight planning: Chart preparation; Navigation plans; Simple fuel plans, Radio planning practice
. Practical completion of a flight plan (flight plan, flight log, nav log, ATC plan, etc.): Extraction of data

- Human performance
  1) Human factors basic concepts: Human factors in aviation, Accident statistics, Flight safety concepts
  2) Basic aviation physiology: Basics of flight physiology, Man and environment: the sensory system; Health and Hygiene;
  3) 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
- Meteorology
  1) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;
  2) Wind: Definition and measurement; General circulation; Turbulence; Variation of wind with height; Local winds; Standing waves;
  3) Thermodynamics: Humidity;
  4) Clouds and Fog: Cloud formation and description; Fog, mist, haze
  5) Precipitation
  6) Airmasses and fronts: Types of airmasses; Fronts;
  7) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions;
  8) Climatology: Typical weather situations in mid-latitudes; Local seasonal wea ther and wind
  9) Flight hazards: Icing, Turbulence; Windshear; Thunderstorms; Hazards in mountainous areas; Visibility reducing phenomena;
  10) Meteorological information: Observation, Weather charts, Information for flight planning
- Navigation:
  1) General Navigation: Basics of navigation: The solar system; The earth, Time and time conversions; Directions, Distance
  2) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
  3) Charts: General properties of miscellaneous types of projections; The representation of meridians, parallels, great circles and rhumb lines; The use of current aeronautical charts
  4) 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
  5) 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);
  6) 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

- Operational procedures
    1) ICAO Annex 6 Parts I, II and III (as applicable)
    2) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Decompression of pressurised cabin; Windshear, microburst; Wake turbulance; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways;

- Principles of flight:
    1) Basics, laws and definitions; The two-dimensional airflow about an aerofoil; The coefficients; The three-dimensional airflow about an aeroplane; 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 CL-CD ratio, increasing drag; The boundary layer;
    2) Stability: Condition of equilibrium in stable horizontal flight; Methods of achieving balance; Longitudinal stability; Static directional stability; Static lateral stability; Dynamic lateral stability;
    3) Control: General; Pitch control; Yaw control; Roll control; Interaction in different planes (yaw/roll); Means to reduce control forces; Mass balance; Trimming;
    4) Limitations: Operating limitations; Manoeuvring envelope; Gust envelope;
    5) Propellers: Conversion of engine torque to thrust; Engine failure or engine stop; Design feature for power absorption; Moments and couples due to propeller operation;
    6) Flight mechanics: Forces acting on an aeroplane; Asymmetric thrust; Emergency descent; Windshear;
- Radiotelephony:
    1) 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;
    2) Morse code.

PART B

COMMERCIAL PILOT LICENCE - HELICOPTER

The knowledge instruction and test for the commercial pilot licence – helicopter shall include at least the following subjects:

- Air law
    1) International Agreements and Organisations: 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;
    2) Relevant parts of ICAO Annexes: 1. 2. 7, 8, 9, 11 (and doc 4444), 12, 13, 14, 15, 17;
    3) Procedures for air navigation – aircraft operations Doc 8168;
    4) National law;
- Aircraft general knowledge
    1) Airframe and systems, electrics, powerplant; emergency equipment

. Airframe and systems: Helicopter configurations; Controls and rotors; Cockpit and cabin; Landing Gear; Transmission systems; Rotorbrake; Inspection; Hydraulics; Air driven systemsDe-ice and anti-ice systems, Fuel system
. Electrics: Direct Current (DC); Alternating Current (AC); Semiconductors; Basic knowledge of computers; Basic radio propagation theory;
. Powerplant: Piston Engine; Turbine Engine; Engine construction; Engine systems, Auxiliary Power Unitr (APU);
. Emergency equipment: Doors and emergency exits; Smoke detection; Fire detection; Fire fighting equipment; Aircraft oxygen equipment; Emergency equipment;

2) Instrumentation
. Flight instruments: Air data instruments; Gyroscopic instruments; Magnetic Compass; Radio Altimeter; Electronic Flight Instrument System (EFIS); Flight Management System (FMS);
. Automatic flight control system: Flight director, Autopilot; Flight envelope protection; Yaw damper/Stability augmentation system;
. 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;
. 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;

- Flight performance and planning
1) Mass and balance: Centre of gravity, Mass and balance limits;
2) Loading: Terminology; Aircraft mass checks; Procedures for determining helicopter mass and balance documentation; Effects of overloading;
3) Centre of gravity: Basis of cg calculations (load and balance documentation); Calculation of cg; Securing of load; Area load, running load, supporting;
4) Performance: Airworthiness Requirements; Definitions of terms; Take off – Cruise – Landing Performance;
5) Flight planning and flight monitoring:
. Flight plan for cross country flights: Navigation plan; Fuel plan; Flight monitoring and in-flight replanning; Radio communication and navigation aids;
. ICAO ATC flight plan: Types of flight plan; Completing the flight plan; Filling the flight plan; Closing the flight plan; Adherence to flight plan;
. Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans; Radio planning practice;
. Practical completion of a flight plan (flight plan, flight log, nav log, ATC plan, etc.): Extraction of data;
. Offshore or remote area operation: Additional flight planning aspects for offshore or remote area operation; Computerised flight planning;

- Human performance
1) Human factors basic concepts: Human factors in aviation; Accident statistics; Flight safety concepts;
2) Basic aviation physiology: Basics of flight physiology; Man and environment: the sensory system; Health and Hygiene;
3) 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

- Meteorology

1) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;
2) Wind: Definition and measurement; General circulation; Turbulence; Variation of wind with height; Local winds; Standing waves;
3) Thermodynamics: Humidity; Change of state of aggregation; Adiabetic processes
4) Clouds and Fog: Cloud formation and description; Fog, mist, haze
5) Precipitation
6) Airmasses and fronts: Types of airmasses; Fronts;
7) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions; Tropical revolving storms
8) Climatology: Climatology zones; Tropical climatology; Typical weather situations in mid-latitudes; Local seasonal weather and wind
9) Flight hazards: Icing, Turbulence; Windshear; Thunderstorms; Tornadoes; Low and high level inversions; Stratospheric conditions; Hazards in mountainous areas;
10) Meteorological information: Observation, Weather charts, Information for flight planning

- Navigation:
  1) General Navigation: Basics of navigation: The solar system; The earth, Time and time conversions; Directions, Distance
  2) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
  3) Charts: General properties of miscellaneous types of projections; The representation of meridians, parallels, great circles and rhumb lines; The use of current aeronautical charts
  4) 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
  5) 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);
  6) 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: Pulse techniques and associated terms; Ground radar; SSR (secondary surveillance radar and transponder); Use of radar observations and application to in-flight navigation;

  Area navigation systems: Flight director and autopilot coupling;

  Self-contained and external-referenced navigation systems: Doppler; Loran-C; Decca navigation system; Satellite assisted navigation: GPS/GLONASS/DGPS

- Operational procedures
  1) ICAO Annex 6 Parts I, II and III (as applicable);
  2) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Windshear, microburst; Wake turbulance; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways; Rotor down wash; Operation influence by meteorological conditions;
  3) Emergency procedures;

- Principles of flight:
    1) 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;
    2) 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;
- Radiotelephony:
    1) 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;
    2) Morse code.

FOURTH SCHEDULE

PART A

Reg. 50

AIRLINE TRANSPORT PILOT LICENCE (A) – KNOWLEDGE

The knowledge instruction and test for the airline transport pilot licence – aeroplane shall include at least the following subjects:

- Air law
  1) International Agreements and Organisations: 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;
  2) Relevant parts of ICAO Annexes: 1. 2. 7, 8, 9, 11 (and doc 4444), 12, 13, 14, 15, 17;
  3) Procedures for air navigation – aircraft operations Doc 8168;
  4) National law;
- Aircraft general knowledge
  1) Airframe and systems, electrics, powerplant; emergency equipment
     . Airframe and systems: Fuselage; Cockpit and cabin windows; Wings, Stabilising 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;
     . Electrics: Direct Current (DC); Alternating Current (AC); Semiconductors; Basic knowledge of computers; Basic radio propagation theory;
     . Powerplant: Piston Engine; Turbine Engine; Engine construction; Engine systems, Auxiliary Power Unit (APU);
     . Emergency equipment: Doors and emergency exits; Smoke detection; Fire detection; Fire fighting equipment; Aircraft oxygen equipment; Emergency equipment;
  2) Instrumentation
     . Flight instruments: Air data instruments; Gyroscopic instruments; Magnetic Compass; Radio Altimeter; Electronic Flight Instrument System (EFIS); Flight Management System (FMS);
     . Automatic flight control system: Flight director, Autopilot; Flight envelope protection; Yaw damper/Stability augmentation system, Automatic pitch trim; Thrust computation, Auto-thrust;
     . 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;
     . 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;
- Flight performance and planning
  1) Mass and balance: Centre of gravity, Mass and balance limits;
  2) Loading: Terminology; Aircraft mass checks; Procedures for determining aeroplane mass and balance documentation; Effects of overloading;

3) Centre of gravity: Basis of cg calculations (load and balance documentation); Calculation of cg; Securing of loading; Area load; running load, supporting;
4) Performance of single-engine aeroplanes not certified under FAR/JAR 25 – Performance class B: Definitions of terms and speeds; Take-off and landing performance; Climb and cruise performance;
5) Performance of multi-engine aeroplanes 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;
6) Performance of aeroplanes 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;
7) Flight planning and flight monitoring:
   . Flight plan for cross country flights: Navigation plan; Fuel plan; Flight monitoring and in-flight replanning; Radio communication and navigation aids;
   . ICAO ATC flight plan: Types of flight plan; Completing the flight plan; Filling the flight plan; Closing the flight plan; Adherence to flight plan;
   . Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans; Radio planning practice;
   IFR (airways) flight planning: Meteorological considerations; Selection of routes to destination and alternates; General flight planning tasks;
   . Jet aeroplanes flight planning: Additional flight planning aspects for jet aeroplanes (advanced flight planning); Computerised flight planning;
   . Practical completion of a flight plan (flight plan, flight log, nav log, ATC plan, etc.): Extraction of data;

- Human performance
  1) Human factors basic concepts: Human factors in aviation; Accident statistics; Flight safety concepts;
  2) Basic aviation physiology: Basics of flight physiology; Man and environment: the sensory system; Health and Hygiene;
  3) 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
- Meteorology
  1) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; International Standard Atmosphere (ISA); Altimetry;
  2) Wind: Definition and measurement; Primary cause of wind; General circulation; Turbulence; Variation of wind with height; Local winds; Jet streams; Standing waves;
  3) Thermodynamics: Humidity; Change of state of aggregation; Adiabetic processes
  4) Clouds and Fog: Cloud formation and description; Fog, mist, haze
  5) Precipitation: Development; Types;
  6) Airmasses and fronts: Types of airmasses; Fronts;
  7) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions; Tropical revolving storms
  8) Climatolic: Climatology zones; Tropicalclimatology; Typical weather situations in mid-latitudes; Local seasonal weather and wind
  9) Flight hazards: Icing, Turbulence; Windshear; Thunderstorms; Tornadoes; Low and high level inversions; Stratospheric conditions; Hazards in mountainous areas; Visibility reducing phenomena;

10) Meteorological information: Observation, Weather charts, Information for flight planning

- Navigation:
  1) General Navigation: Basics of navigation: The solar system; The earth, Time and time conversions; Directions, Distance
  2) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
  3) Charts: General properties of miscellaneous types of projections; The representation of meridians, parallels, great circles and rhumb lines; The use of current aeronautical charts
  4) 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
  5) 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);

  Inertial navigation systems (INS): Principles and practical application; Alignment procedures; Accuracy, reliability, errors and coverage, INS operation;
  6) 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);

  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;
  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;
  Self-contained and external-referenced navigation systems: Doppler; Loran-C; Decca navigation system; Satellite assisted navigation: GPS/GLONASS/DGPS
- Operational procedures
  1) ICAO Annex 6 Parts I, II and III (as applicable); Navigation requirements for long-range flights;
  2) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Decompression of pressurised cabin; Windshear, microburst; Wake turbulance; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways;
- Principles of flight:
  1) Basics, laws and definitions; The two-dimensional airflow about an aerofoil; The coefficients; The three-dimensional airflow about an aeroplane; 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 CL-CD ratio, increasing drag; The boundary layer; Special circumstances;
  2) Transonic aerodynamics: The Mach number definition, Normal shockwaves; Means to avoid the effects of exceeding Mcrit (Mach critical)
  3) Supersonic aerodynamics: Oblique shockwaves

Stability: Condition of equilibrium in stable horizontal flight; Methods of achieving balance; Longitudinal stability; Static directional stability; Static lateral stability; Dynamic lateral stability;

4) Control: General; Pitch control; Yaw control; Roll control; Interaction in different planes (yaw/roll); Means to reduce control forces; Mass balance; Trimming;
5) Limitations: Operating limitations; Manoeuvring envelope; Gust envelope;
6) Propellers: Conversion of engine torque to thrust; Engine failure or engine stop; Design feature for power absorption; Moments and couples due to propeller operation;
7) Flight mechanics: Forces acting on an aeroplane; Asymmetric thrust; Emergency descent; Windshear;

- Radiotelephony:
  1) 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;
  2) IFR Communications: Definitions; General operating procedures; Action required to betaken in case of communication failure; Distress and urgency procedures; General principles of VHF propagation and allocation of frequencies;
  3) Morse code.

PART B

AIRLINE TRANSPORT PILOT LICENCE HELICOPTERS – KNOWLEDGE

The knowledge instruction and test for the airline transport pilot licence – helicopter shall include at least the following subjects:

- Air law
  1) International Agreements and Organisations: 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;
  2) Relevant parts of ICAO Annexes: 1. 2. 7, 8, 9, 11 (and doc 4444), 12, 13, 14, 15, 17;
  3) Procedures for air navigation – aircraft operations Doc 8168;
  4) National law;
- Aircraft general knowledge

  Airframe and systems, electrics, powerplant; emergency equipment

  . Airframe and systems: Helicopter configurations; Controls and rotors; Cockpit and cabin; Landing Gear; Transmission systems; Rotorbrake; Inspection; Hydraulics; Air driven systems, De-ice and anti-ice systems, Fuel system
  . Electrics: Direct Current (DC); Alternating Current (AC); Semiconductors; Basic knowledge of computers Basic radio propagation theory;
  . Powerplant: Piston Engine; Turbine Engine; Engine construction; Engine systems, Auxiliary Power Unit (APU);
  . Emergency equipment: Doors and emergency exits; Smoke detection; Fire detection; Fire fighting equipment; Aircraft oxygen equipment; Emergency equipment;

2) Instrumentation

. Flight instruments: Air data instruments; Gyroscopic instruments; Magnetic Compass; Radio Altimeter; Electronic Flight Instrument System (EFIS); Flight Management System (FMS);

. Automatic flight control system: Flight director, Autopilot; Flight envelope protection; Yaw damper/Stability augmentation system;

. 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;

. 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;

- Flight performance and planning

1) Mass and balance: Centre of gravity, Mass and balance limits;

2) Loading: Terminology; Aircraft mass checks; Procedures for determining helicopter mass and balance documentation; Effects of overloading;

3) Centre of gravity: Basis of cg calculations (load and balance documentation); Calculation of cg; Securing of load; Area load; running load, supporting;

4) Performance: Airworthiness Requirements; Definitions of terms; Take off – Cruise – Landing Performance;

5) Flight planning and flight monitoring:

. Flight plan for cross country flights: Navigation plan; Fuel plan; Flight monitoring and in-flight replanning; Radio communication and navigation aids;

. ICAO ATC flight plan: Types of flight plan; Completing the flight plan; Filling the flight plan; Closing the flight plan; Adherence to flight plan;

. Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans; Radio planning practice;

. 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.

. Practical completion of a flight plan (flight plan, flight log, nav log, ATC plan, etc.): Extraction of data;

. Offshore or remote area operation: Additional flight planning aspects for offshore or remote area operation; Computerised flight planning;

- Human performance

1) Human factors basic concepts: Human factors in aviation; Accident statistics; Flight safety concepts;

2) Basic aviation physiology: Basics of flight physiology; Man and environment: the sensory system; Health and Hygiene;

3) 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

- Meteorology

1) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;

2) Wind: Definition and measurement; General circulation; Turbulence; Variation of wind with height; Local winds; Jet streams; Standing waves;
3) Thermodynamics: Humidity; Change of state of aggregation; Adiabetic processes
4) Clouds and Fog: Cloud formation and description; Fog, mist, haze
5) Precipitation
6) Airmasses and fronts: Types of airmasses; Fronts;
7) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions; Tropical revolving storms
8) Climatology: Climatology zones; Tropical climatology; Typical weather situations in mid-latitudes; Local seasonal weather and wind
9) Flight hazards: Icing, Turbulence; Windshear; Thunderstorms; Tornadoes; Low and high level inversions; Stratospheric conditions; Hazards in mountainous areas;
10) Meteorological information: Observation, Weather charts, Information for flight planning

- Navigation:

1) General Navigation: Basics of navigation: The solar system; The earth, Time and time conversions; Directions, Distance
2) Magnetism and compasses: General Principles, Aircraft magnetism, Knowledge of the principles, standby and landing or main compasses and remote reading compasses
3) Charts: General properties of miscellaneous types of projections; The representation of meridians, parallels, great circles and rhumb lines; The use of current aeronautical charts
4) 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
5) 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);
6) 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);

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;

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.

Self-contained and external-referenced navigation systems: Doppler; Loran-C; Decca navigation system; Satellite assisted navigation: GPS/GLONASS/DGPS

- Operational procedures

1) ICAO Annex 6 Parts I, II and III (as applicable);

2) Special operational procedures and hazards: Minimum equipment list; Ground icing; Bird strike risk and avoidance; Noise abatement; Fire/smoke; Windshear, microburst; Wake turbulance; Security; Emergency and precautionary landings; Fuel jettisoning; Transport of dangerous goods; Contaminated runways;

- Principles of flight:
  1) 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;
  2) 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;
- Radiotelephony:
  1) 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;
  2) 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.

3) Morse code.

FIFTH SCHEDULE

INSTRUMENT RATING AEROPLANES AND HELICOPTERS - KNOWLEDGE

The knowledge instruction and test for the instrument rating – aeroplane and helicopter shall include at least the following subjects:

- Air law
  1) International Agreements and Organisations: 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
  2) Relevant parts of ICAO Annexes: 1. 2. 7, 8, 9, 11 (and doc 4444), 12, 13, 14, 15;
  3) Procedures for air navigation – aircraft operations Doc 8168;
  4) National law
- Aircraft general knowledge

  Airframe and systems, electrics, powerplant, emergency equipment
  - Airframe and systems: Air driven systems (piston engines only), Air driven systems (turbopropeller and jet aircraft), Non-pneumatic operated de-ice and anti-ice systems, Fuel systems
  - Electrics: Direct Current (DC), Basic radio propagation theory
  - Flight instruments: Air data instruments, Gyroscopic instruments, Magnetic Compass, Radio Altimeter, Electronic Flight Instrument System (EFIS), Flight Management System (FMS)
  - Automatic flight control system: Flight director; Autopilot; Yaw damper/Stability augmentation system;
  - Warning and recording equipment: Warnings general; Stall warning;

- Flight performance and planning

  Flight planning and flight monitoring:
  - Flight plan for cross country flights: Navigation plan, Fuel plan, Flight monitoring and in-flight replanning, Radio communication and navigation aids;
  - ICAO ATC flight plan: Types of flight plan, Completing the flight plan, Filling the flight plan, Closing the flight plan, Adherence to flight plan
  - Practical flight planning: Chart preparation; Navigation plans; Simple fuel plans, Radio planning practice
  - IFR (airways) flight planning: Meteorological considerations, Selection of routes to destination and alternates, General flight planning tasks,
  - Practical completion of a flight plan (flight plan, flight log, nav log, ATC plan, etc.): Extraction of data
- Human performance
  1) Human factors basic concepts: Human factors in aviation, Accident statistics, Flight safety concepts
  2) Basic aviation physiology: Basics of flight physiology, Man and environment: the sensory system; Health and Hygiene;

3) 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

- Meteorology
  1) The atmosphere: Composition, extent, vertical division; Temperature; Atmospheric pressure; Atmospheric density; Altimetry;
  2) Wind: Definition and measurement; General circulation; Turbulence; Variation of wind with height; Local winds; Standing waves;
  3) Thermodynamics: Humidity; Change of state of aggregation; Adiabetic processes
  4) Clouds and Fog: Cloud formation and description; Fog, mist, haze
  5) Precipitation: Development and types of precipitation;
  6) Airmasses and fronts: Types of airmasses; Fronts;
  7) Pressure systems: Location of the principal pressure areas, Anticyclone, Non frontal depressions;
  8) Climatology: Typical weather situations in mid-latitudes; Local seasonal weather and wind
  9) Flight hazards: Icing, Turbulence; Windshear; Thunderstorms; Low and high level inversions; Hazards in mountainous areas;
  10) Meteorological information: Observation, Weather charts, Information for flight planning
- Navigation:
  1) General Navigation:
  2) Charts: The use of current aeronautical charts
  3) 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);

  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;

  Area navigation systems: General philosophy; Typical flight deck equipment and operation; Instrument indications; Types of area navigation system inputs; VOR/DME area navigation (RNAV);

  Self-contained and external-referenced navigation systems: Satellite assisted navigation: GPS/GLONASS/DGPS
- Operational procedures
  1) General
  2) Special operational procedures and hazards: General
- Radiotelephony:

  IFR Communications: Definitions; General operating procedures; Action required to betaken in case of communication failure; distress and urgency procedures; General principles of VHF propagation and allocation of frequencies; morse code.

SIXTH SCHEDULE

Reg. 103

KNOWLEDGE AND SKILL REQUIREMENTS FOR AIRCRAFT MAINTENANCE ENGINEERS LICENSING

(1) The subjects relevant to the knowledge and skill requirements for all Licence Categories specified in the regulations is presented in this Schedule in a Modular format. The Schedule details the content of each Module.

(2) The examinations for each category of licence (and its Sub-Divisions where appropriate) shall be based on a number of the Modules as indicated in the Module/Category relationship set out in Table 1 below

(3) From Table 1 it will be noted that the modular arrangements recognise that major areas of the subjects are common to more than one licence category its Sub-Divisions. Thus, when an existing licence is to be extended to include another Category or Sub-Division, those Modules that have been satisfied by previous examinations may be excluded.

(4) Each module is numbered and contains a series of syllabus subject headings. Each subject is then further expanded in more detail against 'level numbers' corresponding to Licence Without Type Rating (LWTR) and Type Rating (TR). This expansion of detail provides an indication of the degree/level of knowledge, experience, competence and skill in aeronautical engineering required by the Regulations.

(5) There are three level numbers and they are defined as follows:
Level 1: General appreciation of principles and familiarisation of the subject.
Level 2: Comprehens ion of principles and salient features with a practical ability to assess operational condition.
Level 3: Detailed knowledge of all aspects of the subject.

(6) In applying the above levels to the subjects which, in particular relate to aircraft, engines, systems and items of equipment, the following aspects should be taken into account-
(a) theoretical principles;
(b) constructional arrangements, functional and design features;
(c) maintenance practices;
(d) normal, deteriorated and failed conditions.

Table 1 - Module/Category relationship

Module \ Category	'A' - Aeroplanes	'C' - Engines		'A' & 'C' Rotorcraft		'A' & 'C' Airship		- X -				
		Piston	Turbine	Piston	Turbine	Piston	Turbine	Electrical	instruments	Automatic Pilots		Comp Compen
										Aeroplane	Rotorcraft	
	- SUBJECT MODEL NUMBER S-											
Regulations	1	1	1	1	1	1	1	1	1	1	1	
Basic Engineering	2	2	2	2	2	2	2	2	2	2	2	
Common	3			3	3	3	3					
	4(a)											
	4(b)											
Piston Engine		6		6		6						
Propellers		7	7			7	7					
Turbine Engine			8		8		8					
Rotorcraft				9	9							
Airship						10	10					
Human Performance	13	13	13	13	13	13	13	13	13	13	13	
Basic: Electrical equipment & System								21				
Basic: Instruments									22			
Basic: Electronic												
Basic: Gyroscopes									23	23	23	
Basic: Servo-mechanism												
Automatic Pilots: Aeroplanes										24		
Automatic Pilots: Common										25	25	
Automatic Pilots: Rotorcraft											26	
Compass Compensation												30
Radio: Communication & Navigation												
Radio: Radar												

MODULAR SUBJECTS FOR AIRCRAFT MAINTENANCE ENGINEER

2.1.1.2 MODULE 1 REGULATIONS

Syllabus Subject	Level		Details
	WTR	TR	
Maintenance Engineers' Licences & Authorisations	2	-	Civil Aviation Regulations requirements
			Responsibilities: by statutory law and by the need to fly aircraft in a satisfactory condition, i.e. common/civil/constitutional law
			Penalties – under statutory law and resulting from civil law suits
			Categories - applicability Areas and extent of limitations and privileges within categories
			Overlap of category applicability
			Relevant Airworthiness Notices and other Authority guidance manuals
Aircraft Registrations	1	2	International and national registration requirements
			Registration process
Certificate of Airworthiness	1	2	Issue of Certificate of Airworthiness requirements
			Categories of certificate of airworthiness and purpose of flight
			Prototypes, modified prototypes, series aircraft
			Renewal of certificate of airworthiness requirements and process
Maintenance and Maintenance Records and Certification	1	2	Civil Aviation Regulations requirements and other applicable guidance material issued by the Authority
			Maintenance certification: certificate of release to service
			Duplicate inspections
			Contributory certifications and reliance on other documentation and persons
			Certification - acceptance investigation and judgment procedures Modification standards, process and recording
			Maintenance records – relevance of previous records
			Maintenance records – requirement to be kept, preservation and production
			Offences in relation to documents and records

			Inspection requirements and Standards' persons authorised
			Build Standards
			Maintenance responsibilities
Aircraft, engine and VP Propeller Log Books	1	2	Civil Aviation Regulations requirements and other applicable guidance material issued by the Authority
			Authority approval: Light aircraft, large aircraft
			Worksheet; technical log
			Data to be entered in technical log books
			Condition reports – e.g. heavy landing checks, defect investigations, NDT and other inspections, mandatory and non-mandatory
			Maintenance checks and inspections
			Cross-reference to other files/records
			Preservation of documents; Civil Aviation Regulations requirements
Technical log	1	2	Civil Aviation Regulations requirements
			Technical Log – Air Operators Certificate Requirements
Aircraft Documentation and Requirements	1	2	Type certification and supplemental type certification
			Documents to be carried Flight manual – provision of manuals and aircraft performance
			Mass Schedule and aircraft loading
			External, and internal markings and signs, e.g. nationality and registration no smoking and fasten seat belt, placards and requirements, doors and exits
			Certificate of Airworthiness
			Certificate of registration
			Air Operators Certificate
			Instrument and Equipments
			Radio Station license and approval
			Change of ownership
			Aerial work, including parachuting, glider towing etc – certification
			Exits and break-in markings
Approvals	-	1	Design organizations
	1	2	Approved maintenance Organization
			Maintenance Schedules/ programmes
			AOC and AMO interface
			100 hours and annual inspections
			Aircraft parts stores requirements and management
Defect Reporting	1	2	Civil Aviation Regulations requirements Reportable occurrences (defects, incidents, accidents)
Authority Requirements	1	2	Manual of Airworthiness Requirements
			Airworthiness Notices

			Foreign airworthiness directives
Manufactures requirements	1	2	Service bulletins, manuals service letters etc
Foreign Authorities requirements	1	2	FAA, CAA (UK), JAR
ICAO Annexes requirements	1	2	Annexes 1, 6 and 8

Module 2 **Basic Engineering Practices**

Engineering Drawings and Technical Information	1	2	Drawing details-common practices: plan, elevations, isometric, sections, scale, dimensional and indicating presentation
	2	2	Use, validity control, interpretation
	1	2	Maintenance Manuals, Parts Catalogues, Overhaul Manuals
			Service bulletin and modification data
			Maintenance schedules: approved and otherwise
	2	2	Wiring diagram manuals, Interconnection charts, Schematic diagrams, Symbols
Mathematics	1	-	Simple calculations: measurements, angles, graphs, metric/imperial, volume, forces, moments, centre of gravity Transposition of formulae, Powers of numbers, Binary notation, Simple equations, Conversion of units
			Resolution of forces
	1	-	Pressure/volume/temperature of gases
			Density, specific gravity, Pressure
			Hydraulics: basic principles, liquids in flow and static conditions
			The atmosphere-density/pressure/temperature/altitude/humidity
			Basic principles of motion, acceleration, centrifugal, centripetal forces, friction Basic electrical laws, units, power in circuits, Magnetism, circuit calculation
Hangar/Workshop Common Practices and Tools	1	-	Lubrication methods and application
			Hand tools, simple machine tools
			Go/No Go gauges, fits and clearances
	2	2	Crimping tools, hand and hydraulic
	1	-	Precision measuring instruments, Electrical measuring instruments, Circuit testing methods
	2	-	Torque loading
	1 1	- -	Assessment of in service condition of soldered, brazed and welded joints Inhibiting and corrosion protection
			Painting and paint stripping
	1	-	Metal contamination

			Fire protection and safety in and around the workshop/hangar/aircraft
			Storage and handling
Common Parts	1	2	Control cables and fittings
			Fastening devices – threaded, riveted and swaged
			V-band clamps and couplings
			Locking: parts and methods
			Washers
			Bearings
			Pipes: rigid and flexible Keys and key ways
			Worm drive and other types of band clips
Gases and Compounds	1	2	Air, nitrogen, carbon dioxide, oxygen, helium
			Acetylene
			Safety aspects
			Adhesives, oils, greases, sealing compounds, solvent
Basic Electrics	2	-	General principles and practices
	2		Simple circuits a.c. to d.c., d.c. to a.c., a.c. to a.c. conversion
	1	2	Ground services ac and dc
			Batteries, application and handling
			Insulators and Insulation, Conductors and conductivity
			Common items used in aircraft applications, e.g. resistors, potentiometers, solenoids
			Transformers, single phase and auto
			Semi-conductors, capacitors, relays
			Micro switches
			Proximity detectors
			Fuses, circuit breakers
			Motors/actuators
			Principles of frequency wild, constant frequency a.c. power
	1		Circuit wiring, connectors, crimping, clipping, cable sizes and types, cable looms, harnesses, terminations and disconnects
			Bonding, earthing of aircraft
	1		Static electricity; lightning; static charges; ‘interference’ effects on radio equipment, electrostatic damage protection
Environmental Aspects	1	2	Effects of snow, ice, lightning and turbulence

Module 3 **Category 'A' Common – Aeroplanes, Rotorcraft and Airships**

Syllabus Subject	***2.1.2 Level***		**Detail**
	WTR	**TR**	
Basic Aerofoil Theory	1	2	Lift/thrust/drag/weight
			Stalling of an aerofoil
			Induced and parasitic drag
			Boundary layer Aerofoil shapes
			Chord/span/aspect ratio
Sub-Structures	1	2	Folded metal, sheet metal, extrusions, tubing
			Effect of swaging, lightening holes
			Use of different metals
			Commonly used fasteners and joint methods
			Protective treatments and precautions
			Honeycomb
			Reinforced plastic/epoxy materials, applications
			Floors
			Seats – crew, passenger – 'crash' situation Aerials, Pitot probes, drain masts, air intakes and similar structural fitments
			Instrument panels and consoles
			Radio equipment racks and stowages
Metals	1	-	Light alloys, iron and steel
	1	2	Titanium
	1	-	Brass, bronze, copper, lead
	1	2	Recognition and general characteristics of metals used
			Application and use of metals
			The purpose of heat treatments Use of different heat treated materials
			Anodic treatments
			Corrosion treatments during manufacture
			Identification of corrosion
	2	2	Corrosion treatments during repair
			Fatigue
			Other protective treatments/finishes
Non-destructive Condition-Testing	1	-	Typical uses and display of defects using:
			X ray/gamma ray, ultrasonic, eddy current, magnetic particle
	2	-	Penetrant leaching
	1	2	Visual probes
			Eyeglass equipment: usefulness, effectiveness of various magnifications
Materials – non Metal Reinforced Plastics/Epoxy Composites	1	2	Glass, fibre and filament reinforcement
			Materials used

			Cold setting, hot setting systems
			Construction principles used, aircraft applications
			Failure characteristics
			Honeycomb, foam sandwich
Hydraulic	2	-	Simple systems, i.e. powered pump, reverse selection, pressure relief, pressure regulation LP AND HP filters
	1	2	Types of pump
			Differing fluids – mineral/fire resistant
			Control and indication methods
Landing Gear and Brakes	1	2	Wheels, tyres, shock absorbers, castering, steering methods
	2	-	Simple hydraulic brakes, i.e. master cylinder to wheel-brake unit
	1	2	Brake discs and callipers
	1	-	Landing and braking energy conversion
Electrical	1	2	Simpler type systems
	1	2	Batteries, generators, relays, wiring, switch gear
			Voltage control
			Current limiting, circuit protection devices
			Paralleling
			a.c. from inverters Crimping
			Soldered joints
			Control and indications, magnetic indicators and annuciators
Instruments (other than Engines)	1	2	Pitot/static systems and associated instruments
			Gyro instruments – vacuum/pressure/ electrical
			Pressure and temperature indication
			Position indication
			Compasses
Radio	1	-	VHF communication systems
Safety Equipment	1	2	Fire extinguishers – hand
			Life jackets
			Life rafts
			Seat belts/harnesses -passenger/crew 3-point, 4-point, inertial, lapstraps
	-	3	Mandatory requirements for upper torso restraint
Ground Handling	1	1	Jacking, trestling, slinging, towing, tie down
			'Servicing' activities
			Storage
			Painting – protective finish/external markings
	1	2	Weighing and centre of gravity determination – weighing report
			Civil Aviation Requirements e.g. Airworthiness Notices, manual of Airworthiness Requirements
			Scale position
			Basic Weight
			Unusable fuel
			Oil and other consumable liquids - quantities

			Role variations
			Hold/seat row/removable equipment
			Station identification
			C of G datum

2.1.2.1 MODULE 4(A) CATEGORY 'A' – AEROPLANES

	Level		
Syllabus Subject	**WTR**	**TR**	
Theory of Flight and Control	1	2	Stability and control
			Equilibrium
			Stalling of the aircraft
			Flaps and slats
			Aerodynamic balance
			Mass balance
			Aileron/elevator/rudder control
			Tabs – servo/anti-servo/balance/anti-balance/ trim/spring
			Canard/foreplanes
Aircraft Structures	1	2	Main structures - fuselage/wing
			Stressed skin – diaphragms and longerons
			Tubular structures
			Skin, frames, and stiffening
			Wing: spar and rib structures
			Integral fuel tanks
			Load paths
			Empennage
			Windows, doors and hatches

Refurbish/'Overhaul' of Aircraft	1	2	Preparation of the aircraft–cleaning, access dismantling, jacking and trestling, furnishing removal
			Preparation of inspection reports and establishment of work required
			Final inspection – preparation of final reports and records/log book entries
			Mandatory modifications, Inspections, Service bulletins, Airworthiness Directives applicable to the type rating sought
Overhaul/Repair of Parts/ components	1	2	Overhaul data – requirements, documentation, work sheets, inspection stages, testing
			Use and control of workshop inspection aids including non-destructive test equipment
			Factors and limitations affecting choice of equipment and methods used
			Overhaul and testing procedures for component parts of pneumatic, hydraulic, air conditions, oxygen, anti-icing, de-icing, fire extinguishing and rotorcraft transmission systems
			Assembly procedures and approved repair schemes applicable to major components
			Engine mounting structures
			Inspections necessary before, during and after repair, including checking of alignment and symmetry
			Repair, inspection and testing of tanks, heat exchangers, fuel and oil systems, and all types of control systems relevant to the Licence category sought
Facilities	1	2	Preparation and layout of workshops
			Care, use and checking for accuracy of test equipment
Welding	1	2	Use and application
			Approved welders – limitations, periodic testing
			Supporting – pre-heating – pressure relief
			Cleaning and preparation
			Fluxes and filler/welding rods
			Gas and specialist welding principles

			Materials
			Strength of welded joints
			Inspection before, during and after welding
			Pre-and post-treatments
			Equipment
Brazing/hard Soldering	1	2	Use and application
			Support, pre-heating, pressure relief
			Cleaning and preparation
			Fluxes – fillers/spelter Materials
			Equipment
Materials – non Metal:			
Wood	-	2	Types, application and uses
			Diseases – environmental effects
			Plywoods
			Glues – past and present
			Storage and condition control
			Damage-failure modes
Fabrics	-	2	Painting/protective finishes Natural and man-made materials – types, applications and used
	-	1	Techniques used during covering
	-	2	Repairs
			Paint finishes and protective treatments
			Butrate and nitrate paints
			Ageing
			Tautening, heat shrinking
			Strength considerations
			Drainage and apertures
			Stitching, stringing, adhesives Testing
Systems:			
Flight Controls	1	2	Aileron, elevator rudder
			Operating systems and surfaces – manually operated
			Trim operating systems and surfaces – manual and electric

			Flap systems – electrical, hydraulic and manual
	-	2	Flap systems – pneumatic
	1	2	Simple asymmetric protection
			Slat systems – automatic, and manual
	-	2	Hydraulic
	1	2	Tab systems – trim, balance, servo, anti- servo, anti-balance, spring servo
			Stall sensing and warning – simple systems, e.g. vane or reed types
			Basic auto pilots – simple systems
Ice and Rain Protection	1	2	Inputs into main controls- function testing – attitude, heading and height sensing Liquid, electric and boot systems
			Power source, control and indication
			Windscreen wipers
	-	2	Electrically-heated windscreens
Heating and Ventilation	1	2	Combustion heaters, exhaust heat exchangers
			Ram air
			Ventilation fans
Oxygen	1	2	Bottle storage, distribution, regulation
			Masks
Pressurisation	2 1	- 2	Safety features and requirements Simple systems – bleed air, turbo-charger bleed
			Passenger environmental requirements for the control of: oxygen, heating, ventilation, rate of change, humidity
			Mass flow control
	1	2	Temperature control
			Differential pressure – maximum, negative
			Control and indication
			Cabin structure, windows and doors for pressurised flight
Vacuum/Pressure	1	2	Dry and wet pump systems
			Oil separation
			Gyro supply
			Relief valve
			Filtering
			Aerofoil anti-icing
Pneumatic	-	2	Landing gear/flaps/brakes
			Operating systems
			Basic theory and common practices

2.1.2.2 MODULE 4(B) CATEGORY 'A' – AEROPLANES

Syllabus Subject	Level WTR	Level TR	
Theory of Flight and Control	1	2	Transonic effects, swept wings, wing fences, spoilers, high lift devic es vortex generators
			High speed stall
			Shock wave
			Speed of sound-mach numbers
			Work turbulence
	-	2	Supersonics – sound waves
			Delta wing forms
			Kinetic heating
			C of G control
	1	2	Active controls – computerised flight
			Managem ent systems – general principle
Aircraft Structures	1	2	Fail-safe application
			Fatigue effects and control
			Wing: box/integral tank construction
			Pressure-loaded skin, bulkheads, windows, windscreens, doors

			Milling/chemical etch constructed structure
			Bonded type construction
			Fasteners-close tolerance
			Sealing compounds
			Maintenance programmes-structural survey
			NDT programmes
			Large aircraft paint and protective Finishing processes
			Cargo holds
			Venting and draining Sound proofing
Materials – non-Metal:			
Furnishings	1	1	Upholstery
			Toilet and galley partitioning
			Carpets and Curtains
			Particle boards and plastic laminates
	1	2	Fire resistance/escape requirements
			Passenger seats
			Crew seats – cabin and flight crew
Systems:			
Flight Control	1	2	Powered controls
			Spoiler, air/speed brake, lift dump
			Lift augmentation-LE droop, slats/flaps
			Flap operating systems – large transport aircraft

			Flap asymmetric and alternate operation
			Stall sensing-stick shake
	-	2	Stick push/nudge
	-	1	Electronic control system
	1	1	Fly by wire
Hydraulic	1	2	Variable delivery systems
			Accumulator/cut-out dependent system
			Pressure/volume control
			Pressure-reducing valves Fire-resistant fluids-temperature, contamination, compatibility
			Pressurised reservoirs
			Multiple system provision
			Alternate systems-HYRAT/hydraulic motors
			Electrically-powered and air –driven systems
			Leak protection systems – system isolation, 'fused' systems, priority control
			Internal leakage – cause and effects – acceptability
Landing Gear	1	2	Multiple axles and wheels
			Bogey beams Door sequencing
			Main and alternate brake provision
			Anti-skid system-electronic and mechanical-aquaplaning
			Landing gear unsafe protection
			Alternate lowering
			Weight on/weight off sensing
			Fire protection
			Powered steering – retraction self centring
	-	2	Auto braking
Pneumatic (ATA 36)	1	2	Bleed air pneumatic systems
			Systems supplied
			Bleed air valves
			Mass, flow, pressure and temperature control and indication
			Ducting
			Leak detection Alternate supply-APU and ground cart
Ice and Rain Protection	1	2	Mainplane/tail hot air anti-ice systems
			Control and indication
			Leak/overheat-detection/protection
	1	2	Ice detection
			Rain repellant
			Windscreen wipers
			Laminated windscreen heating

			Waste water discharge
			Pilot/static sensors
Environmental and passenger Systems: -			
Air Conditioning	1	2	Cabin blower/bleed air supply
			Heat exchangers
			Cold air units/air cycle machines
			Vapour cycle systems
			Humidity control systems
			Mass, flow, pressure and temperature control and indication Leakage detection and protection
			Ventilation requirements
			Passenger service unit air supply
			Water extraction
			Recirculation
Pressurisation	1	2	Outflow control - electric, electronic and pneumatic
			Maximum differential and negative pressure control
			Cabin altitude and rate of change
			Emergency dump and manual control
			Ditching
			Cabin altitude and rate of change
			Entrance/access/baggage door sealing and locking, indications and warnings
Oxygen	1	2	Storage, distribution and charging
			Drop-out system
			Chemical systems
			Therapeutic provision
			Masks – passenger/crew/smoke
	1	3	Bottle checks and precautions
Toilets, Waste and Water, Galley Services	1 1	1 2	Toilets: servicing provision Toilet flushing systems – pump over – heat protection
			Water – washing, hot/cold, potable
			Potable water – health protection
			Pressure control
			Water heating systems – safety provisions
			Waste collection and drainage
			Galleys-refrigerators, food and drink, ice – health protection
			Lifts, safety factors
Baggage	1	2	Catering trolleys Automatic systems-pallets and containers
			Restraint and securing
			Dangerous goods
Entertainment and	1	1	Films, video, television and audio
Passenger service			Public address
Electrical	1	1	ase a.c. power generation systems: - Control and protection

			Transformer rectifier units Cables and terminations
			Basic electronics-hardware – printed circuit boards
			Built-in testing provisions
			Static inverters
	-	1	Multiplex – basic principles
	1	1	Logic – basic principles
Instruments	1	1	ADI, HSI representation and ground functioning
			Altitude encoding and transponder systems – general
			Computer inputs Centralised air data units
			CRT displays
			Flight recorders – voice recorders
			INS
Equipment, Safety	1	2	Slide, rafts, dinghies
			Portable oxygen
			Loud hailers
			Smoke masks/hoods
			Survival equipment
			Notices/placards

Module 6 **Category 'C' – Piston Engines in Aeroplanes, Rotorcraft and Airships**

Syllabus Subject	**Level WTR**	**TR**	
Principles, Terminology. Definitions and Laws	1	2	Normally aspirated and supercharged operation
			Two and four stroke cycles
			Ignition timing, mixture, fuel grade detonation.
			Power
			Overhaul periods/continuation in service beyond overhaul recommendation
			Ground running – principles and problems
			Effect of altitude, humidity, temperature, and icing
			Standard atmosphere, pressure altitude
			Fixed and variable pitch propeller effects
			Vibration characteristics and damping
			Type certification
Engine overhaul: General	2	-	Overhaul as a condition control process – its advantages and disadvantages
			Familiarity with the operating environment of piston engines in aircraft
			Sudden stoppage – over-revving, over-boosting, over-heating
			Bogus parts
			Fatigue Mandatory reporting

			Fuels and oils – Mogas
Overhaul Process Control	2	-	Facilities: shop layout – stores; work environment; equipment for cleaning, inspection, rework and testing
			Control of precision measuring instruments and equipment
			Work package control and processing
			Acceptability of third party work/opinions/reports/recommendations e.g. manufacturers and their agents/other agencies
			Use of experts and expert opinion
			Use of unskilled labour
Constructional Arrangement and Piston Engine General Consideration	1	1	General arrangement – internal
	1	2	General arrangement - external
			Crankcase breathing
			Propeller shaft sealing
			Materials
			Propeller attachment provision
			Power take-off provision
			Cooling
			Cylinders, pistons and valve gear
			Hydraulic tappets Camshaft
			Casings, mountings and accessories drive
			Vibration damping
			Crankshaft, balance weights, main bearings
			Auxiliary drives, internal lubrication provisions
			Seals and sealing materials
			Oil coolers and thermostatic valves
			Oil pumps, filtering, pressure control
			Fuel pumps – engine driven
			Ignition and valve timing provision
			Drive pulleys
			Hardness testing, fits and clearances Dowels and blind holes
			Sequential torque assembly – retorquing requirements
			Tooth patterns and backlash checks
			Contact area checking
			End float clearance, checking and setting
			Bonding and main earthing
Repairs and rectification	1	1	Machining
			Heat treatment
			Anodic treatments Plating
			Corrosion treatments
	2	2	Protective treatments and finishes
			Surface finishes
			Fits and clearances
			Thread forms
Overhaul activity	1	2	Cylinder and piston assemblies

			Cooling baffles – hottest cylinder
			Main casings
			Rear covers
			Gear trains
			Camshaft and valve operating mechanisms
			Crankshaft, connecting rods – bearings
			Lubrication systems–passages, jets, pumps, pressure relief valves, coolers, thermostatic valves, filters and strainers
			Sealing-slinger rings, and mechanical flow control
			Crank cases, rear covers, sumps Engine mounting provisions
			Governor drive provision
			Induction and exhaust manifolds
			Reduction gears, assemblies and housings
			Superchargers/turbochargers
			Carburettor/injection systems
			Hoses and pipes
			Electrical wiring
			Ignition harness
Non-Destructive Testing	2	-	Eddy current/ultrasonic/X-ray/gamma ray/ magnetic particle
			Techniques – status and approval
			Approved NDT organisations
			Interpretation of results
			Certification of inspection completion/acceptability of the condition found
Welding/Brazing	2	-	Preparation – fluxes, welding/brazing rods
			Expansion/contraction effects and control
			Hollow parts – internal protection
			Welding methods: gas/arc/resistance welding
			Brazing/hard soldering methods
			Approval of welders
			Inspection of welded/brazed joints
Release, Preservation, Storage and Transportation	2	-	Log Books: certification, reports, references, recording of parts, limits, concessions, modifications, alternate parts, mandatory modifications and inspections
			Service information leaflets, etc
			Lifed parts, salvage schemes/oversized parts
			Inhibiting: internal, external, injectors, carburettors, turbochargers
Systems:			
Carburation and induction	1	2	Air intake – normal/alternate – filtering
			Manifolds Anti-icing provision
			Float type and injection systems
			Engine driven fuel pumps
			Priming systems
			Mixture/idle cut-off/throttle control
Ignition	1	2	Magnetos
			Ignition harness

			Spark plugs – reach variations, operating temperature – long life
			Switch control
			Timing (internal/external)
			Advancing and retarding mechanisms
			Screening
			Starting aids – impulse couplings and ignition boosting
Starting	1	2	Starter motors – manuals, Bendix, solenoid, pre-engaged – engagement methods
			Non-engagement indication and effects
			Starter relays Earth straps
			Cooling
			Effects on battery
Fire Protection and Indication	1	2	Extinguishant, bottles, cartridges, 'life control
			Detection systems and warnings
			Two shot provision
Lubrication	1	2	Wet and dry sump systems
			System arrangement
			Pressure control
			Effects of hot and cold weather Filtering
			Straight, detergent, ash dispersant oils
			Engine condition assessment using oil system analysis
			Oil coolers- temperature control valves
			Hoses, rigid pipes, internal passages, splash – oil jet
			Cooling functions of the oil system
Supercharging/Turbocharging	1	2	Directly driven and exhaust drive superchargers
			Manual and automatic control
			Lubrication and hydraulic power
			Controls and indication
			Automatic control systems
Aircraft Fuel	1	2	Tanks, cells and integral systems
			Fuel tank heating and monitoring
			Venting
			Fuel pumps – electrical
			Fuel grades and quality
			MOGAS
			Water contamination – drains
			Filtering
Engine Controls	1	2	Controls and indication Throttle
			Electronic controls
			Mixture
			Propeller
			Alternate air
			Manual controls for turbocharger
Engine Instruments	1	2	Manifold pressure
			Rotational speed
			Pressure and temperature

			Cylinder head temperature
			Exhaust gas temperature
			Electronic Condition Monitoring
Diagnostic Tools	1	2	Equipment
			Use and analysis

Module 7 **Category 'C' – Fixed and Variable Pitch Propellers**

2.2

	Level		
Syllabus Subject	**WTR**	**TR**	
Principles, Terminology, Definitions and Laws	1	-	Constant Speeding
			Pitch variation
			Ground and flight functioning characteristics
			Power conversion
			Blade forces: aerodynamic and centrifugal
			Aerofoil aerodynamic principles
			Pitch coarse/fine, high/low, reverse
			Feathering
			Vibration characteristics
			Turbine engine installation propeller systems
Constructional Arrangement	1	2	Pitch change mechanism single/double acting
			CSUs/governors
			Spinners
			Balance control
			Materials Diameter – minimum and maximum
			Pitch stops – fixed, centrifugal, manual and electrical
			Protective finishes – contour control
	1	3	Damage acceptance areas
			Cropping
	1	2	Attachment and assembly methods
			Oil transfer – governor/propeller/sump
			Safety visibility
Automatic and Manual Pitch Control Systems	1	2	Pilot control and governor sensing Feathering
Ice Protection	1	2	Liquid and electrical systems
Turbine Engine Application	1	2	Auto-feathering
			Synchronising/synchrophasing
			Braking
			Automatic and manually controlled pitch limiting systems
			Beta control
			Permitted balancing

Module 8 **Category 'C'– Turbine Engines in Aeroplanes, Rotorcraft and Airships**

	Level		
Syllabus Subject	**WTR**	**TR**	
Principles, Terminology Definitions and Laws	1	2	Gas flow path – temperature, velocity and pressure
			Compression
			Combustion
			Turbine Power extraction
			Effects of atmospheric variations in temperature, density, pressure altitude on engine and on engine/aircraft combination
			Single shaft, two and three shaft engines
			Centrifugal and axial flow compressors
			Fan engines
			By-pass engines
			Water/water methanol injection
			Power turbines
			Surge/compressor stalling Propeller turbines
			Gas producers
			APU applications
			Thrust reversal
			Power assessment
Constructional Arrangement	1	2	Casings, shafts, bearings, accessories drive
			Air intakes and compressors
			Combustion section
			Turbines and exhaust
			Materials
			Modular construction
	1	3	Engine inspection capability and condition assessment provision
	1	3	Principles of 'condition monitored' and 'on condition' maintenance programmes
	-	2	Supersonic flight air intake geometry control systems
Propeller and Shaft Power Provision	1	2	Gas producers
			Reduction gearing
			Power and auxiliary drive
	1	1	Rotational speed and power control, safety systems Principles of torque/power/rotational speed in power transmission by rotating shafts
Systems:			
Thrust Reversing	1	2	General arrangements
			Control/interlocks
			Safety features
			Operating systems – hydraulic/pneumatic mechanical
			Turbine and fan applications

APUs	1	2	General arrangements
			Intake and exhausts systems – door operation
			Load control
			Electrical output control and management
			Speed control
			Fuel control
			Safety features
			Ground/flight/altitude-limiting factors
			Mounting
			Fire protection and indication
			Bay cooling
			Ground running
(3) Fuel Control	1	2	Principles – parameters
			Mechanical/electronic control
			Power speed – control and limiting
			Temperature and power factors
			Burners–primary and secondary provision
	-	2	Burners –shaft injection, torch ignition
	1	2	Governor speed sensing
Fuel Systems	1	2	Tanks – cells and integral systems
			Refueling/defuelling, crossfeed, jettison, venting, transfer
			Scavenging – jet pumps
			Boost pumps, backing pumps
			LP/HP valves and control
			Tank selection
			Internal/external pipes, hoses, connectors
			Fuel types
			Static electricity – effects and control
			Leak assessment and control
			Fuel quantity indication – 'Level Sticks'
			Water contamination – effects and control SG/Density/volume/weight
			Filtering and heating
			Fuel systems in pressurized cabin areas
Water Injection	1	2	Water/water methanol applications
			Sensing, control and safety provision
			Power effects
			Tankage
			Replenishing/dumping
			Pumps
			Effects on fuel control Pipes and pipe lines
Lubrication	1	2	Tanks, storage, venting, contents indication
			Pressure/scavenge pumps
			Filters, screens and magnetic plugs/chip detectors
			Pressure/flow control
			Heat exchangers oil/fuel, oil/air
			Sealing-labyrinth seals, carbon seals, etc.
			Overboard drains – drains systems
			Lubrication of mains bearings, accessories and gear trains
			Supply to propeller systems

			Contamination by hydraulic fluid/fuel
			Types of oil
			Internal/external pipes, hoses and passages – effects of heat
			Use of oil for ice protection – intake and fuel control
Cooling, Sealing and Bleed Air Services	1	2	Internal cooling, external cooling, sealing air
			Overboard dump – temperature monitoring
			Off-takes for other services – air conditioning, anti-icing, equipment drive, pressurizing of hydraulic reservoirs, water systems, etc.
			Centrifugal filters
Surge Protection and Airflow Control	1	2	Bleed valves – operating systems
			Variable inlet guide vanes – scheduling, operating systems
			Surge sensing
			'Surge margins'
	-	2	Supersonic flight air intake geometry control
Ice Protection	1	2	Hot air systems – struts and intakes
			Electrical systems – engine and intakes
			Use of oil and air bleeds
			Pressure sensor heating Control and indication
Fire Protection	1	2	Fire detection
			Overheat warning
			Fire extinguishing
			Bay and zone isolation
			Fire walls, bulkheads, cladding
			Fire wires, detector units
			Single/dual detection
			Extinguishants
			First and second shot capability
			Warnings and indications – lights, aural warnings, fuse types, squib test
			'Bottle gone' indicators
			Operating systems
			Over pressure
			Cartridges – life control
			Electric and electronic systems
Ignition	1	2	High energy ignition systems
	-	2	Torch ignition
			Glow plug systems
	1	2	Igniter plugs and leads Operation inside and outside the starting cycle
Starting	1	2	Starting cycle
			Initiation – HP valves, termination, bleed valves, starter valves, power lever, self sustaining speeds
			Starter motors – electrical, pneumatic, starter/generators – HP air, impingement air
			Clutch provision, overspeed sensing
			Manual operation starter cooling/resting

			Ground power electrical/pneumatic provisions
Controls	1	2	Power/throttle/thrust reverse
			HP/LP valve controls – manual and electric
			Condition control systems
			Propeller control
			Auto control of throttle
			Control runs
	-	1	Electronic control systems
Pods, Pylons, Cowlings and Mountings	1	2	General arrangements
			Services and controls – input/exit Materials
			Venting
			Zone demarcation
			Mountings
			Pylon and pod structural features
			Torque, vibration, expansion provisions
			Bay venting
			Cooling air intakes
Electrical	1	2	a.c. generators – CSDs/IDGs
			Starter/generators Starter motor high current circuits
			CSDs – principles of operation, disconnect/ reconnect, lubrication/hydraulic operation, filters, coolers
Instruments	1	2	Rotational speed indication; a.c. generator and pulse probe systems
			Temperature and pressure systems
			Pressure ratio systems
			Turbine temperature systems
			Instrument system amplifier
			Fuel flow indication
			Torque indication Fuel contents/oil contents- electrical and electronic
			Vibration indication
Ground Handling	1	2	Storage and inhibiting
			Spare engine carriage
			Ground running – noise control – power checking
			Functional checks of engine associated services

Module 9 **Category 'A' & 'C'–Rotorcraft**

	Level		
Syllabus Subject	**WTR**	**TR**	
Theory of Flight and Control	1	2	Rotor disc: forces acting, lift, drag centrifugal force, weight, rotor useful force, phase lag; advance angle non-constant speed drive (Hookes Joint) effect
			Articulate/semi-rigid/rigid rotors
			Flapping/dragging/feathering Climbing/losing height/horizontal flight
			Main and anti-torque rotors– control inputs – cyclic and collective
			Effects of aircraft speed on rotors
			Directional control
			Translational lift/inflow/ground effect
			Vortex ring effect
			Retreating blade stall
			Reverse flow
			Auto-rotation; auto-rotative force/blade section
	-	2	Auto-rotation rev/min Twin rotors
Constructional Arrangements	1	2	Rotorcraft structures, load paths, vibration effects
			Landing gear configurations: skids/wheels/floats
			Fuselages, tail cones, pylons, engine mounts
			Gearbox and transmission mountings
			Doors and windows
Systems:			
Flying Controls	1	2	Collective/cyclic/directional
			Hydraulic
	1	2	Rotor heads – main and tail rotor Articulated, rigid, semi-rigid, teetering
			Swash plate/spider control input methods
			Blades: construction and materials; balancing: static, dynamic, span wise, chord wise
			Tracking: flag and in-flight methods
			Tabs/trailing edge bending
			Vibration – effects and analysis
			BIM indicators
			Automatic Pilots/Autostabilisers – Control interface
			System components – component replacement and subsequent testing

Ice and Raid Protection	1	2	Windscreen wipers
			Electrically-heated windscreens
Heating and Ventilation	1	2	Exhaust heat exchangers
			Ram air
			Ventilation fans
Transmission systems	1	2	Engines to rotors: shafts, clutches, free wheel units; reduction gearboxes; main transmission/ gearboxes, combining gearboxes
			Tail rotor drive: drive shafts, intermediate gearboxes, tail rotor gearboxes Lubrication systems: oils, coolers, cooling fans, filters, magnetic plugs, chip detectors, pumps, pressure control
			Universal drive provision
			Splined shafts, type of gears – tooth pattern
			Instrumentation
			Rotor brake systems
Equipment	1	2	Hoists and winches
			External load carrying
			Flotation
			Survival systems
			Specialised role equipments, aerial spraying, cameras
Instruments	1	1	ADI, HIS
			Flight recorders
	1	2	HUMs

Module 10 **Category 'A' & 'C'– Airships**

	Level		
Syllabus Subject	**WTR**	**TR**	
Principles of Lift	1	-	Bodies immersed in fluids
			Gases: free to expand/constant volume/constant temperature/constant pressure
			Mixture of gases in a containing vessel
	2	-	Centre of gravity, centre of buoyancy, static heaviness, static lightness, static trim
			Ballonet ceiling, pressure height
			Superpressure, superheat
			Porosity
			Equilibrium
			Ballast-shot/water
Theory of Flight and Control	1	-	Aerodynamic lift, aerodynamic balance
			Stability and control
			Free ballooning
			Fins, rudders, elevators
			Tabs: balance/servo/trim/spring Powered flying controls
Envelope	2	-	Materials: fabrics, Kevlar
	1	-	Ultra-violet light effects
			Gas-tight membranes
			Ballonets, gases, load curtains, shear curtains, support cables, gas valves, air valves, entry ports, inspection domes, charge adaptors, load patches, handling lines, nose cone
			Charging, purging, porosity checks
			Lightning protection
Gondola	2	-	Airs systems: ram air scoops, ballonet fans, dampers, transfer fans Main Structures
			Materials: Kevlar laminate, fibrelam, sandwich panels, metal skin frames and stiffening
	1	-	Moulding/bonding techniques
			Support cables, support cable attachment, bulkheads, equipment attachment
			Furnishings
			Doors, windows and hatches
			Fire protection – skinning
			Lightning protection
Systems:			
(1) Flight control	1	-	Fins, rudders, elevators
			Operating systems and surfaces – manually/power operated
			Trim operating systems – manual and electric
(2) Ice and Rain Protection	1	-	Windscreen wipers
(3) Heating and Ventilation	1	-	Exhaust heat exchanges
			Ventilation system
(4) Vacuum/Pressure	1	-	Supply and associated system
(5) Landing Gear	1	-	Geometric arrangement

			Structural arrangement
			Castering/pivoting/locking
			Shock absorbers
			Weight sensing/measurement
Ducted Propellers	1	-	Principles of operation
			Propeller forces: aerodynamic/centrifugal
			Pitch variation/control
			Positive/negative vectoring
			Power conversion
			Control systems: electronic control, emergency forward coarse selection Balance
			Clutches
			Materials
			Protective finish: contour control, visibility
			Duct pivoting systems: drive and control, motors, limit control, gear boxes, inter-connection, emergency manual
Ground Handling	1	-	Attaching to/releasing from/mast
			Ground power
			Fuelling
			Ballasting Helium: charging, purifying, leak testing
			Pressure watch techniques
			Mooring – mobile/portable
			Engine running
			Hangaring
			Adverse weather

Module 13 **Human Performance**

	Level		
Syllabus Subject	**WTR**	**TR**	
General	2		The need to take human factors into account
			Incidents attributable to human factors/ human error
			'Murphy's' Law
Human Performance and Limitations	2		Vision
			Hearing
			Information processing
			Attention and perception Memory
			Claustrophobia and physical access
Social Psychology	1		Responsibility: individual and group Motivation and de-motivation
			Peer pressure
			'Culture' issues
			Team working
			Management, supervision and leadership
Factors Affecting Performance	2		Fitness/health
			Stress: domestic and work related

			Time pressure and deadlines
			Workload: overload and underload
			Sleep and fatigue, shiftwork
			Alcohol, medication, drug abuse
Physical Environment	1		Noise and fumes
			Illumination
			Climate and temperature
			Motion and vibration
			Working environment
Tasks	1		Physical work
			Repetitive tasks
			Visual inspection
			Complex systems
Communication	2		Within and between teams
			Work logging and recording
			Keeping up to date, currency
			Dissemination of information
Human Error	2		Error models and theories
			Types of error in maintenance tasks
			Implications of errors (i.e. accidents)
Hazards in the Workplace	2		Avoiding and managing errors Recognizing and avoiding hazards
			Dealing with emergencies

Module 21 **Basic: Electrical Equipment and Systems**

	Level		
	WTR	**TR**	
Batteries	1	-	Principles of primary and secondary cells
	2	-	Lead-acid types Ni-Cad types
	2	3	Methods of charging batteries in aircraft
	2	-	Capacity testing, storage
Direct Current Machines	2	-	Basic laws and principles
			Types and characteristics
			Control
Direct Current Generation	1	2	Voltage regulation
			Control
			Load sharing
			Paralleling
			System layout
			Interlock circuits
Power Conversion Equipment	1	2	Static and rotary inverters
			Transformer rectifier units
Fire Protection	1	2	Detection systems
			Fire and overheat warning
			Smoke detectors – principles and applications
			Overheat sensors
			Extinguishing systems
			Warnings
Flight Controls	1	2	Motors and actuators – clutches and brakes

			Limit switches, micro switches and proximity detectors
			Power control units
			Flap motors protection and control
			Trim motors
Fuel Systems	1	2	Boost pumps control and indication
			Jettison systems
			Refuel/defuel systems
			Fuel heaters
Hydraulic Systems	1	2	Crossfeed, supply and shut-off valves-normal and emergency Pump control and isolation
			Pressure switches
			Overheat warnings
			Electrically-operated priority valves
			Fluid reservoir components
			Low level warnings
Landing Gear Systems	1	2	Actuation motors – selection and control
			Indication – proximity sensors micro switches
			Air/ground sensor systems
			Anti-skid systems – operation, control and override Automatic braking systems – inputs; control and override
Lighting Systems	1	2	External systems: landing, navigation, anti-collision and inspection, etc.
			Internal systems: normal and emergency, fluorescent tubes, reading and passenger information systems, multiplex function
Pneumatics	1	2	Control – indication and protection
Engine and Propeller Control	1	2	Fuel control valves
			Temperature and speed limiting systems
			Propeller feathering controls
			Electronic engine control
Starting and Ignition	1	2	System types
			Control
			Principles of operation of high energy ignition units
			Aircraft and engine applications and related systems, e.g. stall warning
Alternating Current Machines	2	-	Basic laws and principles
			Types and characteristics
			Control
Alternating Current Power Generation	1	2	Constant and variable frequency
			Constant speed drive units Paralleling
			Load sharing
			Load shedding
			Generator control unit
			Voltage regulation
			Load controller
			Differential protection

			Fault and test panels
			Voltage, frequency and excitation control and protection
Alternating Current Power Distribution Systems	1	2	Bus-bar layouts
			Split and parallel systems
			Transfer relay interlocks
			Emergency conditions
			APU and GPU interlocks
			Warnings
Air Conditioning Systems	1	2	Maintenance panels Control
			Indication
			Protection
Ice and Rain Protection Systems	1	2	Windscreen heating: control, indication and failure
			Engine/propeller and airframe anti-ice protection: thermal, electrical and pneumatic
			Warnings and indications
			Overhead indications and protection
			Ground operations
			Windscreen wiper, washer and rain repellent systems Sensor protection – angle of airflow, pitot head, static plate and temperature probes
			Waster water heaters – thermal anti-icing protection
			Aerial heaters
Auxiliary Power Units	1	2	Starting, control, protection
			Power generation
			Fire protection
Ground Power Supplies	-	2	Interlocks and protection of aircraft supplies
			Control
Centralised Warning and Indication Systems	1	2	Inputs Output warnings
			Priority philosophy
Galley/Toilet Services	1	-	Power supply and protection
			Water heating
			Equipment

Module 22 **Basic: Instruments Category 'X'**

	Level		
Syllabus Subject	**WTR**	**TR**	
Pitot-Static Systems and Instruments	1	-	Atmospheric physics, temperature lapse rate, Mach number computation
	2	-	Airspeed indicator, altimeter, vertical speed indicator, and machmeter
			Servo altimeter
	1	2	Pitot probes, static plates and heaters
	2	2	Pipelines and flexible hoses
	1	2	Drain straps, associated equipment
			Altitude and airspeed switches
Rate of Turn and Slip Indication	1	2	Rotor speed; display
Vacuum System	1	-	Sources
	1	2	Control and adjustment
			Indication
Pressure Measurement	1	-	Sensing elements; capsules, bellows, Bourdon tubes, transmitters
			Displays
Temperature Measurement	1	2	Variable resistance
			Thermocouples; compensation; limits and values; servo indicators; control system inputs
Rotational Speed Measurement	1	2	Direct drive indicators; tacho-generator and indicator systems; pulse probe systems
			Displays
Position Measurement	1	2	d.c. and a.c. systems
Quantity Measurement	1	2	Direct reading
	2	2	Electrical and electronic systems
	1	2	Compensation
			Power supplies
Flow Measurement	1	2	Indicators Transmitters
			Power supplies
Compasses	1	2	Direct reading compass installation; safe distance
			Flux detectors and remote sensors remote system components
			Heading reference outputs
Air Data Computation	2	-	Sensors and inputs
			Signal processor: mechanical, electrical and electronic
			Signal outputs and displays
Reduced Vertical Separation Minima	1	2	Signal sources and interface with other systems
	1	2	Maintenance practices
Flight Path Computation	2	2	Signal sources, radio inputs
	1	2	Modes, computation
			Displays
Electronic Display Systems	1	1	CRT; LED; LCD displays
	1	2	EADI; EHSI; symbol generators
			Control panels

			Comparators and monitors
			Engine indicating and crew alerting systems
			Electronic centralised aircraft monitors
Flight Data Recorders	1	2	Requirements
	1	2	Sensors and inputs
			Cockpit Voice Recorder inputs
			Interface with aircraft systems
			Signal processing
			Entry panels
			Computer principles
			Data recording methods
			Retrieval and verification
	1	1	Readout
	1	2	Failure monitors
Inertial Navigation Systems and Inertial Reference Systems	1	1	Basic principles
			Platform construction
			Computation
	1	2	Displays and interface with aircraft equipment
			Mode selector and CDU
			Failure/fault indicators Power supplies and cooling
Ground Proximity Warning Systems	2	2	Modes
			Warnings
	1	2	Inputs and interface with other aircraft systems
	1	1	Computation
			Monitors
			Failure indications
Vibration Measurement	1	2	Types of pick up
			Signal conditioning
			Displays Alarm levels and warnings
Compass Compensation	1	-	Base survey techniques
			Compass swinging areas
			Aircraft magnetism
			Terrestrial magnetism – variation
			Methods and procedures for swinging compasses
	3	-	Deviation: calculations and effects on a compass
			Compensation and adjustment procedures

Module 23 **Basic Gyroscopes and Servomechanisms Category 'X'**

	Level		
Syllabus Subject	**WTR**	**TR**	
Gyroscopes	1	-	Basic principles
	1	2	Types and methods of operation – vacuum, electrical, or laser
	2	-	Handling care
Electronics	1	2	Transistors
	1	2	Biasing, simple circuit arrangements Amplifiers
			Signal amplifiers, feedback
Attitude sensing	1	2	Errors, correction
			Remote gyros, interconnection and transfers
			Limits
Direction sensing	1	2	Errors, compensation
			Remote gyros, interconnection and transfers
Rate sensing	1	2	Alignment
			Rotor speeds
Accelerometers Synchros	1 1	2 2	Basic principles CTs, Differential, Torque synchros and resolvers
Servomechanisms	1	2	Rate and position sensing and control
			Integrators
			Response and damping
			Power requirements
			Clutches
			Override and lockout protection
			Null and loop error sensing
			Synchronisation systems
Digital Techniques	2		Force rebalance systems Logics – basic gate functions and truth tables
	1		Microprocessors – block diagram
			Digital computing techniques
			Parallel and series operation
			Volatile/non-volatile data storage
		2	Multiplex systems
High Intensity Radiated Fields (HIRF)	1	1	Effect on sensitive systems, principles and methods used to minimize HIRF effects
Fly by Wire	1	1	General principles

Module 24 **Automatic Pilots - Aeroplanes Category 'X'**

	Level		
Syllabus Subject	**WTR**	**TR**	
Theory of Flight (Fixed Wing)	1	2	Forces on the aircraft
			Stability – dihedral, sweepback, etc
			Control axis
			Primary control surfaces – operation and effect on the aircraft
			Secondary controls Forces during turns
			Functions of trim tabs, balance tabs and servo tables
			High speed buffet and stall conditions
			Auto-pilot control axis
			Auto-stabilisers – wing levellers
			Co-ordinated turns, aileron/rudder cross feed
			Versine generation and application
			Sideslip monitors – Slip and skid in a turn
Yaw Dampers	1	2	Turbulence penetration and the effect on autopilot control Dutch Roll phenomenon
			Yaw sensing
			Yaw signal processing
			Synchronisation
			Series and parallel systems
			Cockpit indication
			Aileron/rudder control interaction in turns
			Rudder PCU, LRUs
			Interlocks with autopilot systems
Pitch Trim Systems	1	2	Longitudinal axis stability
			High speed tuck
			Mach No. inputs
Mach Trim	1	2	Mach trim actuators computation
			Connections with aircraft controls
			Warnings
Alpha Trim	1	2	Angle of attack sensing
			Computation
			Interface with other aircraft systems: e.g. N1 computers – stall warning systems
			Flight directors
Auto-Stabilisers	1	2	Trim actuators – control and safety interlocks
			Speed change systems for trim actuators
			Interlocks
			Elevator/stabiliser interaction
C of G Trimmers	1	2	Computation
			Indication
Demand Signals	1	2	Control wheel steering systems
			Touch wheel steering systems

Module 25 **Automatic Pilots – Common - Category 'X'**

	Level		
Syllabus Subject	**WTR**	**TR**	
Error Signals	1	2	Rate system – errors and control
			Displacement system – errors and control
			Heading and course error inputs
			Radio beam deviation inputs
			Attitude inputs CADC/autopilot interface – e.g. q or % adaptation
			Sideslip sensors and monitors
Signal Processing	1	2	Typical channel signal flow path
			Buffer amps
			Input signal modulation
			Summing points
			Signal sensors and switching functions
			Integrators
			Limiters
			Gain programmers Dual channel monitors
			Voter systems
Demand Signals	1	2	Mode selectors
			Control display units
			Turn controllers
			Control column transducers
			Command override systems
			Mode compatibility
			Mode annunciators
			Failure and disconnect lights and aural warnings
			Interlocks – pre and post-engage
			Pitch attitude trim
			Roll out/heading-hold, engage
			Synchronisation
			Trim monitors and indicators
			Altitude hold inputs
			Vertical speed control
			Mach/IAS hold
			Altitude acquire or change systems
Command Signal Outputs	1	2	Power control units – line replaceable units
			Solenoid valves Transfer valves
			Position sensors
			Servomotors - construction, interconnection with control runs
			Clutches – torque settings
			Brakes
			Tachogenerators –feedback and damping
			Position feedback - indication
			Torque limiting
			Hardover sensing – disconnection
			Jam detection Runway conditions – disconnection

			Pilot override - disconnection

Module 26 Automatic Pilots – Rotorcraft- Category 'X'

	Level		
Syllabus Subject	**WTR**	**TR**	
Theory of Flight (Rotorcraft)	1	2	Rotor disc: forces, lift, drag, centrifugal force, weight, phase lag Articulated/semi-rigid/rigid rotors flapping/ dragging/feathering
			Vertical and translational flight
			Main and anti-torque rotors, control inputs cyclic, collective, rudder pedals
			Directional control
			Autorotation
			Forward speed effects
Command Outputs	1	2	Actuators
			Indicators
Trim Systems	1	2	Manual/Automatic Indication
Stability Augmentation Systems	1	2	Actuators
			Indicators
			Computation

Module 30 Compass Compensation

	Level		
Syllabus Subject	**WTR**	**TR**	
Compass Compensation	2	-	Base survey techniques
			Compass swinging areas
			Aircraft magnetism
			Terrestrial magnetism – variation Methods and procedures for swinging compasses
	1	-	Flux valve operation
	3	-	Deviation: calculations and effects on a compass
			Compensation and adjustment procedures
	1	-	Various compass types

Radio Communication and Navigation – Category 'R'

	Level		
Syllabus Subject	**WTR**	**TR**	
Radio Theory	1	-	Propagation of radio waves
			Polarisation
			Radiation patterns
			Transmitters and receivers
			RF Amps, IF Amps
			Oscillators, frequency synthesisers Frequency multipliers
			Mixers, detectors, BFO, AGC
			Noise limiters, muting circuits, audio amplifiers
			Modulators, RF power amplifiers matching units
			Filters and tuned circuits
Interference	2	-	Principles and methods used to minimise the effects of conducted and radiated interference
			Methods used to minimise the effects of lightning strikes and static on aerials
Aerials and Feeders	2	-	Diplexers, baluns and matching stubs
			Fixed and variable matching arrangements Locations and types of aerials – communication and navigation
			Bandwidth and effective height of an aerial
Communication	2	-	Calculation of standing wave ratio
			Control and monitoring circuits
Audio Systems	2	-	Intercommunication
			Audio mixing and distribution systems
			Public address and entertainment systems
			Headsets and microphones
Cockpit Voice Recorder	2	-	Signal sources
			Control circuitry: hot microphone Requirements
VHF/HF Communications	2	-	Airborne installations
VOR/ILS	1	-	Ground station signals
	2	-	Airborne installations
			Control
			Monitors
			Indicators
			Loading
			AFCS and instrument interface
Marker	1 2	- -	Ground installations Airborne systems
Automatic Direction Finding	2	-	Receiver
			Loop and sense aerials and feeders
			Bearing errors and correction devices
			Loop swings
Satellite Communication and Navigation (GPS) Systems	1	-	Airborne installations
			Receiver, computer

	2	-	Displays
			Interface with other systems
Flight Compartment Electronic Display Systems	1	-	EADI; EHSI; symbol generators
			Control panels
			Comparators and monitors
Microwave Landing Systems (TRSB)	1	-	Receiver, computer
			Interface with other systems
RNAV	1	-	Computer
			Interface with other systems Indications

Module 32 **Radar Systems – Category 'R'**

	Level		
Syllabus Subject	**WTR**	**TR**	
Pulse Techniques	1	-	Radar transmitter/receiver
			Pulse modulation
			Peak power, average power
			Duty cycle, pulse shape, pulse width
			Pulse rise time and repetition frequency
			Range accuracy and resolution
			Receiver bandwidth
			Noise
Primary Radar	2	-	Weather radar:
			Control and monitoring circuits
			Indicators; displays
			Scanners; waveguides
	2	-	Doppler:
			Aerials
			Indicators
			Interface with other equipment
	2	-	Radio altimeters:
Secondary Radar	2	-	Pulse and FM, CW systems DME:
			Indicators
			Control and monitor circuits
			Interface with other aircraft systems
			ATC Transponders:
			Instrument system interface
			Control and monitor circuits
	1	-	TCAS:
			Indicators
			Control and monitor circuits
			Interface with other aircraft systems

SEVENTH SCHEDULE

OFFENCES AND PENALTIES

Regulation Number	Regulation Title	Penalties
14	Validation certificate and ratings issued on the basis of a foreign pilot licence.	B
15	Conversion of pilot licences based on foreign licences	A
17	Knowledge test: prerequisites and passing grades	B
18	Practical test: prerequisites for flight crew	B
19	Practical Tests: general requirements	B
20	Practical Tests: required aircraft and equipment	B
21	Retesting after failure	B
22	Records of Training time	A
23	Flight training received from flight instructors not licensed by the authority	B
24	Limitations on the use of flight simulators and flight training devices	B
25	Use of an approved flight simulator or an approved flight training device for a pilot license or rating: aeroplane category, class or type rating	B
26	Instrument Rating Requirements	B
27	Category Rating	B
28	Class Rating	B
29	Type Rating	B
30	Category II and III operations pilot authorisation requirements	B
32	Solo requirements for student pilots	B
34	Solo Cross-Country flight requirements	B
36	Aeronautical knowledge	B
37	Flight Proficiency	B
38	Aeronautical Experience: PPL	B
39	Limitations: Required Crew members	B
40	Limitations on private pilot licence with balloon rating	B
43	Aeronautical knowledge requirements	B
44	Flight training proficiency requirements: CPL	B
45	Aeronautical experience: CPL	B
46	Commercial pilot licence privileges	B
47	Commercial pilot licence limitations	B
56	Airline Transport Pilot licence privileges	B
64	Flight Instructor: areas of operation for flight proficiency	B
65	Flight Instructor Records	A
66	Additional category flight instructor ratings	B
67	Flight Instructor rating privileges	B

68	Renewal of flight instructor rating	B
72	Ground Instructor privileges	A
76	Fight Engineer Licence: general eligibilities requirements	B
78	Knowledge Requirements: flight engineers licence	B
79	Aeronautical experience requirements: flight engineers	B
80	Skill Requirements	B
81	Conversion of flight engineers licence	A
84	Knowle dge requirements: air traffic controllers licence	B
85	Skill requirements: operating positions	B
100	Air Traffic Controllers: Practical Experience Requirements: Facility Rating	B
101	Air Traffic Controllers Skill Requirements: Facility Ratings	B
103	Air Traffic Controllers: Maximum Hours	A
104	Air Traffic Controllers: Currency Requirements	A
107	Flight Dispatchers: Knowledge Requirements	B
108	Flight Dispatchers: Experience or Training Requirements	B
109	Flight Dispatchers: Skill Requirements	B