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Statutory Instrument No. 60 of 2022

CIVIL AVIATION ACT
(Cap. 71:01)

CIVIL AVIATION (AIR TRAFFIC SERVICES) REGULATIONS, 2022
(Published on 6th June, 2022)

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SCHEDULES

IN EXERCISE of the powers conferred on the Minister of Transport and Public Works by section 89 of the Civil Aviation Act, and on the recommendation of the Civil Aviation Authority of Botswana, the following Regulations are hereby made —

PART I — Preliminary

- Citation **1.** These Regulations may be cited as the Civil Aviation (Air Traffic Services) Regulations, 2022.

2. In these Regulations, unless the context otherwise requires –
- “accident” means an occurrence associated with the operation of an aircraft which, in the case of –
- (a) a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all persons have disembarked; or
 - (b) an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down, in which –
 - (i) a person is fatally or seriously injured as a result of –
 - (aa) being in the aircraft;
 - (bb) direct contact with any part of the aircraft, including a part which has become detached from the aircraft; or
 - (cc) direct exposure to jet blast, except where the injury is from a natural cause, self-inflicted or inflicted by another person, or where the injury is due to a stowaway hiding outside an area normally available to passengers and crew,
 - (ii) the aircraft sustains damage structural failure which –
 - (aa) adversely affects the structural strength, performance or flight characteristics of the aircraft; and
 - (bb) would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine, and its cowlings and accessories, propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windcreens, small dents or puncture holes, the aircraft skin, minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike including holes in the radome; or
 - (cc) the aircraft is missing or is completely inaccessible;
- “advisory airspace” means an airspace of defined dimensions, or designated route, within which an air traffic advisory service is available;
- “advisory route” means a designated route along which an air traffic advisory service is available;
- “aerodrome” means a defined area on land or water including any buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;
- “aerodrome control service” means an air traffic control service for aerodrome traffic;
- “aerodrome control tower” means a unit established to provide air traffic control service to aerodrome traffic;
- “aerodrome traffic” means traffic on the maneuvering area of an aerodrome and all aircraft flying in the vicinity of an aerodrome;
- “aeronautical fixed service (AFS)” means a telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services;
- “Aeronautical Information Publication (AIP)” means a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation;

- “aeronautical mobile service” means a mobile service between an aeronautical station and an aircraft station, or between an aircraft station, in which survival craft stations may participate, emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies;
- “aeronautical telecommunications station” means a station in the aeronautical telecommunication service;
- “Airborne Collision Avoidance System (ACAS)” means an aircraft system based on Secondary Surveillance Radar (SSR) transponder signals which operates independently of ground based equipment to provide advice to the pilot on potential conflicting aircrafts that are equipped with SSR transponders;
- “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;
- “air-ground communication” means a two-way communication between an aircraft and a station or location on the surface of the earth;
- “AIRMET information” means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof;
- “air traffic” means an aircraft in flight or operating on the maneuvering area of an aerodrome;
- “air traffic advisory service” means a service provided within an advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans;
- “ATC” means Air Traffic Control;
- “air traffic control clearance” means authorisation for an aircraft to proceed under conditions specified by an air traffic control unit;
- “air traffic controller schedule” means a plan for allocating air traffic controller duty periods and non-duty periods over a period of time, otherwise referred to as a roster;
- “air traffic control service (ATS)” means a service provided —
- (a) for the purpose of preventing collisions between aircrafts;
 - (b) on the maneuvering area between aircraft and obstructions; and
 - (c) for the purpose of expediting and maintaining an orderly flow of air traffic;
- “air traffic control unit” means a generic term meaning variously, area control centre, approach control unit or aerodrome control tower;
- “air traffic flow management (ATFM)” means a service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilised to the maximum extent possible and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority;
- “air traffic service” means a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service);

- “air traffic services reporting office” means a unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure;
- “air traffic services unit” means a generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office;
- “airway” means a control area or portion thereof established in the form of a corridor;
- “ALERFA” means the code word used to designate an alert phase;
- “alerting service” means a service provided to notify appropriate organisations regarding aircraft in need of search and rescue aid, and assist such organisations as required;
- “alert phase” means a situation wherein apprehension exists as to the safety of an aircraft and its occupants;
- “alternate aerodrome” means an aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met and which is operational at the expected time of use;
- “altitude” means the vertical distance of a level, a point or an object considered as a point, measured from mean sea level;
- “Appeals Tribunal” means the Appeals Tribunal established under section 79 of the Act;
- “approach control service” means air traffic control service for arriving or departing controlled flights;
- “approach control unit” means a unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes;
- “appropriate ATS authority” means the relevant authority designated by the State responsible for providing air traffic services in the airspace concerned;
- “apron” means a defined area on a land aerodrome, intended to accommodate an aircraft for purposes of loading or unloading passengers, mail or cargo, fueling, parking or maintenance;
- “apron management service” means a service provided to regulate the activities and the movement of aircraft and vehicles on an apron;
- “area control centre” means a unit established to provide air traffic control service to a controlled flight in a control area under the unit’s jurisdiction;
- “area control service” means air traffic control service for a controlled flight in a control area;
- “area navigation (RNAV)” means a method of navigation which permits aircraft operation on any desired flight path within the coverage of ground or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these;
- “area navigation route” means an ATS route established for the use of an aircraft capable of employing area navigation;
- “ATS route” means a specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services;
- “Automatic Dependent Surveillance - Broadcast (ADS-B)” means a means by which an aircraft, aerodrome vehicles and other objects can automatically transmit or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link;

- “Automatic Dependent Surveillance - Contract (ADS-C)” means a means by which the terms of an ADS-C agreement is exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports;
- “Automatic Terminal Information Service (ATIS)” means the automatic provision of current routine information to an arriving or departing aircraft throughout 24 hours or a specified portion thereof;
- “base turn” means a turn executed by an aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track;
- “calendar” means a discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day;
- “change-over point” means the point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft;
- “clearance limit” means the point to which an aircraft is granted an air traffic control clearance;
- “conference communications” means communication facilities whereby direct speech conversation may be conducted between three or more locations simultaneously;
- “control area” means a controlled airspace extending upwards from a specified limit above the earth;
- “controlled aerodrome” means an aerodrome at which air traffic control service is provided to aerodrome traffic;
- “controlled airspace” means an airspace of defined dimensions within which an air traffic control service is provided in accordance with the airspace classification;
- “controlled flight” means any flight which is subject to an air traffic control clearance;
- “Controller-Pilot Data Link Communications (CPDLC)” means a means of communication between a controller and a pilot, using data link for ATC communications;
- “control zone” means a controlled airspace extending upwards from the surface of the earth to a specified upper limit;
- “cruising level” means a level maintained during a significant portion of a flight;
- “danger area” means an airspace of defined dimensions within which an activity dangerous to a flight of aircraft may exist at a specified time;
- “Data link-Automatic Terminal Information Service (D-ATIS)” means the provision of ATIS through data link;
- “data link communications” means a form of communication intended for the exchange of messages via a data link;
- “Data-link VOLMET (D-VOLMET)” means provision of current aerodrome routine meteorological reports and aerodrome special meteorological reports, aerodrome forecasts, SIGMET, special air-reports not covered by a SIGMET and where available, AIRMET via data link;
- “datum” means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities;

- “declared capacity” means a measure of the ability of the ATC system or any of its subsystems or operating positions to provide a service to an aircraft during normal activities and is expressed as the number of aircrafts entering a specified portion of an airspace in a given period of time, taking due account of weather, ATC unit configuration, staff and equipment available, and any other factor that may affect the workload of the controller responsible for the airspace;
- “DETRESFA” means the code word used to designate a distress phase;
- “distress phase” means a situation where there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance;
- “downstream clearance” means a clearance issued to an aircraft by an air traffic control unit that is not the current controlling authority of that aircraft;
- “duty” means any task that an air traffic controller is required by the air traffic services provider to perform and these tasks include those performed during time-in-position, administrative work and training;
- “duty period” means a period which starts when an air traffic controller is required by an air traffic service provider to report for or to commence a duty and ends when an air traffic controller is free from all duties;
- “emergency phase” means a generic term meaning uncertainty phase, alert phase or distress phase;
- “fatigue” means a physiological state of reduced mental or physical performance capability resulting from sleep loss, extended wakefulness, circadian phase, or workload, mental or physical activity that can impair a person’s alertness and ability to perform safety-related operational duties;
- “Fatigue Risk Management System (FRMS)” means a data-driven means of continuously monitoring and managing fatigue-related safety risks, based upon scientific principles, knowledge and operational experience that aims to ensure relevant personnel are performing at adequate levels of alertness;
- “final approach” means that part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified —
- (a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or
 - (b) at the point of interception of the last track specified in the approach procedure; and
 - (c) ends at a point in the vicinity of an aerodrome from which —
 - (i) a landing can be made, or
 - (ii) a missed approach procedure is initiated;
- “flight information centre” means a unit established to provide flight information service and alerting service;
- “flight information region” means an airspace of defined dimensions within which flight information service and alerting service are provided;
- “flight information service” means a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights;
- “flight level” means a surface of constant atmospheric pressure which is related to a specific pressure datum, 1 013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals;

- “flight plan” means specified information provided to an air traffic service unit, relative to an intended flight or portion of a flight of an aircraft;
- “forecast” means a statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of an airspace;
- “gregorian calendar” means the calendar in general use, first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar;
- “height” means the vertical distance of a level, a point or an object considered as a point, measured from a specified datum;
- “human factor principles” means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance;
- “human performance” means human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations;
- “instrument flight procedure design service” means a service established for the design, documentation, validation, maintenance and periodic review of instrument flight procedures necessary for the safety, regularity and efficiency of air navigation;
- “Instrument Flight Rules (IFR)” means the symbol used to designate the instrument flight rules;
- “IFR flight” means a flight conducted in accordance with the instrument flight rules;
- “INCERFA” means a code word used to designate an uncertainty phase;
- “incident” means an occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation;
- “Instrument Meteorological Conditions (IMC)” means meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions;
- “integrity classification (aeronautical data)” means classification based upon the potential risk resulting from the use of corrupted data classified as –
- (a) routine data: there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
 - (b) essential data: there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and
 - (c) critical data: there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
- “international NOTAM office” means an office designated by the Authority for the exchange of NOTAM internationally;
- “level” means a generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level;
- “maneuvering area” means that part of an aerodrome to be used for the take-off, landing or taxiing of an aircraft, excluding an apron;
- “meteorological office” means an office designated to provide meteorological service for international air navigation;
- “movement area” means that part of an aerodrome to be used for the take-off, landing or taxiing of an aircraft, consisting of the maneuvering area and the apron;

- “navigation specification” means a set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications —
- (a) “Required Navigation Performance (RNP) specification” means a navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, such as RNP 4, RNP APCH; and
 - (b) area navigation (RNAV) specification” means a navigation specification based on an area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, such as RNAV 5, RNAV 1;
- “night” means the time between 30 minutes after sunset and 30 minutes before sunrise, sunset and sunrise being determined at surface level;
- “non-duty period” means a continuous and defined period of time, subsequent to, or prior to duty periods, during which the air traffic controller is free of his or her duties;
- “NOTAM” means a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations;
- “obstacle” means a fixed, whether temporary or permanent, or mobile object, or part thereof, that —
- (a) is located on an area intended for the surface movement of an aircraft;
 - (b) extends above a defined surface intended to protect aircraft in flight; or
 - (c) stands outside the defined surfaces, and that have been assessed as being a hazard to air navigation;
- “operator” means a person, organisation or enterprise engaged in or offering to engage in an aircraft operation;
- “Performance-Based Navigation (PBN)” means an area navigation based on performance requirements for an aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace;
- “Performance-Based Communication (PBC)” means communication based on performance specifications applied to the provision of air traffic services;
- “Performance-Based Surveillance (PBS)” means surveillance based on performance specifications applied to the provision of air traffic services;
- “printed communications” means communications which automatically provide a permanent printed record at each terminal of a circuit of messages which pass over such circuit;
- “prohibited area” means airspace of defined dimensions, above the land area or territorial waters of a State, within which the flight of an aircraft is prohibited;
- “radio navigation service” means a service providing guidance information or position data for the efficient and safe operation of an aircraft supported by one or more radio navigation aid;
- “radiotelephony” means a form of radio communication primarily intended for the exchange of information in the form of speech;
- “reporting point” means a specified geographical location in relation to which the position of an aircraft can be reported;
- “Required Communication Performance (RCP) specification” means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication;

- “Required Surveillance Performance (RSP) specification” means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance;
- “rescue coordination centre” means a unit responsible for promoting efficient organisation of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region;
- “restricted area” means an airspace of defined dimensions, above the land area or territorial waters of Botswana, within which the flight of an aircraft is restricted in accordance to certain specified conditions;
- “runway” means a defined rectangular area on a land aerodrome prepared for the landing or take-off of an aircraft;
- “Runway Visual Range (RVR)” means the range over which a pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line;
- “safety management system” means a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures;
- “SIGMET information” means information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations;
- “significant point” means a specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes;
- “special VFR flight” means a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC or at night;
- “state safety programme” means an integrated set of regulations and activities aimed at improving safety;
- “strayed aircraft” means an aircraft which has deviated significantly from its intended track or which reports that it is lost;
- “taxiing” means movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off or landing;
- “terminal control area” means a control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes;
- “time-in-position” means the period of time when an air traffic controller is exercising the privileges of the air traffic controller’s licence at an operational position;
- “track” means the projection on the earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from north (true, magnetic or grid);
- “traffic avoidance advice” means advice provided by an air traffic service unit specifying maneuvers to assist a pilot to avoid a collision;
- “traffic information” means information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight, and to help the pilot avoid a collision;
- “transfer of control point” means a defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next;

“transferring control unit” means an air traffic control unit in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit along the route of flight;

“uncertainty phase” means a situation where uncertainty exists as to the safety of an aircraft and its occupants;

“unidentified aircraft” means an aircraft which has been observed or reported to be operating in a given area but whose identity has not been established;

“Visual Flight Rules (VFR)” means the symbol used to designate the visual flight rules;

“VFR flight” means a flight conducted in accordance with the visual flight rules;

“Visual Meteorological Conditions (VMC)” means meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima;

“Voice-Automatic Terminal Information Service (Voice-ATIS)” means provision of ATIS by means of a continuous and repetitive voice broadcast; and

“VOLMET” means meteorological information for aircraft in flight.

3. These Regulations shall apply to any person providing air traffic services within a designated air space and at an aerodrome registered in Botswana. Application

PART II — *General Provisions*

4. A person who wishes to provide air traffic services shall have an Air Navigation Services Provider Certificate issued in accordance with the Civil Aviation (Air Navigation Services) Regulations.

Air Navigation
Services Provider
Certificate
Cap. 71:01
(Sub. Leg.)

5. (1) The Authority shall determine, those portions of an airspace and those aerodromes where air traffic services shall be provided including territories over which the Authority has jurisdiction.

Establishment
of air traffic
services provider

(2) Air traffic services shall be provided in accordance with these Regulations, except that by mutual agreement, the Authority may delegate to another State the responsibility for establishing and providing air traffic services in flight information regions, control areas or control zones extending over the territory of Botswana.

(3) The portion of the airspace of undetermined sovereignty where air traffic services are provided shall be determined on the basis of a regional air navigation agreement.

(4) Where Botswana has accepted the responsibility to provide air traffic services in such portions of airspace referred to under subregulation (3), the Authority shall arrange for such services to be established and provided in accordance with these Regulations.

(5) Where it has been determined that air traffic services will be provided, the Authority shall designate the air navigation services provider to be responsible for providing such services.

(6) Where air traffic services are established, information shall be published in the AIP, as necessary to permit the utilisation of such services.

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Objectives of air traffic services	<p>6. The objectives of the air traffic services shall be to —</p> <ul style="list-style-type: none">(a) prevent collisions between aircraft;(b) prevent collisions between aircraft on the maneuvering area and obstructions on that area;(c) expedite and maintain an orderly flow of air traffic;(d) provide advice and information useful for the safe and efficient conduct of flights; and(e) notify appropriate organisations regarding aircraft in need of search and rescue aid, and assist such organisations as required.
Divisions of air traffic services	<p>7. Air traffic services provided for the purpose of these Regulations shall comprise of the —</p> <ul style="list-style-type: none">(a) air traffic control service;(b) area control service;(c) approach control service;(d) aerodrome control service;(e) flight information service; and(f) alerting service.
Determination of need for air traffic services	<p>8. (1) The need for the provision of air traffic services shall be determined by consideration of the following —</p> <ul style="list-style-type: none">(a) the types of air traffic involved;(b) the density of air traffic;(c) the meteorological conditions; and(d) such other factors as may be relevant. <p>(2) The requirement for an aircraft to carry ACAS whilst flying in a given area shall not be considered as a factor in determining the need for air traffic services in that area.</p>
Designation of portions of airspace and controlled aerodromes where air traffic services are provided	<p>9. (1) Where it has been determined that air traffic services shall be provided in particular portions of an airspace or at a particular aerodrome, the portions of the airspace or the aerodromes shall be designated in relation to the air traffic services that are to be provided.</p> <p>(2) The designation of the particular portions of the airspace or aerodromes shall be —</p> <ul style="list-style-type: none">(a) light information regions, portions of the airspace where it is determined that flight information service and alerting service will be provided, shall be designated as flight information regions;(b) control areas and control zones —<ul style="list-style-type: none">(i) portions of the airspace where it is determined that air traffic control services are provided to IFR flights shall be designated as control areas or control zones,(ii) portions of controlled airspace wherein it is determined that air traffic control services are also provided to VFR flights shall be designated as Classes B, C, or F airspace, and(iii) where designated within a flight information region, control areas and control zones shall form part of that flight information region;(c) controlled aerodromes and such aerodromes where it is determined that air traffic control services are provided to aerodrome traffic shall be designated as controlled aerodromes;(d) reduced vertical separation minima airspace;

- (e) a sector, if the Authority considers such a designation is necessary to facilitate the provision of air traffic services within the flight information region; and
- (f) air traffic services routes and significant points along the routes.
- (3) The Authority may designate portions of the airspace as special use airspace if it considers such airspace necessary in the interest of safety or national security or for any other reasons in the public interest.
- (4) Subject to subregulation (3), a special use airspace may be designated as —
- restricted area;
 - prohibited area;
 - danger area;
 - low flying zone; and
 - flight training area.
- (5) The lateral limits of the airspaces designated under this regulation shall be defined by —
- WGS-84 geographical coordinates; or
 - the prominent geographical lines, circles or any part of a circle of a specified radius or great circle between two points or a parallel of latitude.
- (6) The vertical limits of airspaces designated under these Regulations shall be defined by heights, altitudes or flight levels.
- (7) The Authority shall publish the designation of particular portions of the airspace in the relevant aeronautical publications.
- 10.** (1) The Authority shall classify designated controlled airspace as set out in Schedule 1. Classification of airspaces
- (2) The Authority shall select airspace classes in accordance with the needs of the State.
- (3) The requirements for flights within each class of airspace shall be as set out in the table in Schedule 1.
- 11.** (1) The navigation specifications for PBN within the Gaborone Flight Information Region shall be in accordance with subregulation (2). Performance Based Navigation (PBN) operations
- PBN specifications shall be as follows —
 - RNAV 5 and RNAV 2 for en-route continental ATS routes;
 - RNAV 1 and RNP 1 for terminal area arrival or departure; and
 - RNP APCH with (Baro- RNAV), APV and LNAV for approach.
 - An ATS provider shall implement performance-based navigation within designated airspaces and aerodromes in accordance with the set specifications.
- 12.** (1) The Authority shall determine RCP specifications when applying performance-based communication (PBC). Performance Based Communication (PBC) operations
- (2) Where applicable, the RCP specifications shall be determined on the basis of regional air navigation agreements.
- (3) The RCP specification shall be appropriate to the air traffic services provided in the Gaborone Flight Information Region.
- 13.** (1) The Authority shall determine RSP specifications when applying performance-based surveillance (PBS). Performance Based Surveillance (PSB) operations
- (2) Where applicable, the RSP specification shall be determined on the basis of regional air navigation agreements.

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Establishment and designation of units providing air traffic services

(3) The RSP specification shall be appropriate to the air traffic services provided.

(4) The ATS units shall be provided with equipment capable of performance consistent with the RSP specifications where applicable.

14. The air traffic services shall be provided by units established and designated as follows —

(a) flight information established to provide flight information service and alerting service within flight information regions, unless the responsibility of providing such services within a flight information region is assigned to an air traffic control unit having adequate facilities for the discharge of such responsibility; or

(b) air traffic control units established to provide air traffic control services, flight information service and alerting service within control areas, control zones and at controlled aerodromes.

Specifications for flight information regions, control areas and control zones

15. (1) The delineation of airspace, wherein air traffic services are to be provided, shall be related to the nature of the route structure and the need for efficient service rather than to national boundaries.

(2) A flight information region shall —

(a) be delineated to cover the whole of the air route structure to be served by such regions; and

(b) include all airspace within the flight information region's lateral limits except as limited by an upper flight information region.

(3) Where a flight information region is limited by an upper flight information region, the lower limit specified for the upper flight information region shall constitute the upper vertical limit of the flight information region and shall coincide with a VFR cruising level of the tables as set out in Schedule 1 to the Civil Aviation (Rules of the Air) Regulations.

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(4) A control area including, inter alia, airways and terminal control areas, shall be delineated so as to encompass sufficient airspace to contain the flight paths of IFR flights or portions thereof to which it is desired to provide the applicable parts of the air traffic control service, taking into account the capabilities of the navigation aids normally used in that area.

(5) A lower limit of a control area shall be established at a height above the ground or water of not less than 200 m (700 ft).

(6) The lower limit of a control area shall, when practicable and desirable in order to allow freedom of action for VFR flights below the control area, be established at a greater height than the minimum specified in subregulation (5).

(7) When the lower limit of a control area is above 900 m (3000 ft.) Mean Sea Level (MSL) it shall coincide with a VFR cruising level of the table as set out in Schedule 1 to the Civil Aviation (Rules of the Air) Regulations.

(8) An upper limit of a control area shall be established when either —

(a) air traffic control service is not provided above such upper limit; or

(b) the control area is situated below an upper control area, in which case the upper limit shall coincide with the lower limit of the upper control area.

(9) When established, such upper limit shall coincide with a VFR cruising level of the table set out in Schedule 1 to the Civil Aviation (Rules of the Air) Regulations.

- 16.** Where it is desirable to limit the number of flight information regions or control areas through which a high flying aircraft would otherwise have to operate, a flight information region or control area, as appropriate, shall be delineated to include the upper airspace within the lateral limits of a number of lower flight information regions or control areas.
- 17.** (1) The lateral limits of a control zone shall encompass at least portions of the airspace, which are not within control areas, containing the paths of IFR flights arriving at and departing from aerodromes to be used under instrument meteorological conditions.
- (2) The lateral limits of a control zone shall extend to at least 9.3 km (5 NM) from the centre of the aerodrome concerned in the directions from which approaches may be made.
- (3) Where a control zone is located within the lateral limits of a control area, the control zone shall extend upwards from the surface of the earth to at least the lower limit of the control area.
- (4) Where a control zone is located outside the lateral limits of a control area, an upper limit shall be established.
- (5) Where it is desired to establish the upper limit of a control zone at a level higher than the lower limit of the control area established above it, or where the control zone is located outside of the lateral limits of a control area, the control zone's upper limit shall be established at a level which can easily be identified by a pilot.
- (6) Where the limit under subregulation (5) is above 900 m (3 000 ft.) Mean Sea Level it shall coincide with a VFR cruising level as set out in Schedule 1 to the Civil Aviation (Rules of the Air) Regulations.
- 18.** (1) An area control centre or flight information centre shall be identified by the name of a nearby town or city or geographic feature.
- (2) An aerodrome control tower or approach control unit shall be identified by the name of the aerodrome at which it is located.
- (3) A control zone, control area or flight information region shall be identified by the name of the unit having jurisdiction over such airspace.
- 19.** (1) When an ATS route is established, a protected airspace along each ATS route and a safe spacing between adjacent ATS routes shall be provided.
- (2) When warranted by density, complexity or nature of the traffic, a special route shall be established for use by low-level traffic, including helicopters.
- (3) When determining the lateral spacing between routes under subregulation (2), account shall be taken of the navigational means available and the navigation equipment carried on board helicopters.
- (4) An ATS route shall be identified by a designator.
- (5) A designator for an ATS route other than a standard departure and arrival route shall be selected in accordance with the principles set out in Schedule 2.
- (6) Standard departure and arrival routes and associated procedures shall be identified in accordance with the principles set out in Schedule 3.
- 20.** (1) Change-over points shall be established on ATS route segments defined by reference to very high frequency omni-directional radio ranges where this will assist accurate navigation along the route segments.
- (2) The establishment of change-over points shall be limited to route segments of 110 km (60 NM) or more, except where the complexity of ATS routes, the density of navigation aids or other technical and operational reasons warrant the establishment of change-over points on shorter route segments.

Flight information regions or control areas in upper airspace

Control zones

Identification of air traffic services units and airspaces

Establishment and identification of ATS routes

Establishment of change-over points

(3) Unless otherwise established in relation to the performance of the navigation aids or frequency protection criteria, the change-over point on a route segment shall be the mid-point between the facilities in the case of a straight route segment or the intersection of radials in the case of a route segment which changes direction between the facilities.

Establishment and identification of significant points

21. (1) Significant points shall be established for the purpose of defining an ATS route or in relation to the requirements of air traffic services for information regarding the progress of aircraft in flight.

(2) Significant points shall —

(a) be identified by designators; and

(b) be established and identified in accordance with the principles set out in Schedule 4.

Establishment and identification of standard routes of taxiing aircrafts

22. (1) Standard routes for taxiing aircraft shall be established on an aerodrome between runways, aprons and maintenance areas and such routes shall be direct, simple and where practicable, designed to avoid traffic conflicts.

(2) Standard routes for taxiing aircraft shall be identified by designators distinctively different from those of the runways and ATS routes.

Coordination between operator and air traffic services
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23. (1) An air traffic services unit shall have due regard for the requirements of the operators consequent on the air traffic services unit's obligations as set out in Civil Aviation (Operation of Aircraft) Regulations.

(2) The ATS units shall make available to the operators or the operator's designated representatives such information as may be available to enable them or their designated representatives to carry out their responsibilities.

(3) The ATS Units shall provide the operator or a designated representative whenever requested, with messages including position reports in so far as practicable in accordance with locally agreed procedures.

Coordination between military authorities and air traffic services

24. (1) An air traffic services authority shall establish and maintain close cooperation with military authorities responsible for activities that may affect flights of a civil aircraft.

(2) Coordination of activities potentially hazardous to a civil aircraft shall be effected in accordance with regulation 25.

(3) An arrangement shall be made to permit information relevant to the safe and expeditious conduct of flights of civil aircraft to be promptly exchanged between air traffic services units and appropriate military units.

(4) The air traffic services unit shall in accordance with locally agreed procedures, provide appropriate military units with pertinent flight plan and other data concerning flights of civil aircraft.

(5) The air traffic services authority shall designate any area or route where the requirements of Civil Aviation (Rules of the Air) Regulations concerning flight plans, two-way communications and position reporting apply to all flights to facilitate identification of civil aircraft.

(6) Special procedures shall be established in order to ensure that —

(a) air traffic services units are notified if a military unit observes that an aircraft which is, or might be, a civil aircraft is approaching, or has entered, any area in which interception might become necessary; and

(b) all possible efforts are made to confirm the identity of the aircraft and to provide it with the navigational guidance necessary to avoid the need for interception.

25. (1) An arrangement for activities potentially hazardous to a civil aircraft, whether over the territory of Botswana or over the high seas, shall be coordinated with the appropriate air traffic services authorities.

(2) The coordination shall be effected to permit timely promulgation of information regarding the activities in accordance with the Civil Aviation (Aeronautical Information Services) Regulations.

(3) Where the appropriate ATS authority is not that of the State where the organisation planning the activities is located, initial coordination shall be effected through the ATS authority responsible for the airspace over the State where the organisation is located.

(4) The objective of the coordination shall be to achieve the best arrangement which may avoid hazards to civil aircraft and minimise interference with the normal operations of such aircraft.

(5) In determining the arrangements under subregulation (4), the appropriate ATS authority shall apply the following conditions —

- (a) the location or area, time and duration for the activities shall be selected as far as possible in order to avoid closure or realignment of established ATS routes, blocking of the most economic flight levels, or delays of scheduled aircraft operations, unless no other options exist;
- (b) the size of the airspace designated for the conduct of the activities shall be kept as small as possible; and
- (c) direct communication between the appropriate ATS authority or air traffic services unit and the organisation or unit conducting the activities shall be provided for use in the event that civil aircraft emergencies or other unforeseen circumstances require discontinuation of the activities.

(6) The appropriate ATS authority shall be responsible for initiating the promulgation of information regarding the activities.

(7) Where an activity that is potentially hazardous to civil aircraft takes place on a regular or continuing basis, special committees shall be established as required to ensure that the requirements of all parties concerned are adequately coordinated.

(8) Adequate steps shall be taken to prevent emission of laser beams from adversely affecting flight operations.

(9) The Air Navigation Service Provider (ANSP) together with the military authorities, through the civil or military coordination arrangements, shall establish procedures providing for a flexible use of airspace reserved for military or other special activities in order to provide added airspace capacity and to improve efficiency and flexibility of aircraft operations.

(10) The procedures under subregulation (9) shall permit all airspace users to have safe access to such reserved airspace.

(11) The ANSP shall ensure that a safety risk assessment is conducted as soon as practicable, for activities potentially hazardous to a civil aircraft, and that appropriate risk mitigation measures are implemented.

(12) The risk mitigation measures under subregulation (11) may include airspace restriction or temporary withdrawal of established ATS routes or portions thereof.

(13) The Authority shall establish procedures to enable the organisation or unit conducting or identifying activities potentially hazardous to a civil aircraft to contribute to the safety risk assessment in order to facilitate consideration of relevant safety-significant factors.

Coordination of activities potentially hazardous to civil aircraft
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Aeronautical data

26. (1) Determination and reporting of air traffic services-related aeronautical data shall be in accordance with the accuracy and integrity classification required to meet the needs of the end user of aeronautical data.
(2) Digital data error detection technics shall be used during the transmission and or storage of aeronautical data and digital data sets.

Coordination between meteorological and air traffic services providers

27. (1) Meteorological and air traffic services providers shall make arrangements to ensure that an aircraft receives the most up-to-date meteorological information for aircraft operations.

(2) The meteorological and air traffic services authority shall make an arrangement where necessary for air traffic personnel to —

- (a) report if observed by an air traffic services personnel or communicated by aircraft, such other meteorological elements as may be agreed upon in addition to using indicating instruments;
- (b) report as soon as possible to the associated meteorological office meteorological phenomena of operational significance, if observed by air traffic services personnel or communicated by aircraft, which have not been included in the aerodrome meteorological report; or
- (c) report as soon as possible to the associated meteorological office pertinent information concerning pre-eruption volcanic activity, volcanic eruptions and information concerning volcanic ash cloud.

(3) An area control centre or a flight information centre shall report the information under subregulation (2)(c) to the associated meteorological watch office and volcanic ash advisory centres.

(4) The area control centre, flight information centre and associated meteorological watch office shall maintain close coordination to ensure that information on volcanic ash included in NOTAM and SIGMET messages is consistent.

Coordination between aeronautical information services and air traffic services

28. (1) An aeronautical information service and air traffic service responsible for air traffic services shall make an arrangement to ensure that aeronautical information services units obtain information to enable them to provide up-to-date pre-flight information and to meet the need for inflight information.

(2) An arrangement shall be made between aeronautical information services and air traffic services responsible for air traffic services to report to the responsible aeronautical information services unit, with a minimum of delay —

- (a) information on an aerodrome's condition;
- (b) the operational status of associated facilities, services and navigation aids within their area of responsibility;
- (c) the occurrence of volcanic activity observed by air traffic services personnel or reported by aircraft; and
- (d) any other information considered to be of operational significance.

(3) The services responsible for changes to the air navigation system shall, before introducing any change, take due account of the time needed by the aeronautical information service for the preparation, production and issuance of relevant material for promulgation and to ensure timely provision of the information to the aeronautical information service, close coordination between those services concerned shall be required.

(4) A change to aeronautical information that affects charts or computer-based navigation systems which qualify to be notified by the Aeronautical Information Regulation and Control (AIRAC) system, shall be as set out in the Civil Aviation (Aeronautical Information Services) Regulations.

(5) Subject to subregulation (4), the predetermined, internationally agreed AIRAC effective dates in addition to 14 days postage time shall be observed by the responsible air traffic services when submitting the raw information or data to aeronautical information services.

(6) The air traffic services responsible for the provision of raw aeronautical information or data to the aeronautical information services shall do so while taking into account accuracy and integrity requirements required to meet the needs of the end-user of aeronautical data.

29. (1) The Authority shall determine and promulgate minimum flight altitudes for each Air Traffic Service route and control area.

Minimum
flight attitudes

(2) The minimum flight altitudes determined under subregulation (1) shall provide a minimum clearance above the controlling obstacle located within the areas concerned.

30. (1) An aircraft known or believed to be in a state of emergency, including being subjected to unlawful interference, shall be given maximum consideration, assistance and priority over other aircraft as may be necessitated by the circumstances.

Service to
aircraft in
event of
emergency

(2) An aircraft equipped with an appropriate data link capability or an SSR transponder to indicate that the aircraft is in a state of emergency, shall operate the equipment as follows —

- (a) on Mode A, Code 7700;
- (b) on Mode A, Code 7500, to indicate specifically that it is being subjected to unlawful interference;
- (c) activate the appropriate emergency or urgency capability of ADS-B or ADS-C; or
- (d) transmit the appropriate emergency message via CPDLC.

(3) Human factor principles shall be observed in communications between an ATS units and an aircraft in the event of an emergency.

(4) The ATS unit shall attend promptly to requests by an aircraft when an occurrence of unlawful interference with the aircraft takes place or is suspected.

(5) Information pertinent to the safe conduct of the flight as referred to under subregulation (4) shall be transmitted and the necessary action shall be taken to expedite the conduct of all phases of the flight, especially the safe landing of the aircraft.

(6) The ATS unit in accordance with locally agreed procedures shall immediately inform the appropriate authority designated by the State and exchange necessary information with the operator or its designated representative when an occurrence of unlawful interference with an aircraft takes place or is suspected.

31. (1) An ATS unit shall take all necessary steps as outlined under subregulations (2) and (3) to assist strayed aircraft and to safeguard its flight as soon as the unit becomes aware of the strayed aircraft.

In-flight
contingencies,
strayed and
unidentified
aircraft

(2) Where the aircraft's position is not known, the air traffic services unit shall —

- (a) attempt to establish a two-way communication with the aircraft, unless such communication already exists;
- (b) use available means to determine its position;
- (c) inform other ATS units into whose area the aircraft may have strayed or may stray, taking into account any factor which may have affected the navigation of the aircraft in the circumstances;

- (d) inform, in accordance with a locally agreed procedure, appropriate military units and provide them with pertinent flight plan and other data concerning strayed aircraft; and
 - (e) request from the units referred to under paragraphs (c) and (d) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.
- (3) When the aircraft's position is established, the air traffic services unit shall —
- (a) advise the aircraft of its position and corrective action to be taken; and
 - (b) provide, as necessary, other ATS units and appropriate military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.
- (4) Where an ATS unit becomes aware of an unidentified aircraft in its area, the air traffic services unit shall endeavour to establish the identity of the aircraft in accordance with locally agreed procedures.
- (5) Subject to subregulation (4) the ATS unit shall take the following steps —
- (a) attempt to establish a two-way communication with the aircraft;
 - (b) inquire of other air traffic services units within the flight information region about the flight and request their assistance in establishing two-way communication with the aircraft;
 - (c) inquire of the ATS unit serving the adjacent flight information regions about the flight, and request the ATS' unit assistance in establishing two-way communication with the aircraft; and
 - (d) attempt to obtain information from any other aircraft in the area.
- (6) The air traffic services unit shall, inform the appropriate military unit as soon as the identity of the aircraft has been established.
- (7) The appropriate State agency shall immediately be informed, in accordance with locally agreed procedures when the ATS unit considers that a strayed or unidentified aircraft may be the subject of an unlawful interference.

Interception of
civil aircraft

- 32.** (1) Where an ATS unit learns that an aircraft is being intercepted in its area of responsibility, the air traffic services unit shall take the following steps as are appropriate in the circumstances —
- (a) attempt to establish two-way communication with the intercepted aircraft via any means available, including the emergency radio frequency 121.5 MHz, unless such communication already exists;
 - (b) inform the pilot of the intercepted aircraft of the interception;
 - (c) establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft;
 - (d) relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary;
 - (e) in close coordination with the intercept control unit take all necessary steps to ensure the safety of the intercepted aircraft; and
 - (f) inform ATS units serving adjacent flight information regions if it appears that the aircraft has strayed from such adjacent flight information regions.
- (2) Where an ATS unit learns that an aircraft is being intercepted outside its area of responsibility, the air traffic services unit shall take the following steps as are appropriate in the circumstances —
- (a) inform the ATS unit serving the airspace in which the interception is taking place, providing this unit with available information that will assist in identifying the aircraft and requesting it to take action in accordance with subregulation (1); and

(b) relay messages between the intercepted aircraft and the appropriate ATS unit, the intercept control unit or the intercepting aircraft.

33. (1) An ATS unit shall use Coordinated Universal Time (UTC) and shall express the time in hours and minutes, and where required, seconds of the 24 hour day beginning at midnight. Time in air traffic services

(2) An ATS unit shall be equipped with clocks indicating the time in hours, minutes and seconds, clearly visible from each operating position in the unit concerned.

(3) The ATS unit clocks and other time recording devices shall be checked as necessary to ensure correct time to within plus or minus 30 seconds of UTC.

(4) Wherever data link communications are utilised by an air traffic services unit, clocks and other time-recording devices shall be checked as necessary to ensure correct time to within 1 second of UTC.

(5) The correct time shall be obtained from a standard time station or, if not possible, from another unit which has obtained the correct time from such station.

(6) An aerodrome control tower shall, prior to an aircraft taxiing for take-off, provide the pilot with the correct time, unless arrangements have been made for the pilot to obtain it from other sources.

(7) The ATS unit shall provide an aircraft with the correct time on request and time checks shall be given to the nearest half minute.

34. The Authority shall establish requirements for carriage and operation of pressure-altitude reporting transponders within defined portions of an airspace. Establishment of requirement for carriage and operation of pressure-altitude reporting transponders

35. (1) An ATS provider shall establish a safety management system in accordance with the Civil Aviation (Safety Management) Regulations. Safety management Cap. 71:01 (Sub. Leg.)

(2) Any significant safety-related change to the ATS system, including the implementation of a reduced separation minimum or a new procedure, shall only be effected after a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted.

(3) The ATS provider, when appropriate, shall ensure that adequate provision is made for post-implementation monitoring to verify that the defined level of safety continues to be met.

36. (1) The Authority shall determine requirements for Fatigue Management for the purpose of managing fatigue in the provision of air traffic control services. Prescriptive fatigue management

(2) The requirements referred to under subregulation (1) are set out in Schedule 5.

(3) The ATS provider, for the purposes of managing its fatigue-related safety risks, shall establish air traffic controller schedules commensurate with the services provided and in compliance with Schedule 5.

(4) Where the air traffic services provider complies with scheduling limits in the provision of part or all of its air traffic control services under subregulation (3), the Authority shall —

(a) require evidence that the limitations are not exceeded and that non-duty period requirements are met;

(b) require an ATS provider to familiarise its personnel with the principles of fatigue management and its policies with regard to fatigue management;

- (c) establish a process to allow variations from the applicable scheduling limits to address any additional risks associated with sudden, unforeseen operational circumstances; and
 - (d) where an air traffic services provider demonstrates that any associated risk is managed to a level of safety equivalent to, or better than, that achieved through the applicable scheduling limits, the Authority may approve variations to these limits in order to address strategic operational needs in exceptional circumstances.
- 37.** (1) The World Geodetic System -1984 shall be used as the horizontal-reference system for air navigation.
- (2) Reported aeronautical geographical coordinates indicating latitude and longitude shall be expressed in terms of the World Geodetic System-1984 geodetic reference datum.
- 38.** Mean Sea Level datum, which gives the relationship of gravity-related height or elevation to a surface known as the geoids shall be used as the vertical reference system for air navigation.
- 39.** (1) The Gregorian calendar and Coordinated Universal Time shall be used as the temporal reference system for air navigation.
- (2) Where a different temporal reference system is used, the temporal reference system shall be indicated in Part 1, section 2.1.2. of the Aeronautical Information Publication.
- 40.** (1) An ATS provider shall ensure that an air traffic controller speaks and understands the languages used for radiotelephony communications as set out in the Civil Aviation (Personnel Licensing) Regulations.
- (2) The English language shall be used for communications between air traffic control units except when conducted in a mutually agreed language.
- 41.** (1) An ATS authority shall develop and promulgate contingency plans for implementation in the event of disruption, or potential disruption of air traffic services and related supporting services in the airspace for which they are responsible for the provision of such services.
- (2) The contingency plan shall be developed with the assistance of International Civil Aviation Organization in coordination with the air traffic services authorities responsible for the provision of services in adjacent portions of airspace and with airspace users concerned.
- 42.** (1) A prohibited, restricted or danger area shall upon initial establishment, be given identification and full details and be promulgated by the Authority.
- (2) The identification assigned shall be used to identify the area in all subsequent notifications pertaining to that area.
- (3) The identification shall be composed of a group of letters and figures as follows —
- (a) nationality letters for location indicators assigned to the State or territory which has established the airspace;
 - (b) the letter —
 - (i) P for prohibited area,
 - (ii) R for restricted area, and
 - (iii) D for danger area,
 as appropriate; and
 - (c) a number, unduplicated within the State or territory.

(4) An identification number shall not be reused for a period of at least one year after cancellation of the area to which they refer to avoid confusion.

(5) Where a prohibited, restricted or danger area is established, the area shall be as small as practicable and be contained within simple geometrical limits, so as to permit ease of reference by all concerned.

43. The Authority shall ensure that an instrument flight procedure design service is in place in accordance with the Civil Aviation (Construction of Visual and Instrument Flight Procedures) Regulations.

Instrument flight
procedure
design service
Cap. 71:01
(Sub. Leg.)

PART III — *Air Traffic Control Service*

44. An air traffic control service shall be provided to —

- (a) IFR flights in airspace Classes A, B, C, D and E;
- (b) VFR flights in airspace Classes B, C and D;
- (c) special VFR flights; and
- (d) aerodrome traffic at controlled aerodromes.

Application of
air traffic
control service

45. The divisions of air traffic control service under regulation 7(1) shall be provided by the various units as follows —

Provision of
air traffic
control service

- (a) area control service by —
 - (i) an area control centre, or
 - (ii) the unit providing approach control service in a control zone or in a control area of limited extent which is designated primarily for the provision of approach control service, and where no area control centre is established; or
- (b) approach control service by —
 - (i) an aerodrome control tower or area control centre when it is necessary or desirable to combine under the responsibility of one unit the functions of the approach control service with those of the aerodrome control service or the area control service, or
 - (ii) by an approach control unit when it is necessary or desirable to establish a separate unit; and
- (c) aerodrome control service by an aerodrome control tower.

46. (1) In order to provide air traffic control services, an air traffic control unit shall —

Operation of
air traffic
control service

- (a) be provided with information on the intended movement of each aircraft, or variations there from, and with current information on the actual progress of each aircraft;
- (b) determine from the information received, the relative positions of known aircrafts to each other;
- (c) issue clearances and information for the purpose of preventing collision between aircrafts under the air traffic control services' control and of expediting and maintaining an orderly flow of traffic; and
- (d) coordinate clearances as necessary with other units —
 - (i) whenever an aircraft might otherwise conflict with traffic operated under the control of such other units, or
 - (ii) before transferring control of an aircraft to such other units.

(2) Information on an aircraft's movement, together with a record of air traffic control clearances issued to such aircraft, shall be so displayed as to permit ready analysis in order to maintain an efficient flow of air traffic with adequate separation between aircrafts.

(3) Clearances issued by an air traffic control unit shall provide separation between —

- (a) flights in airspace Classes A and B;
- (b) IFR flights in airspace Classes C, D and E;
- (c) IFR flights and VFR flights in airspace Class C;
- (d) IFR flights and special VFR flights; and
- (e) special VFR flights when so determined by the appropriate ATS authority.

(4) A flight may be cleared without separation being provided in respect of a specific portion of the flight conducted in visual meteorological conditions when requested by an aircraft and if so determined by the appropriate ATS authority for the cases listed under subregulation (3) (b) in airspace Classes D and E.

(5) Separation by an air traffic control unit shall be obtained by at least one of the following —

- (a) vertical separation, obtained by assigning different levels selected from —
 - (i) the appropriate table of cruising levels described in the Civil Aviation (Rules of the Air) Regulations, or
 - (ii) a modified table of cruising levels, when so determined in accordance with the Civil Aviation (Rules of the Air) Regulations or flight above FL 410, except that the correlation of levels to track as determined therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or air traffic control clearances;
- (b) horizontal separation, obtained by providing —
 - (i) longitudinal separation, by maintaining an interval between aircraft operating along the same, converging or reciprocal tracks, expressed in time or distance, or
 - (ii) lateral separation, by maintaining aircraft on different routes or in different geographical areas; or
- (c) composite separation, consisting of a combination of vertical separation and one of the other forms of separation contained under paragraph (b) using minima for each which may be lower than, but not less than half of, those used for each of the combined elements when applied individually.

(6) Composite separation shall only be applied on the basis of regional air navigation agreements.

(7) For an airspace where a reduced vertical separation minimum of 300 m (1000 ft) is applied between FL 290 and FL 410 inclusive, a programme shall be instituted on a regional basis, for monitoring the height-keeping performance of an aircraft operating at these levels, in order to ensure that the continued application of this vertical separation minimum meets the safety objectives.

(8) The scope of regional monitoring programmes shall be adequate to conduct analysis of aircraft group performance and evaluate the stability of altimetry system error.

(9) Where RCP or RSP specifications are applied, programmes shall be instituted for monitoring the performance of the infrastructure and the participating aircraft against the appropriate RCP or RSP specifications, to ensure that operations in the applicable airspace continue to meet safety objectives.

(10) The scope of monitoring programmes shall be adequate to evaluate communication or surveillance performance, as applicable.

47. (1) The selection of separation minima for application within a given portion of airspace shall be as follows —

- (a) the separation minima shall be selected from those determined by the provisions of the Procedure for Air Navigation Services- Air Traffic Management (PANS-ATM) and the Regional Supplementary Procedures as applicable under the prevailing circumstances except, that where types of aids are used or circumstances prevail which are not covered by these Regulations, other separation minima shall be established as necessary by –
- (i) the appropriate ATS Authority following consultation with operators, for routes or portions of routes contained within the sovereign airspace of Botswana, or
 - (ii) regional air navigation agreements for routes or portions of routes contained within an airspace over areas of undetermined sovereignty;
- (b) the selection of separation minima shall be made in consultation between the appropriate ATS authorities responsible for the provision of air traffic services in neighbouring airspaces where –
- (i) traffic passes from one airspace into the other neighbouring airspace, and
 - (ii) routes are closer to the common boundary of the neighbouring airspaces than the separation minima applicable in the circumstances.
- (2) Details of the selected separation minima and of their areas of application shall be notified –
- (a) to the ATS units concerned; and
 - (b) to pilots and operators through aeronautical information publications, where separation is based on the use by aircraft of specified navigation aids or specified navigation techniques.
- 48.** (1) A controlled flight shall be under the control of only one air traffic control unit at any given time. Responsibility for control
- (2) The responsibility for the control of all aircrafts operating within a given block of airspace shall be vested in a single air traffic control unit.
- (3) The control of an aircraft may be delegated to other air traffic control units provided that coordination between all air traffic control units concerned is assured.
- 49.** The responsibility for the control of an aircraft shall be transferred from one air traffic control unit to another in accordance with the principles set out in Schedule 6. Place or time of transfer
- 50.** (1) Responsibility for the control of an aircraft shall not be transferred from one air traffic control unit to another without the consent of the accepting control unit, and such transfer shall be obtained in accordance with the following conditions – Coordination of transfer
- (a) the transferring control unit shall communicate to the accepting control unit the appropriate parts of the current flight plan, and any control information pertinent to the transfer requested;
 - (b) where transfer of control is to be effected using radar or ADS-B data, the control information pertinent to the transfer shall include information regarding the position and where required, the track and speed of the aircraft, as observed by radar or ADS-B immediately prior to the transfer; or
 - (c) where the transfer of control is to be effected using ADS-C data, the control information pertinent to the transfer shall include the four-dimensional position and other information as necessary.

- (2) The accepting control unit shall —
 - (a) indicate its ability to accept control of the aircraft on the terms specified by the transferring control unit, unless by prior agreement between the two units concerned, and the absence of any such indication shall be understood to signify acceptance of the terms specified, or indicate any necessary changes thereto; and
 - (b) specify any other information or clearance for a subsequent portion of the flight, which the accepting control unit requires the aircraft to have at the time of transfer.
 - (3) The accepting control unit shall notify the transferring control unit when it has established two-way voice or data link communications with, and assumed control of the aircraft concerned, unless otherwise specified by agreement between the two control units concerned.
 - (4) Applicable coordination procedures, including transfer of control points, shall be specified in the letters of agreement and ATS unit instructions, as appropriate.
- 51.** Air traffic control clearances shall be based solely on the requirements for providing air traffic control service.
- 52.** (1) An air traffic control clearance shall indicate —
- (a) aircraft identification as shown in the flight plan;
 - (b) clearance limit;
 - (c) route of flight;
 - (d) level of flight for the entire route or part of the route and changes of levels if required; and
 - (e) any necessary instructions or information on other matters such as approach or departure manoeuvres, communications and the time of expiry of the clearance.
- (2) Standard departure or arrival routes and associated procedures shall be established where necessary to facilitate —
- (a) the safe, orderly and expeditious flow of air traffic; and
 - (b) the description of the route and procedure in air traffic control clearances.
- 53.** (1) An air traffic control clearance relating to the transonic acceleration phase of a supersonic flight shall extend at least to the end of that phase.
- (2) An air traffic control clearance relating to the deceleration and descent of an aircraft from supersonic cruise to subsonic flight shall provide for uninterrupted descent, at least during the transonic phase.
- 54.** (1) A flight crew shall read back to the air traffic controller safety-related parts of Air Traffic Control clearances and instructions which are transmitted by voice.
- (2) The flight crew shall always read back the following items of ATC clearances and instructions —
- (a) ATC route clearances;
 - (b) clearances and instructions to enter, land on, take off from, hold short of, cross and backtrack on any runway; and
 - (c) runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions and, whether issued by the controller or contained in ATIS broadcasts, transition levels.
- (3) Other clearances or instructions, including conditional clearances, shall be read back or acknowledged in a manner to clearly indicate that they have been understood and shall be complied with.

Air traffic control clearances

Contents of clearances

Clearances for transonic flight

Read-back of clearances and safety-related information

(4) The controller shall listen to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and shall take immediate action to correct any discrepancies revealed by the read-back.

(5) Unless specified by the appropriate ATS Authority, voice read-back of Controller Pilot Data Link Communication messages shall not be required.

55. (1) An air traffic control clearance shall be coordinated between air traffic control units to cover the entire route of an aircraft or a specified portion of the route.

Coordination of clearances

(2) An aircraft shall be cleared for the entire route to the aerodrome of first intended landing —

- (a) when it has been possible, prior to departure, to coordinate the clearance between all the units under whose control the aircraft will come; or
- (b) when there is reasonable assurance that prior coordination will be effected between those units under whose control the aircraft will subsequently come.

(3) Where coordination under subregulation (2) has not been achieved or is not anticipated, the aircraft shall be cleared only to that point where coordination is reasonably assured and prior to reaching such point, or at such point, the aircraft shall receive further clearance, holding instructions being issued as appropriate.

(4) When determined by the appropriate ATS authority, an aircraft shall contact a downstream air traffic control unit, for the purpose of receiving a downstream clearance prior to the transfer of control point.

(5) An aircraft shall maintain the necessary two-way communication with the current air traffic control unit while obtaining a downstream clearance.

(6) A clearance issued as a downstream clearance shall be clearly identifiable as such to the pilot.

(7) A downstream clearance shall not affect the aircraft's original flight profile in any airspace, other than that of the air traffic control unit responsible for the delivery of the downstream clearance unless the downstream clearance has been coordinated.

(8) Where data link communications are used to facilitate downstream clearance delivery, two-way voice communications between the pilot and the air traffic control unit providing the downstream clearance shall be available.

(9) Where an aircraft intends to depart from an aerodrome within a control area to enter another control area within a period of 30 minutes, or such other specific period of time as has been agreed between the area control centres concerned, coordination with the subsequent area control centre shall be effected prior to issuance of the departure clearance.

(10) When an aircraft intends to leave a control area for flight outside controlled airspace, and re-enter the same or another control area, a clearance from point of departure to the aerodrome of first intended landing shall be issued.

(11) The clearance or revision referred to under subregulation (10) shall apply only to those portions of the flight conducted within controlled airspace.

56. (1) Air traffic flow management shall be implemented for airspace where air traffic demand at times exceeds, or is expected to exceed, the declared capacity of the air traffic control services concerned.

Air traffic flow management

(2) Air traffic flow management shall be implemented on the basis of regional air navigation agreements or, where appropriate, through multilateral agreements and such agreements shall make provision for common procedures and common methods of capacity determination.

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Control of persons and vehicles at aerodromes

(3) Where it becomes apparent to an ATC unit that traffic additional to that already accepted —

- (a) cannot be accommodated within a given period of time at a particular location or in a particular area; or
- (b) can only be accommodated at a given rate, that unit shall advise the ATFM unit, when such is established, as well as when appropriate, the ATS units concerned.

(4) A flight crew of an aircraft destined to the location or area in question and operators concerned shall also be advised of the delays expected or the restrictions that will be applied.

57. (1) The movement of a person or vehicle including a towed aircraft on the maneuvering area of an aerodrome shall be controlled by the aerodrome control tower to avoid hazard to such person or vehicle, or to an aircraft landing, taxiing or taking off.

(2) In conditions where low visibility procedures are in operation —

- (a) a person and a vehicle operating on the maneuvering area of an aerodrome shall be restricted to the essential minimum, and particular regard shall be given to the requirements to protect the Instrument Landing System or Micro Landing System sensitive areas when Category II or Category III precision instrument operations are in progress;
- (b) subject to subregulation (3), the minimum separation between vehicles and taxiing aircraft shall be as determined by the appropriate ATS authority taking into account the aids available; and
- (c) when mixed Instrument Landing System or Micro Landing System Category II or Category III precision instrument operations are taking place to the same runway continuously, the more restrictive Instrument Landing System or Micro Landing System critical and sensitive areas shall be protected.

(3) An emergency vehicle proceeding to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic.

(4) Subject to subregulation (3), a vehicle on the maneuvering area shall be required to comply with the following rules —

- (a) a vehicle or a vehicle towing an aircraft shall give way to an aircraft which is landing, taking off or taxiing;
- (b) a vehicle shall give way to other vehicles towing an aircraft;
- (c) a vehicle shall give way to other vehicles in accordance with ATS unit instructions; and
- (d) notwithstanding paragraphs (a), (b) and (c), a vehicle or a vehicle towing an aircraft shall comply with instructions issued by the aerodrome control tower.

(5) The ATS provider shall establish a runway safety programme to enhance runway safety using collaborative approach that involves regulators, aircraft operators, aerodrome operators and air navigation service providers.

Provision of radar and ADS-B

58. Radar and ADS-B ground systems shall provide for the display of safety-related alerts and warnings, including conflict alert, conflict prediction, minimum safe altitude warning and unintentionally duplicated SSR codes.

Use of surface movement radar

59. In the absence of visual observation of all or part of the maneuvering area or to supplement visual observation, Surface Movement Radar or other suitable surveillance equipment, shall be utilised to —

- (a) monitor the movement of an aircraft and vehicles on the maneuvering area;

- (b) provide directional information to pilots and vehicle drivers as necessary; and
 - (c) provide advice and assistance for the safe and efficient movement of an aircraft and vehicles on the maneuvering area.
- 60.** (1) Flight information service shall be provided to all aircraft which are likely to be affected by the information and which are —
- (a) provided with air traffic control service; or
 - (b) otherwise known to the relevant air traffic services units.
- (2) Where an ATS unit provides both flight information service and air traffic control service, the provision of air traffic control service shall have precedence over the provision of flight information service whenever the provision of air traffic control service so requires.
- 61.** (1) Flight information service shall include the provision of pertinent —
- (a) SIGMET and AIRMET information;
 - (b) information concerning pre-eruption volcanic activity, volcanic eruptions and volcanic ash clouds;
 - (c) information concerning the release into the atmosphere of radioactive materials or toxic chemicals;
 - (d) information on changes in the availability of radio navigation services;
 - (e) information on changes in condition of an aerodrome and associated facilities, including information on the state of the aerodrome movement areas when they are affected by significant depth of water;
 - (f) information on unmanned free balloons; and
 - (g) any other information likely to affect safety.
- (2) Flight information services provided to a flight shall include, in addition to that outlined under subregulation (1), the provision of information concerning —
- (a) weather conditions reported or forecast at departure, destination and alternate aerodromes;
 - (b) collision hazard to an aircraft operating in airspace Classes C, D, E, F and G as set out in Schedule 1; and
 - (c) for flight over water areas, in so far as practicable and when requested by a pilot, any available information including radio call sign, position, true track, speed of surface vessels in the area.
- (3) An ATS unit shall transmit, as soon as practicable, special air-reports to other aircrafts concerned, to the associated meteorological office, and to other ATS units concerned.
- (4) The transmission to an aircraft referred under subregulation (3) shall be continued for a period to be determined by agreement between the meteorological and air traffic services authorities concerned.
- (5) Flight information service provided to VFR flights shall include, in addition to that outlined under subregulation (1), the provision of available information concerning traffic and weather conditions along the route of flight that are likely to make operation under the visual flight rules impracticable.
- 62.** (1) The meteorological information and operational information concerning radio navigation services and aerodromes included in the flight information service shall, whenever available, be provided in an operationally integrated form.
- (2) Where integrated operational flight information messages are to be transmitted to an aircraft, the messages shall be transmitted with the content and where specified, in the sequence indicated, for the various phases of the flight.

Application of
flight
information
service

Scope of flight
information
service

Application of
operational flight
information
service
broadcasts

(3) Operational flight information service broadcasts, where provided, shall consist of messages containing integrated information regarding selected operational and meteorological elements appropriate to the various phases of flight.

(4) The broadcasts referred to under subregulation (3) are —

- (a) High Frequency;
- (b) Very High Frequency; and
- (c) Automatic Terminal Information Service.

(5) Applicable operational flight information service messages shall be transmitted by the appropriate ATS unit when requested by the pilot.

High Frequency
operational flight
information
service
broadcasts

63. (1) High Frequency operational flight information service broadcasts shall be provided when it has been determined by regional air navigation agreements that a requirement exists.

(2) Whenever such High Frequency operational flight information service broadcasts are provided —

- (a) the information shall be in accordance with subregulation (3) as applicable, subject to regional air navigation agreements;
- (b) the aerodromes for which reports and forecasts are to be included shall be as determined by regional air navigation agreements;
- (c) the time-sequencing of stations participating in the broadcast shall be as determined by regional air navigation agreements;
- (d) the high frequency operational flight information service broadcast message shall take into consideration human performance;
- (e) the broadcast message shall not exceed the length of time allocated for it by regional air navigation agreements, care being taken that the readability is not impaired by the speed of the transmission;
- (f) each aerodrome message shall be identified by the name of the aerodrome to which the information applies;
- (g) where information has not been received in time for a broadcast, the latest available information shall be included together with the time of that observation;
- (h) the full broadcast message shall be repeated when this is feasible within the remainder of the time allotted to the broadcasting station;
- (i) the broadcast information shall be updated immediately a significant change occurs; and
- (j) the High Frequency operational flight information service message shall be prepared and disseminated by the most appropriate unit as designated by the Authority.

(3) High Frequency operational flight information service broadcast messages shall contain the following information in the sequence indicated or as determined by regional air navigation agreements —

- (a) en-route weather information on significant phenomena shall be in the form of available Significant Meteorological Information as set out in the Civil Aviation (Meteorological Services for Air Navigation) Regulations; and
- (b) aerodrome information including —
 - (i) name of aerodrome,
 - (ii) time of observation,
 - (iii) essential operational information,
 - (iv) surface wind direction and speed, if appropriate, maximum windspeed,

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- (v) visibility and where applicable, the RVR,
- (vi) present weather,
- (vii) cloud below 1 500 m (5 000 ft.) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available, and
- (viii) aerodrome forecast.

64. (1) Very High Frequency operational flight information service broadcasts shall be provided as determined by regional air navigation agreements.

VHF operational
flight information
service
broadcasts

(2) Whenever Very High Frequency operational flight information service broadcasts are provided —

- (a) the aerodromes for which reports and forecasts are to be included shall be as determined by regional air navigation agreements;
- (b) each aerodrome message shall be identified by the name of the aerodrome to which the information applies;
- (c) where information has not been received in time for a broadcast, the latest available information shall be included together with the time of that observation;
- (d) the broadcasts shall be continuous and repetitive;
- (e) the Very High Frequency operational flight information service broadcast message shall take into consideration human performance;
- (f) the broadcast message shall, whenever practicable, not exceed five minutes, care being taken that the readability is not impaired by the speed of the transmission;
- (g) the broadcast message shall be updated on a scheduled basis as determined by regional air navigation agreements and shall be updated immediately a significant change occurs; and
- (h) the Very High Frequency operational flight information service message shall be prepared and disseminated by the most appropriate unit as designated by the Authority.

(3) Very High Frequency operational flight information service broadcast messages shall contain the following information in the sequence indicated —

- (a) name of aerodrome;
- (b) time of observation;
- (c) landing runway;
- (d) significant runway surface conditions and, where appropriate, braking action;
- (e) changes in the operational state of the radio navigation services, where appropriate;
- (f) holding delay, where appropriate;
- (g) surface wind direction and speed; if appropriate, maximum wind speed;
- (h) visibility and, where applicable, the RVR;
- (i) present weather;
- (j) cloud below 1 500 m (5 000 ft.) or below the highest minimum sector altitude, whichever is greater; cumulonimbus, where the sky is obscured, vertical visibility, when available;
- (k) air temperature;
- (l) dew point temperature;
- (m) QNH altimeter setting;
- (n) supplementary information on recent weather of operational significance and, where necessary, wind shear;

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- (o) trend forecast, when available; and
 - (p) notice of current Significant Meteorological Information messages.
- Voice-automatic terminal information service broadcasts

65. (1) Voice-automatic terminal information service broadcasts shall be provided at an aerodrome where there is a requirement to reduce the communication load on the Air Traffic Service Very High Frequency air-ground communication channels.

 - (2) Where provided, Voice-automatic terminal information service broadcast shall comprise —
 - (a) one broadcast serving an arriving aircraft;
 - (b) one broadcast serving a departing aircraft;
 - (c) one broadcast serving both the arriving and departing aircraft; or
 - (d) two broadcasts serving the arriving and departing aircrafts respectively at an aerodrome where the length of a broadcast serving both arriving and departing aircraft would be excessively long.
 - (3) A discrete Very High Frequency shall, whenever practicable, be used for Voice-ATIS broadcasts.
 - (4) Where a discrete frequency is not available, the transmission may be made on the voice channel of the most appropriate terminal navigation aid, preferably a Very High Frequency Omni-directional Radio Range provided the range and readability are adequate and the identification of the navigation aid is sequenced with the broadcast so that the latter is not obliterated.
 - (5) Voice-automatic terminal information service broadcasts shall not be transmitted on the voice channel of an Instrument Landing System.
 - (6) Whenever a Voice-automatic terminal information service is provided, the broadcast shall be continuous and repetitive.
 - (7) The information contained in the current broadcast shall immediately be made known to the ATS unit concerned with the provision to an aircraft of information relating to approach, landing and take-off, whenever the message has not been prepared by that unit.
 - (8) The Voice-automatic terminal information service broadcasts provided at designated aerodromes for use by international air services shall be available in the English language as a minimum and where Voice-automatic terminal information service broadcasts are available in more than one language, a discrete channel shall be used for each language.
 - (9) The Voice-automatic terminal information service broadcast message shall, whenever practicable, not exceed 30 seconds, care being taken that the readability of the automatic terminal information service message is not impaired by the speed of the transmission or by the identification signal of a navigation aid used for transmission of automatic terminal information service and the broadcast message shall take into consideration human performance.
- Data link-automatic terminal information service

66. (1) Information shall be identical in both content and format to the applicable Voice-automatic terminal information service broadcast where a Data link-automatic terminal information service supplements the existing availability of Voice-automatic terminal information service.

 - (2) The content, for the purpose of maintaining the same designator, shall be considered identical where real-time meteorological information is included but the data remains within the parameters of the significant change criteria
 - (3) Voice-automatic terminal information service and Data link-automatic terminal information service shall be updated simultaneously where a Data link-automatic terminal information service supplements the existing availability of Voice-automatic terminal information service and the automatic terminal information service requires updating.

67. (1) Whenever Voice-automatic terminal information service or Data link-automatic terminal information service is provided —

Automatic terminal information service (voice or data link)

- (a) the information communicated shall relate to a single aerodrome;
- (b) the information communicated shall be updated immediately a significant change occurs;
- (c) the preparation and dissemination of the automatic terminal information service message shall be the responsibility of the air traffic services;
- (d) individual automatic terminal information service messages shall be identified by a designator in the form of a letter of the International Civil Aviation Organization spelling alphabet and designators assigned to consecutive automatic terminal information service messages shall be in alphabetical order;
- (e) aircraft shall acknowledge receipt of the information upon establishing communication with the Air Traffic Services unit providing approach control service or the aerodrome control tower, as appropriate;
- (f) the appropriate ATS unit shall, when replying to the message under paragraph (e) or, in the case of an arriving aircraft, at such other time as may be determined by the appropriate ATS authority, provide the aircraft with the current altimeter setting; and
- (g) the meteorological information shall be extracted from the local meteorological routine or special report.

(2) The automatic terminal information service messages shall indicate that the relevant weather information shall be given on initial contact with the appropriate Air Traffic Services unit, when rapidly changing meteorological conditions make it inadvisable to include a weather report in the automatic terminal information service.

(3) Information contained in a current automatic terminal information service, the receipt of which has been acknowledged by the aircraft concerned, need not be included in a directed transmission to the aircraft, with the exception of the altimeter setting, which shall be provided in accordance with subregulation (1) (f).

(4) Where an aircraft acknowledges receipt of an automatic terminal information service that is no longer current, any element of information that needs updating shall be transmitted to the aircraft without delay.

(5) Contents of automatic terminal information service shall be kept as brief as possible and information additional to that specified under regulations 67, 68 and 69 shall only be included when justified in exceptional circumstances.

68. Automatic terminal information service messages containing both arrival and departure information shall contain the following elements of information in the order listed —

Automatic terminal information service for arriving and departing aircraft

- (a) name of aerodrome;
- (b) arrival or departure indicator;
- (c) contract type, if communication is via Data link- automatic terminal information service;
- (d) designator;
- (e) time of observation, if appropriate;
- (f) type of approach to be expected;
- (g) the runway in use and the status of arresting system constituting a potential hazard, if any;
- (h) significant runway surface conditions and, if appropriate, braking action;

- (i) holding delay, if appropriate;
- (j) transition level, if applicable;
- (k) other essential operational information;
- (l) surface wind direction and speed, including significant variations and, if surface wind sensors related specifically to the sections of the runway in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
- (m) visibility and, where applicable, the RVR;
- (n) present weather;
- (o) cloud below 1 500m (5 000ft.) or below the highest minimum sector altitude, whichever is greater, cumulonimbus, if the sky is obscured, vertical visibility when available;
- (p) air temperature;
- (q) dew point temperature;
- (r) altimeter setting;
- (s) any available information on significant meteorological phenomena in the approach and climb-out areas including wind shear, and information on recent weather of operational significance;
- (t) trend forecast, when available; and
- (u) specific automatic terminal information service instructions.

Automatic terminal information service for arriving aircraft

69. An automatic terminal information service message containing arrival information only shall contain the following elements of information in the order listed —

- (a) name of aerodrome;
- (b) arrival indicator;
- (c) contract type, if communication is via Data link-automatic terminal information service;
- (d) designator;
- (e) time of observation, if appropriate;
- (f) type of approach to be expected;
- (g) main landing runway and the status of the arresting system constituting a potential hazard, if any;
- (h) significant runway surface conditions and, if appropriate, braking action;
- (i) holding delay, if appropriate; transition level, where applicable;
- (j) other essential operational information;
- (k) surface wind direction and speed, including significant variations and, if surface wind sensors related specifically to the sections of runways in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
- (l) visibility and, when applicable, the RVR;
- (m) present weather;
- (n) cloud below 1 500m (5 000ft.) or below the highest minimum sector altitude, whichever is greater, cumulonimbus, where the sky is obscured, vertical visibility when available;
- (o) air temperature;
- (p) dew point temperature;
- (q) altimeter settings;
- (r) any available information on significant meteorological phenomena in the approach area including wind shear, and information on recent weather of operational significance;

- (s) trend forecast, when available; and
- (t) specific automatic terminal information service instructions.

70. An automatic terminal information service messages containing departure information only shall contain the following elements of information in the order listed —

Automatic terminal information service for departing aircraft

- (a) name of aerodrome;
- (b) departure indicator;
- (c) contract type, if communication is via Data link-automatic terminal information service;
- (d) designator;
- (e) time of observation, if appropriate;
- (f) runway to be used for take-off and the status of arresting system constituting a potential hazard, if any;
- (g) significant surface conditions of a runway to be used for take-off and, where appropriate, braking action;
- (h) departure delay, if appropriate;
- (i) transition level, if applicable;
- (j) other essential operational information;
- (k) surface wind direction and speed, including significant variations and, if surface wind sensors related specifically to the sections of a runway in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
- (l) visibility and, where applicable, the RVR;
- (m) present weather;
- (n) cloud below 1 500 m (5 000 ft.) or below the highest minimum sector altitude, whichever is greater, cumulonimbus, where the sky is obscured, vertical visibility when available;
- (o) air temperature;
- (p) dew point temperature;
- (q) altimeter settings;
- (r) any available information on significant meteorological phenomena in the climb-out area including wind shear;
- (s) trend forecast, when available; and
- (t) specific automatic terminal information service instructions.

71. (1) High Frequency or Very High Frequency VOLMET broadcasts or D-VOLMET service shall be provided when it has been determined by regional air navigation agreements that a requirement exists.

VOLMET broadcasts and D-VOLMET service

- (2) VOLMET broadcasts shall use standard radiotelephony phraseologies.

PART V — *Alerting Service*

72. (1) An ATS unit shall provide an alerting service —

Application of alerting service

- (a) for all aircrafts provided with air traffic control service;
- (b) in so far as practicable, to all other aircrafts having filed a flight plan or otherwise known to the air traffic services; and
- (c) to any aircraft known or believed to be the subject of unlawful interference.

(2) A flight information centre or area control centre shall serve as the central point for collecting all information relevant to a state of emergency of an aircraft operating within the Gaborone flight information region or control area concerned and for forwarding such information to the rescue coordination centre.

(3) In the event of a state of emergency arising to an aircraft while it is under the control of an aerodrome control tower or approach control unit, such unit shall notify immediately the flight information centre or area control centre responsible which shall in turn notify the rescue coordination centre.

(4) The notification referred to under subregulation (3) shall not be required when the nature of the emergency is such that the notification would be unnecessary.

(5) Where the urgency of the situation so requires, the aerodrome control tower or approach control unit responsible shall first alert and take other necessary steps to set in motion all appropriate local rescue and emergency organisations which can give the immediate assistance required.

73. (1) Without prejudice to any other circumstances that may render such notification advisable, an ATS unit shall, except as set out in regulation 75 (1), notify rescue coordination centres immediately an aircraft is considered to be in a state of emergency in accordance with the following —

(a) uncertainty phase when —

- (i) no communication has been received from an aircraft within a period of 30 minutes after the time a communication shall have been received,
- (ii) from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier, or
- (iii) an aircraft fails to arrive within 30 minutes of the estimated time of arrival last notified to or estimated by air traffic services units, whichever is the later, except when no doubt exists as to the safety of the aircraft and its occupants.

(b) alert phase when —

- (i) following the uncertainty phase, subsequent attempts to establish communication with the aircraft or inquiries to other relevant sources have failed to reveal any news of the aircraft,
- (ii) an aircraft has been cleared to land and fails to land within five minutes of the estimated time of landing and communication has not been re-established with the aircraft, or
- (iii) information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely, except when evidence exists that would allay apprehension as to the safety of the aircraft and its occupants, or
- (iv) an aircraft is known or believed to be the subject of unlawful interference; and

(c) distress phase when —

- (i) following the alert phase, further unsuccessful attempts to establish communication with the aircraft and more widespread unsuccessful,
- (ii) inquiries point to the probability that the aircraft is in distress,
- (iii) the fuel on board is considered to be exhausted, or to be insufficient to enable the aircraft to reach safety, or when
- (iv) information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely, or
- (v) information is received, or it is reasonably certain that the aircraft is about to make or has made a forced landing,

except when there is reasonable certainty that the aircraft and its occupants are not threatened by grave and imminent danger and do not require immediate assistance.

(2) The notification under subregulation (1) shall contain the following information as is available in the order listed —

- (a) INCERFA, ALERFA or DETRESFA, as appropriate to the phase of the emergency;
- (b) agency and person calling;
- (c) nature of the emergency;
- (d) significant information from the flight plan;
- (e) unit which made last contact, time and means used;
- (f) last position report and how determined;
- (g) colour and distinctive marks of aircraft;
- (h) dangerous goods carried as cargo;
- (i) any action taken by reporting office; and
- (j) other pertinent remarks.

(3) The information specified under subregulation (2), which is not available at the time the notification is made to a rescue coordination centre, shall be sought by an ATS unit prior to the declaration of a distress phase, if there is reasonable certainty that this phase will eventuate.

(4) Further to the notification under subregulation (1), the rescue coordination centre shall, without delay, be furnished with —

- (a) any useful additional information, especially on the development of the state of emergency through subsequent phases; or
- (b) information that the emergency situation no longer exists.

74. An ATS unit shall use all available communication facilities to establish and maintain communication with an aircraft in a state of emergency, and to request news of the aircraft.

Use of communication facilities

75. (1) Where a state of emergency is considered to exist, the flight of the aircraft involved shall be plotted on a chart in order to determine the probable future position of the aircraft and its maximum range of action from its last known position.

Plotting aircraft in state of emergency

(2) The flights of other aircraft known to be operating in the vicinity of the aircraft involved shall also be plotted in order to determine their probable future positions and maximum endurance.

76. (1) When an area control or a flight information centre decides that an aircraft is in the uncertainty or the alert phase, it shall, when practicable, advise the operator prior to notifying the rescue coordination centre.

Information to operator

(2) All information notified to the rescue coordination centre by an area control or flight information centre shall, whenever practicable, also be communicated, without delay, to the operator.

77. (1) Where an ATS has established that an aircraft is in a state of emergency, other aircrafts known to be in the vicinity of the aircraft involved shall, except as provided under subregulation (2) be informed of the nature of the emergency as soon as practicable.

Information to aircraft operating in vicinity of aircraft in state of emergency

(2) Where the ATS unit knows or believes that an aircraft is being subjected to unlawful interference, no reference shall be made in ATS air-ground communications to the nature of the emergency unless the unlawful interference has first been referred to in communications from the aircraft involved and there is certainty that such reference will not aggravate the situation.

PART VI — *Air Traffic Services Requirements For Communications*

Aeronautical
mobile service
(air-ground
communications)

78. (1) Radiotelephony or data link shall be used in air-ground communications for air traffic services purposes.

(2) Where an RCP specification has been determined by the Authority for performance-based communication, ATS units shall, in addition to the requirements specified under subregulation (1), have communication equipment which will enable them to provide ATS in accordance with the determined Required Communication Performance specifications.

(3) Where direct pilot-controller two-way radiotelephony or data link communications are used for the provision of air traffic control services, the recording facilities shall be provided on all such air-ground communication channels

(4) Recordings of communications channels as required under subregulation (3) shall be retained for a period of at least 30 days.

(5) Air-ground communication facilities shall enable two-way communications to take place between a unit providing flight information service and an appropriately equipped aircraft flying anywhere within the Gaborone Flight Information region.

(6) Air-ground communication facilities for flight information services shall permit direct, rapid, continuous and static-free two-way communications whenever practicable.

(7) Air-ground communication facilities shall enable two-way communications to take place between a unit providing area control service and an appropriately equipped aircraft flying anywhere within the control area.

(8) Air-ground communication facilities for an area control service shall permit direct, rapid, continuous and static-free two-way communications whenever practicable.

(9) Where air-ground voice communication channels are used for the area control service, and are worked by air-ground communicators, suitable arrangements shall be made to permit direct pilot-controller voice communications, as and when required.

(10) Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between the unit providing approach control service and the appropriately equipped aircraft under its control.

(11) Where the unit providing approach control service functions as a separate unit, air-ground communications shall be conducted over communication channels provided for its exclusive use.

(12) Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between an aerodrome control tower and appropriately equipped aircraft operating at any distance within 45 km (25 NM) of the aerodrome concerned.

(13) Separate communication channels shall be provided for the control of traffic operating on the maneuvering area where conditions warrant.

General
application
of aeronautical
fixed service
(ground-ground
communication)

79. Direct-speech or data link communications shall be used in ground-ground communications for air traffic services purposes.

- 80.** (1) A flight information centre shall have facilities for communications with the following units providing a service within its area of responsibility —
- (a) the area control centre, unless collocated;
 - (b) approach control units; and
 - (c) aerodrome control towers.
- (2) An area control centre, in addition to being connected to the flight information centre as determined under subregulation (1), shall have facilities for communications with the following units providing a service within its area of responsibility —
- (a) approach control units;
 - (b) aerodrome control towers; and
 - (c) air traffic services reporting offices, when separately established.
- (3) An approach control unit, in addition to being connected to the flight information centre and the area control centre as prescribed in subregulations (1) and (2) shall have facilities for communications with the associated aerodrome control towers and, when separately established, the associated air traffic services reporting offices.
- (4) An aerodrome control tower, in addition to being connected to the flight information centre, the area control centre and the approach control unit under subregulations (1), (2) and (3) shall have facilities for communications with the associated air traffic services reporting office, when separately established.
- 81.** (1) A flight information centre and an area control centre shall have facilities for communications with the following units providing a service within their respective area of responsibility —
- (a) appropriate military units;
 - (b) the meteorological office serving the centre;
 - (c) the aeronautical telecommunications station serving the centre;
 - (d) appropriate operator's offices;
 - (e) the rescue coordination centre or, in the absence of such centre, any other appropriate emergency service; and
 - (f) the international NOTAM office serving the centre.
- (2) An approach control unit and an aerodrome control tower shall have facilities for communications with the following units providing a service within their respective area of responsibility —
- (a) appropriate military units;
 - (b) rescue and emergency services (including ambulance and fire);
 - (c) the meteorological office serving the unit concerned;
 - (d) the aeronautical telecommunications station serving the unit concerned; and
 - (e) the unit providing apron management service, when separately established.
- (3) The communication facilities required under subregulation (1) (a) and (2) (a) shall include provisions for rapid and reliable communications between the air traffic services unit concerned and the military unit responsible for control of interception operations within the area of responsibility of the air traffic services unit.
- 82.** (1) The communication facilities required under regulations 79, 80 (1) (a) and 80 (2) shall include provisions for —
- (a) communications by direct speech alone, or in combination with data link communications, whereby for the purpose of transfer of control using radar or Automatic Dependent Surveillance-Broadcast, the communications may be established instantaneously and for other purposes the communications can normally be established within 15 seconds; and

Communications
between air
traffic services
units

Communications
between air
traffic services
units and
other units

Description of
communication
facilities

- (b) printed communications, where a written record is required, the message transit time for such communications being no longer than five minutes.
 - (2) The communication facilities in all cases not covered under subregulation (1), shall include provisions for —
 - (a) communications by direct speech alone, or in combination with data link communications, whereby the communications can normally be established within 15 seconds; and
 - (b) printed communications, where a written record is required, the message transit time for such communications being no longer than five minutes.
 - (3) An ATS units shall provide suitable facilities for automatic recording in all cases where automatic transfer of data to or from air traffic services computers is required.
 - (4) The communication facilities required under regulations 79 and 80 shall be supplemented, as and where necessary, by facilities for other forms of visual or audio communications.
 - (5) The communication facilities required under regulation 80 (2) shall include provisions for communications by direct speech arranged for conference communications.
 - (6) The communication facilities required under regulation 81 (2) (d) shall include provisions for communications by direct speech arranged for conference communications, whereby the communications can normally be established within 15 seconds.
 - (7) A facility for direct-speech or data link communications between air traffic services units and between air traffic services units and other units described under regulations 82 (1) and (2) shall be provided with automatic recording.
 - (8) Recordings of data and communications as required under subregulations (3) and (7) shall be retained for a period of at least 30 days.
- 83.** (1) The Flight Information Centre and area control centre shall have facilities for communications with all adjacent flight information centres and area control centres.
- (2) The communication facilities referred to under subregulation (1) shall in all cases include provisions for messages in a form suitable for retention as a permanent record, and delivery in accordance with transit times specified by regional air navigation agreements.
 - (3) Unless otherwise determined on the basis of regional air navigation agreements, facilities for communications between area control centres serving contiguous control areas shall, include provisions for direct speech and, where applicable, data link communications, with automatic recording, whereby for the purpose of transfer of control using radar, Automatic Dependent Surveillance-Broadcast or Automatic Dependent Surveillance-Contract data, the communications can be established instantaneously and for other purposes the communications can normally be established within 15 seconds.
 - (4) When so required by agreement between the Authorities concerned in order to eliminate or reduce the need for interceptions in the event of deviations from assigned track, facilities for communications between adjacent flight information centres or area control centres other than those mentioned under subregulation (3) shall include provisions for direct speech alone, or in combination with data link communications.
 - (5) The communication facilities referred to under subregulation (4) shall be provided with automatic recording.

(6) The communication facilities under subregulation (4) shall permit communications to be established normally within 15 seconds.

(7) Wherever local conditions are such that it is necessary to clear an aircraft into an adjacent control area prior to departure, an approach control unit or aerodrome control tower shall be connected with the area control centre serving the adjacent area.

(8) The communication facilities under subregulation (7) shall include provisions for communications by direct speech alone, or in combination with data link communications, with automatic recording, whereby for the purpose of transfer of control using radar, Automatic Dependent Surveillance-Broadcast or Automatic Dependent Surveillance-Contract data, the communications may be established instantaneously and for other purposes the communications may normally be established within 15 seconds.

(9) Suitable facilities for automatic recording shall be provided in all cases where automatic exchange of data between air traffic services computers is required.

(10) Recordings of data and communications as required under subregulation (9) shall be retained for a period of at least 30 days.

84. Appropriate procedures for direct speech communications shall be developed to permit immediate connections to be made for very urgent calls concerning the safety of an aircraft, and the interruption, if necessary, of less urgent calls in progress at the time.

Procedures for direct-speech communications

85. (1) An ATS shall provide an aerodrome control service with two-way radiotelephony communication facilities for the control of vehicles on the maneuvering area, except where communication by a system of visual signals is deemed to be adequate.

Communications for control of vehicles other than aircraft on maneuvering areas at controlled aerodromes

(2) Separate communication channels shall be provided for the control of vehicles on the maneuvering area where conditions warrant.

(3) Automatic recording facilities shall be provided on all separate communication channels provided for the control of vehicles on the maneuvering area.

(4) Recordings of communications as required in subregulation (3) shall be retained for a period of at least 30 days.

86. (1) Surveillance data from primary and secondary radar equipment or other systems used as an aid to air traffic services, in addition to other aeronautical data, shall automatically or through other appropriate means be recorded and stored for use in accident and incident investigations, search and rescue, air traffic control and surveillance systems evaluation and training.

Recording and storage of aeronautical data

(2) Subject to subregulation (1), stored aeronautical data and automatic surveillance recordings shall be retained for a period of at least 30 days.

(3) Aeronautical data or recordings pertinent to an accident and incident investigations, shall be retained for a longer period until it is evident that the data or recordings will no longer be required.

PART VII — *Air Traffic Services Requirements For Information*

87. (1) An ATS unit shall be supplied with up-to-date information on existing and forecast meteorological conditions as necessary for the performance of its respective functions.

General meteorological information

(2) The information referred to under subregulation (1) shall be supplied in such a form as to require a minimum of interpretation on the part of ATS personnel and with a frequency which satisfies the requirements of the air traffic services unit concerned.

(3) The ATS unit shall be supplied with available detailed information on the location, vertical extent, direction and rate of movement of meteorological phenomena in the vicinity of the aerodrome, and particularly in the climb-out and approach areas, which could be hazardous to aircraft operations.

(4) Where computer-processed upper air data is made available to an ATS unit in digital form for use by ATS computers, the contents, format and transmission arrangements shall be as agreed between the Meteorological Department and the appropriate ATS authority.

Flight information centres and area control centres
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(Sub. Leg.)

88. (1) Flight information centres and area control centres shall be supplied with meteorological information as set out in Schedule 9 of the Civil Aviation (Meteorology Services for Air Navigation) Regulations, with particular emphasis being given to the occurrence or expected occurrence of weather deterioration as soon as this can be determined.

(2) The reports and forecasts referred to under subregulation (1) shall cover the flight information region or control area and such other area as may be determined on the basis of regional air navigation agreements.

(3) Flight information centres and area control centres shall be provided at suitable intervals, with current pressure data for setting altimeters, for locations specified by the flight information centre or area control centre concerned.

Units providing approach control services

89. (1) A unit providing approach control services shall be supplied with meteorological information as set out in Schedule 9 of the Civil Aviation (Meteorology Services for Air Navigation) Regulations, for the airspace and the aerodromes with which the unit is concerned.

(2) A special report and amendments to forecasts shall be communicated to the unit providing approach control services as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast.

(3) Where multiple anemometers are used, the indicators to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each anemometer.

(4) The unit providing approach control services shall be provided with current pressure data for setting altimeters, for locations specified by the unit providing approach control service.

(5) The unit providing approach control services for final approach, landing and take-off shall be equipped with surface wind displays.

(6) The displays referred to under subregulation (5) shall be related to the same locations of observation and be fed from the same sensors as the corresponding displays in the aerodrome control tower and in the meteorological station, where such a station exists.

(7) The unit providing approach control services for final approach, landing and take-off at aerodromes where runway visual range values are assessed by instrumental means shall be equipped with displays permitting read-out of the current runway visual range values.

(8) The displays referred to under subregulation (7) shall be related to the same locations of observation and be fed from the same sensors as the corresponding displays in the aerodrome control tower and in the meteorological station, where such a station exists.

(9) The unit providing approach control services for final approach, landing and take-off at aerodromes where the height of cloud base is assessed by instrumental means shall be equipped with displays permitting read-out of the current values of the height of cloud base.

(10) The displays referred to under subregulation (9) shall be related to the same locations of observations and be fed from the same sensors as the corresponding displays in the aerodrome control tower and in the meteorological station, where such a station exists.

(11) The unit providing approach control services for final approach, landing and take-off shall be supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach.

90. (1) A meteorological service provider shall supply an aerodrome control tower with meteorological information as set out in Schedule 9 of the Civil Aviation (Meteorology Services for Air Navigation) Regulations, for the aerodrome with which the aerodrome control tower is concerned.

Aerodrome
control towers

(2) The meteorological service provider shall communicate special reports and amendments to forecasts to the aerodrome control towers as soon as the reports and amendments are necessary in accordance with established criteria, without waiting for the next routine report or forecast.

(3) The meteorological service provider shall provide an aerodrome control towers with current pressure data for setting altimeters for the aerodrome concerned.

(4) An aerodrome control tower shall be equipped with surface wind displays.

(5) The surface wind displays shall be related to the same locations of observation and be fed from the same sensors as the corresponding displays in the meteorological station, where such a station exists.

(6) Where multiple sensors are used, the surface wind displays to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each sensor.

(7) The aerodrome control tower at an aerodrome where runway visual range values are measured by instrumental means shall be equipped with displays permitting read-out of the current runway visual range values.

(8) The displays referred to under subregulation (7) shall be related to the same locations of observation and be fed from the same sensors as the corresponding displays in the meteorological station, where such a station exists.

(9) The aerodrome control towers at an aerodrome where the height of the cloud base is assessed by instrumental means, shall be equipped with displays permitting read-out of the current values of the height of cloud base.

(10) The displays shall be related to the same locations of observations and be fed from the same sensors as the corresponding displays in the meteorological station, where such a station exists.

(11) The aerodrome control towers shall be supplied with information on wind shear which could adversely affect an aircraft on the approach or take-off paths or during circling approach and an aircraft on the runway during the landing roll or take-off run.

(12) Aerodrome control towers or other appropriate units shall be supplied with aerodrome warnings.

91. Current meteorological reports and forecasts shall be supplied to communication stations for flight information purposes and a copy of such information shall be forwarded to the flight information centre or the area control centre.

Communication
stations

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Information on aerodrome conditions and operational status of associated facilities	<p>92. An aerodrome control tower and units providing approach control services shall be kept currently informed of the operationally significant conditions of the movement area, including the existence of temporary hazards, and the operational status of any associated facilities at the aerodromes with which they are concerned.</p>
Information on operational status of navigation services	<p>93. (1) An ATS unit shall be kept currently informed of the operational status of radio navigation services and visual aids essential for take-off, departure, approach and landing procedures within the ATS unit's area of responsibility and those radio navigation services and visual aids essential for surface movement.</p> <p>(2) Information on the operational status, and any changes thereto, of radio navigation services and visual aids as referred to under subregulation (1) shall be received by the appropriate ATS units on a timely basis consistent with the use of the services and aids involved.</p>
Information on unmanned free balloons	<p>94. An operator of an unmanned free balloon shall keep the appropriate air traffic services units informed of details of flights of unmanned free balloons in accordance with the provisions contained in the Civil Aviation (Rules of the Air) Regulations.</p>
Information concerning volcanic activity	<p>95. (1) An ATS unit shall be informed of pre-eruption volcanic activity, volcanic eruptions and volcanic ash cloud which could affect airspace used by flights within their area of responsibility.</p> <p>(2) Area control centres and flight information centres shall be provided with volcanic ash advisory information issued by the associated Volcanic Ash Advisory Centres.</p>
Information concerning radioactive materials and toxic chemical "clouds"	<p>96. An ATS unit shall be informed of the release into the atmosphere of any radioactive material or toxic chemicals which could affect airspace used by flights within the ATS unit's area of responsibility.</p>
Requirements for application for exemption	<p>97. (1) A person may apply to the Authority for an exemption from any provision of these Regulations.</p> <p>(2) Unless in case of emergency, a person requiring exemptions from any of these regulations shall make an application to the Authority at least 60 days prior to the proposed effective date, giving the following information —</p> <ul style="list-style-type: none">(a) name and contact address including electronic mail and facsimile if any;(b) telephone number;(c) a citation of the specific requirement from which the applicant seeks exemption;(d) justification for the exemption;(e) a description of the type of operations to be conducted under the proposed exemption;(f) the proposed duration of the exemption;(g) an explanation of how the exemption would be in the public interest;(h) a detailed description of the alternative means by which the applicant shall ensure a level of safety equivalent to that established by the regulation in question;(i) a safety risk assessment carried out in respect of the exemption applied for, whether the applicant handles international operations and seeks to operate under the proposed exemption, an indication whether the exemption would contravene any provision of the standards and recommended practices of the International Civil Aviation Organization; and

(j) any other information that the Authority may require.

(3) Where the applicant seeks emergency processing of an application for exemption, the application shall contain supporting facts and reasons for not filing the application within the time specified under subregulation (2) and satisfactory reason for deeming the application an emergency.

(4) The Authority may in writing, refuse an application made under subregulation (3), where in the opinion of the Authority, the reasons given for emergency processing are not satisfactory.

(5) The application for exemption shall be accompanied by a fee determined by the Authority.

98. (1) The Authority shall review the application for exemption made under regulation 97 for accuracy and compliance, and if the application is satisfactory, the Authority shall publish a detailed summary of the application for comments, within a set time, in either —

- (a) the *Gazette*;
- (b) aeronautical information circular; or
- (c) a daily newspaper with national circulation.

(2) Where the application requirements have not been fully complied with, the Authority shall request the applicant in writing, to comply prior to publication or making a decision under regulation 97(3).

99. (1) Where the application requirements have been satisfied, the Authority shall conduct an evaluation of the request to include —

- (a) determination of whether an exemption would be in the public interest;
- (b) a determination, after a technical evaluation of whether the applicant's proposal would provide a level of safety equivalent to that established by the regulation, although where the Authority decides that a technical evaluation of the request would impose a significant burden on the Authority's technical resources, the Authority may deny the exemption on that basis;
- (c) a determination of whether a grant of the exemption would contravene these Regulations; and
- (d) a recommendation based on the preceding elements, of whether the request should be granted or denied, and of any conditions or limitations that should be part of the exemption.

(2) The Authority shall notify the applicant in writing, the decision to grant or deny the request, and publish a detailed summary of the Authority's evaluation and decision.

(3) The summary referred to under subregulation (2) shall specify the duration of the exemption and any conditions or limitations of the exemption.

(4) Where the request is for an emergency relief, the Authority shall publish its decision after processing the application.

(5) Where the exemption affects a significant population of the aviation community of the State, the Authority shall publish the summary in aeronautical information circular.

PART IX — *Miscellaneous Provisions*

100. The Authority may suspend or revoke a licence, certificate, approval, authorisation, exemption or other document of a person who contravenes any provision of these Regulations.

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Appeals to Appeals Tribunal	101. A person aggrieved with the decision of the Authority under these Regulations may within 14 days of such decision appeal to the Appeals Tribunal.
Offences	102. (1) A person who contravenes any provision of these Regulations commits an offence and is liable to a fine not exceeding P100 000 or to imprisonment for a term not exceeding six months, or to both. (2) Where 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, orders, notices or proclamations made there under was due to any cause not avoidable by the exercise of reasonable care by that person, the act or omission shall be deemed not to be a contravention by that person of that provision.
Transitional	103. A licence, certificate, approval or any other document issued to an operator or person prior to the commencement of these Regulations shall continue in force as if it was issued under these Regulations until it expires, is varied or cancelled by the Authority.

SCHEDULES

SCHEDULE 1

Classification of airspaces
(Regulations 10(1) and (3) and 61(2)(b))

<i>Class</i>	<i>Type of flight</i>	<i>Separation provided</i>	<i>Service provided</i>	<i>Speed limitation</i>	<i>Radio communication requirement</i>	<i>Subject to an ATC</i>
A	IFR only	All aircraft	Air traffic control service	Not applicable	Continuous two-way	Yes
B	IFR	All aircraft	Air traffic control service	Not applicable	Continuous two-way	Yes
	VFR	All aircraft	Air traffic control service	Not applicable	Continuous two-way	Yes
C	IFR	IFR from IFR IFR from VFR	Air traffic control service	Not applicable	Continuous two-way	Yes
	VFR	VFR from IFR	1) Air traffic control service for separation from IFR; 2) VFR/VFR traffic information (and traffic avoidance advice on request)	250 kt IAS below 3 050 m (10 000 ft.) AMSL	Continuous two-way	Yes
D	IFR	IFR from IFR	Air traffic control service, traffic information about	250 kt IAS below 3 050 m (10 000 ft.) AMSL	Continuous two-way	Yes
	VFR	Nil	IFR/VFR and VFR/VFR traffic information (and traffic avoidance advice on request)	250 kt IAS below 3 050 m (10 000 ft.) AMSL	Continuous two-way	Yes
E	IFR	IFR from IFR	Air traffic control service and, as far as practical, traffic information about VFR flights	250 kt IAS below 3 050 m (10 000 ft.) AMSL	Continuous two-way	Yes
	VFR	Nil	Traffic information as far as practical	250 kt IAS below 3 050 m (10 000 ft.) AMSL	No	No

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F	IFR	IFR from IFR as far as practical	Air traffic advisory service, flight information service	250 kt IAS below 3 050 m (10 000 ft.) AMSL	Continuous two-way	No
	VFR	Nil	Flight information service	250 kt IAS below 3 050 m (10 000 ft.) AMSL	No	No
G	IFR	Nil	Flight information service	250 kt IAS below 3 050 m (10 000 ft.) AMSL	Continuous two-way	No
	VFR	Nil	Flight information service	250 kt IAS below 3 050 m (10 000 ft.) AMSL	No	No
<ul style="list-style-type: none"> When the height of the transition altitude is lower than 30 50m (10 000ft) AMSL, FL 100 should be used in lieu of 10 000ft. 						

SCHEDULE 2

Principles governing the identification of navigation specifications and identification of ATS routes other than standard departure and arrival routes
(Regulation 19 (5))

1. Designators for ATS routes and navigation specifications

- 1.1 The purpose of a system of route designators and navigation specifications applicable to a specified ATS route segment(s), route(s) or area is to allow both pilots and ATS, taking into account automation requirements —
- (a) to make unambiguous reference to any ATS route without the need to resort to the use of geographical coordinates or other means in order to describe it;
 - (b) to relate an ATS route to a specific vertical structure of the airspace, as applicable;
 - (c) to indicate a required level of navigation performance accuracy, when operating along an ATS route or within a specified area; and
 - (d) to indicate that a route is used primarily or exclusively by certain types of aircraft.

Note 1 – Specifications governing the publication of navigation specifications are given in the Civil Aviation (Aeronautical Charts) Regulations and the Civil Aviation (Aeronautical Information Services) Regulations.

Note 2 – In relation to this part and for flight planning purposes, a prescribed navigation specification is not considered an integral part of the ATS route designator.

- 1.2 In order to meet this purpose, the designation system shall —
- (a) permit the identification of any ATS route in a simple and unique manner;
 - (b) avoid redundancy;
 - (c) be usable by both ground and airborne automation systems;
 - (d) permit utmost brevity in operational use; and
 - (e) provide sufficient possibility of extension to cater for any future requirements without the need for fundamental changes.
- 1.3 Controlled, advisory and uncontrolled ATS routes, with the exception of standard arrival and departure routes, shall therefore be identified as specified hereafter.

2. Composition of designator

- 2.1 The ATS route designator shall consist of a basic designator supplemented, where necessary, by —
- (a) one prefix as prescribed in 2.3; and
 - (b) one additional letter as prescribed in 2.4.
- 2.1.1 The number of characters required to compose the designator shall not exceed six characters.
- 2.1.2 The number of characters required to compose the designator should, whenever possible, be kept to a maximum of five characters.
- 2.2 The basic designator shall consist of one letter of the alphabet followed by a number from 1 to 999.
- 2.2.1 A selection of the letter shall be made from those listed hereunder —
- (a) A, B, G, R for routes which form part of the regional networks of ATS routes and are not area navigation routes;

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- (b) L, M, N, P for area navigation routes which form part of the regional networks of ATS routes;
 - (c) H, J, V, W for routes which do not form part of the regional networks of ATS routes and are not area navigation routes; and
 - (d) Q, T, Y, Z for area navigation routes which do not form part of the regional networks of ATS routes.
- 2.3 Where applicable, one supplementary letter shall be added as a prefix to the basic designator in accordance with the following —
- (a) K to indicate a low-level route established for use primarily by helicopters;
 - (b) U to indicate that the route or portion thereof is established in the upper airspace; and
 - (c) S to indicate a route established exclusively for use by supersonic aircraft during acceleration, deceleration and while in supersonic flight.
- 2.4 Where prescribed by the appropriate ANSP or on the basis of regional air navigation agreements, a supplementary letter may be added after the basic designator of the ATS route in question in order to indicate the type of service provided in accordance with the following —
- (a) the letter F to indicate that on the route or portion thereof advisory service only is provided; or
 - (b) the letter G to indicate that on the route or portion thereof flight information service only is provided.

Note 1 – Due to limitations in the display equipment on board aircraft, the supplementary letters “F” or “G” may not be displayed to the pilot.

Note 2 – Implementation of a route or a portion thereof as controlled route, advisory route or flight information route is indicated in aeronautical charts and aeronautical information publications in accordance with the provisions in these Regulations.

3. Assignment of basic designators

- 3.1 A basic ATS route designator shall be assigned in accordance with the following principles —
- 3.1.1 The same basic designator shall be assigned to a main trunk route throughout its entire length, irrespective of terminal control areas, States or regions traversed.

Note 1 – This is of particular importance where automated ATS data processing and computerised airborne navigation equipment is used.

- 3.1.2 Where two or more trunk routes have a common segment, the segment in question shall be assigned each of the designators of the routes concerned, except where this would present difficulties in the provision of air traffic service in which case, by common agreement, one designator only shall be assigned.
- 3.1.3 A basic designator assigned to one route shall not be assigned to any other route.
- 3.1.4 A States' requirement for a designator shall be notified to the Regional Offices of ICAO for coordination.

4. Use of designators in communications

- 4.1 In printed communications, a designator shall be expressed at all times by not less than two and not more than six characters.
- 4.2 In voice communications, the basic letter of a designator shall be spoken in accordance with the ICAO spelling alphabet.
- 4.3 Where the prefixes K, U or S specified under paragraph 2.3 are used, they shall, in voice communications, be spoken as follows —

K – KOPTER U – UPPER

S – SUPERSONIC

The word “kopter” shall be pronounced as in the word “helicopter” and the words “upper” and “supersonic” as in the English language.

4.4 Where the letters “F” or “G” specified under paragraph 2.4 are used, the flight crew shall not be required to use them in voice communications.

SCHEDULE 3

Principles governing the identification of standard departure and arrival routes and associated procedures
(Regulation 19 (6))

Note – Material relating to the establishment of standard departure and arrival routes and associated procedures is contained in the Air Traffic Services Planning Manual (Doc 9426).

1. Designators for standard departure and arrival routes and associated procedures

Note – In the following text the term “route” is used in the meaning of “route and associated procedures”.

- 1.1 The system of designators shall —
 - (a) permit the identification of each route in a simple and unambiguous manner;
 - (b) make a clear distinction between —
 - (i) a departure route and arrival route;
 - (ii) a departure or arrival route and other ATS routes;
 - (iii) a route requiring navigation by reference to ground based radio aids or self contained airborne aids, and routes requiring navigation by visual reference to the ground;
 - (c) be compatible with ATS and aircraft data processing and display requirements;
 - (d) be of utmost brevity in its operational application;
 - (e) avoid redundancy; and
 - (f) provide sufficient possibility for extension to cater for any future requirements without the need for fundamental changes.
- 1.2 Each route shall be identified by a plain language designator and a corresponding coded designator.
- 1.3 The designator shall, in voice communications, be easily recognisable as relating to a standard departure or arrival route and shall not create any difficulties in pronunciation for pilots and ATS personnel.

2. Composition of designators

- 2.1 Plain language designator
 - 2.1.1 The plain language designator of a standard departure or arrival route shall consist of —
 - (a) a basic indicator; followed by
 - (b) a validity indicator; followed by
 - (c) a route indicator, where required; followed by
 - (d) the word “departure” or “arrival”; followed by
 - (e) the word “visual”, if the route has been established for use by aircraft operating in accordance with the visual flight rules (VFR).
 - 2.1.2 The validity indicator shall be a number from 1 to 9.
 - 2.1.3 The route indicator shall be one letter of the alphabet. The letters “I” and “O” shall not be used.

2.2 Coded designator

The coded designator of a standard departure or arrival route, instrument or visual, shall consist of —

- (a) the coded designator or name-code of the significant point described in 2.1.1 (a); followed by
- (b) the validity indicator in 2.1.1(b); followed by
- (c) the route indicator in 2.1.1 (c), where required.

Note – Limitations in the display equipment on board an aircraft may require shortening of the basic indicator, if that indicator is a five-letter name-code, e.g. KODAP. The manner in which such an indicator is shortened is left to the discretion of operators.

3. Assignment of designators

- 3.1 Each route shall be assigned a separate designator.
- 3.2 In order to distinguish between two or more routes which relate to the same significant point (and therefore are assigned the same basic indicator), a separate route indicator as described in 2.1.3 shall be assigned to each route.

4. Assignment of validity indicators

- 4.1 A validity indicator shall be assigned to each route to identify the route which is currently in effect.
- 4.2 The first validity indicator to be assigned shall be the number “1”.
- 4.3 Whenever a route is amended, a new validity indicator, consisting of the next higher number, shall be assigned. The number “9” shall be followed by the number “1”.

5. Examples of plain language and coded designators

5.1 Example 1: Standard departure route – instrument —

- (a) Plain language BRECON ONE;
- (b) designator: DEPARTURE; and
- (c) Coded designator: BCN 1.

5.1.1 Meaning: The designator identifies a standard instrument departure route which terminates at the significant point BRECON (basic indicator). BRECON is a radio navigation facility with the identification BCN (basic indicator of the coded designator). The validity indicator ONE (1 in the coded designator) signifies either that the original version of the route is still in effect or that a change has been made from the previous version NINE (9) to the now effective version ONE (1) (see 4.3). The absence of a route indicator (see 2.1.3 and 3.2) signifies that only one route, in this case a departure route, has been established with reference to BRECON.

5.2 Example 2: Standard arrival route – instrument:

- (a) Plain language: KODAP TWO ALPHA;
- (b) designator: ARRIVAL; and
- (c) Coded designator: KODAP 2 A.

5.2.1 Meaning: This designator identifies a standard instrument arrival route which begins at the significant point KODAP (basic indicator). KODAP is a significant point not marked by the site of a radio navigation facility and therefore assigned a five-letter name-code in accordance with Appendix 2. The validity indicator TWO (2) signifies that a change has been made from the previous version ONE (1) to the now effective version TWO (2). The route indicator ALPHA identifies one of several routes established with reference to KODAP and is a specific character assigned to this route.

5.3 Example 3: Standard departure route – visual:

5.3.1 Meaning: This designator identifies a standard departure route for controlled VFR flights which terminates at ADOLA, a significant point not marked by the site of a radio navigation facility. The validity indicator FIVE (5) signifies that a change has been made from the previous version FOUR (4) to the now effective version FIVE (5). The route indicator BRAVO (A) identifies one of several routes established with reference to ADOLA.

6. Composition of designators for MLS or RNAV approach procedures

6.1 Plain language designator

6.1.1 The plain language designator of an MLS/RNAV approach procedure shall consist of —

- (a) MLS”; followed by
- (b) a basic indicator; followed by
- (c) a validity indicator; followed by
- (d) a route indicator; followed by
- (e) the word “approach”; followed by
- (f) the designator of the runway for which the procedure is designed.

6.1.2 The basic shall be the name or name-code of the significant point where the approach procedure begins.

6.1.3 The validity indicator shall be a number from 1 to 9.

6.1.4 The route indicator shall be one letter of the alphabet. The letters “I” and “O” shall not be used.

6.1.5 The designator of the runway shall be in accordance with the Civil Aviation (Aerodromes Designs and Operations) Regulations.

6.2 Coded designator

6.2.1 The coded designator of an MLS or RNAV approach procedure shall consist of:

- (a) MLS”; followed by
- (b) the coded designator or name-code of the significant point described in 6.1.1 (b); followed by
- (c) the validity indicator in 6.1.1 (c); followed by
- (d) the route indicator in 6.1.1 (d); followed by
- (e) the runway designator in 6.1.1 (f).

6.3 Assignment of designators

6.3.1 The assignment of designators for MLS or RNAV approach procedures shall be in accordance with paragraph 3. Procedures having identical tracks but different flight profiles shall be assigned separate route indicators.

6.3.2 The route indicator letter for MLS or RNAV approach procedures shall be assigned uniquely to all approaches at an airport until all the letters have been used. Only then shall the route indicator letter be repeated. The use of the same route indicator for two routes using the same MLS ground facility shall not be permitted.

6.3.3 The assignment of validity indicator for approach procedures shall be in accordance with paragraph 4.

6.4 Example of plain language and coded designators

6.4.1 Example —

- (a) Plain language MLS HAPPY ONE ALPHA
designator: APPROACH RUNWAY
ONE EIGHT LEFT
- (b) Coded designator: MLS HAPPY 1 A 18L

Meaning: The designator identifies an MLS or RNAV approach procedure which begins at the significant point HAPPY (basic indicator). HAPPY is a significant point not marked by the site of a radio navigation facility and therefore assigned a five-letter name-code in accordance with Appendix 2. The validity indicator ONE (1) signifies that either the original version of the route is still in effect or a change has been made from the previous version NINE to the now effective version ONE (1). The route indicator ALPHA (A) identifies one of several routes established with reference to HAPPY and is a specific character assigned to this route.

7. Use of designators in communications

7.1 In voice communications, only the plain language designator shall be used.

Note – For the purpose of identification of routes, the words “departure”, “arrival” and “visual” described in 2.1.1 (d) and 2.1.1 (e) are considered to be an integral element of the plain language designator.

7.2 In printed or coded communications, only the coded designator shall be used.

8. Display of routes and procedures to air traffic control

8.1 A detailed description of each currently effective standard departure or arrival route or approach procedure, including the plain language designator and the coded designator, shall be displayed at the working positions at which the routes or procedures are assigned to aircraft as part of an ATC clearance, or are otherwise of relevance in the provision of air traffic control services.

8.2 Whenever possible, a graphic portrayal of the routes or procedures shall also be displayed.

SCHEDULE 4

Principles governing the establishment and identification of significant points
(*Regulation 21 (2) (b)*)

1. Establishment of significant points

- 1.1 Significant points shall, whenever possible, be established with reference to ground-based or space-based radio navigation aids, preferably VHF or higher frequency aids.
- 1.2 Where such ground-based or space-based radio navigation aids do not exist, significant points shall be established at locations which can be determined by self-contained airborne navigation aids, or, where navigation by visual reference to the ground is to be effected, by visual observation. Specific points may be designated as “transfer of control” points by agreement between adjacent air traffic control units or control positions concerned.

2. Designators for significant points marked by the site of a radio navigation aid

- 2.1 Plain language name for significant points marked by the site of a radio navigation aid
 - 2.1.1 Whenever practicable, significant points shall be named with reference to an identifiable and preferably prominent geographical location.
 - 2.1.2 When selecting a name for the significant point, care shall be taken to ensure that the following conditions are met —
 - (a) the name shall not create difficulties in pronunciation for pilots or ATS personnel when speaking in the language used in ATS communications. Where the name of a geographical location in the national language selected for designating a significant point gives rise to difficulties in pronunciation, an abbreviated or contracted version of this name, which retains as much of its geographical significance as possible, shall be selected;

Example: FUERSTENFELDBRUCK = FURSTY

- (b) the name shall be easily recognisable in voice communications and shall be free of ambiguity with those of other significant points in the same general area. In addition, the name shall not create confusion with respect to other communications exchanged between air traffic services and pilots;
 - (c) the name shall, where possible, consist of at least six letters and form two syllables and preferably not more than three; and
 - (d) the selected name shall be the same for both the significant point and the radio navigation aid marking it.
- 2.2 Composition of coded designators for significant points marked by the site of a radio navigation aid
 - 2.2.1 The coded designator shall be the same as the radio identification of the radio navigation aid. It shall be so composed, where possible, as to facilitate association with the name of the point in plain language.
 - 2.2.2 Coded designators shall not be duplicated within 1100km (600 NM) of the location of the radio navigation aid concerned, except as noted hereunder.

Note – When two radio navigation aids operating in different bands of the frequency spectrum are situated at the same location, their radio identifications are normally the same.

2.3 States' requirements for coded designators shall be notified to the Regional Offices of ICAO for coordination.

3. Designators for significant points not marked by the site of a radio navigation aid

3.1 Where a significant point is required at a position not marked by the site of a radio navigation aid, and is used for ATC purposes, it shall be designated by a unique five letter pronounceable "name-code" This name-code designator then serves as the name as well as the coded designator of the significant point.

Note – The principles governing the use of alphanumeric name-codes in support of RNAV SIDs, STARs and instrument approach procedures are detailed in the Civil Aviation (Construction of Visual and instrument Flight Procedures) Regulations.

3.2 The name-code designator shall be selected so as to avoid any difficulties in pronunciation by pilots or ATS personnel when speaking in the language used in ATS communications.

Examples: ADOLA, KODAP

3.3 The name-code designator shall be easily recognisable in voice communications and shall be free of ambiguity with those used for other significant points in the same general area.

3.4 The unique five-letter pronounceable name-code designator assigned to a significant point shall not be assigned to any other significant point. When there is a need to relocate a significant point, a new name-code designator shall be chosen. In cases when a State wishes to keep the allocation of specific name-codes for reuse at a different location, such name-codes shall not be used until after a period of at least six months.

3.5 Requirements for unique five-letter pronounceable name-code designators shall be notified to the Regional Offices of ICAO for coordination.

3.6 In areas where no system of fixed routes is established, or where the routes followed by aircraft vary depending on operational considerations, significant points shall be determined and reported in terms of World Geodetic System – 1984 (WGS-84) geographical coordinates except that permanently established significant points serving as exit or entry points into such areas shall be designated in accordance with the applicable provisions in 2 or 3.

4. Use of designators in communications

4.1 Normally the name selected in accordance with 2 or 3 shall be used to refer to the significant point in voice communications. Where the plain language name for a significant point marked by the site of a radio navigation aid selected in accordance with 2.1 is not used, it shall be replaced by the coded designator which, in voice communications, shall be spoken in accordance with the ICAO spelling alphabet.

4.2 In printed and coded communications, only the coded designator or the selected name-code shall be used to refer to a significant point.

5. Significant points used for reporting purposes

- 5.1 In order to permit an ATS to obtain information regarding the progress of aircraft in flight, selected significant points may need to be designated as reporting points.
- 5.2 In establishing such points, consideration shall be given to the following factors —
 - (a) the type of air traffic services provided;
 - (b) the amount of traffic normally encountered;
 - (c) the accuracy with which an aircraft is capable of adhering to the current flight plan;
 - (d) the speed of the aircraft;
 - (e) the separation minima applied;
 - (f) the complexity of the airspace structure;
 - (g) the control methods employed;
 - (h) the start or end of significant phases of a flight (climb, descent, change of direction, etc.);
 - (i) transfer of control procedures;
 - (j) safety and search and rescue aspects; and
 - (k) the cockpit and air-ground communication workload.
- 5.3 Reporting points shall be established either as “compulsory” or as “on-request”.
- 5.4 In establishing “compulsory” reporting points the following principles shall apply —
 - (a) compulsory reporting points shall be limited to the minimum necessary for the routine provision of information to air traffic services units on the progress of aircraft in flight, bearing in mind the need to keep cockpit and controller workload and air-ground communications load to a minimum;
 - (b) the availability of a radio navigation aid at a location shall not necessarily determine its designation as a compulsory reporting point; and
 - (c) compulsory reporting points shall not necessarily be established at flight information region or control area boundaries.
- 5.5 “On-request” reporting points may be established in relation to the requirements of air traffic services for additional position reports when traffic conditions so demand.
- 5.6 The designation of compulsory and on-request reporting points shall be reviewed regularly with a view to keeping the requirements for routine position reporting to the minimum necessary to ensure efficient air traffic services.
- 5.7 Routine reporting over compulsory reporting points shall not systematically be made mandatory for all flights in all circumstances. In applying this principle, particular attention shall be given to the following —
 - (a) high-speed, high-flying aircraft shall not be required to make routine position reports over all reporting points established as compulsory for low-speed, low-flying aircraft; and
 - (b) an aircraft transiting through a terminal control area should not be required to make routine position reports as frequently as arriving and departing aircraft.
- 5.8 In areas where the above principles regarding the establishment of reporting points would not be practicable, a reporting system with reference to meridians of longitude or parallels of latitude expressed in whole degrees may be established.

SCHEDULE 5

Prescriptive Fatigue Management
(Regulation 36 (3))

Note – Guidance on the development and implementation of prescriptive fatigue management is contained in the Manual for the Oversight of Fatigue Management Approaches (ICAO Doc 9966).

Fatigue Management

1. Rest and duty limitations for air traffic controllers

- (a) The service provider's responsibilities
 - (i) Duty rosters shall be prepared and published sufficiently in advance to provide ATCOs the opportunity to plan adequate rest. Consideration should be given to the cumulative effects of undertaking long duty hours interspersed with minimum non-work periods, and of avoiding rosters that result in the serious disruption of an established pattern of working and sleeping. Rosters should cover a period of at least 30 days.
 - (ii) Minimum non-work periods need to provide adequate rest such that the ATCO can achieve a suitable sleep period, as well as allowing for consideration of other physiological requirements and any associated travelling or commuting time.
 - (iii) In order to avoid any detriment to an ATCO's performance, opportunities to consume a meal must be arranged when the duty period exceeds 8 hours.
 - (iv) The Service Provider shall not require an ATCO to undertake any safety related task if it is known or suspected that the ATCO is fatigued to the extent that safety may be adversely affected.
 - (v) To provide evidence of compliance with prescriptive limits, records will be kept for 12 months of the duties performed and non-duty periods achieved so as to facilitate inspection by the service's authorised personnel and audit by the ASSO
- (b) Air traffic controllers' responsibilities
 - (i) An ATCO shall not perform any safety relevant tasks when he or she knows that he or she is fatigued or feels unfit to the extent that safety may be adversely affected.
 - (ii) ATCOs shall make best use of the facilities and opportunities that are provided for rest and for the consumption of meals. They shall plan and use rest periods to ensure that they are fully rested.
- (c) Duty Limitation Parameters
 - (i) Duty period
 - (1) The duty period may not exceed 12 hours.
 - (2) The aggregate of duty period hours may not exceed 200 hours within a defined period of 720 consecutive hours or 30 consecutive days.
 - (3) There must be at least 12 hours between the end of one duty period and the beginning of the next.
 - (4) No more than 6 consecutive days of duty shall be worked.
 - (5) Were the maximum number of consecutive days of duty is rostered, there shall be a minimum interval of 60 hours between the end of one consecutive period of duty days and the next.
- (d) Operational duty
 - (i) A period of operational duty shall not exceed 2 hours.
 - (ii) An operational duty shall not exceed 2 hours without there being a break taken during or at the end of that period.
 - (iii) A break shall total not less than 30 minutes.

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(e) Night duties

- (i) A period of night duty shall be defined as starting at 2200 local and ending at 0600 local
- (ii) A duty which covers all or part of the period of night duty shall not exceed 10 hours.
- (iii) No more than 3 consecutive duties shall be worked which cover all or part of the period of night duty.
- (iv) A minimum period of 54 hours shall occur between the end of duties which cover all or part of the period of night duty and the commencement of the next period of duty

(f) On-call duties

- (i) No more than 3 on-call duties shall be worked in a 7 day period.
- (ii) The maximum length of an on call period of duty where the ATCO does not attend the place of work shall be 20 hours.

SCHEDULE 6

Transfer of Control
(Regulation 49)**1. Division of responsibility for control between air traffic control units****1.1.1 General**

The appropriate ATS authority shall designate the area of responsibility for each air traffic control (ATC) unit and, when applicable, for individual control sectors within an ATC unit. Where there is more than one ATC working position within a unit or sector, the duties and responsibilities of the individual working positions shall be defined.

1.1.2 Between a unit providing aerodrome control service and a unit providing approach control service

1.1.2.1 Except for flights which are provided aerodrome control service only, the control of arriving and departing controlled flights shall be divided between units providing aerodrome control service and units providing approach control service as follows —

1.1.2.1.1 **Arriving aircraft.** Control of an arriving aircraft shall be transferred from the unit providing approach control service to the unit providing aerodrome control service when the aircraft —

- (a) is in the vicinity of the aerodrome, and it is considered that approach and landing will be completed in visual reference to the ground, or has reached uninterrupted visual meteorological conditions;
- (b) is at a prescribed point or level; or
- (c) has landed,

as specified in letters of agreement or ATS unit instructions.

1.1.2.1.2 Transfer of communications to the aerodrome controller shall be effected at such a point, level or time that clearance to land or alternative instructions, as well as information on essential local traffic, can be issued in a timely manner.

Note — Even though there is an approach control unit, control of certain flights may be transferred directly from an ACC to an aerodrome control tower and vice versa, by prior arrangement between the units concerned for the relevant part of approach control service to be provided by the ACC or the aerodrome control tower, as applicable.

1.1.2.1.3 Departing aircraft. Control of a departing aircraft shall be transferred from the unit providing aerodrome control service to the unit providing approach control service —

- (a) when visual meteorological conditions prevail in the vicinity of the aerodrome —
 - (i) prior to the time the aircraft leaves the vicinity of the aerodrome,
 - (ii) prior to the aircraft entering instrument meteorological conditions, or
 - (iii) when the aircraft is at a prescribed point or level, as specified in letters of agreement or ATS unit instructions;
- (b) when instrument meteorological conditions prevail at the aerodrome —

- (i) immediately after the aircraft is airborne, or
- (ii) when the aircraft is at a prescribed point or level, as specified in letters of agreement or local instructions.

Note – See Note following 1.1.2.1.2.

1.1.3 Between a unit providing approach control service and a unit providing area control service

1.1.3.1 When area control services and approach control services are not provided by the same air traffic control unit, responsibility for controlled flights shall rest with the unit providing area control service except that a unit providing approach control service shall be responsible for the control of —

- (a) an arriving aircraft that has been released to the unit providing approach control service by the ACC; and
- (b) departing aircraft until such aircraft is released to the ACC.

1.1.3.2 A unit providing approach control service shall assume control of an arriving aircraft, provided that such aircraft has been released to it, upon arrival of the aircraft at the point, level or time agreed for transfer of control, and shall maintain control during approach to the aerodrome.

1.1.4 Between two units providing area control service

The responsibility for the control of an aircraft shall be transferred from a unit providing area control service in a control area to the unit providing area control service in an adjacent control area at the time of crossing the common control area boundary as estimated by the ACC having control of the aircraft, or at such other point, level or time as has been agreed between the two units.

1.1.5 Between control sectors or positions within the same air traffic control unit

The responsibility for the control of an aircraft shall be transferred from one control sector or position to another control sector or position within the same ATC unit at a point, level or time, as specified in local instructions.

1.1.6 Transfer of control where an ATS surveillance service is being provided

1.1.6.1 Where an ATS surveillance service is being provided, transfer of control shall be effected, whenever practicable, so as to enable the uninterrupted provision of the ATS surveillance service.

1.1.6.2 Where SSR or ADS-B or MLAT is used and the display of position indications with associated labels is provided for, transfer of control of aircraft between adjacent control positions or between adjacent ATC units may be effected without prior coordination, provided that —

- (a) updated flight plan information on the aircraft about to be transferred, including the discrete assigned SSR code or, with respect to Mode S and ADS-B, the aircraft identification, is provided to the accepting controller prior to transfer;
- (b) the ATS surveillance system coverage provided to the accepting controller is such that the aircraft concerned is presented on the situation display before the transfer is effected and is identified on, but preferably before, receipt of the initial call;

- (c) when the controllers are not physically adjacent, two-way direct speech facilities, which permit communications to be established instantaneously, are available between them at all times;

Note. — “Instantaneous” refers to communications which effectively provide for immediate access between controllers.

- (d) the transfer points and all other conditions of application, such as direction of flight, specified levels, transfer of communication points, and especially an agreed minimum separation between aircraft, including that applicable to succeeding aircraft on the same route, about to be transferred as observed on the situation display, have been made the subject of specific instructions (for intra-unit transfer or of a specific letter of agreement between two adjacent ATC units;
- (e) the instructions or letter of agreement specify explicitly that the application of this type of transfer of control may be terminated at any time by the accepting controller, normally with an agreed advance notice; and
- (f) the accepting controller is informed of any level, speed or vectoring instructions given to the aircraft prior to its transfer and which modify its anticipated flight progress at the point of transfer.

1.1.6.3 The minimum agreed separation between an aircraft about to be transferred (1.1.6.2 (d) refers) and the advance notice (1.1.6.2 (e) refers) shall be determined taking into account all relevant technical, operational and other circumstances.

Where circumstances arise in which these agreed conditions can no longer be satisfied, controllers shall revert to the procedure in 1.1.6.4 until the situation is resolved.

1.1.6.4 Where primary radar is being used, and where another type of ATS surveillance system is employed but the provisions of 1.1.6.2 are not applied, the transfer of control of aircraft between adjacent control positions or between two adjacent ATS units may be effected, provided that —

- (a) identification has been transferred to or has been established directly by the accepting controller;
- (b) when the controllers are not physically adjacent, two-way direct-speech facilities between them are at all times available which permit communications to be established instantaneously;
- (c) separation from other controlled flights conforms to the minima authorised for use during transfer of control between the sectors or units concerned;
- (d) the accepting controller is informed of any level, speed or vectoring instructions applicable to the aircraft at the point of transfer; and
- (e) radio communication with the aircraft is retained by the transferring controller until the accepting controller has agreed to assume responsibility for providing the ATS surveillance service to the aircraft. Thereafter, the aircraft should be instructed to change over to the appropriate channel and from that point is the responsibility of the accepting controller.

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MADE this 27th day of May, 2022.

ERIC MOTHIBI MOLALE,
Minister of Transport and Public Works.

Statutory Instrument No. 61 of 2022

CIVIL AVIATION ACT
(Cap. 71:01)

CIVIL AVIATION (PERSONNEL LICENSING) (GENERAL) REGULATIONS, 2022
(Published on 6th June, 2022)

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SCHEDULES

IN EXERCISE of the powers conferred on the Minister of Transport and Public Works by section 89 of the Civil Aviation Act, and on the recommendation of the Civil Aviation Authority, the following Regulations are hereby made —

PART I — *Preliminary*

1. These Regulations may be cited as the Civil Aviation (Personnel Licensing) (General) Regulations, 2022. Citation
2. In these Regulations, unless the context otherwise requires — Interpretation
 - “accredited medical conclusion” means a conclusion reached by one or more medical experts acceptable to the Authority and in consultation with flight operations or other experts as necessary;

- “adapted competency model” means a group of competencies with their associated description and performance criteria adapted from an International Civil Aviation Organization (ICAO) competency framework that an organization uses to develop competency-based training and assessment for a given role;
- “aeronautical experience” means the pilot time obtained in an aircraft or approved flight simulation training device that meets the training and flight time requirements of these Regulations;
- “aeroplane” means a power-driven heavier-than-air aircraft, that derives its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;
- “aircraft” means a machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth’s surface;
- “aircraft avionics” is a term designating any electronic device, including its electrical part, for use in an aircraft, including radio, automatic flight control and instrument systems;
- “aircraft category” means the classification of an aircraft according to specified basic characteristics such as aeroplane, helicopter, glider or free balloon;
- “aircraft certificated for single-pilot operation” means a type of aircraft which the State of Registry has determined, during the certification process, may be operated safely with a minimum crew of one pilot;
- “aircraft required to be operated with a co-pilot” means a type of aircraft that is required to be operated with a co-pilot, as specified in the flight manual or by the air operator certificate;
- “aircraft type” means all aircraft of the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics;
- “airframe” means the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces including rotors, but excluding propellers and rotating airfoils of a power plant, and landing gear of an aircraft and their accessories and controls;
- “airmanship” means the consistent use of good judgement and well-developed knowledge, skills and attitudes to accomplish flight objectives;
- “airship” means a power-driven lighter-than-air aircraft;
- “appliance” means an 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, and that is installed in or attached to the aircraft and is not part of an airframe, power plant or propeller;
- “approved maintenance organisation” means an organisation approved by the Authority to perform specific aircraft maintenance activities including the inspection, overhaul, maintenance, repair or modification and release to service of an aircraft or aircraft component;
- “approved training” means training conducted under special curricula and supervision approved by the Authority;
- “Approved Training Organisation” means an organisation as defined in the Civil Aviation (Approved Training Organisations) Regulations;

- “ATS surveillance service” is a term used to indicate a service provided directly by means of an ATS surveillance system;
- “ATS surveillance system” is a generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of an aircraft;
- “authorised instructor” means a person who —
- (a) holds a valid and current ground or flight instructor rating issued under these Regulations, for conducting ground training or flight training; or
 - (b) is authorised by the Authority to provide ground training, flight training, or other training under these Regulations and the Civil Aviation (Approved Training Organisations) Regulations;
- “balloon” means a non-power-driven lighter-than-air aircraft;
- “category I operation” means a precision instrument approach and landing with a decision height not lower than 60 m (200 ft) and with either a visibility of not less than 800 m or Runway Visual Range (RVR) of not less than 550 m;
- “category II operation” means a precision instrument approach and landing with a decision height lower than 60 m (200 ft), but not lower than 30 m (100 ft) and an RVR of not less than 300 m;
- “category III operation” means a decision height lower than 30 m (100 ft) or no decision height and a runway visual range less than 300 m or no runway visual range limitations;
- “certify as airworthy” means to certify that an aircraft or parts thereof comply with current airworthiness requirements after maintenance has been performed on the aircraft or parts thereof;
- “commercial air transport operation” means an aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire;
- “competency” means a dimension of human performance that is used to reliably predict successful performance on the job, whereby a competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions;
- “competency-based training and assessment” means training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards;
- “competency standard” means a level of performance that is defined as acceptable when assessing whether or not competency has been achieved;
- “Contracting State” means a State that is a signatory to the Convention on International Civil Aviation (Chicago Convention);
- “co-pilot” means a licensed pilot serving in any piloting capacity other than as pilot-in-command but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction;
- “course” means a programme of instruction to obtain a licence, rating, qualification, authorisation or current experience required under these Regulations;
- “credit” means a recognition of alternative means or prior qualifications;

- “critical engine” means the engine whose failure would most adversely affect the performance or handling qualities of an aircraft;
- “cross country” means a flight between a point of departure and a point of arrival following a pre-planned route using standard navigation procedures;
- “detect and avoid” means the capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action;
- “dual instruction time” means a flight time during which a person receives flight instruction from a properly authorised pilot on board the aircraft, or from a properly authorised remote pilot using the remote pilot station during a remotely piloted aircraft flight;
- “engine” means a unit used or intended to be used for aircraft propulsion which consists of at least components and equipment necessary for functioning and control, but excludes the propeller or rotors, where applicable;
- “error” means an action or inaction by an operational person that leads to deviations from the organisational or the operational person’s intentions or expectations;
- “error management” means the process of detecting and responding to errors with counter measures that reduce or eliminate the consequences of errors and mitigate the probability of further errors or undesired events;
- “examiner” means a person authorised by the Authority to conduct a pilot proficiency test, a practical test for a licence or rating, or a knowledge test under these Regulations;
- “flight crew member” means a crew member charged with duties essential to the operation of an aircraft during a flight;
- “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 procedures trainer” means as defined under the flight simulation training device;
- “flight simulation training device” means any of the following three types of apparatus in which flight conditions are simulated on the ground, a —
- (a) simulation flight trainer, which provides an accurate representation of the flight deck of a particular aircraft type or an accurate representation of the remotely piloted aircraft system (RPAS) to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated;
 - (b) flight procedures trainer, which provides a realistic flight deck environment or realistic RPAS environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class; or

- (c) basic instrument flight trainer, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight or the RPAS environment in instrument flight conditions;

“flight time” means –

- (a) for an aeroplane, the total time from the moment an aeroplane moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight; and it 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;
- (b) for a helicopter, 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;
- (c) for an airship or free balloon, 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; or
- (d) for remotely piloted aircraft system, the total time from the moment a command and control (C2) link is established between the remote pilot station (RPS) and the remotely piloted aircraft (RPA) for the purpose of taking off or from the moment the remote pilot receives control following a handover until the moment the remote pilot completes a handover or the C2 link between the RPS and the RPA is terminated at the end of the flight;

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

“glider flight time” means the total time occupied in flight, whether it is towed or not, from the moment the glider first moves for the purpose of taking off until the moment it comes to rest at the end of the flight;

“handover” means the act of passing piloting control from one remote pilot station to another;

“heavier-than-air aircraft” means an aircraft that derives 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 axes;

“human performance” means human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations;

“IFR” means the symbol used to designate the instrument flight rules;

“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, and if a landing is not completed, to a position at which holding or enroute obstacle clearance criterion applies;

- “instrument flight time” means the time during which a pilot is piloting an aircraft, or a remote pilot is piloting a remotely piloted aircraft, solely by reference to instruments and without external reference points;
- “instrument ground time” means the time during which a pilot is practising, on the ground, simulated instrument flight in a flight simulation training device approved by the Authority;
- “instrument time” means instrument flight time or instrument ground time;
- “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 a licence or rating that may be administered in written form or through a computer;
- “language proficiency skills” means the knowledge and abilities which impact on the capacity of a person to communicate spontaneously, accurately, intelligibly, meaningfully and appropriately in a given language;
- “likely” in the context of the medical provisions in these Regulations, means with a probability of occurring that is unacceptable to the medical assessor;
- “maintenance” means the performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair;
- “medical assessment” means the evidence issued by the Authority that the licence holder meets specific requirements of medical fitness;
- “medical assessor” means a physician, appointed by the Authority, qualified and experienced in the practice of aviation medicine and competent in evaluating and assessing medical conditions of flight safety significance;
- “medical conclusion” means a medical conclusion reached by one or more medical experts accredited by the Authority;
- “medical examiner” means a medical physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the Authority to conduct medical examinations of fitness of applicants for licences or ratings for which medical requirements are prescribed;
- “monitoring” means a cognitive process to compare an actual to an expected state;
- “night” means the time between 15 minutes after sunset and 15 minutes before sunrise, sunrise and sunset being determined at surface level, and includes any time between sunset and sunrise when an unlighted aircraft or other unlighted prominent object cannot be clearly seen at a distance of 4572 m;
- “observable behaviour (OB)” means a single role-related behaviour that can be observed and may or may not be measurable;
- “performance criteria” means statements used to assess whether the required levels of performance have been achieved for a competency, and each performance criterion consists of an observable behaviour, a condition and a competency standard;

- “pilot flying (PF)” means the pilot whose primary task is to control and manage the flight path. The secondary tasks of the PF are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crew members;
- “pilot-in-command” 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-in-command under supervision” means a co-pilot performing under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, in accordance with a method of supervision acceptable to the Authority;
- “pilot monitoring (PM)” means the pilot whose —
- (a) primary task is to monitor the flight path and its management by the PF; and
 - (b) secondary task is to perform non-flight path related actions including radio communications, aircraft systems, other operational activities and to monitor other crew members;
- “piloting (to pilot)” means to manipulate the flight controls of an aircraft during flight time;
- “pilot time” means the time a person —
- (a) serves as a required pilot;
 - (b) receives training from an authorised instructor in an aircraft or approved flight simulation training device; or
 - (c) gives training as an authorised instructor in an aircraft or approved flight simulation 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 aerofoil 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 licence, certificate, rating or authorisation that is conducted by having the applicant respond to questions and demonstrate manoeuvres in flight, in an approved synthetic flight trainer or in a combination of these;
- “pressurised aircraft” means an aircraft fitted with means of controlling out flow of cabin air in order to maintain maximum cabin altitude of not more than 10 000 ft to enhance breathing and comfort of passengers and crew;
- “problematic use of substances” means the use of one or more psychoactive substances by aviation personnel in a way that —
- (a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; or
 - (b) causes or worsens an occupational, social, mental or physical problem or disorder;

- “propeller” means a device for propelling an aircraft that has blades on a power plant driven shaft and that, when rotated, produces by its action on the air, a thrust approximately perpendicular to its plane of rotation, and it includes control components normally supplied by its manufacturer, but does not include main and auxiliary rotors or rotating airfoils of engines;
- “psychoactive substance” means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psycho-stimulants, hallucinogens and volatile solvents, excluding coffee and tobacco;
- “psychosis” means a mental disorder in which a person has manifested delusions, hallucinations, grossly bizarre or disorganised behaviour or other commonly accepted symptoms of this condition or where the individual may reasonably be expected to manifest delusions, hallucinations, grossly bizarre or disorganised behaviour or other commonly accepted symptoms of this condition;
- “quality system” means documented organisational procedures and policies, internal audit of those policies and procedures; management review and recommendation for quality improvement;
- “rated air traffic controller” means an air traffic controller holding a licence and valid ratings appropriate to the privileges to be exercised;
- “rating” means an authorisation entered on or associated with a licence and forming part of the licence, stating special conditions, privileges or limitations pertaining to such licence or certificate;
- “rendering a licence valid” means the action taken by the Authority, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence;
- “repair” means the restoration of an aircraft, engine, propeller or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear;
- “rotorcraft” means a power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors;
- “safety management system” means a systematic approach to managing safety, including the necessary organisational structures, accountability, responsibilities, policies and procedures;
- “significant” in the context of the medical provisions in these Regulations, means to a degree or of a nature that is likely to jeopardise flight safety;
- “signing a maintenance release” means to certify that maintenance work has been completed satisfactorily in accordance with appropriate airworthiness requirements, by issuing the maintenance release referred to in the Civil Aviation Regulations;
- “solo flight time” means a flight time on which a student pilot is the sole occupant of the aircraft;
- “state safety programme” means an integrated set of regulations and activities aimed at improving safety;
- “substance” means alcohol, sedatives, hypnotics, anxiolytics, hallucinogens, opioids, cannabis, inhalants, central nervous system stimulants such as cocaine, amphetamines and similarly acting sympathomimetic, 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 is or was physically hazardous;
- (b) a verified positive drug test result acquired under an anti-drug programme or internal programme of the Government; or
- (c) misuse of a substance that the Authority, based on case history and qualified medical judgement relating to the substance involved, finds that it makes the applicant unable to safely perform the duties or exercise the privileges of the licence applied for or held, or may reasonably be expected for the maximum duration of the 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;

“threat” means an event or error that occurs beyond the influence of an operational person which increases operational complexity and shall be managed to maintain a margin of safety;

“threat management” means a process to detect and respond to a threat with counter-measures that reduce or eliminate any consequence of the threat and mitigate the probability of an error or an undesired state;

“training programme” means a programme that consists of courses, courseware, facilities, flight training equipment, and personnel necessary to accomplish a specific training objective and includes a core curriculum and a speciality curriculum;

“VFR” means visual flight rules; and

“VMC” means visual meteorological conditions.

PART II — *General rules concerning licences*

3. These Regulations shall apply to the following —

Application

- (a) flight crew members —
 - (i) a private pilot,
 - (ii) a commercial pilot,
 - (iii) a multi-crew pilot,
 - (iv) an airline transport pilot,
 - (v) a glider pilot, and
 - (vi) a free balloon pilot; and
- (b) personnel —
 - (i) an aircraft maintenance engineer,
 - (ii) an air traffic controller,
 - (iii) a flight operations officer,
 - (iv) an aeronautical station operator,
 - (v) an aviation repair specialist,
 - (vi) a parachute rigger,
 - (vii) a flight radiotelephone operator,

	(viii) a cabin crew member, and (ix) any other personnel as may be determined by the Authority.
Authority to act as flight crew member	<p>4. (1) A person shall not act as a flight crew member of an aircraft unless, he or she holds a licence —</p> <p>(a) appropriate to the duties to be performed by the person; and (b) issued by the Authority in accordance with these Regulations.</p> <p>(2) Where a person holds a licence issued by a foreign Contracting State, the Authority may validate such licence.</p> <p>(3) A flight crew member shall carry the appropriate licence on board the aircraft when engaged in international air navigation.</p>
Validation of licence	<p>5. (1) The Authority may as an alternative to the issuance of its own licence, validate a licence issued by another Contracting State, by authorising a person holding such licence to exercise the privileges of the licence:</p> <p>Provided that —</p> <p>(a) such validation shall be done in a manner determined by the Authority; (b) the validation period shall not extend beyond the period of validity of the licence; and (c) such validation shall cease to be valid if the licence is suspended or revoked.</p> <p>(2) The Authority shall verify the authenticity of the licence with the Contracting State that issued the licence where validation is issued for use in a commercial air transport operation.</p> <p>(3) Notwithstanding the provisions of subregulations (1) and (2), the Authority shall automatically render valid a licence from another ICAO Contracting State that adopted common licensing regulations and the state shall have entered into a formal agreement recognising the automatic validation process with an established surveillance system to ensure the continuing implementation of the common licensing regulations.</p> <p>(4) The Contracting State shall have registered the agreement with ICAO pursuant to Article 83 of the Convention on International Civil Aviation.</p> <p>(5) An endorsement shall appear on licences rendered valid under the process of subregulations (3) and (4) indicating —</p> <p>(a) that the licence is automatically validated under the agreement; (b) the reference to the ICAO registration number of the agreement and the endorsement; and (c) a list of all states that are party to the agreement with any transition requirements where applicable.</p>
Privileges of holder of licence	<p>6. A licence holder shall not exercise privileges other than those granted under the licence.</p>
Medical fitness	<p>7. (1) An applicant for a licence shall, where applicable, hold a medical certificate issued by the Authority, in accordance with these Regulations.</p> <p>(2) To satisfy the licensing requirements of medical fitness, the applicant shall meet the appropriate medical requirements specified for the licence applied for.</p>
Competency and recency requirements	<p>8. (1) The Authority shall, after issuing a licence, ensure that the privileges granted under the licence or ratings are not exercised unless the holder maintains competency and meets the requirements for recent experience.</p> <p>(2) A licence holder shall not exercise the privileges granted by that licence unless he or she maintains competency and meets the requirements for recent experience.</p>

(3) A flight crew member, engaged in commercial air transport operations shall establish maintenance of competency by demonstration of skill during proficiency flight checks.

(4) A flight crew member may, to the extent possible, demonstrate his or her continuing competency in a flight simulation training device.

(5) A flight crew member shall record the maintenance of competency in the operator's records or in the flight crew member's personal log book or licence.

9. (1) An aeroplane, airship, helicopter, powered-lift pilot and a free balloon operator shall demonstrate the ability to speak and understand the language used for radio telephony communications to the level specified in Schedule 2 of these Regulations.

Language
proficiency

(2) An air traffic controller, a flight operations officer, cabin crew member, aircraft maintenance engineer, parachute rigger, aviation repair specialist and an aeronautical station operator shall demonstrate the ability to speak and understand the language used in radiotelephony communications to the level specified in Schedule 2 of these Regulations.

PART III — General requirements for pilot licences, remote pilot licence and ratings

10. An applicant for a pilot licence shall —

- (a) before being issued with a pilot licence or rating, meet such requirements in respect of age, knowledge, experience, flight instruction, skill and medical fitness specified for the licence or rating applied for; and
- (b) demonstrate in a manner determined by the Authority, such requirements for knowledge and skill specified for the licence or rating applied for.

General
licensing
specifications

11. (1) A person shall not, unless he or she is a holder of a pilot licence issued in accordance with these Regulations, act as a pilot-incommand or co-pilot of an aircraft in any of the following categories —

Category
ratings

- (a) an aeroplane;
- (b) an airship of a volume of more than 4600 cubic metres;
- (c) a free balloon;
- (d) a glider;
- (e) a helicopter; or
- (f) a powered-lift.

(2) The Authority shall include the category of the aircraft in the title of the licence or endorse it as a rating on the licence:

Provided that the category rating shall not be endorsed on a licence if the category is included in the title of the licence.

(3) Where the holder of a pilot licence applies for a licence for an additional aircraft category, the Authority shall —

- (a) issue the holder of the licence with an additional pilot licence for that category of aircraft; or
- (b) endorse the original licence with the new category rating.

(4) The holder of a pilot licence who applies for an additional category rating shall meet the requirements of these Regulations, appropriate to the privileges for the category rating applied for.

- (5) Where the Authority issues an additional category rating or endorses the additional category rating on a pilot licence, the additional category rating shall indicate the level of licensing privileges at which the category rating is granted.
- 12.** (1) The Authority shall establish class ratings for aeroplanes certificated for single-pilot operation including class ratings for a —
- (a) single-engine land aeroplane;
 - (b) multi-engine land aeroplane; and
 - (c) helicopter or powered-lift which has comparable handling, performance and other characteristics.
- (2) The Authority shall establish type ratings for —
- (a) an aircraft certificated for operation with a minimum crew of at least two pilots;
 - (b) a helicopter or powered-lift certificated for single-pilot operation except where a class rating has been established under subregulation (1); or
 - (c) any aircraft, whenever the Authority considers it necessary.
- (3) Where the Authority establishes a common type rating, the rating shall only apply to an aircraft with similar characteristics in operating procedures, systems and handling.
- (4) Where an applicant demonstrates the skill and knowledge required for the initial issue of a pilot licence, the Authority shall enter the category and rating appropriate to the class and type of aircraft used in the demonstration, on the licence.
- (5) Where the Authority issues a type rating limiting the privileges to act as co-pilot or limiting the privileges to act as pilot only during the cruise phase of the flight, the Authority shall endorse such limitation on the rating.
- (6) The Authority may, for the purpose of training, testing, or for specific special purpose non-revenue or non-passenger carrying flights —
- (a) provide in writing to the licence holder, special authorisation, in place of issuing a type rating in accordance with subregulation (2); and
 - (b) the authorisation shall be limited in validity, to the time needed to complete the specific flight.
- (7) The Authority, having issued a licence, shall ensure that other Contracting States are satisfied as to the validity of the licence.
- 13.** (1) An applicant for a class rating shall demonstrate a degree of skill appropriate to the licence in an aircraft of the class for which the rating is applied for.
- (2) An applicant for a type rating shall —
- (a) have experience in the appropriate type of aircraft or flight simulator, which experience shall be gained under appropriate supervision, in —
 - (i) the normal flight procedures and manoeuvres during all phases of flight,
 - (ii) the abnormal and emergency procedures and manoeuvres in cases of failure and malfunction of equipment, such as powerplant, systems and airframe,
 - (iii) where applicable, the instrument procedures, including instrument approach, missed approach and landing procedures under normal, abnormal and emergency conditions and simulated engine failure, and
 - (iv) the procedures for crew incapacitation and coordination, including allocation of pilot tasks, crew cooperation and use of checklists;

Class and type ratings

Requirements for class and type ratings

- (b) demonstrate the skill and knowledge required for the safe operation of the applicable type of aircraft, and relevant to the duties of a pilot-in-command or co-pilot; and
 - (c) demonstrate, at the airline transport pilot licence level, an extent of knowledge required under these Regulations.
- (3) Where the application is for a type rating for —
- (a) an aircraft certificated for operation with a minimum crew of at least two pilots; or
 - (b) a helicopter or powered-lift certificated for single-pilot operation.
- (4) The applicant shall demonstrate the skill and knowledge required for the safe operation of the applicable type of aircraft and relevant to the licensing requirements and piloting functions of the applicant.

14. Where an applicant uses a flight simulation training device to acquire the experience or perform any manoeuvre required during a demonstration of skill for the issue of a licence, the Authority shall ensure that the training device used is appropriate to the task and shall approve the use of such training device.

Use of flight simulation training device

15. A holder of a pilot licence shall not act as a pilot-in-command or co-pilot of an aircraft under instrument flight rules unless he or she has received an instrument rating, from the Authority, appropriate to the aircraft category.

Instrument rating

16. (1) A person shall not carry out a flight instruction required for the issue of a pilot licence or rating, unless he or she —

Authorisation to conduct instruction

- (a) holds an appropriate pilot licence;
- (b) has received a flight instruction rating on his or her pilot licence, from the Authority;
- (c) has been authorised by the Authority to act as an agent of an approved training organisation, carrying out flight instruction; or
- (d) has received a specific authorisation from the Authority.

(2) A person shall not carry out an instruction, on a flight simulation training device, required for the issue of a licence or rating, unless he or she —

- (a) holds an appropriate licence; or
- (b) has the appropriate flight training experience; and
- (c) has received a specific authorisation from the Authority.

(3) An approved training for flight crew and air traffic controllers shall be conducted within an approved training organisation.

(4) Any competency-based approved training for aircraft maintenance personnel shall be conducted within an approved training organisation.

17. (1) A student pilot or a holder of a pilot licence shall be entitled to be credited in full, with all solo, dual instruction and pilot-in-command flight time towards the total flight time required for the initial issue of a pilot licence or the issue of a higher grade of pilot licence.

Crediting of flight time

(2) When acting as a co-pilot of an aircraft certificated for operation by a single pilot, but the Authority requires for the aircraft to be operated with a co-pilot, the holder of a pilot licence shall be entitled to be credited with not more than 50 per cent of the co-pilot flight time towards the total flight time required for a higher grade of pilot licence.

(3) Notwithstanding subregulation (2), the Authority may authorise that flight time shall be credited in full towards the total flight time required, if the aircraft is equipped to be operated by a co-pilot and the aircraft is operated in a multi-crew operation.

Limitation of privileges of pilots aged over 60 years

(4) When acting as a co-pilot of an aircraft certificated to be operated with a co-pilot, the holder of a pilot licence shall be entitled to be credited in full with the flight time towards the total time required for a higher grade of pilot licence.

(5) When acting as a pilot-in-command under supervision, the holder of a pilot licence shall be entitled to be credited in full with the flight time towards the total flight time required for a higher grade of pilot licence.

18. A holder of a pilot licence shall not act as pilot-in-command of an aircraft engaged in international commercial air transport operations if the licence holder has attained his or her 60th birthday, or in the case of operations with more than one pilot where the other pilot is younger than 60 years of age, his or her 65th birthday.

PART IV — Student pilot licence

Student pilot licence

19. (1) The Authority shall set out the requirements and privileges for a student pilot and in setting out the privileges, the Authority shall ensure that such privileges do not permit a student pilot to constitute a hazard to air navigation.

(2) A student pilot shall not fly solo unless he or she —

(a) is under the supervision of, or has the authority from an authorised flight instructor; and

(b) holds a current Class 2 medical certificate.

(3) A student pilot shall not fly solo in an aircraft on an international flight unless it is by special or general arrangement between Botswana and the Contracting State concerned.

PART V — Private pilot licence

A — General requirements appropriate to the aeroplane, airship, helicopter and powered-lift categories

Age requirements

20. An applicant for a private pilot licence, appropriate to the aeroplane, airship, helicopter and powered-lift categories, shall be at least 17 years of age.

Knowledge requirements

21. An applicant for a private pilot licence shall demonstrate a level of knowledge, appropriate to the privileges granted to the holder of a private pilot licence and appropriate to the category of aircraft intended to be included in the licence, in the following subjects —

(a) air law —

(i) rules and regulations relevant to the holder of a private pilot licence,

(ii) rules of the air,

(iii) altimeter setting procedures, and

(iv) appropriate air traffic service practices and procedures;

(b) aircraft general knowledge —

(i) principles of operation and functioning of engines, systems and instruments,

(ii) operating limitations of the relevant category of aircraft and engines including the relevant operational information from the flight manual or other appropriate document,

(iii) in the case of helicopters and powered-lifts, transmission (power trains), where applicable, and

(iv) in the case of airships, physical properties and practical application of gases;

- (c) flight performance, planning and loading, including —
 - (i) the effects of loading and mass distribution on flight characteristics,
 - (ii) the use and practical application of take-off, landing and other performance data,
 - (iii) pre-flight and en-route flight planning appropriate to private operations under visual flight rules,
 - (iv) the preparation and filing of air traffic service flight plans,
 - (v) the appropriate air traffic service procedures,
 - (vi) position reporting procedures,
 - (vii) altimeter setting procedures, and
 - (viii) operations in areas of high-density traffic;
- (d) human performance, including principles of threat and error management;
- (e) meteorology, including —
 - (i) the application of elementary aeronautical meteorology,
 - (ii) the use of and procedures for obtaining meteorological information,
 - (iii) altimetry, and
 - (iv) hazardous weather conditions;
- (f) the practical aspects of air navigation, dead-reckoning techniques and the use of aeronautical charts;
- (g) operational procedures, including —
 - (i) the application of threat and error management to operational performance,
 - (ii) altimeter setting procedures,
 - (iii) the use of aeronautical documentation such as Notice to Air Missions (NOTAM), aeronautical codes and abbreviations,
 - (iv) appropriate precautionary and emergency procedures, including action taken to avoid hazardous weather, wake turbulence and operating hazards, and
 - (v) in the case of helicopters and if applicable, powered-lifts, settling with power, ground resonance, retreating blade stall, dynamic roll over and safety procedures associated with flight in VMC;
- (h) the principles of flight; and
- (i) radiotelephony, including the —
 - (i) communication procedures and phraseology as applied to visual flight rules operations, and
 - (ii) action to be taken in case of communication failure.

22. An applicant for a private pilot licence shall, as a pilot-in-command of an aircraft within appropriate category, demonstrate the ability to perform the procedures and manoeuvres, as may be specified by the Authority, with a degree of competency appropriate to the privileges granted to the holder of a private pilot licence and to —

Skills
requirements

- (a) recognise and manage threats and errors;
- (b) operate the aircraft within its limitations;
- (c) complete all maneuvers with smoothness and accuracy;
- (d) exercise good judgement and airmanship;
- (e) apply aeronautical knowledge; and
- (f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

23. An applicant for a private pilot licence shall hold a current class 2 medical certificate.

Medical fitness

Privileges of private pilot licence

24. (1) Subject to the requirements under these Regulations, a holder of a private pilot licence shall act, but not for remuneration, as a pilot-in-command or co-pilot of an aircraft, within the appropriate aircraft category, engaged in non-revenue flights.

(2) Before exercising the privileges at night, the licence holder shall have received dual instruction in aircraft within the appropriate category of aircraft in night flying, including take-off, landing and navigation.

B — Specific requirements for aeroplane category

Experience

25. (1) The applicant shall have completed not less than 40 hours of flight time during a course of approved training, as a pilot of aeroplanes appropriate to the class rating sought.

(2) Where the Authority determines that experience as a pilot, under instruction, in a flight simulation training device is acceptable as part of the total flight time of the 40 hours, credit for such experience shall be limited to a maximum of five hours.

(3) When the applicant has flight time as a pilot of aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of subregulation (1) can be reduced accordingly.

(4) The applicant shall have completed in aeroplanes, not less than —

- (a) 10 hours of solo flight, appropriate to the class rating sought, under the supervision of an authorised flight instructor; and
- (b) five hours of solo cross-country flight time with at least one solo cross-country flight of a total of not less than 270 kilometres or 150 nautical miles, in the course of which full-stop landings at two different aerodromes shall be made.

Flight instruction

26. (1) An applicant for a private pilot licence, with an aeroplane category rating, shall have received dual instruction in an aeroplane appropriate to the class rating applied for, from an authorised flight instructor.

(2) The instructor shall ensure that the applicant has operational experience, to the level of performance required for a private pilot, in —

- (a) recognising and managing threats and errors;
- (b) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;
- (c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- (d) control of the aeroplane by external visual reference;
- (e) flight at critically slow airspeeds, recognition of and recovery from incipient and full stalls;
- (f) flight at critically high airspeeds, recognition of and recovery from spiral dives;
- (g) normal and crosswind take-off and landing;
- (h) maximum performance, being short field and obstacle clearance;
- (i) take-off and short-field landings;
- (j) flight by reference solely to instruments, including the completion of a level 180 degree turn;
- (k) cross-country flying using visual reference, dead reckoning and where available, radio navigation aids;

- (l) emergency operations, including simulated aeroplane equipment malfunctions;
- (m) operations to, from and transiting controlled aerodromes; compliance with air traffic service procedures; and
- (n) communication procedures and phraseology.

C – Specific requirements for helicopter category

27. (1) The applicant shall have completed not less than 40 hours of flight time, or 35 hours if completed during a course of approved training, as a pilot of helicopters. Experience

(2) The Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 40 hours or 35 hours, as the case may be, and credit for such experience shall be limited to a maximum of five hours.

(3) The Authority shall, where the applicant has flight time as a pilot of aircraft in other categories, determine —

- (a) whether such experience is acceptable; and if so,
- (b) the extent to which the flight time requirements of subregulation (1) may be reduced.

(4) The applicant shall have completed in helicopters, not less than 10 hours of solo flight time under the supervision of an authorised flight instructor, including five hours of solo cross-country flight time with at least one cross-country flight, at a total of not less than 180 km (100 nautical miles) in the course of which landings, at two different points shall be made.

28. (1) An applicant for private pilot licence with a helicopter rating shall have received not less than 20 hours of dual instruction time, in a helicopter, from an authorised flight instructor. Flight instruction

(2) The instructor shall ensure that the applicant has operational experience, to the level of performance required for a private pilot, in —

- (a) recognising and managing threats;
- (b) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;
- (c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- (d) controlling the helicopter by external visual reference;
- (e) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- (f) ground manoeuvring and run-ups, hovering, take-offs and landings on normal, out of wind and sloping ground;
- (g) take-offs and landings with necessary power, including maximum performance take-off and landing techniques on restricted site operations or quick stops;
- (h) cross-country flying using visual reference, dead reckoning and where available, radio navigation aids including a flight of at least one hour;
- (i) emergency operations, including simulated helicopter equipment malfunction and autorotative approach;
- (j) operations to, from and transiting controlled aerodromes;
- (k) compliance with air traffic service providers; and
- (l) communication procedures and phraseology.

(3) The applicant shall have received dual instrument flight instruction from an authorised flight instructor.

(4) The flight instructor shall ensure that the applicant has operational experience in flight, by reference solely to instruments, including the completion of a level 180 degree turn in a suitably instrumented helicopter.

D — Specific requirements for powered-lift category

Experience

29. (1) An applicant for a private pilot licence with a powered-lift category rating shall have completed not less than 40 hours of flight time as a pilot of powered-lifts.

(2) The Authority shall determine whether experience as a pilot under instruction, in a flight simulation training device, is acceptable as part of the total flight time of 40 hours required under subregulation (1).

(3) Where the applicant has flight time as a pilot of an aircraft in other categories, the Authority shall determine whether such experience is acceptable as part of the total flight time and the extent to which the flight time requirements under subregulation (1) may be reduced.

(4) An applicant shall have completed, in a powered-lift, not less than 10 hours of solo flight time under the supervision of an authorised flight instructor, including five hours of solo cross-country flight time with at least one cross-country flight of a total of not less than 270 kilometres or 150 nautical miles, in the course of which full-stop landings at two different aerodromes shall be made.

Flight instruction

30. (1) An applicant for a private pilot licence with a powered-lift category rating shall have received not less than 20 hours of dual instruction time in a powered-lift, from an authorised flight instructor.

(2) A flight instructor shall ensure that the applicant has operational experience, to the level of performance required for a private pilot, in —

- (a) recognising and managing threats and errors;
- (b) pre-flight operations, including mass and balance determination, powered-lift inspection and servicing;
- (c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- (d) controlling a powered-lift by external visual reference;
- (e) ground manoeuvring and run-ups, hover and rolling take-offs and climb-out, hover and rolling approach and landings for normal, out of wind and sloping ground;
- (f) take-off and landing with minimum necessary power, maximum performance take-off and landing techniques in restricted site operations and quick stops;
- (g) flight by reference solely to instruments, including completion of a level 180 degree turn;
- (h) recovery at the incipient stage from settling with power, recovery techniques from low-rotor rpm within the normal range of engine rpm;
- (i) cross-country flying using visual reference, dead reckoning and where available, radio navigation aids, including a flight of at least one hour;
- (j) emergency operations, including simulated powered-lift equipment malfunctions, power of reconversion to autorotation and autorotative approach, and where applicable, transmission and interconnect driveshaft failure;

- (k) operations to, from and transiting controlled aerodromes;
- (l) compliance with air traffic service procedures; and
- (m) communication procedures and phraseology.

E — Specific requirements for airship category

31. An applicant for a private pilot licence with an airship category rating shall have completed not less than 25 hours of flight time, as a pilot of an airship, including at least — Experience

- (a) three hours of cross-country flight training in an airship, with a cross-country flight of a total of not less than 45 km or 25 nautical miles;
- (b) five take-offs and five landings to a full stop at an aerodrome, with each landing involving a flight in the traffic pattern at an aerodrome;
- (c) three hours of instrument time; and
- (d) five hours as a pilot assuming the duties of a pilot-in-command, under the supervision of the pilot-in-command.

32. (1) An applicant for a private pilot licence with an airship category rating shall have received dual instruction, in an airship, from an authorised flight instructor. Flight instruction

(2) A flight instructor shall ensure that the applicant under subregulation (1) has received instruction in —

- (a) recognising and managing threats and errors;
- (b) pre-flight operations, including mass and balance determination, airship inspection and servicing;
- (c) ground reference manoeuvres;
- (d) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- (e) techniques and procedures for take-off, including appropriate limitations, emergency procedures and signals used;
- (f) controlling an airship by external visual reference;
- (g) take-offs, landings and go-arounds;
- (h) maximum performance (obstacle clearance), take-offs;
- (i) flight by reference solely to instruments, including the completion of a level 180 degree turn;
- (j) navigation, cross-country flying using visual reference, dead reckoning and radio navigation aids;
- (k) emergency operations, recognition of leaks, including simulated airship equipment malfunctions; and
- (l) communication procedures and phraseology.

PART VI — Commercial pilot licence

A — General requirements appropriate to the aeroplane airship, helicopter and powered-lift categories

33. An applicant for a commercial pilot licence shall not be less than 18 years of age. Age requirements

34. (1) An applicant for a commercial pilot licence shall have demonstrated a level of knowledge, appropriate to the privileges granted to the holder of a commercial licence and appropriate to the category of aircraft intended to be included in the licence, in — Knowledge requirements

- (a) air law —
 - (i) rules and regulations relevant to the holder of a commercial pilot licence,
 - (ii) rules of the air, and
 - (iii) appropriate air traffic service practices and procedures;
- (b) aircraft general knowledge for aeroplanes, airship, helicopters and powered-lift, including —
 - (i) principles of operation and functioning of engines, systems and instruments,
 - (ii) operating limitations of the relevant category of aircraft and engines,
 - (iii) relevant operational information from the flight manual or other documents,
 - (iv) use and serviceability checks of equipment and systems of the appropriate aircraft,
 - (v) maintenance procedures for airframes, systems and engines of the appropriate aircraft,
 - (vi) in the case of a helicopter or powered-lift, transmission (power train), where applicable, or
 - (vii) in the case of an airship, physical properties and practical application of gases;
- (c) flight performance, planning and loading, including —
 - (i) the effects of loading and mass distribution on aircraft handling, flight characteristics and performance, mass and balance calculations,
 - (ii) the use and practical application of take-off, landing and other performance data, or
 - (iii) in the case of an airship, helicopter or powered-lift, the effects of external loading on handling;
- (d) human performance including principles of threat and error management;
- (e) meteorology, including —
 - (i) the interpretation and application of aeronautical meteorological reports, charts and forecasts,
 - (ii) the use of, and procedures for obtaining meteorological information pre-flight and in-flight,
 - (iii) altimetry,
 - (iv) aeronautical meteorology including climatology of relevant areas in relation to elements that have effect on aviation,
 - (v) 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, and
 - (vi) the causes, recognition and effects of icing, including frontal zone penetration procedures; hazardous weather avoidance;
- (f) navigation, including —
 - (i) air navigation including the use of aeronautical charts, instruments and navigation aids,
 - (ii) an understanding of the principles and characteristics of appropriate navigation systems,
 - (iii) the operation of airborne equipment, and

- (iv) in the case of airships the —
 - (aa) use, limitation and serviceability of avionics and instruments necessary for control and navigation,
 - (bb) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight and identification of radio navigation, and
 - (cc) principles and characteristics of self-contained and external referenced navigation system and operation of airborne equipment;
- (g) operational procedure —
 - (i) the application of threat and error management to operational performance,
 - (ii) the use of aeronautical documentation such as NOTAM, aeronautical codes and abbreviations,
 - (iii) altimeter setting procedures,
 - (iv) the appropriate precautionary and emergency procedures,
 - (v) the operational procedures for carriage of freight, potential hazards associated with dangerous goods,
 - (vi) the requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from the aircraft, and
 - (vii) in the case of a helicopter and where applicable, powered-lift, settling with power, ground resonance, retreating blade stall, dynamic rollover and other operating hazards and safety procedures associated with flight in VMC;
- (h) principles of flight; and
- (i) radiotelephony communication procedures and phraseology applied to visual flight rules operations, including action to be taken in the case of communication failure.

35. An applicant for a commercial pilot licence shall demonstrate the ability to perform as pilot-in-command of an aircraft within the appropriate category of aircraft, the procedures and manoeuvres, as may be specified by the Authority, with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot licence, and shall —

Skills requirements

- (a) recognise and manage threats and errors;
- (b) operate the aircraft within its limitations;
- (c) complete all manoeuvres with smoothness and accuracy;
- (d) exercise good judgement and airmanship;
- (e) apply aeronautical knowledge;
- (f) maintain control of the aircraft at all times; and
- (g) ensure the successful outcome of a procedure or manoeuvre.

36. An applicant for a commercial pilot licence shall hold a Class 1 Medical Certificate.

Medical fitness

37. (1) Subject to compliance with the requirements specified in these Regulations, the privileges of the holder of a commercial pilot licence shall be —

Privileges and conditions of commercial pilot licence

- (a) to exercise all the privileges of the holder of a private pilot licence in an aircraft, within the appropriate aircraft category;
- (b) to act as a pilot-in-command of an aircraft within the appropriate aircraft category engaged in operations other than commercial air transportation;

- (c) to act as a pilot-in-command of an aircraft, within the appropriate aircraft category and certificated for single-pilot operation, engaged in commercial air transportation;
- (d) to act as a co-pilot of an aircraft, within the appropriate aircraft category, required to be operated with a co-pilot; and
- (e) in the case of an airship category, to pilot an airship under instrument flight rules.

(2) Where the privileges are exercised at night, the holder of the licence shall have received dual instruction in an aircraft, within the appropriate category of an aircraft in night flying, including take-off, landing and navigation.

B — Specific requirements for aeroplane category

Experience

38. (1) An applicant for a commercial pilot licence with an aeroplane category rating shall have completed not less than 200 hours of flight time, or 150 hours if completed during a course of approved training, as a pilot of aeroplanes.

(2) The Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be and credit for such experience shall be limited to a maximum of 20 hours.

- (3) The applicant shall have completed in an aeroplane, not less than —
 - (a) 100 hours as a pilot-in-command or, in the case of a course of approved training, 70 hours as a pilot-in-command;
 - (b) 20 hours of cross-country flight time as a pilot-in-command including a cross-country flight of a total of not less than 540 kilometres or 300 nautical miles, in the course of which full-stop landings at two different aerodromes shall be made;
 - (c) 10 hours of instrument instruction time, of which not more than five hours may be instrument ground time; and
 - (d) five hours of night flight time including five take-offs and five landings as a pilot-in-command, if the privileges of the licence are to be exercised at night.

(4) Where an applicant has flight time as a pilot of aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of subregulation (2) can be reduced accordingly.

Flight instruction

39. (1) An applicant for a commercial pilot licence with an aeroplane category rating shall have received dual instruction in an aeroplane, appropriate to the class and type rating sought, from an authorised flight instructor.

(2) A flight instructor shall ensure that the applicant has operational experience, to the level of performance required for a commercial pilot, in at least the following —

- (a) recognising and managing errors and threats;
- (b) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;
- (c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- (d) control of the aeroplane by external visual reference;
- (e) flight at critically slow airspeeds; spin avoidance; recognition of and recovery from, incipient and full stalls;

- (f) flight with asymmetrical power for multi-engine class and type rating;
- (g) flight at critically high airspeed; recognition of, and recovery from spiral dives;
- (h) maximum performance, short field and obstacle clearance take-offs and landings;
- (i) normal and cross-wind take-offs and landings;
- (j) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- (k) cross-country flying using visual reference, dead reckoning and radio navigation aids; diversion procedures;
- (l) abnormal and emergency procedures including simulated aeroplane equipment malfunctions;
- (m) operations to, from and transiting controlled aerodromes, compliance with air traffic service procedures; and
- (n) communication procedures and phraseology.

C — Specific requirements for powered-lift category

40. (1) An applicant for a commercial pilot licence with a powered-lift category rating shall have completed, as a pilot of a powered-lift, not less than 200 hours of flight time in a powered lift or 150 hours if completed during a course of approved training, as a pilot of aircraft. Experience

(2) The Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be.

(3) The applicant shall have completed, in a powered-lift, not less than —

- (a) 50 hours as a pilot-in-command;
- (b) 10 hours of cross-country flying as a pilot-in-command, including cross-country flight at a total of not less than 540 kilometres or 300 nautical miles, in the course of which full-stop landings at two different aerodromes shall be made;
- (c) 10 hours of instrument instruction, of which not more than five hours may be instrument ground time; and
- (d) five hours of night flight time including five take-offs and landings as a pilot-in-command if the privileges are to be exercised at night.

(4) Where the applicant has flight time as a pilot of aircraft in other categories, the Authority shall determine whether such experience is acceptable and the extent to which flight time requirements under subregulation (1) may be reduced.

41. (1) An applicant for a commercial pilot licence with a powered-lift category shall have received dual instruction in a powered-lift from an authorised flight instructor. Flight instruction

(2) A flight instructor shall ensure that the applicant has operational experience, to the level of performance required for the commercial pilot, in —

- (a) recognising and managing errors and threats;
- (b) pre-flight operations including mass and balance determination, powered-lift inspection and servicing;
- (c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- (d) controlling a powered-lift by external visual reference;
- (e) recovery at incipient stage from settling with power, recovery techniques from low-rotor rpm within the normal range engine rpm;

- (f) ground manoeuvring and run-ups, hovering and rolling take-offs and climb-out; hover and rolling approach and landings-normal, out of wind and sloping ground steep approaches;
- (g) take-off and landing with minimum necessary power, maximum performance take-off and landing techniques, restricted site operations and quick stops;
- (h) hovering out of ground effect, operations with external load, if applicable, on flight at high altitude;
- (i) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- (j) cross-country flying using visual reference, dead reckoning and where available, radio navigation aids, including a flight of at least one hour;
- (k) emergency operations including simulated powered-lift equipment malfunctions, power of reconversion to autorotation and autorotative approach, and where applicable, transmission and interconnect driveshaft failure;
- (l) operations to and from controlled aerodromes including compliance with air traffic service procedures; and
- (m) communication procedures and phraseology.

D — Specific requirements for airship category

- | | |
|--------------------|--|
| Experience | <p>42. (1) An applicant for commercial pilot licence with an airship category rating shall have completed not less than 200 hours of flight time as a pilot.</p> <p>(2) The applicant shall have completed not less than —</p> <ul style="list-style-type: none"> (a) 50 hours as a pilot of an airship; (b) 30 hours in an airship as a pilot-in-command or pilot-in-command under supervision, which shall include not less than — <ul style="list-style-type: none"> (i) 10 hours of cross-country flight time, and (ii) 10 hours of night flight; (c) 40 hours of instrument time, of which 20 hours shall be in flight and 10 hours in flight in an airship; and (d) 20 hours of flight training in airships in the areas of operation specified by the Authority. |
| Flight instruction | <p>43. An applicant for a commercial pilot with an airship category rating shall have received dual instruction, in an airship, from an authorised flight instructor.</p> <p>(2) A flight instructor shall ensure that the applicant has operational experience, to the level of performance required for the commercial pilot, in —</p> <ul style="list-style-type: none"> (a) recognising and managing errors and threats; (b) pre-flight operations including mass and balance determination, airship inspection and servicing; (c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures; (d) techniques and procedures for take-off, including appropriate limitations, emergency procedures and signals used; (e) control of an airship by external visual reference; (f) recognising leaks; (g) normal take-off and landing; (h) maximum performance (short field and obstacle clearance) take-off and short field landing; |

- (i) flight under instrument flight rules;
- (j) cross-country flying using visual reference, dead reckoning and where applicable, radio navigation aids;
- (k) emergency operations including simulated airship equipment malfunctions;
- (l) operations to, from and transiting controlled aerodromes and compliance with air traffic service procedures; and
- (m) communication procedures and phraseology.

E — Specific requirements for helicopter category

44. (1) An applicant for a commercial pilot licence with a helicopter category rating shall have completed not less than 150 hours of flight time or 100 hours if completed during a course of approved training, as a pilot of helicopters. Experience

(2) The Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 150 hours or 100 hours, as the case may be and credit for such experience shall be limited to a maximum of 10 hours.

- (3) The applicant shall have completed, in a helicopter, not less than —
- (a) 35 hours as a pilot-in-command;
 - (b) 10 hours of cross-country flying as a pilot-in-command, including cross-country flight in the course of which full-stop landings at two different points shall be made;
 - (c) 10 hours of instrument instruction time of which not more than five hours may be instrument ground time; and
 - (d) five hours of night flight time including five take-offs and five landings patterns as a pilot-in-command if the privileges are to be exercised at night.

(4) Where the applicant has flight time as a pilot of aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which flight time requirements under subregulation (1) may be reduced.

45. (1) An applicant for a commercial pilot licence with a helicopter category shall have received dual instruction in a helicopter from an authorised flight instructor. Flight instruction

(2) The flight instructor shall ensure that the applicant has operational experience, to the level of performance required for the commercial pilot, in —

- (a) recognising and managing threats and errors;
- (b) pre-flight operations including mass and balance determination, helicopter inspection and servicing;
- (c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- (d) control of the helicopter by external visual reference;
- (e) recovery at incipient stage, from settling with power;
- (f) recovery techniques from low-rotor rpm within the normal range engine rpm;
- (g) ground manoeuvring and run-ups, hovering, take-offs;
- (h) landings in normal, out of wind and sloping ground and steep approaches;
- (i) take-off and landing with minimum necessary power, maximum performance take-off and landing techniques, restricted site operations and quick stops;

- (j) hovering out of ground effect, operations with external load, if applicable, flight at high altitude;
- (k) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- (l) cross-country flying using visual reference, dead reckoning and radio navigation aids and diversion procedures;
- (m) abnormal and emergency procedures, including simulated helicopter equipment malfunctions, autorotative approach and landing;
- (n) operations to and from and controlled aerodromes, compliance with air traffic service procedures; and
- (o) communication procedures and phraseology.

PART VII — *Multi-crew pilot licence (MPL) for aeroplane category*

Age requirements	46. An applicant for multi-crew pilot licence shall not be less than 18 years of age.
Competencies	<p>47. The Authority shall adapt and publish a competency model for multi-crew pilot licensing.</p> <p>(2) An applicant for MPL shall satisfactorily demonstrate the competencies identified in an adapted competency model to perform as a co-pilot of a turbine powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots.</p>
Knowledge requirements	<p>48. (1) An applicant for a multi-crew pilot licence shall at least meet the requirements specified for an airline transport pilot licence, appropriate to the aeroplane category in an approved training course as well as the additional requirements underpinning the approved adapted competency model.</p> <p>(2) Training in the underpinning knowledge requirements shall be fully integrated with the training of the underpinning skill requirements.</p>
Skills requirements	<p>49. (1) The applicant shall have demonstrated the underpinning skills required for the competencies of the approved adapted competency model as pilot flying and pilot monitoring, to the level required to perform as a co-pilot of turbine-powered aeroplanes certificated for operation with a minimum crew of at least two pilots under VFR and IFR.</p> <p>(2) The Authority shall make the competency standards to be achieved and the associated performance criteria for the multi-crew pilot licence applicant shall be publicly available.</p>
Medical fitness	50. An applicant for a multi-crew pilot licence shall hold a Class 1 Medical Certificate.
Privileges and conditions of multi-crew pilot licence	<p>51. (1) Subject to compliance with the requirements specified in these Regulations, a holder of a multi-crew pilot licence shall —</p> <ul style="list-style-type: none"> (a) exercise all the privileges of the holder of a private pilot licence in an aeroplane category, provided that the specific requirements for the aeroplane category under regulation 48 are met; (b) exercise the privileges of an instrument rating in a multi-crew operation; and (c) act as a co-pilot of an aeroplane required to be operated with a co-pilot. <p>(2) The licence holder shall, before exercising the privileges of an instrument rating in a single-pilot operation in an aeroplane, —</p> <ul style="list-style-type: none"> (a) demonstrate an ability to act as pilot-in-command in a single-pilot operation, exercised by reference solely to instruments; and

- (b) meet the skills requirements for an instrument rating, appropriate to the aeroplane category.
- (3) The holder of a multi-crew pilot licence shall, before exercising the privileges of an instrument rating in a single-pilot operation in an aeroplane —
 - (a) complete 70 hours —
 - (i) as a pilot-in-command, or
 - (ii) made up of not less than 10 hours as a pilot-in-command and 10 hours as a pilot-in-command under supervision;
 - (b) complete 20 hours of cross-country flight time —
 - (i) as a pilot-in-command, or
 - (ii) made up of not less than 10 hours as a pilot-in-command and 10 hours as a pilot-in-command under supervision, including a cross-country flight to a total of not less than 540 km or 300 nautical miles, in the course of which full-stop landings at two different aerodromes shall be made; and
 - (c) meet the requirements, for a commercial pilot licence appropriate to the aeroplane category.

52. (1) An applicant for a multi-crew pilot licence shall have completed, in an approved training course, not less than 240 hours, which includes actual and simulated flight, as a pilot flying and pilot monitoring. Experience

- (2) Flight experience in actual flight shall include —
 - (a) the experience required for an aeroplane category rating;
 - (b) upset recovery training;
 - (c) night flying; and
 - (d) flight by reference solely to instruments.

(3) In addition to meeting the provisions of subregulation (2) above, the applicant shall have gained, in a turbine powered aeroplane certificated for operation with a minimum crew of at least two pilots, or in a flight simulation training device approved for that purpose by the Authority, in accordance with Part A of Schedule 3 the experience necessary to achieve the final competency standard of the approved adapted competency model.

53. (1) An applicant for a multi-crew pilot licence shall have completed a course of approved training covering the experience requirements under regulation 51. Flight instruction

(2) The applicant shall have received dual flight instruction in order to achieve the final competency standard in all the competencies of the approved adapted competency model for the issue of the multi-crew pilot licence.

PART VIII — *Airline transport pilot licence*

A — General requirements appropriate to the aeroplane, airship, helicopter and powered-lift categories

54. An applicant for an airline transport pilot licence shall not be less than 21 years of age. Age requirements

55. (1) An applicant for an airline transport pilot licence shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an airline transport pilot licence and appropriate to the category of aircraft intended to be included in the licence, in at least the following subjects — Knowledge requirements

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- (a) air law —
 - (i) rules and regulations relevant to the holder of an airline transport pilot licence,
 - (ii) rules of the air, and
 - (iii) appropriate air traffic service practices and procedures;
- (b) aircraft general knowledge for aeroplanes, helicopters and powered lifts, including —
 - (i) the general characteristics and limitations of electrical, hydraulic, pressurisation and other aircraft systems, flight control systems including autopilot and stability augmentation,
 - (ii) the principles of operation, handling procedure, operating limitations of aircraft engines,
 - (iii) effects of atmospheric conditions on engine performance,
 - (iv) relevant operational information from the flight manual or any other appropriate document,
 - (v) the operating procedures and limitations of the relevant category of aircraft,
 - (vi) effects of atmospheric conditions on aircraft performance in accordance with the relevant operational information from the flight manual,
 - (vii) the use and serviceability checks of equipment and systems of appropriate aircraft,
 - (viii) flight instruments,
 - (ix) compasses, turning and acceleration errors,
 - (x) gyroscopic instruments operational limits and precession effects,
 - (xi) practices and procedures in the event of malfunctions of various flight instruments and electronic display units,
 - (xii) the maintenance procedures for airframes, systems and engines of appropriate aircraft, and
 - (xiii) for helicopters and powered-lift, transmission (power trains), where applicable;
- (c) flight performance, planning and loading, —
 - (i) the effects of loading and mass distribution on aircraft handling, flight characteristics and performance, mass and balance calculations,
 - (ii) the use of practical application of take-off, landing and other performance data including procedures for cruise control,
 - (iii) pre-flight and en-route operational flight planning, preparation and filing of air traffic services flight plans, appropriate air traffic service procedures, altimeter setting procedures, and
 - (iv) in the case of helicopters and powered lifts, the effects of external loading on handling;
- (d) human performance including principles of threat and error management;
- (e) meteorology, —
 - (i) the interpretation and application of aeronautical meteorological reports, charts and forecasts,
 - (ii) codes and abbreviations,
 - (iii) the use of, and procedures for obtaining meteorological information, pre-flight and in-flight,

- (iv) altimetry,
 - (v) aeronautical meteorology,
 - (vi) climatology of relevant areas in respect of the elements having an effect upon aviation,
 - (vii) the movement of pressure systems;
 - (viii) the structure of fronts and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions,
 - (ix) the causes, recognition and effects of icing,
 - (x) frontal zone penetration procedures and hazardous weather avoidance,
 - (xi) in the case of aeroplanes and powered-lifts, practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts, and
 - (xii) jet streams;
 - (g) operational procedures —
 - (i) application of threat and error management to operational performance,
 - (ii) interpretation and use of aeronautical documentation such as Adaptive Internet Protocol (AIP), NOTAM, aeronautical codes and abbreviations,
 - (iii) precautionary and emergency procedures and safety practices,
 - (iv) operational procedures for carriage of freight and dangerous goods,
 - (v) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft,
 - (vi) in the case of helicopter and where applicable, powered-lift, settling with power, ground resonance, retreating blade stall, dynamic rollover and other operating hazards, including safety procedures associated with flight in VMC;
 - (h) navigation, —
 - (i) air navigation, including the use of aeronautical charts, instruments and radio navigation aids and area navigation systems,
 - (ii) specific navigation requirements for long-range flights,
 - (iii) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aircraft,
 - (iv) the use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids, and
 - (v) principles and characteristics of self-contained and external referenced navigation system; operation of airborne equipment;
 - (i) principles of flight;
 - (j) radiotelephony;
 - (k) communication procedures and phraseology; and
 - (l) action to be taken in the case of communication failure.
- (2) An applicant for airline transport pilot licence appropriate to the aeroplane or powered-lift category shall, in addition to the knowledge requirements under subregulation (1), have met the knowledge requirements for an instrument rating.

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Skills requirements

56. (1) An applicant for an airline transport pilot licence shall demonstrate the ability to perform, as pilot-in-command of an aircraft within the appropriate category required to be operated with a co-pilot, the following procedures and manoeuvres —

- (a) pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic service flight plan;
- (b) normal flight procedures and manoeuvres during all phases of flight;
- (c) abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as engine, systems and airframe;
- (d) procedures for crew incapacitation and crew coordination, including allocation of pilot tasks, crew cooperation and the use of checklists; and
- (e) in the case of an aeroplane and powered-lift, procedures and manoeuvres for instrument flight as described in regulation 62, including simulated engine failure.

(2) An applicant shall, in the case of an aeroplane, have demonstrated the ability to perform the procedures and manoeuvres, described in subregulation (1), as a pilot-in-command of a multi-engine aeroplane.

(3) The applicant shall have demonstrated the ability to perform the procedures and manoeuvres, required for an airline transport pilot licence, with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot licence and to —

- (a) recognise and manage threats and errors;
- (b) smoothly and accurately, manually control the aircraft within its limitations at all times, such that the successful outcome of a procedure or manoeuvre is assured;
- (c) operate the aircraft in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;
- (d) perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight;
- (e) exercise good judgement and airmanship, to include structured decision making and maintenance of situational awareness; and
- (f) communicate effectively with other flight crew members and effectively perform procedures for crew incapacitation, crew coordination, standard operating procedures and the use of a checklist.

Medical fitness

57. An applicant for an airline transport pilot licence shall hold a current class 1 medical certificate.

Privileges and conditions of airline transport pilot licence

58. (1) Subject to compliance with the requirements specified in these Regulations, the privileges of the holder of an airline transport pilot licence shall be to —

- (a) exercise all the privileges of the holder of a private pilot licence and commercial pilot licence in an aircraft within the appropriate aircraft category and, in the case of an aeroplane or powered-lift category, of an instrument rating; and
- (b) act as a pilot-in-command, in commercial air transportation, of an aircraft within the appropriate category and certificated for operation with more than one pilot.

(2) Where the holder of an airline transport pilot licence in the aeroplane category has previously held only a multi-crew pilot licence, the privileges of the licence shall be limited to multi-crew operations unless the holder has met the requirements established in regulations 50 (1) (a), 50 (2), 50 (3) and any limitation of the privileges shall be endorsed on the licence.

B — *Specific requirements for aeroplane category rating*

59. (1) An applicant for an airline transport pilot licence shall have completed not less than 1500 hours of flight time as a pilot in an aeroplane. Experience

(2) The Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight of 1500 hours:

Provided that credit for such experience shall be limited to a maximum of 100 hours, of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer.

(3) The applicant shall have completed, in an aeroplane, not less than —

- (a) 500 hours as a pilot-in-command under supervision; or
- (b) 250 hours —
 - (i) as a pilot-in-command, or
 - (ii) made up of not less than 70 hours as a pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- (c) 200 hours of cross-country flight time, of which not less than 100 hours shall be as a pilot-in-command or as a pilot-in-command under supervision;
- (d) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and
- (e) 100 hours of night flight as a pilot-in-command or as a co-pilot.

(4) When the applicant has flight time as a pilot of aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of subregulation (2) can be reduced accordingly.

60. An applicant for an airline transport pilot licence shall have received dual instruction required for the issue of — Flight instruction

- (a) a commercial pilot licence with an aeroplane category rating;
- (b) an instrument rating; and
- (c) where applicable, a multi-crew pilot licence appropriate to the aeroplane category.

C — *Specific requirements for helicopter category rating*

61. (1) An applicant for an airline transport pilot licence with a helicopter category rating shall have completed not less than 1000 hours of flight time, as a pilot of a helicopter. Experience

(2) The Authority shall determine whether experience as a pilot under instruction, in a flight simulation training device, is acceptable as part of the total flight time of 1000 hours and credit for such experience shall be limited to a maximum of 100 hours of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer.

(3) The applicant shall have completed in helicopters not less than —

- (a) 250 hours —
 - (i) as a pilot-in-command, or
 - (ii) made up of not less than 70 hours as a pilot-in-command and the necessary additional flight time as a pilot-in-command under supervision;

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- Flight instruction
- (b) 200 hours of cross-country flight time, of which not less than 100 hours shall be as a pilot-in-command or as a pilot-in-command under supervision;
 - (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 a pilot-in-command or as a co-pilot.
- (4) Where the applicant has flight time as a pilot of an aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements under subregulation (1) may be reduced accordingly.
- 62.** An applicant for airline transport pilot licence with a helicopter rating shall have received flight instruction required for the issue of a commercial pilot licence.

D — Specific requirements for powered-lift category rating

- Experience
- 63.** (1) An applicant for an airline transport pilot licence with a powered-lift category rating shall have completed not less than 1500 hours of flight time as a pilot of a powered-lift.
- (2) The Authority shall determine whether experience as a pilot under instruction, in a flight simulation training device, is acceptable as part of the total flight time of 1500 hours.
- (3) The applicant shall have completed in a powered-lift not less than —
- (a) 250 hours —
 - (i) as a pilot-in-command, or
 - (ii) made up of not less than 70 hours as a pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
 - (b) 100 hours of cross-country flight time, of which not less than 50 hours shall be as a pilot-in-command or as a pilot-in-command under supervision;
 - (c) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and
 - (d) 25 hours of night flight as a pilot-in-command or as a co-pilot.
- (4) The applicant shall have received dual flight instruction required for issuance of a commercial pilot licence and an instrument rating.
- (5) Where the applicant has flight time as a pilot of an aircraft in other categories, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements under subregulation (1) can be reduced.
- Flight instruction
- 64.** An applicant for an airline transport pilot licence with a helicopter powered-lift category licence rating shall have received flight instruction required for the issue of a commercial pilot licence.

PART IX — Instrument rating (aeroplane, airship, helicopter and powered-lift categories)

- Knowledge requirements
- 65.** An applicant for an instrument rating shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an instrument rating in at least the following subjects —

- (a) air law, —
 - (i) rules and regulations relevant to flight under instrument flight rules, and
 - (ii) related air traffic service practices and procedures;
- (b) aircraft general knowledge for the aircraft category applied for, —
 - (i) use, limitation and serviceability of avionics, electronic device and instruments necessary for the control and navigation of an aircraft under instrument flight rules and in instrument meteorological conditions,
 - (ii) use and limitations of autopilot, and
 - (iii) 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 for the aircraft category being sought, —
 - (i) pre-flight preparations and checks appropriate to flight under instrument flight rules, and
 - (ii) operational flight planning; preparation and filing of air traffic service flight plans under instrument flight rules and altimeter setting procedures;
- (d) human performance for the aircraft category applied for and human performance relevant to instrument flight in aircraft including principles of threat and error management;
- (e) meteorology for the aircraft being sought, —
 - (i) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining meteorological information,
 - (ii) altimetry,
 - (iii) effects of icing; frontal zones penetration procedures and hazardous weather avoidance, and
 - (iv) in the case of a helicopter and powered-lift, effects of rotor icing;
- (f) navigation for the aircraft category applied for —
 - (i) practical air navigation using radio navigation aids, and
 - (ii) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight and identification of radio navigation aids;
- (g) operational procedures for the aircraft category applied for —
 - (i) application of threat and error management to operational performance,
 - (ii) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent and approach, and
 - (iii) precautionary and emergency procedures; safety practices associated with flight under instrument flight rules; obstacle clearance criteria; and
- (h) radiotelephony;
- (i) communication procedures and phraseology as applied to aircraft as applied to aircraft under instrument flight rules; and
- (j) action to be taken in case of communication failure.

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Skills requirements

66. (1) An applicant for an instrument rating shall have demonstrated, in an aircraft of the category for which the instrument rating is being sought, the ability to perform the procedures and manoeuvres, specified by the Authority, with a degree of competency appropriate to the privilege granted to the holder of an instrument rating and to —

- (a) recognise and manage threats and errors;
- (b) operate the aircraft for the category being sought within its limitations;
- (c) complete all manoeuvres with smoothness and accuracy;
- (d) exercise good judgement and airmanship;
- (e) apply aeronautical knowledge; and
- (f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

(2) Where the privileges of the instrument rating are exercised at night or under instrument flight conditions, the applicant shall have demonstrated the ability to operate multi-engine aircraft, within the appropriate category, by reference solely to instruments with one engine inoperative or simulated inoperative.

Medical fitness

67. An applicant for an instrument rating, who holds a private pilot licence, shall have established his or her hearing acuity on the basis of compliance with the hearing requirements for the issue of a class 1 medical certificate.

Privileges of instrument rating

68. Subject to compliance with the requirements specified in these Regulations, the privileges of the holder of an instrument rating with a specific aircraft category shall be to pilot that category of aircraft under instrument flight rules.

Conditions for exercising privileges of instrument rating

69. A holder of an instrument rating shall, before exercising the privileges on a multi-engine aircraft, meet the skills requirements provided in regulation 66 (2).

Experience

70. (1) An applicant for an instrument rating shall hold a pilot licence for the aircraft category being sought.

(2) The applicant shall have completed not less than —

- (a) 50 hours of cross-country flight time as a pilot-in-command of an aircraft category acceptable to the Authority, of which not less than 10 hours shall be in the aircraft category sought; and
- (b) 40 hours of instrument in an aircraft of which not more than 20 hours, or 30 hours where a flight simulator is used, may be instrument ground time which ground time shall be under the supervision of an authorised instructor.

Flight instruction

71. (1) An applicant for an instrument rating shall have gained not less than 10 hours of instrument flight time required in regulation 70 (2) (a) while receiving dual instrument flight instruction in the aircraft category being sought, from an authorised flight instructor.

(2) The instructor shall ensure that the applicant has operational experience to the level of performance required for the holder of an instrument rating in —

- (a) pre-flight procedures, including the use of the flight manual or equivalent document, and appropriate air traffic service documents in the preparation of an instrument flight rules flight plan;
- (b) pre-flight inspection, the use of checklists, taxiing and pre- take-off checks;
- (c) procedures and manoeuvres for instrument flight rules operation under normal, abnormal and emergency conditions covering at least —

- (i) transition to instrument flight on take-off,
 - (ii) standard instrument departures and arrivals,
 - (iii) en-route instrument flight rules procedures,
 - (iv) holding procedures,
 - (v) instrument approaches to specified minima,
 - (vi) missed approach procedures,
 - (vii) landing from instrument approaches; and
 - (d) in-flight manoeuvres and particular flight characteristics.
- (3) If the privileges of the instrument rating are to be exercised on multi-engine aircraft, the applicant shall have received dual instrument flight instruction in a multi-engine aircraft within the appropriate category from an authorised flight instructor.
- (4) The instructor shall ensure that the applicant has operational experience in the operation of the aircraft within the appropriate category by reference solely to instruments with one engine inoperative or simulated inoperative.

PART X — Flight instructor rating (aeroplane, airship, helicopter and powered-lift categories)

72. (1) An applicant for a flight instructor rating shall have met the knowledge requirements for the issue of a commercial pilot licence appropriate to the aircraft category to be included in the licence. Knowledge requirements

(2) In addition, the applicant shall have demonstrated a level of knowledge, appropriate to the privileges granted to the holder of a flight instructor rating, in at least the following areas —

- (a) techniques of applied instruction; and
- (b) assessment of student performance in those subjects in which ground instruction is given;
- (c) the learning process;
- (d) elements of effective teaching;
- (e) student evaluation and testing and training philosophies;
- (f) training programme development;
- (g) lesson planning;
- (h) classroom instructional techniques;
- (i) use of training aids, including flight simulation training devices as appropriate;
- (j) analysis and correction of student errors;
- (k) human performance relevant to flight instruction including principles of threat and error management; and
- (l) hazards involved in simulating system failures and malfunctions in such aircraft.

73. An applicant for a flight instructor rating shall have demonstrated, in the category and class of aircraft for which flight instructor privileges are sought, the ability to instruct in those areas in which flight instruction is to be given, including pre-flight, post-flight and ground instruction as appropriate. Skills requirements

74. An applicant for a flight instructor rating shall have met the experience requirements for the issue of a commercial pilot licence specified for an aeroplane, helicopter, powered-lift and airship category, as appropriate. Experience

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Flight instruction

75. An applicant for a flight instructor rating shall, under the supervision of a flight instructor, have —

- (a) received instruction in flight instructional techniques including demonstration, student practices, recognition and correction of common student errors; and
- (b) practised instructional techniques in those flight manoeuvres and procedures in flight instruction to be given.

Privileges and conditions of instructor rating

76. (1) Subject to compliance with the requirements specified in these Regulations, the privileges of a flight instructor rating shall be to —

- (a) supervise solo flights by a student pilot; and
- (b) carry out flight instruction for the issue of a private pilot licence, commercial pilot licence, instrument rating and flight instructor rating:

Provided that the flight instructor —

- (i) holds at least the licence and rating for which instruction is being given, in the appropriate aircraft category,
- (ii) holds the licence and rating necessary to act as the pilot-in-command of the aircraft on which the instruction is given, and
- (iii) has the flight instructor privileges granted entered on the licence.

(2) An applicant, in order to carry out instruction for a multi-crew pilot licence, shall have met all the instructor rating requirements.

PART XI — *Glider pilot licence*

Age requirements

77. An applicant for a glider pilot licence shall be at least 16 years of age.

Knowledge requirements

78. An applicant for a glider pilot licence shall have demonstrated a level of knowledge, appropriate to the privileges granted to the holder of a glider pilot, in at least the following subjects —

- (a) air law, —
 - (i) rules and regulations relevant to the holder of a glider pilot licence,
 - (ii) rules of the air, and
 - (iii) appropriate air traffic service practices and procedures;
- (b) aircraft general knowledge, —
 - (i) principles of operation of glider systems and instruments, and
 - (ii) operating limitations of gliders; relevant operational information from the flight manual or other appropriate document;
- (c) flight performance, planning and loading, —
 - (i) the effects of loading and mass distribution on flight characteristics including mass and balance considerations,
 - (ii) the use and practical application of launching, landing and other performance data, and
 - (iii) pre-flight and en-routing flight planning appropriate to operations under VFR,
 - (iv) appropriate air traffic service procedures,
 - (v) altimeter setting procedures, and
 - (vi) operations in areas of high-density traffic;
- (d) human performance relevant to the glider pilot including principles of threat and error management;
- (e) meteorology, the application of elementary aeronautical meteorology, use of, and procedures for obtaining meteorological information and altimetry;

- (f) practical aspects of air navigation and dead-reckoning techniques and use of aeronautical charts;
- (g) operational procedures —
 - (i) the use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations,
 - (ii) the different launch methods and associated procedures, and
 - (iii) the appropriate precautionary and emergency procedures including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
- (h) the principles of flight relating to gliders; and
- (i) communication procedures, VFR operations and radio failure procedures.

79. (1) An applicant for a glider pilot licence shall have completed not less than six hours of flight time as a pilot of gliders, including two hours of solo flight time, during which not less than 20 launches and landings shall have been performed. Experience

(2) Where the applicant has flight time as a pilot of an aeroplane, the Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements under subregulation (1) may be reduced.

(3) The applicant shall have gained, under the appropriate supervision, operational experience in gliders in at least the following areas —

- (a) pre-flight operations, including glider assembly and inspection;
- (b) techniques and procedures for the launching method used, including appropriate airspeed limitations, emergency procedures and signals used;
- (c) traffic pattern operations, collision avoidance precautions and procedures;
- (d) control of the glider by external visual reference;
- (e) flight throughout the flight envelope;
- (f) recognition of and recovery from incipient, full stalls and spiral dives;
- (g) normal and crosswind launches, approaches and landings;
- (h) cross-country flying using visual reference and dead-reckoning; and
- (i) emergency procedures.

80. An applicant for a glider pilot licence shall have demonstrated the ability to perform as pilot-in-command of a glider, the procedures and manoeuvres provided for in regulation 79, with a degree of competency appropriate to the privileges granted to the holder of glider pilot licence and to — Skills requirements

- (a) recognise and manage threats and errors;
- (b) operate the glider within its limitations;
- (c) complete all manoeuvres with smoothness and accuracy;
- (d) exercise good judgement and airmanship;
- (e) apply aeronautical knowledge; and
- (f) maintain control of the glider at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

81. An applicant for a glider pilot licence shall hold a current class 2 medical certificate. Medical fitness

82. (1) Subject to compliance with the requirements specified in these Regulations, the holder of a glider pilot licence shall act as a pilot-in-command of any glider provided the licence holder has operational experience in the launching method used. Privileges and conditions of glider pilot licence

(2) If passengers are to be carried, the licence holder shall have completed not less than 10 hours of flight time in gliders.

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PART XII — *Free balloon pilot licence*

Age requirements

83. An applicant for a free balloon pilot licence shall be at least 16 years of age.

Knowledge requirements

84. An applicant for a free balloon pilot licence shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a free balloon pilot licence, in at least the following subjects —

- (a) air law, —
 - (i) rules and regulations relevant to the holder of a free balloon pilot licence,
 - (ii) rules of air, and
 - (iii) the appropriate air traffic services practices and procedures;
- (b) aircraft general knowledge, —
 - (i) the principles of operation of free balloon systems and instruments,
 - (ii) the operating limitations of free balloons; the relevant operational information from the flight manual or other appropriate document, and
 - (iii) the physical properties and practical application of gases used in free balloons;
- (c) flight performance, planning and loading, —
 - (i) the effects of loading on flight characteristics including mass calculations,
 - (ii) the use and practical application of launching, landing and other performance data, including the effect of temperature, and
 - (iii) pre-flight and en-route flight planning appropriate to the operations under visual flight rules, appropriate air traffic services procedures, altimeter setting procedures and operations in areas of high density traffic;
- (d) human performance relevant to the free balloon pilot including the principles of threat and error management;
- (e) meteorology, —
 - (i) the application of elementary aeronautical meteorology,
 - (ii) the use of and procedures for obtaining meteorological information, and
 - (iii) altimetry,
- (f) navigation, —
 - (i) the practical aspects of air navigation and dead-reckoning techniques, and
 - (ii) the use of aeronautical charts;
- (g) operational procedures, —
 - (i) the use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and
 - (ii) the appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
- (h) the principles of flight relating to free balloons; and
- (i) communication procedures and phraseology as appropriate to VFR operations and action to be taken in case of communication failure.

85. (1) An applicant for a free balloon pilot licence shall have completed not less than 16 hours of flight time as a pilot of a free balloon including at least eight launches and ascents of which one shall be solo. Experience

(2) The applicant shall have gained operational experience in free balloons, under appropriate supervision, in free balloons in at least the following areas —

- (a) pre-flight operations, including balloon assembly, rigging, inflation, mooring and inspection;
- (b) techniques and procedures for the launching and ascent, including appropriate limitations, emergency procedures and signals used;
- (c) collision avoidance precautions;
- (d) control of the free balloon by external visual reference;
- (e) recognition of and recovery from, rapid descents;
- (f) cross-country flying using visual reference and dead-reckoning;
- (g) approaches and landings, including ground handling; and
- (h) emergency approaches.

(3) If the privileges of the licence are to be exercised at night, the applicant shall have gained, under appropriate supervision, operational experience in free balloons in night flying.

(4) A holder of a free balloon pilot licence shall have completed not less than 35 hours of flight time, including 20 hours as a pilot of a free balloon if the privileges of the licence are to be exercised for remuneration or hire.

86. An applicant for a free balloon pilot licence shall have demonstrated the ability to perform as a pilot-in-command of a free balloon, the procedures and manoeuvres described in regulation 85 (2) with a degree of competency appropriate to the privileges granted to the holder of a free balloon pilot licence, and to recognize, manage threats and errors and — Skills requirements

- (a) operate the free balloon within its limitations;
- (b) complete all manoeuvres with smoothness and accuracy;
- (c) exercise good judgement and airmanship;
- (d) apply aeronautical knowledge; and
- (e) maintain control of the free balloon at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

87. An applicant for a free balloon pilot licence shall hold a current Class 2 Medical Certificate. Medical fitness

88. (1) Subject to compliance with the requirements specified in these Regulations, the privileges of a holder of a free balloon pilot licence shall be to act as a pilot-in-command of any free balloon provided that the licence holder has operational experience in hot air or gas balloons, as appropriate. Privileges of free balloon pilot licence

(2) If the privileges of the licence are to be exercised at night, the applicant shall have gained, under appropriate supervision, operational experience in free balloons in night flying.

PART XIII — *Student Remote Pilot*

89. (1) A student remote pilot shall meet requirements prescribed by the Contracting State concerned. In prescribing such requirements, Contracting States shall ensure that the privileges granted would not permit student remote pilots to constitute a hazard to air navigation. General requirements

(2) A student remote pilot shall not fly an Adaptive Internet Protocol (RPA) solo unless under the supervision of, or with the authority of, an authorised RPA instructor.

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- (3) A student remote pilot shall not fly an RPA solo on international RPAS operations unless by special or general arrangement between the Contracting States concerned.
- Medical fitness requirements **90.** The Authority shall not permit a student remote pilot to fly an RPA solo unless he or she holds a current Class 3 or a current Class 1 Medical Assessment.

PART XIV — Remote Pilot

- General requirements **91.** The Authority shall not permit a student remote pilot to fly an RPA solo unless he/she holds a current Class 3 or a current Class 1 Medical Assessment.
- Age requirement **92.** The applicant shall not be less than 18 years of age.
- Knowledge requirement **93.** The applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a remote pilot licence and appropriate to the category of Radioisotope Power System (RPA) and associated RPS intended to be included in the remote pilot licence, in at least the following subjects:
- (a) air law, —
 - (i) rules and regulations relevant to the holder of a remote pilot licence; rules of the air; appropriate air traffic services practices and procedures, and
 - (ii) rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;
 - (b) general RPAS knowledge, —
 - (i) principles of operation and the functioning of engines, systems and instruments,
 - (ii) operating limitations of the relevant category of RPA and engines; relevant operational information from the flight manual or other appropriate document,
 - (iii) use and serviceability checks of equipment and systems of appropriate RPA,
 - (iv) maintenance procedures for airframes, systems and engines of appropriate RPA,
 - (v) for rotorcraft and powered-lifts, transmission (power trains) where applicable,
 - (vi) use, limitation and serviceability of avionics, electronic devices and instruments necessary for the control and navigation of an RPA under IFR and in instrument meteorological conditions,
 - (vii) flight instruments; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments,
 - (viii) for airships, physical properties and practical application of gases,
 - (ix) RPS general knowledge —
 - (aa) principles of operation and function of systems and instruments,
 - (bb) use and serviceability checks of equipment and systems of appropriate RPS, and
 - (cc) procedures in the event of malfunctions,
 - (x) C2 link general knowledge,
 - (aa) different types of C2 links and their operating characteristics and limitations,

- (bb) use and serviceability checks of C2 link systems, and
 - (cc) procedures in the event of C2 link malfunction, and
 - (xi) detect and avoid capabilities for RPAS;
 - (c) Flight performance, planning and loading, —
 - (i) effects of loading and mass distribution on RPA handling, flight characteristics and performance; mass and balance calculations,
 - (ii) use and practical application of take-off, landing and other performance data,
 - (iii) pre-flight and en-route flight planning appropriate to RPAS operations under IFR; preparation and submission of air traffic services flight plans under IFR; appropriate air traffic services procedures; altimeter setting procedures, and
 - (iv) in the case of airships, rotorcraft and powered-lifts, effects of external loading on handling;
 - (d) Human performance, —
 - (i) human performance relevant to RPAS and instrument flight, including principles of TEM;
 - (e) Meteorology, —
 - (i) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry,
 - (ii) aeronautical meteorology; climatology of relevant areas with respect to the elements having an effect on aviation; the movement of pressure systems, the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions,
 - (iii) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance,
 - (iv) in the case of rotorcraft and powered-lifts, effects of rotor icing, and
 - (v) in the case of high altitude operations, practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts, jetstreams;
 - (f) Navigation, —
 - (i) air navigation, including the use of aeronautical charts, Instruments and navigation aids; an understanding of the principles and characteristics of appropriate navigation systems; operation of RPAS equipment,
 - (ii) use, limitation and serviceability of avionics and instruments necessary for control and navigation,
 - (iii) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids, and
 - (iv) principles and characteristics of self-contained and external-referenced navigation systems; operation of RPAS equipment;
 - (g) Operational procedures, —
 - (i) application of TEM to operational performance,
 - (ii) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations and instrument procedure charts for departure, en-route, descent and approach,
 - (iii) altimeter setting procedures,

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- (iv) appropriate precautionary and emergency procedures; safety practices associated with flight under IFR; obstacle clearance criteria,
 - (v) operational procedures for carriage of freight; potential hazards associated with dangerous goods and their management,
 - (vi) requirements and practices for safety briefings to remote flight crew members,
 - (vii) in the case of rotorcraft, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC,
 - (viii) operational procedures for handovers and coordination, and
 - (ix) operational procedures for normal and abnormal C2 link operations; and
- (h) Principles of flight, —
- (i) principles of flight, and
 - (ii) radiotelephony, and
 - (iii) communication procedures and phraseology; action to be taken in case.

Skill requirements

94. (1) The applicant shall have demonstrated all the competencies of the adapted competency model approved by the Authority at the level required, to act as remote pilot in command of an RPAS operation within the appropriate category of RPA and associated RPS.

(2) If the privileges of the remote pilot are to be exercised on a multi-engined RPA, the applicant shall have demonstrated the ability to operate under IFR with degraded propulsion capabilities.

Medical fitness requirements

95. The applicant shall hold a current Class 3 Medical Assessment or a current Class 1 Medical Assessment.

Privileges of remote pilot licence holder

96. (1) Subject to compliance with the requirements specified in these regulations, the privileges of the holder of a remote pilot licence shall be:

- (a) to act as remote pilot-in-command of an RPA and associated RPS, certificated for remote single-pilot operation;
- (b) to act as remote co-pilot of an RPA and associated RPS, required to be operated with a remote co-pilot;
- (c) to act as a remote pilot-in-command of an RPA and the associated RPS, required to be operated with a remote co-pilot; and
- (d) to act either as remote pilot-in-command or as remote co-pilot of an RPAS under IFR.

(2) Before exercising the privileges at night, the remote pilot licence holder shall have received dual instruction in an RPA and associated RPS in night flying, including take-off, landing and navigation.

B — Specific Requirements for issue of Remote Pilot Licence

Experience requirement

97. The applicant shall have gained experience during training in operating the RPA and associated RPS to successfully demonstrate the competencies required in these Regulations.

Training requirement

98. (1) In order to meet the requirements of the remote pilot licence, the applicant shall have completed an approved training course. The training shall be competency-based and, if applicable, conducted in a multi-crew operational environment.

(2) During the training, the applicant shall have acquired the competencies and underpinning skills required for performing as a remote pilot of an RPA certificated for operation under IFR.

(3) The applicant shall have received dual remote pilot licence training in an RPA and associated RPS, sought from an authorised RPAS instructor.

(4) The RPAS instructor shall ensure that the applicant has operational experience in all phases of flight and the entire operating envelope of an RPAS, including abnormal and emergency conditions, upset prevention and recovery training for the categories concerned, as well as IFR operations.

PART XV — *Licences and ratings for personnel other than
flight crew member*

99. (1) An applicant shall, before being issued with a licence or rating for personnel other than a flight crew member, meet such requirements in respect of age, knowledge, experience and where appropriate medical fitness and skill, as are specified for the licence or rating sought.

General
requirements

(2) An applicant for a licence or rating for personnel other than a flight crew member shall demonstrate, in a manner determined by the Authority, such requirements in respect of knowledge and skill as are specified for the licence or rating sought.

A. Aircraft maintenance engineer licence

100. An applicant for an aircraft maintenance engineer licence shall be at least 18 years of age.

Age
requirement

101. An applicant for an aircraft maintenance engineer licence shall have demonstrated a level of knowledge relevant to the privileges to be granted and appropriate to the responsibilities of an aircraft maintenance licence holder, in the following subjects —

Knowledge
requirements

- (a) air law and airworthiness requirements, rules and regulations relevant to an aircraft maintenance licence holder including applicable airworthiness requirements governing certification and continuing airworthiness of an aircraft and approved aircraft maintenance organisation and procedures;
- (b) natural science and aircraft general knowledge, basic mathematics and units of measurements, fundamental principles and theory of physics and chemistry applicable to aircraft maintenance;
- (c) aircraft engineering, —
 - (i) characteristics and applications of the materials of aircraft construction including principles of construction, functioning of aircraft structures and fastening techniques,
 - (ii) engines and their associated systems,
 - (iii) mechanical, fluid, electrical and electronic power sources,
 - (iv) aircraft instrument and display systems,
 - (v) aircraft control systems, and
 - (vi) airborne navigation and communication systems;

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- (d) aircraft maintenance, including tasks required to ensure the continuing airworthiness of an aircraft including methods and procedures for the overhaul, repair, inspection, replacement, modification or defect rectification of aircraft structures, components and systems in accordance with the methods prescribed in the relevant maintenance manuals and the applicable standards of airworthiness; and
 - (e) human performance, including principles of threat and error management, relevant to aircraft maintenance.
- Experience **102.** An applicant for an aircraft maintenance engineer licence shall have the following experience in the inspection, servicing and maintenance of an aircraft or its components —
- (a) for the issue of a licence with privileges for the aircraft in its entirety, at least —

 - (i) four years, or
 - (ii) two years, if the applicant has satisfactorily completed an approved training course; and
 - (b) for the issue of a licence with privileges restricted in accordance with these Regulations, a period of time that will enable a level of competency equivalent to that required in paragraph (a) to be attained, provided that this is not less than, —

 - (i) two years, or
 - (ii) such a period as the Authority considers necessary to provide an equivalent level of practical experience to an applicant who has satisfactorily completed an approved training course.
- Skills requirements **103.** An applicant for aircraft maintenance engineer licence shall have demonstrated the ability to perform functions applicable to the privileges to be granted.
- Privileges and conditions of holder of aircraft maintenance engineer licence **104.** (1) Subject to compliance with the requirements specified in these Regulations, the privileges of the holder of an aircraft maintenance engineer licence shall be to certify the aircraft or parts of the aircraft as airworthy after an authorised repair, modification or installation of an engine, accessory, instrument, and an item of equipment, and to sign a maintenance release following inspection, maintenance operations or routine servicing.
- (2) The holder of an aircraft maintenance licence specified in subregulation (1) shall exercise the privileges only in respect of —
- (a) an aircraft entered on the licence in its entirety specifically or under broad categories;
 - (b) the airframes and engine and aircraft systems or components as are entered on the licence either specifically or under broad categories;
 - (c) aircraft avionics systems or components as are entered either specifically or under broad categories:

Provided that the licence holder is familiar with all the relevant information relating to the maintenance and airworthiness of the particular aircraft for which the licence holder is signing a maintenance release, or such airframe, engine, aircraft system or component and aircraft avionic system or component which the licence holder is certifying as being airworthy; and

(d) on the condition that, within the preceding 24 months, the licence holder has had experience in the inspection, servicing or maintenance of an aircraft or components in accordance with the privileges granted by the licence held for not less than six months, or has met the provision for the issue of a licence with the appropriate privileges, to the satisfaction of the Authority.

(3) Where the Authority authorises an approved maintenance organisation to appoint non-licenced personnel to exercise the privileges of an aircraft maintenance engineer, the person appointed shall meet the requirements specified for the issue of an aircraft maintenance engineer licence.

B — *Student Air traffic controller licence*

105. Before authorising student air traffic controllers, the Authority shall ensure that student air traffic controllers do not constitute a hazard to air navigation. Requirements for authorisation

106. A student air traffic controller shall not receive instruction in an operational environment unless he or she holds a current Class 3 medical certificate. Medical fitness

107. The applicant shall hold a current Class 3 Medical Assessment or a current Class 1 Medical Assessment. Medical fitness requirements

C — *Specific Requirements for Issue of Remote Pilot Licence*

108. The applicant shall have gained experience during training in operating the RPA and associated RPS to successfully demonstrate the competencies required in these regulations. Experience Requirement

109. (1) In order to meet the requirements of the remote pilot licence, the applicant shall have completed an approved training course. The training shall be competency-based and, if applicable, conducted in a multi-crew operational environment. Training requirements

(2) During the training, the applicant shall have acquired the competencies and underpinning skills required for performing as a remote pilot of an RPA certificated for operation under IFR.

(3) The applicant shall have received dual remote pilot licence training in an RPA and associated RPS, sought from an authorised RPAS instructor. The RPAS instructor shall ensure that the applicant has operational experience in all phases of flight and the entire operating envelope of an RPAS, including abnormal and emergency conditions, upset prevention and recovery training for the categories concerned, as well as IFR operations.

(4) If the privileges of the remote pilot are to be exercised on a multi-engined RPA, the applicant shall have received dual instrument remote pilot licence training in a multi-engined RPA within the appropriate category from an authorised RPAS instructor. The RPAS instructor shall ensure that the applicant has operational experience in the operation of the RPA within the appropriate category with engines inoperative or simulated inoperative.

110. (1) Subject to compliance with the requirements specified in these regulations, the privileges of the holder of a remote pilot licence shall be — Privileges of remote pilot licence holder

(a) to act as remote pilot-in-command of an RPA and associated RPS, certificated for remote single-pilot operation;

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- (b) to act as remote co-pilot of an RPA and associated RPS, required to be operated with a remote co-pilot;
- (c) to act as a remote pilot-in-command of an RPA and the associated RPS, required to be operated with a remote co-pilot; and
- (d) to act either as remote pilot-in-command or as remote co-pilot of an RPAS under IFR.

(2) Before exercising the privileges at night, the remote pilot licence holder shall have received dual instruction in an RPA and associated RPS in night flying, including take-off, landing and navigation.

D. Air traffic controller licence

Knowledge requirement

111. The applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of an air traffic controller.

E. Air traffic controller ratings

Privileges and conditions of the holder

112. The holder of a licence shall not carry out instructions in an operator environment unless such holder has received specific authorisation from the Authority.

F. Aeronautical station operator licence

General requirement

113. (1) The applicant for an aeronautical station operator licence shall meet the requirements of these Regulations.

(2) Unlicensed persons may operate as aeronautical station operators on the condition that they meet the same requirements.

PART XVI — *RPAS Instructor Rating*

A. Requirements for the issue of the rating

Knowledge requirement

114. (1) The applicant shall demonstrate the ability to effectively assess trainees against the adapted competency model used in the approved training programme.

(2) The applicant shall successfully complete the training and meet the qualifications of an approved training organization appropriate to the delivery of competency-based training programmes.

(3) The RPAS instructor training programme shall focus on the development of competence in the following specific areas —

- (a) the adapted competency model of the remote pilot training programme according to the defined grading system used by the RPAS operator or approved training organization;
- (b) in accordance with the assessment and grading system of the RPAS operator or approved training organization, making assessments by observing behaviours; gathering objective evidence regarding the observable behaviours of the adapted competency model used;
- (c) recognising and highlighting performance that meets competency standards;
- (d) determining root causes for deviations below the expected standards of performance; and

- (e) identifying situations that could result in unacceptable reductions in safety margins.
- (4) The applicant shall have met the competency requirements for the issue of a remote pilot licence as appropriate to the category of RPA and associated RPS.
- (5) In addition, the applicant shall have demonstrated a level of competency appropriate to the privileges granted to the holder of an RPAS instructor rating, in at least the following areas.
 - (a) techniques of applied instruction;
 - (b) assessment of student performance in those subjects in which ground instruction is given;
 - (c) the learning process;
 - (d) elements of effective teaching;
 - (e) competency-based training principles, including student assessments;
 - (f) evaluation of the training programme effectiveness;
 - (g) lesson planning;
 - (h) classroom instructional techniques;
 - (i) use of training aids, including FSTDs as appropriate;
 - (j) analysis and correction of student errors;
 - (k) human performance relevant to RPAS, instrument flight and remote pilot licence training, including principles of TEM; and
 - (l) hazards involved in simulating system failures and malfunctions in the aircraft.

115. (1) The applicant shall have successfully performed a formal competency assessment, prior to conducting instruction and assessment within a competency-based training programme. Skill requirements

(2) The competency assessment shall be conducted during a practical training session in the category of RPA and associated RPS for which RPAS instructor privileges are sought, including pre-flight, post-flight and ground instruction as appropriate.

(3) The competency assessment shall be conducted by a person authorised by the Licensing Authority.

116. (1) The applicant shall have met the requirements for the issue of a remote pilot licence, shall maintain competencies and meet the recent experience requirements for the licence. Experience requirement

(2) The applicant shall have sufficient training and experience to attain the required level of proficiency in all of the required tasks, manoeuvres, operations and principles, and methods of instruction relevant to these Regulations.

117. The applicant shall, under the supervision of an RPAS instructor authorised by the Licensing Authority for that purpose — Training requirement

- (a) have received training in RPAS instructional techniques including demonstration, student practices, recognition and correction of common student errors; and
- (b) have practiced instructional techniques in those flight manoeuvres and procedures in which it is intended to provide remote pilot licence training.

118. (1) Subject to compliance with the requirements specified in these regulations, the privileges of the holder of an RPAS instructor rating shall be — Privileges of the holder of the rating

- (a) to supervise solo flights by student remote pilots; and
- (b) to carry out remote pilot licence training for the issue of a remote pilot licence and an RPAS instructor rating provided that the RPAS instructor:

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- (i) holds at least the remote pilot licence and rating for which instruction is being given, in the appropriate RPA category and associated RPS,
- (ii) holds the remote pilot licence and rating necessary to act as the remote pilot-in-command of the RPA category and associated RPS on which the instruction is given, and
- (iii) has the RPAS instructor privileges granted endorsed on the remote pilot licence.

(2) The applicant, in order to carry out remote pilot licence training in a multi crew operational environment, shall have also met all the instructor qualification requirements.

C — Air traffic controller licence

Requirements
for issue of
licence

119. (1) Before issuing an air traffic controller licence, the Authority shall require an applicant to meet all the requirements for an air traffic controller licence and the requirements of at least one of the ratings set out in these Regulations.

(2) Unlicensed state employees may operate as air traffic controllers on condition that they meet the same requirements.

Age
requirements

120. An applicant for an air traffic controller licence shall not be less than 21 years of age.

Knowledge
requirements

121. An applicant for an air traffic controller licence shall have demonstrated a level of knowledge appropriate to the holder of an air traffic controller licence, in at least the following subjects —

air law, the rules and regulations relevant to an air traffic controller;

(a) air traffic control equipment, the principles, use and limitations of equipment used in air traffic control;

(b) general knowledge, —

(i) the principles of flight,

(ii) the principles of operation and functioning of aircraft, engines and systems, and

(iii) aircraft performance relevant to air traffic control operations;

(c) human performance including principles of threat and error management;

(d) meteorology, —

(i) aeronautical meteorology,

(ii) the use and appreciation of meteorological documentation and information,

(iii) the origin and characteristics of weather phenomena affecting flight operations and safety, and

(iv) altimetry;

(e) navigation, —

(i) the principles of air navigation, and

(ii) the principles, limitation and accuracy of navigation system and visual aids; and

(f) operational procedures, —

(i) air traffic control communication, radiotelephony and phraseology procedures (routine, non-routine and emergency),

(ii) the use of the relevant aeronautical documentation, and

(iii) safety practices associated with a flight.

122. (1) An applicant for air traffic controller licence shall have completed an approved training course in an approved training organisation and demonstrated the required competence having accomplished not less than three months of satisfactory service engaged in the actual control of air traffic under the supervision of an appropriately rated air traffic controller on-the-job training instructor (OJTI).

Experience

(2) The requirements specified for an air traffic controller rating may be credited as part of the experience required in this regulation.

(3) An air traffic controller acting as an air traffic control on-the-job training instructor shall hold an appropriate rating and be qualified as an air traffic control on-the-job training instructor.

123. An applicant for an air traffic controller licence shall hold a current class 3 medical certificate.

Medical fitness

D — Air traffic controller ratings

124. The Authority may, on application, issue the following air traffic controller ratings to an applicant who meets the requirements in these Regulations —

Categories of air traffic controller ratings

- (a) aerodrome control rating;
- (b) approach control procedural rating;
- (c) approach control surveillance rating;
- (d) approach precision radar control rating;
- (e) area control procedural rating; and
- (f) area control surveillance rating.

125. An applicant for an air traffic controller rating shall have demonstrated a level of knowledge appropriate to the privileges granted, in the following subjects in so far as they affect the area of responsibility —

Knowledge requirements for air traffic controller rating

- (a) aerodrome control rating, —
 - (i) aerodrome layout, physical characteristics and visual aids,
 - (ii) airspace structure,
 - (iii) applicable rules, procedures and source of information,
 - (iv) air navigation facilities,
 - (v) air traffic control equipment and its use,
 - (vi) terrain and prominent landmarks,
 - (vii) characteristics of air traffic,
 - (viii) weather phenomena, and
 - (ix) emergency and search and rescue plans;
- (b) approach control procedural and area control procedural ratings —
 - (i) airspace structure,
 - (ii) applicable rules, procedures and source of information,
 - (iii) air navigation facilities,
 - (iv) air traffic control equipment and its use,
 - (v) terrain and prominent landmarks,
 - (vi) characteristics of air traffic and traffic flow,
 - (vii) weather phenomena, and
 - (viii) emergency and search and rescue plans;
- (c) approach control surveillance, approach precision radar control and area control surveillance rating; and

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- (d) the applicant shall meet the requirements under paragraph (b), in so far as they affect the area of responsibility, and shall have demonstrated a level of knowledge appropriate to the privileges granted, in the following additional subjects —
 - (i) principles, use and limitations of applicable ATS surveillance systems and associated equipment, and
 - (ii) procedures for the provision of ATS surveillance service, as appropriate, including procedures to ensure appropriate terrain clearance.

Experience

- 126.** (1) An applicant for an air traffic controller licence shall have —
- (a) satisfactorily completed an approved training course; and
 - (b) demonstrated the required competence while providing, under the supervision of an air traffic control (ATC) on-the-job training instructor (OJTI), one or more of the following —
 - (i) an aerodrome control rating, an aerodrome control service, for a period of not less than 90 hours or one month, whichever is greater, at the unit at which the rating is sought,
 - (ii) an approach control procedural, approach control surveillance, area control procedural or area control surveillance rating, a control service for the rating sought, for a period of not less than 180 hours or three months, whichever is greater, at the unit for which the rating is sought, and
 - (iii) an approach precision radar control rating, not less than 200 precision approaches of which not more than 100 shall have been carried out on a radar simulator approved for that purpose by the Authority, not less than 50 of the precision approaches shall have been carried out at the unit and on the equipment for which the rating is sought; and
 - (c) if the privileges of the approach control surveillance rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator approaches on the surveillance equipment of the type in use at the unit for which the rating is sought and under the supervision of an appropriately rated controller.
- (2) The experience under subregulation (1) (b) shall have been completed within the six-month period immediately preceding the application.
- (3) The application for a rating shall be made within six months from the completion of experience specified under sub-regulation (1) (b).

Skills requirements

127. An applicant for an air traffic controller rating shall have demonstrated, at a level appropriate to the privileges being granted, the skill, judgement and performance required to provide a safe, orderly and expeditious control service including the recognition and management of threats and errors.

Concurrent issue of two air traffic controller ratings

128 (1) Where two air traffic controller ratings are sought concurrently, the Authority shall determine the applicable requirements on the basis of the requirements for each rating.

(2) The applicable requirements in subregulation (1) shall not be less than those of the more demanding rating.

Privileges and conditions of air traffic controller rating

129. (1) Subject to compliance with the requirements specified in these Regulations, the privileges of the holder of an air traffic controller licence endorsed with one or more of the undermentioned ratings shall be —

- (a) aerodrome control rating, to provide or supervise the provision of aerodrome control service for the aerodrome for which the licence holder is rated;
 - (b) approach control procedural rating, to provide or supervise the provision of approach control service for the aerodrome or aerodromes for which the licence holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service;
 - (c) approach control surveillance rating, to provide or supervise the provision of approach control service with the use of applicable ATS surveillance systems for the aerodrome or aerodromes for which the licence holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service; subject to compliance with the provisions of subregulation (1) (c), the privileges shall include the provision of surveillance radar approaches;
 - (d) approach precision radar control rating, to provide or supervise the provision of precision approach radar service at the aerodrome for which the licence holder is rated;
 - (e) control procedural rating, to provide or supervise the provision of area control service within the control area or portion thereof, for which the licence holder is rated; and
 - (f) area control surveillance rating, to provide or supervise the provision of area control service with the use of an ATS surveillance system, within the control area or portion thereof, for which the licence holder is rated.
- (2) The holder of an air traffic controller licence shall, before exercising the privileges indicated in subregulation (1), be familiar with all pertinent and current information.
- (3) The Authority shall not permit the holder of the licence, to carry out instruction in an operational environment unless such holder has received proper authorisation from the Authority.
- 130.** (1) An air traffic controller rating shall become invalid when an air traffic controller has ceased to exercise the privileges of the rating for a period not exceeding six months.
- (2) An air traffic controller rating shall remain invalid until the air traffic controller's ability to exercise the privileges of the rating has been re-established.

Validity of ratings

E – Flight operations officer licence

- 131.** An applicant for a flight operations officer licence shall not be less than 21 years of age.
- 132.** An applicant for a flight operations officer licence shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight operations officer licence, in at least the following subjects —
- (a) air law including rules and regulations relevant for operational control to the holder of a flight operations officer licence and the appropriate air traffic service practices and procedures;
 - (b) aircraft general knowledge, —
 - (i) the principles of operation of aeroplane engines, systems and instruments,
 - (ii) the operating limitations of an aeroplane and engines,

Age requirements

Knowledge requirements

- (iii) minimum equipment list, and
- (iv) configuration deviation list;
- (c) flight performance calculation, planning procedures and loading, —
 - (i) the effects of loading and mass distribution on aircraft performance and flight characteristics and mass and balance calculations,
 - (ii) operational flight planning; fuel consumption and endurance calculations, alternate aerodrome selection procedures, en-route cruise control and extended range operation,
 - (iii) the preparation and filing of air traffic services flight plans,
 - (iv) the basic principles of computer-assisted planning systems,
 - (v) take off performance including field length, climb and obstacle criteria and limitation,
 - (vi) cruise performance including minimum altitudes, decompression/engine out/gear down scenario planning, and
 - (vii) landing performance including approach climb and field length criteria and limitations;
- (d) human performance relevant to operational control duties, including principles of threat and error management;
- (e) meteorology, —
 - (i) 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, and
 - (ii) the interpretation and application of aeronautical meteorological reports, charts and forecasts, codes and abbreviations, use of and procedures for obtaining meteorological information;
- (f) navigation, including principles of navigation with particular reference to instrument flight;
- (g) operational procedures, —
 - (i) the use of aeronautical documentation and standard operating procedures,
 - (ii) the operational procedures for the carriage of freight and dangerous goods,
 - (iii) the procedures relating to aircraft accidents and incidents, and emergency flight procedure, and
 - (iv) the procedures relating to unlawful interference and sabotage of an aircraft;
- (h) principles of flight relating to the appropriate category of aircraft; and
- (i) radio communication procedures for communicating with aircraft and relevant ground stations.

Experience

133. (1) An applicant for a flight operations officer licence shall have gained the following experience —

- (a) a total of two years of service in any one or in any combination of the following capacities, provided that in any combination of experience, the period serviced in any capacity shall be at least 12 months —
 - (i) as a flight crew member in air transportation,
 - (ii) as a meteorologist in an organisation providing operational control to aircraft in air transportation, or
 - (iii) as an air traffic controller, or a technical supervisor of flight operations officers or air transportation flight operations systems;

- (b) at least 12 months as an assistant in the dispatching of air transport; or
 - (c) satisfactorily completed a course of approved training.
- (2) The applicant shall have served under the supervision of a flight operations officer for at least 90 working days within the six months immediately preceding the application.

134. An applicant for a flight operations officer licence shall have demonstrated the ability to —

Skills
requirements

- (a) make an accurate and operationally acceptable weather analysis;
- (b) provide an operationally valid briefing on weather conditions of a specific air route;
- (c) forecast weather trends pertinent to air transportation with particular reference to destination and alternates;
- (d) determine the optimum flight path for a given segment, and create accurate manual or computer generated flight plans;
- (e) 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;
- (f) recognise and manage threats and errors;
- (g) identify and to retrieve aeronautical data and other information relevant for the analysis of operational situations and risks;
- (h) identify and evaluate the risk factors and the possible consequences for flight operations;
- (i) identify and evaluate actions considering risk, the effect on flight safety and regularity of the operation;
- (j) determine an appropriate course of action based on the responsibilities and policies described in the operation manuals;
- (k) apply appropriate standard and non-standard procedures from the operations manual for the initiation, planning, continuation, diversion or termination of flights in the interest of safety of the aircraft and regularity and efficiency of the operation; and
- (l) identify and apply operational limitations and minimums in relation to the weather, aircraft status and appropriate navigation procedures;

135. Subject to compliance with the requirements specified in these Regulations, the privileges of a holder of a flight operations officer licence shall be to serve in that capacity with the responsibility for each area for which the applicant meets the requirements as specified by the Authority.

Privileges of
flight
operations
officer licence

F — Aeronautical station operator licence

136. An applicant for an aeronautical station operator licence shall be at least 18 years of age.

Age
requirements

137. An applicant for an aeronautical station operator licence shall have demonstrated a level of knowledge appropriate to the holder of an aeronautical station operator, in at least the following subjects —

Knowledge
requirements

- (a) general knowledge of air traffic service provided within Botswana;
- (b) operational procedures including radiotelephony procedures, phraseology and telecommunication network;
- (c) rules and regulations applicable to the aeronautical station operator; and
- (d) telecommunication equipment including principles, use and limitation of telecommunication equipment in an aeronautical station.

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- Experience **138.** An applicant for an aeronautical station operator licence shall have —
- (a) satisfactorily completed an approved training course within the 12 months period immediately preceding the application, and shall have served satisfactorily under a qualified aeronautical station operator for not less than two months; or
 - (b) satisfactorily served under a qualified aeronautical station operator for not less than six months during the 12 months period immediately preceding the application.
- Skills requirements **139.** An applicant for an aeronautical station operator licence shall demonstrate competency in —
- (a) operating the telecommunication equipment used; and
 - (b) transmitting and receiving radiotelephony messages with efficiency and accuracy.
- Privileges of aeronautical station operator licence **140.** Subject to compliance with the requirements specified in these Regulations, the privileges of the holder of an aeronautical station operator licence shall be to act as an operator in an aeronautical station and before exercising the privileges of the licence, the holder shall be familiar with all pertinent and current information regarding the types of equipment and operating procedures used at the aeronautical station.

PART XVII — *Medical requirements for licensing*

- Medical certificates **141.** (1) The Authority shall, on an application made in a format prescribed by the Authority, issue a —
- (a) Class 1 medical certificate which applies to applicants for, and holders of —
 - (i) commercial pilot licence for aeroplane, airship, helicopter and powered-lift,
 - (ii) multi-crew pilot licences for aeroplane, and
 - (iii) airline transport pilot licences for aeroplane, helicopter and powered-lift,
 - (b) Class 2 medical certificate which applies to applicants for, and holders of —
 - (i) private pilot licences for aeroplane, airship, helicopter and powered-lift,
 - (ii) glider pilot licences,
 - (iii) free balloon pilot licences, or
 - (iv) cabin crew member licences; and
 - (c) Class 3 medical certificate which applies to applicants for, and holders of air traffic controller licences.
- (2) An applicant for a medical certificate shall provide the medical examiner with a personally certified statement of medical facts concerning personal, familial and hereditary history and the applicant shall be made aware of the necessity for giving a statement that is as complete and accurate as the applicant's knowledge permits, and any false statement shall be dealt with in accordance with regulation 178.
- (3) The medical examiner shall report to the Authority any individual case where, in the examiner's judgement, an applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence being applied for or held, is not likely to jeopardise flight safety.

(4) The level of medical fitness to be met for the renewal of a medical assessment shall be the same as that for the initial assessment except where otherwise specifically stated.

142. An applicant for a medical assessment issued in accordance with the terms of these Regulations shall undergo a medical examination based on the following requirements —

Requirements
for medical
certificates

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

143. An applicant for any class of medical assessment shall be required to be free from —

Physical and
mental
requirements

- (a) any abnormality, congenital or acquired;
- (b) any active, latent, acute or chronic disability;
- (c) any wound, injury or sequelae from operation; or
- (d) any effect or side-effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken, and

such as would entail a degree of functional incapacity which is likely to interfere with the safe operation of an aircraft or with the safe performance of duties.

144. (1) The methods in use for the measurement of visual acuity are likely to lead to differing evaluations and to achieve uniformity, Contracting States shall ensure that equivalence in the methods of evaluation are obtained.

Visual acuity
test
requirements

(2) The following shall be conducted for tests of visual acuity —

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

145. (1) The Authority shall use such methods of examination as shall guarantee reliable testing of colour perception.

Colour
perception
requirements

(2) An applicant shall demonstrate the ability to perceive readily, those colours the perception of which is necessary for the safe performance of duties.

(3) The applicant shall be tested for the ability to correctly identify a series of pseudoisochromatic plates in daylight or in artificial light of the same colour temperature such as that provided by CIE standard illuminants C or D65 as specified by the International Commission on Illumination (CIE).

(4) An applicant obtaining a satisfactory result as prescribed by the Authority shall be assessed as fit and an applicant who fails to obtain a satisfactory result in such a test shall be assessed as unfit unless he or she is able to readily distinguish the colours used in air navigation and correctly identify aviation coloured lights.

(5) An applicant who fails to meet the criteria in subregulations (1) to (4) shall be assessed as unfit except for Class 2 assessment with the following restriction: valid daytime only.

146. (1) The Authority shall use such methods of examination as shall guarantee reliable testing of hearing.

Hearing test
requirements
for medical
certificates

(2) An applicant shall demonstrate a hearing performance sufficient for the safe exercise of their licence and rating privileges.

(3) An applicant for Class 1 medical assessments shall be tested by —

- (a) pure-tone audiometry at first issue of the assessment, not less than once every five years up to the age of 40 years, and thereafter not less than once every two years; or

(2) When a holder of an airline transport pilot licence in an aeroplane, helicopter and powered-lift, or a commercial pilot licence in an aeroplane, airship, helicopter and powered-lift, engaged in single-crew commercial air transport operations carrying passengers, has passed his or her 40th birthday, the period of validity specified in subregulation (1) shall be reduced to six months.

(3) When a holder of a private pilot licence in aeroplane, airship, helicopter and powered-lift, or a free balloon pilot licence, glider pilot licence or an air traffic controller licence has passed his or her 40th birthday, the period of validity specified in subregulation (1) shall be reduced to 24 months and where such licence holder has attained the age of 50 years, the period of validity shall be further reduced to 12 months.

(4) When a holder of an airline transport pilot licence in an aeroplane, helicopter and powered-lift or a commercial pilot licence in an aeroplane, airship, helicopter and powered-lift or a multi-crew pilot licence in an aeroplane, who is engaged in commercial air transport operations, has passed his or her 60th birthday, the period of validity specified in subregulation (1) shall be reduced to six months.

PART XVIII — *Suspension of medical certificate*

151. (1) The Authority shall suspend or revoke a medical certificate, if it is established that an applicant or a certificate holder no longer meets the requirements of a medical certificate under these Regulations.

Suspension of medical certificate

(2) In case of doubt of the medical fitness of the holder of a medical certificate, the Authority may —

- (a) require the holder to repeat a complete or partial medical examination as it deems necessary; or
- (b) suspend the certificate in the case of a temporary rejection on medical grounds.

152. The Authority shall notify in writing, the holder of the medical certificate of the suspension and state reasons for the suspension.

Notice of suspension

153. The holder of the medical certificate shall surrender the certificate within 14 days of receiving the notice under regulation 152.

Surrender of medical certificate

154. The Authority may provide the person whose medical certificate has been suspended with a new medical certificate of lower class if his or her medical fitness allows it.

Issue of lower class medical certificate

155. (1) A suspension may be lifted if the medical examination has been passed satisfactorily.

Lifting of suspension

(2) Where a suspension has been lifted, the person involved shall receive a new medical certificate unless the medical certificate was revoked.

156. 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.

Prohibition of medical certification

157. (1) All medical reports and records shall be securely held with accessibility restricted to authorised personnel.

Medical records

(2) When justified by operational considerations, the medical assessor shall determine to what extent pertinent medical information is presented to relevant officials of the Authority.

(3) The period of validity of a medical assessment may be reduced when clinically indicated.

PART IXX — *Requirements for medical examiners*

Aviation
medical
examiners

158. (1) The Authority shall designate and authorise a qualified and medical licensed medical practitioner to —

- (a) be an aviation medical examiner; and
- (b) conduct medical examinations of fitness of applicants for the issue, renewal or re-issue of the licences or ratings, as may be required in these Regulations.

(2) The Authority may, in writing, appoint an aviation medical examiner based outside Botswana to conduct the functions under subregulation (1).

(3) An aviation medical examiner shall receive —

- (a) basic training in aviation medicine for class 2 and class 3 medical examinations on the relevant subjects;
- (b) advanced training in aviation medicine for class 1 medical examinations on the relevant subjects; and
- (c) refresher training for Aviation medical examination at intervals of two years or as determined by the Authority.

(4) An aviation medical examiner shall acquire knowledge and experience of the conditions in which the holders of licences and ratings carry out their duties.

(5) An aviation medical examiner shall be required to demonstrate competency to the Authority before initial designation and or resignation.

(6) An aviation medical examiner shall have completed at least 10 examinations for a medical certificate per year.

(7) An authorisation for an aviation medical examiner shall be valid for three years and re-authorisation shall be at the discretion of the Authority.

(8) An aviation medical examiner shall submit a signed report to the Authority, after completing the medical examination of an applicant, detailing the results of the examination, and where the medical examination is carried out by a constituted group of aviation medical examiners, the Authority shall appoint the head of the group responsible for coordinating the results of the examination and signing the report.

(9) The Authority shall use the services of physicians experienced in the practice of aviation medicine, where necessary to evaluate reports submitted to it by aviation medical examiners.

(10) The Authority shall have access to medical reports from a designated medical examiner. These reports shall be treated with the confidentiality it deserves.

(11) The medical examiner shall be required to submit sufficient information to the Authority to enable the Authority to undertake medical assessment.

(12) The Authority shall retain the right to reconsider any action of an aviation medical examiner.

(13) Where the medical report is submitted to the Authority in electronic format, adequate identification of the aviation medical examiner shall be established.

(14) If the medical examination is carried out by two or more medical assessors, the Authority shall appoint one of these to be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report.

PART XX — *Requirements for medical examination*

159. (1) An applicant for a licence or rating, where medical fitness is prescribed, shall sign and furnish to the aviation medical examiner a declaration for medical stating whether he or she has previously undergone such an examination and, if possible, state the results of the examination.

Aviation
medical
examiners

(2) An applicant who attends a medical examination or test for the issuing of a medical certificate shall —

- (a) produce proof of his or her identity;
- (b) produce for inspection any licence held for which the certificate is required and the most recent medical certificate held, if any; and
- (c) provide the Aviation Medical Examiner with a personal statement of medical facts concerning personal, familial and hereditary history and sign a declaration confirming the accuracy, completeness and truthfulness of the information contained in the medical examination form.

(3) Provide the Aviation Medical Examiner with a personal statement of medical facts concerning personal, familial and hereditary history and sign a declaration confirming the accuracy, completeness and truthfulness of the information contained in the medical examination form.

(4) An applicant for a medical certificate shall provide the aviation medical examiner with a personal certified statement of medical facts concerning personal, familial and hereditary history.

(5) An applicant for a medical certificate shall produce proof of identification.

(6) Any false declaration to an aviation medical examiner made by an applicant for a licence or rating shall be reported to the Authority for appropriate action.

(7) A flight crew member or an air traffic controller shall not exercise the privileges of his or her licence unless he or she holds a current medical certificate, appropriate to the licence, except where otherwise stated in these Regulations.

160. (1) For the initial issue of the medical certificate, the period of validity shall begin on the date the medical examination is performed.

Validity of
medical
Assessment

(2). The period of validity of a Medical Assessment may be reduced when clinically indicated.

(3) The period of validity of a Medical Assessment may be extended, at the discretion of the Licensing Authority, up to 45 days.

(4) If the medical examination is carried out by two or more medical examiners, Contracting States or the Authority shall appoint one of these to be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report.

161. (1) Where the medical requirements prescribed for a particular licence are not met the appropriate medical certificate will not be issued, renewed or re-issued unless the following conditions are met —

Special
circumstances
for aviation
medical
examination

- (a) an accredited medical conclusion indicates that in the special circumstances, the applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence applied for is not likely to jeopardize light safety;
- (b) the relevant ability, skill and experience of the applicant and operational conditions have been given due consideration; and

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- (c) the licence is endorsed by the Authority with any special limitation or limitations when the safe performance of the licence holder's duties is dependent on compliance with such limitation or limitations.
- (2) An aviation medical examiner shall report to the Authority any individual case where, in the aviation medical examiner's judgement, an applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence being applied for, or held, is not likely to jeopardise flight safety.
- Decrease in medical fitness **162.** (1) A person who holds a licence issued under these Regulations, shall not exercise the privileges of his or her licence and related ratings at any time when he or she is aware of any decrease in his or her medical fitness which may render him or her unable to safely and properly exercise the privileges of the licence and ratings held.
- (2) In the case of a female, the licence holder shall, immediately, inform the Authority of a confirmed pregnancy.
- (3) A person who holds a licence issued under these Regulations shall inform the Authority of any decrease in medical fitness of a duration of more than 20 days, which —
- (a) requires continued treatment with prescribed medication; or
- (b) has required hospital treatment.
- Use of psychoactive substances **163.** A person who holds a licence issued under these Regulations shall not —
- (a) exercise the privileges of his or her licence and related ratings while under the influence of any psychoactive substance which might render him or her unable to safely and properly exercise those privileges; and
- (b) engage in any abusive use of substances.
- Medical history **164.** (1) The applicant shall have no established medical history or clinical diagnosis of any of the following —
- (a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
- (b) epilepsy; or
- (c) any disturbance of consciousness without satisfactory medical explanation of cause.
- (2) The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.
- (3) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.
- Hearing test requirement for medical certificates **165.** (1) An applicant for a medical certificate shall be required to demonstrate hearing performance sufficient for the safe exercise of the privileges of the licence and rating sought.
- (2) The hearing test may be conducted using a pure tone audiometer or alternate method that will provide equivalent result
- (3) The hearing test shall be performed at the first medical examination and then at specified intervals according to the class of medical examination and age of the applicant.
- (4) If a pure tone audiometer is used, the reference zero for calibration shall be that of the International Organisation for Standardization Recommendation R389, 1964.

(5) For hearing tests where audiometry is not performed, an applicant shall be tested in a quiet room by whispered and spoken voice tests under the following conditions —

- (a) a quiet room where the intensity of the background noise is less than 35 dB(A) when measured on “slow” response of an “A”- weighted sound level meter;
- (b) the sound level of an average conversational voice at one metre from the point of output is 60dB(A) and that of a whispered voice is 45dB(A);
- (c) at two metres from the speaker, the sound is 6 dB(A) lower; and
- (d) 12 months interval specified for the commercial pilot licence and airline transport pilot licence that is carrying passengers in single-pilot operations shall be reduced to six months.

(6) Where the holder of a licence and rating is over the age of 50 years the two years interval specified for the private pilot licence and air traffic controller licence shall be reduced to 12 months.

(7) For the initial issue of the medical certificate, the period of validity shall begin on the date the medical examination is performed.

(8) The period of validity shall for the last month counted, include the day that has the same calendar number as the date of the medical examination or, if that month has no day with that number, the last day of that month.

(9) The requirements for the renewal or re-issue of a medical certificate shall be the same as those for the initial certificate except where otherwise specifically stated.

(10) The renewal of class 1, 2 and 3 medical certificates may be delegated to the authorised aviation medical examiner.

(11) The re-issue of class 1 medical certificate shall be done by the Authority.

(12) The re-issue of class 2 and 3 medical certificates may be delegated by the Authority to an authorised aviation medical examiner.

PART XXI — *Miscellaneous provisions*

166. (1) A person may apply to the Authority for an exemption from these Regulations.

Application for exemption

(2) An application for an exemption shall be submitted at least 60 days in advance of the proposed effective date.

(3) A request for an exemption shall contain the applicant’s —

- (a) name;
- (b) physical address and mailing address;
- (c) telephone number;
- (d) facsimile number, if available; and
- (e) electronic mail address, if available.

(4) The application shall be accompanied by a fee determined by the Authority, for technical evaluation.

167. (1) An application for an exemption shall contain the following —

Requirements for exemption

- (a) a citation of the specific requirement from which the applicant seeks exemption;
- (b) an explanation of why the exemption is needed;
- (c) a description of the type of operations to be conducted under the proposed exemption;
- (d) the proposed duration of the exemption;

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- (e) an explanation of how the exemption is in the public interest;
- (f) 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;
- (g) a detailed description of any known safety concerns with the requirement, including information about any relevant accidents or incidents of which the applicant is aware; and
- (h) if the applicant seeks to operate under the proposed exemption outside Botswana's airspace, an indication of whether the exemption would contravene any provision of the International Civil Aviation Organisation Standards and Recommended Practices as well as the regulations pertaining to the airspace in which the operation will occur.

(2) Where the applicant seeks emergency processing of an application for emergency, the application shall contain supporting facts and reasons why the application was not timely filed, and the reasons why 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 for an exemption within the specified time.

Review by
Authority

168. (1) The Authority shall review the application for accuracy and compliance with the requirements under these Regulations.

(2) If the application satisfies the requirements of this regulation and the Authority determines that a review of its merits is justified, the Authority shall publish a detailed summary of the application in the *Gazette* for comments and specify the date by which comments may be received by the Authority for consideration.

(3) Where the requirements of these Regulations have not been met, the Authority shall notify the applicant and take no further action until the applicant corrects the application and re-files it in accordance with these Regulations.

(4) Where an applicant makes an emergency application, the Authority shall publish the application or the Authority's decision as soon as possible after processing the application.

Evaluation of
request

169. (1) Where any comments are received by the Authority, the Authority shall conduct an evaluation of the request to determine whether —

- (a) an exemption would be in the public interest;
- (b) the applicant's proposal would provide a level of safety equivalent to that established by law;
- (c) a grant of the exemption would contravene the applicable International Civil Aviation Organisation Standards and Recommended Practices; and
- (d) the request should be granted or denied, and of any conditions or limitations that should be part of the exemption.

(2) Where the Authority decides that a technical evaluation of the request would impose a significant burden on the Authority's technical resources, the Authority may deny the exemption on that basis.

(3) The Authority shall notify the applicant in writing and shall give a detailed summary of its evaluation and decision to grant or deny the request.

(4) The summary referred to in subregulation (2) shall specify the duration of the exemption and any conditions or limitations of the exemption.

(5) Where the exemption affects a significant population of the aviation community of Botswana, the Authority shall publish the summary in the aeronautical information circular.

PART XXII — *General provisions*

- 170.** (1) A holder of a licence, certificate or authorisation issued by the Authority shall have it in his or her physical possession or at the work site when exercising the privileges of that licence, certificate or authorisation. Possession of licence
- (2) A crew member of a foreign registered aircraft shall hold a valid licence, certificate or authorisation, including an appropriate and current medical certificate, issued by the State of Registry and has it in his or her physical possession or at the work station when exercising the privileges of that licence, certificate or authorisation.
- 171.** (1) A holder of a licence, rating or a certificate issued under these Regulations shall not exercise the privileges of the licence, rating or certificate while under the influence of any psychoactive substance, by reason of which human performance is impaired. Use of psychoactive substances
- (2) Any safety-sensitive personnel whose functions are critical to the safety of aviation shall not undertake any function while under the influence of any psychoactive substance, by reason of which human performance is impaired.
- (3) Any person referred to in subregulations (1) and (2) shall not engage in any kind of problematic use of substances
- 172.** (1) A person who performs any function requiring a licence, rating, qualification or authorisation prescribed by these Regulations directly or by contract may be tested for drug or alcohol usage. Drug and alcohol testing and reporting
- (2) A 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 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.
- (3) A person who performs any function requiring a licence, rating, qualification or authorisation prescribed by these Regulations directly or by contract may be tested for drug or alcohol usage.
- (4) A 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 his or her licence, certificate, rating, qualification, or authorisation issued under these Regulations suspended or revoked.
- (5) 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 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 his or her licence, certificate, rating, qualification, or authorisation issued under these Regulations suspended or revoked.

(6) Any person who is convicted for the violation of any local or national statute relating to the growing, processing, 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 licence or certificate

173. A person who holds a licence, certificate, or authorisation required by these Regulations shall present it for inspection upon a request by the Authority or any person authorised by the Authority.

Change of name and address

174. (1) A holder of a licence, certificate or authorisation issued under these Regulations may apply to change the name on a licence or certificate.

(2) The holder shall include with any such request —

- (a) the current licence or certificate; and
- (b) 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 thereof.

(4) The Authority shall return to the holder the original documents specified in subregulation 2 (b) and retain copies thereof and return the replaced licence, certificate or authorisation with the appropriate endorsement.

(5) A holder of a licence, certificate, or authorisation issued under these Regulations shall notify the Authority of the change in the physical and mailing address and shall do so in the case of —

- (a) physical address, at least fourteen days in advance; and
- (b) mailing address upon any change of address.

Replacement of documents

175. A person may apply to the Authority in the prescribed form for replacement of documents issued under these Regulations if the documents are lost or destroyed.

Suspension and revocation

176. (1) The Authority may, if it considers it to be in the public interest, suspend provisionally, pending further investigation, any licence, certificate, approval, permission, exemption, authorisation or such other document issued, granted or having effect under these Regulations.

(2) The Authority may, upon the completion of an investigation which has shown sufficient ground to its satisfaction and if it considers it to be in the public interest, revoke, suspend, or vary any licence, certificate, approval, permission, exemption, authorisation or other document issued or granted under these Regulations.

(3) The Authority may, if it considers it to be in the public interest, prevent any person or aircraft from flying.

(4) A holder or any person having the possession or custody of any licence, certificate, approval, permission, exemption, authorisation or other documents 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 licence, certificate, approval, permission, exemption, authorisation, or any other document has been granted or issued under these Regulations shall render the document invalid during the continuance of the breach.

177. (1) The Authority may charge fees in connection with the issue, validation, renewal, extension or variation of any licence or other document, including the issue of a copy thereof, or the undergoing of any examination, test, inspection or investigation or the grant of any permission or approval, required by, or for the purpose of these Regulations, as the Authority may determine. Fees

(2) Upon an application being made in connection with which any fee is chargeable in accordance with subregulation (1), the applicant shall be required, before the application is considered, to pay the fee so chargeable.

(3) If, after that payment has been made, the application is withdrawn by the applicant or otherwise ceases to have effect or is refused, the Authority shall not refund the payment made.

178. (1) A person who contravenes this provision in relation to an aircraft, the operator of that aircraft and the pilot-in-command, if the operator or, the pilot-in-command is not the person who contravened that provision, he or she shall, without prejudice to the liability of any other person under these Regulations for that contravention, be deemed for the purposes of the following provisions of this subregulation to have contravened that provision. Penalties

(2) Subregulation (1) shall not apply if the person proves that the contravention occurred without his or her consent or connivance and that he or she exercised due diligence to prevent the contravention.

(3) Where a person is charged with contravening a provision of these Regulations orders, notices or proclamations made there under by reason of his having been a member of the flight crew of an aircraft on a flight for the purpose of commercial air transport operations, 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.

(4) A person who contravenes any provision of these Regulations, orders, notices or proclamations made thereunder not being a provision referred to in subregulation (9) commits an offence and is liable to a fine not exceeding P50 000, or to imprisonment for a term not exceeding 10 years, or to both, and in the case of a continuing contravention, each day of the contravention shall constitute a separate offence.

(5) In case an aircraft is involved in a contravention and the contravention is by the owner or operator of the aircraft, the aircraft shall be subject to a lien for the penalty.

(6) Any aircraft subject to alien for the purpose of sub-regulation (5) may be seized by and placed in the custody of the Authority;

(7) The aircraft shall be released from custody of the Authority upon —

- (a) payment of the penalty or the amount agreed upon in compromise;
- (b) deposit of a bond in such amount as the Authority may prescribe, conditioned upon payment of the penalty or the amount agreed upon in compromise; or
- (c) receiving an order of the court to that effect.

(8) Where criminal proceedings are not instituted under subregulation (3), the Authority may impose an appropriate administrative penalty, as set out in Schedule 5 to these Regulations, on a person, organisation or operator who —

- (a) hinders or obstructs an authorised officer, inspector or authorised person in the exercise of his or her powers or in the performance of his or her duties;

- (b) refuses or fails to give his or her name and address, or gives a false name or address when called upon to do so by an authorised officer, or inspector;
- (c) obstructs or impedes another person from exercising any privilege, power or duty conferred on such other person by the Authority or under these Regulations;
- (d) makes or causes to be made, orally or in writing —
 - (i) a misleading or false statement or declaration for the purpose of obtaining any licence, rating, certificate, approval, authorisation, exemption or any other document under these Regulations, or
 - (ii) falsifies, counterfeits, alters, defaces or mutilates, or adds anything to, any licence, rating, certificate, approval, authorisation, exemption or other document issued under these Regulations;
- (e) does, causes or permits to be done, an act contrary to, or fails to comply with, any provision of these Regulations or has failed to perform any duty or function in accordance with prescribed designation procedures attached to the designation;
- (f) exercises a privilege granted by, or uses any licence, rating, certificate, approval, authorisation, exemption or any other document issued under these Regulations, of which he or she is not the holder;
- (g) unless otherwise authorised in these Regulations, permits a licence, rating, certificate, approval, authorisation, exemption or other document issued under these Regulations, of which he or she is the holder, to be used or privileges thereof to be exercised by another person;
- (h) commits an act, by —
 - (i) interference with any flight crew member, air traffic controller or aircraft maintenance engineer,
 - (ii) tampering with any aircraft or any part thereof, or
 - (iii) disorderly conduct or otherwise, which is likely to endanger the safety of an aircraft or its occupants;
- (i) enters in a place within the boundaries of a licensed aerodrome or heliport which is closed to the public, without the permission of an aerodrome or heliport operator; and
- (j) gives false information pertaining to the investigation of an aviation accident or incident.

(9) Where criminal proceedings are instituted, the administrative penalties for offences under subregulation (8) may be used as a guide in determining the appropriate penalty.

Revocation of
Cap. 71:01
(Sub. Leg.)

179. The Civil Aviation (Personnel Licensing) (General) Regulations are hereby revoked.

Transitional
provisions

180. (1) Notwithstanding any other provision of these Regulations, a person who at the commencement of these Regulations, is carrying out aviation related training shall, within 12 months from the date of commencement of these Regulations, or within such longer period as the Minister may, by Order in the *Gazette* prescribe, comply with the requirements of these Regulations or cease to carry out such operations.

(2) A person who fails to comply with these Regulations within the prescribed period commits an offence and shall be liable, to the penalties specified under section 88 of the Act.

Savings

181. Any valid licence, certificate, permit or authorisation issued or granted by the Authority before the commencement of these Regulations shall remain valid until it expires or is revoked.

SCHEDULES

SCHEDULE 1

(reg. 4 and 5)

SPECIFICATIONS FOR PERSONNEL LICENCES

Personnel licences issued by a Contracting State in accordance with the relevant provisions of these Regulations shall conform to the following specifications —

1. Detail

- (a) A Contracting State having issued a licence shall ensure that other States are able to easily determine the licence privileges and validity of ratings.
- (b) The following details shall appear on the licence —
 - (i) name of State (in bold type),
 - (ii) title of licence (in very bold type),
 - (iii) serial number of the licence, in Arabic numerals, given by the authority issuing the licence,
 - (iv) name of holder in full (in Roman alphabet also if script of national language is other than Roman),
 - (v) date of birth,
 - (vi) address of holder if desired by the State,
 - (vii) nationality of holder,
 - (viii) signature of holder,
 - (ix) authority and, where necessary, conditions under which the licence is issued,
 - (x) certification concerning validity and authorisation for holder to exercise privileges appropriate to licence,
 - (xi) signature of officer issuing the licence and the date of such issue,
 - (xii) seal or stamp of authority issuing the licence,
 - (xiii) ratings including category, class, type of aircraft, airframe, aerodrome control, etc.,
 - (xiv) remarks, such as special endorsements relating to limitations and endorsements for privileges, including from 5 March, 2008 an endorsement of language proficiency, and other information required in pursuance to Article 39 of the Chicago Convention, and
 - (xv) any other details desired by the State issuing the licence.

2. Material — First quality papers or other suitable material, including plastic cards, shall be used and the items mentioned in paragraph 1 (b) shown clearly thereon.

3. Language

When licences are issued in a language other than English, the licence shall include an English translation of at least items (i), (ii), (vi), (ix), (xii), (xiii) and (xiv) under paragraph 1(b) and when provided in a language other than English, authorisations issued shall include an English translation of the name of the State issuing the authorisation, the limit of validity of the authorisation and any restriction or limitation that may be established.

4. Arrangement of items

Item headings on the licence shall be uniformly numbered in roman numerals as indicated in paragraph 1 (b), so that on any licence the number will, under any arrangement, refer to the same item heading.

SCHEDULE 2
(reg. 9)

LANGUAGE PROFICIENCY REQUIREMENTS

1. To meet the language proficiency requirements contained in regulation 9, an applicant for a licence or a licence holder shall demonstrate, in a manner acceptable to the Authority, compliance with the holistic descriptors at paragraph 2 and with the Operational Level (Level 4) of the Language Proficiency Rating Scale in paragraph 3.
2. Holistic descriptors — proficient speakers shall —
 - (a) communicate effectively in voice-only (telephone/radiotelephone) and in face-to-face situations;
 - (b) communicate on common, concrete and work-related topics with accuracy and clarity;
 - (c) use appropriate communicative strategies to exchange messages and to recognise and resolve misunderstandings including to check, confirm, or clarify information in a general or work-related context;
 - (d) handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
 - (e) use a dialect or accent which is intelligible to the aeronautical community.
3. Rating scales —
 - (a) Operational Level (Level 4) —
 - (i) Pronunciation: pronunciation, stress, rhythm and intonation are influenced by the first language or regional variation but only sometimes interfere with understanding,
 - (ii) Structure: basic grammatical structures and sentence patterns are used creatively and are usually well controlled and errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning,
 - (iii) Vocabulary: vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work related topics and can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances, and
 - (iv) Fluency: produces stretches of language at an appropriate tempo, there may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. May make limited use of discourse markers or connectors and fillers are not distracting,
 - (v) Comprehension: comprehension is mostly accurate on common, concrete, and work related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies,
 - (vi) Interactions: responses are usually immediate, appropriate and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming or clarifying, and
 - (b) Extended Level (Level 5)
 - (i) Pronunciation: pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding,

- (ii) Structure: basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning,
 - (iii) Vocabulary: vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic,
 - (iv) Fluency: able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors,
 - (v) Comprehension: comprehension is accurate on common, concrete, and work related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect or accent) or registers.
 - (vi) Interactions: responses are immediate, appropriate, and informative. Manages the speaker-listener relationship effectively.
- (c) Expert Level (Level 6)
- (i) Pronunciation: Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.
 - (ii) Structure: Both basic and complex grammatical structures and sentence patterns are consistently well controlled.
 - (iii) Vocabulary: Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.
 - (iv) Fluency: Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.
 - (v) Comprehension: Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.
 - (vi) Interactions: Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.

SCHEDULE 3
PART A
(reg. 46, 48, 49, 50, 51, 52 and 53)

MULTI-CREW PILOT LICENCE

1. TRAINING

1. In order to meet the requirements of the multi-crew pilot licence in the aeroplane category, the applicant shall have completed an approved training course. The training shall be competency-based and conducted in a multi-crew operational environment.

2. During the training, the applicant shall have acquired the knowledge, skills and attitudes underpinning the competencies required for performing as a co-pilot of a turbine-powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots, under VFR and IFR, day and night flying.

2. ASSESSMENT LEVEL

1. The applicant for the multi-crew pilot licence in the aeroplane category shall have achieved the final competency standard of the approved adapted competency model.

PART B — SIMULATED FLIGHT

1. The FSTDs used to gain the experience specified in these regulations, shall have been approved by the Authority.

2. FSTDs suitable for each multi-crew pilot licence training phase shall be categorized as follows:

- (a) Core flying skills phase. E-training and part tasking devices approved by the Authority that have the following characteristics:
 - involve accessories beyond those normally associated with desktop computers, such as functional replicas of a throttle quadrant, a sidestick controller, or an FMS keypad;
 - involve psychomotor activity with appropriate application of force and timing of responses;
 - otherwise meet, at a minimum, the Type I or III qualifications
- (b) Basic phase. A FSTD that represents a generic turbine-powered aeroplane and has the following characteristics.
 - is equipped with a daylight visual system; and
 - otherwise meets, at a minimum, the Type IV or V qualifications.
- (c) Intermediate phase. A FSTD that represents a multi-engined turbine-powered aeroplane certificated for a crew of two pilots and has the following characteristics:
 - is equipped with an enhanced daylight visual system;
 - is equipped with an autopilot; and
 - otherwise meets, at a minimum, the Type VI qualification;
- (d) Advanced phase. A flight simulation training device that represents a multi-engined turbine-powered aeroplane certificated for a crew of two pilots and has the following characteristics:
 - is equipped with an enhanced daylight visual system;
 - is equipped with an autopilot; and
 - otherwise meets, at a minimum, the Type VII qualification.

SCHEDULE 4
(reg. 141-149)

REQUIREMENTS FOR ISSUANCE OF CLASS 1, CLASS 2
AND 3 MEDICAL CERTIFICATES

Class 1 — *Medical certificate*

1. Certificate issue and renewal
 - 1.1 An applicant for a commercial pilot licence for aeroplane, airship, helicopter or powered-lift, a multi-crew pilot licence for aeroplane, or an airline transport pilot licence for aeroplane, helicopter or powered-lift shall undergo an initial medical examination for the issue of a Class 1 medical certificate.
 - 1.2 Except where otherwise stated in this section, holders of commercial pilot licences for aeroplane, airship, helicopter or powered-lift, multi-crew pilot licences for aeroplane, or airline transport pilot licences for aeroplane, helicopter or powered-lift shall have their Class 1 medical certificates renewed at intervals not exceeding those specified in regulation 125.
 - 1.3 When the Authority is satisfied that the requirements of this section and the general provisions of these Regulations have been met, a Class 1 medical certificate shall be issued to the applicant.
2. Physical and mental requirements
 - 2.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.
 - 2.2 The applicant shall have no established medical history or clinical diagnosis of —
 - (a) an organic mental disorder;
 - (b) mental or behavioural disorder due to use of psychoactive substances and includes dependence syndrome induced by alcohol or other psychoactive substances;
 - (c) schizophrenia or a schizotypal or delusional disorder;
 - (d) a mood (affective) disorder;
 - (e) a neurotic, stress-related or somatoform disorder;
 - (f) a behavioural syndrome associated with physiological disturbances or physical factors;
 - (g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
 - (h) mental retardation;
 - (i) a disorder of psychological development;
 - (j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
 - (k) a mental disorder not otherwise specified, such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.
 - 2.3 The applicant shall have no established medical history or clinical diagnosis of any of the following —
 - (a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
 - (b) epilepsy; or
 - (c) any disturbance of consciousness without satisfactory medical explanation of cause.
 - 2.4 The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.

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2.5 The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

2.5.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

2.5.2 An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

2.6 Electrocardiography shall form part of the heart examination for the first issue of a medical certificate.

2.6.1 Electrocardiography shall be included in re-examinations of applicants over the age of 50 years no less frequently than annually.

2.7 The systolic and diastolic blood pressures shall be within normal limits.

2.7.1 The use of drugs for control of high blood pressure shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

2.8 There shall be no significant functional nor structural abnormality of the circulatory system.

2.9 There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleurae likely to result in incapacitating symptoms during normal or emergency operations.

2.10 Applicants with chronic obstructive pulmonary disease shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

2.11 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations shall be assessed as unfit.

2.11.1 The use of drugs for control of asthma shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

2.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.

2.12.1 Applicants with quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

2.13 Applicants with significant impairment of function of the gastrointestinal tract or its adnexa shall be assessed as unfit.

2.13.1 Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.

2.14 Applicants with sequelae of disease of, or surgical intervention on, any part of the digestive tract or its adnexa, likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

2.15 Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.

2.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.

2.16.1 Applicants with non-insulin-treated diabetes mellitus shall be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

2.17 Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

2.18 Applicants with renal or genitourinary disease shall be assessed as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

2.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

2.19 Applicants with sequelae of disease of or surgical procedures on the kidneys or the genito-urinary tract, in particular obstructions due to stricture or compression, shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

2.19.1 Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.

2.20 Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

2.21 Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

2.22 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

2.23 The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

2.24 The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

2.25 There shall be —

- (a) no disturbance of vestibular function;
- (b) no significant dysfunction of the Eustachian tubes; and
- (c) no unhealed perforation of the tympanic membranes.

2.25.1 A single dry perforation of the tympanic membrane need not render the applicant unfit.

2.26 There shall be —

- (a) no nasal obstruction; and
- (b) no malformation nor any disease of the buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

2.27 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

3. Visual requirements

The medical examination shall be based on the following requirements —

3.1 The function of the eyes and their adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's licence and rating privileges.

C.646

3.2 Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

- (a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
- (b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

3.3 Applicants may use contact lenses to meet this requirement provided that:

- (a) the lenses are monofocal and non-tinted;
- (b) the lenses are well tolerated; and
- (c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

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

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

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

3.4 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 3.3.2, the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 3.2; if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

3.4.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

3.5 The applicant shall be required to have normal fields of vision.

3.6 The applicant shall be required to have normal binocular function.

3.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

4 Hearing requirements

4.1 The applicant, when tested on a pure-tone audiometer, shall not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz.

4.1.1 An applicant with a hearing loss greater than the above may be declared fit provided that the applicant has normal hearing performance against a background noise that reproduces or simulates the masking properties of flight deck noise upon speech and beacon signals.

3.4.2 Alternatively, a practical hearing test conducted in flight in the cockpit of an aircraft of the type for which the applicant's licence and ratings are valid may be used.

Class 2 — *Medical certificate*

Certificate issue and renewal

An applicant for a private pilot licence – aeroplane, airship, helicopter or powered-lift, a glider pilot licence, a free balloon pilot licence, shall undergo an initial medical examination for the issue of a Class 2 medical certificate. The Authority shall issue a class 2 medical certificate when it is satisfied that the requirements of these regulations are met.

Physical and mental requirements

- (1) The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.
- (2) The applicant shall have no established medical history or clinical diagnosis of —
 - (a) an organic mental disorder;
 - (b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;
 - (c) schizophrenia or a schizotypal or delusional disorder;
 - (d) a mood (affective) disorder;
 - (e) a neurotic, stress-related or somatoform disorder;
 - (f) a behavioural syndrome associated with physiological disturbances or physical factors;
 - (g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
 - (h) mental retardation;
 - (i) a disorder of psychological development;
 - (j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
 - (k) a mental disorder not otherwise specified; such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.
- (3) The applicant shall have no established medical history or clinical diagnosis of any of the following —
 - (a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
 - (b) epilepsy; and
 - (c) any disturbance of consciousness without satisfactory medical explanation of cause.
- (4) The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.
- (5) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.
- (6) An applicant who has undergone coronary bypass grafting or angioplasty, with or without stenting or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.
- (7) An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.
- (8) Electrocardiography shall form part of the heart examination for the first issue of a Medical Certificate after the age of 40. Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less than every two years.

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- (9) The systolic and diastolic blood pressures shall be within normal limits.
- (10) The use of drugs for control of high blood pressure shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges. There shall be no significant functional nor structural abnormality of the circulatory system.
- (11) There shall be no disability of the lungs or any active disease of the structures of the lungs, mediastinum or pleura likely to result in incapacitating symptoms during normal or emergency operations.
- (12) Applicants with chronic obstructive pulmonary disease shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.
- (13) Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations shall be assessed as unfit. The use of drugs for control of asthma shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.
- (14) Applicants with active pulmonary tuberculosis shall be assessed as unfit. Applicants with quiescent or healed lesions, known to be tuberculous or presumably tuberculous in origin, may be assessed as fit. Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.
- (15) Applicants with significant impairment of the function of the gastrointestinal tract or its adnexa shall be assessed as unfit.
- (16) Applicants with sequelae of disease of or surgical intervention on any part of the digestive tract or its adnexa, likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, shall be assessed as unfit.
- (17) Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit. Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.
- (18) Applicants with non-insulin-treated diabetes mellitus shall be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.
- (19) Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.
- (20) Applicants with renal or genitourinary disease shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges. Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.
- (21) Applicants with sequelae of disease of, or surgical procedures on, the kidneys or the genitourinary tract, in particular obstructions due to stricture or compression, shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.
- (22) Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated. Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

(23) Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy. Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

(24) The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

(25) The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

There shall be —

- (a) no disturbance of the vestibular function;
- (b) no significant dysfunction of the Eustachian tubes; and
- (c) no unhealed perforation of the tympanic membranes.

(26) A single dry perforation of the tympanic membrane need not render the applicant unfit.

There shall be —

- (a) no nasal obstruction; and
- (b) no malformation nor any disease of the buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

(27) Applicants with stuttering and other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

Visual requirements for class 2 medical certificate

The medical examination shall be based on the following requirements —

(1) The function of the eyes and their adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's licence and rating privileges.

(2) Distant visual acuity with or without correction shall be 6/12 or better in each eye separately, and binocular visual acuity shall be 6/9 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

- (a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
- (b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

(3) Applicants may use contact lenses to meet this requirement provided that:

- (a) the lenses are monofocal and non-tinted;
- (b) the lenses are well tolerated; and
- (c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

(4) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses to minimize peripheral field distortion. Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

(5) The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 6.4.3.2, the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction

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already prescribed in accordance with these regulations; if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

(6) When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

(7) The applicant shall be required to have normal fields of vision. The applicant shall be required to have normal binocular function. Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

Hearing requirements

(1) Applicants who are unable to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner and with the back turned to the examiner, shall be assessed as unfit. When tested by pure-tone audiometry, an applicant with a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz, shall be assessed as unfit.

Class 3 — *Medical certificate*

Certificate issue and renewal

Cap. 71:01
(Sub. Leg.)

(1) An applicant for an air traffic controller licence shall undergo an initial medical examination for the issue of a Class 3 medical certificate. Except where otherwise stated in this section, holders of air traffic controller licences shall have their Class 3 medical certificates renewed at intervals not exceeding those specified in the Civil Aviation (Personnel Licensing) (Other Personnel) Regulations.

(2) The Authority shall issue a medical certificate to an applicant who meets the requirements of these Regulations.

Physical and mental requirements

(1) The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable to perform duties safely. The applicant shall have no established medical history or clinical diagnosis of:

- (a) an organic mental disorder;
- (b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;
- (c) schizophrenia or a schizotypal or delusional disorder;
- (d) a mood (affective) disorder;
- (e) a neurotic, stress-related or somatoform disorder;
- (f) a behavioural syndrome associated with physiological disturbances or physical factors;
- (g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
- (h) mental retardation;
- (i) a disorder of psychological development;
- (j) a behavioural or emotional disorder, with onset in childhood or adolescence; or a mental disorder not otherwise specified; and
- (k) such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.

(2) The applicant shall have no established medical history or clinical diagnosis of any of the following —

- (a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
- (b) epilepsy; or
- (c) any disturbance of consciousness without satisfactory medical explanation of cause.

(3) The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges. The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

(4) An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence and rating privileges.

(5) An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence and rating privileges.

(6) Electrocardiography shall form part of the heart examination for the first issue of a medical certificate. Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less frequently than every two years. The systolic and diastolic blood pressures shall be within normal limits.

(7) The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence privileges. There shall be no significant functional nor structural abnormality of the circulatory system.

(8) There shall be no disability of the lungs or any active disease of the structures of the lungs, mediastinum or pleurae likely to result in incapacitating symptoms. Applicants with chronic obstructive pulmonary disease shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges. Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms shall be assessed as unfit.

(9) The use of drugs for control of asthma shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges. Applicants with active pulmonary tuberculosis shall be assessed as unfit. Applicants with quiescent or healed lesions, known to be tuberculous or presumably tuberculous in origin, may be assessed as fit. Applicants with significant impairment of the function of the gastrointestinal tract or its adnexae shall be assessed as unfit.

(10) Applicants with sequelae of disease of or surgical intervention on any part of the digestive tract or its adnexa, likely to cause incapacitation, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.

(11) Applicants with insulin-treated diabetes mellitus shall be assessed as unfit. Applicants with non-insulin-treated diabetes shall be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

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Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges. Applicants with renal or genito-urinary disease shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges. Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

(12) Applicants with sequelae of disease of, or surgical procedures on the kidneys or the genito-urinary tract, in particular obstructions due to stricture or compression, shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges. Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.

(13) Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

(14) Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy. Following confinement or termination of pregnancy the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

(15) The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges. The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges. There shall be no malformation nor any disease of the nose, buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant's licence and rating privileges. Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

Visual requirements

The medical examination shall be based on the following requirements.

(1) The function of the eyes and their adnexa shall be normal. There shall be no active pathological condition, acute or chronic, or any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's licence and rating privileges.

(2) Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

- (a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
 - (b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.
- (3) Applicants may use contact lenses to meet this requirement provided that:
- (a) the lenses are monofocal and non-tinted;
 - (b) the lenses are well tolerated; and
 - (c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

(4) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses. Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60, shall be required to provide a full ophthalmic report prior to initial medical certificate and every five years thereafter.

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

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

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

(8) Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenia and diplopia need not be disqualifying.

Hearing requirements

(1) The applicant, when tested on a pure-tone audiometer shall not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz.

(2) An applicant with a hearing loss greater than the above may be declared fit provided that the applicant has normal hearing performance against a background noise that reproduces or simulates that experienced in a typical air traffic control working environment. Alternatively, a practical hearing test conducted in an air traffic control environment representative of the one for which the applicant's licence and ratings are valid.

SCHEDULE 5
(regulation 178 (8))

ADMINISTRATIVE PENALTIES

(1) The administrative penalties, in respect of the offences under regulation 178 (8), shall apply to an individual as indicated in Table A.

TABLE A
PENALTIES APPLICABLE TO AN INDIVIDUAL

<i>Regulation</i>	<i>1st offence</i>	<i>2nd offence</i>	<i>Subsequent offence</i>
178 (8) (a)	P 5 000	P 10 000	P 15 000
178 (8) (b)	P 5 000	P 10 000	P 15 000
178 (8) (c)	P 5 000	P 10 000	P 15 000
178 (8) (d)	P 15 000	P 20 000	P 25 000
178 (8) (e)	P 10 000	P 20 000	P 30 000
178 (8) (f)	P 10 000	P 20 000	P 30 000
178 (8) (g)	P 10 000	P 20 000	P 30 000
178 (8) (h)	P 10 000	P 20 000	P 30 000
178 (8) (i)	P 10 000	P 20 000	P 30 000
178 (8) (j)	P 5 000	P 10 000	P 15 000

(2) The administrative penalties, in respect of the offences under regulation 178 (8), shall apply to an organisation as indicated in Table B.

TABLE B
PENALTIES APPLICABLE TO AN ORGANISATION

<i>Regulation</i>	<i>1st offence</i>	<i>2nd offence</i>	<i>Subsequent offence</i>
178 (8) (a)	P 15 000	P 30 000	P 50 000
178 (8) (b)	P 15 000	P 30 000	P 50 000
178 (8) (c)	P 15 000	P 30 000	P 50 000
178 (8) (d)	P 15 000	P 30 000	P 50 000
178 (8) (e)	P 25 000	P 40 000	P 60 000
178 (8) (f)	P 25 000	P 50 000	P 80 000
178 (8) (g)	P 25 000	P 50 000	P 80 000
178 (8) (h)	P 35 000	P 60 000	P 100 000
178 (8) (i)	P 25 000	P 50 000	P 120 000
178 (8) (j)	P 15,000	P 30,000	P 80 000

MADE this 27th day of May, 2022.

ERIC M. MOLALE,
Minister of Transport and Public Works.