

**AIR NAVIGATION ACT
(CHAPTER 6, SECTION 3)**

**AIR NAVIGATION ORDER
(1990 Edition)**

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PART I : PRELIMINARY

1. Citation.

This Order may be cited as the Air Navigation Order.

2. Definitions.

(1) In this Order, unless the context otherwise requires —

“accredited medical conclusion” means the conclusion reached by one or more medical experts acceptable to the Chief Executive for the purposes of the case concerned, in consultation with flight operations experts or other experts if necessary;

“advisory airspace” means an airspace of defined dimensions, or a designated route, within which air traffic advisory service is available;

“aerial work” means an aircraft operation in which an aircraft is used for specialised services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, and aerial advertisement;

“aerial work aircraft” means an aircraft (other than a public transport aircraft) flying, or intended by the operator to fly, for the purpose of aerial work;

“aerial work undertaking” means an undertaking whose business includes the performance of aerial work;

“aerobatic manoeuvres” includes loops, spins, rolls, bunts, stall turns, inverted flying and any other similar manoeuvre;

“aerodrome” means a defined area on land (including any building, installation and equipment) used or intended to be used, either wholly or in part, for the arrival, departure and surface movement of aircraft;

“aerodrome certificate” means a certificate granted by the Chief Executive under paragraph 67 to a person to operate an aerodrome, subsequent to the acceptance of the aerodrome manual;

“aerodrome control service” means air traffic control service for aerodrome traffic;

“aerodrome control tower” means a unit established to provide air traffic control service to aerodrome traffic;

“aerodrome facility and equipment” means the facility and equipment, inside or outside the boundaries of an aerodrome, that is constructed, or installed, and maintained for the arrival, departure and surface movement of aircraft, and “aerodrome facility, equipment” and “aerodrome facility or equipment” shall be construed accordingly;

“aerodrome manual” means the manual forming part of the application for an aerodrome certificate under this Order and includes any amendments thereto made in accordance with this Order;

“aerodrome operator”, in relation to a certified aerodrome, means the holder of an aerodrome certificate;

“aerodrome traffic” means all traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome;

“aerodrome traffic zone”, in relation to any aerodrome, means defined airspace, which is notified, around an aerodrome for the protection of aerodrome traffic;

“Aeronautical Information Circular” means a notice containing information which relates to flight safety, air navigation, technical, administrative or legislative matters;

“Aeronautical Information Publication” means a publication issued by and with the authority of the Aeronautical Information Services provider and containing aeronautical information of a lasting character essential to air navigation;

“Aeronautical Information Services” means the services established within the defined area of coverage for the provision of aeronautical information and data necessary for the safety, regularity and efficiency of air navigation and, where appropriate, includes the personnel and facilities employed to provide information pertaining to the availability of air navigation services and their associated procedures necessary for the safety, regularity and efficiency of air navigation;

“aeronautical light” means any light established for the purpose of aiding air navigation;

“aeronautical radio station” means a radio station on the surface which transmits or receives signals for the purpose of assisting aircraft;

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

“AIP Amendment” means permanent changes to the information contained in the Aeronautical Information Publication;

“AIP Supplement” means temporary changes, published by means of special pages, to the information contained in the Aeronautical Information Publication;

“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;

“aircraft component” means —

- (a) an aircraft engine;
- (b) an aircraft propeller; or
- (c) any part or equipment of an aircraft, being a part or an equipment fitted to or provided in an aircraft, and includes an assembly of aircraft parts or equipment;

“aircraft material” means a material (including a fluid) for use in the production, maintenance, servicing or operation of an aircraft or of an aircraft component, but does not include an aircraft component;

“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;

“Airworthiness Notice” means an Airworthiness Notice issued under paragraph 7(12);

“airworthy” means the status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation;

““Air Operator Certificate Requirements (AOCR)” means the Air Operator Certificate Requirements issued under paragraph 87(5);

“air traffic” means all aircraft in flight or operating on the manoeuvring area of an aerodrome;

“air traffic advisory service” means a service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on flight plans in accordance with Instrument Flight Rules;

“air traffic control clearance” means authorisation for an aircraft to proceed under conditions specified by an air traffic control unit;

“air traffic control service” means a service provided in accordance with this Order for the purpose of —

- (a) preventing any collision —
 - (i) between aircraft; and
 - (ii) between aircraft and any obstruction on the manoeuvring area; or
- (b) expediting and maintaining an orderly flow of air traffic;

“air traffic control unit” includes area control centre, approach control unit and aerodrome control tower;

“air traffic controller licence” means an air traffic controller licence granted or renewed under paragraph 62A (4);

“air traffic service” includes flight information service, alerting service, air traffic advisory service, air traffic control service, area control service, approach control service and aerodrome control service;

“air transport undertaking” means an undertaking whose business includes the carriage by air of passengers or cargo for hire or reward;

“alerting service” means a service provided to notify appropriate organisations regarding aircraft in need of search and rescue aid, and to assist such organisations as may be required;

“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 aeronautical radio station” means, in relation to an aircraft, an aeronautical radio station serving the area in which the aircraft is for the time being;

“apron” means a defined area, on a land aerodrome, intended to accommodate aircraft for the purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance;

“area control centre” means a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction;

“area control service” means air traffic control service for controlled flights in control areas;

“authorised person” means any person authorised by the Chief Executive either generally or in relation to a particular case or class of cases, and references to an authorised person include references to the holder for the time being of any office designated by the Chief Executive;

“basic instrument flight trainer” means a type of apparatus which is equipped with the appropriate instruments and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions;

“beneficial interests” means interests arising under contract and other equitable interests;

“cabin crew member” means a member of the crew who performs, in the interest of the safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but does not include a flight crew member;

“cargo” includes mail and animals;

“Certificate of Airworthiness” includes any validation thereof and any flight manual, performance schedule or other document, whatever its title, incorporated by reference in that certificate relating to the Certificate of Airworthiness;

“certificate of maintenance review” means a certificate of maintenance review issued under paragraph 9;

“certificate of release to service” means a certificate that certifies —

- (a) that the part of the aircraft or its equipment has been overhauled, repaired, replaced, modified or maintained, as the case may be, in a manner and with material of a type approved by the Chief Executive either generally or in relation to a class of aircraft or the particular aircraft and which identifies the overhaul, repair, replacement, modification or maintenance to which it relates and includes particulars of the work done; or
- (b) in relation to an inspection required by the Chief Executive, that the inspection has been made in accordance with the requirements of the Chief Executive and that any consequential repair, replacement or modification has been carried out;

“certificated for single pilot operation”, when used in relation to an aircraft, means that the aircraft is a type of aircraft which the Chief Executive has determined as being capable of being operated safely with a minimum crew of one pilot;

“certified aerodrome” means an aerodrome whose operator has been granted an aerodrome certificate;

“Chief Executive” means the Chief Executive of the Authority appointed under section 11 of the Civil Aviation Authority of Singapore Act 2009 (Act 17 of 2009), and includes any person authorised by him to act on his behalf and any person acting in that capacity;

“competent authority” —

- (a) in relation to Singapore, means the Chief Executive; and
- (b) in relation to any other country, means the authority responsible under the law of that country for exercising the safety regulatory oversight of civil aviation;

“congested area” , in relation to a city, town or settlement, means any area which is substantially used for residential, industrial, commercial or recreational purposes;

“Contracting State” means any country (including Singapore) which is a party to the Chicago Convention;

“controlled airspace” means an airspace of defined dimensions within which 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;

“control area” means air space which has been notified as such and which extends upwards from a notified altitude;

“control zone” means any airspace which extends upwards from the surface of the earth to a specified upper limit as notified in the Aeronautical Information Publication;

“co-pilot” means a pilot serving in any piloting capacity other than as pilot-in-command, but does not include a pilot who is on board an aircraft for the sole purpose of receiving flight instruction;

“country” includes a territory;

“crew” means a member of the flight crew, a cabin crew member or a person carried on the aircraft who is appointed by the operator of the aircraft to give or to supervise the training, practice and periodical tests required in respect of the crew under paragraph 27(2);

“designated medical examiner” means a person who —

- (a) is qualified and licensed to practise medicine in Singapore or elsewhere;
- (b) has received training in the practice of aviation medicine and has demonstrated adequate competency in aviation medicine;
- (c) possesses the practical knowledge and experience of the aviation environment; and
- (d) is approved by the Chief Executive to conduct a medical examination of and report on the fitness of an applicant for a licence or rating for which medical requirements are prescribed in the Fourteenth Schedule;

“ELT” means an emergency locator transmitter which —

- (a) broadcasts distinctive signals on designated frequencies and, depending on application, may either operate automatically following a crash or be manually activated; and
- (b) satisfies the requirements and operates in accordance with the provisions of Annex 10 to the Convention;

“engine” means a unit which is used or intended to be used for aircraft propulsion and which consists of at least those components and equipment necessary for functioning and control, but excludes the propeller or rotors (if applicable);

“equivalent release document” means a document issued in accordance with the regulations of a foreign civil aviation authority and accepted by the Chief Executive as equivalent to a certificate of release to service;

“evaluating medical examiner” means a person who —

- (a) is qualified and licensed to practise medicine in Singapore or elsewhere;
- (b) is trained and experienced in the practice of aviation medicine;
- (c) possesses the practical knowledge and experience of the conditions in which the holder of a licence carries out the functions to which his licence relates; and
- (d) is approved by the Chief Executive to assess the medical fitness of an applicant under the Fourteenth Schedule based on evaluating the report of the designated medical examiner and such other assessments as the evaluating medical examiner may deem necessary;

“flight” and “to fly” have the meanings respectively assigned to them by sub-paragraph (2);

“flight crew” means a crew member, including the pilot, flight engineer, flight navigator and flight radio operator, who is charged with duties essential to the operation of an aircraft during a flight duty period;;

“flight despatcher” means a person designated by the operator of an aircraft to —

- (a) engage in the control and supervision of flight operations while acting as a close link between the aircraft in flight and the ground services, and between the flight crew and the operator's ground staff; and
 - (b) provide support, briefing or assistance to the pilot-in-command in the safe conduct of the flight, including pre-flight preparation for the despatch release,
- and includes a flight operations officer;

“flight information centre” means a unit established to provide flight information service and alerting service;

“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 air traffic services units relating to an intended flight or portion of a flight of an aircraft;

“flight procedures trainer” means a type of apparatus which provides a realistic flight deck environment and which simulates instrument responses, simple control functions of the mechanical, electrical, electronic and other aircraft systems and the performance and flight characteristics of aircraft of a particular class;

“flight recorder” means any type of recorder installed in an aircraft for the purpose of complementing an investigation into an accident or incident;

“flight simulation training device” means an apparatus in which flight conditions are simulated on the ground and includes a flight simulator, a flight procedures trainer and a basic instrument flight trainer;

“flight simulator” means a type of apparatus that provides an accurate representation of a flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic and other aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that aircraft type are realistically simulated;

“flight visibility” means the visibility forward from the flight deck of an aircraft in flight;

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

“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;

“Instrument Flight Rules” means Instrument Flight Rules contained in Part I of the Eleventh Schedule;

“Instrument Meteorological Conditions” means meteorological conditions expressed in terms of visibility, distance from cloud and ceiling, less than the minima specified for visual meteorological conditions;

“to land” in relation to aircraft includes to alight on water;

“legal personal representative” means an executor, administrator or other representative of a deceased person;

“licence” includes any certificate of competency or certificate of validity issued with the licence or required to be held in connection with the licence by the law of the country in which the licence is granted;

“lifejacket” includes any device designed to support a person individually in or on water;

“log book” , in the case of an aircraft log book, engine log book or variable pitch propeller log book includes a record kept either in a book or by any other means approved by the Chief Executive in any particular case;

“maintenance” means the performance of tasks required to ensure the continued airworthiness of an aircraft, including any one, or combination of, the following:

- (a) overhaul;
- (b) inspection;
- (c) replacement;
- (d) defect rectification;
- (e) the embodiment of a modification or repair;

“maintenance schedule” means a document which describes the specific scheduled maintenance tasks and their frequency of completion necessary for the safe operation of those aircraft to which it applies;

“manoeuvring area” means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, but does not include aprons;

“Manual of Aerodrome Standards” means the Manual of Aerodrome Standards published by the Chief Executive under paragraph 67B;

“maximum total weight authorised” , in relation to an aircraft, means the maximum total weight of the aircraft and its contents at which the aircraft may take off anywhere in the world in the most favourable circumstances in accordance with the Certificate of Airworthiness in force in respect of the aircraft;

“military aircraft” includes the naval, military or air force aircraft of any country;

“modification”, in relation to an aircraft or aircraft component, means the alteration of the aircraft or aircraft component to conform to the approved standard for that aircraft or aircraft component as notified in the Singapore Airworthiness Requirements (SAR), and “modified” shall be construed accordingly;

“movement area” means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the aprons;

“nautical mile” means the International Nautical Mile which is a distance of 1,852 metres;

“night” means the time between 20 minutes after sunset and 20 minutes before sunrise, sunset and sunrise being determined at surface level;

“Notam” or “Notice to Airmen” means a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service or procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations;

“notified” means —

- (a) shown in any official publications issued by the Chief Executive for the purpose of enabling any of the provisions of this Order to be complied with, such as but not limited to —
 - (i) Advisory Circulars (AC);
 - (ii) Airworthiness Notices;
 - (iii) Air Operator Certificate Requirements (AOCR);
 - (iv) Manual of Aerodrome Standards (MOAS);
 - (v) Manual of Standards – Licensing of Air Traffic Control Personnel (MOS-PEL);
 - (vi) Manual of Standards – Units of Measurement to be used in Air and Ground Operations (MOS-UOM);
 - (vii) Singapore Air Safety Publications (SASP);
 - (viii) Singapore Airworthiness Requirements (SAR); or
 - (ix) Singapore General Aviation Requirements (SGAR); or

- (b) shown in any publications issued by the Aeronautical Information Services provider such as but not limited to —
 - (i) Aeronautical Information Circulars (AIC);
 - (ii) Aeronautical Information Publications (AIP); or
 - (iii) Notams (Notices to Airmen);

“obstacle” means any fixed (whether temporary or permanent) or mobile object or part thereof—

- (a) which is located in an area intended for the surface movement of aircraft; or
- (b) which extends above a defined surface intended to protect aircraft in flight;

“obstacle limitation surfaces” means a series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacles in order to permit the intended aircraft operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around the aerodrome;

“operator” has the meaning assigned to it by sub-paragraph (3);

“overhaul”, in relation to an aircraft component, means a process that ensures that the aircraft component is in complete conformity with all the applicable service tolerances specified in the type certificate holder’s or aircraft component manufacturer’s instructions for continued airworthiness, or in data which is approved or accepted by the competent authority and includes at least the disassembly, cleaning, inspection, necessary repairs, reassembly and testing of the aircraft component in accordance with such specified data;

“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;

“Pre-flight Information Bulletin” means a presentation of current Notam information of operational significance, prepared prior to flight;

“pressurised aircraft” means an aircraft provided with means of maintaining in any compartment thereof a pressure greater than that of the surrounding atmosphere;

“problematic use of psychoactive substances” means the use of one or more psychoactive substances in a way that —

- (a) constitutes a direct hazard to the user or endangers the lives, health or welfare of any other person; or
- (b) causes or worsens an occupational, social, mental or physical problem or disorder suffered by the user;

“production” means the performance of tasks required for the manufacture or assembly of aircraft, aircraft components, aircraft materials or part thereof;

“psychoactive substances” means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens and volatile solvents, but excludes coffee and tobacco;

“public transport” has the meaning assigned to it by sub-paragraph (4);

“public transport aircraft” means an aircraft flying or intended by the operator of the aircraft to fly, for the purpose of public transport;

“public transport of passengers” means transport of passengers which is public transport by virtue of sub-paragraph (4) (a) (i) or (ii);

“rating”, in relation to a licence issued under paragraph 11, 20 or 62A, means an authorisation entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence;

“repair” means the restoration of an aeronautical product to an airworthy condition to ensure that the aircraft continues to comply with design aspects of the appropriate airworthiness requirements used for the issuance of the type certificate of the respective aircraft type, after it has been damaged or subject to wear;

“replacement”, in relation to any part of any aircraft or its equipment, includes the removal and replacement of that part whether or not by the same part, and whether or not any work is done on it,

but does not include the removal and replacement of a part which is designed to be removable solely for the purpose of enabling another part to be inspected, repaired, removed or replaced or cargo to be loaded;

“required navigation performance” or “RNP” means a statement of the navigation performance necessary for operation within a defined airspace;

“RNP type” means a containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time;

“Rules of the Air” means the Rules of the Air contained in the Eleventh Schedule;

“runway strip” means a defined area, including the runway and stopway if provided, that is intended —

- (a) to reduce the risk of damage to aircraft running off a runway; and
- (b) to protect aircraft flying over the area during take-off or landing operations;

“scheduled journey” means one of a series of journeys which are undertaken between the same two places and together amount to a systematic service;

“Singapore Air Safety Publication (SASP)” means the Singapore Air Safety Publication issued under paragraph 20;

“Singapore aircraft” means an aircraft which is registered in the Republic of Singapore;

“Singapore Airworthiness Requirements (SAR)” means the Singapore Airworthiness Requirements issued under paragraph 17A;

“special VFR flight” means a flight which is a special VFR flight for the purposes of the rules prescribed under paragraph 62 (1);

“State of registry” means the State on whose register the aircraft is entered;

“State of the operator” means the State in which the operator of an aircraft has his principal place of business or, if he has no such place of business, his permanent residence;

“survival ELT” means an ELT which is removable from an aircraft, stowed as to facilitate its ready use in an emergency, and capable of being manually activated;

“taxiing” means the movement of an aircraft on the surface of an aerodrome under its own power, but does not include take-off and landing;

“Visual Flight Rules” means the Visual Flight Rules contained in Part I of the Eleventh Schedule;

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

(2) An aircraft shall be deemed to be in flight —

- (a) in the case of an aeroplane, a pilotless flying machine or glider (whether being towed or not), from the moment it first moves for the purpose of taking off until the moment when it finally comes to rest after landing at the end of the flight;
- (b) in the case of a helicopter or gyroplane, from the moment its rotor blades start turning until the moment when it finally comes to rest after landing at the end of the flight, and the rotor blades are stopped;
- (c) in the case of an airship or free balloon, from the moment when it first becomes detached from the surface until the moment when it next becomes attached thereto or comes to rest thereon,

and the expressions “a flight”, “to fly” and “flight time” shall be construed accordingly.

(3) For the purposes of the application of any provision of this Order in relation to any particular aircraft, “operator” means the person who, or organisation or enterprise which, at the relevant time is engaged in or offering to engage in an aircraft operation, except in the following cases:

- (a) where there is an agreement for the charter, hire, lease or loan of an aircraft by one person (the first-mentioned person) to another person, other than an air transport undertaking or an aerial work undertaking for a period not exceeding 14 days, the first-mentioned person shall be deemed to be the operator for the purposes of the application of any provision in Part III;

- (b) where the aircraft, being a Singapore aircraft, is used in any general aviation operation, the owner of the aircraft shall be deemed to be the operator of that aircraft unless the owner has informed the Chief Executive in a manner specified by the Chief Executive that he is not the person who is engaged in that operation; and
- (c) where the aircraft is not used in any aircraft operation, the person who owns or whose management or control the aircraft is in shall be deemed to be the operator.

(4)

- (a) Subject to this paragraph, an aircraft in flight shall for the purposes of this Order be deemed to fly for the purpose of public transport —
 - (i) if hire or reward is given or promised for the carriage of passengers or cargo in the aircraft on that flight; or
 - (ii) if any passengers or cargo are carried gratuitously in the aircraft on that flight by an air transport undertaking, not being persons in the employment of the undertaking (including its directors in the case of a body corporate), persons with the authority of the Chief Executive either making any inspection or witnessing any training, practice or test for the purposes of this Order, or a cargo intended to be used by any such passengers as aforesaid, or by the undertaking; or
 - (iii) for the purposes of Part III if hire or reward is given or promised for the right to fly the aircraft on that flight otherwise than under a hire purchase agreement.
- (b) Where under a transaction effected by or on behalf of a member of an unincorporated association of persons on the one hand and the association of persons or any member thereof on the other hand, a person is carried in, or is given the right to fly, an aircraft in such circumstances that hire or reward would be deemed to be given or promised if the transaction were effected otherwise than as aforesaid, hire or reward, shall, for the purposes of this Order, be deemed to be given.

(5) The expressions appearing in the “Table of General Classification of Aircraft” set out in Part A of the First Schedule shall have the meanings thereby assigned to them.

(6) For the purpose of paragraphs 6(1), 13(1), 19(2)(a) and 35(1), the reference to law of the State of the operator shall apply where —

- (a) that aircraft is registered in a Contracting State other than the State of the operator;
- (b) the operator is operating that aircraft pursuant to an agreement for its lease, charter or interchange or any similar arrangement;
- (c) the State in which that aircraft is registered has, by agreement with the State of the operator, agreed to transfer to the State of the operator its functions and duties as State of registry in respect of that aircraft in relation to any one or more of the following matters:
 - (i) in the case of paragraph 6(1), airworthiness;
 - (ii) in the case of paragraph 13 (1), aircraft radio and radio navigation equipment;
 - (iii) in the case of paragraph 19(2)(a), flight crew licensing; or
 - (iv) in the case of paragraph 35(1), radio licensing; and
- (d) the agreement has been registered with the Council of the International Civil Aviation Organisation or the existence and scope of the agreement have been directly communicated to the Authority.

(7) For the purposes of paragraphs 67 (4) (e), 67F and 67G (1) and the Eighteenth Schedule, “safety management system” means a system for the management of safety at aerodromes, including the organizational structure, responsibilities, procedures, processes and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for the control of safety at, and the safe use of, the aerodrome.

- (8) In this Order, any reference to acting as an air traffic controller shall be read as providing or supervising the provision of aerodrome control service, approach control service or area control service.

PART II : REGISTRATION AND MARKING OF AIRCRAFT

3. Aircraft to be registered.

- (1) An aircraft shall not fly in Singapore unless it is registered in —
- (a) Singapore; or
 - (b) a Contracting State; or
 - (c) some other State in relation to which there is in force an agreement between the Government and the government of that State which makes provision for the flight in Singapore of aircraft registered in that State:
- Provided that —
- (i) any aircraft may fly unregistered on any flight which —
 - (a) begins and ends in Singapore without passing over any other State; and
 - (b) is in accordance with the “B Conditions” set out in the Second Schedule;
 - (c) is in accordance with the conditions of a permit to fly issued by the Chief Executive in respect of that aircraft;
 - (ii) this paragraph shall not apply to any kite or captive balloon.
- (2) The Chief Executive may, in such special circumstances and subject to such conditions or limitations as he may think fit, exempt temporarily from sub-paragraph (1) an aircraft registered elsewhere.
- (3) If an aircraft flies in Singapore in contravention of sub-paragraph (1) in such manner or circumstances that if the aircraft had been registered in Singapore an offence against this Order or against other subsidiary legislation made under the Act would have been committed, the like offence shall be deemed to have been committed in respect of that aircraft.

4. Registration of aircraft in Singapore.

- (1) The Chief Executive shall be the authority for the registration of aircraft in Singapore.
- (2) Subject to this paragraph, an aircraft shall not be registered or continue to be registered in Singapore if it appears to the Chief Executive that —
- (a) the aircraft is registered outside Singapore and that such registration does not cease by operation of law upon the aircraft being registered in Singapore;
 - (b) an unqualified person is entitled as owner to any legal or beneficial interest in the aircraft or any share therein; or
 - (c) it would be inexpedient in the public interest for the aircraft to be or to continue to be registered in Singapore.
- (3) The following persons and no other shall be qualified to be the owner of a legal or beneficial interest in an aircraft registered in Singapore or a share therein:
- (a) the Government;
 - (b) citizens of Singapore;
 - (c) citizens of any Commonwealth country; and
 - (d) bodies incorporated in Singapore or in some part of the Commonwealth and having their principal place of business in some part of the Commonwealth.

- (4) If an unqualified person residing or having a place of business in Singapore is entitled as owner to a legal or beneficial interest in an aircraft, or a share therein, the Chief Executive, upon being satisfied that the aircraft may otherwise be properly so registered, may register the aircraft in Singapore. The person aforesaid shall not cause or permit the aircraft, while it is registered in pursuance of this sub-paragraph, to be used for the purpose of public transport or aerial work.
- (5) If an aircraft is chartered by demise to a person qualified as aforesaid the Chief Executive may, whether or not an unqualified person is entitled as owner to a legal or beneficial interest therein, register the aircraft in Singapore in the name of the charterer upon being satisfied that the aircraft may otherwise be properly so registered, and subject to this paragraph the aircraft may remain so registered during the continuation of the charter.
- (6) Application for the registration of an aircraft in Singapore shall be made in writing to the Chief Executive, and shall include or be accompanied by such particulars and evidence relating to the aircraft and the ownership and chartering thereof as he may require to enable him to determine whether the aircraft may properly be registered in Singapore and to issue the certificate referred to in sub-paragraph (8). In particular, the application shall include the proper description of the aircraft according to column 4 of the "Table of General Classification of Aircraft" set out in Part A of the First Schedule.
- (7) Upon receiving an application for the registration of an aircraft in Singapore and being satisfied that the aircraft may properly be so registered, the Chief Executive shall register the aircraft, wherever it may be, and shall include in the register the following particulars:
- (a) the number of the certificate;
 - (b) the nationality mark of the aircraft, and the registration mark assigned to it by the Chief Executive;
 - (c) the name of the constructor of the aircraft and its designation;
 - (d) the serial number of the aircraft;
 - (e)
 - (i) the name and address of every person who is entitled as owner to a legal interest in the aircraft or a share therein and in the case of an aircraft which is the subject of a hire-purchase agreement the name and address of the hirer; or
 - (ii) in the case of an aircraft registered in pursuance of sub-paragraph (4) or (5) an indication that it is so registered.
- (8) The Chief Executive shall furnish to the person or persons in whose name the aircraft is registered (referred to in this Order as the registered owner) a certificate of registration, which shall include the foregoing particulars and the date on which the certificate was issued:
- Provided that the Chief Executive shall not be required to furnish a certificate of registration if the registered owner —
- (a) is the holder of an aircraft dealer's certificate granted under sub-paragraph (9);
 - (b) has made to the Chief Executive and has not withdrawn a statement of his intention that the aircraft is to fly only in accordance with the "C Conditions" set out in the Second Schedule; and
 - (c) shall use the aircraft only in accordance with the "C Conditions" set out in the Second Schedule.
- (9) The Chief Executive may grant to any person an aircraft dealer's certificate if he is satisfied that he is a person carrying on in Singapore the business of buying and selling aircraft.
- (10) Subject to sub-paragraphs (4) and (5), if at any time after an aircraft has been registered in Singapore an unqualified person becomes entitled as owner to a legal or beneficial interest in the aircraft or a share therein, the registration of the aircraft shall thereupon become void and the certificate of registration shall forthwith be returned by the registered owner to the Chief Executive for cancellation.

- (11) Any person who is registered as the owner of an aircraft registered in Singapore shall forthwith inform the Chief Executive in writing of —
- (a) any change in the particulars which were furnished to the Chief Executive upon application being made for the registration of the aircraft;
 - (b) the destruction of the aircraft, or its permanent withdrawal from use; or
 - (c) in the case of an aircraft registered in pursuance of sub-paragraph (5) the termination of the demise charter.
- (12) Any person who becomes the owner of an aircraft registered in Singapore shall forthwith inform the Chief Executive in writing to that effect.
- (13) The Chief Executive may, whenever it appears necessary or appropriate to do so for giving effect to this Part or for bringing up to date or otherwise correcting the particulars entered in the register, amend the register or, if he thinks fit, may cancel the registration of the aircraft, and shall cancel that registration if he is satisfied that there has been a change in the ownership of the aircraft.
- (14) The Chief Executive may, by regulations, adapt or modify sub-paragraphs (1) to (13) as he considers necessary or expedient for the purpose of providing for the temporary transfer of aircraft to or from the Singapore register, either generally or in relation to a particular case or class of cases.
- (15) In this paragraph references to an interest in an aircraft do not include references to an interest in an aircraft to which a person is entitled only by virtue of his membership of a flying club, and the reference in sub-paragraph (11) to the registered owner of an aircraft includes, in the case of a deceased person, his personal representative, and in the case of a body corporate which has been dissolved, its successor.
- (16) Nothing in this paragraph shall require the Chief Executive to cancel the registration of an aircraft if in his opinion it would be inexpedient in the public interest to do so.

5. Nationality and registration marks.

- (1) An aircraft (other than an aircraft permitted by or under this Order to fly without being registered) shall not fly unless it bears painted thereon or affixed thereto, in the manner required by the law of the country in which it is registered, the nationality and registration marks required by that law.
- (2) The marks to be borne by aircraft registered in Singapore shall comply with Part B of the First Schedule.
- (3) An aircraft shall not bear any marks which purport to indicate —
- (a) that the aircraft is registered in a country in which it is not in fact registered except that marks approved by the Chief Executive for the purposes of flight in accordance with the “B Conditions” set out in the Second Schedule shall be deemed not to indicate that the aircraft is so registered; or
 - (b) that the aircraft is a State aircraft of a particular country if it is not in fact such an aircraft, unless the appropriate authority of that country has sanctioned the bearing of such marks.

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PART III : AIRWORTHINESS AND EQUIPMENT OF AIRCRAFT

6. Certificate of Airworthiness to be in force.

- (1) An aircraft shall not fly unless there is in force in respect thereof a Certificate of Airworthiness duly issued or rendered valid under the law of the country in which the aircraft is registered or under the law of the State of the operator, and any conditions subject to which the certificate was issued or rendered valid are complied with:

Provided that the foregoing prohibition shall not apply to —

- (i) any flight —
 - (a) beginning and ending in Singapore without passing over any other country, of a Singapore aircraft flying in accordance with the “A Conditions” or the “B Conditions” set out in the Second Schedule;
 - (aa) of an aircraft flying in accordance with the ferry flight authorisation contained in or attached to the operations specifications of an air operator certificate granted under paragraph 87; or
 - (b) of an aircraft flying in Singapore in accordance with the conditions of a permit to fly issued by the Chief Executive in respect of that aircraft;
 - (ii) any kite or captive balloon.
- (2) In the case of Singapore aircraft the Certificate of Airworthiness referred to in sub-paragraph (1) shall be a certificate issued or rendered valid in accordance with paragraph 7.

7. Issue and renewal of Certificates of Airworthiness.

- (1) The Chief Executive may issue in respect of any aircraft a Certificate of Airworthiness if he is satisfied that the aircraft is fit to fly having regard to —
- (a) the design, construction, workmanship and materials of the aircraft (including in particular any engines fitted therein), and of any equipment carried in the aircraft which he considers necessary for the airworthiness of the aircraft;
 - (b) the results of flying trials, and such other tests of the aircraft as he may require; and
 - (c) its compliance with the requirements contained in all Airworthiness Notices:

Provided that, if the Chief Executive has issued a Certificate of Airworthiness in respect of an aircraft which, in his opinion, is a prototype aircraft or a modification of a prototype aircraft, he may dispense with flying trials in the case of any other aircraft if he is satisfied that it conforms to such prototype or modification.

- (2) Every Certificate of Airworthiness shall specify such categories as are, in the opinion of the Chief Executive, appropriate to the aircraft in accordance with the Third Schedule and the certificate shall be issued subject to the condition that the aircraft shall be flown only for the purpose indicated in the said Schedule in relation to those categories.
- (3) - *deleted* -
- (4) Where an aircraft is classified in its Certificate of Airworthiness as being under the Special Category, the purpose for which the aircraft is used shall also be specified in its Certificate of Airworthiness.

- (5) The Chief Executive may issue the Certificate of Airworthiness subject to such other conditions relating to the airworthiness of the aircraft as he thinks fit.
- (6) The Certificate of Airworthiness may designate the performance group to which the aircraft belongs for the purposes of the requirements referred to in paragraph 29 (1).
- (7) The Chief Executive may, subject to such conditions as he thinks fit, issue a certificate of validation rendering valid for the purposes of this Order a Certificate of Airworthiness issued in respect of any aircraft under the law of any country other than Singapore.
- (8) Subject to this paragraph and paragraph 60, a Certificate of Airworthiness or validation issued under this paragraph shall remain in force for such period as may be specified therein, and may be renewed from time to time by the Chief Executive for such further period as he thinks fit.
- (9) A Certificate of Airworthiness or a certificate of validation issued in respect of an aircraft shall cease to be in force —
 - (a) if the aircraft, or such of its equipment as is necessary for the airworthiness of the aircraft is overhauled, repaired or modified, or if any part of the aircraft or of such equipment is removed or is replaced, otherwise than in a manner and with material of a type approved by the Chief Executive either generally or in relation to a class of aircraft or to the particular aircraft;
 - (b) from the time an inspection is required by the Chief Executive to be made for the purpose of ascertaining whether the aircraft remains airworthy until the completion of that inspection of the aircraft or of any such equipment;
 - (c) from the time a modification is required by the Chief Executive for the purpose of ensuring that the aircraft remains airworthy until the completion to the satisfaction of the Chief Executive of that modification of the aircraft or of any such equipment; or
 - (d) if the aircraft, or such of its equipment as is necessary for the airworthiness of the aircraft, is not in compliance with the requirements contained in all Airworthiness Notices.
- (10) The Chief Executive shall not be required by reason of this Order to accept an application for the issue of a Certificate of Airworthiness or a certificate of validation or for the variation or renewal of any such certificate when the application is not supported by reports from such approved persons as the Chief Executive may specify (either generally or in a particular case or class of cases).
- (11) The Chief Executive shall cause to be prepared and preserved in relation to each Singapore aircraft a record enabling the aircraft (including in particular its engines) and such of its equipment as he may have considered necessary for the airworthiness of the aircraft in issuing, varying or rendering valid a Certificate of Airworthiness, to be identified with the drawings and other documents on the basis of which the certificate was issued, varied or rendered valid as the case may be. All equipment so identified shall for the purpose of this Order be deemed to be equipment necessary for the airworthiness of the aircraft. The Chief Executive shall cause such record to be produced for examination upon request being made therefor at any reasonable time by any person having, in the opinion of the Chief Executive, reasonable grounds for requiring to examine it.
- (12) The Chief Executive may, from time to time, issue an Airworthiness Notice stipulating the requirements that must be complied with in relation to the airworthiness of any aircraft or type of aircraft.
- (13) Subject to sub-paragraph (14), any applicant for and any holder of a Certificate of Airworthiness issued under this paragraph shall comply with any Airworthiness Notice issued by the Chief Executive under this paragraph.
- (14) The Chief Executive may, either generally or for such time as he may specify, waive the application of any Airworthiness Notice, or part thereof, issued under this paragraph, to any person referred to in sub-paragraph (13).

8. Approval or certificate for design, production or distribution of aircraft, aircraft components or aircraft materials.

- (1) No person shall engage in any stage of design, production or distribution of —
- (a) Singapore aircraft;
 - (b) aircraft components fitted or to be fitted to or provided or to be provided in a Singapore aircraft; or
 - (c) aircraft materials for use in the production, maintenance, servicing or operation of a Singapore aircraft or an aircraft component of a Singapore aircraft,
- unless he has obtained from the Chief Executive a certificate or other form of written approval in respect of the design, production or distribution of the aircraft, aircraft component or aircraft material, or the Chief Executive determines that no certificate or approval is required, either generally or in a particular case.
- (2) Any person engaged or intending to engage in any stage of design, production or distribution of any other aircraft, aircraft component or aircraft material may apply to the Chief Executive for a certificate or other form of written approval in respect of the design, production or distribution of that other aircraft, aircraft component or aircraft material.
- (3) The Chief Executive may, subject to such conditions as he thinks fit, issue a certificate or other form of written approval under this paragraph to an applicant who has —
- (a) made his application in such form and manner and provided such information as may be specified in the Singapore Airworthiness Requirements (SAR);
 - (b) furnished such other information as the Chief Executive may require; and
 - (c) satisfied the Chief Executive that —
 - (i) he is, or will be, able to carry out the design, production or distribution to which the application relates in a satisfactory manner; and
 - (ii) where the application relates to design, the design complies with the appropriate airworthiness requirements specified in the Singapore Airworthiness Requirements (SAR).
- (4) An authorised person may, at any time, for the purpose of ascertaining whether the design, production or distribution to which an application, a certificate or an approval relates is being, or will be, carried on in a satisfactory manner or for any other purpose —
- (a) inspect any aircraft, aircraft component or aircraft material;
 - (b) inspect any process or system carried on by, any record maintained by or any document in the possession of, the applicant or holder of the certificate or approval in connection with the activities to which the certificate or approval relates;
 - (c) conduct any test or evaluation that the authorised person considers necessary; and
 - (d) require the applicant or holder of the certificate or approval to furnish to the authorised person such evidence as the authorised person may require of —
 - (i) the qualifications and competence of the applicant or holder or of the employees of the applicant or holder;
 - (ii) the facilities, including suppliers' facilities, at the disposal of the applicant or holder; or
 - (iii) design data, documents or reports in connection with the activities to which the certificate or approval relates.

- (5) The costs of any inspection, testing or examination under sub-paragraph (4), including the manpower cost of \$90 per man-hour, shall be borne by the applicant for or holder of the certificate or approval, as the case may be.
- (6) The holder of a certificate or an approval under this paragraph shall, at all times, comply with the conditions contained in such certificate or approval.

8A. Certificate or other approval for maintenance of aircraft or aircraft components.

- (1) No person shall engage in the maintenance of —
 - (a) a Singapore aircraft; or
 - (b) any aircraft component fitted or to be fitted to a Singapore aircraft,unless he has obtained from the Chief Executive a certificate or other form of written approval in respect of the maintenance of the aircraft or aircraft component, or unless the Chief Executive has notified that no certificate or approval is required, either generally or in a particular case.
- (2) The Chief Executive may, subject to such conditions as he thinks fit, issue a certificate or other form of written approval under this paragraph to an applicant therefor who has —
 - (a) made his application in such form and manner, and provided such information, as may be specified in the Singapore Airworthiness Requirements (SAR);
 - (b) furnished with his application such other information as the Chief Executive may require; and
 - (c) satisfied the Chief Executive that he is, or will be, able to carry out the maintenance to which the application relates in a satisfactory manner in accordance with the Singapore Airworthiness Requirements (SAR).
- (3) The Chief Executive may, at any time, for the purpose of ascertaining whether the maintenance of a Singapore aircraft or any aircraft component fitted or to be fitted thereto is being or will be carried on in a satisfactory manner —
 - (a) inspect the aircraft or aircraft component that is being or that is to be maintained, or any other relevant aircraft material;
 - (b) inspect any process or system carried on by, any record maintained by or any document in the possession of, the person carrying out or who intends to carry out the maintenance of such Singapore aircraft or aircraft component;
 - (c) require the applicant or holder of the certificate or approval to furnish to the Chief Executive such evidence as he may require of —
 - (i) the qualifications and competence of the applicant for or holder of the certificate or approval or of the employees of the applicant for or holder of the certificate or approval;
 - (ii) the facilities, including suppliers' or sub-contractors' facilities, at the disposal of the applicant for or holder of the certificate or approval; or
 - (iii) the maintenance data, documents or reports in connection with the activities to which the certificate or approval relates.
- (4) The holder of a certificate or an approval issued under this paragraph shall, at all times, comply with the conditions contained in such certificate or approval.

9. Certification of maintenance review.

- (1) A Singapore aircraft in respect of which a Certificate of Airworthiness in the Transport or Aerial Work Category is in force shall not fly unless —
- (a) the aircraft (including in particular its engines), together with its equipment and radio station, is maintained in accordance with maintenance schedules approved by the Chief Executive in relation to that aircraft; and
 - (b) there is in force a certificate of maintenance review issued in accordance with this paragraph and such certificate shall certify the date on which the maintenance review was carried out and the date thereafter when the next review is due:

Provided that an aircraft may, notwithstanding that sub-paragraphs (1) (a) and (b) have not been complied with in relation to the radio station therein, fly for the sole purpose of enabling persons to be trained to perform duties in aircraft.

- (2) The approved maintenance schedule referred to in sub-paragraph (1) (a) shall specify the occasions on which a review must be carried out for the purpose of issuing a certificate of maintenance review.
- (3) A certificate of maintenance review may be issued for the purposes of this paragraph only by —
- (a) the holder of an aircraft maintenance licence granted under paragraph 11, in accordance with the privileges of the rating endorsed on the licence as specified in the Singapore Airworthiness Requirements (SAR);
 - (b) the holder of an aircraft maintenance licence granted under the law of any country other than Singapore and rendered valid under this Order, in accordance with the privileges of the rating endorsed thereon;
 - (c) the holder of an aircraft maintenance licence granted under the law of any country notified by the Chief Executive, in accordance with the privileges of the rating endorsed thereon and subject to any conditions that the Chief Executive may impose;
 - (d) a person whom the Chief Executive has authorised to issue a certificate of maintenance review in a particular case, and in accordance with that authority; or
 - (e) a person approved by the Chief Executive as being competent to issue such certificates, and in accordance with that approval:

Provided that, upon approving a maintenance schedule, the Chief Executive may direct that certificates of maintenance review relating to that schedule, or to any part thereof specified in his direction, may be issued only by the holder of such a licence as is so specified.

- (4) A person referred to in sub-paragraph (3) shall not issue a certificate of maintenance review unless he has first verified that —
- (a) maintenance has been carried out on the aircraft in accordance with the maintenance schedule approved for that aircraft;
 - (b) inspections and modifications required by the Chief Executive as provided in paragraph 7 have been completed as certified in the relevant certificate of release to service;
 - (c) defects entered in the technical log of the aircraft in accordance with sub-paragraphs (7) and (8) have been rectified or the rectification thereof has been deferred in accordance with procedures approved by the Chief Executive; and
 - (d) certificates of release to service have been issued in accordance with paragraph 10.
- (5) For the purpose of sub-paragraph (4), operator of the aircraft shall furnish all such information relating to all such matters as may be necessary for the person referred to in that sub-paragraph.
- (6) Certificate of maintenance review shall be issued in duplicate. One of the duplicates shall, during the period of validity of the certificate, be carried in the aircraft when paragraph 56 so requires, and the other shall be kept by the operator elsewhere than in the aircraft.

- (7) On the termination of every flight by a Singapore aircraft for any of the purposes specified in sub-paragraph (1), the pilot-in-command of the aircraft shall enter in a technical log —
 - (a) the times when the aircraft took off and landed;
 - (b) the particulars of any defect which are known to him and which affects the airworthiness or safe operation of the aircraft or if no defect is known to him, an entry to that effect; and
 - (c) such other particulars in respect of the airworthiness or operation of the aircraft as the Chief Executive may require.
- (8) Notwithstanding sub-paragraph (7), in the case of a number of consecutive flights each of which begins and ends —
 - (a) on the same day;
 - (b) at the same aerodrome; and
 - (c) with the same person as the pilot-in-command of the aircraft,the pilot-in-command of the aircraft may, except where he becomes aware of a defect during an earlier flight, make the entries referred to in sub-paragraph (7) in a technical log at the end of the last of such consecutive flights.
- (9) Upon the rectification of any defect which has been entered in a technical log in accordance with sub-paragraphs (7) and (8), a copy of the certificate of release to service required by paragraph 10 in respect of the work done for the rectification of the defect shall be entered in the technical log in such a position or manner as to be readily identifiable with the entry of the defect to which it relates.
- (10) The technical log referred to in sub-paragraphs (7), (8) and (9) shall be carried in the aircraft when paragraph 56 so requires and copies of the entries referred to in those sub-paragraphs shall be kept on the ground.
- (11) Subject to paragraph 59, every certificate of maintenance review shall be preserved by the operator of the aircraft for a period of two years following the expiry of the period of validity of the certificate and for such further period as the Chief Executive may require in any particular case.

10. Inspection, overhaul, repair, replacement and modification.

- (1) A Singapore aircraft, being an aircraft in respect of which a Certificate of Airworthiness issued or rendered valid under this Order is in force, shall not fly if any part of the aircraft or of such of its equipment as is necessary for the airworthiness of the aircraft, has been overhauled, repaired, replaced, modified or maintained, or has been inspected as provided in paragraph 7(9)(b), unless there is in force —
 - (a) a certificate of release to service issued in accordance with this paragraph; or
 - (b) an equivalent release document,relating to the overhaul, repair, replacement, modification, maintenance or inspection, as the case may be.
- (2) - deleted -
- (3) Neither —
 - (a) equipment provided in compliance with the Fifth Schedule (except paragraph 3 of the Fifth Schedule); nor
 - (b) in the case of a public transport aircraft, radio equipment provided for use therein or in any survival craft carried therein, whether or not such equipment is provided in compliance with this Order or any regulations made or any requirements notified thereunder,

shall be installed or placed on board for use in an aircraft after being overhauled, repaired, modified or inspected, unless there is in force in respect thereof at the time when it is installed or placed on board —

- (i) a certificate of release to service issued in accordance with this paragraph; or
- (ii) an equivalent release document,

relating to the overhaul, repair, modification or inspection, as the case may be.

- (4) A certificate of release to service may be issued for the purposes of this paragraph only by —
 - (a) the holder of an aircraft maintenance licence granted under paragraph 11, in accordance with the privileges of the rating endorsed on the licence as specified in the Singapore Airworthiness Requirements (SAR);
 - (b) the holder of an aircraft maintenance licence granted under the law of any country other than Singapore and rendered valid under this Order, in accordance with the privileges of the rating endorsed thereon;
 - (c) the holder of an aircraft maintenance licence granted under the law of any country notified by the Chief Executive, in accordance with the privileges of the rating endorsed thereon and subject to any conditions that he may impose;
 - (d) the holder of a certificate or a written approval issued by the Chief Executive in accordance with paragraph 8A;
 - (e) a person whom the Chief Executive has authorised to issue the certificate in a particular case; or
 - (f) in relation only to the adjustment and compensation of direct reading magnetic compasses, the holder of an Airline Transport Pilot's Licence (Aeroplanes) or a Flight Navigator's Licence.
- (5) Subject to paragraph 59, if the aircraft to which a certificate of release to service relates is a public transport aircraft or an aerial work aircraft, the certificate of release to service shall be preserved by the operator of the aircraft for the period of time for which he is required to preserve the log book relating to the same part of the aircraft or to the same equipment or apparatus as the case may be. In the case of any other aircraft the certificate shall be preserved by the operator of the aircraft for a period of two years.
- (6) In this paragraph, the word "repair" includes, in relation to a compass the adjustment and compensation thereof and the word "repaired" shall be construed accordingly.

11. Aircraft maintenance licence.

- (1) The Chief Executive may grant an aircraft maintenance licence (which may include a rating limiting the licence to any particular type of aircraft or equipment) for the purposes of this Order if he is satisfied that the applicant is a fit and proper person to hold the licence and is qualified by his knowledge and experience to do so.
- (2) For the purpose of this paragraph, the applicant shall furnish such evidence and undergo such examination and test as the Chief Executive may require.
- (3) An aircraft maintenance licence granted under sub-paragraph (1) shall, subject to any rating as aforesaid, entitle the holder of the licence to issue a certificate of maintenance review, a certificate of release to service or a certificate of fitness for flight in accordance with the privileges of the licence as specified in the Singapore Airworthiness Requirements (SAR).
- (4) An aircraft maintenance licence shall, subject to any rating as aforesaid and subject to the holder of the licence maintaining competency and meeting the requirements for recent experience as specified

in the Singapore Airworthiness Requirements (SAR), remain in force for the period specified in the licence, which period shall not exceed 24 months.

- (5) The Chief Executive may issue a certificate rendering valid for the purpose of this Order any aircraft maintenance licence granted under the law of any country other than Singapore, which certificate may be issued subject to such conditions and for such period as the Chief Executive thinks fit.
- (6) An aircraft maintenance licence granted under this paragraph shall not be valid unless it bears thereon the ordinary signature of the holder in ink.
- (7) A holder of an aircraft maintenance licence granted under sub-paragraph (1) shall not perform any function to which his licence relates if he is under the influence of any psychoactive substance which may render him unable to perform such function in a safe and proper manner.
- (8) A holder of an aircraft maintenance licence granted under sub-paragraph (1) shall not at any time engage in the problematic use of psychoactive substances.
- (9) The Chief Executive may, for the purpose of this paragraph and subject to such conditions as he thinks fit —
 - (a) approve any course of training or instruction;
 - (b) authorise a person to conduct any examination or test as the Chief Executive may specify; and
 - (c) approve a person to provide any course of training or instruction.

12. Equipment of aircraft.

- (1) An aircraft shall not fly unless it is so equipped with instruments and equipment as to comply with the law of the country in which it is registered, and to —
 - (a) enable the flight crew to control the flight path of the aircraft, carry out any required procedural manoeuvre, and observe the operating limitations of the aircraft in the expected operating conditions; and
 - (b) enable lights and markings to be displayed, and signals to be made, in accordance with this Order and any regulations made and requirements notified thereunder.
- (2) In the case of Singapore aircraft the equipment required to be provided (in addition to any other equipment required by or under this Order) shall be that specified in such parts of the Fifth Schedule as are applicable in the circumstances and shall comply with the provisions of that Schedule. The equipment, except that specified in paragraph 3 of the Schedule, shall be of a type approved by the Chief Executive either generally or in relation to a class of aircraft or in relation to that aircraft and shall be installed in a manner so approved.
- (3) In any particular case the Chief Executive may direct that a Singapore aircraft shall carry such additional or special equipment or supplies as he may specify for the purpose of facilitating the navigation of the aircraft, the carrying out of search and rescue operations, or the survival of the persons carried in the aircraft.
- (4) The equipment carried in compliance with this paragraph shall be so installed or stowed and kept stowed, and so maintained and adjusted, as to be readily accessible and capable of being used by the person for whose use it is intended.
- (5) The position of equipment provided for emergency use shall be indicated by clear markings in or on the aircraft. In particular in every public transport aircraft registered in Singapore there shall be —
 - (a) provided individually for each passenger; or

- (b) if the Chief Executive so permits in writing, exhibited in a prominent position in every passenger compartment,

a notice relevant to the aircraft in question containing pictorial —

- (i) instructions on the brace position to be adopted in the event of an emergency landing;
- (ii) instructions on the method of use of the safety belts and safety harnesses as appropriate;
- (iii) information as to where emergency exits are to be found and instructions as to how they are to be used; and
- (iv) information as to where the life-jackets, escape slides, life-rafts and oxygen masks, if required to be provided by sub-paragraph (2), are to be found and instructions as to how they are to be used.

- (6) All equipment installed or carried in an aircraft, whether or not in compliance with this paragraph, shall be so installed or stowed and kept stowed and so maintained and adjusted as not to be a source of danger in itself or to impair the airworthiness of the aircraft or the proper functioning of any equipment or services necessary for the safety of the aircraft.
- (7) Without prejudice to sub-paragraph (2), all navigational equipment (other than radio equipment) of any of the following types:
- (a) equipment capable of establishing the aircraft's position in relation to its position at some earlier time by computing and applying the resultant of the acceleration and gravitational forces acting upon it; and
 - (b) equipment capable of establishing automatically the altitude and relative bearing of selected celestial bodies,

when carried in a Singapore aircraft (whether or not in compliance with this Order or any of the regulations made thereunder) shall be of a type approved by the Chief Executive either generally or in relation to a class of aircraft or in relation to that aircraft and shall be installed in a manner so approved.

- (8) This paragraph shall not apply in relation to radio equipment except that specified in the Fifth Schedule.

13. Radio and radio navigation equipment of aircraft.

- (1) An aircraft shall not fly unless it is so equipped with radio and radio navigation equipment as to comply with the law of the country in which the aircraft is registered or with the law of the State of the operator and to enable communications to be made, and the aircraft to be navigated, in accordance with the provisions of this Order and any regulations made thereunder.
- (2) In the case of a Singapore aircraft, the aircraft shall be equipped with radio and radio navigation equipment in accordance with the Sixth Schedule.
- (2A) A Singapore aircraft operating under instrument flight rules shall not fly unless it is equipped with radio and radio navigation equipment to ensure that the failure of one item of such equipment at any stage of the flight does not prevent the aircraft from proceeding with the flight plan and in accordance with air traffic service requirements, including any additional requirements required to operate in the airspace specified in the Sixteenth Schedule, in defined portions of airspace or on routes where an RNP type has been notified, as the case may be.
- (3) In any particular case the Chief Executive may direct that a Singapore aircraft shall carry such additional or special radio equipment as he may specify for the purpose of facilitating the navigation of the aircraft, the carrying out of search and rescue operations or the survival of the persons carried in the aircraft.

- (4) The radio and radio navigation equipment provided in compliance with this paragraph shall always be maintained in serviceable condition.
- (5) All radio and radio navigation equipment installed in a Singapore aircraft, whether or not in compliance with this Order or any regulations made or requirements notified thereunder, shall be of a type approved by the Chief Executive as suitable for the purpose for which it is to be used, and shall be installed in a manner approved by the Chief Executive. Neither the equipment nor the manner in which it is installed shall be modified except with the approval of the Chief Executive.

14. Minimum equipment requirements.

- (1) The Chief Executive may, subject to such conditions as he thinks fit, grant in respect of any aircraft or class of aircraft registered in Singapore a permission permitting such aircraft to commence a flight in specified circumstances notwithstanding that any specified item of equipment (including radio and radio navigation equipment) required by or under this Order to be carried in the circumstances of the intended flight is not carried or is not in a fit condition for use.
- (2) An aircraft registered in Singapore shall not commence a flight if any of the equipment (including radio and radio navigation equipment) required by or under this Order to be carried in the circumstances of the intended flight is not carried or is not in a fit condition for use —
 - (a) otherwise than under and in accordance with the terms of a permission under this paragraph which has been granted to the operator; and
 - (b) unless the particulars of any permission granted pursuant to sub-paragraph (1) are made available to the pilot-in-command of the aircraft to enable him to determine whether he can comply with paragraph 31(b)(ii).

15. Aircraft, engine and propeller log books.

- (1) In addition to any other log book required by or under this Order, the following log books shall be kept in respect of every public transport aircraft and aerial work aircraft registered in Singapore —
 - (a) an aircraft log book; and
 - (b) a separate log book in respect of each engine fitted in the aircraft; and
 - (c) a separate log book in respect of each variable pitch propeller fitted to the aircraft.

The log books shall include the particulars respectively specified in the Seventh Schedule.

- (2) Each entry in the log book shall be made as soon as it is practicable after the occurrence to which it relates, but in no event more than 7 days after the expiration of the certificate of maintenance review (if any) in force in respect of the aircraft at the time of the occurrence.
- (3) Entries in a log book may refer to other documents, which shall be clearly identified, and any other document so referred to shall be deemed, for the purposes of this Order, to be part of the log book.
- (4) It shall be the duty of the operator of every aircraft in respect of which log books are required to be kept to keep them or cause them to be kept in accordance with paragraphs (1) to (3).
- (5) Subject to paragraph 59 every log book shall be preserved by the operator of the aircraft until a date two years after the aircraft, the engine or the variable pitch propeller, as the case may be, has been destroyed or has been permanently withdrawn from use.

16. Aircraft weight schedule.

- (1) Every flying machine and glider in respect of which a Certificate of Airworthiness issued or rendered valid under this Order is in force shall be weighed, and the position of its centre of gravity determined, at such times and in such manner as the Chief Executive may require in the case of that aircraft.
- (2) Upon the aircraft being weighed as mentioned in sub-paragraph (1), the operator of the aircraft shall prepare a weight schedule showing —
 - (a) either the basic weight of the aircraft, that is to say, the weight of the aircraft empty together with the weight of the unusable fuel and unusable oil in the aircraft and of such items of equipment as are indicated in the weight schedule or such other weight as may be approved by the Chief Executive in the case of that aircraft; and
 - (b) either the position of the centre of gravity of the aircraft when the aircraft contains only the items included in the basic weight or such other position of the centre of gravity as may be approved by the Chief Executive in the case of that aircraft.
- (3) Subject to paragraph 59 the weight schedule shall be preserved by the operator of the aircraft until the expiry of a period of 6 months following the next occasion on which the aircraft is weighed for the purposes of this paragraph.

17. Access and inspection for airworthiness purposes.

The Chief Executive may cause such inspections, investigations, tests, experiments and flight trials to be made as he considers necessary for the purposes of this Part and any authorised person shall at all reasonable times have the right of access to any place in any establishment to which access is necessary for the purpose of inspecting the production or assembly of an aircraft or part thereof or its equipment or any documents relating thereto.

17A. Compliance with Singapore Airworthiness Requirements (SAR)

- (1) The Chief Executive may, from time to time, in such manner as he thinks fit, issue the Singapore Airworthiness Requirements (SAR) containing the requirements, as determined by the Chief Executive, that are to be complied with by any of the following persons in any particular circumstances, in addition to any other obligation that is imposed on such person under this Order:
 - (a) any applicant for, or holder of, a certificate of registration referred to in paragraph 4;
 - (b) any applicant for, or holder of, a Certificate of Airworthiness referred to in paragraph 7;
 - (c) any applicant for, or holder of, a certificate or other form of written approval referred to in paragraph 8 or 8A;
 - (d) any person who is approved or authorised to issue a certificate of maintenance review under paragraph 9 or a certificate of release to service under paragraph 10;
 - (e) any applicant for, or holder of, an aircraft maintenance licence referred to in paragraph 11;
 - (f) any person who is authorised to conduct any examination or test or who is approved to provide any course of training or instruction, under paragraph 11; and
 - (g) any applicant for, or holder of, an Air Operator Certificate referred to in paragraph 87.
- (2) The Chief Executive may, either generally or for such time as he may specify, waive the application of any provision of the Singapore Airworthiness Requirements (SAR) issued under this paragraph in respect of any person referred to in sub-paragraph (1).

PART IV : AIRCRAFT CREW AND LICENSING

18. Composition of crew of aircraft.

- (1) An aircraft shall not fly unless it carries a flight crew of the number and description required by the law of the country in which it is registered.
- (2) A Singapore aircraft shall carry a flight crew adequate in number and description to ensure the safety of the aircraft and of at least the number and description specified in the Certificate of Airworthiness issued or rendered valid under this Order or, if no Certificate of Airworthiness is required under this Order to be in force, the Certificate of Airworthiness, if any, last in force under this Order, in respect of that aircraft.
- (3) A Singapore aircraft flying for the purpose of public transport shall carry not less than the number of flight crew members required by the certification of the aircraft type.
- (3A) Subject to sub-paragraph (3B), a Singapore aircraft flying for the purpose of public transport in circumstances where the pilot-in-command is required to comply with the Instrument Flight Rules and having a maximum total weight authorised of 5,700 kg or less and powered by —
 - (a) one or more turbine jets;
 - (b) one or more turbine propeller engines and provided with a means of pressurising the personnel compartment;
 - (c) two or more turbine propeller engines and certificated to carry more than 9 passengers;
 - (d) two or more turbine propeller engines and certificated to carry less than 10 passengers and not provided with a means of pressurising the personnel compartments;
 - (e) two or more piston engines,shall carry not less than two pilots as members of the flight crew.
- (3B) A Singapore aircraft described in sub-paragraph (3A) (d) or (e) shall not be required to carry two pilots if it is equipped with an autopilot which has been approved by the Chief Executive and which is serviceable on take-off or if before take-off the approved autopilot is found to be unserviceable and the aircraft flies in accordance with arrangements approved by the Chief Executive.
- (4) A Singapore aircraft engaged on a flight for the purpose of public transport shall carry —
 - (a) a flight navigator as a member of the flight crew; or
 - (b) navigational equipment approved by the Chief Executive and used in accordance with any conditions subject to which that approval may have been given,if on the route or any diversion therefrom, being a route or diversion planned before take-off, the aircraft is intended to be more than 500 nautical miles from the point of take-off measured along the route to be flown, and to pass over part of an area specified in the Fifteenth Schedule.
- (5) The flight navigator referred to in sub-paragraph (4) shall be carried in addition to any person who is carried in accordance with this paragraph to perform other duties.
- (6) A Singapore aircraft which is required by paragraph 13 to be equipped with radio communication equipment shall carry a flight radio operator as a member of the flight crew, who, if he is required to operate radiotelegraph apparatus, shall be carried in addition to any other person who is carried in accordance with this paragraph to perform other duties.

- (7) If it appears to him to be expedient to do so in the interests of safety, the Chief Executive may direct any particular operator of any Singapore aircraft that the aircraft operated by him or any such aircraft shall not fly in such circumstances as the Chief Executive may specify unless they carry in addition to the flight crew required to be carried therein by sub-paragraphs (1) to (6) such additional persons as members of the flight crew as he may specify in the direction.
- (8) A Singapore aircraft flying for the purpose of public transport shall not carry less than the number of cabin crew members specified in the Air Operator Certificate Requirements (AOCR) issued under paragraph 87(5) in relation to that aircraft.
- (9) The Chief Executive may, if it appears to him to be expedient to do so in the interests of safety, direct any particular operator of any Singapore aircraft that the aircraft operated by him or any such aircraft shall not fly in such circumstances as the Chief Executive may specify unless those aircraft carry in addition to the cabin crew members required to be carried therein by sub-paragraph (8) such additional persons as cabin crew members as he may specify in the direction.

19. Members of flight crew licences.

- (1) Subject to this paragraph, a person shall not act as a member of the flight crew of a Singapore aircraft unless he is the holder of an appropriate licence granted or rendered valid under this Order:
 Provided that a person may, within Singapore, act as a flight radiotelephony operator without being the holder of such a licence if —
 - (a) he does so as a pilot of a glider not flying for the purpose of public transport or aerial work, or as a person being trained in Singapore aircraft to perform duties as a member of the flight crew of an aircraft;
 - (b) he is authorised to operate the radiotelephony station by the holder of the licence granted in respect of that station by the Info-communications Development Authority of Singapore under the Telecommunications Act; CAP. 323
 - (c) messages are transmitted only for the purpose of instruction, or of the safety or navigation of the aircraft;
 - (d) messages are transmitted only on a frequency exceeding 60 megacycles per second assigned by the Info-communications Development Authority of Singapore under the Telecommunications Act; CAP. 323
 - (e) the transmitter is pre-set to one or more of the frequencies so assigned and cannot be adjusted in flight to any other frequency;
 - (f) the operation of the transmitter requires the use only of external switches; and
 - (g) the stability of the frequency radiated is maintained automatically by the transmitter.
- (2) Subject to this paragraph, a person shall not act as a member of the flight crew required by or under this Order to be carried in an aircraft registered outside Singapore unless —
 - (a) in the case of an aircraft flying for the purpose of public transport or aerial work he is the holder of an appropriate licence granted or rendered valid under the law of the country in which the aircraft is registered or under the law of the State of the operator; and
 - (b) in the case of any other aircraft, he is the holder of an appropriate licence granted or rendered valid under the law of the country in which the aircraft is registered or under this Order, and the Chief Executive does not in the particular case give a direction to the contrary.
- (3) For the purposes of this paragraph, a licence granted under the law of a Contracting State purporting to authorise the holder thereof to act as a member of the flight crew of an aircraft, not being a licence purporting to authorise him to act as a student pilot only, shall unless the Chief Executive in the particular case gives a direction to the contrary be deemed to be a licence rendered valid under this Order but shall not entitle the holder —

- (a) to act as a member of the flight crew of any aircraft flying for the purpose of public transport or aerial work or on any flight in respect of which he receives remuneration for his services as a member of the flight crew on that flight; or
 - (b) in the case of a pilot's licence, to act as pilot of any aircraft flying in controlled airspace in circumstances requiring compliance with the Instrument Flight Rules or to give any instruction in flying.
- (4) Notwithstanding sub-paragraph (1), a person may, unless the Certificate of Airworthiness in force in respect of the aircraft otherwise requires, act as pilot of Singapore aircraft for the purpose of undergoing training or tests for the grant or renewal of a pilot's licence or for the inclusion, renewal or extension of a rating thereon without being the holder of an appropriate licence, if the following conditions are complied with:
- (i) no other person shall be carried in the aircraft or in an aircraft being towed thereby except a person carried as a member of the flight crew in compliance with this Order, a person authorised by the Chief Executive to witness the aforesaid training or tests, or to conduct the aforesaid tests, or, if the pilot-in-command of the aircraft is the holder of an appropriate licence, a person carried for the purpose of being trained or tested as a member of the flight crew of an aircraft; and
 - (ii) the person acting as the pilot of the aircraft without being the holder of an appropriate licence shall not be the pilot-in-command of the aircraft unless within the period of 6 months immediately preceding he was serving as a qualified pilot of aircraft in the Armed Forces, and his physical condition has not, so far as he is aware, so deteriorated during that period as to render him unfit for the licence for which he intends to qualify.
- (5) Notwithstanding sub-paragraph (1), a person may act as a member of the flight crew of a Singapore aircraft without being the holder of an appropriate licence if, in so doing, he is acting in the course of his duty as a member of the Armed Forces.
- (6) An appropriate licence for the purposes of this paragraph means a licence which entitles the holder to perform the functions which he undertakes in relation to the aircraft concerned and the flight on which it is engaged.
- (7) This paragraph shall not apply to a person (other than a flight radio operator) by reason of his acting as a member of the flight crew of a glider which is not flying for the purpose of public transport or aerial work.
- (8) Notwithstanding anything in this paragraph —
- (a) the holder of a licence granted or rendered valid under this Order being a licence endorsed to the effect that the holder does not satisfy in full the relevant international standard, shall not act as a member of the flight crew of a Singapore aircraft in the territory of a Contracting State other than Singapore, except in accordance with permission granted by the competent authorities of that State; and
 - (b) the holder of a licence granted or rendered valid under the law of a Contracting State other than Singapore, being a licence endorsed as aforesaid, shall not act as a member of the flight crew of any aircraft in Singapore except in accordance with permission granted by the Chief Executive, whether or not the licence is or is deemed to be rendered valid under this Order.

20. Grant and renewal of licences to members of flight crew.

- (1) The Chief Executive may grant licences, subject to such conditions as he thinks fit, for any of the following classes:
- (a) Student pilot's licence;
 - (b) Private pilot's licence (aeroplanes);
 - (c) Private pilot's licence (helicopters and gyroplanes);

- (d) Private pilot's licence (balloons and airships);
- (e) Commercial pilot's licence (aeroplanes);
- (f) Commercial pilot's licence (helicopters and gyroplanes);
- (g) Commercial pilot's licence (balloons);
- (h) Commercial pilot's licence (airships);
- (i) Commercial pilot's licence (gliders);
- (j) Airline transport pilot's licence (aeroplanes);
- (k) Airline transport pilot's licence (helicopters and gyroplanes);
- (l) Flight navigator's licence;
- (m) Flight engineer's licence; and
- (n) Flight radiotelephony operator's licence,

upon his being satisfied that the applicant is a fit and proper person to hold the licence and is qualified by reason of his knowledge, experience, competence, skill and physical fitness to act in the capacity to which the licence relates, and for that purpose the applicant may be required to undergo the appropriate medical examinations set out in the Fourteenth Schedule and any other examinations and tests or furnish any other evidence as the Chief Executive may determine. A licence of any class shall not be granted to any person who is under the minimum age specified for that class of licence in Part A of the Eighth Schedule. A licence of the class referred to in (a) to (k) shall not be renewed or granted to any person who has attained the age of 65 years.

- (2) Subject to any conditions of the licence, a licence of any class shall entitle the holder to perform the functions specified in respect of that licence in Part A of the Eighth Schedule under the heading "privileges":

Provided that —

- (a) subject to sub-paragraphs (10) and (11) and to paragraphs 19 (4) and 23 (1), a person shall not be entitled to perform any of the functions specified in Part B of that Schedule in respect of a rating unless his licence includes that rating;
- (b) a person shall not be entitled to perform any of the functions to which his licence relates if he knows or has reason to believe that his physical condition renders him temporarily or permanently unfit to perform such function; and
- (c) a person shall not be entitled to perform the functions to which an instrument rating (aeroplanes), an instrument rating (helicopters), a flying instructor's rating or an assistant flying instructor's rating relates unless his licence bears a certificate signed by a person authorised by the Chief Executive to sign such certificates, indicating that the holder of the licence has —
 - (i) within the period of 12 months, in the case of an instrument rating (aeroplanes), an instrument rating (helicopters) and an assistant flying instructor's rating; or
 - (ii) within a period of 24 months, in the case of a flying instructor's rating, preceding the day on which he performs those functions, passed a test of his ability to perform the functions to which the rating relates, which test shall be carried out either in flight or, on the ground by means of apparatus approved by the Chief Executive in which flight conditions are simulated.
- (d) a holder of a pilot's licence, a flight navigator's licence or a flight engineer's licence shall not be entitled to exercise the privileges of an aircraft rating contained in his licence on a flight unless the licence bears, in accordance with the requirements contained in the Singapore Air Safety Publication (SASP), a valid certificate of test or a valid certificate of experience, which certificate shall in either case be appropriate to the functions he is to perform on that flight.

- (3) The Chief Executive may, if he is satisfied that the applicant is qualified as aforesaid to act in the capacity to which the rating relates, include in a licence a rating of any of the classes specified in Part B of the Eighth Schedule and such rating shall be deemed to form part of the licence and shall entitle the holder to perform such functions as are specified in Part B of that Schedule in respect of that rating. An instrument rating (referred to in that Schedule) may be renewed by any person appointed by

the Chief Executive for that purpose, if that person is satisfied by a test that the applicant continues to be competent to perform the functions to which the rating relates. The test shall be carried out either in flight or by means of apparatus approved by the Chief Executive in which flight conditions are simulated on the ground.

- (3A) A person who has failed any test or examination required under this paragraph, shall not be entitled to fly or perform any duty on any aircraft in the capacity for which that test would have qualified him, had he passed that test or examination.
- (4) A licence and a rating shall, subject to paragraph 60 remain in force for the periods indicated in the licence, not exceeding those respectively specified in the Eighth Schedule, and may be renewed by the Chief Executive from time to time upon his being satisfied that the applicant is a fit and proper person and is qualified as aforesaid.
- (5) A licence granted under this paragraph shall not be valid unless it bears thereon the ordinary signature of the holder in ink.
- (6) Subject to paragraph 6 of the Fourteenth Schedule, every holder of a licence, other than a flight radiotelephony operator's licence, granted under this paragraph shall, upon applying for the renewal of the licence and upon such other occasions as the Chief Executive may require, submit himself to medical examination by a person approved by the Chief Executive either generally or in a particular case who shall make a report to the Chief Executive in such form as the Chief Executive may require.
- (7) A holder of a licence, other than a flight radiotelephony operator's licence, granted under this paragraph or rendered valid under paragraph 21 who —
- (a) suffers any personal injury involving incapacity to undertake the functions to which his licence relates;
 - (b) suffers any illness involving incapacity to undertake those functions throughout a period of more than 20 days;
 - (c) knows or has reason to believe that she is pregnant;
 - (d) requires continued treatment with any medical prescription; or
 - (e) has received medical treatment requiring hospitalisation,
- shall —
- (i) inform the Chief Executive in writing of such injury, illness, pregnancy or treatment —
 - (A) as soon as possible in the case of any such injury, pregnancy or treatment; or
 - (B) as soon as possible after a period of 20 days has elapsed in the case of any such illness;and
 - (ii) not exercise the privileges of the licence and related ratings until he has satisfied the evaluating medical examiner that his medical fitness has been restored to the standard required in paragraph 7 of the Fourteenth Schedule.
- (8) A licence, other than a flight radiotelephony operator's licence, granted under this Part shall be deemed to be suspended upon the occurrence of such an injury, or the elapse of such period of illness as is referred to in sub-paragraph (7).

The suspension of the licence shall cease —

- (a) upon the holder being medically examined under arrangements made by the Chief Executive and pronounced fit to resume his functions under the licence; or
- (b) upon the Chief Executive exempting the holder from the requirement of a medical examination, subject to such conditions as the Chief Executive may think fit.

- (9) A licence granted under this paragraph shall be deemed to be suspended upon the pregnancy of the holder being diagnosed and shall remain suspended until the holder has been medically examined and pronounced fit to resume her duties under the licence.
- (10) Nothing in this Order shall be taken to prohibit the holder of a commercial pilot's or airline transport pilot's licence (aeroplanes) from acting as pilot-in-command of an aeroplane carrying passengers by night by reason of the lack of a night rating in his licence.
- (11) Nothing in this Order shall prohibit the holder of a pilot's licence from acting as pilot of an aircraft not exceeding 5,700 kg maximum total weight authorised when with the authority of the Chief Executive he is testing any person in pursuance of sub-paragraph (1) or (3) notwithstanding that the type of aircraft in which the test is conducted is not specified in the aircraft rating included in his licence.
- (12) Where any provision of Part B of the Ninth Schedule permits a test to be conducted in a flight simulation training device approved by the Chief Executive, that approval may be granted subject to such conditions as the Chief Executive thinks fit.
- (13) Without prejudice to any other provision of this Order, the Chief Executive may, for the purpose of this paragraph, either absolutely or subject to such conditions as he thinks fit —
- (a) approve any course of training or instruction;
 - (b) authorise a person to conduct such examinations or tests as he may specify;
 - (c) approve a person to provide any course of training or instruction; and
 - (d) approve the use of a flight simulation training device by any person approved under sub-paragraph (c) to provide any course of flight training or instruction.
- (14) Any person, being an applicant for or the holder of any licence referred to in this paragraph and any person granted an approval under sub-paragraph (13)(c) or (d) shall comply with the relevant requirements contained in the Singapore Air Safety Publication (SASP) issued by the Chief Executive.

20A. Limitation on privileges of pilots of 60 years of age and above

The holder of a licence granted under paragraph 20 (1) (e), (f), (j) or (k) who has attained the age of 60 years shall not act as a pilot of a public transport aircraft unless —

- (a) he is a member of a multi-pilot crew; and
- (b) the other pilot is less than 60 years of age.

21. Validation of licences.

The Chief Executive may issue a certificate of validation rendering valid for the purposes of this Order any licence as a member of the flight crew of aircraft granted under the law of any country other than Singapore. A certificate of validation may be issued subject to such conditions and for such period as the Chief Executive thinks fit.

22. Personal flying log book.

- (1) Every member of the flight crew of a Singapore aircraft, and every person who engages in flying for the purpose of qualifying for the grant or renewal of a licence under this Order or undergoing tests or receiving instructions in flying for admission into the Armed Forces, shall keep a personal flying log book in which the following particulars shall be recorded:

- (a) the name and address of the holder of the log book;
 - (b) particulars of the holder's licence (if any) to act as a member of the flight crew of an aircraft; and
 - (c) the name and address of his employer (if any);
- (2) Particulars of each flight during which the holder of the log book acted either as a member of the flight crew of an aircraft or for the purpose of qualifying for the grant or renewal of a licence under this Order, as the case may be, shall be recorded in the log book at the end of each flight or as soon thereafter as is reasonably practicable, including —
- (a) the date, the places at which the holder of the log book embarked from the aircraft and the time spent during the course of a flight when he was acting in either capacity;
 - (b) the type and registration marks of the aircraft;
 - (c) the capacity in which he acted in flight;
 - (d) particulars of any special conditions under which the flight was conducted, including night flying and instrument flying; and
 - (e) particulars of any test or examination undertaken whilst in flight.
- (3) *-deleted-*
- (4) Particulars of any test or examination taken whilst in a flight simulator shall be recorded in the log book, including —
- (a) the date of the test or examination;
 - (b) the type of simulator;
 - (c) the capacity in which he acted; and
 - (d) the nature of the test or examination.

23. Instructions in flying.

- (1) A person shall not give any instruction in flying to which this paragraph applies unless —
- (a) he holds a licence, granted or rendered valid under this Order, entitling him to act as pilot-in-command of the aircraft for the purpose and in the circumstances under which the instruction is to be given; and
 - (b) his licence includes a flying instructor's rating or an assistant flying instructor's rating entitling the holder to give the instruction.
- (2) This paragraph shall apply to instruction in flying given to any person flying or about to fly a flying machine or glider for the purpose of becoming qualified for —
- (a) the grant of a pilot's licence; and
 - (b) the inclusion or variation of any rating in his licence.
- (3) This paragraph shall not apply to any instruction in flying to a person for the purpose of becoming qualified for the inclusion in his licence of an aircraft rating entitling him to act as pilot of a multi-engined aircraft, or of any aircraft of any class appearing in column 4 of the Table in Part A of the First Schedule if that person has previously been entitled under the Order, or qualified in the Armed Forces, to act as pilot of a multi-engined aircraft, or of an aircraft of that class as the case may be.

24. Glider pilot— minimum age.

A person under the age of 16 years shall not act as pilot-in-command of a glider.

24A. Prohibition of use of psychoactive substances

- (1) A holder of a licence granted under paragraph 20 (1) shall not perform any function specified in the privileges applicable to his licence by virtue of Part A of the Eighth Schedule if he is under the influence of any psychoactive substance which may render him unable to perform such function in a safe and proper manner.
- (2) A holder of a licence granted under paragraph 20 (1) shall not at any time engage in the problematic use of psychoactive substances.

PART V : OPERATION OF AIRCRAFT

25. Operations manual.

- (1) This paragraph shall apply to public transport aircraft registered in Singapore except aircraft used for the time being solely for flights not intended to exceed 60 minutes in duration, which are either —
 - (a) flights solely for training persons to perform duties in an aircraft; or
 - (b) flights intended to begin and end at the same aerodrome.
- (2)
 - (a) The operator of every aircraft to which this paragraph applies shall —
 - (i) make available to each member of his operating staff an operations manual;
 - (ii) ensure that each copy of the operations manual is kept up to date; and
 - (iii) ensure that on each flight every member of the crew has access to a copy of every part of the operations manual which is relevant to his duties on the flight.
 - (b) Each operations manual shall contain all such information and instructions as may be necessary to enable the operating staff to perform their duties as such including, in particular, the information and instructions necessary to comply with the requirements specified in the Air Operator Certificate Requirements (AOCR).

Provided that the operations manual shall not be required to contain any information or instructions available in a flight manual accessible to the persons by whom the information or instructions may be required.
- (3) An aircraft to which this paragraph applies shall not fly unless not less than 30 days prior to such flight the operator of the aircraft has furnished to the Chief Executive a copy of the whole of the operations manual for the time being in effect in respect of the aircraft.
- (3A) Subject to sub-paragraph (3B), any amendment or addition to the operations manual shall be furnished to the Chief Executive by the operator before or immediately after it comes into effect.
- (3B) Where an amendment or addition relates to the operation of an aircraft to which the operations manual did not previously relate, that aircraft shall not fly for the purpose of public transport until the amendment or addition has been furnished to the Chief Executive.
- (3C) Without prejudice to the foregoing sub-paragraphs the operators shall make such amendments or additions to the operations manual as the Chief Executive may require for the purpose of ensuring the safety of the aircraft or of any persons or property carried therein or the safety, efficiency or regularity of air navigation.
- (4) For the purposes of this paragraph and the Ninth Schedule, “operating staff” means the employees and agents employed by the operator, whether or not as members of the crew of the aircraft, to ensure that the flights of the aircraft are conducted in a safe manner, and includes an operator who performs those functions.
- (5) If in the course of a flight on which the equipment specified in Scale 0 in paragraph 5 of the Fifth Schedule is required to be provided in an aircraft and the said equipment becomes unserviceable, the aircraft shall be operated for the remainder of the flight in accordance with any relevant instructions in the operations manual.

26. Training manual.

- (1) The operator of every aircraft registered in Singapore and flying for the purpose of public transport shall:
 - (a) make a training manual available to every person appointed by the operator to give or to supervise the training, experience, practice or periodical test required under paragraph 27 (2); and
 - (b) ensure that each copy of that training manual is kept up to date.
- (2) Each training manual shall contain all such information and instructions as may be necessary to enable a person appointed by the operator to give or to supervise the training, experience, practice and periodical tests required under paragraph 27 (2) to perform his duties as such including in particular information and instructions relating to the matters specified in Part C of the Ninth Schedule.
- (3)
 - (a) An aircraft to which this paragraph applies shall not fly unless not less than 30 days prior to such flight the operator of the aircraft has furnished to the Chief Executive a copy of the whole of his training manual relating to the crew of that aircraft.
 - (b) Subject to sub-paragraph (3) (c), any amendment or addition to the training manual shall be furnished to the Chief Executive by the operator before or immediately after they come into effect.
 - (c) Where an amendment or addition relates to training, experience, practice or periodical tests on an aircraft to which the training manual did not previously relate, that aircraft shall not fly for the purpose of public transport until the amendment or addition has been furnished to the Chief Executive.
 - (d) Without prejudice to sub-paragraphs (1) and (2) the operator shall make such amendments or additions to the training manual as the Chief Executive may require for the purpose of ensuring the safety of the aircraft or of persons or property carried therein or the safety, efficiency or regularity of air navigation.

27. Public transport — operators' responsibilities.

- (1) The operator of a Singapore aircraft shall not permit the aircraft to fly for the purpose of public transport without first —
 - (a) designating from among the flight crew a pilot to be the pilot-in-command of the aircraft for the flight;
 - (b) satisfying himself by every reasonable means that the aeronautical radio stations and navigation aids serving the intended route or any planned diversion therefrom are adequate for the safe navigation of the aircraft; and
 - (c) satisfying himself by every reasonable means that the aerodrome at which it is intended to take off or land and any alternate aerodrome at which a landing may be made are suitable for the purpose and in particular are adequately manned and equipped including such manning and equipment as may be notified to ensure the safety of the aircraft and its passengers:

Provided that the operator of the aircraft shall not be required to satisfy himself as to the adequacy of firefighting, search, rescue or other services which are required only after the occurrence of an accident.

- (2) The operator of a Singapore aircraft shall not permit any person to be a member of the crew thereof during any flight for the purpose of public transport (except a flight for the sole purpose of training persons to perform duties in aircraft) unless such person has had the training, experience, practice and periodical tests specified in Part B of the Ninth Schedule in respect of the duties which he is to perform and unless the operator has satisfied himself that such person is competent to perform his duties, and in particular to use the equipment provided in the aircraft for that purpose. The operator shall maintain, preserve, produce and furnish information respecting records relating to the foregoing matters in accordance with Part B of that Schedule.
- (3) The operator of a Singapore aircraft shall not permit any member of the flight crew thereof, during any flight for the purpose of the public transport of passengers to simulate emergency manoeuvres and procedures which will adversely affect the flight characteristics of the aircraft.
- (4) The operator of a Singapore aircraft shall adopt a security programme and shall ensure that such a programme is compatible with any aerodrome security programme.

28. Public transport — loading of aircraft.

- (1) The operator of a Singapore aircraft shall not cause or permit it to be loaded or any load to be suspended therefrom for a flight for the purpose of public transport except under the supervision of a person whom he has caused to be furnished with written instructions as to the distribution and securing of the load so as to ensure that —
 - (a) the load may safely be carried on the flight; and
 - (b) any conditions subject to which the Certificate of Airworthiness in force in respect of the aircraft was issued or rendered valid, being conditions relating to the loading of the aircraft, are complied with.

- (2) The instructions shall indicate the weight of the aircraft prepared for service, that is to say the aggregate of the basic weight (shown in the weight schedule referred to in paragraph 16) and the weight of such additional items in or on the aircraft as the operator thinks fit to include; and the instructions shall indicate the additional items included in the weight of the aircraft prepared for service, and shall show the position of the centre of gravity of the aircraft at that weight:

Provided that this sub-paragraph shall not apply in relation to a flight if —

- (a) the aircraft's maximum total weight authorised does not exceed 1,150 kg; or
- (b) the aircraft's maximum total weight authorised does not exceed 2,730 kg and the flight is intended not to exceed 60 minutes in duration and is either —
 - (i) a flight solely for training persons to perform duties in an aircraft; or
 - (ii) a flight intended to begin and end at the same aerodrome.
- (3) The operator of an aircraft shall not cause or permit it to be loaded in contravention of the instructions referred to in sub-paragraph (1).
- (4) The person supervising the loading of the aircraft shall, before the commencement of any such flight, prepare and sign a load sheet in duplicate conforming to the requirements specified in sub-paragraph (6) and shall (unless he is himself the pilot-in-command of the aircraft) submit the load sheet for examination by the pilot-in-command of the aircraft who shall upon being satisfied that the aircraft is loaded in the manner required by sub-paragraph (1) sign his name thereon:

Provided that the foregoing requirements of this paragraph shall not apply if —

- (a) the load and the distributing and securing thereof upon the next intended flight are to be unchanged from the previous flight and the pilot-in-command of the aircraft makes and signs an endorsement to that effect upon the load sheet for the previous flight, indicating the date of the endorsement, the place of departure upon the next intended flight and the next intended place of destination; or

(b) sub-paragraph (2) does not apply in relation to the flight.

- (5) One copy of the load sheet shall be carried in the aircraft when paragraph 56 so requires until the flights to which it relates have been completed and one copy of that load sheet and of the instructions referred to in this paragraph shall be preserved by the operator until the expiration of a period of 6 months thereafter and shall not be carried in the aircraft.
- (6) Every load sheet required by sub-paragraph (4) shall contain the following particulars:
- (a) the nationality mark of the aircraft to which the load sheet relates, and the registration mark assigned to that aircraft by the Chief Executive;
 - (b) particulars of the flight to which the load sheet relates;
 - (c) the total weight of the aircraft as loaded for that flight;
 - (d) the weight of the several items from which the total weight of the aircraft, as so loaded, has been calculated including in particular the weight of the aircraft prepared for service and the respective total weights of the passengers, crew, baggage and cargo intended to be carried on the flight; and
 - (e) the manner in which the load is distributed and the resulting position of the centre of gravity of the aircraft which may be given approximately if and to the extent that the relevant Certificate of Airworthiness so permits,

and shall include at the foot or end of the load sheet a certificate signed by the person referred to in sub-paragraph (1) as responsible for the loading of the aircraft, that the aircraft has been loaded in accordance with the written instructions furnished to him by the operator of the aircraft pursuant to that sub-paragraph.

- (7) For the purpose of calculating the total weight of the aircraft the respective total weights of the passengers and crew entered in the load sheet shall be computed from the actual weight of each person and for that purpose each person shall be separately weighed:

Provided that in the case of an aircraft with a total seating capacity of 12 or more persons and subject to sub-paragraph (8), the weights may be calculated according to the following table and the load sheet shall bear a notation to that effect:

TABLE

Males 75 kg

Females 65 kg

Children aged two and above but not exceeding 12 years of age 40 kg

Infants under two years of age 10 kg

- (8) The pilot-in-command of the aircraft shall, if in his opinion it is necessary to do so in the interests of the safety of the aircraft, require any or all of the passengers and crew to be actually weighed for the purpose of the entry to be made in the load sheet.
- (9) The operator of an aircraft registered in Singapore and flying for the purpose of the public transport of passengers shall not cause or permit baggage to be carried in the passenger compartment of the aircraft unless such baggage can be properly secured and, in the case of an aircraft capable of seating more than 30 passengers, such baggage (other than baggage carried in accordance with a permission issued pursuant to paragraph 34) shall not exceed the capacity of the spaces in the passenger compartment approved by the Chief Executive for the purpose of stowing baggage.

29. Public transport — operating conditions.

- (1) No Singapore aircraft shall be flown for the purpose of public transport unless such requirements as are specified in the Fifth Schedule in respect of its weight and related performance have been complied with.
- (2) The assessment of the ability of an aircraft to comply with sub-paragraph (1) shall be based on the information as to its performance contained in the Certificate of Airworthiness relating to the aircraft. In the event of the information given therein being insufficient for that purpose such assessment shall be based on the best information available to the pilot-in-command of the aircraft.
- (3) The requirements specified in Part D of the Ninth Schedule in respect of the weather conditions required for take-off, approach to landing and landing shall be complied with in respect of every aircraft to which paragraph 25 applies.
- (4) An aircraft registered in Singapore when flying over water for the purpose of public transport shall fly, except as may be necessary for the purpose of take-off or landing, at such an altitude as would enable the aircraft —
 - (a) if it has one engine only, in the event of the failure of that engine; and
 - (b) if it has more than one engine, in the event of the failure of one of those engines and with the remaining engine or engines operating within the maximum continuous power conditions specified in the Certificate of Airworthiness relating to the aircraft,to reach a place at which it can safely land at a height sufficient to enable it to do so.
- (5) Except under and in accordance with the terms of any written permission granted by the Chief Executive to the operator, a Singapore aeroplane having two turbine engines and a maximum total weight authorised exceeding 5,700 kg, shall not be flown for the purpose of public transport on a route where the flight time at single engine cruise speed to an adequate en-route alternate aerodrome exceeds 60 minutes.

30. Aircraft not registered in Singapore — aerodrome operating minima.

- (1) A public transport aircraft registered in a country other than Singapore shall not fly in or over Singapore unless the operator thereof shall have furnished to the Chief Executive such particulars as he may from time to time require relating to the aerodrome operating minima specified by the operator in relation to aerodromes in Singapore for the purpose of limiting their use by the aircraft for take-off or landing, including any instruction given by the operator in relation to such weather conditions. The aircraft shall not fly in or over Singapore unless the operator shall have made such amendments of or additions to the aerodrome operating minima so specified and shall comply with any instruction given by the Chief Executive for the purpose of ensuring the safety of the aircraft or the safety, efficiency or regularity of air navigation.
- (2) A public transport aircraft registered in a country other than Singapore shall not begin or end a flight at an aerodrome in Singapore in aerodrome operating minima less favourable than those so specified in the Ninth Schedule in relation to that aerodrome, or in contravention of the instructions referred to in sub-paragraph (1).

- (3) Without prejudice to sub-paragraph (2), a public transport aircraft registered in a country other than Singapore shall not commence or continue an approach to landing at an aerodrome in Singapore if the runway visual range at that aerodrome is at that time less than the relevant minimum for landing established in accordance with sub-paragraph (1).
- (4) For the purposes of this paragraph, “runway visual range”, in relation to a runway or landing strip, means the range over which the pilot of an aircraft on the centreline of a runway can see runway surface markings or the lights delineating the runway or identifying its centreline or, in the case of an aerodrome in Singapore, the distance, if any, communicated to the pilot-in-command of the aircraft by or on behalf of the person in charge of the aerodrome as being the runway visual range.

30A. Flight despatchers not to use psychoactive substances, etc.

- (1) No person shall perform any duty or function in the capacity of a flight despatcher if he is under the influence of any psychoactive substance which may render him unable to perform such duty or function in a safe and proper manner.
- (2) A flight despatcher shall not at any time engage in the problematic use of psychoactive substances.

31. Pre-flight action by pilot-in-command of aircraft.

The pilot-in-command of a Singapore aircraft shall satisfy himself before the aircraft takes off —

- (a) that the flight can safely be made, taking into account the latest information available as to the route and aerodromes to be used, the weather reports and forecasts available, and any alternative course of action which can be adopted in case the flight cannot be completed as planned;
- (b)
 - (i) that the equipment (including radio equipment) required by or under this Order to be carried in the circumstances of the intended flight is carried and is in a fit condition for use; or
 - (ii) that the flight may commence under and in accordance with the terms of a permission granted to the operator pursuant to paragraph 14;
- (c) that the aircraft is in every way fit for the intended flight, and that where certificates of maintenance review are required by paragraph 9 (1) to be in force, they are in force and will not cease to be in force during the intended flight;
- (d) that the load carried by the aircraft is of such weight, and is so distributed and secured, and it may safely be carried on the intended flight;
- (e) in the case of a flying machine or airship, that sufficient fuel, oil and engine coolant (if required) are carried for the intended flight, and that a safe margin has been allowed for contingencies, and in the case of a flight for the purpose of public transport, that the instructions in the operations manual relating to fuel, oil and engine coolant have been complied with;
- (f) in the case of an airship or balloon, that sufficient ballast is carried for the intended flight;
- (g) in the case of a flying machine, that having regard to the performance of the flying machine in the conditions to be expected on the intended flight, and to any obstructions at the places of departure and intended destination and on the intended route, it is capable of safely taking off, reaching and maintaining a safe height thereafter, and making a safe landing at the place of intended destination; and
- (h) that any pre-flight check system established by the operator and set forth in the operations manual or elsewhere has been complied with by each member of the crew of the aircraft.

32. Passenger briefing by pilot-in-command.

The pilot-in-command of a Singapore aircraft shall take all reasonable steps to ensure —

- (a) before the aircraft takes off on any flight, that all passengers are made familiar with the position and method of use of emergency exits, safety belts (with diagonal shoulder strap, where required to be carried), safety harnesses and (where required to be carried) oxygen equipment, life-jackets, the floor path lighting system and all other devices required by or under this Order and intended for use by passengers individually in the case of an emergency occurring to the aircraft; and
- (b) in an emergency, that all passengers are instructed in the emergency action which they should take.

33. Pilots to remain at controls.

- (1) The pilot-in-command of a Singapore aircraft, being a flying machine or glider, shall cause one pilot to remain at the controls at all times while the aircraft is in flight. If the aircraft is required by or under this Order to carry two pilots, the pilot-in-command shall cause both pilots to remain at the controls during take-off and landing. If the aircraft carries two or more pilots (whether or not it is required to do so) and is engaged on a flight for the purpose of the public transport of passengers the pilot-in-command shall remain at the controls during take-off and landing.
- (2) Each pilot at the controls shall be secured in his seat by either a safety belt with or without one diagonal shoulder strap, or a safety harness except that during take-off and landing a safety harness shall be worn if it is required by paragraph 12 to be evaded.

34. Public transport of passengers — additional duties of pilot-in-command.

- (1) This paragraph shall apply to flights for the purpose of the public transport of passengers by Singapore aircraft.
- (2) In relation to every flight to which this paragraph applies, the pilot-in-command of the aircraft shall —
 - (a)
 - (i) if the aircraft is not a seaplane but is intended in the course of the flight to reach a point more than 30 minutes flying time (while flying in still air at the speed specified in the relevant certificate of airworthiness as the speed for compliance with regulations governing flights over water) from the nearest land, take all reasonable steps to ensure that before take-off all passengers are given a demonstration of the method of use of the life-jackets required by or under this Order for the use of passengers;
 - (ii) if the aircraft is not a seaplane but is required by paragraph 18 (8) to carry cabin crew members, take all reasonable steps to ensure that, before the aircraft takes off on a flight —
 - (A) which is intended to proceed beyond gliding distance from land; or
 - (B) on which in the event of any emergency occurring during the take-off or during the landing at the intended destination or any likely alternate destination it is reasonably possible that the aircraft would be forced to land onto water,all passengers are given a demonstration of the method of use of the life-jackets required by or under this Order for the use of passengers except that where the only requirement to give such a demonstration arises because it is reasonably possible that the aircraft would be forced to land onto water at one or more of the likely alternate destinations the

demonstration need not be given until after the decision has been taken to divert to such a destination;

- (b) if the aircraft is a seaplane, take all reasonable steps to ensure that before the aircraft takes off all passengers are given a demonstration of the method of use of the equipment referred to in subparagraph (2) (a);
- (c) before the aircraft takes off, and before it lands, take all reasonable steps to ensure that the crew of the aircraft are properly secured in their seats and that all persons carried in compliance with paragraph 18 (8) are properly secured in seats which shall be in a passenger compartment and which shall be so situated that those persons can readily assist passengers;
- (d) before the aircraft takes off, and before it lands, and whenever by reason of turbulent air or any emergency occurring during flight he considers the precaution necessary —
 - (i) take all reasonable steps to ensure that all passengers of two years of age or more are properly secured in their seats by safety belts (with diagonal shoulder strap, where required to be carried) or safety harnesses and that all passengers under the age of two years are properly secured by means of a child restraint device; and
 - (ii) take all reasonable steps to ensure that those items of baggage in the passenger compartment which he reasonably considers ought by virtue of their size, weight and nature to be properly secured are properly secured and, in the case of an aircraft capable of seating more than 30 passengers, that such baggage is either stowed in the passenger compartment stowage spaces approved by the Chief Executive for the purpose or carried in accordance with the terms of a written permission granted by the Chief Executive which permission may be granted subject to such conditions as the Chief Executive thinks fit.
- (e) except in a case where a pressure greater than 700 hPa is maintained in all passenger and crew compartments throughout the flight, take all reasonable steps to ensure that —
 - (i) before the aircraft reaches flight level 100 the method of use of the oxygen provided in the aircraft in compliance with the requirements of paragraph 12 is demonstrated to all passengers;
 - (ii) when flying above flight level 120 all passengers and cabin crew members are recommended to use oxygen;
 - (iii) during any period when the aircraft is flying above flight level 100 oxygen is used by all the flight crew of the aircraft.

35. Operation of radio in aircraft.

- (1) The radio station in an aircraft shall not be operated, whether or not the aircraft is in flight, except in accordance with the conditions of the licence issued in respect of that station under the law of the country in which the aircraft is registered or under the law of the State of the operator, and by a person duly licensed or otherwise permitted to operate the radio station under the law.
- (2) Whenever an aircraft is in flight in such circumstances that it is required by this Order to be equipped with radio communication equipment, a continuous radio watch shall be maintained by a member of the flight crew listening to the signals transmitted upon the frequency notified, or designated by a message received from an appropriate or aeronautical radio station, for use by that aircraft:

Provided that —

- (a) the radio watch may be discontinued or continued on another frequency to the extent that a message as aforesaid so permits or for reasons of safety; and
- (b) the watch may be kept by a device installed in the aircraft if —
 - (i) the appropriate aeronautical radio station has been informed to that effect and has raised no objection; and
 - (ii) that the station is notified or in the case of a station situated in a country other than Singapore, otherwise designated as transmitting a signal suitable for that purpose.

- (3) The radio station in an aircraft shall not be operated so as to cause interference which would impair the efficiency of aeronautical telecommunications or navigational services, and in particular emissions shall not be made except as follows:
 - (a) emissions of the class and frequency for the time being in use, in accordance with general international aeronautical practice, in the airspace in which the aircraft is flying;
 - (b) distress, urgency and safety messages and signals, in accordance with general international aeronautical practice;
 - (c) messages and signals relating to the flight of the aircraft, in accordance with general international aeronautical practice;
 - (d) such public correspondence messages as may be permitted by or under the aircraft radio station licence referred to in sub-paragraph (1).
- (4) In every Singapore aircraft which is equipped with radio communication equipment a telecommunication log book shall be kept in which the following entries shall be made:
 - (a) the identification of the aircraft radio station;
 - (b) the date and time of the beginning and end of every radio watch maintained in the aircraft and of the frequency on which it was maintained;
 - (c) the date and time, and particulars of all messages and signals sent or received, including in particular details of any distress traffic sent or received;
 - (d) particulars of any action taken upon the receipt of a distress signal or message; and
 - (e) particulars of any failure or interruption of radio communications and the cause thereof:

Provided that a telecommunication log book shall not be required to be kept in respect of communication by radiotelephony with a radio station on land or on a ship which provides a radio service for aircraft.
- (5) The flight radio operator maintaining radio watch shall sign the entries in the telecommunication log book indicating the times at which he began and ended the maintenance of such watch.
- (6) The telecommunication log book shall be preserved by the operator of the aircraft until a date 6 months after the date of the last entry therein.
- (7) In any Singapore aircraft (other than a Singapore helicopter), the pilot and the flight engineer (if any) shall not make use of a hand-held microphone (whether for the purpose of radio communication or of intercommunication within the aircraft) whilst the aircraft is flying in controlled airspace at an altitude less than 15,000 feet above mean sea level or is taking-off or landing.
- (8) Every flight crew member who is required to be on flight deck duty in a Singapore helicopter that is flying at any level shall, for the purpose of radio communication or of intercommunication within the Singapore helicopter, use a hands-free microphone, such as a boom or throat microphone.

36. Minimum navigation performance.

- (1) An aircraft registered in Singapore shall not fly in airspace specified in the Sixteenth Schedule unless —
 - (a) it is equipped with navigation systems which enable the aircraft to maintain the navigation performance capability specified in the Sixteenth Schedule; and
 - (b) the navigation systems required by sub-paragraph (1) (a) are approved by the Chief Executive and installed and maintained in a manner approved by the Chief Executive; and
 - (c) the operating procedures for the navigation systems required by sub-paragraph (1) (a) are approved by the Chief Executive; and

- (d) the equipment is operated in accordance with the approved procedures while the aircraft is flying in the airspace.

36A. Required navigation performance

A Singapore aircraft shall not fly in defined portions of airspace or on routes where an RNP type has been notified unless the aircraft —

- (a) is equipped with navigation equipment which will enable it to operate in accordance with the notified RNP type; and
- (b) is approved by the Chief Executive to operate in such airspace or on such routes.

37. Use of flight recorders and preservation of records.

- (1) The holder of an air operator certificate granted under paragraph 87 and the operator of a Singapore aircraft used in any general aviation operation shall, in relation to any aircraft operated by him, at all times —
 - (a) ensure that the recordings made by any flight recorder required by this Order to be carried on the aircraft are retained in accordance with the Singapore Airworthiness Requirements (SAR); and
 - (b) subject to paragraph 59, preserve a record of the flight data of not less than one representative flight that has been made within the last 12 months and which includes a take-off, climb, cruise, descent, approach to landing and landing, together with a means of identifying the record with the flight to which it relates.
- (2) The holder of an air operator certificate granted under paragraph 87 and the operator of a Singapore aircraft used in any general aviation operation shall, if so required by the Chief Executive, preserve the recordings referred to in sub-paragraph (1)(a) for such period as the Chief Executive may specify in any particular case.
- (3) On any flight on which a flight recorder is required by this Order to be carried, the flight recorder shall not be switched off during flight time.
- (4) The operator and the pilot-in-command of an aircraft shall ensure that following an accident or serious incident (as defined in the Air Navigation (Investigation of Accidents and Incidents) Order (O7)), the records of the every flight recorder are preserved and for this purpose, the flight recorders shall be de-activated immediately upon completion of the flight.
- (5) Every flight recorder de-activated in accordance with sub-paragraph (4) shall not be re-activated before their disposition as determined —
 - (a) by an Inspector of Accidents appointed under the Air Navigation (Investigation of Accidents and Incidents) Order 2003 (G.N. No. S 78/2003), if the accident or serious incident occurred in Singapore; or
 - (b) by the investigating authority in the State conducting the investigation, if the accident or serious incident involving a Singapore aircraft occurred outside Singapore.

38. Towing of gliders.

- (1) An aircraft in flight shall not tow a glider unless the Certificate of Airworthiness issued or rendered valid in respect of the towing aircraft under the law of the country in which that aircraft is registered includes an express provision that it may be used for that purpose.

- (2) The length of the combination of towing aircraft, tow rope and glider in flight shall not exceed 150 metres.
- (3) The pilot-in-command of an aircraft which is about to tow a glider shall satisfy himself, before the towing aircraft takes off —
 - (a) that the tow rope is in good condition and is of adequate strength for the purpose, and that the combination of towing aircraft and glider, having regard to its performance in the conditions to be expected on the intended flight and to any obstructions at the place of departure and on the intended route, is capable of safely taking off, reaching and maintaining a safe height at which to separate the combination and that thereafter the towing aircraft can make a safe landing at the place of intended destination;
 - (b) that signals have been agreed and communications established with persons suitably stationed so as to enable glider to take-off safely; and
 - (c) that emergency signals have been agreed between the pilot-in-command of the towing aircraft and the pilot-in-command of the glider, to be used, respectively, by the pilot-in-command of the towing aircraft to indicate that the tow should immediately be released by the glider, and by the pilot-in-command of the glider to indicate that the tow cannot be released.
- (4) The glider shall be attached to the towing aircraft by means of the tow rope before the aircraft takes off.

39. Towing, picking up and raising of persons and articles.

- (1) Subject to this paragraph, an aircraft in flight shall not, by means external to the aircraft, tow any article other than a glider, or pick up or raise any person, animal or article unless the Certificate of Airworthiness issued or rendered valid in respect of that aircraft under the laws of the country in which the aircraft is registered includes an express provision that it may be used for that purpose.
- (2) An aircraft in flight shall not tow any article other than a glider, at night or when flight visibility is less than 1.6 kilometres.
- (3) The length of the combination of towing aircraft, tow rope and article in tow, shall not exceed 150 metres.
- (4) A helicopter shall not fly at any height over a congested area of a city, town or settlement at any time when an article, person or animal is suspended from the helicopter.
- (5) A passenger shall not be carried in a helicopter at any time when an article, person or animal is suspended therefrom, other than a passenger who has duties to perform in connection with the article, person or animal.
- (6) Nothing in this paragraph shall —
 - (a) prohibit the towing in a reasonable manner by an aircraft in flight of any radio aerial, any instrument which is being used for experimental purposes, or any signal, apparatus or article required or permitted by or under this Order to be towed or displayed by an aircraft in flight;
 - (b) prohibit the picking up or raising of any person, animal or article in an emergency or for the purpose of saving life;
 - (c) apply to any aircraft while it is flying in accordance with the “B Conditions” set out in the Second Schedule; or
 - (d) be taken to permit the towing or picking up of a glider otherwise than in accordance with paragraph 38.

40. Dropping of persons and articles.

- (1) Articles and animals (whether or not attached to a parachute) shall not be dropped, or permitted to drop, from an aircraft in flight so as to endanger persons or property.
- (2) Articles, animals and persons (whether or not attached to a parachute) shall not be dropped, or permitted to drop, to the surface from an aircraft flying in Singapore:
Provided that this sub-paragraph shall not apply to the descent of persons by parachute from an aircraft in an emergency, or to the dropping of articles by or with the authority of the pilot-in-command of the aircraft in the following circumstances:
 - (a) the dropping of articles for the purpose of saving life;
 - (b) jettisoning, in case of emergency, of fuel or other articles in the aircraft;
 - (c) the dropping of ballast in the form of fine sand or water;
 - (d) the dropping of articles solely for the purpose of navigating the aircraft in accordance with ordinary practice or with this Order;
 - (e) the dropping at an aerodrome in accordance with this Order, of ropes, banners or similar articles towed by aircraft; and
 - (f) the dropping of articles for such purpose as the Chief Executive may approve, subject to any condition that may be imposed on such approval.
- (3) For the purposes of this paragraph, dropping includes projecting and lowering.
- (4) Nothing in this paragraph shall prohibit the lowering of any person, animal or article from a helicopter to the surface, if the Certificate of Airworthiness issued or rendered valid in respect of the helicopter under the law of the country in which it is registered includes an express provision that it may be used for that purpose.

41. –deleted–

42. –deleted–

43. Method of carriage of persons.

A person shall not be in or on part of an aircraft in flight which is not a part designed for the accommodation of persons and in particular a person shall not be on the wings or undercarriage of an aircraft. A person shall not be in or on any object, other than a glider or flying machine, towed by or attached to an aircraft in flight:

Provided that a person may have temporary access to —

- (a) any part of an aircraft for the purpose of taking action necessary for the safety of the aircraft or of any person or cargo therein; or
- (b) any part of an aircraft in which cargo or stores are carried, being a part which is designed to enable a person to have access thereto while the aircraft is in flight.

44. Exits and break-in markings.

- (1) This paragraph shall apply to public transport aircraft registered in Singapore.

- (1A) Notwithstanding sub-paragraph (1), if a Singapore aircraft to which this paragraph does not apply is provided with break-in markings, those markings shall be made in accordance with sub-paragraphs (5) and (7).
- (2) Whenever an aircraft to which this paragraph applies is carrying passengers, every exit therefrom and every internal door in the aircraft shall be in working order, and during take-off and landing and during any emergency every such exit and door shall be kept free of obstruction and shall not be fastened by locking or otherwise so as to prevent, hinder or delay its use by passengers:
- Provided that —
- (a) an exit may be obstructed by cargo if it is an exit which, in accordance with arrangements approved by the Chief Executive either generally or in relation to a class of aircraft or a particular aircraft, is not required for use by passengers;
 - (b) a door between the flight crew compartment and any adjacent compartment to which passengers have access may be locked or bolted if the pilot-in-command of the aircraft so determines, for the purpose of preventing access by passengers to the flight crew compartment; and
 - (c) nothing in this paragraph shall apply to any internal door which is so placed that it cannot prevent, hinder or delay the exit of passengers from the aircraft in an emergency if it is not in working order.
- (3) Every exit from the aircraft shall be marked with the words “EXIT” or “EMERGENCY EXIT”.
- (4)
- (a) Every exit from the aircraft shall be marked with instructions in English and with diagrams, to indicate the correct method of opening the exit.
 - (b) The markings shall be placed on or near the inside surface of the door or other closure of the exit and, if it is openable from the outside of the aircraft, on or near the exterior surface.
- (5)
- (a) Every aircraft to which this paragraph applies, being an aircraft of which the maximum total weight authorised exceeds 3,600 kg shall be marked upon the exterior surface of its fuselage with marking to show the areas (referred to in this sub-paragraph as break-in areas) which can, for purposes of rescue in an emergency, be most readily and effectively broken into by persons outside the aircraft.
 - (b) The break-in areas shall be rectangular in shape and shall be marked by right-angled corner markings, each arm of which shall be 10 cm in length along its outer edge and 3 cm in width.
 - (c) The words “CUT HERE IN EMERGENCY” shall be marked across the centre of each break-in area.
 - (d) If the corner markings are more than 2m apart, intermediate lines 10cm in length and 3 cm in width shall be inserted so that there is no more than 2m between adjacent markings.
- (6) On every flight by an aircraft to which this paragraph applies, being an aircraft of which the maximum total weight authorised exceeds 5,700 kg, every exit from such an aircraft intended to be used by passengers in an emergency shall be marked upon the exterior of the aircraft by a band not less than 5 cm in width outlining the exit.
- (7) The markings required by this paragraph shall —
- (a) be painted, or affixed by other equally permanent means;
 - (b) except in the case of the markings required by sub-paragraph (6), be red in colour and, in any case in which the colour of the adjacent background is such as to render red markings not readily visible, be outlined in white or some other contrasting colour in such a manner as to render them readily visible;
 - (c) in the case of the markings required by sub-paragraph (6), be of a colour clearly contrasting with the background on which it appears;

(d) be kept at all times clean and unobscured.

- (8) If one, but not more than one, exit from an aircraft becomes inoperative at a place where it is not reasonably practicable for it to be repaired or replaced, nothing in this paragraph shall prevent that aircraft from carrying passengers until it next lands at a place where the exit can be repaired or replaced:

Provided that —

- (a) the number of passengers carried and the position of the seats which they occupy is in accordance with arrangements approved by the Chief Executive either in relation to the particular aircraft or to a class of aircraft; and
- (b) in accordance with arrangements so approved, the exit is fastened by locking or otherwise, the words "Exit" or "Emergency Exit" are covered and the exit is marked by a red disc at least 23 centimetres in diameter with a horizontal white bar across it bearing the words "No exit" in red letters.

45. Imperilling safety of aircraft.

A person shall not wilfully or negligently imperil the safety of an aircraft or any person on board, whether by interference with any member of the flight crew of the aircraft, or by tampering with the aircraft or its equipment or by disorderly conduct or by any other means.

46. Imperilling safety of any person or property.

A person shall not wilfully or negligently cause or permit an aircraft to endanger any person or property.

47. Intoxication in aircraft.

- (1) A person shall not enter any aircraft when drunk, or be drunk in any aircraft.
- (2) A person under the influence of a drug to such an extent as to impair his senses shall not enter or be in any aircraft.
- (3) A person shall not, when acting as a member of the crew of any aircraft or being carried in any aircraft for the purpose of so acting, be under the influence of drink or a drug.

48. Smoking in aircraft.

- (1) Notices indicating when smoking is prohibited shall be exhibited in every Singapore aircraft so as to be visible from each passenger seat therein.
- (2) A person shall not smoke in any compartment of a Singapore aircraft at a time when smoking is prohibited in that compartment by a notice to that effect exhibited by or on behalf of the pilot-in-command of the aircraft.

49. Authority of pilot-in-command of aircraft.

Every person in a Singapore aircraft shall obey all lawful commands which the pilot-in-command of that aircraft may give for the purpose of securing the safety of the aircraft and of persons or property carried therein, or the safety, efficiency or regularity of air navigation.

50. Stowaways.

A person shall not secrete himself for the purpose of being carried in an aircraft without the consent of either the operator or the pilot-in-command thereof or of any other person entitled to give consent to his being carried in the aircraft.

PART VA : GENERAL AVIATION OPERATIONS

50A. General aviation operations.

- (1) In this Part, unless the context otherwise requires —
“general aviation operations” means the operation of an aircraft for any purpose other than for public transport or aerial work;
“Singapore General Aviation Requirements (SGAR)” means the requirements contained in the Singapore General Aviation Requirements issued under this Part.
- (2) The Chief Executive may, in such manner as he thinks fit, issue the Singapore General Aviation Requirements (SGAR) containing the requirements, as determined by the Chief Executive, that are to be complied with by the owner, operator or pilot-in-command of a Singapore aircraft used in any general aviation operations in addition to any other obligation that is imposed on such person under this Order.
- (3) The Chief Executive may, either generally or for such period as he may specify, waive the application of any provision of the Singapore General Aviation Requirements (SGAR) issued under this paragraph in respect of any person referred to in sub-paragraph (2).

PART VB : CARRIAGE OF MUNITIONS OF WAR AND DANGEROUS GOODS

50B. Definitions of this Part

In this Part, unless the context otherwise requires —

“agent” means any person who undertakes the responsibilities or carries out any of the functions of an operator or a shipper, as the case may be, on behalf of the operator or shipper in relation to the carriage of munitions of war or dangerous goods;

“cargo” means any property carried on an aircraft other than mail and accompanied or mishandled baggage;

“dangerous goods” means any article or substance which is capable of posing a risk to health, safety, property or the environment and which is set out in the list of dangerous goods in the Technical Instructions or is classified as such according to the Technical Instructions;

“dangerous goods accident” means any occurrence associated with and related to the transport or carriage of munitions of war or dangerous goods by air which results in fatal or serious injury to a person or major property damage;

“dangerous goods incident” means any occurrence, other than a dangerous goods accident, which is associated with and related to the transport or carriage of munitions of war or dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained, and includes any occurrence relating to the transport or carriage of munitions of war or dangerous goods and which seriously jeopardises the aircraft or its occupants;

“ID number” means an identification number specified in the Technical Instructions for an item of dangerous goods which has not been assigned a UN number;

“munitions of war” means any weapons and ammunition designed for use in warfare or against any person, including any part designed for such weapons and ammunition;

“serious injury” means any injury which is sustained by a person in an accident and which —

- (a) requires hospitalisation for a period more than 48 hours, where such period commences within 7 days from the date the injury was sustained;
- (b) results in a fracture of any bone, other than a simple fracture of any finger, toe or nose;
- (c) involves lacerations which cause severe haemorrhage or nerve, muscle or tendon damage;
- (d) involves injury to any internal organ;
- (e) involves second or third degree burns, or any burns affecting more than 5% of the surface of the body; or
- (f) involves verified exposure to infectious substances or injurious radiation;

“State of Origin” means the State in the territory of which the cargo was first loaded on an aircraft;

“Technical Instructions” means the English language edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air approved and published by decision of the Council of the International Civil Aviation Organisation for the time being in force;

“UN number” means the four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods to identify a substance or a particular group of substances.

50C. Permit for carriage of munitions of war

- (1) An aircraft shall not carry or have loaded onto it as cargo any munitions of war unless —
 - (a) the operator of the aircraft has been granted a munitions of war permit under sub-paragraph (3); and
 - (b) such goods are carried or loaded as cargo in accordance with —
 - (i) the Technical Instructions; and
 - (ii) the conditions of the munitions of war permit granted under sub-paragraph (3).
- (2) No person shall take, or cause to be taken, on board any aircraft or to deliver, or cause to be delivered, for loading or carriage thereon, any goods which he knows or suspects, or has reason to know or suspect, to be munitions of war unless the Technical Instructions have been complied with.
- (3) The Chief Executive may, subject to such conditions as he thinks fit, grant to the operator of any aircraft a munitions of war permit for the carriage of munitions of war on board the aircraft —
 - (a) on a single return flight (ad hoc permit); or
 - (b) on 10 or more return flights over a period of 6 months (block permit).
- (4) An application for a munitions of war permit under sub-paragraph (3) shall be submitted to the Chief Executive no later than 7 days before the relevant date of shipment and shall include the following information:
 - (a) the reason why it is essential for the munitions of war to be carried by air;
 - (b) a proposal (including any safety control measures specified by the applicant) on achieving a level of safety equivalent to that provided by the instructions specified in the Technical Instructions;
 - (c) the proposed proper shipping name, classification and UN number of the munitions of war with full supporting technical data;
 - (d) the proposed packaging;
 - (e) the quantity to be carried;
 - (f) any special handling required and any special emergency response information;
 - (g) names and addresses of the consignor and consignee; and
 - (h) the airports of departure and destination and the proposed dates of shipment and routing.

50D. Permit for carriage of dangerous goods

- (1) An aircraft shall not carry or have loaded onto it any dangerous goods unless —
 - (a) the operator of the aircraft has been granted a dangerous goods permit under sub-paragraph (3); and
 - (b) such goods are carried or loaded as cargo in accordance with —
 - (i) the Technical Instructions; and
 - (ii) the conditions of the dangerous goods permit granted under sub-paragraph (3).
- (2) Subject to sub-paragraphs (5) and (6), no person shall take, or cause to be taken, on board any aircraft or deliver, or cause to be delivered, for loading or carriage thereon, any dangerous goods which he knows or suspects, or ought to know or suspect, to be dangerous goods unless the Technical Instructions have been complied with.
- (3) The Chief Executive may, subject to such conditions as he thinks fit, grant to the operator of any aircraft a dangerous goods permit for the carriage of dangerous goods on board the aircraft —
 - (a) on a single return flight (ad hoc permit); or

- (b) on 10 or more return flights over a period of 6 months (block permit).
- (4) An application for a dangerous goods permit under sub-paragraph (1) shall be submitted to the Chief Executive no later than 7 days before the relevant date of shipment.
 - (5) Sub-paragraph (2) shall not apply to dangerous goods that are carried in compliance with sub-paragraph (6) and that are —
 - (a) required to be aboard the aircraft in accordance with the relevant airworthiness and technical requirements or that are authorised by the State of the operator to meet special requirements;
 - (b) required for providing, during flight, medical aid to a patient;
 - (c) required for providing, during flight, veterinary aid or a humane killer for an animal;
 - (d) required for providing, during flight, aid in connection with search and rescue operations;
 - (e) permitted for carriage by passengers or crew members in accordance with sub-paragraph (6)(c);
 - (f) intended for use or sale during the flight in question;
 - (g) vehicles carried in aircraft designed or modified for vehicle ferry operations; or
 - (h) required for the propulsion of the means of transport or the operation of its specialised equipment during transport such as refrigeration units or that are required in accordance with any technical requirements such as fire extinguishers.
 - (6) The goods specified in sub-paragraph (5) shall be carried in accordance with Part V of the Nineteenth Schedule, the applicable paragraphs of Part 1 of the Technical Instructions and the following sub-paragraphs:
 - (a) the goods specified in sub-paragraph (5)(a) shall only be carried on board an aircraft —
 - (i) if they are required to be carried on the aircraft by or under this Order or are otherwise intended for use on the aircraft for the purpose of the good order of the flight in accordance with the normal practice whether or not, in either case, such goods are required to be carried or intended to be used on that particular flight; or
 - (ii) when they are intended as replacements or have been removed for replacement, if they comply with paragraph 2.2.2 of Part 1 of the Technical Instructions;
 - (b) the goods specified in sub-paragraph (5)(b) and (c) shall only be carried on board an aircraft if —
 - (i) they are or may be required for use during the flight;
 - (ii) they are or may be required for use during a subsequent flight by the same aircraft and it will not be practicable to load the goods onto the aircraft in the intervening period before the commencement of that subsequent flight; or
 - (iii) they were used or might have been required for use during a previous flight by the same aircraft and it has not been practicable to unload them from the aircraft since that flight;
 - (c) the goods specified in sub-paragraph (5)(e) shall only be carried by passengers or crew members on board an aircraft if they comply with the provisions in Part 8 of the Technical Instructions;
 - (d) the goods specified in sub-paragraph (5)(f) shall only be carried on board an aircraft if the Technical Instructions identify them as being items which can be carried on the aircraft for sale or use during a flight or, when they are intended as replacements for such items or have been removed for replacement, they are carried in accordance with paragraph 2.2.3 of Part 1 of the Technical Instructions.

50E. Responsibilities of operator and shipper

- (1) Every operator of an aircraft, including his agent, who has been granted a munitions of war permit under paragraph 50C or a dangerous goods permit under paragraph 50D shall comply with the relevant provisions of Parts II, IV and V of the Nineteenth Schedule.
- (2) Every shipper, including his agent, who intends to consign any munitions of war or dangerous goods for carriage by air shall comply with the relevant provisions of Parts III and IV of the Nineteenth Schedule.

50F. Power to inspect, examine and obtain samples, etc

- (1) An authorised person may inspect, examine and take samples of any goods which the authorised person has reasonable grounds to suspect may be munitions of war or dangerous goods in respect of which any provision of this Part, the Technical Instructions or the Nineteenth Schedule have not been complied with.
- (2) An authorised person may open, or require to be opened, any baggage or package which the authorised person has reasonable grounds to suspect may contain munitions of war or dangerous goods in respect of which any provision of this Part, the Technical Instructions or the Nineteenth Schedule have not been complied with.
- (3) An authorised person may —
 - (a) enter at any time any premises occupied by any person —
 - (i) for the purposes of carrying out his duties under sub-paragraphs (1) and (2); or
 - (ii) for the purpose of ascertaining whether there is, or has been, a contravention of any provision of this Part, the Technical Instructions or the Nineteenth Schedule;
 - (b) inspect any book, document or other record relating to the loading or carriage of any munitions of war or dangerous goods which he reasonably suspects may be in contravention of any provision of this Part, the Technical Instructions or the Nineteenth Schedule; and
 - (c) take photographs of the premises, goods, baggage, package and any other property or material found thereon.
- (4) No person shall refuse to give access to, or wilfully obstruct, hinder or delay, any authorised person in the performance and execution of any matter or thing which he is authorised to do.
- (5) Subject to paragraph (6), any sample taken by an authorised person under this paragraph shall be retained for so long as the Chief Executive considers necessary in all the circumstances and shall be disposed of in such manner as the Chief Executive considers appropriate in all the circumstances.
- (6) Without prejudice to the generality of sub-paragraph (5), any sample taken under this paragraph may be retained —
 - (a) for use as evidence at a trial for an offence; or
 - (b) for forensic examination or for investigation in connection with an offence.

50G. Reporting and investigation of occurrences

- (1) The operator of a Singapore aircraft shall report to the Chief Executive, in accordance with sub-paragraphs (3), (4) and (5), any dangerous goods accident, dangerous goods incident or the finding of undeclared or misdeclared munitions of war or dangerous goods in cargo or passenger's baggage on board any aircraft operated by that operator.
- (2) An operator of any aircraft, other than a Singapore aircraft, shall report to the Chief Executive, in accordance with sub-paragraphs (3), (4) and (5), any dangerous goods accident, dangerous goods incident or the finding of undeclared or misdeclared munitions of war or dangerous goods in cargo or passenger's baggage on board any aircraft that is operated by that operator and that lands in or departs from Singapore.

- (3) A report required under paragraph (1) or (2) shall contain such of the following information as is appropriate to the occurrence:
- (a) date of the occurrence;
 - (b) State of the operator;
 - (c) State of Origin;
 - (d) State of registry;
 - (e) location of the occurrence, flight number and flight date;
 - (f) description of the goods and the reference number of the air waybill, pouch, baggage tag and ticket;
 - (g) proper shipping name (including the technical name, if applicable);
 - (h) UN or ID number, whichever is applicable;
 - (i) class or division of the goods in accordance with the Technical Instructions and any subsidiary risk;
 - (j) type of packaging and the packaging specification marking;
 - (k) quantity of the munitions of war or dangerous goods;
 - (l) name and address of the shipper or passenger;
 - (m) suspected cause of the occurrence;
 - (n) action taken upon discovery of the occurrence, including any mitigation measures;
 - (o) any serious injury, death or damage of property caused by the occurrence;
 - (p) any other reporting action taken;
 - (q) name, title, address and contact number of the reporter;
 - (r) any other relevant details.
- (4) Subject to sub-paragraph (5), a report containing as much of the information referred to in sub-paragraph (3) as is in his possession shall be despatched in a form specified by the Chief Executive, and by the quickest available means within 24 hours of the occurrence coming to the knowledge of the person making the report.
- (5) Where any information referred to in sub-paragraph (3) is not in the possession of the person making a report under sub-paragraph (1) or (2), that person shall despatch the information in a form as specified by the Chief Executive, and by the quickest available means within 24 hours of the information coming into his possession.
- (6) Where any dangerous goods accident, dangerous goods incident or the finding of any undeclared or misdeclared munitions of war or dangerous goods in cargo or passenger's baggage on board any aircraft is reported to the Chief Executive under sub-paragraph (1) or (2), the Chief Executive shall cause an investigation to be made in such manner as he thinks necessary.
- (7) For the purposes of any investigation under sub-paragraph (6), any authorised person carrying out the investigation may —
- (a) require such persons as he thinks necessary to answer any question, furnish any information or produce any document, paper or article, and retain any such document, paper or article until the completion of the investigation;
 - (b) have access to and examine any consignment of goods; and
 - (c) enter and inspect any place as he thinks necessary for the purposes of the investigation.
- (8) In this paragraph, "undeclared or misdeclared munitions of war or dangerous goods" means munitions of war or dangerous goods which are not declared or inaccurately declared in the relevant dangerous goods transport document referred to in the Nineteenth Schedule.

50H. Exemption from the provisions of Technical Instructions

(1) For the purposes of —

- (a) paragraphs 50C, 50D and 50E; and
- (b) paragraphs 1, 3, 4 and 7 of Part II, paragraph 1 of Part III and paragraphs 1 and 2 of Part IV of the Nineteenth Schedule,

the Chief Executive may exempt any person, including any operator or shipper, from any provision of the Technical Instructions referred to in any of those provisions, either absolutely or subject to such conditions as he thinks fit.

- (2) An application for an exemption under sub-paragraph (1) shall be made in writing and shall include any documents or information as the Chief Executive may require.
- (3) Any person who is granted an exemption under sub-paragraph (1) shall —
 - (a) provide a certified true copy of the exemption granted to the operator of the aircraft on which the munitions of war or dangerous goods are to be carried or loaded; and
 - (b) attach the relevant exemption documents to the dangerous goods transport document which accompanies the munitions of war or dangerous goods.
- (4) An exemption granted under sub-paragraph (1) shall be valid for a period of 2 years or such shorter period as the Chief Executive may determine in any particular case.

50I. No derogation from paragraph 50C

Paragraphs 50D, 50E and 50G shall be additional to and not in derogation from paragraph 50C.

PART VI : AIRCRAFT NOISE

51. Control of aircraft noise.

- (1) In this Part, unless the context otherwise requires —

“aircraft” means —

- (a) a subsonic jet aeroplane;
- (b) a supersonic aeroplane;
- (c) a propeller-driven aeroplane having a maximum total weight authorised of less than 8,618 kg, except that which is designed exclusively for agricultural, fire-fighting or aerobatic purposes;
- (d) a propeller-driven aeroplane having a maximum total weight authorised of 8,618 kg or more; or
- (e) a helicopter other than a helicopter that is designed exclusively for agricultural or fire-fighting purposes or for the purpose of carrying an external load;

“Annex” means Volume I of Annex 16 to the Chicago Convention entitled “Environmental Protection”;

“noise certificate” means a certificate issued or validated or other document approved by the competent authority of a State to the effect that the aircraft to which the certificate or other document relates complies with the applicable noise certification requirements in force in that State;

“State of Design” means the State having jurisdiction over the organisation responsible for the type design of an aircraft; and

“Type Certificate” means a document issued by a State of Design to define the design of an aircraft type and to certify that the design complies with the appropriate airworthiness requirements of that State.

- (2) This Part shall apply to every aircraft landing or taking off in Singapore except an aircraft flying in accordance with “A Conditions” or “B Conditions” set out in the Second Schedule.
- (3) An aircraft to which this Part applies shall not land or take off in Singapore unless —
- (a) there is in force in respect of that aircraft a noise certificate which is —
 - (i) issued by the Chief Executive under sub-paragraph (4);
 - (ii) issued or validated by the competent authority of the country in which the aircraft is registered, being a country which applies standards which in the opinion of the Chief Executive are substantially equivalent to the Annex; or
 - (iii) issued or validated in pursuance of the Annex by the competent authority of the State in which the aircraft is registered; and
 - (b) all conditions subject to which the certificate was issued are complied with.
- (4) The Chief Executive may, subject to such conditions as he thinks fit, issue a noise certificate in respect of any Singapore aircraft if —
- (a) the State of Design in respect of the aircraft type of that aircraft has included in the flight manual or the Type Certificate a statement that the aircraft type conforms with the relevant standards in respect of noise contained in the Annex;
 - (b) a noise certificate has been issued in respect of that aircraft by the State of Design; or
 - (c) the Chief Executive is satisfied, on the basis of any relevant documents, that the aircraft conforms with the relevant standards in respect of noise contained in the Annex.

- (5) On or after 15th May 2010, any person who requires a noise certificate in respect of a Singapore aircraft shall make an application to the Chief Executive in writing and such application shall include or be accompanied by such particulars and evidence relating to the aircraft, including any document specified in sub-paragraph (4), as the Chief Executive may require to enable him to properly determine whether a noise certificate may be issued in respect of that aircraft.

PART VII : FATIGUE OF CREW

52. Application and interpretation of PART VII.

- (1) Subject to sub-paragraph (2), paragraphs 53 and 54 shall apply in relation to any Singapore registered aircraft which is —
 - (a) engaged on a flight for the purpose of public transport; or
 - (b) operated by an air transport undertaking.
- (2) Paragraphs 53 and 54 shall not apply in relation to a flight made only for the purpose of instruction in flying given by or on behalf of a flying club or flying school or a person who is not an air transport undertaking.
- (3) In this Part, unless the context otherwise requires —

“day” means a continuous period of 24 hours beginning at midnight;

“fatigue” means a physiological state of reduced mental or physical performance resulting from sleep loss, extended wakefulness or physical activity that can impair a crew member’s alertness and ability to safely operate an aircraft or perform safety related duties;

“flight time”, in relation to any person, means all time spent by that person in an aircraft whether or not registered in Singapore (other than an aircraft of which the maximum total weight authorised does not exceed 1,600 kg and which is not flying for the purpose of public transport or aerial work) while it is in flight and he is carried therein as a member of the crew thereof;
- (4) - *deleted* -

53. Fatigue of crew — operator’s responsibilities.

- (1) The operator of an aircraft to which this paragraph applies shall not cause or permit that aircraft to make a flight unless —
 - (a) the operator has established a scheme for the management of fatigue for every person flying in that aircraft as a member of its crew;
 - (b) the scheme is approved by the Chief Executive;
 - (c) either —
 - (i) the scheme is incorporated in the operations manual required by paragraph 25; or
 - (ii) in a case where an operations manual is not required by paragraph 25, the scheme is incorporated in a document, a copy of which has been made available to every person flying in that aircraft as a member of its crew; and
 - (d) the operator has taken all such steps as are reasonably practicable to ensure that the provisions of the scheme will be complied with in relation to every person flying in that aircraft as a member of its crew.
- (2) The operator of an aircraft to which this paragraph applies shall not cause or permit any person to fly therein as a member of its crew if he knows or has reason to believe that that person is suffering from, or having regard to the circumstances of the flight to be undertaken, is likely to suffer from such fatigue while he is so flying as may endanger the safety of the aircraft or of its occupants.
- (3) The operator of an aircraft to which this paragraph applies shall not cause or permit any person to fly therein as a member of its flight crew unless the operator has in his possession an accurate and up-to-

date record in respect of that person and in respect of the 28 days immediately preceding the flight showing —

- (a) all his flight times; and
 - (b) brief particulars of the nature of the functions performed by him in the course of his flight times.
- (4) The record referred to in sub-paragraph (3) shall, subject to paragraph 59, be preserved by the operator of the aircraft until a date 12 months after the flight referred to in that paragraph.

54. Fatigue of crew — responsibilities of crew.

- (1) A person shall not act as a member of the crew of an aircraft to which this paragraph applies if he knows or suspects that he is suffering from, or having regard to the circumstances of the flight to be undertaken, is likely to suffer from such fatigue as may endanger the safety of the aircraft or its occupants.
- (2) A person shall not act as a member of the flight crew of an aircraft to which this paragraph applies unless he has ensured that the operator of the aircraft is aware of his flight times during the period of 28 days preceding the flight.

55. Flight times — responsibilities of flight crew.

- (1) Subject to sub-paragraph (2), a person shall not act as a member of the flight crew of a Singapore registered aircraft if at the beginning of the flight the aggregate of all his previous flight times —
- (a) during the period of 28 consecutive days expiring at the end of the day on which the flight begins exceeds 100 hours; or
 - (b) during the period of 12 months expiring at the end of the previous month exceeds 1,000 hours.
- (2) Paragraph (1) shall not apply to a flight made —
- (a) in aircraft of which the maximum total weight authorised does not exceed 1,600 kg and which is not flying for the purpose of public transport or aerial work; or
 - (b) in an aircraft not flying for the purpose of public transport nor operated by an air transport undertaking, if at the time when the flight begins the aggregate of all the flight times of that person since he was last medically examined and found fit for the purpose of the renewal of the Flight Crew Licence does not exceed 25 hours.

PART VIIA : EXHIBITIONS OF FLYING

55A. Exhibitions of flying.

- (1) No person shall act as the organiser of an exhibition of flying (referred to in this paragraph as the exhibition organiser) at an organised event which event the exhibition organiser reasonably believes is likely to be attended by more than 500 persons and which event consists wholly or partly of an exhibition of flying unless at the time at which such an exhibition of flying commences the exhibition organiser has obtained the permission in writing of the Chief Executive under sub-paragraph (4) for the exhibition of flying and complies with any conditions therein specified:

Provided that the permission in writing of the Chief Executive under sub-paragraph (4) shall not be required for an exhibition of flying at an organised event if the exhibition organiser could not reasonably foresee 7 days before the intended date of the event that it would be likely to be attended by more than 500 persons.

- (2)
- (a) The pilot-in-command of an aircraft intending to participate in an exhibition of flying for which a permission is required by virtue of sub-paragraph (1) shall take all reasonably steps to satisfy himself before he participates that —
- (i) the exhibition organiser has been granted such permission;
 - (ii) the flight can comply with any relevant conditions subject to which that permission may have been granted; and
 - (iii) the pilot has been granted a display authorisation appropriate to the intended flight.
- (b) The pilot-in-command of an aircraft participating in an exhibition of flying for which a permission required by virtue of sub-paragraph (1) has been granted shall comply with any conditions subject to which that permission has been granted.
- (c) No person shall act as pilot of an aircraft participating in an exhibition of flying for which a permission is required by virtue of sub-paragraph (1) unless he holds a display authorisation appropriate to the intended flight granted to him by the Chief Executive or such person as the Chief Executive may authorise to make such grant and he complies with any conditions thereof.
- (3) The exhibition organiser shall not permit any person to act as pilot of an aircraft which participates in an exhibition of flying for which a permission is required by virtue of sub-paragraph (1) unless such person holds a display authorisation appropriate to the intended flight granted by the Chief Executive or such person as the Chief Executive may authorise to make such grant.
- (4) The Chief Executive shall grant to any person applying therefor a permission required by virtue of sub-paragraph (1) if he is satisfied that that person is a fit and competent person, having regard in particular to his previous conduct and experience, his organisation, staffing and other arrangements, to safely organise the proposed exhibition of flying. The permission may be granted subject to such conditions, which may include conditions in respect of military aircraft, as the Chief Executive thinks fit and shall, subject to paragraph 60, remain in force for the period specified in the permission.
- (5) The Chief Executive or such person authorised by the Chief Executive under sub-paragraph (2) (c) shall, for the purposes of this paragraph, either unconditionally or subject to such conditions as he thinks fit —
- (a) grant an authorisation permitting the holder to act as pilot of an aircraft taking part in an exhibition of flying in respect of which a permission is required by virtue of sub-paragraph (1) upon being satisfied that the applicant is a fit person to hold the authorisation and is qualified by reason of his knowledge, experience, competence, skill, physical and mental fitness to fly in accordance therewith and for that purpose the applicant shall furnish such evidence and undergo such examinations and tests as the Chief Executive or such person authorised under sub-paragraph (2) (c) may require of him;

- (b) conduct such examinations or tests he may specify; and
 - (c) approve a person as qualified to furnish reports to him and accept such reports.
- (6) Sub-paragraph (1) shall not apply to an exhibition organiser at an organised event which takes place at an aerodrome or any other premises in the occupation or under the control of the military authorities.
- (7) The exhibition organiser shall not permit any military aircraft to participate in an exhibition of flying for which a permission is required by virtue of sub-paragraph (1) unless he complies with any conditions specified in respect of military aircraft subject to which such permission may have been granted.

PART VIII : DOCUMENTS AND RECORDS

56. Documents to be carried.

- (1) An aircraft shall not fly unless it carries the documents which it is required to carry under the law of the country in which it is registered.
- (2) A Singapore aircraft shall, when in flight, carry documents in accordance with the Tenth Schedule:
Provided that, if the flight is intended to begin and end at the same aerodrome and does not include passage over the territory of any country other than Singapore, the documents may be kept at that aerodrome instead of being carried in the aircraft.

57. Records to be kept.

The operator of a public transport aircraft registered in Singapore shall, in respect of any flight by that aircraft during which it may fly at an altitude of more than 49,000 feet, keep a record in a manner prescribed of the total dose of cosmic radiation to which the aircraft is exposed during the flight together with the names of the members of the crew of the aircraft during the flight.

58. Production of documents and records.

- (1) The pilot-in-command of an aircraft shall, within a reasonable time after being requested to do so by an authorised person, cause to be produced to that person —
 - (a) the Certificate of Registration and Certificate of Airworthiness in force in respect of the aircraft;
 - (b) the licences of its flight crew;
 - (c) the noise certificate as required by paragraph 51; and
 - (d) such other documents as the aircraft is required by paragraph 56 to carry when in flight.
- (2) The operator of a Singapore aircraft shall, within a reasonable time after being requested to do so by an authorised person, cause to be produced to that person such of the following documents or records as may have been requested by that person being documents or records which are required, by or under this Order, to be in force or to be carried, preserved or made available:
 - (a) the relevant documents as specified in the Tenth Schedule;
 - (b) the aircraft log book, engine log books and variable pitch propeller log books required under this Order to be kept;
 - (c) the weight schedule, if any, required to be preserved under paragraph 16;
 - (d) - *deleted* -
 - (e) any records of flight times, duty periods and rest periods which he is required by paragraph 53 (4) to preserve, and such other documents and information in the possession or control of the operator, as the authorised person may require for the purpose of determining whether those records are complete and accurate;
 - (f) any such operation manuals as are required to be made available under paragraph 25 (2) (a) (i);
 - (g) the records made by any flight recorder required to be carried by or under this Order; or
 - (h) the record made from any cosmic radiation detection equipment together with the record of the names of the members of the crew of the aircraft which are required to be kept under paragraph 57.

- (3) The holder of a licence granted or rendered valid under this Order shall, within a reasonable time after being requested to do so by an authorised person, cause to be produced to that person his licence, including any certificate of validation. The requirements of this sub-paragraph shall be deemed to have been complied with, except in relation to a licence required by paragraph 56 to be carried in the aircraft or kept at an aerodrome, if the licence requested is produced within 5 days after the request has been made, to an authorised person specified, at the time of the request, by the person to whom the request is made.
- (4) Every person required by paragraph 22 to keep a personal flying log book shall cause it to be produced within a reasonable time to an authorised person after being requested to do so by him within two years after the date of the last entry therein.

58A. Power to inspect and copy documents and records.

An authorised person shall have the power to inspect and copy any books, log book, documents or other records, for the purposes of carrying out any investigation, inspection or audit or to ascertain if there is, or has been, a contravention of —

- (a) this Order;
- (b) any condition attached to any licence, certificate, approval, permission, permit, exemption, authorisation or other document granted under this Order; or
- (c) the Air Operator Certificate Requirements (AOCR), the Singapore Airworthiness Requirements (SAR), the Singapore Air Safety Publications (SASP), the Singapore General Aviation Requirements (SGAR), any Airworthiness Notice or any Manual of Standards issued under this Order.

59. Preservation of documents, etc.

A person required by this Order to preserve any document by reason of his being the operator of an aircraft shall, if he ceases to be the operator of the aircraft, continue to preserve the document or record as if he had not ceased to be the operator, and in the event of his death the duty to preserve the document or record shall fall upon his personal representative:

Provided that if —

- (a) another person becomes the operator of the aircraft and it remains registered in Singapore he or his personal representative shall deliver to that other person upon demand the certificates of maintenance review and release to service, the log books and the weight schedule and any record made by a flight recorder and preserved in accordance with this Order which are in force or required to be preserved in respect of that aircraft;
- (b) an engine or variable pitch propeller is removed from the aircraft and installed in another aircraft operated by another person and registered in Singapore he or his personal representative shall deliver to that other person upon demand the log book relating to that engine or propeller; and
- (c) any person in respect of whom a record has been kept by him in accordance with paragraph 53 (3) becomes a member of the flight crew of a public transport aircraft registered in Singapore and operated by another person he or his personal representative shall deliver those records to that other person upon demand,

and it shall be the duty of that other person to deal with the document or record delivered to him as if he were the first-mentioned operator.

60. Revocation, suspension and variation of certificates, licences and other documents.

- (1) The Chief Executive may, if he thinks fit, provisionally suspend any certificate, licence, approval, permission, exemption, authorisation or other document issued, granted or having effect under this Order pending investigation of the case.
- (2) The Chief Executive may, on sufficient ground being shown to his satisfaction after due inquiry, revoke, suspend or vary any such certificate, licence, approval, permission, exemption, authorisation or other document.
- (3) The holder or any person having the possession or custody of any certificate, licence, approval, permission, exemption or other document which has been revoked, suspended or varied under this Order shall surrender it to the Chief Executive within a reasonable time after being required to do so by him.
- (4) The breach of any condition subject to which any certificate, licence, approval, permission, exemption or other document has been granted or issued under this Order shall render the document invalid during the continuance of the breach.

61. Offences in relation to documents and records.

- (1) A person shall not with intent to deceive —
 - (a) use any certificate, licence, approval, permission, exemption, authorisation or other document issued or required by or under this Order which has been forged, altered, revoked or suspended or to which he is not entitled;
 - (b) lend any certificate, licence, approval, permission, exemption, authorisation or other document issued or required by or under this Order to or allow it to be used by any other person; or
 - (c) make any false representation for the purpose of procuring for himself or any other person the grant, issue, renewal or variation of any such certificate, licence, approval, permission, exemption, authorisation or any other document,and in this paragraph a reference to a certificate, licence, approval, permission, exemption, authorisation or other document includes a copy or purported copy thereof.
- (2) A person shall not wilfully mutilate, alter or render illegible any log book or other record required by or under this Order to be maintained or any entry made therein, or knowingly make, or procure or assist in the making of, any false entry in or material omission from any such log book or record or destroy any such log book or record during the period for which it is required under this Order to be preserved.
- (3) All entries made in writing in any log book and record referred to in sub-paragraph (2) shall be in ink or indelible pencil.
- (4) A person shall not wilfully or negligently make in a load sheet any entry which is incorrect in any material particular, or any material omission from such a load sheet.
- (5) A person shall not purport to issue any certificate for the purposes of this Order or any regulations made or requirements notified thereunder unless he is authorised to do so under this Order.
- (6) A person shall not issue any such certificate as aforesaid unless he has satisfied himself that all statements in the certificate are correct.

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PART IX : CONTROL OF AIR TRAFFIC

62. Rules of the air.

- (1) The Rules of the Air for the purposes of this paragraph shall consist of —
 - (a) the provisions of the Rules of the Air in Annex 2 to the Chicago Convention as set out in Part I of the Eleventh Schedule (except 3.8.1 of Chapter 3 and 1.1, 1.2 and 1.3 of Appendix 2 thereof); and
 - (b) the provisions as set out in Part II of that Schedule.
- (2) Every person and every aircraft shall comply with the Rules of the Air as may be applicable to that person or aircraft in the circumstances of the case.
- (3) Subject to sub-paragraph (4), it shall be an offence to contravene, to permit the contravention or, or to fail to comply with, the Rules of the Air.
- (4) It shall be lawful for the Rules of the Air to be departed from —
 - (a) in circumstances that render such departure absolutely necessary in the interests of safety; or
 - (b) to the extent necessary for complying with the law of any country other than Singapore within which the aircraft then is.
- (5) If any departure from the Rules of the Air is made in accordance with sub-paragraph (4), the pilot-in-command of the aircraft shall cause written particulars of the departure, and of the circumstances giving rise to it, to be given within 10 days thereafter to the competent authority of the country in whose territory the departure was made or if the departure was made over the high seas, to the Chief Executive.
- (6) Nothing in the Rules of the Air shall exonerate any person from the consequence of any neglect in the use of lights or signals or of the neglect of any precautions required by ordinary aviation practice or by the special circumstances of the case.
- (7) The Chief Executive may for the purpose of promoting the safety of the aircraft make regulations as to special signals and other communications to be made by or on an aircraft, as to the course on which and the height at which an aircraft shall fly and as to any other precautions to be observed in relation to the navigation and control of aircraft which the Chief Executive may consider expedient for the purpose aforesaid and no aircraft shall fly in contravention of any such regulations.

62A. Licensing of air traffic controllers

- (1) Subject to sub-paragraph (5), no person shall —
 - (a) act as an air traffic controller;
 - (b) hold himself out, whether by use of radio call sign or otherwise, as an air traffic controller; or
 - (c) supervise or train any person to act as an air traffic controller,

unless he holds an air traffic controller licence granted or renewed under this paragraph and the appropriate rating is included in such licence.

- (2) Any person who desires to obtain or renew an air traffic controller licence shall apply to the Chief Executive in such form and manner as the Chief Executive may determine.

- (3) An applicant shall undergo such training courses, examinations and tests as the Chief Executive may require.
- (3A) Without prejudice to any other provision of this Order, the Chief Executive may, for the purpose of sub-paragraph (3), either absolutely or subject to such conditions as he thinks fit –
- (a) approve any course of training or instruction;
 - (b) authorise a person to conduct such examinations or tests as the Chief Executive may specify;
 - (c) approve a person to provide any course of training or instruction approved under sub-paragraph (a); and
 - (d) approve the use of a simulator for the purposes of air traffic control training.
- (3B) The Chief Executive may, in such manner as he thinks fit, publish a manual, to be called the “Manual of Standards – Licensing of Air Traffic Control Personnel”, containing such standards, recommended practices and guidance material relating to the licensing of air traffic controllers and the approval of persons to provide training for air traffic controllers as he may determine to be applicable in Singapore.
- (3C) The holder of an air traffic controller licence shall comply with the applicable standards specified in the Manual of Standards – Licensing of Air Traffic Control Personnel and shall not at any time contravene any condition of the air traffic controller licence.
- (3D) A person who is approved to provide any course of training or instruction under sub-paragraph (3A) shall comply with the applicable standards specified in the Manual of Standards – Licensing of Air Traffic Control Personnel and shall not at any time contravene any condition of the approval granted to him.
- (4) The Chief Executive shall, subject to such conditions as he thinks fit, grant or renew an air traffic controller licence if he is satisfied that the applicant —
- (a) is not below the age of 21 years;
 - (b) possesses the necessary knowledge, skill and experience to act as an air traffic controller;
 - (c) satisfies the medical examination and medical fitness requirements specified in the Fourteenth Schedule.
- (5) Notwithstanding sub-paragraph (1), a person who is undergoing on-the-job training to act as an air traffic controller shall be entitled to hold himself out, whether by use of radio call sign or otherwise, as an air traffic controller if he is directly supervised by a person who holds an air traffic controller licence with the appropriate rating.
- (6) Paragraphs 62E, 62F and 62G shall apply to any person referred to in sub-paragraph (5) as they apply to a holder of an air traffic controller licence.
- (7) In sub-paragraphs (1) and (5) and paragraph 62E(1), (2) and (4), “rating” means an air traffic controller rating specified in the Seventeenth Schedule.

62B. Signature required

An air traffic controller licence shall be signed by the successful applicant upon the grant or renewal of the licence under paragraph 62A (4) in the presence of a person authorised by the Chief Executive.

62C. Renewal and duration of air traffic controller licence

An air traffic controller licence may be granted or renewed for a period of —

- (a) 48 months from the date the licence is granted or renewed, if the applicant is below 40 years of age on that date;
- (b) 24 months from the date the licence is granted or renewed, if the applicant is 40 years of age or more but less than 50 years of age on that date; or
- (c) 12 months from the date the licence is granted or renewed, if the applicant is 50 years of age or more on that date.

62D. Replacement of air traffic controller licence

- (1) Where an air traffic controller licence has been lost or defaced before its expiry, the Chief Executive may, on application, issue a replacement air traffic controller licence.
- (2) Upon issuance of the replacement licence, the holder of the air traffic controller licence to whom the replacement licence is issued shall sign the replacement licence in the presence of a person authorised by the Chief Executive.

62E. Incapacity of air traffic controllers

- (1) A holder of an air traffic controller licence who —
 - (a) knows or has reason to believe that he is unfit or is suffering from any personal injury which affects his capacity to act as an air traffic controller in accordance with the rating in his licence;
 - (b) suffers from any illness which affects his capacity to act as an air traffic controller in accordance with the rating in his licence throughout a period of more than 20 days;
 - (c) knows or has reason to believe that she is pregnant;
 - (d) requires continued treatment with any medical prescription; or
 - (e) has received medical treatment requiring hospitalisation,shall —
 - (i) inform the Chief Executive in writing of such injury, illness, pregnancy or treatment —
 - (A) as soon as possible in the case of any such injury, pregnancy or treatment; or
 - (B) as soon as possible after a period of 20 days has elapsed in the case of any such illness;and
 - (ii) not exercise the privileges of the licence and related ratings until he has satisfied the evaluating medical examiner that his medical fitness has been restored to the standard required in paragraph 7 of the Fourteenth Schedule.
- (2) A holder of an air traffic controller licence referred to in sub-paragraph (1)(a) or (b) shall not act as an air traffic controller in accordance with the rating in his licence until —

- (a) he has undergone such medical examination as may be required by the Chief Executive and is certified fit to act as an air traffic controller; or
 - (b) if he is not required by the Chief Executive to undergo a medical examination, he has complied with any condition which the Chief Executive may impose on him.
- (3) The Chief Executive may require the holder of an air traffic controller licence referred to in sub-paragraph (1) (c) to undergo such medical examination as may be determined by the Chief Executive.
- (4) A holder of an air traffic controller licence who has been required to undergo the medical examination referred to in sub-paragraph (3) shall not act as an air traffic controller in accordance with the rating in her licence if she is certified as unfit to act as an air traffic controller.

62F. Fatigue of air traffic controllers

A holder of an air traffic controller licence shall not act as an air traffic controller if he knows or has reason to believe that he is suffering from fatigue which may render him unable to act as an air traffic controller in a safe and proper manner.

62G. Prohibition of use of psychoactive substances

- (1) A holder of an air traffic controller licence shall not act as an air traffic controller if he is under the influence of any psychoactive substance which may render him unable to carry out his duties as an air traffic controller in a safe and proper manner.
- (2) A holder of an air traffic controller licence shall not at any time engage in the problematic use of psychoactive substances.

62H. Paragraphs 62A to 62G not to apply to members of Armed Forces

Paragraphs 62A to 62G shall not apply to any member of the Armed Forces who acts as an air traffic controller in respect of any aircraft under any circumstance.

63. Power to prohibit or restrict flying.

- (1) Where the Minister makes an order under section 3 (2) (l) of the Act, the Chief Executive may make regulations supplemental to such order restricting or imposing conditions on flight, either generally or in relation to any class of aircraft, over any area or along any route specified in such order and an aircraft shall not fly in contravention of such regulations.
- (2) If the pilot-in-command of an aircraft becomes aware that the aircraft is flying in contravention of any such regulations he shall forthwith cause a signal of distress to be made by radio or by one of the prescribed visual signals, and shall (unless otherwise instructed by the appropriate air traffic control unit or by a commissioned officer of the Armed Forces) cause the aircraft to land at the aerodrome, being an aerodrome suitable for that purpose, which it can reach by flying to the least possible extent over the area to which the regulations relate. The aircraft shall not begin to descend while over such area.

64. Balloons, kites and airships.

- (1) Within Singapore —
 - (a) a captive balloon or kite shall not be flown at a height of more than 200 feet above the ground level or within 60 metres of any vessel, vehicle or structure;
 - (b) a captive balloon shall not be flown within 5 kilometres of an aerodrome;
 - (c) a balloon exceeding two metres in any linear dimension at any stage of its flight, including any basket or other equipment attached to the balloon, shall not be flown in controlled airspace;
 - (d) a kite shall not be flown within 5 kilometres of an aerodrome;
 - (e) an airship shall not be moored; and
 - (f) an aircraft capable of being flown without a pilot shall not be flown —
 - (i) more than 200 feet above ground level;
 - (ii) within 5 kilometres of an aerodrome; or
 - (iii) within the boundaries of any danger or of any restricted or prohibited area, without the permission in writing of the Chief Executive, and in accordance with any conditions subject to which that permission may be granted.
- (2) A captive balloon when in flight shall be securely moored, and shall not be left unattended unless it is fitted with a device which ensures its automatic deflation if it breaks free of its moorings.
- (3) For the purposes of this paragraph, the reference to an aerodrome in sub-paragraph 1(b),(d) and (f)(ii) shall include a reference to a military aerodrome.

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PART X : AERODROMES, AERONAUTICAL LIGHTS AND DANGEROUS LIGHTS

65. Aerodromes: public transport of passengers and instruction in flying.

- (1) An aircraft flying for the purpose of the public transport of passengers or for the purpose of instruction in flying shall not take-off or land at a place in Singapore other than —
 - (a) a Government aerodrome notified as available for the take-off and landing of such aircraft, or in respect of which the person in charge of the aerodrome has given his permission for the particular aircraft to take-off or land, as the case may be; or
 - (b) a certified aerodrome.
- (2) The aircraft referred to in sub-paragraph (1) shall take-off or land in accordance with any conditions subject to which the aerodrome may have been so certified or notified, or subject to which such permission may have been given.
- (3) An aircraft engaged on a flight for the public transport of passengers shall not take-off or land by night at any place in Singapore unless adequate lighting is in operation at the aerodrome.

66. Use of Government aerodromes.

The Minister may cause to be notified, subject to such conditions as he thinks fit, any Government aerodrome as an aerodrome available for take-off and landing by aircraft.

67. Aerodrome certificate

- (1) No person shall operate an aerodrome in Singapore for the take-off and landing of aircraft engaged in flights for the purpose of public transport or instruction in flying unless he is the holder of an aerodrome certificate granted under this Order.
- (2) An applicant for the grant or renewal of an aerodrome certificate shall submit —
 - (a) an application in the form set out in the Manual of Aerodrome Standards; and
 - (b) an aerodrome manual for the aerodrome for which the application is made.
- (3) The aerodrome manual referred to in sub-paragraph (2) (b) shall contain —
 - (a) information and instructions relating to the matters specified in the Eighteenth Schedule; and
 - (b) such other information and instructions as may be necessary to enable the aerodrome operating staff to perform their duties.
- (4) The Chief Executive may grant or renew an aerodrome certificate to an applicant if he is satisfied that —
 - (a) the applicant is competent to operate and maintain his aerodrome properly, having regard to his previous conduct and experience, equipment, organisation, staffing, maintenance and other arrangements;

- (b) the aerodrome manual prepared for the applicant's aerodrome and submitted with his application in accordance with sub-paragraphs (2) and (3) contains accurate information and complies with the requirements specified in the Eighteenth Schedule;
 - (c) the applicant's aerodrome facilities, equipment and services comply with the standards specified in the Manual of Aerodrome Standards;
 - (d) the applicant's aerodrome operating procedures make satisfactory provision for the safety of aircraft; and
 - (e) for the purpose of any application made on or after 24th November 2005, an acceptable safety management system is in place at the applicant's aerodrome.
- (5) If the Chief Executive refuses to grant or renew an aerodrome certificate to an applicant, the Chief Executive shall, within 14 days of the refusal, give the applicant a written notice of the refusal, stating the reasons for the refusal.
- (6) The Chief Executive may, upon payment of the fee specified in paragraph 21(1) of the Twelfth Schedule, grant or may renew an aerodrome certificate subject to such conditions as he thinks fit.
- (7) If the Chief Executive grants or renews an aerodrome certificate subject to any condition —
- (a) the condition shall be set out in an endorsement on the aerodrome certificate or otherwise notified to the applicant in writing; and
 - (b) the reasons for the condition shall be provided to the applicant in writing.
- (8) The Chief Executive may suspend or cancel an aerodrome certificate if the applicable annual fee specified in paragraph 21(2) of the Twelfth Schedule is not paid within the time required by the Chief Executive, or if there are reasonable grounds for believing that —
- (a) a condition to which the certificate is subject has been breached; or
 - (b) the aerodrome facilities, equipment, operations or maintenance are not of the standard necessary in the interests of the safety of air navigation.
- (9) Before suspending or cancelling an aerodrome certificate under sub-paragraph (8), the Chief Executive shall —
- (a) give the aerodrome operator holding the certificate a notice which —
 - (i) sets out the facts and circumstances that, in the opinion of the Chief Executive, justify the suspension or cancellation of that certificate; and
 - (ii) invites the aerodrome operator to show cause, in writing, within a reasonable period stated in the notice, as to why that certificate should not be suspended or cancelled; and
 - (b) take into account any reason that the aerodrome operator may give under sub-paragraph (a) (ii).
- (10) A suspension or cancellation of an aerodrome certificate shall take effect from the date specified in the notice of suspension or cancellation.
- (11) An aerodrome certificate granted or renewed on or after 30th June 2009 shall be valid for a period of 5 years after the date of the grant or renewal, as the case may be, unless it is earlier suspended or cancelled in accordance with sub-paragraph (8).
- (12) An aerodrome certificate shall not be transferable to any person without prior consent in writing of the Chief Executive, and any purported transfer of an aerodrome certificate in the contravention of this sub-paragraph shall be void and of no effect
- (13) An aerodrome certificate granted before 30th June 2009 and in force on that date shall be valid for a period of 5 years from 30th June 2009.

67A. Aerodrome manual

- (1) An aerodrome operator shall —
 - (a) produce an aerodrome manual for his aerodrome and provide the Chief Executive with a copy thereof which is kept complete and current;
 - (b) keep at least one complete and current copy of the aerodrome manual at the aerodrome and, if the aerodrome is not his principal place of business, keep another such copy of the aerodrome manual at his principal place of business;
 - (c) make the copy of the aerodrome manual referred to in sub-paragraph (b) available for inspection by the Chief Executive or any authorised person;
 - (d) maintain the aerodrome manual and make such amendments as may be necessary to maintain the accuracy of the information in the aerodrome manual and to keep its contents up to date; and
 - (e) make such amendments or additions to the aerodrome manual as the Chief Executive may require for —
 - (i) maintaining the accuracy of the aerodrome manual;
 - (ii) ensuring the safe and efficient operation of aircraft at the aerodrome; or
 - (iii) ensuring the safety of air navigation.
- (2) An aerodrome operator shall —
 - (a) make available to each member of the aerodrome operating staff a copy of the aerodrome manual or a copy of every part of the aerodrome manual which is relevant to the member's duties and shall ensure that such copy is kept up to date; and
 - (b) take all reasonable steps to ensure that each member of the aerodrome operating staff —
 - (i) is aware of the contents of every part of the aerodrome manual which is relevant to his duties; and
 - (ii) undertakes his duties in conformity with the relevant provisions of the manual.
- (3) In this paragraph, “aerodrome operating staff” means all persons, whether or not employed by the aerodrome operator, who in the course of their duties are —
 - (a) concerned with ensuring that the aerodrome is safe for use by aircraft; or
 - (b) required to have access to the aerodrome manoeuvring area or apron.

67B. Manual of Aerodrome Standards

The Chief Executive may, in such manner as he thinks fit, publish a Manual of Aerodrome Standards containing such standards, recommended practices and guidance material on aerodromes as he may determine to be applicable in Singapore.

67C. Compliance with Manual of Aerodrome Standards and conditions of aerodrome certificate

An aerodrome operator —

- (a) shall comply with the applicable standards specified in the Manual of Aerodrome Standards; and
- (b) shall not at any time contravene, or cause or permit the contravention of, any condition of the aerodrome certificate.

67D. Competence of operational and maintenance personnel

- (1) An aerodrome operator shall employ an adequate number of qualified and skilled personnel to perform all critical activities for the operation and maintenance of his aerodrome.
- (2) If the Chief Executive requires the competency of the personnel referred to in sub-paragraph (1) to be certified, the aerodrome operator shall, for the purposes of that sub-paragraph, employ only persons possessing such certification.
- (3) An aerodrome operator shall implement programmes to upgrade the competency of the personnel referred to in sub-paragraph (1).

67E. Aerodrome operation and maintenance

- (1) Subject to such directions that the Chief Executive may issue, an aerodrome operator shall operate and maintain his aerodrome in accordance with the procedures set out in the aerodrome manual.
- (2) An aerodrome operator shall ensure proper and efficient maintenance of the aerodrome facilities and equipment.
- (3) An aerodrome operator shall, in respect of his aerodrome, ensure that —
 - (a) appropriate air traffic services are available to ensure the safety of aircraft in the airspace associated with the aerodrome; and
 - (b) aeronautical information services, meteorological services and provision of security and other services relating to safety are available.

67F. Aerodrome operator's safety management system

Every aerodrome operator shall, by 24th November 2005, establish and implement an operating safety management system that complies with the standards specified in the Manual of Aerodrome Standards at each of his aerodromes to which this Order applies.

67G. Access to aerodrome

- (1) The Chief Executive or any authorised person may, before an aerodrome certificate is granted and subsequently at any other time, for the purpose of ensuring safety at an aerodrome —
 - (a) inspect and carry out tests on the aerodrome facilities, equipment or services;
 - (b) inspect the aerodrome operator's documents and records; or
 - (c) verify the aerodrome's safety management system.
- (2) For the purposes of sub-paragraph (1), an aerodrome operator shall, at the request of the Chief Executive or any authorised person, allow access to any part of the aerodrome or any aerodrome facility, equipment, records and operator personnel.
- (3) An aerodrome operator shall co-operate in facilitating the activities referred to in sub-paragraph (1).

67H. Notification and reporting

- (1) An aerodrome operator shall review every Aeronautical Information Publication, AIP Supplement, AIP Amendment, Notice to Airmen, Pre-flight Information Bulletin and Aeronautical Information Circular issued by the Aeronautical Information Services provider on receipt thereof and shall, immediately after such review, notify the Aeronautical Information Services provider of any inaccurate information contained therein that pertains to his aerodrome.
- (2) An aerodrome operator shall, in writing and within such period of time as may be specified by the Chief Executive, notify the Aeronautical Information Services provider of any change to any aerodrome facility or equipment or the level of service at the aerodrome —
 - (a) which has been planned in advance; and
 - (b) which is likely to affect the accuracy of the information contained in any publication by the Aeronautical Information Services provider referred to in sub-paragraph (1), before effecting the change.
- (3) Subject to sub-paragraph (4), an aerodrome operator shall give the Aeronautical Information Services provider, and shall arrange for the air traffic control unit to receive, immediate notice detailing any of the following circumstances of which the aerodrome operator has knowledge:
 - (a) in respect of obstacles, obstructions and hazards —
 - (i) any projection by an object through an obstacle limitation surface relating to the aerodrome; and
 - (ii) the existence of any obstruction or hazardous condition affecting aviation safety at or near the aerodrome;
 - (b) any change in the level of service at the aerodrome as set out in any publication by the Aeronautical Information Services provider referred to in sub-paragraph (1) or any variation (that has been accepted by the Chief Executive) from the Manual of Aerodrome Standards;
 - (c) closure of any part of the movement area of the aerodrome;
 - (d) any significant change in any aerodrome facility or the physical layout of the aerodrome; and
 - (e) any other condition that could affect aviation safety at the aerodrome and against which precautions are warranted.
- (4) When it is not feasible for an aerodrome operator to arrange for the air traffic control unit to receive notice of any circumstance referred to in sub-paragraph (3), the aerodrome operator shall give immediate notice directly to the pilots who may be affected by that circumstance.

67I. Special inspections

An aerodrome operator shall inspect an aerodrome, as circumstances require, to ensure aviation safety —

- (a) as soon as practicable after any aircraft accident or incident within the meaning of these terms as defined in the Air Navigation (Investigation of Accidents and Incidents) Order 2003 (G.N. No. S 78/2003);
- (b) during and immediately after any period of construction or repair of any aerodrome facility or equipment that is critical to the safety of aircraft operation; and
- (c) at any other time when there are conditions at the aerodrome that could affect aviation safety.

67J. Handling of obstructions

- (1) An aerodrome operator shall remove from the aerodrome surface any vehicle or any other obstruction that is likely to be hazardous to aircraft operations.
- (2) An aerodrome operator shall not permit any structure in any area within his control to exceed the obstacle limitation surface and shall take such reasonable measures within his power to prevent any other structure from so exceeding, except in the case of —
 - (a) any frangible structure which, by virtue of its function, must be located on the runway strip;
 - (b) any structure which is shielded in accordance with the Manual of Aerodrome Standards by an existing object; or
 - (c) any structure which, after aeronautical study, is determined not to adversely affect the safety or significantly affect the regularity of operations of aircraft.

67K. Warning notices

When any low flying aircraft, at or near an aerodrome, or taxiing aircraft is likely to be hazardous to any person or vehicular traffic, the aerodrome operator shall —

- (a) post hazard warning notices on any public way that is adjacent to the manoeuvring area; or
- (b) if such a public way is not controlled by the aerodrome operator, inform the authority responsible for posting the notices on the public way that there is a hazard.

67L. Deviation from Manual of Aerodrome Standards

- (1) Where an aerodrome fails to comply with any standard specified in the Manual of Aerodrome Standards, the Chief Executive may, after taking into consideration such aeronautical or other studies as he thinks fit, determine any condition or procedure necessary to ensure that the aerodrome attains a level of safety equivalent to that established by the standard.
- (2) The aerodrome operator of an aerodrome referred to in sub-paragraph (1) shall ensure that the aerodrome complies with any condition or procedure determined by the Chief Executive under that sub-paragraph.
- (3) Any deviation of an aerodrome from any standard specified in the Manual of Aerodrome Standards shall be set out in an endorsement to the relevant aerodrome certificate.

67M. Exemptions

- (1) Without prejudice to the generality of paragraph 84, the Minister may, after taking into account all safety-related aspects and operating circumstances, exempt, by notice in writing, any aerodrome operator from any provision of paragraphs 67, 67A and 67C to 67L.
- (2) Any exemption granted by the Minister under sub-paragraph (1) shall be subject to any condition or procedure specified by the Minister in the relevant aerodrome certificate as being necessary in the interest of safety.

67N. –deleted–

68. Charges at Government aerodromes and certified aerodromes

- (1) The Minister may, in relation to any Government aerodrome notified in pursuance of paragraph 66, or in relation to any aerodrome in respect of which an aerodrome certificate has been granted, or to such aerodromes generally or to any class thereof, prescribe the charges, or the maximum charges, which may be made for the use of the aerodrome and for any services performed at the aerodrome to or in connection with aircraft, and may further prescribe the conditions to be observed in relation to those charges and the performance of these services.
- (2) The operator of a certified aerodrome in relation to which the Minister has prescribed any charges or conditions under sub-paragraph (1) shall not cause or permit any charges to be made in contravention of the prescribed charges, and shall cause particulars of the prescribed charges to be kept exhibited at the aerodrome in such a place and manner as to be readily available for the information of any person affected thereby.
- (3) The operator of any certified aerodrome shall, when required by the Minister, furnish to the Minister such particulars as he may require of the charges established by the operator for the use of the aerodrome or of any facilities provided at the aerodrome for the safety, efficiency or regularity of air navigation.

69. Use of aerodromes by aircraft of Contracting States

The operator of any certified aerodrome in Singapore which is available for the take-off and landing of Singapore aircraft engaged in flights for the purpose of public transport or instruction in flying shall cause the aerodrome, and all air navigation facilities provided thereat, to be available for use by aircraft registered in other Contracting States on the same terms and conditions as for use by Singapore aircraft.

70. Noise and vibration caused by aircraft on aerodrome.

- (1) Noise and vibration may be caused by aircraft including military aircraft, on Government aerodromes, certified aerodromes or on aerodromes at which the production, repair or maintenance of aircraft is carried out by persons carrying on business as producers or repairers of aircraft, under the following conditions that is to say, that whether in the course of the production of the aircraft or otherwise —
 - (a) the aircraft is taking off or landing; or
 - (b) the aircraft is moving on the ground or water; or
 - (c) the engines are being operated in the aircraft —
 - (i) for the purpose of ensuring their satisfactory performance;
 - (ii) for the purpose of bringing them to a proper temperature in preparation for, or at the end of, a flight; or
 - (iii) for the purpose of ensuring that the instruments, accessories or other components of the aircraft are in a satisfactory condition.
- (2) Section 4 (2) of the Act shall apply to the aerodromes specified in sub-paragraph (1).

71. Aeronautical lights.

- (1) A person shall not establish or maintain an aeronautical light within Singapore except with the permission of the Chief Executive and in accordance with any conditions subject to which the permission may be granted.
- (2) A person shall not alter the character of an aeronautical light within Singapore except with the permission of the Chief Executive and in accordance with any conditions subject to which the permission may be granted.
- (3) A person shall not wilfully or negligently damage or interfere with any aeronautical light established and maintained by or with the permission of the Chief Executive.

72. Dangerous lights.

- (1) A person shall not exhibit in Singapore any light which —
 - (a) by reason of its glare is liable to endanger aircraft taking off from, or landing at, an aerodrome; or
 - (b) by reason of its liability to be mistaken for an aeronautical light is liable to endanger aircraft.
- (2) If any light which appears to the Chief Executive to be such a light as aforesaid is exhibited the Chief Executive may cause a notice to be served upon the person who is the occupier of the place where the light is exhibited or having charge of the light, directing that person, within a reasonable time to be specified in the notice, to take such steps as may be specified in the notice for extinguishing or screening the light and for preventing for the future the exhibition of any other light which may similarly endanger aircraft.
- (3) The notice may be served either personally or by post, or by affixing it in some conspicuous place near to the light to which it relates.

72A. Aviation fuel at aerodromes.

- (1) A person who has the management of an aviation fuel installation on an aerodrome in Singapore shall not cause or permit any fuel to be delivered to that installation or from it to an aircraft unless —
 - (a) when the fuel is delivered into the installation he is satisfied that —
 - (i) the installation is capable of storing and dispensing the fuel so as not to render it unfit for use in aircraft;
 - (ii) the installation is marked in a manner appropriate to the grade of fuel stored or if different grades are stored in different parts each part is so marked; and
 - (iii) in the the case of delivery into the installation or part thereof from a vehicle or vessel, the fuel has been sampled and is of a grade appropriate to that installation or that part of the installation as the case may be and is fit for use in aircraft; and
 - (b) when any aviation fuel is dispensed from the installation he is satisfied as the result of sampling that the fuel is fit for use in aircraft.
- (2) Sub-paragraph (1) shall not apply in respect of fuel which has been removed from an aircraft and it is intended for use in another aircraft operated by the same operator as the aircraft from which it has been removed.

- (3) A person to whom sub-paragraph (1) applies shall —
- (a) keep a written record in respect of each installation of which he has the management, which record shall include —
 - (i) particulars of the grade and quantity of aviation fuel delivered and the date of delivery;
 - (ii) particulars of all samples taken of the aviation fuel and of the results of tests of those samples; and
 - (iii) particulars of the maintenance and cleaning of the installation;
 - (b) preserve the written record for a period of 12 months or such longer period as the Chief Executive may direct; and
 - (c) within a reasonable time after being requested to do so by the Chief Executive or an authorised person, produce such record to the Chief Executive or that authorised person.
- (4) A person shall not cause or permit any aviation fuel to be dispensed for use in an aircraft if he knows or has reason to believe that the aviation fuel is not fit for use in aircraft.
- (5) If it appears to the Chief Executive or an authorised person that any aviation fuel is intended or likely to be delivered in contravention of any provision of this paragraph, the Chief Executive or that authorised person may direct the person having the management of the installation not to permit aviation fuel to be dispensed from that installation until the direction has been revoked by the Chief Executive or by an authorised person.
- (5A) The Chief Executive or an authorised person shall have the right of access at all reasonable times to any aviation fuel installation on an aerodrome
- (a) for the purpose of inspecting the installation or any aviation fuel delivered thereto or stored therein;
 - (b) for the purpose of inspecting any record required by sub-paragraph (3) to be kept; or
 - (c) to cause such inspections, investigations or tests to be made as he considers necessary for the purpose of ensuring compliance with this paragraph.
- (6) For the purpose of this paragraph —
- “aviation fuel” means fuel intended for use in aircraft;
- “aviation fuel installation” means any apparatus or container, including a vehicle, designed, manufactured or adapted for the storage of aviation fuel or for the delivery of such fuel to an aircraft.

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PART XI : GENERAL

73. Power to prevent aircraft flying.

- (1) If it appears to the Chief Executive or an authorised person that any aircraft is intended or likely to be flown —
- (a) in such circumstances that any provision of paragraph 3, 5, 6, 18, 19, 28, 37, 50C or 87 would be contravened in relation to the flight;
 - (b) in such circumstances that the flight would be in contravention of any other provision of this Order or any regulations made thereunder and be a cause of danger to any person or property whether or not in the aircraft; or
 - (c) while in a condition unfit for the flight, whether or not the flight would otherwise be in contravention of any provision of this Order or of any regulations made thereunder,
- the Chief Executive or that authorised person may direct the operator or the pilot-in-command of the aircraft that he is not to permit the aircraft to make the particular flight or any other flight of such description as may be specified in the direction, until the direction has been revoked by the Chief Executive or by an authorised person, and the Chief Executive or that authorised person may take such steps as are necessary to detain the aircraft.
- (2) For the purposes of sub-paragraph (1), the Chief Executive or any authorised person may enter upon and inspect any aircraft.

73A. Approval of persons to furnish reports.

In relation to any of its functions pursuant to any of the provisions of this Order, the Chief Executive may, either absolutely or subject to such conditions as he thinks fit, approve a person as qualified to furnish reports to him and may accept such reports.

74. Right of access to aerodromes and other places.

The Chief Executive and any authorised person shall have the right of access at all reasonable times —

- (a) to any aerodrome, for the purpose of inspecting the aerodrome;
- (b) to any aerodrome for the purpose of inspecting any aircraft on the aerodrome or any document which he has power to demand under this Order, or for the purpose of detaining any aircraft under the provisions of this Order;
- (c) to any place where an aircraft has landed or is parked or maintained, for the purpose of inspecting the aircraft or any component or part of the aircraft or any document which he has power to demand under this Order and for the purpose of detaining the aircraft under the provisions of this Order; and

- (d) to any place, for the purpose of carrying out any inspection, investigation, examination or testing in relation to —
- (i) any certificate, licence, permit, approval, permission, exemption, authorisation or other document granted under this Order; or
 - (ii) any requirement contained in the Air Operator Certificate Requirements (AOCR), the Singapore Airworthiness Requirements (SAR), the Singapore Air Safety Publications (SASP), the Singapore General Aviation Requirements (SGAR), any Airworthiness Notice or any Manual of Standards issued under this Order.

75. Obstruction of persons.

A person shall not wilfully obstruct or impede any person acting in the exercise of his powers or the performance of his duties under this Order.

76. Enforcement of directions.

Any person who fails to comply with any direction given to him by the Minister or by any authorised person under any provision of this Order or any regulations made or requirements notified thereunder shall be deemed for the purposes of this Order to have contravened that provision.

77. Fees.

- (1) The provisions of the Twelfth Schedule shall have effect with respect to the fees to be charged in connection with the issue, validation, renewal, extension or variation of any certificate, licence or other document (including an application for, or the issue of a copy of, any such document), 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, this Order or any regulations made thereunder.
- (2) Upon an application being made in connection with which any fee is chargeable in accordance with sub-paragraph (1), the applicant shall be required, before the application is entertained, to pay the fee so chargeable. If after such payment has been made, this application is withdrawn by the applicant or otherwise ceases to have effect or is refused, the Chief Executive may in his discretion, refund all or part of such payment.

78. Exercise of powers, etc., of the Minister outside Singapore.

In so far as the exercise of any power or the performance of any duty of the Minister under this Order may be required outside Singapore in any country where there is no representative of the Minister competent to exercise such power or to perform such duty the Minister may authorise in writing any person appearing to him to be qualified to do so or the holder for the time being of any office, to exercise such power or to perform such duty.

79. Regulations by the Minister.

The Minister may make regulations for carrying out the purposes and provisions of this Order.

80. Penalties.

- (1) If any provision of this Order or of any regulations made thereunder is contravened in relation to an aircraft, the operator of that aircraft and the pilot-in-command thereof, if the operator or, as the case may be, the pilot-in-command is not the person who contravened that provision shall (without prejudice to the liability of any other person under this Order for that contravention) be deemed for the purposes of the following provisions of this paragraph to have contravened that provision unless he proves that the contravention occurred without his consent or connivance and that he exercised all due diligence to prevent the contravention.
- (2) If it is proved that an act or omission of any person which would otherwise have been a contravention by that person of a provision of this Order or of any regulations made thereunder 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.
- (3) Where a person is charged with contravening a provision of this Order or any regulations made thereunder by reason of his having been a member of the flight crew of an aircraft on a flight for the purpose of public transport or aerial work the flight shall be treated (without prejudice to the liability of any other person under this Order) 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) If any person contravenes any provision of this Order, or of any regulations made there under, not being a provision referred to in sub-paragraph (5) or (6) he shall be liable on conviction to a fine not exceeding \$10,000 or in the case of a second or subsequent conviction for the like offence to a fine not exceeding \$20,000.
- (5) If any person contravenes any provision specified in Part A of the Thirteenth Schedule he shall be liable on conviction to a fine not exceeding \$20,000 or in the case of a second or subsequent conviction for the like offence to a fine of \$40,000 or to imprisonment for a term not exceeding 15 months or to both.
- (6) If any person contravenes any provision specified in Part B of the Thirteenth Schedule he shall be liable on conviction to a fine not exceeding \$100,000 or to imprisonment for a term not exceeding 5 years or to both.

81. Extraterritorial effect of this Order.

Except where the context otherwise requires, the provisions of this Order —

- (a) in so far as they apply (whether by express reference or otherwise) to Singapore aircraft, shall apply to such aircraft wherever they may be;
- (b) in so far as they apply as aforesaid to other aircraft shall apply to such aircraft when they are within Singapore;
- (c) in so far as they prohibit, require or regulate (whether by express reference or otherwise) the doing of anything by persons in, or by any of the crew of, any Singapore aircraft, shall apply to such persons and crew, wherever they may be; and
- (d) in so far as they prohibit, require or regulate as aforesaid the doing of anything in relation to any Singapore aircraft by other persons shall apply to them wherever they may be.

82. Application of this Order to Singapore controlled aircraft not registered in Singapore.

The Chief Executive may direct that such of the provisions of this Order and of any regulations made or having effect thereunder as may be specified in the direction shall have effect as if reference in those provisions to aircraft registered in Singapore included references to the aircraft specified in the direction, being an aircraft not so registered but for the time being under the management of a person who, or of persons each of whom, is qualified to hold a legal or beneficial interest by way of ownership in an aircraft registered in Singapore.

83. Application of this Order to the Government and visiting forces, etc.

- (1) The provisions of this Order shall apply to or in relation to aircraft belonging to or exclusively employed in the service of the Government, not being military aircraft, as they apply to or in relation to other aircraft which are registered in Singapore or are capable of being so registered and for the purposes of such application the department or other authority for the time being responsible on behalf of the Government for the management of the aircraft shall be deemed to be the operator of the aircraft and in the case of an aircraft belonging to the Government, to be the owner of the interest of the Government in the aircraft:

Provided that nothing in this paragraph shall render liable to any penalty any department or other authority responsible on behalf of the Government for the management of any aircraft.

- (2) Except as otherwise expressly provided the naval, military and airforce authorities and members of any visiting force and property held or used for the purpose of such a force shall be exempt from the provisions of this Order and of any regulations made thereunder to the same extent as if that force formed part of the Armed Forces and for the time being serving there.
- (3) Except as otherwise provided by sub-paragraph (4), paragraph 55A (4), paragraph 55A (7), paragraph 62 (2) and paragraph 70, nothing in this Order shall apply to or in relation to any military aircraft.
- (4) Where a military aircraft is flown by a civilian pilot and is not commanded by a person who is acting in the course of his duty as a member of any of the Armed Forces or as a member of a visiting force, the provisions of paragraphs 45, 46, 47, 62 and 63 shall apply on the occasion of that flight.

84. Exemption from this Order.

The Minister may exempt from any of the provisions of this Order or any regulations made thereunder any aircraft or persons or classes of aircraft or persons, either absolutely or subject to such conditions as he thinks fit.

85. Saving.

Subject to paragraphs 67 and 68, nothing in this Order or the regulations made thereunder shall confer any right to land in any place as against the owner of the land or other persons interested therein.

86. Small aircraft.

The provisions of this Order, other than paragraphs 2 (1), 2 (5), 46 and 64, shall not apply to or in relation to —

- (a) any balloon which at any stage of its flight is not more than two metres in any linear dimension including any basket or other equipment attached to the balloon;
- (b) any kite weighing not more than two kg; or
- (c) any other aircraft weighing not more than 7 kg without its fuel.

87. Issue of air operator certificates.

- (1) No person whose principal place of business is in Singapore shall operate an aircraft for the purpose of public transport otherwise than under and in accordance with the terms of an air operator certificate granted to the operator of the aircraft under sub-paragraph (2) certifying that the holder of the certificate is competent to ensure that the aircraft operated by him are operated safely.
- (2) The Chief Executive shall grant to a person an air operator certificate if he is satisfied that that person is competent having regard, in particular, to his previous conduct and experience, his equipment, organisation, staffing, maintenance and other arrangements, to secure the safe operation of aircraft of the type specified in the certificate on flights of the description and for the purposes so specified.
- (2A) Subject to sub-paragraph (2B), the number of aircraft registered outside Singapore operated by the holder of an air operator certificate granted under sub-paragraph (2) shall not —
 - (a) in the case where the total number of aircraft operated by him is 4 or less, exceed one; or
 - (b) in any other case, exceed 25 percent of the total number of aircraft operated by him (rounded up to the next highest whole number).
- (2B) At least one aircraft of each aircraft type operated by the holder of an air operator certificate granted under sub-paragraph (2) shall be a Singapore aircraft.
- (2C) The holder of an air operator certificate granted under sub-paragraph (2) shall have management and control of at least one Singapore aircraft.
- (3) Any person who wishes to apply for an air operator certificate shall submit an application to the Chief Executive in such form and manner, and provide such information, as may be specified in the Air Operator Certificate Requirements (AOCR).
- (4) The air operator certificate may be granted subject to such conditions as the Chief Executive thinks fit and shall remain in force for the period specified in the certificate.
- (5) The holder of an air operator certificate shall, at all times, comply with the conditions contained in his air operator certificate and the requirements stipulated in the Air Operator Certificate Requirements (AOCR) issued by the Chief Executive.

88. Mandatory reporting.

- (1) Subject to this paragraph, any person who —
 - (a) is the holder of an air operator certificate granted under paragraph 87;
 - (b) is the holder of any certificate or other form of written approval granted under paragraph 8;
 - (c) is the holder of any certificate or other form of written approval granted under paragraph 8A;

- (d) may issue a certificate of maintenance review under paragraph 9 or a certificate of release to service under paragraph 10;
- (e) is the owner, operator or pilot-in-command of a Singapore aircraft used in any general aviation operations; or
- (f) is the holder of an aerodrome certificate granted under paragraph 67, shall —
 - (i) make a report to the Chief Executive of any reportable occurrence of which he knows and which is of such a description specified in the relevant document referred to in sub-paragraph (2A), within such time as is specified in that document for the making of such a report; and
 - (ii) furnish to the Chief Executive such information which is in his possession or control and which relates to any reportable occurrence which has been reported by him or by another person, within such time and by such means as are specified in a notice in writing served upon him by the Chief Executive.

(2) In this paragraph, “reportable occurrence” means —

- (a) any incident relating to such an aircraft or any defect in or malfunctioning of such an aircraft or any part or equipment of such an aircraft, being an incident, malfunctioning or defect endangering, or which if not corrected would endanger the aircraft, its occupants or any other person;
- (b) any defect in or malfunctioning of any facility on the ground used or intended to be used for purposes of or in connection with the operation of such an aircraft, being a defect or malfunctioning endangering, or which if not corrected would endanger such an aircraft or its occupants;
- (c) any incident relating to a violation of any regulation or procedures of any Contracting State in which such an aircraft operates.

(2A) The following documents are the relevant documents for the purposes of sub-paragraph (1)(i):

- (a) in the case of a holder of an air operator certificate granted under paragraph 87, the Air Operator Certificate Requirements (AOCR);
- (b) in the case of a person who is a holder of any certificate or other form of written approval granted under paragraph 8, that part of the Singapore Airworthiness Requirements (SAR) known as SAR 21 or SAR 145, as may be applicable in respect of that person;
- (c) in the case of a person who is a holder of any certificate or other form of written approval granted under paragraph 8A or who may issue a certificate of release to service under paragraph 10, that part of the Singapore Airworthiness Requirements (SAR) known as SAR 145;
- (d) in the case of a person who may issue a certificate of maintenance review under paragraph 9, the Singapore Airworthiness Requirements (SAR);
- (e) in the case of a person who is the owner, operator or pilot-in-command of a Singapore aircraft involved in any general aviation operations under paragraph 50A, the Singapore General Aviation Requirements (SGAR); and
- (f) in the case of a holder of an aerodrome certificate granted under paragraph 67, the Manual of Aerodrome Standards.

- (3) Subject to sub-paragraph (1) (ii), nothing in this paragraph shall require a person to report any occurrence which he has reason to believe has been or will be reported by another person to the Chief Executive in accordance with this paragraph.
- (4) A person shall not make any report under this paragraph if he knows or has reason to believe that the report is false in any particular.
- (5) Without prejudice to paragraph 37 (2) and subject to paragraph 59, the operator of an aircraft shall, if he has reason to believe that a report has been or will be made in pursuance of this paragraph, preserve any data from a flight recorder relevant to the reportable occurrence for 14 days from the

date on which a report of that occurrence is made to the Chief Executive or for such longer period as the Chief Executive may in a particular case direct:

88A. Directives

- (1) The Chief Executive may, from time to time, issue a directive requiring any person, class of persons or all persons holding any certificate, licence, approval, permission, exemption, authorisation or other document granted or issued under this Order to do, or not to do, such things which are specified in the directive or which are of a description as specified therein.
- (2) A directive issued by the Chief Executive under sub-paragraph (1) —
 - (a) shall take effect at such time, being the earliest practicable time, as is specified by or under that directive; and
 - (b) may, at any time, be revoked by the Chief Executive, whether in whole or in part, or whether in respect of any person, class of persons or all persons to whom the directive applies.
- (3) Any person to whom a directive is issued under sub-paragraph (1) shall comply with the directive.

88B. Advisory circulars

- (1) The Chief Executive may, from time to time, issue advisory circulars on any aspect of safety in civil aviation, including any aspect relating to —
 - (a) the safety of any aircraft operation in Singapore and the operation of Singapore aircraft outside Singapore;
 - (b) the inspection, overhaul, repair, replacement or modification of aircraft or aircraft components;
 - (c) any matter relating to persons issued with any licence under this Order; or
 - (e) the operation and management of an aerodrome.
- (2) The Chief Executive shall publish each advisory circular in any way the Chief Executive thinks fit, except that failure to comply with this paragraph in respect of any advisory circular shall not invalidate the advisory circular.

88C. Units of Measurement

- (1) The Chief Executive may, in such manner as he thinks fit, publish a Manual of Standards – Units of Measurement to be used in Air and Ground Operations containing such specifications on units of measurement in conformance with Annex 5 to the Chicago Convention.
- (2) Any person involved in any aspect of international civil aviation air and ground operations in Singapore shall comply with the applicable specifications contained in the Manual of Standards – Units of Measurement to be used in Air and Ground Operations issued under sub-paragraph (1).

88D. Exemption from Requirements and Manuals of Standards

- (1) The Chief Executive may, if the circumstances require, exempt from any but not all of the provisions of the following Requirements or Manuals of Standards any aircraft or persons or classes of aircraft or

persons, or any aerodrome, as the case may be, either absolutely or subject to such conditions as he thinks fit:

- (a) the Singapore Airworthiness Requirements (SAR);
- (b) the Singapore Air Safety Publication (SASP);
- (c) the Air Operator Certificate Requirements (AOCR) issued under this paragraph to any holder of an air operator certificate;
- (d) the Singapore General Aviation Requirements (SGAR);
- (e) the Manual of Standards – Units of Measurement to be used in Air and Ground Operations;
- (f) the Manual of Aerodrome Standards;
- (g) the Manual of Standards – Licensing of Air Traffic Control Personnel.

88E. Manual of Standards – Meteorological Service for International Air Navigation

- (1) The Authority may, in such manner as it thinks fit, publish a Manual of Standards – Meteorological Service for International Air Navigation containing such standards, recommended practices and guidance material relating to aeronautical meteorological services as it may determine to be applicable in Singapore.
- (2) Any person who provides meteorological services for international air navigation shall comply with the standards specified in the Manual of Standards – Meteorological Service for International Air Navigation published under sub-paragraph (1).
- (3) The Authority shall have the right of access at all reasonable times to any meteorological facilities and personnel, for the purpose of carrying out any audit, inspection or investigation, in relation to any requirement contained in the Manual of Standards – Meteorological Service for International Air Navigation published under sub-paragraph (1).
- (4) The Authority shall have the power to inspect and copy any document or record, for the purposes of carrying out any audit, inspection or investigation, or to ascertain if there is, or has been, a contravention of the Manual of Standards – Meteorological Service for International Air Navigation published under sub-paragraph (1).
- (5) The Authority may, if the circumstances require, exempt any person who provides meteorological services for international air navigation, either absolutely or subject to such conditions as it thinks fit, from any but not all of the provisions of the Manual of Standards – Meteorological Service for International Air Navigation.

89. Saving and transitional.

- (1) This Order shall apply to or in relation to any certificate, licence, approval, permission, exemption, authority, direction, log book, record or other document issued, granted or made under the Air Navigation Order 1973, revoked by this Order, as it applies to a certificate, licence, approval, permission, exemption, authority, direction, log book, record or other document issued, granted or made under this Order.
- (2) Any certificate, licence, approval, permission, exemption or other document issued or granted under the Air Navigation Order 1973, revoked by this Order, in force on 1st July 1985 shall, subject to paragraph 60, remain in force and shall have effect for the purposes of this Order as if it had been granted under the corresponding provisions thereof:

Provided that any such document which is expressed to remain in force for a definite period shall remain in force, unless renewed, only until the expiration of that period.

- (3) Any reference in any document to “certificate of compliance” and “certificate of maintenance” shall be construed as reference to “certificate of release to service” and “certificate of maintenance review”, respectively.
- (4) Any certificate of maintenance issued immediately before 1st January 1989 shall continue to be in force until the date of expiry of that certificate.
- (5) Any certificate of compliance issued immediately before 1st January 1989 shall continue to be in force until it is replaced by a certificate of release to service duly issued in accordance with the provisions of this Order.

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FIRST SCHEDULE

(Paragraphs 2 (5), 4 (6) and 23 (1))

PART A : TABLE OF GENERAL CLASSIFICATION OF AIRCRAFT

Aircraft	Lighter than air	Non-power-driven	Free Balloon
			Captive Balloon
		Power-driven	Airship
	Heavier than air	Non-power-driven	Glider
			Kite
		Power-driven (flying machines)	Aeroplane (Landplane)
			Aeroplane (Seaplane)
			Aeroplane (Amphibian)
			Aeroplane (Self-launching Motor Glider)
			Powered Lift (Tilt Rotor)
			Rotorcraft-Helicopter Gyroplane.

PART B : NATIONALITY AND REGISTRATION MARKS OF AIRCRAFT REGISTERED IN SINGAPORE

1. The nationality mark of the aircraft shall be the arabic numeral "9" and the roman capital letter "V", and the registration mark shall be a group of 3 capital letters in roman characters assigned by the Chief Executive on the registration of the aircraft. The letters shall be without ornamentation and a hyphen shall be placed between the nationality mark and the registration mark.
2. The nationality and registration marks shall be displayed in a prominent position, taking into consideration the construction features of the aircraft and shall always be kept clean and visible.
3. The letters constituting each group of marks shall be of equal height and they, and the hyphen, shall be of a single colour which shall clearly contrast with the background on which they appear.
4. The nationality and registration marks shall be painted on the aircraft or shall be affixed thereto by any other means ensuring a similar degree of permanence in the following manner:

I. Position and Size of Marks

(a) Heavier-than-air Aircraft (excluding kites) —

(i) Horizontal Surfaces of the Wings:

(A) On aircraft having a fixed wing surface, the marks shall appear on the lower surface of the wing structure, and shall be on the port wing unless they extend across the whole surface of both wings. So far as is possible the marks shall be located equidistant from the leading and trailing edges of the wings. The tops of the letters shall be towards the leading edge of the wing.

(B) The height of the letters shall be at least 50 centimetres:

Provided that if the wings are not large enough for the marks to be 50 centimetres in height, marks of the greatest height practicable in the circumstances shall be displayed.

(ii) Fuselage (or equivalent structure) and Vertical Tail Surface:

(A) The marks shall also appear either —

(AA) on each side of the fuselage (or equivalent structure), and shall, in the case of fixed wing aircraft, be located between the wings and the horizontal tail surface; or

(BB) on the vertical tail surfaces.

(B) When located on a single vertical tail surface, the marks shall appear on both sides. When located on multi-vertical tail surfaces the marks shall appear on the outboard sides of the outer surfaces. Subject to sub-paragraphs (d) and (E), the height of the letters constituting each group of marks shall be at least 30 centimetres.

(C) If one of the surfaces authorised for displaying the required marks is large enough for those marks to be 30 centimetres in height (whilst complying with sub-paragraph (E)) and the other is not, marks of 30 centimetres in height shall be placed on the largest authorised surface.

(D) If neither surface is large enough for marks of 30 centimetres in height (whilst complying with sub-paragraph (E)), marks of the greatest height practicable in the circumstances shall be displayed on the larger of the two surfaces.

(E) The marks on the vertical tail surfaces shall be such as to leave a margin of at least 5 centimetres along each side of the vertical tail surface.

(F) On rotary wing aircraft where owing to the structure of the aircraft the greatest height practicable for the marks on the sides of the fuselage (or equivalent structure) is less

than 30 centimetres, the marks shall also appear on the lower surface of the fuselage as close to the line of symmetry as is practicable and shall be placed with the tops of the letters towards the nose. The height of the letters constituting each group of marks shall be at least 50 centimetres:

Provided that if the lower surface of the fuselage is not large enough for the marks to be of 50 centimetres in height, marks of the greatest height practicable in the circumstances shall be displayed.

- (iii) Wherever in sub-paragraph (a) marks of the greatest height practicable in the circumstance are required, that height shall be such as is consistent with Section II of this Part.

(b) Airships and Free Balloons —

- (i) Airships: The marks shall be placed on each side of the airship. They shall be placed horizontally either on the hull near the maximum cross-section of the airship or on the lower vertical stabiliser.
- (ii) Free Balloons: The marks shall be in two places on diametrically opposite sides of the balloon.
- (iii) In the case of both airships and free balloons, the side marks shall be so placed as to be visible both from the sides and from the ground. The height of the letters shall be at least 50 centimetres.

II. Width, Spacing and Thickness of Marks

(a)

- (i) For the purposes of this Section, "a standard letter" shall mean any letter other than the letters I, M and W.
- (ii) The width of each standard letter and the length of the hyphen between the nationality marks and the registration mark shall be two-thirds of the height of a letter.
- (iii) The width of the letters M and W shall be neither less than two-thirds of their height nor more than their height.
- (iv) The width of the letter I shall be one-sixth of the height of the letters forming the marks.

- (b) The thickness of each letter and hyphen shall be one-sixth of the height of the letters forming the marks.

- (c) Each letter and hyphen shall be separated from the letter or hyphen which it immediately precedes or follows, by a space equal to either one-quarter or one-half of the width of a standard letter. Each such space shall be equal to every other such space within the marks.

- 5. In addition, the nationality and registration marks shall also be inscribed, together with the name and address of the registered owner of the aircraft, on a fire-proof metal plate affixed in a prominent position —

- (a) in the case of a balloon, on the basket or envelope; or
- (b) in the case of any other aircraft, on the fuselage or car, near the main entrance.

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SECOND SCHEDULE

(Paragraphs 3 (1), 4 (8), 6 (1), 39 (6) and 51 (2))

A, B AND C CONDITIONS

The A Conditions, the B Conditions and the C Conditions referred to in paragraphs 3 (1), 4 (8), 6 (1), 39 (6) and 51 (2) of the Order are as follows:

A Conditions.

- (1) The aircraft shall be either an aircraft in respect of which a Certificate of Airworthiness or validation has previously been in force under the provisions of the Order, or an aircraft identical in design with an aircraft in respect of which such a certificate is or has been in force.
- (2) The aircraft shall fly only for the purpose of enabling it to
 - (a) qualify for the issue or renewal of a Certificate of Airworthiness or of the validation thereof or the approval of a modification of the aircraft, after an application has been made for such issue, renewal, validation or approval, as the case may be; or
 - (b) proceed to or from a place at which any inspection, test or weighing of the aircraft is to take place for a purpose referred to in sub-paragraph (a).
- (3) The aircraft and its engines shall be certified as fit for flight by a holder of an aircraft maintenance licence in accordance with the requirements of the Singapore Airworthiness Requirements (SAR), or by a person approved by the Chief Executive for the purpose of issuing certificates under this condition.
- (4) The aircraft shall carry the minimum flight crew specified in any Certificate of Airworthiness or validation which has previously been in force under the Order in respect of the aircraft, or is or has previously been in force in respect of any other aircraft of identical design.
- (5) The aircraft shall not carry any passenger or cargo except passengers performing duties in the aircraft in connection with the flight.
- (6) The aircraft shall not fly over any congested area of a city, town or settlement, except in accordance with procedures which have been approved by the Chief Executive in relation to that flight.
- (7) Without prejudice to paragraph 18 (2) of the Order the aircraft shall carry such flight crew as may be necessary to ensure the safety of the aircraft.

B Conditions.

- (1) The flight shall be made under the supervision of a person approved by the Chief Executive for the purposes of these Conditions, and subject to any additional conditions which may be specified in such approval.
- (2) If it is not registered in Singapore or under the law of any country referred to in paragraph 3 of the Order, the aircraft shall be marked in a manner approved by the Chief Executive for the purposes of these Conditions, and the provisions of paragraphs 13, 15, 19, 31, 35, 56, 57 and 58 of the Order shall

be complied with in relation to the aircraft as if it was registered in Singapore so far as such provisions are applicable to the aircraft in the circumstances.

- (3) The aircraft shall fly only for the purpose of —
 - (a) experimenting with or testing the aircraft (including in particular its engines) and its equipment; or
 - (b) enabling the aircraft to qualify for the issue or validation of a Certificate of Airworthiness or the approval of a modification of the aircraft; or
 - (c) proceeding to or from a place at which any experiment, test, inspection or weighing of the aircraft is to take place for a purpose referred to in sub-paragraph (a) or (b).
- (4) The aircraft shall carry such flight crew as may be necessary to ensure the safety of the aircraft.
- (5) The aircraft shall not carry any cargo, or any person other than the flight crew except the following:
 - (a) persons employed by the operator who carry out during the flight duties in connection with the purposes specified in paragraph (3);
 - (b) persons employed by producers of component parts of the aircraft (including the engines) who carry out during the flight duties in connection with the purposes so specified;
 - (c) persons approved by the Chief Executive under paragraph 7 (10) of the Order as qualified to furnish reports for the purposes of the Order; and
 - (d) persons, other than those carried under the preceding provisions of this paragraph, who are carried in the aircraft in order to carry out a technical evaluation of the aircraft or its operation.
- (6) The aircraft shall not fly over any congested area of a city, town or settlement, except in accordance with procedures which have been approved by the Chief Executive in relation to that flight.

C Conditions.

- (1) The operator of the aircraft shall be the registered owner of the aircraft who shall be the holder of an aircraft dealer's certificate granted under this Order.
- (2) The aircraft shall fly only for the purpose of —
 - (a) testing the aircraft;
 - (b) demonstrating the aircraft with a view to the sale of that aircraft or other similar aircraft;
 - (c) proceeding to or from a place at which the aircraft is to be tested or demonstrated as aforesaid or overhauled, repaired or modified; or
 - (d) delivering the aircraft to a person who has agreed to buy or lease it.
- (3) The aircraft shall fly within Singapore only.

THIRD SCHEDULE

(Paragraph 7)

CATEGORIES OF AIRCRAFT

1. Categories of Aircraft.

Transport Category (Passenger).

Transport Category (Cargo).

Aerial Work Category.

Private Category.

Special Category.

2. The purposes for which the aircraft may fly are as follows:

Transport Category (Passenger): Any purpose.

Transport Category (Cargo): Any purpose, other than the public transport of passengers.

Aerial Work Category: Any purpose other than public transport.

Private Category: Any purpose other than public transport or aerial work.

Special Category: Any other purpose specified in the Certificate of Airworthiness but not including the carriage of passengers unless expressly permitted.

FOURTH SCHEDULE

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FIFTH SCHEDULE

(Paragraphs 10(3), 12(2) and (8), 25(5) and 29(1) and
Sixth and Twelfth Schedules)

AIRCRAFT EQUIPMENT

1. Every Singapore aircraft shall be provided, when flying in circumstances specified in the first column of the Table set forth in paragraph 4, with adequate equipment, and for the purpose of this paragraph the expression "adequate equipment" shall mean the scales of equipment respectively indicated in that Table:

Provided that, if the aircraft is flying in a combination of such circumstances, the scales of equipment shall not on that account be required to be duplicated.

2. The equipment carried in an aircraft as being necessary for the airworthiness of the aircraft shall be taken into account in determining whether this Schedule is complied with in respect of that aircraft.
3. The following items of equipment shall not be required to be of a type approved by the Chief Executive:
 - (i) The equipment referred to in Scale A (ii).
 - (ii) First Aid Equipment and Handbook referred to in Scale B.
 - (iii) Time pieces referred to in Scale F.
 - (iv) Torches referred to in Scales G, H and J.
 - (v) Whistles referred to in Scale H.
 - (vi) Sea anchors referred to in Scales I and J.
 - (vii) Equipment for mooring, anchoring or manoeuvring aircraft on the water referred to in Scale I.
 - (viii) Paddles referred to in Scale J.
 - (ix) Food and water referred to in Scales J, T and W.
 - (x) Rocket signals referred to in Scale I.
 - (xi) Stoves, cooking utensils, snow shovels, ice saws, sleeping bags and arctic suits referred to in Scale T.
 - (xii) First Aid Equipment referred to in Scales J, T and W.
 - (xiii) Megaphones referred to in Scale V.

4. TABLE

Aircraft and circumstances of flight	Scale of equipment required
1. Flying machines flying for purpose other than public transport —	
(a) on all flights	A, B, E and F
(b) when flying at night	C and G
(c) when flying over water —	
(i) in the case of seaplanes	H, I (iii) and (iv)
(ii) in the case of single-engine aeroplanes	H
(iii) at a distance of more than 50 nautical miles away from land suitable for making an emergency landing	H
(iv) at a distance of more than 100 nautical miles, in the case of single-engine aeroplanes, or 200 nautical miles, in the case of multi-engine aeroplanes capable of continuing flight with one engine inoperative	H, J and S (i)
(v) in the case of helicopters, including those engaged in offshore or overwater operations	B, D, H, J and S
(d) when flying at a height of 10,000 feet or more above mean sea level —	
(i) having a Certificate of Airworthiness first issued (whether in Singapore or elsewhere) before 1st January 1989	K1 or K2
(ii) having a Certificate of Airworthiness first issued (whether in Singapore or elsewhere) after 1st January 1989	K2
(e) when flying at a height of 25,000 feet or more above mean sea level	CC
(f) on all flights by a turbine-jet aeroplane	Y
(g) when carrying out aerobatic manoeuvres	M.
2. Flying machines flying for the purpose of public transport —	
(a) when flying under Instrument Flight Rules —	
(i) in the case of flying machines of which the maximum total weight authorised exceeds 1,150 kg.	A, B, E with E (iv) duplicated and F
(ii) in the case of flying machines of which the maximum total weight authorised does not exceed 1,150 kg. —	
(aa) outside controlled airspace	A, B, D and F (i) only
(bb) within controlled airspace	A, B, E with E (iv)

duplicated and F

(b) when flying at night —

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| (i) in the case of flying machines of which the maximum total weight authorised exceeds 1,150 kg. | A, B, C, E with E (iv) duplicated, F and G |
| (ii) in the case of flying machines of which the maximum total weight authorised does not exceed 1,150 kg. | A, B, C, D, F (i) only and G |
| (iii) in the case of turbo-jet aeroplanes for the carriage of passengers and which have a maximum total weight authorised exceeding 22,700 kg. | BB (i) and BB (ii) |
| (iv) in the case of aeroplanes having a maximum total weight authorised exceeding 5,700 kg. for the carriage of passengers and which conform to a type for which a Certificate of Airworthiness was first applied for (whether in Singapore or elsewhere) after 30th April 1972 but not including any aeroplane which in the opinion of the Chief Executive is identical in all matters affecting the provision of emergency evacuation facilities to an aeroplane for which a Certificate of Airworthiness was first applied for before that date | BB (i) and BB (ii) |
| (v) in the case of aeroplanes for the carriage of passengers which in accordance with the Certificate of Airworthiness in force in respect thereof may carry more than 19 persons over 3 years of age | BB (i) |
| (vi) in the case of helicopters | A, B, C, E with E (iv) duplicated, F and G |
| (c) in the case of flying machines when flying over water beyond gliding distance from land, or in the case of helicopters when flying over water beyond auto-rotational distance from land | A, B, D, F (i) only, H and S(i) |
| (d) on all flights on which in the event of any emergency occurring during take-off or during the landing at the intended destination or any likely alternate destination it is reasonably possible that the aeroplane would be forced to land onto water | A, B, D, F (i) only, H and S(i) |
| (e) when flying over water — | |
| (i) In the case of an aeroplane having such a weight and performance that with any one of its engines inoperative and the remaining engine or engines operating within the maximum continuous power conditions specified in the Certificate of Airworthiness, performance schedule or flight manual relating to the aeroplane issued or rendered valid by the Chief Executive it is capable of a gradient of climb of at least 1 in 200 at an altitude of 5,000 feet in the International Standard Atmosphere specified in or ascertainable by reference to the Certificate of Airworthiness in force in respect of that aeroplane, when — | |
| (aa) more than 50, but not exceeding 400 nautical miles from the nearest aerodrome at which an emergency landing can be made | A, B, D, F (i) only, and H |

(bb) more than 400 nautical miles from the nearest aerodrome at which an emergency landing can be made	A, B, D, F (i) only, H and J
(ii) in the case of helicopters engaged in offshore operations or overwater operations	A, B, D, F, H, J and S
(iii) in the case of helicopters, when more than 10 minutes flying time*, from land and flying over water in a hostile environment	A, B, D, F (i) only, H and J
(iv) in the case of all other flying machines, when more than 30 minutes flying time* from aerodrome	A, B, D, F (i) only, H and J
(f) on all flights which involve manoeuvres on water	A, B, D, F (i) only, H, I and J
(g) when flying at a height of 10,000 feet or more above mean sea level:	
(i) having a Certificate of Airworthiness first issued (whether in Singapore or elsewhere) before 1st January 1989	A, B, D, F (i) only and K1 or K2
(ii) having a Certificate of Airworthiness first issued (whether in Singapore or elsewhere) on or after 1st January 1989	A, B, D, F (i) only and K2
(h) when flying at a height of 25,000 feet or more above mean sea level	CC
(i) on flights when the weather reports or forecasts available at the aerodrome at the time of departure indicate that conditions favouring ice formation are likely to be met	A, B, D, F (i) only and L
(j) when carrying out aerobatic manoeuvres	A, B, D, F (i) only and M
(k) on all flights on which the aircraft carries a flight crew of more than one person	N
(l) on all flights by flying machines being turbine-jet aircraft with a maximum total weight authorised exceeding 5,700 kg. or pressurised aircraft with a maximum total weight authorised exceeding 11,400 kg.	O
(m) on all flights for the purpose of the public transport of passengers	Q and V
(n) on all flights by a pressurised aircraft	R
(o) when flying over substantially uninhabited land areas where in the event of an emergency landing polar conditions are likely to be met	T

*For purposes of this Table, flying time shall be calculated on the assumption that the aircraft is flying in still air at the speed specified in the relevant Certificate of Airworthiness as the speed for compliance with regulations governing flights over water.

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| (p) | when flying over substantially uninhabited land areas where in the event of an emergency landing, tropical conditions are likely to be met | W |
| (q) | when flying at an altitude of more than 49,000 feet | X |
| (r) | on all flights by a turbine-jet aeroplane | Y |
| (s) | on all other flights | A, B, D and F (i) only. |
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| 3. | Gliders flying for purposes other than public transport or aerial work when flying by night | A (ii) only and C. |
|----|---|--------------------|
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|-----|--|------------------------------|
| 4. | Gliders flying for the purpose of public transport or aerial work
— | |
| (a) | when outside controlled airspace under Instrument Flight Rules | A, B, D and F (i) only |
| (b) | when flying by night | A, B, C, D, F (i) only and G |
| (c) | when carrying out aerobatic manoeuvres | A, B, D, F (i) only and M |
| (d) | on all other flights | A, B, D, F (i) only. |
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|----|---|---|
| 5. | All aeroplanes which have a maximum total weight authorised exceeding 5,700 kg. | P |
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| 6. | Aeroplanes which have a maximum total weight authorised not exceeding 5,700 kg and are powered by one or more turbine engines. | P |
|----|--|---|
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- | | | |
|----|--|---|
| 7. | All helicopters which have a maximum total weight authorised exceeding 3,180 kg. | P |
|----|--|---|
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- | | | |
|--------|--|----|
| 8. (a) | All turbine-engine aeroplanes exceeding 5,700 kg maximum total weight authorised or authorised to carry more than 5 passengers | U. |
| (b) | All piston-engine aeroplanes exceeding 5,700 kg maximum total weight authorised or authorised to carry more than 9 passengers | U. |
| (c) | All helicopters flying for the purpose of public transport when operating in accordance with IFR, exceeding 3,175 kg maximum total weight authorised or authorised to carry more than 9 passengers | U. |

9. All aeroplanes when operated across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult S.
10. Turbine-engine aeroplanes exceeding 5,700 kg. maximum total weight authorised or authorised to carry more than 9 passengers for the purpose of public transport DD.

5. The scales of equipment indicated in the Table set out in paragraph 4 shall be as follows:

Scale A.

- (i) Spare fuses for all electrical circuits the fuses of which can be replaced in flight, consisting of 10% of the number of each rating or 3 of each rating, whichever is the greater.
- (ii) Maps, charts, codes and other documents and navigational equipment necessary, in addition to any other equipment required under the Order for the intended flight of the aircraft, including any diversion which may reasonably be expected.
- (iii)
 - (a) Subject to Scale B (xii), in all aeroplanes, helicopters and gyroplanes, for every pilot's seat and for any seat situated alongside a pilot's seat, a safety belt with one diagonal shoulder strap or a safety harness;
 - (b) subject to Scale B (xiv) for every seat in use (not being a seat referred to in sub-paragraph (a)) a safety belt with or without one diagonal shoulder strap or a safety harness; and
 - (c) in addition and for attachment to the equipment required in sub-paragraph (b), a child restraint device for every child under the age of two years.
- (iv) One portable non-toxic type fire extinguisher for each enclosed passenger and crew compartment, one of which shall be convenient to a member of the flight crew.
- (v) At least one crash axe readily accessible to a member of the flight crew.

Scale B.

- (i) An aeroplane shall be equipped with accessible and adequate medical supplies including the following:
 - (a) one or more first aid kits;
 - (b) in the case of aeroplanes operating for the purpose of public transport and required to carry cabin crew as part of its operating crew, one universal precaution kit (or two universal precaution kits if the aircraft is authorised to carry more than 250 passengers) for the use of cabin crew members in managing incidents of ill health associated with a case of a suspected communicable disease, or in the case of illness involving contact with body fluids; and
 - (c) in the case of aeroplanes operating for the purpose of public transport of passengers with a maximum total weight authorised exceeding 5,700 kg, one medical kit for the use of medical doctors or other qualified persons in treating in-flight medical emergencies.
- (ii) A helicopter shall be equipped with accessible and adequate medical supplies including the following:
 - (a) one first aid kit; and
 - (b) in the case of helicopters operating for the purpose of public transport and required to carry cabin crew as part of its operating crew, one universal precaution kit for the use of cabin crew members in managing incidents of ill health associated with a case of suspected communicable disease, or in the case of illness involving contact with body fluids.

- (iii) The number of first aid kits set out in the right-hand column in the table below shall be carried in every aeroplane which is authorised to carry the number of passengers set out in the left-hand column:

Passenger	First-aid kits
0 – 100	1
101 – 200	2
201 – 300	3
301 – 400	4
401 – 500	5
More than 500	6

- (iv) Where an aeroplane is required to carry more than one first aid kit and universal precaution kit, these shall be distributed as evenly as practicable throughout the passenger cabins and should be readily accessible to cabin crew members.
- (v) The medical kit, when carried, shall be stored in a secure manner and in an appropriate location.
- (vi) The first aid kit shall include the following:
- (a) list of contents of the first aid kit;
 - (b) antiseptic swabs (10/pack);
 - (c) bandage with adhesive strips;
 - (d) bandage gauze measuring 7.5 cm by 4.5 m;
 - (e) triangular bandage with safety pins;
 - (f) dressing for burns measuring 10 cm by 10 cm;
 - (g) sterile dressing for compress measuring 7.5 cm by 12 cm;
 - (h) sterile dressing gauze measuring 10.4 cm by 10.4 cm;
 - (i) adhesive tape measuring 2.5 cm in a roll;
 - (j) sterile strips (or equivalent adhesive strip);
 - (k) hand cleanser or cleansing towelettes;
 - (l) pad, shield or tape for the eye;
 - (m) a pair of scissors measuring 10 cm;
 - (n) adhesive surgical tape measuring 1.2 cm by 4.6 m;
 - (o) splinter tweezers;
 - (p) multiple pairs of disposable gloves;
 - (q) non-mercury thermometers;
 - (r) mouth to mouth resuscitation mask with one-way valve;
 - (s) mild to moderate analgesic;
 - (t) antiemetic;
 - (u) nasal decongestant;
 - (v) antacid;
 - (w) antihistamine;
 - (x) incident record form; and
 - (y) a current edition of a first-aid manual.

- (vii) In addition to the number of universal precaution kits that are required to be carried in accordance with paragraph (i)(b), the operator shall make available on an aeroplane such additional kits as may be necessary during a period of increased public health risk, such as during an outbreak of a serious communicable disease having pandemic potential for the purpose of cleaning up any potentially infectious body contents such as blood, urine, vomit and faeces and to protect operating crew members who are assisting in the care of passengers with potentially infectious cases of suspected communicable disease.
- (viii) A universal precaution kit shall include the following:
 - (a) dry powder that can convert small liquid spill into a sterile granulated gel;
 - (b) germicidal disinfectant for surface cleaning;
 - (c) skin wipes;
 - (d) face/eye mask (separate or combined);
 - (e) disposable gloves;
 - (f) protective apron;
 - (g) large absorbent towel;
 - (h) pick-up scoop with scraper;
 - (i) bio-hazard disposal waste bag; and
 - (j) instructions.
- (ix) The medical kit required under paragraph (i)(c) shall include the following medical supplies:
 - (a) list of contents of the medical kit;
 - (b) stethoscope;
 - (c) sphygmomanometer (electronic preferred);
 - (d) 3 different sizes of oropharyngeal airways;
 - (e) syringes in the appropriate range of sizes;
 - (f) needles in the appropriate range of sizes;
 - (g) intravenous catheters in the appropriate range of sizes;
 - (h) antiseptic wipes;
 - (i) disposable gloves;
 - (j) needle disposal box;
 - (k) urinary catheter;
 - (l) system for delivering intravenous fluids;
 - (m) venous tourniquet;
 - (n) sponge gauze;
 - (o) adhesive tape;
 - (p) surgical mask;
 - (q) emergency tracheal catheter or a large gauge intravenous cannula;
 - (r) umbilical cord clamp;
 - (s) non-mercury thermometers;
 - (t) basic life support cards;
 - (u) bag-valve mask;
 - (v) flashlight and batteries; and
 - (w) oral and injectable drugs as follows:

- (A) Epinephrine 1:1000;
- (B) Antihistamine – injectable;
- (C) Dextrose 50% (or equivalent) – injectable: 50ml;
- (D) Nitroglycerin tablets, or spray;
- (E) Major analgesic;
- (F) Sedative anticonvulsant – injectable;
- (G) Antiemetic – injectable;
- (H) Bronchial dilator – inhaler;
- (I) Atropine – injectable;
- (J) Adrenocortical steroid – injectable;
- (K) Diuretic – injectable;
- (L) Medication for postpartum bleeding;
- (M) Sodium chloride 0.9% (minimum 250 ml);
- (N) Acetyl salicylic acid (aspirin) for oral use; and
- (O) Oral beta blocker

- (x) If a cardiac monitor is available (with or without an AED), epinephrine 1:10000 (can be a dilution of epinephrine 1:1000) shall be added to the list of drugs set out in paragraph (ix)(w);
- (xi) In the case of a flying machine used for the public transport of passengers in which, while the flying machine is at rest on the ground, the sill of any external door intended for the disembarkation of passengers, whether normally or in an emergency —
 - (a) is more than 1.82 metres from the ground when the under-carriage of the machine is in the normal position for taxiing; or
 - (b) would be more than 1.82 metres from the ground if the under-carriage or any part thereof should collapse, break or fail to function,
 the flying machine shall be equipped with an apparatus which is readily available for use at each such door consisting of a device or devices which will enable passengers to reach the ground safely in an emergency while the flying machine is on the ground, and which can be readily fixed in position for use.
- (xii) For all aircraft on all flights a safety harness shall be provided for each flight crew member seat in place of the safety belt referred to under Scale A. The safety harness shall incorporate a device which will automatically restrain the occupant's torso in the event of rapid deceleration or incapacitation of the occupant.

Note 1: Depending on the design, the lock on an inertia reel device may suffice for this purpose.

Note 2: Safety harness includes shoulder straps and seat belt which may be used independently.

- (xiii) If the pilot-in-command cannot, from his own seat, see all the passengers' seats in the aircraft, the aircraft shall be equipped with a means of indicating to the passengers that seat belts or harnesses should be fastened.
- (xiv) A forward or rearward facing (within 15° of the longitudinal axis of the aircraft) seat, fitted with a safety harness shall be provided for the use of each cabin crew member specified in paragraph 18 (8) of the Order, and shall be located near floor level and emergency exits.

Scale C.

- (i) Equipment for displaying the lights required by the Rules of the Air .
- (ii) Electrical equipment, supplied from the main source of supply in the aircraft, to provide sufficient illumination to enable the flight crew properly to carry out their duties during flight.
- (iii) Unless the aircraft is equipped with radio, devices for making the visual signal specified in the Rules of the Air as indicating a request for permission to land.

Scale D.

- (i)
 - (a) In the case of a helicopter or a gyroplane, a slip indicator;
 - (b) in the case of any other flying machine either —
 - (aa) a turn indicator and a slip indicator; or
 - (bb) a gyroscopic bank and pitch indicator and a gyroscopic direction indicator.
- (ii) A sensitive pressure altimeter adjustable for changes in barometric pressure.
- (iii) An airspeed indicator.
- (iv) A magnetic compass.

Scale E.

- (i)
 - (a) in the case of a helicopter or a gyroplane, a slip indicator.
 - (b) in the case of any other flying machine, a turn indicator and a slip indicator except that any aircraft may, at the option of the operator, be equipped with an additional gyroscopic bank and pitch indicator in lieu of the turn indicator.
- (ii)
 - (a) in the case of a helicopter, a bank and pitch indicator for every pilot and one additional bank and pitch indicator; or
 - (b) in the case of any other flying machine, at least one gyroscopic bank and pitch indicator.
- (iii) A gyroscopic direction indicator.
- (iv) A sensitive pressure altimeter adjustable for changes in barometric pressure.
- (v) An emergency power supply, independent of the main electrical generating system, capable of operating and illuminating an attitude indicating instrument (which shall be clearly visible to the pilot-in-command) for a minimum period of 30 minutes after the total failure of the main electrical generating system, in respect of —
 - (a) aircraft, for which a Certificate of Airworthiness was first issued on or after 1st January 1975 (whether in Singapore or elsewhere), fitted with electrical attitude indicating instruments, of which

the maximum total weight authorised exceeds 5,700 kg issued with a Singapore Certificate of Airworthiness in the Transport Category;

- (b) aircraft, fitted with electrical attitude indicating instruments, certified in the Transport Category for the carriage of more than 19 persons over the age of 3 years; and
- (c) aircraft, fitted with electrical attitude indicating instruments, with a maximum total weight authorised exceeding 15,900 kg,

which shall be automatically operative after the total failure of the main electrical generating system and clear indication shall be given that each attitude indicator is being operated by emergency power.

- (vi) An airspeed indicating system with means of preventing malfunctioning due to either condensation or icing.
- (vii) A magnetic compass.

Scale F.

- (i) An accurate time piece indicating the time in hours, minutes and seconds.
- (ii) A means of indicating whether the power supply to the gyroscopic instruments is adequate.
- (iii) A rate of climb and descent indicator.
- (iv) A means of indicating the outside air temperature.
- (v) If the maximum total weight authorised of the aircraft is more than 5,700 kg 2 air speed indicators.

Scale G.

- (i) At least 2 landing lights.
- (ii) An electric lighting system to provide illumination in every passenger compartment.
- (iii)
 - (a) One electric torch for each member of the crew of the aircraft; or
 - (b)
 - (A) one electric torch for each member of the flight crew of the aircraft; and
 - (B) at least one electric torch affixed adjacent to each floor level exit intended for the disembarkation of passengers whether normally or in an emergency, except that such torches shall —
 - (i) be readily accessible for use by the crew of the aircraft at all times; and
 - (ii) number in total not less than the minimum number of cabin crew members required to be carried with a full passenger complement.
- (iv) In the case of an aircraft of which the maximum total weight authorised exceeds 5,700 kg, a means of observing the existence and build up of ice on the aircraft.

Scale H.

For each person on board, a lifejacket equipped with a whistle and a waterproof torch:

Provided that lifejackets constructed and carried solely for use by children under 3 years of age need not be equipped with a whistle.

Scale I.

- (i) Additional flotation equipment, capable of supporting one-fifth of the number of persons on board, and provided in a place of stowage accessible from outside the flying machine.
- (ii) Parachute distress rocket signals capable of making, from the surface of the water, the pyrotechnical signal of distress specified in the Rules of the Air .
- (iii) A sea anchor and other equipment necessary to facilitate mooring, anchoring and maneuvering the flying machine on water, appropriate to its size, weight and handling characteristics.
- (iv) Equipment for making the sound signals specified in the Merchant Shipping (Prevention of Collisions at Sea) Regulations (Cap. 179, Rg 10).

Scale J.

- (i) Life rafts sufficient to accommodate all persons on board the flying machine with the following equipment:
 - (a) means for maintaining buoyancy;
 - (b) a sea anchor;
 - (c) life lines, and means of attaching one life raft to another;
 - (d) paddles or other means of propulsion for life rafts with a capacity of 6 or less;
 - (e) means of protecting the occupants from the elements;
 - (f) a waterproof torch;
 - (g) marine type pyrotechnical distress signals;
 - (h) means of making sea water drinkable;
 - (i) for each 4 or proportion of 4 persons the life raft is designed to carry —
 - (A) any readily distributable energy supplement with an energy value of about 400kJ; and
 - (B) one litre of fresh water in durable containers; provided that in any case in which it is not reasonably practicable to carry the quantity of water above specified as large a quantity of fresh water as is reasonably practicable in the circumstances may be substituted. In no case however shall the quantity of water carried be less than is sufficient when added to the amount of fresh water capable of being produced by means of the equipment specified in item (h) of this sub-paragraph to provide 1 litre of water for each 4 or proportion of 4 persons the liferaft is designed to carry; and
 - (j) first aid equipment.Items (f) to (j) inclusive, shall be contained in a pack stowed with the life raft.
- (ii) For every 4 or proportion of 4 life rafts —

one survival ELT.

- (iii) In the case of helicopters fitted with 2 life-rafts, each life-raft shall be able to carry all occupants in the overload state. The overload state is defined as a design safety margin of 1.5 times the maximum capacity.

Scale K1.

PART I

- (i) In every flying machine which is provided with means for maintaining a pressure greater than 700 hPa throughout the flight in the flight crew compartment and in the compartments in which passengers are carried —
- (a) a supply of oxygen sufficient, in the event of failure to maintain such pressure, occurring in the circumstances specified in columns 1 and 2 of the Table set out in Part II of this Scale, for continuous use, during the period specified in column 3 of the said Table, by the persons for whom oxygen is to be provided in accordance with column 4 of that Table; and
- (b) in addition, in every case where the flying machine flies above flight level 350, a supply of oxygen in a portable container sufficient for the simultaneous first-aid treatment of two passengers, together with suitable and sufficient apparatus to enable such persons to use the oxygen.
- (ii) In any other flying machine —
- (a) a supply of oxygen sufficient for continuous use by all the crew, and, if passengers are carried, by 10% of the number of passengers, for any period exceeding 30 minutes during which the flying machine flies above flight level 100 but not above flight level 130 except that on and after 1st January 1989 flight crews shall be supplied with oxygen sufficient for continuous use for any period during which the flying machine flies above flight level 100; and
- (b) a supply of oxygen sufficient for continuous use by all persons on board for the whole time during which the flying machine flies above flight level 130, together with suitable and sufficient apparatus to enable such persons to use the oxygen.
- (iii) The quantity of oxygen required for the purpose of complying with paragraphs (i) and (ii) of this Part of this Scale shall be computed in accordance with the information and instructions relating thereto as specified in the operations manual relating to the aircraft.

PART II

Column 1	Column 2	Column 3	Column 4
Vertical displacement of the flying machine in relation to flight levels	Capability of flying machine to descent (where relevant)	Period of supply of oxygen	Persons for whom oxygen is to be provided.
Above flight level 100		30 minutes or the period specified at A hereunder whichever is the greater	In addition to any passenger for whom oxygen is provided as specified below, all the crew.

Column 1	Column 2	Column 3	Column 4
Vertical displacement of the flying machine in relation to flight levels	Capability of flying machine to descent (where relevant)	Period of supply of oxygen	Persons for whom oxygen is to be provided.
Above flight level 100 but not above flight level 300	Flying machine is either flying at or below flight level 150 or is capable of descending and continuing to destination as specified at X hereunder	30 minutes or the period specified at A hereunder whichever is the greater	10% of number of passengers.
	Flying machine is flying above flight level 150 and is not so capable	10 minutes or the period specified at B hereunder whichever is the greater and in addition	All passengers.
		30 minutes or the period specified at C hereunder whichever is the greater	10% of number of passengers.
Above flight level 300 but not above flight level 350	Flying machine capable of descending and continuing to destination as specified at Y hereunder	30 minutes or the period specified at A hereunder whichever is the greater	15% of number of passengers.
	Flying machine is not so capable	10 minutes or the period specified at B hereunder whichever is the greater and in addition	All passengers.
		30 minutes or the period specified at C hereunder whichever is the greater	15% of number of passengers.
Above flight level 350		10 minutes or the period specified at B hereunder whichever is the greater and in addition	All passengers.

Column 1	Column 2	Column 3	Column 4
Vertical displacement of the flying machine in relation to flight levels	Capability of flying machine to descent (where relevant)	Period of supply of oxygen	Persons for whom oxygen is to be provided.

30 minutes or the period specified at C hereunder whichever is the greater	15% of number of passengers.
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- A. The whole period during which, after a failure to maintain a pressure greater than 700 hPa in the control department and in the compartments in which passengers are carried has occurred, the flying machine flies above flight level 100.
- B. The whole period during which, after a failure to maintain such pressure has occurred, the flying machine flies above flight level 150.
- C. The whole period during which, after a failure to maintain such pressure has occurred, the flying machine flies above flight level 100, but not above flight level 150.
- X. The flying machine is capable, at the time when a failure to maintain such pressure occurs, of descending in accordance with the emergency descent procedure specified in the relevant flight manual and without flying below the minimum altitudes for safe flight specified in the operations manual relating to the aircraft, to flight level 150 within 6 minutes, and of continuing at or below that flight level to its place of intended destination or any other place at which a safe landing can be made.
- Y. The flying machine is capable, at the time when a failure to maintain such pressure occurs, of descending in accordance with the emergency descent procedure specified in the relevant flight manual and without flying below the minimum altitudes for safe flight specified in the operations manual relating to the aircraft, to flight level 150 within 4 minutes and of continuing at or below that flight level to its place of intended destination or any other place at which a safe landing can be made.

Scale K2.

- (i) A supply of oxygen and the associated equipment to meet the requirements set out in Parts I and II of this Scale. The duration for the purposes of this Scale shall be —
 - (a) that calculated in accordance with the operations manual prior to the commencement of the flight, being the period or periods which it is reasonably anticipated that the aircraft will be flown in the circumstances of the intended flight at a height where such requirements apply and in calculating the duration account shall be taken of —
 - (A) in the case of pressurised aircraft, the possibility of depressurisation when flying above flight level 100;
 - (B) the possibility of failure of one or more of the aircraft engines;
 - (C) restrictions due to required minimum safe altitude;
 - (D) fuel requirement; and

- (E) the performance of the aircraft; or
- (b) the period or periods during which the aircraft is intended to be flown in the circumstances specified in Parts I and II,

whichever is the greater.

- (ii) If an aircraft is not capable, at the time when a failure to maintain cabin pressurisation occurs, of descending from flight level 250 or above in accordance with the emergency descent procedure specified in the relevant flight manual and without flying below the minimum altitudes for safe flight specified in the operations manual relating to the aircraft, to flight level 130 within 4 minutes and of continuing at or below that flight level to its place of intended destination or any other place at which a safe landing can be made, the aircraft shall be equipped with automatically deployable oxygen equipment and the number of oxygen dispensing units shall exceed the number of passenger and cabin crew member seats by at least 10 per cent.

PART I

Unpressurised Aircraft

- (i) When flying at or below flight level 100: Nil.
- (ii) When flying above flight level 100 but not exceeding flight level 120:

Supply for	Duration
(a) Members of the flight crew	Any period during which the aircraft flies above flight level 100.
(b) Cabin crew members and 10% of passengers	For any continuous period exceeding 30 minutes during which the aircraft flies above flight level 100 but not exceeding flight level 120, the duration shall be the period by which 30 minutes is exceeded.

- (iii) When flying above flight level 120:

Supply for	Duration
(a) Members of the flight crew	Any period during which the aircraft flies above flight level 120.
(b) Cabin crew members and all passengers	Any period during which the aircraft flies above flight level 120.

PART II

Pressurised Aircraft

- (i) When flying at or below flight level 100: Nil.
- (ii) When flying above flight level 100 but not exceeding flight level 250:

Supply for	Duration
(a) Members of the flight crew	30 minutes or whenever the cabin pressure altitude exceeds 10,000 ft, whichever is the greater.

- (b) Cabin crew members and 10% of passengers
 - (A) When the aircraft is capable of descending and continuing to its destination as specified in A below, 30 minutes or whenever the cabin pressure altitude exceeds 10,000 ft, whichever is greater.
 - (B) When the aircraft is not so capable, whenever the cabin pressure altitude is greater than 10,000 ft but does not exceed 12,000 ft.
- (c) Cabin crew members and all passengers
 - (A) When the aircraft is capable all passengers of descending and continuing to its destination as specified in A below, no requirement other than that at (ii)(b)(A) of this part of this scale.
 - (B) When the aircraft is not so capable and the cabin pressure altitude exceeds 12,000 ft, the duration shall be the period when the cabin pressure altitude exceeds 12,000 ft or 10 minutes whichever is the greater.

(iii) When flying above flight level 250:

Supply for	Duration
(a) Members of the flight crew	2 hours or whenever the cabin pressure altitude exceeds 10,000 ft, whichever is the greater.
(b) Cabin crew members	Whenever the cabin pressure altitude exceeds 10,000 ft and a portable supply for 15 minutes.
(c) 10% of passengers	Whenever the cabin pressure altitude exceeds 10,000 ft, but does not exceed 12,000 ft.
(d) 30% of passengers	Whenever the cabin pressure altitude exceeds 12,000 ft, but does not exceed 15,000 ft.
(e) All passengers	If the cabin pressure altitude exceeds 15,000 ft the duration shall be the period when the cabin pressure altitude exceeds 15,000 ft or 10 minutes, whichever is the greater.
(f) 2% of passengers or two passengers, whichever is the greater, being supply of first aid oxygen which must be available for simultaneous first aid treatment of 2% or two passengers wherever they are seated in the aircraft	Whenever after decompression, cabin pressure altitude exceeds 8,000 ft.

A The flying machine is capable, at the time when a failure to maintain cabin pressurisation occurs, of descending in accordance with the emergency descent procedure specified in the relevant flight manual and without flying below the minimum altitudes for safe flight specified in the operations manual relating to the aircraft, to flight level 130 within 4 minutes and of continuing at or below that flight level to its place of intended destination or any other place at which a safe landing can be made.

Scale L.

Equipment to prevent the impairment through ice formation of the functioning of the controls, means of propulsion, lifting surfaces, windows or equipment of the aircraft so as to endanger the safety of the aircraft.

Scale M.

Safety harness for every seat in use.

Scale N.

An intercommunication system for use by all members of the flight crew and including microphones, not of a hand-held type for use by the pilot and flight engineer (if any).

Scale O.

A radar set capable of giving warning to the pilot-in-command and co-pilot of the aircraft of the presence of cumulo-nimbus clouds and other potentially hazardous weather conditions.

Scale P.

Flight recorders which shall satisfy the requirements specified in the Singapore Airworthiness Requirements (SAR) in the following aspects:

- (a) capability of recording, by reference to a timescale, and retaining data;
- (b) parameters or information to be recorded;
- (c) type, construction, location and installation on aircraft;
- (d) duration of the recording; and
- (e) inspection requirements.

Scale Q.

If the maximum total weight authorised of the aeroplane exceeds 5,700 kg a door between the flight crew compartment and any adjacent compartment to which passengers have access, which door shall be fitted with a lock or bolt capable of being worked from the flight crew compartment.

Scale R.

(i)

- (a) In respect of aeroplanes having a maximum total weight authorised exceeding 5,700 kg., equipment sufficient to protect the eyes, nose and mouth of all members of the flight crew required to be carried by virtue of paragraph 18 for a period of not less than 15 minutes and, in addition, where the minimum flight crew required as aforesaid is more than one and a cabin crew member is not required to be carried by virtue of paragraph 18, portable equipment sufficient to protect the eyes, nose and mouth of one member of the flight crew for a period of not less than 15 minutes.
- (b) In respect of aeroplanes having a maximum total weight authorised not exceeding 5,700 kg., the equipment specified in (i)(a) of this Scale except that in the case of such aeroplanes restricted by virtue of the operator's operations manual to fly at or below flight level 250 and capable of descending as specified at A hereunder, such equipment shall be sufficient to protect the eyes only.

(ii)

- (a) In respect of aeroplanes having a maximum total weight authorised exceeding 5,700 kg., portable equipment to protect the eyes, nose and mouth of all cabin crew members required to be carried by virtue of paragraph 18 for a period of not less than 15 minutes.
- (b) In respect of aeroplanes having a maximum total weight authorised not exceeding 5,700 kg., the equipment specified in (ii)(a) of this Scale except that this requirement shall not apply to such aeroplanes restricted by virtue of the operator's operations manual to fly at or below flight level 250 and capable of descending as specified at A hereunder.

A. The aeroplane is capable of descending in accordance with the emergency descent procedure specified in the relevant flight manual and without flying below the minimum altitudes for safe flight specified in the operations manual relating to the aeroplane, to flight level 100 within 4 minutes and of continuing at or below that flight level to its place of intended destination or any other place at which a safe landing can be made.

Scale S.

- (i) At least two survival ELTs, on long-range over-water flights and at least one survival ELT, on flights over designated land areas.
- (ii) Signalling devices.
- (iii) Life-saving equipment including means of sustaining life.

Scale T.

- (i) 1 survival ELT.
- (ii) Marine type pyrotechnical distress signals.
- (iii) For each 4 or proportion of 4 persons on board, any readily distributable energy supplement with an energy value of about 400kJ.
- (iv) For each 4 or proportion of 4 persons on board, 1 litre of fresh water in durable containers.
- (v) First aid equipment.
- (vi) For every 75 or proportion of 75 persons on board, 1 stove suitable for use with aircraft fuel.
- (vii) 1 cooking utensil, in which snow or ice can be melted.
- (viii) 2 snow shovels.
- (ix) 2 ice saws.
- (x) Single or multiple sleeping-bags, sufficient for the use of one-third of all persons on board.
- (xi) 1 arctic suit for each member of the crew of the aircraft.

Scale U.

- (i) A ground proximity warning system which shall be capable of providing automatically a timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.
- (ii) The ground proximity warning system referred to in sub-paragraph (i) shall provide, as a minimum, warnings of the following circumstances:
 - (a) excessive descent rate;
 - (b) excessive terrain closure rate;
 - (c) excessive altitude loss after take-off or go-around;
 - (d) unsafe terrain clearance while not in landing configuration —
 - (i) gear not locked down; or
 - (ii) flaps not in a landing position; and
 - (e) excessive descent below the instrument glide path.
- (iii) The ground proximity warning system referred to in sub-paragraph (i) shall be equipped with forward looking terrain avoidance function.

Scale V.

- (i) If the aircraft may in accordance with its Certificate of Airworthiness carry more than 19 and less than 100 passengers, one portable battery-powered megaphone capable of conveying instructions to all persons in the passenger compartment and readily available for use by a member of the crew.
- (ii) If the aircraft may in accordance with its Certificate of Airworthiness carry more than 99 and less than 200 passengers, two portable battery-powered megaphones together capable of conveying instructions to all persons in the passenger compartment and each readily available for use by a member of the crew.
- (iii) If the aircraft may in accordance with its Certificate of Airworthiness carry more than 199 passengers, 3 portable battery-powered megaphones together capable of conveying instructions to all persons in the passenger compartment and each readily available for use by a member of the crew.
- (iv) If the aeroplane may in accordance with its Certificate of Airworthiness carry more than 19 passengers —
 - (a) a public address system; and
 - (b) an interphone system of communication between members of the flight crew and the cabin crew members.

Scale W.

- (i) 1 survival ELT.
- (ii) Marine type pyrotechnical distress signals.
- (iii) For each 4 or proportion of 4 persons on board, any readily distributable energy supplement with an energy value of about 400kJ.

- (iv) For each 4 or proportion of 4 persons on board, 1/2 litre of fresh water in durable containers.
- (v) First aid equipment.

Scale X.

Cosmic radiation detection equipment calibrated in microsieverts per hour and capable of indicating the action and alert levels of radiation dose rate:

Provided that an aircraft shall not be required to carry the said equipment if before take-off the equipment is found to be unserviceable and it is not reasonably practicable to repair or replace it at the aerodrome of departure and the radiation forecast available to the pilot-in-command of the aircraft indicates that hazardous radiation conditions are unlikely to be encountered by the aircraft on its intended route or any planned diversion therefrom.

Scale Y.

If the speed limitations of the aeroplane are expressed in terms of mach number, a mach number indicator.

Scale BB.

- (i) An emergency lighting system to provide illumination in the passenger compartments sufficient to facilitate the evacuation of the aircraft notwithstanding the failure of the lighting systems specified in paragraph (ii) of Scale G.
- (ii) An emergency lighting system to provide illumination outside the aircraft sufficient to facilitate the evacuation of the aircraft.

Scale CC.

- (i) A quick donning type of oxygen mask which will readily supply oxygen upon demand at the duty station of each flight crew member.
- (ii) A device to provide a positive warning to the pilot of any dangerous loss of pressurisation.

Scale DD.

A forward looking wind shear warning system capable of providing the pilot with —

- (a) timely aural and visual warning of wind shear ahead of the aircraft;
- (b) the information required to permit the pilot to safely commence and continue a missed approach or go-around or to execute an escape manoeuvre if necessary; and
- (c) an indication that the limits specified for the certification of automatic landing equipment are being approached when such equipment is in use.

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SIXTH SCHEDULE

(Paragraph 13)

RADIO AND RADIO NAVIGATION EQUIPMENT TO BE CARRIED IN AIRCRAFT

1. Every aircraft shall be provided, when flying in the circumstances specified in the first column of the Table set forth in paragraph 2, with the scales of equipment respectively indicated in that Table:

Provided that, if the aircraft is flying in a combination of such circumstances the scales of equipment shall not on that account be required to be duplicated.

- 2.

Aircraft and Circumstances of Flight		Scale of Equipment Required									
		A	B	C	D	E	F	G	H	I	J
(1)	All aircraft within Singapore:										
	(a) when flying under Instrument Flight Rules within controlled airspace	A	B								
	(b) when flying at night	A									
	(c) where required by Rules of the Air to comply in whole or in part with Instrument Flight Rules in Visual Meteorological Conditions	A*	B*			E*					
	(d) when flying within any airspace in respect of which special rules are made in relation to a particular aerodrome, so as to require two-way radio communication with that aerodrome	A*									
	(e) when making an approach to landing at an aerodrome notified for the purpose of this sub-paragraph						F*				
	(f) on extended flights over water or on flights over designated land areas	A**									
(2)	In respect of —										
	(a) all aeroplanes that are not flying for the purpose of public	A*	B*			E*		G(i)*			

Aircraft and Circumstances of Flight		Scale of Equipment Required									
		A	B	C	D	E	F	G	H	I	J
transport and all helicopters.											
(b)	all aeroplanes flying for the purpose of public transport for which the individual Certificate of Airworthiness is issued (in Singapore or elsewhere) before 1st January 2009.	A*	B*			E*		G(i)*			
(c)	all aeroplanes flying for the purpose of public transport for which the individual Certificate of Airworthiness is issued (in Singapore or elsewhere) on or after 1st January 2009.	A*	B*			E*		G(ii)*			
(d)	all aeroplanes flying for the purpose of public transport on or after 1st January 2012.	A*	B*			E*		G(ii)*			
(3)	All Singapore aircraft:										
	(a) when flying for the purpose of public transport under Instrument Flight Rules:										
	(i) while making an approach to landing	A**	B	C**	D						
	(ii) on all other occasions	A**	B	C**							
	(b) over 2,300 kg. maximum total weight authorised when flying for the purpose of public transport under Visual Flight Rules	A**	B								
	(c) not over 2,300 kg. maximum total weight authorised when flying for the purpose of public transport under Visual Flight Rules:										
	(i) over a route on which navigation is not effected solely by visual reference to landmarks	A**	B								
	(ii) over water, beyond gliding distance from any land	A**									

Aircraft and Circumstances of Flight	Scale of Equipment Required									
	A	B	C	D	E	F	G	H	I	J

(4) All turbine-engine aeroplanes registered in Singapore exceeding 5,700 kg. maximum total weight authorised or authorised to carry more than 19 passengers, and all such aeroplanes operated for the purpose of public transport regardless of weight

H

(5) All Singapore aircraft when flying in defined portions of airspace where minimum navigation performance specifications (MNPS) are notified

I

(6) All Singapore aircraft when flying in defined portions of airspace where a vertical separation minimum (VSM) of 300 metres (1,000 feet) is applied above flight level 290

J.

* Unless the appropriate air traffic control unit otherwise permits in relation to the particular flight and provided that the aircraft complies with any instruction which the air traffic control unit may give in the particular case.

** The radio equipment shall provide for communications on the aeronautical emergency frequency.

3. The scales of radio and radio navigation equipment indicated the foregoing Table shall be as follows:

Scale A.

Radio equipment capable of maintaining two-way communication with the appropriate aeronautical radio stations.

Scale B.

Such radio equipment capable of enabling the aircraft to be navigated on the intended route and approved by the Chief Executive under paragraph 13(5).

Scale C.

Radio equipment capable of receiving from the appropriate aeronautical radio stations meteorological broadcasts relevant to the intended flight.

Scale D.

Radio navigation equipment capable of receiving signals from one or more aeronautical radio stations on the surface to enable the aircraft to be guided to a point from which a visual landing can be made at the aerodrome at which the aircraft is to land.

Scale E.

Radio equipment capable of providing a continuous indication of the aircraft's distance from the appropriate aeronautical radio stations.

Scale F.

Radio equipment capable of enabling the aircraft to make an approach to landing using the Instrument Landing System.

Scale G.

- (i) Secondary surveillance radar equipment which includes a pressure altitude reporting transponder capable of operating in Mode A and Mode C and of being operated in accordance with such instructions as may be given to the aircraft by the appropriate air traffic control unit.
- (ii) Secondary surveillance radar equipment which includes a pressure altitude reporting transponder capable of operating in Mode S and with a data source that provides pressure altitude information with a resolution of 7.62 m (25 ft) or better, and of being operated in accordance with such instructions as may be given to the aircraft by the appropriate air traffic control unit.

Scale H.

Airborne collision avoidance system (based on secondary surveillance radar transponder signals) which operates in accordance with the relevant provisions of Volume IV of Annex 10 to the Chicago Convention and independently of ground based equipment and is designed to provide advice and appropriate avoidance manoeuvres to the pilot in relation to other aircraft which are equipped with secondary surveillance radar transponder when they are in undue proximity.

Scale I.

Navigation equipment capable of continuously providing indications to the flight crew of adherence to or departure from any track to the required degree of accuracy at any point along that track.

Scale J.

Navigation equipment which is capable of —

- (a) indicating to the flight crew the flight level being flown;
- (b) automatically maintaining a selected flight level;

- (c) providing an alert to the flight crew when a deviation occurs from the selected flight level, which alert shall have a threshold not exceeding ± 90 metres (300 feet); and
- (d) automatically reporting pressure-altitude if the pressure-altitude is not automatically reported by the pressure altimeters required in the Fifth Schedule.

4. In this Schedule —

“Mode A” means the mode in which equipment is capable of replying to an interrogation from secondary surveillance radar units on the surface to elicit transponder replies for identity and surveillance with identity provided in the form of a 4 digit identity code;

“Mode C” means the mode in which equipment is capable of replying to an interrogation from secondary surveillance radar units on the surface to elicit transponder replies for automatic pressure-altitude transmission and surveillance;

“secondary surveillance radar equipment” means such type of radio equipment as may be notified as being capable of —

- (a) replying to an interrogation from secondary surveillance radar units on the surface; and
- (b) being operated in accordance with such instructions as may be given to the aircraft by the appropriate air traffic control unit.

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SEVENTH SCHEDULE

(Paragraph 15)

AIRCRAFT, ENGINE AND PROPELLER LOG BOOKS

1. Aircraft Log Book.

The following entries shall be included in the aircraft log book:

- (a) the name of the constructor, the type of the aircraft, the number assigned to it by the constructor and the date of the construction of the aircraft;
- (b) the nationality and registration marks of the aircraft;
- (c) the name and address of the operator of the aircraft;
- (d) particulars of the date and duration of each flight, or, if more than one flight was made on one day, the number of flights and total duration of flights on that day;
- (e) particulars of all maintenance work carried out on the aircraft or its equipment;
- (f) particulars of any defects occurring in the aircraft or in any equipment required to be carried therein by the Order, and of the action taken to rectify such defects including a reference to the relevant entries in the technical log required by paragraph 9 (7) and (8) of the Order;
- (g) particulars of any overhauls, repairs, replacements and modifications relating to the aircraft or any such equipment as aforesaid:

Provided that entries shall not be required to be made under sub-paragraphs (e), (f) and (g) in respect of any engine or variable pitch propeller.

2. Engine Log Book.

The following entries shall be included in the engine log book:

- (a) the name of the constructor, the type of the engine, the number assigned to it by the constructor and the date of the construction of the engine;
- (b) the nationality and registration marks of each aircraft in which the engine is fitted;
- (c) the name and address of the operator of each such aircraft;
- (d) particulars of the date and duration of each occasion on which the engine is run in flight, or, if the engine is run on more than one occasion on one day, the number of occasions and the total duration of the running of the engine on that day;
- (e) particulars of all maintenance work done on the engine;
- (f) particulars of any defects occurring in the engine, and of the rectification of such defects, including a reference to the relevant entries in the technical log required by paragraph 9 (7) and (8) of the Order; and
- (g) particulars of all overhauls, repairs, replacements and modifications relating to the engine or any of its accessories.

3. Variable Pitch Propeller Log Book.

The following entries shall be included in the variable pitch propeller log book:

- (a) the name of the constructor, the type of the propeller, the number assigned to it by the constructor and the date of the construction of the propeller;
- (b) the nationality and registration marks of each aircraft, and the type and number of each engine, to which the propeller is fitted;
- (c) the name and address of the operator of each such aircraft;
- (d) particulars of the date and duration of each occasion on which the propeller is run in flight, or, if the propeller is run on more than one occasion on one day, the number of occasions and the total duration of the running of the propeller on that day;
- (e) particulars of all maintenance work done on the propeller;
- (f) particulars of any defects occurring in the propeller, and of the rectification of such defects, including a reference to the relevant entries in the technical log required by paragraph 9 (7) and (8) of the Order;
- (g) particulars of any overhauls, repairs, replacements and modifications relating to the propeller.

EIGHTH SCHEDULE

(Paragraph 20)

FLIGHT CREW OF AIRCRAFT: LICENCES AND RATINGS

PART A : LICENCES

Minimum Age, Period of Validity, Privileges

1. Student Pilots

Student Pilot's Licence (All aircraft).

Minimum age — 16 years.

Maximum period of validity —

- (a) 60 months from the date the licence is granted or renewed, if the holder is less than 40 years of age on that date;
- (b) 24 months from the date the licence is granted or renewed, if the holder is 40 years of age or more but less than 50 years of age on that date;
- (c) 12 months from the date the licence is granted or renewed, if the holder is 50 years of age or more but less than 60 years of age on that date; or
- (d) 6 months from the date the licence is granted or renewed, if the holder is 60 years of age or more on that date.

Privileges: The licence —

- (a) shall entitle the holder to fly as pilot-in-command of an aircraft for the purpose of becoming qualified for the grant or renewal of a pilot's licence provided that —
 - (i) the holder is above the age of 16¹/₂ years; and
 - (ii) the holder does not fly the aircraft unless under the supervision of, or with the authority of, a person holding a pilot's licence granted under this Order, being a licence which includes a flying instructor's rating or an assistant flying instructor's rating entitling him to give instructions in flying the type of aircraft to be flown.
- (b) shall be valid only for flights within Singapore and within any other country specified in the licence;
- (c) shall not entitle the holder to fly as pilot-in-command of an aircraft in which any person is carried;
- (ca) shall not entitle the holder to fly on a solo flight to a foreign Contracting State as pilot-in-command of an aircraft unless there is a special or general arrangement made between Singapore and that Contracting State;
- (d) shall be valid only for flights carried out in accordance with instructions given by a person holding a pilot's licence granted under the Order, being a licence which includes a flying instructor's rating or an assistant flying instructor's rating entitling him to give instruction in flying the type of aircraft to be flown.

2. Aeroplane Pilots.

Private Pilot's Licence (Aeroplanes).

Minimum age — 17 years.

Maximum period of validity —

- (a) 60 months from the date the licence is granted or renewed, if the holder is less than 40 years of age on that date;
- (b) 24 months from the date the licence is granted or renewed, if the holder is 40 years of age or more but less than 50 years of age on that date;
- (c) 12 months from the date the licence is granted or renewed, if the holder is 50 years of age or more but less than 60 years of age on that date; or
- (d) 6 months from the date the licence is granted or renewed, if the holder is 60 years of age or more on that date.

Privileges: The licence —

- (a) shall entitle the holder to fly as pilot-in-command or co-pilot of an aeroplane of any of the types specified in the aircraft rating included in the licence, when the aircraft is flying for any purpose other than public transport or aerial work;
- (b) shall not entitle the holder to act as pilot-in-command by night while carrying any passenger in the aircraft unless a night rating is included in the licence, and unless an instrument rating is included therein or he has within the immediately preceding 6 months carried out as pilot-in-command not less than 5 take-offs and 5 landings at a time when the depression of the centre of the sun is not less than 12° below the horizon; or
- (c) shall entitle the holder to act as a holder of a flight radiotelephony operator's licence.

Commercial Pilot's Licence (Aeroplanes).

Minimum age — 18 years.

Maximum period of validity*—

- (a) 6 months from the date on which the licence is granted or renewed, if the holder —
 - (i) is 40 years of age or more on that date and is engaged in single-crew public transport of passengers; or
 - (ii) is 60 years of age or more on that date; or
- (b) 12 months from the date on which the licence is granted or renewed, in any other case.

Privileges: In addition to the privileges given above for the Private Pilot's Licence (Aeroplanes) which includes a night rating (aeroplanes), the holder of the licence shall be entitled to fly as —

* In respect of the privileges of a Private Pilot's Licence the maximum period of validity shall be as given for that licence.

- (a) pilot-in-command of any aeroplane certificated for single pilot operation and which is of a type specified in Part I of the aircraft rating included in the licence, when the aeroplane is engaged in a flight for the purpose of public transport or aerial work:

Provided that —

- (i) he shall not, unless his licence includes an instrument rating (aeroplanes), fly such an aeroplane on any scheduled journey;
 - (ii) he shall not fly such an aeroplane at night unless an instrument rating (aeroplanes) is included in his licence or he has within the immediately preceding 12 months carried out as pilot-in-command not less than 5 take-offs and 5 landings at a time when the depression of the centre of the sun is not less than 12 degrees below the horizon;
 - (iii) he shall not, unless his licence includes an instrument rating (aeroplanes), fly any such aeroplane of which the maximum total weight authorised exceeds 2,300 kg on any flight for the purpose of public transport except a flight beginning and ending at the same aerodrome and not extending beyond 25 nautical miles from that aerodrome;
- (b) co-pilot of any aeroplane of a type specified in Parts I and II of such aircraft rating when the aeroplane is engaged in a flight for the purpose of public transport or aerial work.

Airline Transport Pilot's Licence (Aeroplanes).

Minimum age — 21 years.

Maximum period of validity —

- (a) 6 months from the date on which the licence is granted or renewed, if the holder —
 - (i) is 40 years of age or more on that date and is engaged in single-crew public transport of passengers; or
 - (ii) is 60 years of age or more on that date; or
- (b) 12 months from the date on which the licence is granted or renewed, in any other case.

Privileges: In addition to the privileges given above for the Commercial Pilot's Licence (Aeroplanes) which includes an instrument rating (aeroplanes) the holder of the licence shall be entitled to fly as —

- (a) pilot-in-command of any aeroplane of a type specified in Part I of the aircraft rating included in the licence when the aeroplane is engaged in a flight for the purpose of public transport or aerial work
- (b) co-pilot of any aeroplane of a type specified in Part I or Part II of such aircraft rating when the aeroplane is engaged in a flight for the purpose of public transport or aerial work.

3. Helicopter and Gyroplane Pilots

Private Pilot's Licence (Helicopters and Gyroplanes).

Minimum age — 17 years.

Maximum period of validity —

- (a) 60 months from the date the licence is granted or renewed, if the holder is less than 40 years of age on that date;
- (b) 24 months from the date the licence is granted or renewed, if the holder is 40 years of age or more but less than 50 years of age on that date;
- (c) 12 months from the date the licence is granted or renewed, if the holder is 50 years of age or more but less than 60 years of age on that date; or

- (d) 6 months from the date the licence is granted or renewed, if the holder is 60 years of age or more on that date.

Privileges: The licence —

- (a) shall entitle the holder to fly as a pilot-in-command or co-pilot of any type of helicopter or gyroplane specified in the aircraft rating included in the licence when the aircraft is operated for purposes other than public transport or aerial work;
- (b) shall not entitle the holder to fly as pilot-in-command of such a gyroplane at night unless his licence contains a night rating (helicopters and gyroplanes) and he has within the immediately preceding 12 months, carried out as pilot-in-command not less than 5 take-offs and 5 landings at a time when the depression of the centre of the sun is not less than 12 degrees below the horizon;
- (c) shall not entitle the holder to fly as pilot-in-command of such a helicopter at night unless —
 - (i) his licence includes a night rating (helicopters and gyroplanes); and
 - (ii) his licence includes an instrument rating (helicopters) or he has within the immediately preceding 12 months carried out as pilot-in-command not less than 5 flights, each consisting of a take-off, a transition from hover to forward flight, a climb to at least 500 feet and a landing, at a time when the depression of the centre of the sun is not less than 12 degrees below the horizon;
- (d) shall entitle the holder to act as holder of flight radiotelephony operator's licence.

Commercial Pilot's Licence (Helicopters and Gyroplanes).

Minimum age — 18 years.

Maximum period of validity*—

- (a) 6 months from the date on which the licence is granted or renewed, if the holder —
 - (i) is 40 years of age or more on that date and is engaged in single-crew public transport of passengers; or
 - (ii) is 60 years of age or more on that date; or
- (b) 12 months from the date on which the licence is granted or renewed, in any other case.

Privileges: In addition to the privileges given above for the Private Pilot's Licence (Helicopters and Gyroplanes), which includes a night rating (helicopters and gyroplanes), the holder of the licence shall be entitled to fly as —

- (a) pilot-in-command of any helicopter or gyroplane certificated for single pilot operation and which is of a type specified in Part I of the aircraft rating included in the licence when the helicopter or gyroplane is engaged in a flight for any purpose whatsoever:

Provided that —

- (i) he shall not, unless his licence includes an instrument rating (helicopters) fly such a helicopter on any scheduled journey or on any flight for the purpose of public transport in Instrument Meteorological Conditions;
- (ii) he shall not fly such a gyroplane at night unless he has within the immediately preceding 12 months carried out as pilot-in-command not less than 5 take-offs and 5 landings at a time when the depression of the centre of the sun is not less than 12 degrees below the horizon;

*In respect of the privileges of a Private Pilot's Licence the maximum period of validity shall be as given for that licence.

- (iii) he shall not fly such a helicopter at night unless his licence includes an instrument rating (helicopters) or he has within the immediately preceeding 12 months carried out as pilot-in-command not less than 5 flights, each consisting of a take-off, a transition from hover to forward flight, a climb to at least 500 feet and a landing, at a time when the depression of the centre of the sun is not less than 12 degrees below the horizon;
- (b) co-pilot of any helicopter or gyroplane required to be operated with a co-pilot of a type specified in Part I or Part II of such aircraft rating for purposes whatsoever.

Airline Transport Pilot's Licence (Helicopters and Gyroplanes).

Minimum age — 21 years.

Maximum period of validity —

- (a) 6 months from the date on which the licence is granted or renewed, if the holder —
 - (i) is 40 years of age or more on that date and is engaged in single-crew public transport of passengers; or
 - (ii) is 60 years of age or more on that date; or
- (b) 12 months from the date on which the licence is granted or renewed, in any other case.

Privileges: In addition to the privileges given above for the Commercial Pilot's Licence (Helicopters and Gyroplanes), the holder of the licence shall be entitled to fly as —

- (a) pilot-in-command of any helicopter or gyroplane of a type specified in Part I of the aircraft rating included in the licence when the aircraft is engaged on a flight for any purpose whatsoever.
- (b) co-pilot of any helicopter or gyroplane required to be operated with a co-pilot of a type specified in Part I or Part II of such aircraft rating for any purpose whatsoever.

4. Balloon and Airship Pilots

Private Pilot's Licence (Balloons and Airships).

Minimum age — 17 years.

Maximum period of validity —

- (a) 60 months from the date the licence is granted or renewed, if the holder is less than 40 years of age on that date;
- (b) 24 months from the date the licence is granted or renewed, if the holder is 40 years of age or more but less than 50 years of age on that date;
- (c) 12 months from the date the licence is granted or renewed, if the holder is 50 years of age or more but less than 60 years of age on that date; or
- (d) 6 months from the date the licence is granted or renewed, if the holder is 60 years of age or more on that date.

Privileges: The licence —

- (a) shall entitle the holder to fly, when the balloon or airship is flying for any purpose other than public transport or aerial work, as —
 - (i) pilot-in-command of any type of balloon or airship specified in Part I of the aircraft type rating included in the licence;
 - (ii) co-pilot of any type of balloon or airship specified in Part I or Part II of such aircraft rating; and

(b) shall entitle the holder to act as a holder of a flight radiotelephony operator's licence.

Commercial Pilot's Licence (Balloons).

Minimum age — 18 years.

Maximum period of validity*—

- (a) 60 months from the date the licence is granted or renewed, if the holder is less than 40 years of age on that date;
- (b) 24 months from the date the licence is granted or renewed, if the holder is 40 years of age or more but less than 50 years of age on that date;
- (c) 12 months from the date the licence is granted or renewed, if the holder is 50 years of age or more but less than 60 years of age on that date; or
- (d) 6 months from the date the licence is granted or renewed, if the holder is 60 years of age or more on that date.

Privileges: In addition to the privileges given above for the Private Pilot's Licence in respect of balloons, the holder of the licence shall be entitled to fly as pilot-in-command or co-pilot of any type of balloon specified in the aircraft rating included in the licence.

Commercial Pilot's Licence (Airships).

Minimum age — 18 years.

Maximum period of validity*—

- (a) 6 months from the date on which the licence is granted or renewed, if the holder —
 - (i) is 40 years of age or more on that date and is engaged in single-crew public transport of passengers; or
 - (ii) is 60 years of age or more on that date; or
- (b) 12 months from the date on which the licence is granted or renewed, in any other case.

Privileges: In addition to the privileges given above for the Private Pilot's Licence in respect of airships, the holder of the licence shall be entitled to fly as —

- (a) pilot-in-command of any airship of a type specified in Part I of the aircraft rating included in the licence; or
- (b) co-pilot of any airship of a type specified in Part II of such aircraft rating.

*In respect of the privileges of a Private Pilot's Licence the maximum period of validity shall be as given for that licence.

5. Glider Pilots.

Commercial Pilot's Licence (Glanders).

Minimum age — 18 years.

Maximum period of validity —

- (a) 60 months from the date the licence is granted or renewed, if the holder is less than 40 years of age on that date;
- (b) 24 months from the date the licence is granted or renewed, if the holder is 40 years of age or more but less than 50 years of age on that date;
- (c) 12 months from the date the licence is granted or renewed, if the holder is 50 years of age or more but less than 60 years of age on that date; or
- (d) 6 months from the date the licence is granted or renewed, if the holder is 60 years of age or more on that date.

Privileges: The licence —

- (a) shall entitle the holder to fly as pilot-in-command or co-pilot of —
 - (i) any glider of which the maximum total weight authorised does not exceed 680 kg;
 - (ii) any glider of which the maximum total weight authorised exceeds 680 kg and which is of a type specified in the rating included in the licence; and
- (b) shall entitle the holder to act as a holder of a flight radiotelephony operator's licence.

6. Other Flight Crew

Flight Navigator's Licence.

Minimum age —18 years.

Maximum period of validity — 12 months.

Privileges: The holder of the licence shall be entitled to act as a flight navigator in any aircraft.

Flight Engineer's Licence.

Minimum age —18 years.

Maximum period of validity — 12 months.

Privileges: The holder of the licence shall be entitled to act as flight engineer in any type of aircraft specified in the aircraft rating included in the licence.

Flight Radiotelephony Operator's Licence.

Minimum age – 16 years.

Maximum period of validity – Where the holder of the licence is also the holder of a pilot's licence, the period of validity that is stipulated in the pilot's licence. In any other case, 24 months.

Privileges: The holder of the licence shall be entitled to operate radiotelephony apparatus in any aircraft.

PART B : RATINGS

1. The following ratings may be included in a pilot's licence (other than a student pilot's licence) granted under Part IV of the Order, and, subject to the provisions of the Order and of the licence, the inclusion of a rating in a licence shall have the consequences respectively specified as follows:

Aircraft Rating. The licence shall entitle the holder to act as pilot of aircraft of the types specified in the aircraft rating and different types of aircraft may be specified in respect of different privileges of a licence.

(a) – *deleted*–

Instrument Rating (Aeroplanes) shall entitle the holder of the licence to act as pilot-in-command or co-pilot of an aeroplane flying in controlled airspace in circumstances which require compliance with the Instrument Flight Rules.

Instrument Rating (Helicopters) shall entitle the holder of the licence to act as pilot-in-command of a helicopter flying in controlled airspace in circumstances which require compliance with the Instrument Flight Rules.

Night Rating (Private Pilot's Licence — Aeroplanes) shall entitle the holder of a private pilot's licence to act as pilot-in-command of an aeroplane carrying passengers by night.

Night Rating (Helicopters and Gyroplanes) shall entitle the holder of a private pilot's licence (helicopters) to act as pilot-in-command of a helicopter in which any passenger is carried.

Flying Instructor's Rating shall entitle the holder of the licence to give instruction in flying aircraft of such types as may be specified in the rating for that purpose. The maximum period of validity of a Flying Instructor's Rating shall be 24 months.

Assistant Flying Instructor's Rating shall entitle the holder of the licence to give instruction in flying aircraft of such types as may be specified in the rating for that purpose, subject to the following requirements:

- (a) such instruction shall only be given under the supervision of a person who is present during the take-off and landing at the aerodrome at which the instruction is to begin and end and who holds a pilot's licence endorsed with a flying instructor's rating; and
- (b) an Assistant Flying Instructor's Rating shall not entitle the holder of the licence to give directions to the person undergoing instruction in respect of the performance by that person of —
 - (i) his first solo flight by day;

- (ii) his first solo flight by night;
- (iii) his first solo cross-country flight by day; and
- (iv) his first solo cross-country flight by night

The maximum period of validity of an Assistant Flying Instructor's Rating shall be 12 months.

Class ratings are established for aeroplanes certificated for single-pilot operation and comprise —

- (a) single-engine, land;
- (b) single-engine, sea;
- (c) multi-engine, land; and
- (d) multi-engine, sea.

Type ratings are established for —

- (a) each type of aircraft certificated for operation with a minimum crew of at least two pilots;
- (b) each type of helicopter certificated for single-pilot operation except where a class rating has been issued; and
- (c) any type of aircraft whenever considered necessary by the Chief Executive.

When an applicant demonstrates skill and knowledge for the initial issue of a pilot licence, the category and the ratings appropriate to the class or type of aircraft used in the demonstration shall be entered on the licence.

2. An aircraft rating may be included in every flight engineer's licence. The licence shall entitle the holder to act as flight engineer only of aircraft of a type specified in the aircraft rating.
3. For the purposes of this Schedule —

“solo flight” means a flight on which the pilot of the aircraft is not accompanied by a person holding a pilot's licence granted or rendered valid under the Order;

“cross-country flight” means any flight during the course of which the aircraft is more than 46.3 km from the aerodrome of departure.

NINTH SCHEDULE

PUBLIC TRANSPORT — OPERATIONAL REQUIREMENTS

PART A : OPERATIONS MANUAL

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PART B : CREW TRAINING AND TESTS

1. The training, experience, practice and periodical tests required under paragraph 27 (2) of the Order, in the case of members of the crew of an aircraft engaged on a flight for the purpose of public transport shall be as follows:

- (1) The Crew.

Every member of the crew shall —

- (a) have been tested within the relevant period by or on behalf of the operator as to his knowledge of the use of the emergency and life saving equipment required to be carried in the aircraft on the flight;
 - (b) have practised within the relevant period under the supervision of the operator or of a person appointed by him for the purpose of carrying out of the duties required of him in case of an emergency occurring to the aircraft, either in an aircraft of the type to be used on the flight or in apparatus approved by the Chief Executive for the purpose and controlled by persons so approved;
 - (c) have been trained in the transport of dangerous goods referred to in paragraph 4(1) of Part II of the Nineteenth Schedule; and
 - (d) have been trained in knowledge and skills related to human performance and human factors.

- (2) Pilots.

- (a) Every pilot included in the flight crew who is intended by the operator to fly in circumstances requiring compliance with Instrument Flight Rules shall within the relevant period have been tested by or on behalf of the operator —
 - (i) as to his competence to perform his duties while executing normal manoeuvres and procedures in flight, in an aircraft of the type to be used on the flight, or in an aircraft of such other type used by the operator as the Chief Executive may approve, including the use of the instruments and equipment provided in the aircraft; and
 - (ii) as to his competence to perform his duties in instrument flight conditions while executing emergency manoeuvres and procedures in flight, in an aircraft of the type to be used on the flight, or in an aircraft of such other type used by the operator as the Chief Executive may approve, including the use of the instruments and equipment provided in the aircraft.
 - (b) A pilot's ability to carry out normal manoeuvres and procedures shall be tested in the aircraft in flight. The other tests required by this sub-paragraph may be conducted either in the aircraft in flight or under the supervision of a person approved by the Chief Executive for the purpose, by means of an approved flight simulation training device.

- (c) The tests specified in sub-paragraph (2)(a)(ii) when conducted in the aircraft in flight shall be carried out either in actual instrument flight conditions or in approved simulated instrument flight conditions.
 - (d) Every pilot included in the flight crew whose licence does not include an instrument rating or who, notwithstanding the inclusion of such a rating in his licence, is not intended by the operator to fly in the circumstances requiring compliance with the Instrument Flight Rules shall within the relevant period have been tested, by or on behalf of the operator, in flight in an aircraft of the types to be used on the flight —
 - (i) as to his competence to act as pilot of the aircraft while executing normal manoeuvres and procedures; and
 - (ii) as to his competence to act as pilot of the aircraft while executing emergency manoeuvres and procedures.
 - (e) Every pilot included in the flight crew who is seated at the flying controls during take-off or landing shall within the relevant period —
 - (i) have been tested as to his proficiency in using instrument approach-to-land systems of the type in use at the aerodrome of intended landing and any alternate aerodromes, such test being carried out either in flight in instrument flight conditions or in approved simulated instrument flight conditions or under the supervision of a person approved by the Chief Executive for the purpose by means of an approved flight simulation training device; and
 - (ii) have carried out when seated at the flying controls not less than 3 take-offs and 3 landings in aircraft of the type to be used on the flight or in an aircraft of such other type used by the operator as the Chief Executive may approve or in an approved flight simulation training device.
- (3) Flight Engineers.
- Every flight engineer included in the flight crew shall within the relevant period have been tested by or on behalf of the operator, either in flight, or, under the supervision of a person approved by the Chief Executive for the purpose, by means of apparatus on the ground, as to his competence to perform the duties of flight engineer in an aircraft of the type to be used on the flight, including his ability to execute emergency procedures in the course of such duties.
- (4) Flight Navigators and Flight Radio Operators.
- Every flight navigator and flight radio operator whose inclusion in the flight crew is required under paragraph 18 (4) and (6) respectively of the Order, shall within the relevant period have been tested by or on behalf of the operator as to his competence to perform his duties in conditions corresponding to those likely to be encountered on the flight —
- (a) in the case of a flight navigator, using equipment of the type to be used in the aircraft on the flight for purposes of navigation; and
 - (b) in the case of a flight radio operator using radio equipment of the type installed in the aircraft to be used on the flight, and including a test of his ability to carry out emergency procedures.
- (5) Pilot-in-Commands.
- (a) The pilot designated as pilot-in-command of the aircraft for the flight shall within the relevant period have demonstrated to the satisfaction of the operator that he has adequate knowledge of the route to be taken, the aerodromes of take-off and landing, and any alternate aerodromes, including in particular his knowledge of the terrain, the seasonal meteorological conditions, the meteorological communications and air traffic facilities, services and procedures, the search and rescue procedures and the navigational facilities, relevant to the route;
 - (b) In determining whether a pilot's knowledge of the matters referred to in sub-paragraph (5)(a) is sufficient to render him competent to perform the duties of pilot-in-command on the

flight, the operator shall take into account the pilot's flying experience in conjunction with the following:

- (i) the experience of other members of the intended flight crew;
- (ii) the influence of terrain and obstructions on departure and approach procedures at the aerodromes of take-off and intended landing and at alternate aerodromes;
- (iii) the similarity of the instrument approach procedures and let down aids to those with which the pilot is familiar;
- (iv) the dimensions of runways which may be used in the course of the flight in relation to the performance limits of aircraft of the type to be used on the flights;
- (v) the reliability of meteorological forecasts and the probability of difficult meteorological conditions in the areas to be traversed;
- (vi) the adequacy of the information available regarding the aerodrome of intended landing and any alternate aerodromes;
- (vii) the nature of air traffic control procedures and familiarity of the pilot with such procedures;
- (viii) the influence of terrain on route conditions and the extent of the assistance obtainable en route from navigational aids and air-to-ground communication facilities; and
- (ix) the extent to which it is possible for the pilot to become familiar with unusual aerodrome procedures and features of the route by means of ground instruction and training devices.

(6) For the purposes of this paragraph —

“approved” in relation to a flight simulation training device or simulated instrument flight conditions, means approved by the Chief Executive;

“instrument flight conditions” means weather conditions such that the pilot is unable to fly by visual reference to objects outside the aircraft;

“relevant period” means a period which immediately precedes the commencement of the flight being a period —

- (a) in the case of sub-paragraph (2) (e) (ii), of 90 days;
- (b) in the case of sub-paragraphs (2) (a) (ii), (2) (d) (ii), (2) (e) (i), (3), of 6 months;
- (c) in the case of sub-paragraphs (1), (2) (a) (i), (2) (d) (i), (4) and (5) (a), of 12 months:

Provided that —

- (i) any pilot of the aircraft to whom sub-paragraph (2) (a) (ii), (2) (d) (ii) or (2) (e) (i) and any flight engineer of the aircraft to whom sub-paragraph (3) applies shall for the purposes of the flight be deemed to have complied with such requirements within the relevant period if he has qualified to perform his duties in accordance therewith on two occasions within the period of 12 months immediately preceding the flight, such occasions being separated by an interval of not less than 4 months;
- (ii) the requirements of sub-paragraph (5) (a) shall be deemed to have been complied with within the relevant period by a pilot designated as pilot-in-command of the aircraft for the flight if, having become qualified so to act on flights between the same places over the same route more than 12 months before commencement of the flight, he has within the period of 12 months immediately preceding the flight flown as pilot of an aircraft between those places over that route.

2.

- (1) The records required to be maintained by an operator under paragraph 27 (2) of the Order shall be accurate and up to date records so kept as to show, on any date, in relation to each person who has during the period of two years immediately preceding that date flown as a member of the crew of any public transport aircraft operated by that operator —

- (a) the date and particulars of each test required by this Schedule undergone by that person during the said period including the name and qualifications of the examiner;
 - (b) the date upon which that person last practised the carrying out of the duties referred to in paragraph 1 (1) (b);
 - (c) the operator's conclusions based on each such test and practice as to that person's competence to perform his duties;
 - (d) the date and particulars of any decision taken by the operator during the said period in pursuance of paragraph 1 (5) (a) including particulars of the evidence upon which that decision was based.
- (2) The operator shall whenever called upon to do so by any authorised person produce for the inspection of any person so authorised all records referred to in sub-paragraph (1) and furnish to any such person all such information as he may require in connection with any such records and produce for his inspection all log books, certificates, papers and other documents whatsoever which he may reasonably require to see for the purpose of determining whether such records are complete or of verifying the accuracy of their contents.
- (3) The operator shall at the request of any person in respect of whom he is required to keep records as aforesaid furnish to that person, or to any operator of aircraft for the purpose of public transport by whom that person may subsequently be employed, particulars of any qualifications in accordance with this Schedule.

PART C : TRAINING MANUAL

The following information and instructions in relation to the training, experience, practice and periodical tests required under paragraph 27 (2) of the Order shall be included in the training manual referred to in paragraph 26 (2) of the Order:

- (a) the manner in which the training, practice and periodical tests required under paragraph 27 (2) of the Order and specified in Part B of this Schedule are to be carried out;
- (b)
 - (i) the minimum qualifications and experience which the operator requires of persons appointed by him to give or to supervise the training, practice and periodical tests; and
 - (ii) the type of training, practice and periodical tests which each such person is appointed to give or to supervise; and
 - (iii) the type of aircraft in respect of which each such person is appointed to give or to supervise the training, practice and periodical tests;
- (c) the minimum qualifications and experience required of each member of the crew undergoing the training, practice and periodical tests;
- (d) the syllabus for, and specimen forms for recording, the training, practice and periodical tests;
- (e) the manner in which instrument flight conditions and engine failure are to be simulated in the aircraft in flight;
- (f) the extent to which the training and testing is permitted in the course of flights for the purpose of public transport; and
- (g) the use to be made in the training and testing of equipment approved for the purpose by the Chief Executive.

PART D : AERODROME OPERATING MINIMA

Aerodrome operating minima for take-off, approach to landing and landing by public transport aircraft registered in Singapore.

(1) In this paragraph —

“approach to landing” means that portion of the flight of the aircraft in which it is descending below a height of 1,000 feet above the aerodrome;

“approved”, in relation to the operations manual, means accepted by the Chief Executive after any additions or amendments required by the Chief Executive have been incorporated;

“aerodrome operating minima”, in relation to the operation of an aircraft at an aerodrome, means the limits of usability of an aerodrome for —

- (a) take-off, expressed in terms of runway visual range or visibility, or both, and cloud conditions where necessary;
- (b) landing in precision approach and landing operations, expressed in terms of runway visual range or visibility, or both, and decision altitude/height (DA/H) as appropriate to the category of the operation;
- (c) landing in approach and landing operations with vertical guidance, expressed in terms of runway visual range or visibility, or both, and decision altitude/height (DA/H); and
- (d) landing in non-precision approach and landing operations, expressed in terms of runway visual range or visibility, or both, minimum descent altitude/height (MDA/H) and cloud conditions where necessary;

“cloud ceiling”, in relation to an aerodrome, means the vertical distance from the elevation of the aerodrome to the lowest part of any cloud visible from the aerodrome which is sufficient to obscure more than one-half of the sky so visible;

“decision height”, in relation to the operation of an aircraft at an aerodrome, means the minimum height specified by the operator in or ascertainable by reference to the operations manual as being the minimum height to which an approach to landing can safely be made by that aircraft at that aerodrome without visual reference to the ground;

“runway visual range”, in relation to a runway or landing strip, means the range over which the 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;

“specified”, in relation to an aircraft, means specified in or ascertainable by reference to the operations manual relating to that aircraft;

“visibility” means the ability, as expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night; and, in the case of an aerodrome in Singapore, the distance, if any, communicated to the pilot-in-command of the aircraft by or on behalf of the person in charge of the aerodrome as being the visibility shall be taken as the visibility for the time being.

(2) In compliance with paragraph 25 (2) of the Order, the operator of every aircraft to which this Schedule applies shall establish and include in the operations manual relating to the aircraft particulars of aerodrome operating minima appropriate to every aerodrome of intended departure or landing and every alternate aerodrome:

Provided that —

- (i) in respect of aerodromes to be used only on a flight which is not a scheduled journey or any part thereof it shall be sufficient to include in the operations manual, data and instructions by means of which the appropriate aerodrome operating minima can be calculated by the pilot-in-command of the aircraft; and
- (ii) in respect of aerodromes at which meteorological observations cannot be communicated to the pilot-in-command of an aircraft in flight, it shall be sufficient to include in the approved operations manual, general directions to pilots concerning aerodrome operating minima for safe operation.

(3) The aerodrome operating minima specified shall not, in respect of any aerodrome, be less favourable than any declared in respect of that aerodrome by the competent authority, unless that authority otherwise permits in writing.

- (4) In establishing aerodrome operating minima for the purposes of this Part the operator of the aircraft shall take into account the following matters:
- (a) the type and performance and handling characteristics of the aircraft and any relevant conditions in its Certificate of Airworthiness;
 - (b) the composition of its crew;
 - (c) the physical characteristics of the relevant aerodrome and its surroundings;
 - (d) the dimensions of the runways which may be selected for use;
 - (e) whether or not there are in use at the relevant aerodrome any aids, visual or otherwise, to assist aircraft in approach, landing, or take-off, being aids which the crew of the aircraft are trained and equipped to use; the nature of any such aids that are in use; and the procedures for approach, landing and take-off which may be adopted according to the existence or absence of such aids; and
 - (f) whether or not there is in use at the relevant aerodrome any communication facilities for passing meteorological observations to aircraft in flight,
- and shall establish in relation to each runway which may be selected for use minimum weather conditions appropriate to each set of circumstances which can reasonably be expected.
- (5) With reference to paragraph 29 (3) of the Order, an aircraft shall not commence a flight at a time when —
- (a) the cloud ceiling or the runway visual range or visibility as appropriate, at the aerodrome of departure is less than the minimum respectively specified for take-off; or
 - (b) according to the information available to the pilot-in-command of the aircraft it would not be able, without contravening paragraph (6) of this Part, commence or continue an approach to landing at the aerodrome of intended destination at the estimated time of arrival there and at any alternate aerodrome at any time at which according to a reasonable estimate the aircraft would arrive there.
- (6) With reference to paragraph 29(3) of the Order, an aircraft shall not —
- (a) commence an approach to landing at any aerodrome if the relevant visual minimas at that aerodrome is at the time less than the relevant minimum for landing, provided that if an approach for landing has already commenced, the approach may be continued to the applicable decision height; or
 - (b) continue an approach to landing at an aerodrome by flying beyond a point at which the limits of the aerodrome operating minima specified for that aerodrome will be infringed.
- (7) If according to the information available an aircraft would as regards any flight be required by the Rules of the Air to be flown in accordance with the Instrument Flight Rules at the aerodrome of intended landing, the pilot-in-command of the aircraft shall select prior to take-off an alternate aerodrome unless no aerodrome suitable for that purpose is available.

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TENTH SCHEDULE

Paragraphs 56 and 58

DOCUMENTS TO BE CARRIED BY AIRCRAFT REGISTERED IN SINGAPORE

1. On a flight for the purpose of public transport —
Documents A, B, C, D, E, F, G, H, K and Q and, if the flight is international air navigation, Documents O and P.
2. On a flight for the purpose of aerial work —
Documents A, B, C, D, E, F, G and Q and, if the flight is international air navigation, Documents I, O and P.
3. On a flight for a purpose other than public transport or aerial work —
Documents A, B, C, G and Q and, if the flight is international air navigation, Documents I, O and P
4. On a flight made in accordance with the terms of a permission granted to the operator pursuant to paragraph 14 of the Order, in addition to the documents specified in paragraph 1, 2 or 3, as the case may be, and in paragraph 4A, 4B or 4C, if applicable —
Document J.
- 4A. On a flight on an aircraft as defined in paragraph 51 of this Order, in addition to the documents specified in paragraph 1, 2 or 3, as the case may be, and in paragraph 4, 4B or 4C, if applicable —
Document L.
- 4B. On a flight by an aircraft operating under an agreement for a lease, charter or interchange or any similar arrangement referred to in paragraph 2(6)(b) of this Order, in addition to the documents specified in paragraph 1, 2 or 3, as the case may be, and in paragraph 4, 4A or 4C, if applicable —
Document M.
- 4C. On a flight by an aircraft where the State in which the aircraft is registered has, by agreement with the State of the operator, agreed to transfer to the State of the operator its functions and duties as State of registry in respect of the aircraft (referred to as the transfer agreement), in addition to the documents specified in paragraph 1, 2 or 3, as the case may be, and in paragraph 4, 4A or 4B, if applicable —
Document N.
- 4D. On a flight by a Singapore aircraft, where the responsibilities, functions and duties of the State of registry in respect of that aircraft have been transferred to another Contracting State under an agreement referred to in paragraph 2(6)(c) of this Order, if the aircraft is to enter the airspace of any other Contracting State which —
 - (a) is not a party to the Protocol relating to an amendment to the Chicago Convention (in respect of Article 83bis) signed at Montreal on 6th October 1980; or
 - (b) is a party to that Protocol but has not been duly informed of the agreement referred to in paragraph 2(6)(c) between Singapore and the first-mentioned Contracting State —
Documents A, B and C as issued or validated in accordance with this Order.

5. For the purposes of this Schedule —

“A” means the licence in force under the Telecommunications Act (Cap. 323), in respect of the aircraft radio station installed in the aircraft, and the current telecommunications log book required by the Order;

“B” means the Certificate of Airworthiness in force in respect of the aircraft;

“C” means the licences of the members of the flight crew of the aircraft;

“D” means one copy of the load sheet, if any, required by paragraph 28 of the Order in respect of the flight;

“E” means one copy of each certificate of maintenance review, if any, in force in respect of the aircraft;

“F” means the technical log referred to in paragraph 9 (7) of the Order;

“G” means the certificate of registration in force in respect of the aircraft;

“H” means the operations manual, if any, required by paragraph 25 (2) (a) (ii) of the Order to be carried on the flight;

“I” means a copy of the notified procedures to be followed by the pilot-in-command of an intercepted aircraft, and the notified visual signals for use by intercepting and intercepted aircraft;

“J” means the permission, if any, granted in respect of the aircraft pursuant to paragraph 14 except that, with the permission in writing of the Chief Executive, which may be granted subject to such conditions as he thinks fit, an aircraft to which paragraph 25 applies need not carry such permission if it carries an operations manual which includes the particulars specified in the Air Operator Certificate (AOCR) Requirements;

“K” means a certified true copy of the air operator certificate issued under paragraph 87 of the Order and a copy of its associated operations specifications;

“L” means a noise certificate defined in paragraph 51 of the Order;

“M” means a certified true copy of the agreement for the lease, charter or interchange or similar arrangement referred to in paragraph 2(6)(b) for an aircraft;

“N” means a certified true copy of the transfer agreement referred to in paragraph 2(6)(c);

“O” means a list of passengers’ names and their places of embarkation and destination;

“P” means a cargo manifest with detailed declarations of the cargo carried under the manifest;

“Q” means a journey log, or an equivalent document, setting out the following information, if not already recorded in Document F:

I — Aeroplane nationality and registration.

II — Date.

III — Names of crew members.

IV — Duty assignments of crew members.

V — Place of departure.

VI — Place of arrival.

VII — Time of departure.

VIII — Time of arrival.

IX — Hours of flight.

X — Nature of flight (private, aerial work, scheduled or non-scheduled).

XI — Incidents, observations, if any.

XII — Signature of person in charge;

“International air navigation” means any flight which includes passage over the territory of any country other than Singapore;

“operations specifications” means the authorisations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.

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ELEVENTH SCHEDULE

Paragraph 62

RULES OF THE AIR AND AIR TRAFFIC CONTROL

PART I

INTERNATIONAL STANDARDS

CHAPTER 1. DEFINITIONS

When the following terms are used in the International Standards for Rules of the Air, they have the following meanings:

Acrobatic flight. Manoeuvres intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

ADS-C agreement. A reporting plan which establishes the conditions of ADS-C data reporting (i.e. data required by the air traffic services unit and frequency of ADS-C reports which have to be agreed to prior to using ADS-C in the provision of air traffic services).

Advisory airspace. An airspace of defined dimensions, or designated route, within which air traffic advisory service is available.

Advisory route. A designated route along which air traffic advisory service is available.

Aerodrome. 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. Air traffic control service for aerodrome traffic.

Aerodrome control tower. A unit established to provide air traffic control service to aerodrome traffic.

Aerodrome traffic. All traffic on the manoeuvring area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

Aerodrome traffic zone. An airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

Aeronautical Information Publication (AIP). A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

Aeronautical station (RR S1.81). A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.

Aeroplane. A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Airborne collision avoidance system (ACAS). An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of groundbased equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.

Aircraft. 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 control radio station. An aeronautical telecommunication station having primary responsibility for handling communications pertaining to the operation and control of aircraft in a given area.

Air-taxiing. Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt).

Air traffic. All aircraft in flight or operating on the manoeuvring area of an aerodrome.

Air traffic advisory service. A service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans.

Air traffic control clearance. Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

Air traffic control service. A service provided for the purpose of:

- a) preventing collisions:
 - 1) between aircraft, and
 - 2) on the manoeuvring area between aircraft and obstructions, and
- b) expediting and maintaining an orderly flow of air traffic.

Air traffic control unit. A generic term meaning variously, area control centre, approach control unit or aerodrome control tower.

Air traffic service. 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 airspace. Airspaces of defined dimensions, alphabetically designated, within which specific types of flights may operate and for which air traffic services and rules of operation are specified.

Air traffic services reporting office. A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.

Air traffic services unit. A generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.

Airway. A control area or portion thereof established in the form of a corridor.

Alerting service. A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

Alternate aerodrome. 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. Alternate aerodromes include the following:

Take-off alternate. An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure.

En-route alternate. An aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en route.

ETOPS en-route alternate. A suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shutdown or other abnormal or emergency condition while en route in an ETOPS operation.

Destination alternate. An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.

Altitude. The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).

Approach control service. Air traffic control service for arriving or departing controlled flights.

Approach control unit. A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

Appropriate ATS authority. The relevant authority designated by the State responsible for providing air traffic services in the airspace concerned.

Appropriate authority.

- a) Regarding flight over the high seas: The relevant authority of the State of Registry.
- b) Regarding flight other than over the high seas: The relevant authority of the State having sovereignty over the territory being overflown.

Apron. A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.

Area control centre. A unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.

Area control service. Air traffic control service for controlled flights in control areas.

Area navigation (RNAV). A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

ATS route. A specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services.

Automatic dependent surveillance — broadcast (ADS-B). A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/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). A means by which the terms of an ADS-C agreement will be 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.

Ceiling. The height above the ground or water of the base of the lowest layer of cloud below 6 000 metres (20 000 feet) covering more than half the sky.

Changeover point. 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. The point to which an aircraft is granted an air traffic control clearance.

Control area. A controlled airspace extending upwards from a specified limit above the earth.

Controlled aerodrome. An aerodrome at which air traffic control service is provided to aerodrome traffic.

Controlled airspace. An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.

Controlled flight. Any flight which is subject to an air traffic control clearance.

Controller-pilot data link communications (CPDLC). A means of communication between controller and pilot, using data link for ATC communications.

Control zone. A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

Cruise climb. An aeroplane cruising technique resulting in a net increase in altitude as the aeroplane mass decreases.

Cruising level. A level maintained during a significant portion of a flight.

Current flight plan. The flight plan, including changes, if any, brought about by subsequent clearances.

Danger area. An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

Data link communications. A form of communication intended for the exchange of messages via a data link.

Estimated off-block time. The estimated time at which the aircraft will commence movement associated with departure.

Estimated time of arrival. For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

Expected approach time. The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing.

Filed flight plan. The flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes.

Flight crew member. A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

Flight information centre. A unit established to provide flight information service and alerting service.

Flight information region. An airspace of defined dimensions within which flight information service and alerting service are provided.

Flight information service. A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

Flight level. 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. Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Flight visibility. The visibility forward from the cockpit of an aircraft in flight.

Ground visibility. The visibility at an aerodrome as reported by an accredited observer or by automatic systems.

Heading. The direction in which the longitudinal axis of an aircraft is pointed, usually expressed in degrees from North (true, magnetic, compass or grid).

Height. The vertical distance of a level, a point or an object considered as a point, measured from a specified datum.

IFR. The symbol used to designate the instrument flight rules.

IFR flight. A flight conducted in accordance with the instrument flight rules.

IMC. The symbol used to designate instrument meteorological conditions.

Instrument approach procedure. A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows:

Non-precision approach (NPA) procedure. An instrument approach procedure which utilizes lateral guidance but does not utilize vertical guidance.

Approach procedure with vertical guidance (APV). An instrument approach procedure which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

Precision approach (PA) procedure. An instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation.

Instrument meteorological conditions. Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

Landing area. That part of a movement area intended for the landing or take-off of aircraft.

Level. A generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

Manoeuvring area. That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

Movement area. That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

Pilot-in-command. 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.

Pressure-altitude. An atmospheric pressure expressed in terms of altitude which corresponds to that pressure in the Standard Atmosphere.

Problematic use of substances. 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; and/or
- b) causes or worsens an occupational, social, mental or physical problem or disorder.

Prohibited area. An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

Psychoactive substances. Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

Radiotelephony. A form of radiocommunication primarily intended for the exchange of information in the form of speech.

Repetitive flight plan (RPL). A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.

Reporting point. A specified geographical location in relation to which the position of an aircraft can be reported.

Restricted area. An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

Runway. A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Runway-holding position. A designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorized by the aerodrome control tower.

Safety-sensitive personnel. Persons who might endanger aviation safety if they perform their duties and functions improperly including, but not limited to, crew members, aircraft maintenance personnel and air traffic controllers.

Signal area. An area on an aerodrome used for the display of ground signals.

Special VFR flight. A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

Taxiing. Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

Taxiway. A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

- a) Aircraft stand taxilane. A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.
- b) Apron taxiway. A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.
- c) Rapid exit taxiway. A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

Terminal control area. A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

Total estimated elapsed time. For IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from take-off to arrive over the destination aerodrome.

Track. 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. Advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision.

Traffic information. 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.

Transition altitude. The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

Unmanned free balloon. A non-power-driven, unmanned, lighter-than-air aircraft in free flight.

VFR. The symbol used to designate the visual flight rules.

VFR flight. A flight conducted in accordance with the visual flight rules.

Visibility. Visibility for aeronautical purposes is the greater of:

- a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background;
- b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background.

Visual meteorological conditions. Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

VMC. The symbol used to designate visual meteorological conditions.

CHAPTER 2. — APPLICABILITY OF THE RULES OF THE AIR

2.1 Territorial application of the rules of the air

2.1.1 The rules of the air shall apply to aircraft bearing the nationality and registration marks of a Contracting State, wherever they may be, to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory overflown.

2.1.2 If, and so long as, a Contracting State has not notified the International Civil Aviation Organization to the contrary, it shall be deemed, as regards aircraft of its registration, to have agreed as follows:

For purposes of flight over those parts of the high seas where a Contracting State has accepted, pursuant to a regional air navigation agreement, the responsibility of providing air traffic services, the “appropriate ATS authority” referred to in this Part is the relevant authority designated by the State responsible for providing those services.

2.2 Compliance with the rules of the air

The operation of an aircraft either in flight or on the movement area of an aerodrome shall be in compliance with the general rules and, in addition, when in flight, either with:

- a) the visual flight rules; or
- b) the instrument flight rules.

2.3 Responsibility for compliance with the rules of the air

2.3.1 Responsibility of pilot-in-command

The pilot-in-command of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with the rules of the air, except that the pilot-in-command may depart from these rules in circumstances that render such departure absolutely necessary in the interests of safety.

2.3.2 Pre-flight action

Before beginning a flight, the pilot-in-command of an aircraft shall become familiar with all available information appropriate to the intended operation. Pre-flight action for flights away from the vicinity of an aerodrome, and for all IFR flights, shall include a careful study of available current weather reports and forecasts, taking into consideration fuel requirements and an alternative course of action if the flight cannot be completed as planned.

2.4 Authority of pilot-in-command of an aircraft

The pilot-in-command of an aircraft shall have final authority as to the disposition of the aircraft while in command.

2.5 Problematic use of psychoactive substances

No person whose function is critical to the safety of aviation (safety-sensitive personnel) shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired. No such person shall engage in any kind of problematic use of substances.

CHAPTER 3. GENERAL RULES

3.1 Protection of persons and property

3.1.1 Negligent or reckless operation of aircraft

An aircraft shall not be operated in a negligent or reckless manner so as to endanger life or property of others.

3.1.2 Minimum heights

Except when necessary for take-off or landing, or except by permission from the appropriate authority, aircraft shall not be flown over the congested areas of cities, towns or settlements or over an open-air assembly of persons, unless at such a height as will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface.

3.1.3 Cruising levels

The cruising levels at which a flight or a portion of a flight is to be conducted shall be in terms of:

- a) flight levels, for flights at or above the lowest usable flight level or, where applicable, above the transition altitude;
- b) altitudes, for flights below the lowest usable flight level or, where applicable, at or below the transition altitude.

3.1.4 Dropping or spraying

Nothing shall be dropped or sprayed from an aircraft in flight except under conditions prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

3.1.5 Towing

No aircraft or other object shall be towed by an aircraft, except in accordance with requirements prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

3.1.6 Parachute descents

Parachute descents, other than emergency descents, shall not be made except under conditions prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

3.1.7 Acrobatic flight

No aircraft shall be flown acrobatically except under conditions prescribed by the appropriate authority and as indicated by relevant information, advice and/or clearance from the appropriate air traffic services unit.

3.1.8 Formation flights

Aircraft shall not be flown in formation except by prearrangement among the pilots-in-command of the aircraft taking part in the flight and, for formation flight in controlled airspace, in accordance with the conditions prescribed by the appropriate ATS authority(ies). These conditions shall include the following:

- a) the formation operates as a single aircraft with regard to navigation and position reporting;
- b) separation between aircraft in the flight shall be the responsibility of the flight leader and the pilots-in-command of the other aircraft in the flight and shall include periods of transition when aircraft are manoeuvring to attain their own separation within the formation and during join-up and breakaway; and
- c) a distance not exceeding -
 - (i) 1 km (0.5 NM) laterally and longitudinally and 30 m (100 ft) vertically from the flight leader shall be maintained by each aircraft, not being a military aircraft; or
 - (ii) 2 km (1 NM) laterally and longitudinally and 30 m (100 ft) vertically from the flight leader shall be maintained by each military aircraft.

3.1.9 Unmanned free balloons

An unmanned free balloon shall be operated in such a manner as to minimize hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 4.

3.1.10 Prohibited areas and restricted areas

Aircraft shall not be flown in a prohibited area, or in a restricted area, the particulars of which have been duly published, except in accordance with the conditions of the restrictions or by permission of the State over whose territory the areas are established.

3.2 Avoidance of collisions

Nothing in these rules shall relieve the pilot-in-command of an aircraft from the responsibility of taking such action, including collision avoidance manoeuvres based on resolution advisories provided by ACAS equipment, as will best avert collision.

3.2.1 Proximity

An aircraft shall not be operated in such proximity to other aircraft as to create a collision hazard.

3.2.2 Right-of-way

The aircraft that has the right-of-way shall maintain its heading and speed.

3.2.2.1 An aircraft that is obliged by the following rules to keep out of the way of another shall avoid passing over, under or in front of the other, unless it passes well clear and takes into account the effect of aircraft wake turbulence.

3.2.2.2 *Approaching head-on.* When two aircraft are approaching head-on or approximately so and there is danger of collision, each shall alter its heading to the right.

3.2.2.3 *Converging.* When two aircraft are converging at approximately the same level, the aircraft that has the other on its right shall give way, except as follows:

- a) power-driven heavier-than-air aircraft shall give way to airships, gliders and balloons;
- b) airships shall give way to gliders and balloons;
- c) gliders shall give way to balloons;
- d) power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.

3.2.2.4 *Overtaking.* An overtaking aircraft is an aircraft that approaches another from the rear on a line forming an angle of less than 70 degrees with the plane of symmetry of the latter, i.e. is in such a position with reference to the other aircraft that at night it should be unable to see either of the aircraft's left (port) or right (starboard) navigation lights. An aircraft that is being overtaken has the right-of-way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by

altering its heading to the right, and no subsequent change in the relative positions of the two aircraft shall absolve the overtaking aircraft from this obligation until it is entirely past and clear.

3.2.2.5 *Landing*

3.2.2.5.1 An aircraft in flight, or operating on the ground or water, shall give way to aircraft landing or in the final stages of an approach to land.

3.2.2.5.2 When two or more heavier-than-air aircraft are approaching an aerodrome for the purpose of landing, aircraft at the higher level shall give way to aircraft at the lower level, but the latter shall not take advantage of this rule to cut in in front of another which is in the final stages of an approach to land, or to overtake that aircraft. Nevertheless, power-driven heavier-than-air aircraft shall give way to gliders.

3.2.2.5.3 *Emergency landing.* An aircraft that is aware that another is compelled to land shall give way to that aircraft.

3.2.2.6 *Taking off.* An aircraft taxiing on the manoeuvring area of an aerodrome shall give way to aircraft taking off or about to take off.

3.2.2.7 *Surface movement of aircraft.*

3.2.2.7.1 In case of danger of collision between two aircraft taxiing on the movement area of an aerodrome the following shall apply:

- a) when two aircraft are approaching head on, or approximately so, each shall stop or where practicable alter its course to the right so as to keep well clear;
- b) when two aircraft are on a converging course, the one which has the other on its right shall give way;
- c) an aircraft which is being overtaken by another aircraft shall have the right-of-way and the overtaking aircraft shall keep well clear of the other aircraft.

3.2.2.7.2 An aircraft taxiing on the manoeuvring area shall stop and hold at all runway-holding positions unless otherwise authorized by the aerodrome control tower.

3.2.2.7.3 An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further when the lights are switched off.

3.2.3 Lights to be displayed by aircraft

3.2.3.1 Except as provided by 3.2.3.5, from sunset to sunrise or during any other period which may be prescribed by the appropriate authority all aircraft in flight shall display:

- a) anti-collision lights intended to attract attention to the aircraft; and
- b) navigation lights intended to indicate the relative path of the aircraft to an observer and other lights shall not be displayed if they are likely to be mistaken for these lights.

3.2.3.2 Except as provided by 3.2.3.5, from sunset to sunrise or during any other period prescribed by the appropriate authority:

- a) all aircraft moving on the movement area of an aerodrome shall display navigation lights intended to indicate the relative path of the aircraft to an observer and other lights shall not be displayed if they are likely to be mistaken for these lights;
- b) unless stationary and otherwise adequately illuminated, all aircraft on the movement area of an aerodrome shall display lights intended to indicate the extremities of their structure;
- c) all aircraft operating on the movement area of an aerodrome shall display lights intended to attract attention to the aircraft; and
- d) all aircraft on the movement area of an aerodrome whose engines are running shall display lights which indicate that fact.

3.2.3.3 Except as provided by 3.2.3.5, all aircraft in flight and fitted with anti-collision lights to meet the requirement of 3.2.3.1 a) shall display such lights also outside the period specified in 3.2.3.1.

3.2.3.4 Except as provided by 3.2.3.5, all aircraft:

- a) operating on the movement area of an aerodrome and fitted with anti-collision lights to meet the requirement of 3.2.3.2 c); or

- b) on the movement area of an aerodrome and fitted with lights to meet the requirement of 3.2.3.2 d);

shall display such lights also outside the period specified in 3.2.3.2.

3.2.3.5 A pilot shall be permitted to switch off or reduce the intensity of any flashing lights fitted to meet the requirements of 3.2.3.1, 3.2.3.2, 3.2.3.3 and 3.2.3.4 if they do or are likely to:

- a) adversely affect the satisfactory performance of duties; or
- b) subject an outside observer to harmful dazzle.

3.2.4 Simulated instrument flights

An aircraft shall not be flown under simulated instrument flight conditions unless:

- a) fully functioning dual controls are installed in the aircraft; and
- b) a qualified pilot occupies a control seat to act as safety pilot for the person who is flying under simulated instrument conditions. The safety pilot shall have adequate vision forward and to each side of the aircraft, or a competent observer in communication with the safety pilot shall occupy a position in the aircraft from which the observer's field of vision adequately supplements that of the safety pilot.

3.2.5 Operation on and in the vicinity of an aerodrome

An aircraft operated on or in the vicinity of an aerodrome shall, whether or not within an aerodrome traffic zone:

- a) observe other aerodrome traffic for the purpose of avoiding collision;
- b) conform with or avoid the pattern of traffic formed by other aircraft in operation;
- c) make all turns to the left, when approaching for a landing and after taking off, unless otherwise instructed;
- d) land and take off into the wind unless safety, the runway configuration, or air traffic considerations determine that a different direction is preferable.

3.2.6 Water operations

3.2.6.1 When two aircraft or an aircraft and a vessel are approaching one another and there is a risk of collision, the aircraft shall proceed with careful regard to existing circumstances and conditions including the limitations of the respective craft.

3.2.6.1.1 *Converging.* An aircraft which has another aircraft or a vessel on its right shall give way so as to keep well clear.

3.2.6.1.2 *Approaching head-on.* An aircraft approaching another aircraft or a vessel head-on, or approximately so, shall alter its heading to the right to keep well clear.

3.2.6.1.3 *Overtaking.* The aircraft or vessel which is being overtaken has the right of way, and the one overtaking shall alter its heading to keep well clear.

3.2.6.1.4 *Landing and taking off.* Aircraft landing on or taking off from the water shall, in so far as practicable, keep well clear of all vessels and avoid impeding their navigation.

3.2.6.2 *Lights to be displayed by aircraft on the water.* Between sunset and sunrise or such other period between sunset and sunrise as may be prescribed by the appropriate authority, all aircraft on the water shall display lights as required by the International Regulations for Preventing Collisions at Sea (revised 1972) unless it is impractical for them to do so, in which case they shall display lights as closely similar as possible in characteristics and position to those required by the International Regulations.

3.3 Flight plans

3.3.1 Submission of a flight plan

3.3.1.1 Information relative to an intended flight or portion of a flight, to be provided to air traffic services units, shall be in the form of a flight plan.

3.3.1.2 A flight plan shall be submitted prior to operating:

- a) any flight or portion thereof to be provided with air traffic control service;
- b) any IFR flight within advisory airspace;
- c) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate the provision of flight information, alerting and search and rescue services;
- d) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate coordination with appropriate military units or with air traffic services units in adjacent States in order to avoid the possible need for interception for the purpose of identification;
- e) any flight across international borders.

3.3.1.3 A flight plan shall be submitted, before departure, to an air traffic services reporting office or, during flight, transmitted to the appropriate air traffic services unit or airground control radio station, unless arrangements have been made for submission of repetitive flight plans.

3.3.1.4 Unless otherwise prescribed by the appropriate ATS authority, a flight plan for a flight to be provided with air traffic control service or air traffic advisory service shall be submitted at least sixty minutes before departure, or, if submitted during flight, at a time which will ensure its receipt by the appropriate air traffic services unit at least ten minutes before the aircraft is estimated to reach:

- a) the intended point of entry into a control area or advisory area; or
- b) the point of crossing an airway or advisory route.

3.3.2 Contents of a flight plan

A flight plan shall comprise information regarding such of the following items as are considered relevant by the appropriate ATS authority:

- Aircraft identification
- Flight rules and type of flight
- Number and type(s) of aircraft and wake turbulence category
- Equipment
- Departure aerodrome
- Estimated off-block time
- Cruising speed(s)
- Cruising level(s)
- Route to be followed
- Destination aerodrome and total estimated elapsed time
- Alternate aerodrome(s)
- Fuel endurance
- Total number of persons on board
- Emergency and survival equipment
- Other information.

3.3.3 Completion of a flight plan

3.3.3.1 Whatever the purpose for which it is submitted, a flight plan shall contain information, as applicable, on relevant items up to and including "Alternate aerodrome(s)" regarding the whole route or the portion thereof for which the flight plan is submitted.

3.3.3.2 It shall, in addition, contain information, as applicable, on all other items when so prescribed by the appropriate ATS authority or when otherwise deemed necessary by the person submitting the flight plan.

3.3.4 Changes to a flight plan

Subject to the provisions of 3.6.2.2, all changes to a flight plan submitted for an IFR flight, or a VFR flight operated as a controlled flight, shall be reported as soon as practicable to the appropriate air traffic services unit. For other VFR flights, significant changes to a flight plan shall be reported as soon as practicable to the appropriate air traffic services unit.

3.3.5 Closing a flight plan

3.3.5.1 Unless otherwise prescribed by the appropriate ATS authority, a report of arrival shall be made in person, by radiotelephony or via data link at the earliest possible moment after landing, to the appropriate air traffic services unit at the arrival aerodrome, by any flight for which a flight plan has been submitted covering the entire flight or the remaining portion of a flight to the destination aerodrome.

3.3.5.2 When a flight plan has been submitted only in respect of a portion of a flight, other than the remaining portion of a flight to destination, it shall, when required, be closed by an appropriate report to the relevant air traffic services unit.

3.3.5.3 When no air traffic services unit exists at the arrival aerodrome, the arrival report, when required, shall be made as soon as practicable after landing and by the quickest means available to the nearest air traffic services unit.

3.3.5.4 When communication facilities at the arrival aerodrome are known to be inadequate and alternate arrangements for the handling of arrival reports on the ground are not available, the following action shall be taken. Immediately prior to landing the aircraft shall, if practicable, transmit to the appropriate air traffic services unit, a message comparable to an arrival report, where such a report is required. Normally, this transmission shall be made to the aeronautical station serving the air traffic services unit in charge of the flight information region in which the aircraft is operated.

3.3.5.5 Arrival reports made by aircraft shall contain the following elements of information:

- a) aircraft identification;
- b) departure aerodrome;
- c) destination aerodrome (only in the case of a diversionary landing);
- d) arrival aerodrome;
- e) time of arrival.

3.4 Signals

3.4.1 Upon observing or receiving any of the signals given in Appendix 1, aircraft shall take such action as may be required by the interpretation of the signal given in that Appendix.

3.4.2 The signals of Appendix 1 shall, when used, have the meaning indicated therein. They shall be used only for the purpose indicated and no other signals likely to be confused with them shall be used.

3.4.3 A signalman shall be responsible for providing standard marshalling signals to aircraft in a clear and precise manner using the signals shown in Appendix 1.

3.4.4 No person shall guide an aircraft unless trained, qualified and approved by the appropriate authority to carry out the functions of a signalman.

3.4.5 The signalman shall wear a distinctive fluorescent identification vest to allow the flight crew to identify that he or she is the person responsible for the marshalling operation.

3.4.6 Daylight-fluorescent wands, table-tennis bats or gloves shall be used for all signalling by all participating ground staff during daylight hours. Illuminated wands shall be used at night or in low visibility.

3.5 Time

3.5.1 Coordinated Universal Time (UTC) shall be used and shall be expressed in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.

3.5.2 A time check shall be obtained prior to operating a controlled flight and at such other times during the flight as may be necessary.

3.5.3 Wherever time is utilized in the application of data link communications, it shall be accurate to within 1 second of UTC.

3.6 Air traffic control service

3.6.1 Air traffic control clearances

3.6.1.1 An air traffic control clearance shall be obtained prior to operating a controlled flight, or a portion of a flight as a controlled flight. Such clearance shall be requested through the submission of a flight plan to an air traffic control unit.

3.6.1.2 Whenever an aircraft has requested a clearance involving priority, a report explaining the necessity for such priority shall be submitted, if requested by the appropriate air traffic control unit.

3.6.1.3 *Potential reclearance in flight.* If prior to departure it is anticipated that depending on fuel endurance and subject to reclearance in flight, a decision may be taken to proceed to a revised destination aerodrome, the appropriate air traffic control units shall be so notified by the insertion in the flight plan of information concerning the revised route (where known) and the revised destination.

3.6.1.4 An aircraft operated on a controlled aerodrome shall not taxi on the manoeuvring area without clearance from the aerodrome control tower and shall comply with any instructions given by that unit.

3.6.2 Adherence to flight plan

3.6.2.1 Except as provided for in 3.6.2.2 and 3.6.2.4, an aircraft shall adhere to the current flight plan or the applicable portion of a current flight plan submitted for a controlled flight unless a request for a change has been made and clearance obtained from the appropriate air traffic control unit, or unless an emergency situation arises which necessitates immediate action by the aircraft, in which event as soon as circumstances permit, after such emergency authority is exercised, the appropriate air traffic services unit shall be notified of the action taken and that this action has been taken under emergency authority.

3.6.2.1.1 Unless otherwise authorized by the appropriate ATS authority, or directed by the appropriate air traffic control unit, controlled flights shall, in so far as practicable:

- a) when on an established ATS route, operate along the defined centre line of that route; or
- b) when on any other route, operate directly between the navigation facilities and/or points defining that route.

3.6.2.1.2 Subject to the overriding requirement in 3.6.2.1.1, an aircraft operating along an ATS route segment defined by reference to very high frequency omnidirectional radio ranges shall change over for its primary navigation guidance from the facility behind the aircraft to that ahead of it at, or as close as operationally feasible to, the changeover point, where established.

3.6.2.1.3 Deviation from the requirements in 3.6.2.1.1 shall be notified to the appropriate air traffic services unit.

3.6.2.2 *Inadvertent changes.* In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:

- a) *Deviation from track:* if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.
- b) *Variation in true airspeed:* if the average true airspeed at cruising level between reporting points varies or is expected to vary by plus or minus 5 per cent of the true airspeed, from that given in the flight plan, the appropriate air traffic services unit shall be so informed.
- c) *Change in time estimate:* if the time estimate for the next applicable reporting point, flight information region boundary or destination aerodrome, whichever comes first, is found to be in error in excess of 3 minutes from that notified to air traffic services, or such other period of time as is prescribed by the appropriate ATS authority or on the basis of air navigation regional agreements, a revised estimated time shall be notified as soon as possible to the appropriate air traffic services unit.

3.6.2.2.1 Additionally, when an ADS agreement is in place, the air traffic services unit (ATSU) shall be informed automatically via data link whenever changes occur beyond the threshold values stipulated by the ADS event contract.

3.6.2.3 *Intended changes.* Requests for flight plan changes shall include information as indicated hereunder:

- a) *Change of cruising level:* aircraft identification; requested new cruising level and cruising speed at this level, revised time estimates (when applicable) at subsequent flight information region boundaries.
- b) *Change of route:*
 - 1) *Destination unchanged:* aircraft identification; flight rules; description of new route of flight including related flight plan data beginning with the position from which requested change of route is to commence; revised time estimates; any other pertinent information.
 - 2) *Destination changed:* aircraft identification; flight rules; description of revised route of flight to revised destination aerodrome including related flight plan data, beginning with the position from which requested change of route is to commence; revised time estimates; alternate aerodrome(s); any other pertinent information.

3.6.2.4 *Weather deterioration below the VMC.* When it becomes evident that flight in VMC in accordance with its current flight plan will not be practicable, a VFR flight operated as a controlled flight shall:

- a) request an amended clearance enabling the aircraft to continue in VMC to destination or to an alternative aerodrome, or to leave the airspace within which an ATC clearance is required; or
- b) if no clearance in accordance with a) can be obtained, continue to operate in VMC and notify the appropriate ATC unit of the action being taken either to leave the airspace concerned or to land at the nearest suitable aerodrome; or
- c) if operated within a control zone, request authorization to operate as a special VFR flight; or
- d) request clearance to operate in accordance with the instrument flight rules.

3.6.3 Position reports

3.6.3.1 Unless exempted by the appropriate ATS authority or by the appropriate air traffic services unit under conditions specified by that authority, a controlled flight shall report to the appropriate air traffic services unit, as soon as possible, the time and level of passing each designated compulsory reporting point, together with any other required information. Position reports shall similarly be made in relation to additional points when requested by the appropriate air traffic services unit. In the absence of designated reporting points, position reports shall be made at intervals prescribed by the appropriate ATS authority or specified by the appropriate air traffic services unit.

3.6.3.1.1 Controlled flights providing position information to the appropriate air traffic services unit via data link communications shall only provide voice position reports when requested.

3.6.4 Termination of control

A controlled flight shall, except when landing at a controlled aerodrome, advise the appropriate ATC unit as soon as it ceases to be subject to air traffic control service.

3.6.5 Communications

3.6.5.1 An aircraft operated as a controlled flight shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and establish two-way communication as necessary with, the appropriate air traffic control unit, except as may be prescribed by the appropriate ATS authority in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

3.6.5.2 *Communication failure.* If a communication failure precludes compliance with 3.6.5.1, the aircraft shall comply with the voice communication failure procedures of Annex 10, Volume II, and with such of the following procedures as are appropriate. The aircraft shall attempt to establish communications with the appropriate air traffic control unit using all other available means. In addition, the aircraft, when forming part of the aerodrome traffic at a controlled aerodrome, shall keep a watch for such instructions as may be issued by visual signals.

3.6.5.2.1 If in visual meteorological conditions, the aircraft shall:

- a) continue to fly in visual meteorological conditions; land at the nearest suitable aerodrome; and report its arrival by the most expeditious means to the appropriate air traffic services unit;
- b) if considered advisable, complete an IFR flight in accordance with 3.6.5.2.2.

3.6.5.2.2 If in instrument meteorological conditions or when the pilot of an IFR flight considers it inadvisable to complete the flight in accordance with 3.6.5.2.1 a), the aircraft shall:

- a) unless otherwise prescribed on the basis of regional air navigation agreement, in airspace where radar is not used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 20 minutes following the aircraft's failure to report its position over a compulsory reporting point and thereafter adjust level and speed in accordance with the filed flight plan;
- b) in airspace where radar is used in the provision of air traffic control, maintain the last assigned speed and level, or minimum flight altitude if higher, for a period of 7 minutes following:
 - 1) the time the last assigned level or minimum flight altitude is reached; or
 - 2) the time the transponder is set to Code 7600; or
 - 3) the aircraft's failure to report its position over a compulsory reporting point;
 whichever is later, and thereafter adjust level and speed in accordance with the filed flight plan;
- c) when being radar vectored or having been directed by ATC to proceed offset using area navigation (RNAV) without a specified limit, rejoin the current flight plan route no later than the next significant point, taking into consideration the applicable minimum flight altitude;
- d) proceed according to the current flight plan route to the appropriate designated navigation aid or fix serving the destination aerodrome and, when required to ensure compliance with e) below, hold over this aid or fix until commencement of descent;
- e) commence descent from the navigation aid or fix specified in d) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at, or as close as possible to, the estimated time of arrival resulting from the current flight plan;
- f) complete a normal instrument approach procedure as specified for the designated navigation aid or fix; and
- g) land, if possible, within 30 minutes after the estimated time of arrival specified in e) or the last acknowledged expected approach time, whichever is later.

3.7 Unlawful interference

3.7.1 An aircraft which is being subjected to unlawful interference shall endeavour to notify the appropriate ATS unit of this fact, any significant circumstances associated therewith and any deviation from the current flight plan necessitated by the circumstances, in order to enable the ATS unit to give priority to the aircraft and to minimize conflict with other aircraft.

3.7.2 If an aircraft is subjected to unlawful interference, the pilot-in-command shall attempt to land as soon as practicable at the nearest suitable aerodrome or at a dedicated aerodrome assigned by the appropriate authority unless considerations aboard the aircraft dictate otherwise.

3.8 Interception

3.8.1 Interception of civil aircraft shall be governed by appropriate regulations and administrative directives issued by Contracting States in compliance with the Convention on International Civil Aviation, and in particular Article 3(d) under which Contracting States undertake, when issuing regulations for their State aircraft, to have due regard for the safety of navigation of civil aircraft. Accordingly, in drafting appropriate regulations and administrative directives due regard shall be had to the provisions of Appendix 1, Section 2 and Appendix 2, Section 1.

3.8.2 The pilot-in-command of a civil aircraft, when intercepted, shall comply with the Standards in Appendix 2, Sections 2 and 3, interpreting and responding to visual signals as specified in Appendix 1, Section 2.

3.9 VMC visibility and distance from cloud minima

VMC visibility and distance from cloud minima are contained in Table 3-1.

Table 3-1*
(see 4.1)

Altitude band	Airspace class	Flight visibility	Distance from cloud
At and above 3 050 m (10 000 ft) AMSL	A*** B C D E F G	8 km	1 500 m horizontally 300 m (1 000 ft) vertically
Below 3 050 m (10 000 ft) AMSL and above 900 m (3 000 ft) AMSL, or above 300 m (1 000 ft) above terrain, whichever is the higher	A***B C D E F G	5 km	1 500 m horizontally 300 m (1 000 ft) vertically
At and below 900 m (3 000 ft) AMSL, or 300 m (1 000 ft) above terrain, whichever is the higher	A***B C D E	5 km	1 500 m horizontally 300 m (1 000 ft) vertically
	F G	5 km**	Clear of cloud and with the surface in sight

* When the height of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL 100 should be used in lieu of 10 000 ft.

** When so prescribed by the appropriate ATS authority:

- a) flight visibilities reduced to not less than 1 500 m may be permitted for flights operating:
 - 1) at speeds that, in the prevailing visibility, will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision; or
 - 2) in circumstances in which the probability of encounters with other traffic would normally be low, e.g. in areas of low volume traffic and for aerial work at low levels.
- b) HELICOPTERS may be permitted to operate *in less than 1 500 m* flight visibility, if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstacles in time to avoid collision.

*** The VMC minima in Class A airspace are included for guidance to pilots and do not imply acceptance of VFR flights in Class A airspace.

CHAPTER 4. VISUAL FLIGHT RULES

4.1 Except when operating as a special VFR flight, VFR flights shall be conducted so that the aircraft is flown in conditions of visibility and distance from clouds equal to or greater than those specified in Table 3-1.

4.2 Except when a clearance is obtained from an air traffic control unit, VFR flights shall not take off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or traffic pattern:

- a) when the ceiling is less than 450 m (1 500 ft); or
- b) when the ground visibility is less than 5 km.

4.3 VFR flights between sunset and sunrise, or such other period between sunset and sunrise as may be prescribed by the appropriate ATS authority, shall be operated in accordance with the conditions prescribed by such authority.

4.4 Unless authorized by the appropriate ATS authority, VFR flights shall not be operated:

- a) above FL 200;
- b) at transonic and supersonic speeds.

4.5 Authorization for VFR flights to operate above FL 290 shall not be granted in areas where a vertical separation minimum of 300 m (1 000 ft) is applied above FL 290.

4.6 Except when necessary for take-off or landing, or except by permission from the appropriate authority, a VFR flight shall not be flown:

- a) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height less than 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft;
- b) elsewhere than as specified in 4.6 a), at a height less than 150 m (500 ft) above the ground or water.

4.7 Except where otherwise indicated in air traffic control clearances or specified by the appropriate ATS authority, VFR flights in level cruising flight when operated above 900 m (3 000 ft) from the ground or water, or a higher datum as specified by the appropriate ATS authority, shall be conducted at a cruising level appropriate to the track as specified in the tables of cruising levels in Appendix 3.

4.8 VFR flights shall comply with the provisions of 3.6:

- a) when operated within Classes B, C and D airspace;
- b) when forming part of aerodrome traffic at controlled aerodromes; or
- c) when operated as special VFR flights.

4.9 A VFR flight operating within or into areas, or along routes, designated by the appropriate ATS authority in accordance with 3.3.1.2 c) or d) shall maintain continuous air-ground voice communication watch on the appropriate communication channel of, and report its position as necessary to, the air traffic services unit providing flight information service.

4.10 An aircraft operated in accordance with the visual flight rules which wishes to change to compliance with the instrument flight rules shall:

- a) if a flight plan was submitted, communicate the necessary changes to be effected to its current flight plan; or
- b) when so required by 3.3.1.2, submit a flight plan to the appropriate air traffic services unit and obtain a clearance prior to proceeding IFR when in controlled airspace.

CHAPTER 5. INSTRUMENT FLIGHT RULES

5.1 Rules applicable to all IFR flights

5.1.1 Aircraft equipment

Aircraft shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown.

5.1.2 Minimum levels

Except when necessary for take-off or landing, or except when specifically authorized by the appropriate authority, an IFR flight shall be flown at a level which is not below the minimum flight altitude established by the State whose territory is overflown, or, where no such minimum flight altitude has been established:

- a) over high terrain or in mountainous areas, at a level which is at least 600 m (2 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft;
- b) elsewhere than as specified in a), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.

5.1.3 Change from IFR flight to VFR flight

5.1.3.1 An aircraft electing to change the conduct of its flight from compliance with the instrument flight rules to compliance with the visual flight rules shall, if a flight plan was submitted, notify the appropriate air traffic services unit specifically that the IFR flight is cancelled and communicate thereto the changes to be made to its current flight plan.

5.1.3.2 When an aircraft operating under the instrument flight rules is flown in or encounters visual meteorological conditions it shall not cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued for a reasonable period of time in uninterrupted visual meteorological conditions.

5.2 Rules applicable to IFR flights within controlled airspace

5.2.1 IFR flights shall comply with the provisions of 3.6 when operated in controlled airspace.

5.2.2 An IFR flight operating in cruising flight in controlled airspace shall be flown at a cruising level, or, if authorized to employ cruise climb techniques, between two levels or above a level, selected from:

- a) the tables of cruising levels in Appendix 3; or
- b) a modified table of cruising levels, when so prescribed in accordance with Appendix 3 for flight above FL 410;

except that the correlation of levels to track prescribed therein shall not apply whenever otherwise indicated in air traffic control clearances or specified by the appropriate ATS authority in Aeronautical Information Publications.

5.3 Rules applicable to IFR flights outside controlled airspace

5.3.1 Cruising levels

An IFR flight operating in level cruising flight outside of controlled airspace shall be flown at a cruising level appropriate to its track as specified in:

- a) the tables of cruising levels in Appendix 3, except when otherwise specified by the appropriate ATS authority for flight at or below 900 m (3 000 ft) above mean sea level; or
- b) a modified table of cruising levels, when so prescribed in accordance with Appendix 3 for flight above FL 410.

5.3.2 Communications

An IFR flight operating outside controlled airspace but within or into areas, or along routes, designated by the appropriate ATS authority in accordance with 3.3.1.2 c) or d) shall maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service.

5.3.3 Position reports

An IFR flight operating outside controlled airspace and required by the appropriate ATS authority to:

- submit a flight plan,
- maintain an air-ground voice communication watch on the appropriate communication channel and establish two-way communication, as necessary, with the air traffic services unit providing flight information service,

shall report position as specified in 3.6.3 for controlled flights.

APPENDIX 1. SIGNALS

1. DISTRESS AND URGENCY SIGNALS

1.1 Distress signals

The following signals, used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:

- a) a signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (. . . — . . . in the Morse Code);
- b) a radiotelephony distress signal consisting of the spoken word MAYDAY;
- c) a distress message sent via data link which transmits the intent of the word MAYDAY;
- d) rockets or shells throwing red lights, fired one at a time at short intervals;
- e) a parachute flare showing a red light.

1.2 Urgency signals

1.2.1 The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance:

- a) the repeated switching on and off of the landing lights; or
- b) the repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.

1.2.2 The following signals, used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight:

- a) a signal made by radiotelegraphy or by any other signalling method consisting of the group XXX;
- b) a radiotelephony urgency signal consisting of the spoken words PAN, PAN;
- c) an urgency message sent via data link which transmits the intent of the words PAN, PAN.

2. SIGNALS FOR USE IN THE EVENT OF INTERCEPTION

2.1 Signals initiated by intercepting aircraft and responses by intercepted aircraft

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1	<p>DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left (or to the right in the case of a helicopter) on the desired heading.</p> <p><i>Note 1.— Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.</i></p> <p><i>Note 2.— If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock the aircraft each time it passes the intercepted aircraft.</i></p>	You have been intercepted. Follow me.	<p>DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following.</p> <p><i>Note.— Additional action required to be taken by intercepted aircraft is prescribed in Chapter 3, 3.8.</i></p>	Understood, will comply.
2	DAY or NIGHT — An abrupt breakaway manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	DAY or NIGHT — Rocking the aircraft.	Understood, will comply.
3	DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.	Land at this aerodrome.	DAY or NIGHT — Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.	Understood, will comply.

2.2 Signals initiated by intercepted aircraft and responses by intercepting aircraft

Series	INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responds	Meaning
4	DAY or NIGHT — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	<p>DAY or NIGHT — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft.</p> <p>If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.</p>	Understood, follow me.
5	DAY or NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT — Irregular flashing of all available lights.	In distress.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.

3. VISUAL SIGNALS USED TO WARN AN UNAUTHORIZED AIRCRAFT FLYING IN, OR ABOUT TO ENTER A RESTRICTED, PROHIBITED OR DANGER AREA

By day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red and green lights or stars will indicate to an unauthorized aircraft that it is flying in or about to enter a restricted, prohibited or danger area, and that the aircraft is to take such remedial action as may be necessary.

4. SIGNALS FOR AERODROME TRAFFIC

4.1 Light and pyrotechnic signals

4.1.1 Instructions

Light	From Aerodrome Control to:	
	Aircraft in flight	Aircraft on the ground
Directed towards aircraft concerned (see Figure A1-1).	Cleared to land	Cleared for take-off
	Give way to other aircraft and continue circling	Stop
	Return for landing*	Cleared to taxi
	Aerodrome unsafe, do not land	Taxi clear of landing area in use
	Land at this aerodrome and proceed to apron*	Return to starting point on the aerodrome
Red pyrotechnic	Notwithstanding any previous instructions, do not land for the time being	

* Clearances to land and to taxi will be given in due course.

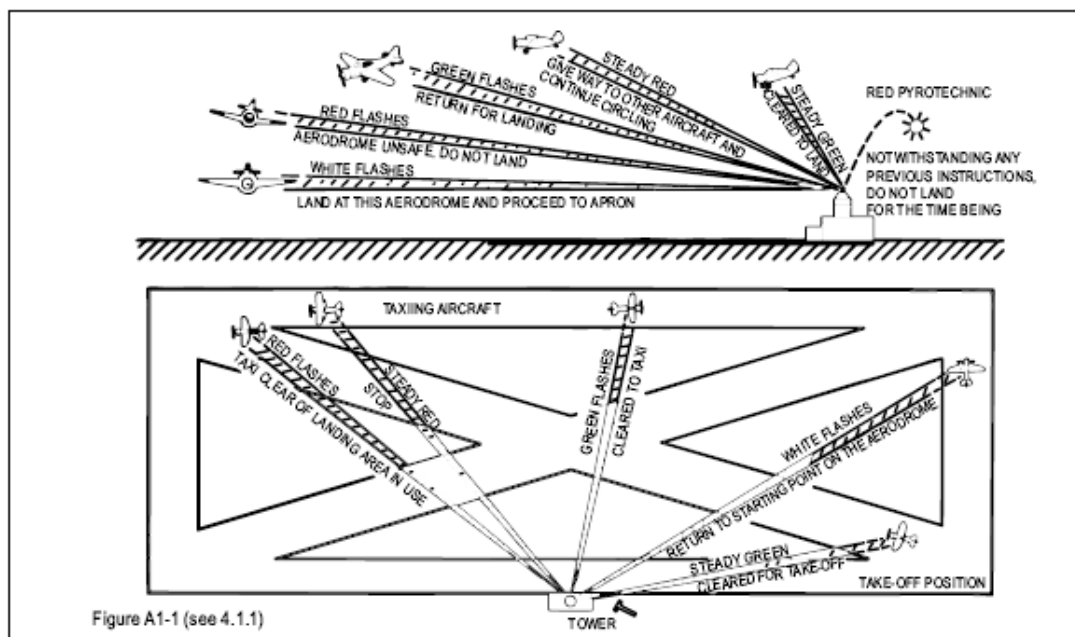


Figure A1-1 (see 4.1.1)

4.1.2 Acknowledgement by an aircraft

a) When in flight:

- 1) during the hours of daylight:
 - by rocking the aircraft's wings;
- 2) during the hours of darkness:
 - by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

b) When on the ground:

- 1) during the hours of daylight:
 - by moving the aircraft's ailerons or rudder;
- 2) during the hours of darkness:
 - by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

4.2 Visual ground signals

4.2.1 Prohibition of landing

A horizontal red square panel with yellow diagonals (Figure A1-2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.



Figure A1-2

4.2.2 Need for special precautions while approaching or landing

A horizontal red square panel with one yellow diagonal (Figure A1-3) when displayed in a signal area indicates that owing to the bad state of the manoeuvring area, or for any other reason, special precautions must be observed in approaching to land or in landing.



Figure A1-3

4.2.3 Use of runways and taxiways

4.2.3.1 A horizontal white dumb-bell (Figure A1-4) when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.



Figure A1-4

4.2.3.2 The same horizontal white dumb-bell as in 4.2.3.1 but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure A1-5) when displayed in a signal area indicates that aircraft are required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways.



Figure A1-5

4.2.4 Closed runways or taxiways

Crosses of a single contrasting colour, yellow or white (Figure A1-6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.



Figure A1-6

4.2.5 Directions for landing or take-off

4.2.5.1 A horizontal white or orange landing T (Figure A1-7) indicates the direction to be used by aircraft for landing and take-off, which shall be in a direction parallel to the shaft of the T towards the cross arm.

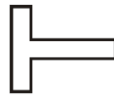


Figure A1-7

4.2.5.2 A set of two digits (Figure A1-8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.



Figure A1-8

4.2.6 Right-hand traffic

When displayed in a signal area, or horizontally at the end of the runway or strip in use, a right-hand arrow of conspicuous colour (Figure A1-9) indicates that turns are to be made to the right before landing and after take-off.

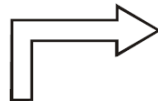


Figure A1-9

4.2.7 Air traffic services reporting office The letter C displayed vertically in black against a yellow background (Figure A1-10) indicates the location of the air traffic services reporting office.



Figure A1-10

4.2.8 Glider flights in operation

A double white cross displayed horizontally (Figure A1-11) in the signal area indicates that the aerodrome is being used by gliders and that glider flights are being performed.

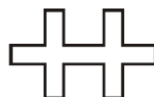


Figure A1-11

5. MARSHALLING SIGNALS

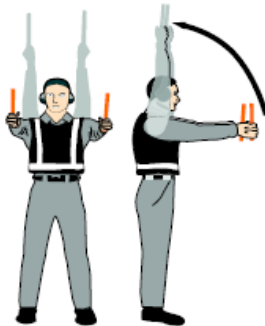
5.1 From a signalman to an aircraft

5.1.1 Prior to using the following signals, the signalman shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft, in complying with 3.4.1, might otherwise strike.



1. Wingwalker/guide

Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body.



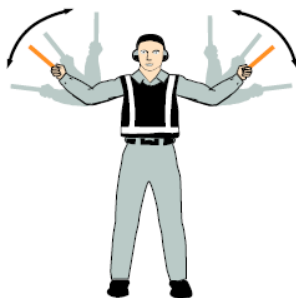
2. Identify gate

Raise fully extended arms straight above head with wands pointing up.



3. Proceed to next signalman or as directed by tower/ground control

Point both arms upward; move and extend arms outward to sides of body and point with wands to direction of next signalman or taxi area.



4. Straight ahead

Bend extended arms at elbows and move wands up and down from chest height to head.



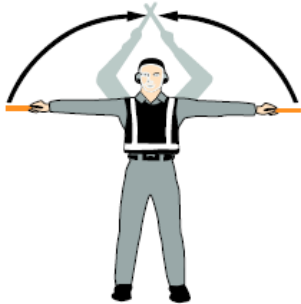
5 a). Turn left
(from pilot's point of view)

With right arm and wand extended at a 90-degree angle to body, make "come ahead" signal with left hand. The rate of signal motion indicates to pilot the rate of aircraft turn.



5 b). Turn right
(from pilot's point of view)

With left arm and wand extended at a 90-degree angle to body, make "come ahead" signal with right hand. The rate of signal motion indicates to pilot the rate of aircraft turn.



6 a). Normal stop

Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.



6 b). Emergency stop

Abruptly extend arms and wands to top of head, crossing wands.



7 a). Set brakes

Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. **Do not** move until receipt of "thumbs up" acknowledgement from flight crew.



7 b). Release brakes

Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. **Do not** move until receipt of "thumbs up" acknowledgement from flight crew.



8 a). Chocks inserted

With arms and wands fully extended above head, move wands inward in a "jabbing" motion until wands touch. **Ensure** acknowledgement is received from flight crew.



8 b). Chocks removed

With arms and wands fully extended above head, move wands outward in a "jabbing" motion. **Do not** remove chocks until authorized by flight crew.



9. Start engine(s)

Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.



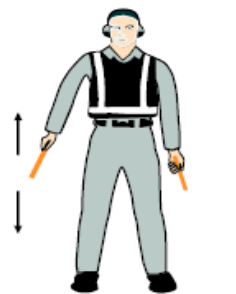
10. Cut engines

Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.



11. Slow down

Move extended arms downwards in a “patting” gesture, moving wands up and down from waist to knees.



12. Slow down engine(s) on indicated side

With arms down and wands toward ground, wave either *right* or *left* wand up and down indicating engine(s) on *left* or *right* side respectively should be slowed down.



13. Move back

With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6 a) or 6 b).



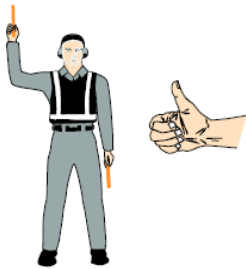
14 a). Turns while backing (for tail to starboard)

Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.



14 b). Turns while backing (for tail to port)

Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.



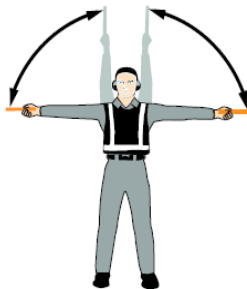
15. Affirmative/all clear

Raise right arm to head level with wand pointing up or display hand with "thumbs up"; left arm remains at side by knee.



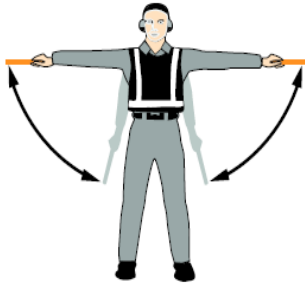
*16. Hover

Fully extend arms and wands at a 90-degree angle to sides.



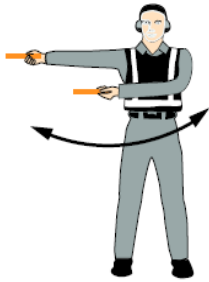
*17. Move upwards

Fully extend arms and wands at a 90-degree angle to sides and, with palms turned up, move hands upwards. Speed of movement indicates rate of ascent.



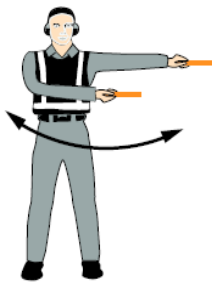
***18. Move downwards**

Fully extend arms and wands at a 90-degree angle to sides and, with palms turned down, move hands downwards. Speed of movement indicates rate of descent.



***19 a). Move horizontally left
(from pilot's point of view)**

Extend arm horizontally at a 90-degree angle to right side of body. Move other arm in same direction in a sweeping motion.



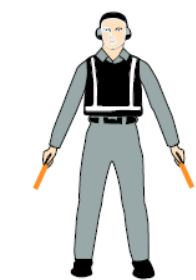
***19 b). Move horizontally right
(from pilot's point of view)**

Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion.



***20. Land**

Cross arms with wands downwards and in front of body.



21. Hold position/stand by

Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.



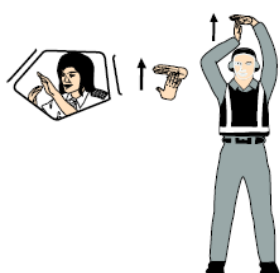
22. Dispatch aircraft

Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.



23. Do not touch controls (technical/servicing communication signal)

Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.



24. Connect ground power (technical/servicing communication signal)

Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a "T"). At night, illuminated wands can also be used to form the "T" above head.

25. Disconnect power (technical/servicing communication signal)

Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a "T"); then move right hand away from the left. **Do not** disconnect power until authorized by flight crew. At night, illuminated wands can also be used to form the "T" above head.



**26. Negative
(technical/servicing communication signal)**



Hold right arm straight out at 90 degrees from shoulder and point wand down to ground or display hand with “thumbs down”; left hand remains at side by knee.

**27. Establish communication via interphone
(technical/servicing communication signal)**



Extend both arms at 90 degrees from body and move hands to cup both ears.

**28. Open/close stairs
(technical/servicing communication signal)**



With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.

5.2 From the pilot of an aircraft to a signalman

5.2.1 Brakes

- Brakes engaged:* raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.
- Brakes released:* raise arm, with fist clenched, horizontally in front of face, then extend fingers.

5.2.2 Chocks

- a) *Insert chocks*: arms extended, palms outwards, move hands inwards to cross in front of face.
- b) *Remove chocks*: hands crossed in front of face, palms outwards, move arms outwards.

5.2.3 Ready to start engine(s)

Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.

5.3 Technical/servicing communication signals

5.3.1 Manual signals shall only be used when verbal communication is not possible with respect to technical/servicing communication signals.

5.3.2 Signalmen shall ensure that an acknowledgement is received from the flight crew with respect to technical/servicing communication signals.

6. STANDARD EMERGENCY HAND SIGNALS

The following hand signals are established as the minimum required for emergency communication between the aircraft rescue and firefighting (ARFF) incident commander/ARFF firefighters and the cockpit and/or cabin crews of the incident aircraft. ARFF emergency hand signals should be given from the left front side of the aircraft for the flight crew.



1. Recommend evacuation

Evacuation recommended based on ARFF and incident commander's assessment of external situation. Arm extended from body and held horizontal with hand upraised at eye level. Execute beckoning arm motion angled backward. Non-beckoning arm held against body.

Night — same with wands.



2. Recommended stop

Recommend evacuation in progress be halted. Stop aircraft movement or other activity in progress. Arms in front of head, crossed at wrists.

Night — same with wands.



3. Emergency contained

No outside evidence of dangerous conditions or "allclear." Arms extended outward and down at a 45-degree angle. Arms moved inward below waistline simultaneously until wrists crossed, then extended outward to starting position (umpire's "safe" signal).

Night — same with wands.



4. Fire

Move right-hand in a “fanning” motion from shoulder to knee, while at the same time pointing with left hand to area of fire.

Night — same with wands.

APPENDIX 2. INTERCEPTION OF CIVIL AIRCRAFT

1. Principles to be observed by States

1.1 To achieve the uniformity in regulations which is necessary for the safety of navigation of civil aircraft due regard shall be had by Contracting States to the following principles when developing regulations and administrative directives:

- a) interception of civil aircraft will be undertaken only as a last resort;
- b) if undertaken, an interception will be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome;
- c) practice interception of civil aircraft will not be undertaken;
- d) navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and
- e) in the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned.

1.2 Contracting States shall publish a standard method that has been established for the manoeuvring of aircraft intercepting a civil aircraft. Such method shall be designed to avoid any hazard for the intercepted aircraft.

1.3 Contracting States shall ensure that provision is made for the use of secondary surveillance radar or ADS-B, where available, to identify civil aircraft in areas where they may be subject to interception.

2. Action by intercepted aircraft

2.1 An aircraft which is intercepted by another aircraft shall immediately:

- a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in Appendix 1;
- b) notify, if possible, the appropriate air traffic services unit;
- c) attempt to establish radiocommunication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz;
- d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit.
- e) if equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit.

2.2 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

2.3 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.

3. Radiocommunication during interception

If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table A2-1 and transmitting each phrase twice:

Table A2-1

<i>Phrases for use by INTERCEPTING aircraft</i>			<i>Phrases for use by INTERCEPTED aircraft</i>		
<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>	<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?	CALL SIGN	<u>KOL</u> SA-IN	My call sign is (call sign)
FOLLOW	<u>FOL</u> -LO	Follow me	(call sign) ²	(call sign)	
DESCEND	DEE- <u>SEND</u>	Descend for landing	WILCO	<u>VILL</u> -KO	Understood
YOU LAND	<u>YOU</u> <u>LAAND</u>	Land at this aerodrome	Will comply		
PROCEED	PRO- <u>SEED</u>	You may proceed	CAN NOT	<u>KANN</u> NOTT	Unable to comply
			REPEAT	REE- <u>PEET</u>	Repeat your instruction
			AM LOST	<u>AM</u> <u>LOSST</u>	Position unknown
			MAYDAY	MAYDAY	I am in distress
			HIJACK ³	<u>HI</u> - <u>JACK</u>	I have been hijacked
			LAND	LAAND	I request to land at
			(place name)	(place name)	(place name)
			DESCEND	DEE- <u>SEND</u>	I require descent

1. In the second column, syllables to be emphasized are underlined.

2. The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.

3. Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK".

APPENDIX 3. TABLES OF CRUISING LEVELS

The cruising levels to be observed when so required by this Part are as follows:

RVSM — FEET

- a) in areas where feet are used for altitude and where, in accordance with regional air navigation agreements, a vertical separation minimum of 1 000 ft is applied between FL 290 and FL 410 inclusive:*

TRACK**											
From 000 degrees to 179 degrees***						From 180 degrees to 359 degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres
010	1 000	300	—	—	—	020	2 000	600	—	—	—
030	3 000	900	035	3 500	1 050	040	4 000	1 200	045	4 500	1 350
050	5 000	1 500	055	5 500	1 700	060	6 000	1 850	065	6 500	2 000
070	7 000	2 150	075	7 500	2 300	080	8 000	2 450	085	8 500	2 600
090	9 000	2 750	095	9 500	2 900	100	10 000	3 050	105	10 500	3 200
110	11 000	3 350	115	11 500	3 500	120	12 000	3 650	125	12 500	3 800
130	13 000	3 950	135	13 500	4 100	140	14 000	4 250	145	14 500	4 400
150	15 000	4 550	155	15 500	4 700	160	16 000	4 900	165	16 500	5 050
170	17 000	5 200	175	17 500	5 350	180	18 000	5 500	185	18 500	5 650
190	19 000	5 800	195	19 500	5 950	200	20 000	6 100	205	20 500	6 250
210	21 000	6 400	215	21 500	6 550	220	22 000	6 700	225	22 500	6 850
230	23 000	7 000	235	23 500	7 150	240	24 000	7 300	245	24 500	7 450
250	25 000	7 600	255	25 500	7 750	260	26 000	7 900	265	26 500	8 100
270	27 000	8 250	275	27 500	8 400	280	28 000	8 550	285	28 500	8 700
290	29 000	8 850				300	30 000	9 150			
310	31 000	9 450				320	32 000	9 750			
330	33 000	10 050				340	34 000	10 350			
350	35 000	10 650				360	36 000	10 950			
370	37 000	11 300				380	38 000	11 600			
390	39 000	11 900				400	40 000	12 200			
410	41 000	12 500				430	43 000	13 100			
450	45 000	13 700				470	47 000	14 350			
490	49 000	14 950				510	51 000	15 550			
etc.	etc.	etc.				etc.	etc.	etc.			

* Except when, on the basis of regional air navigation agreements, a modified table of cruising levels based on a nominal vertical separation minimum of 1 000 ft (300 m) is prescribed for use, under specified conditions, by aircraft operating above FL 410 within designated portions of the airspace.

** Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

*** Except where, on the basis of regional air navigation agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

RVSM — METRES

- b) in areas where metres are used for altitude and where, in accordance with regional air navigation agreements, a vertical separation minimum of 300 m is applied between 8 900 m and 12 500 m inclusive:*

TRACK**											
From 000 degrees to 179 degrees***						From 180 degrees to 359 degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
Standard Metric	Metres	Feet	Standard Metric	Metres	Feet	Standard Metric	Metres	Feet	Standard Metric	Metres	Feet
0030	300	1 000	—	—	—	0060	600	2 000	—	—	—
0090	900	3 000	0105	1 050	3 500	0120	1 200	3 900	0135	1 350	4 400
0150	1 500	4 900	0165	1 650	5 400	0180	1 800	5 900	0195	1 950	6 400
0210	2 100	6 900	0225	2 250	7 400	0240	2 400	7 900	0255	2 550	8 400
0270	2 700	8 900	0285	2 850	9 400	0300	3 000	9 800	0315	3 150	10 300
0330	3 300	10 800	0345	3 450	11 300	0360	3 600	11 800	0375	3 750	12 300
0390	3 900	12 800	0405	4 050	13 300	0420	4 200	13 800	0435	4 350	14 300
0450	4 500	14 800	0465	4 650	15 300	0480	4 800	15 700	0495	4 950	16 200
0510	5 100	16 700	0525	5 250	17 200	0540	5 400	17 700	0555	5 550	18 200
0570	5 700	18 700	0585	5 850	19 200	0600	6 000	19 700	0615	6 150	20 200
0630	6 300	20 700	0645	6 450	21 200	0660	6 600	21 700	0675	6 750	22 100
0690	6 900	22 600	0705	7 050	23 100	0720	7 200	23 600	0735	7 350	24 100
0750	7 500	24 600	0765	7 650	25 100	0780	7 800	25 600	0795	7 950	26 100
0810	8 100	26 600	0825	8 250	27 100	0840	8 400	27 600	0855	8 550	28 100
0890	8 900	29 100				0920	9 200	30 100			
0950	9 500	31 100				0980	9 800	32 100			
1010	10 100	33 100				1040	10 400	34 100			
1070	10 700	35 100				1100	11 000	36 100			
1130	11 300	37 100				1160	11 600	38 100			
1190	11 900	39 100				1220	12 200	40 100			
1250	12 500	41 100				1310	13 100	43 000			
1370	13 700	44 900				1430	14 300	46 900			
1490	14 900	48 900				1550	15 500	50 900			
etc.	etc.	etc.				etc.	etc.	etc.			

- * Except when, on the basis of regional air navigation agreements, a modified table of cruising levels based on a nominal vertical separation minimum of 1 000 ft (300 m) is prescribed for use, under specified conditions, by aircraft operating above FL 410 within designated portions of the airspace.
- ** Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.
- *** Except where, on the basis of regional air navigation agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

Non-RVSM — FEET

c) in other areas where feet are the primary unit of measurement for altitude:

TRACK*											
From 000 degrees to 179 degrees**						From 180 degrees to 359 degrees**					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres	FL	Feet	Metres
010	1 000	300	—	—	—	020	2 000	600	—	—	—
030	3 000	900	035	3 500	1 050	040	4 000	1 200	045	4 500	1 350
050	5 000	1 500	055	5 500	1 700	060	6 000	1 850	065	6 500	2 000
070	7 000	2 150	075	7 500	2 300	080	8 000	2 450	085	8 500	2 600
090	9 000	2 750	095	9 500	2 900	100	10 000	3 050	105	10 500	3 200
110	11 000	3 350	115	11 500	3 500	120	12 000	3 650	125	12 500	3 800
130	13 000	3 950	135	13 500	4 100	140	14 000	4 250	145	14 500	4 400
150	15 000	4 550	155	15 500	4 700	160	16 000	4 900	165	16 500	5 050
170	17 000	5 200	175	17 500	5 350	180	18 000	5 500	185	18 500	5 650
190	19 000	5 800	195	19 500	5 950	200	20 000	6 100	205	20 500	6 250
210	21 000	6 400	215	21 500	6 550	220	22 000	6 700	225	22 500	6 850
230	23 000	7 000	235	23 500	7 150	240	24 000	7 300	245	24 500	7 450
250	25 000	7 600	255	25 500	7 750	260	26 000	7 900	265	26 500	8 100
270	27 000	8 250	275	27 500	8 400	280	28 000	8 550	285	28 500	8 700
290	29 000	8 850	300	30 000	9 150	310	31 000	9 450	320	32 000	9 750
330	33 000	10 050	340	34 000	10 350	350	35 000	10 650	360	36 000	10 950
370	37 000	11 300	380	38 000	11 600	390	39 000	11 900	400	40 000	12 200
410	41 000	12 500	420	42 000	12 800	430	43 000	13 100	440	44 000	13 400
450	45 000	13 700	460	46 000	14 000	470	47 000	14 350	480	48 000	14 650
490	49 000	14 950	500	50 000	15 250	510	51 000	15 550	520	52 000	15 850
etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.

* Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

** Except where, on the basis of regional air navigation agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

Non-RVSM — METRES

d) in other areas where metres are the primary unit of measurement for altitude:

TRACK*											
From 000 degrees to 179 degrees**						From 180 degrees to 359 degrees**					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
Standard Metric	Metres	Feet	Standard Metric	Metres	Feet	Standard Metric	Metres	Feet	Standard Metric	Metres	Feet
0030	300	1 000	—	—	—	0060	600	2 000	—	—	—
0090	900	3 000	0105	1 050	3 500	0120	1 200	3 900	0135	1 350	4 400
0150	1 500	4 900	0165	1 650	5 400	0180	1 800	5 900	0195	1 950	6 400
0210	2 100	6 900	0225	2 250	7 400	0240	2 400	7 900	0255	2 550	8 400
0270	2 700	8 900	0285	2 850	9 400	0300	3 000	9 800	0315	3 150	10 300
0330	3 300	10 800	0345	3 450	11 300	0360	3 600	11 800	0375	3 750	12 300
0390	3 900	12 800	0405	4 050	13 300	0420	4 200	13 800	0435	4 350	14 300
0450	4 500	14 800	0465	4 650	15 300	0480	4 800	15 700	0495	4 950	16 200
0510	5 100	16 700	0525	5 250	17 200	0540	5 400	17 700	0555	5 550	18 200
0570	5 700	18 700	0585	5 850	19 200	0600	6 000	19 700	0615	6 150	20 200
0630	6 300	20 700	0645	6 450	21 200	0660	6 600	21 700	0675	6 750	22 100
0690	6 900	22 600	0705	7 050	23 100	0720	7 200	23 600	0735	7 350	24 100
0750	7 500	24 600	0765	7 650	25 100	0780	7 800	25 600	0795	7 950	26 100
0810	8 100	26 600	0825	8 250	27 100	0840	8 400	27 600	0855	8 550	28 100
0890	8 900	29 100	0920	9 200	30 100	0950	9 500	31 100	0980	9 800	32 100
1010	10 100	33 100	1040	10 400	34 100	1070	10 700	35 100	1100	11 000	36 100
1130	11 300	37 100	1160	11 600	38 100	1190	11 900	39 100	1220	12 200	40 100
1250	12 500	41 100	1280	12 800	42 100	1310	13 100	43 000	1370	13 400	44 000
1370	13 700	44 900	1400	14 000	46 100	1430	14 300	46 900	1460	14 600	47 900
1490	14 900	48 900	1520	15 200	49 900	1550	15 500	50 900	1580	15 800	51 900
etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.

* Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

**Except where, on the basis of regional air navigation agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

APPENDIX 4. UNMANNED FREE BALLOONS

1. Classification of unmanned free balloons

Unmanned free balloons shall be classified as:

- a) *light*: an unmanned free balloon which carries a payload of one or more packages with a combined mass of less than 4 kg, unless qualifying as a heavy balloon in accordance with c) 2), 3) or 4) below; or
- b) *medium*: an unmanned free balloon which carries a payload of two or more packages with a combined mass of 4 kg or more, but less than 6 kg, unless qualifying as a heavy balloon in accordance with c) 2), 3) or 4) below; or
- c) *heavy*: an unmanned free balloon which carries a payload which:
 - 1) has a combined mass of 6 kg or more; or
 - 2) includes a package of 3 kg or more; or
 - 3) includes a package of 2 kg or more with an area density of more than 13 g per square centimetre; or
 - 4) uses a rope or other device for suspension of the payload that requires an impact force of 230 N or more to separate the suspended payload from the balloon.

2. General operating rules

2.1 An unmanned free balloon shall not be operated without appropriate authorization from the State from which the launch is made.

2.2 An unmanned free balloon, other than a light balloon used exclusively for meteorological purposes and operated in the manner prescribed by the appropriate authority, shall not be operated across the territory of another State without appropriate authorization from the other State concerned.

2.3 The authorization referred to in 2.2 shall be obtained prior to the launching of the balloon if there is reasonable expectation, when planning the operation, that the balloon may drift into airspace over the territory of another State. Such authorization may be obtained for a series of balloon flights or for a particular type of recurring flight, e.g. atmospheric research balloon flights.

2.4 An unmanned free balloon shall be operated in accordance with conditions specified by the State of Registry and the State(s) expected to be overflown.

2.5 An unmanned free balloon shall not be operated in such a manner that impact of the balloon, or any part thereof, including its payload, with the surface of the earth, creates a hazard to persons or property not associated with the operation.

2.6 A heavy unmanned free balloon shall not be operated over the high seas without prior coordination with the appropriate ATS authority.

CHARACTERISTICS		PAYLOAD MASS (kilogrammes)					
		1	2	3	4	5	6 or more
ROPE or OTHER SUSPENSION 230 Newtons or MORE		<div>HEAVY</div>					
INDIVIDUAL PAYLOAD PACKAGE	AREA DENSITY more than 13 g/cm ²						
<div>AREA DENSITY CALCULATION MASS (g) <hr/>Area of smallest surface (cm²)</div>	AREA DENSITY less than 13 g/cm ²	<div>LIGHT</div>		<div>MEDIUM</div>			
COMBINED MASS (if Suspension OR Area density OR Mass of individual package are not factors)							

Figure A4-1. Classification of unmanned free balloons

3. Operating limitations and equipment requirements

3.1 A heavy unmanned free balloon shall not be operated without authorization from the appropriate ATS authority at or through any level below 18 000 m (60 000 ft) pressure-altitude at which:

- there are clouds or obscuring phenomena of more than four oktas coverage; or
- the horizontal visibility is less than 8 km.

3.2 A heavy or medium unmanned free balloon shall not be released in a manner that will cause it to fly lower than 300 m (1 000 ft) over the congested areas of cities, towns or settlements or an open-air assembly of persons not associated with the operation.

3.3 A heavy unmanned free balloon shall not be operated unless:

- it is equipped with at least two payload flight termination devices or systems, whether automatic or operated by telecommand, that operate independently of each other;

- b) for polyethylene zero-pressure balloons, at least two methods, systems, devices, or combinations thereof, that function independently of each other are employed for terminating the flight of the balloon envelope;
- c) the balloon envelope is equipped with either a radar reflective device(s) or radar reflective material that will present an echo to surface radar operating in the 200 MHz to 2 700 MHz frequency range, and/or the balloon is equipped with such other devices as will permit continuous tracking by the operator beyond the range of ground-based radar.

3.4 A heavy unmanned free balloon shall not be operated under the following conditions:

- a) in an area where ground-based SSR equipment is in use, unless it is equipped with a secondary surveillance radar transponder, with pressure-altitude reporting capability, which is continuously operating on an assigned code, or which can be turned on when necessary by the tracking station; or
- b) in an area where ground-based ADS-B equipment is in use, unless it is equipped with an ADS-B transmitter, with pressure-altitude reporting capability, which is continuously operating or which can be turned on when necessary by the tracking station.

3.5 An unmanned free balloon that is equipped with a trailing antenna that requires a force of more than 230 N to break it at any point shall not be operated unless the antenna has coloured pennants or streamers that are attached at not more than 15 m intervals.

3.6 A heavy unmanned free balloon shall not be operated below 18 000 m (60 000 ft) pressure-altitude between sunset and sunrise or such other period between sunset and sunrise (corrected to the altitude of operation) as may be prescribed by the appropriate ATS authority, unless the balloon and its attachments and payload, whether or not they become separated during the operation, are lighted.

3.7 A heavy unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously coloured open parachute) more than 15 m long shall not be operated between sunrise and sunset below 18 000 m (60 000 ft) pressure-altitude unless the suspension device is coloured in alternate bands of high conspicuity colours or has coloured pennants attached.

4. Termination

The operator of a heavy unmanned free balloon shall activate the appropriate termination devices required by 3.3 a) and b) above:

- a) when it becomes known that weather conditions are less than those prescribed for the operation;
- b) if a malfunction or any other reason makes further operation hazardous to air traffic or to persons or property on the surface; or
- c) prior to unauthorized entry into the airspace over another State's territory.

5. Flight notification

5.1 Pre-flight notification

5.1.1 Early notification of the intended flight of an unmanned free balloon in the medium or heavy category shall be made to the appropriate air traffic services unit not less than seven days before the date of the intended flight.

5.1.2 Notification of the intended flight shall include such of the following information as may be required by the appropriate air traffic services unit:

- a) balloon flight identification or project code name;
- b) balloon classification and description;
- c) SSR code, aircraft address or NDB frequency as applicable;
- d) operator's name and telephone number;
- e) launch site;
- f) estimated time of launch (or time of commencement and completion of multiple launches);
- g) number of balloons to be launched and the scheduled interval between launches (if multiple launches);

- h) expected direction of ascent;
- i) cruising level(s) (pressure-altitude);
- j) the estimated elapsed time to pass 18 000 m (60 000 ft) pressure-altitude or to reach cruising level if at or below 18 000 m (60 000 ft), together with the estimated location;
- k) the estimated date and time of termination of the flight and the planned location of the impact/recovery area. In the case of balloons carrying out flights of long duration, as a result of which the date and time of termination of the flight and the location of impact cannot be forecast with accuracy, the term “long duration” shall be used.

5.1.3 Any changes in the pre-launch information notified in accordance with 5.1.2 above shall be forwarded to the air traffic services unit concerned not less than 6 hours before the estimated time of launch, or in the case of solar or cosmic disturbance investigations involving a critical time element, not less than 30 minutes before the estimated time of the commencement of the operation.

5.2 Notification of launch

Immediately after a medium or heavy unmanned free balloon is launched the operator shall notify the appropriate air traffic services unit of the following:

- a) balloon flight identification;
- b) launch site;
- c) actual time of launch;
- d) estimated time at which 18 000 m (60 000 ft) pressure altitude will be passed, or the estimated time at which the cruising level will be reached if at or below 18 000 m (60 000 ft), and the estimated location; and
- e) any changes to the information previously notified in accordance with 5.1.2 g) and h).

5.3 Notification of cancellation

The operator shall notify the appropriate air traffic services unit immediately it is known that the intended flight of a medium or heavy unmanned free balloon, previously notified in accordance with 5.1, has been cancelled.

6. Position recording and reports

6.1 The operator of a heavy unmanned free balloon operating at or below 18 000 m (60 000 ft) pressure-altitude shall monitor the flight path of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 2 hours.

6.2 The operator of a heavy unmanned free balloon operating above 18 000 m (60 000 ft) pressure-altitude shall monitor the flight progress of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 24 hours.

6.3 If a position cannot be recorded in accordance with 6.1 and 6.2, the operator shall immediately notify the appropriate air traffic services unit. This notification shall include the last recorded position. The appropriate air traffic services unit shall be notified immediately when tracking of the balloon is re-established.

6.4 One hour before the beginning of planned descent of a heavy unmanned free balloon, the operator shall forward to the appropriate ATS unit the following information regarding the balloon:

- a) the current geographical position;
- b) the current level (pressure-altitude);
- c) the forecast time of penetration of 18 000 m (60 000 ft) pressure-altitude, if applicable;
- d) the forecast time and location of ground impact.

6.5 The operator of a heavy or medium unmanned free balloon shall notify the appropriate air traffic services unit when the operation is ended.

PART II

NATIONAL STANDARDS

Definitions for this Part

1.1 The terms used in this Part shall have the same meanings as the same terms defined in Chapter 1 of Part I.

1.2

- (a) For the purpose of this Part, the horizontal plane of a light shown by an aircraft means the plane which would be the horizontal plane passing through the source of that light, if the aircraft were in level flight.
- (b) Where by reason of the physical construction of an aircraft it is necessary to fit more than one lamp in order to show a light required by this Part, the lamps shall be so fitted and constructed that, so far as is reasonably practicable, not more than one such lamp is visible from any one point outside the aircraft.
- (c) Where in this Part a light is required to show through specified angles in the horizontal plane, the lamps giving such light shall be so constructed and fitted that the light is visible from any point in any vertical plane within those angles throughout angles of 90° above and below the horizontal plane, but, so far as is reasonably practicable, through no greater angle, either in the horizontal plane or the vertical plane.
- (d) Where in this Part a light is required to show in all directions the lamps giving such light shall be so constructed and fitted that, so far as is reasonably practicable, the light is visible from any point in the horizontal plane and on any vertical plane passing through the source of that light.

Meaning of Standard Atmosphere

2. For the purpose of the definition of “pressure-altitude” in Chapter 1 of Part I, “**Standard atmosphere**” means an atmosphere defined as follows:

- (a) the air is a perfect dry gas;
- (b) the physical constants are:
 - Sea level mean molar mass: $M_0 = 28.964420 \times 10^{-3} \text{ kg mol}^{-1}$
 - Sea level atmospheric pressure: $P_0 = 1013.250 \text{ hPa}$
 - Sea level temperature: $t_0 = 15^\circ\text{C}$
 - $T_0 = 288.15 \text{ K}$
 - Sea level atmospheric density: $\rho_0 = 1.2250 \text{ kg m}^{-3}$
 - Temperature of the ice point: $T_i = 273.15 \text{ K}$
 - Universal gas constant: $R^* = 8.31432 \text{ JK}^{-1}\text{mol}^{-1}$
- (c) the temperature gradients are:

<i>Geopotential altitude (km)</i>		<i>Temperature gradient (Kelvin per standard geopotential kilometre)</i>
<i>From</i>	<i>To</i>	
−5.0	11.0	−6.5
11.0	20.0	0.0
20.0	32.0	+1.0
32.0	47.0	+2.8
47.0	51.0	0.0
51.0	71.0	−2.8
71.0	80.0	−2.0

Reporting Hazardous Conditions

3. The pilot-in-command of an aircraft shall, on meeting with hazardous conditions in the course of a flight, or as soon as possible thereafter, send to the appropriate air traffic control unit by the quickest means

available information containing such particulars of the hazardous conditions as may be pertinent to the safety of other aircraft.

Practice Instrument Approaches

4. Within Singapore, an aircraft shall not carry out instrument approach practice when flying in Visual Meteorological Conditions unless —

- (a) the appropriate air traffic control unit has previously been informed that the flight is to be made for the purpose of instrument approach practice; and
- (b) if the flight is not being carried out in simulated instrument flight conditions, an observer approved by the Chief Executive is carried in such a position in the aircraft that he has an adequate field of vision and can readily communicate with the pilot flying the aircraft.

Failure of Navigation Lights

5. In Singapore, in the event of the failure of any light which is required by this Part to be displayed in flight, if the light cannot be immediately repaired or replaced the aircraft shall land as soon as in the opinion of the pilot-in-command of the aircraft it can safely do so, unless authorised by the appropriate air traffic control unit to continue its flight.

Flying Machines

6.1 A flying machine when flying at night shall display lights as follows:

- (a) in the case of a flying machine registered in Singapore having a maximum total weight authorised of more than 5,700 kg, it shall display the system of lights specified in 6.2(b);
- (b) in the case of a flying machine registered in Singapore having a maximum total weight authorised of 5,700 kg or less, any one of the following systems of lights —
 - (i) that specified in 6.2(a);
 - (ii) that specified in 6.2(b); or
 - (iii) that specified in 6.2(d) excluding 6.2(d)(ii); and
- (c) in the case of any other flying machine one of the systems of lights specified in 6.2.

6.2 The systems of lights referred to in 6.1 are as follows:

- (a)
 - (i) a green light of at least 5 candela showing to the starboard side through an angle of 110° from dead ahead in the horizontal plane;
 - (ii) a red light of at least 5 candela showing to the port side through an angle of 110° from dead ahead in the horizontal plane; and
 - (iii) a white light of at least 3 candela showing through angles of 70° from dead astern to each side in the horizontal plane, all being steady lights;
- (b)
 - (i) the lights specified in (a); and
 - (ii) an anti-collision light;
- (c) the lights specified in (a), but all being flashing lights flashing together; and
- (d) the lights specified in (a), but all being flashing lights flashing together in alternation with one or both of the following:
 - (i) A flashing white light of at least 20 candela showing in all directions;
 - (ii) a flashing red light of at least 20 candela showing through angles of 70° from dead astern to each side in the horizontal plane.

6.3 If the lamp showing either the red or the green light specified in 6.2(a) is fitted more than two metres from the wing tip, a lamp may, notwithstanding rule 3.2.3.1 of Part I, be fitted at the wing tip to indicate its position, showing a steady light of the same colour through the same angle.

Gliders

7. A glider while flying at night shall display either a steady red light of at least 5 candela showing in all directions, or lights in accordance with rule 6.2 and 6.3 of this Part.

Free Balloons

8. A free balloon while flying at night shall display a steady red light, of at least 5 candela, showing in all directions, suspended not less than 5 metres and not more than 10 metres below the basket, or if there is no basket, below the lowest part of the balloon.

Captive Balloons and Kites

9.1 A captive balloon or kite while flying at night at a height exceeding 60 metres above the surface shall display lights as follows:

- (a) a group of two steady lights consisting of a white light placed 4 metres above a red light, both being of at least 5 candela and showing in all directions, the white light being placed not less than 5 metres or more than 10 metres below the basket, or, if there is no basket, below the lowest part of the balloon or kite;
- (b) on the mooring cable, at intervals of not more than 300 metres measured from the group of lights referred to in (a), groups of lights of the colour and power and in the relative position specified in that sub-paragraph, and, if the lowest group of lights is obscured by cloud, an additional group below the cloud base; and
- (c) on the surface, a group of 3 flashing lights arranged in a horizontal plane at the apexes of a triangle, approximately equilateral, each side of which measures at least 25 metres; one side of the triangle shall be approximately at right angles to the horizontal projection of the cable and shall be delimited by two red lights; the third light shall be a green light so placed that the triangle encloses the object on the surface to which the balloon or kite is moored.

9.2 A captive balloon while flying by day at a height exceeding 60 metres above the surface shall have attached to its mooring cable at intervals of not more than 200 metres measured from the basket, or, if there is no basket, from the lowest part of the balloon, tubular streamers not less than 40 cm in diameter and two metres in length, and marked with alternate bands of red and white 50 cm wide.

9.3 A kite flown in the circumstances referred to in 9.2 shall have attached to its mooring cable either —

- (a) tubular streamers as specified in 9.2; or
- (b) at intervals of not more than 100 metres measured from the lowest part of the kite, streamers of not less than 80 cm long and 30 cm wide at their widest part and marked with alternate bands of red and white 10 cm wide.

Airships

10.1 Except as provided in 10.2, an airship while flying at night shall display the following steady lights:

- (a) a white light of at least 5 candela showing through angles of 110° from dead ahead to each side in the horizontal plane;
- (b) a green light of at least 5 candela showing to the starboard side through an angle of 110° from dead ahead in the horizontal plane;
- (c) a red light of at least 5 candela showing to the port side through an angle of 110° from dead ahead in the horizontal plane; and
- (d) a white light of at least 5 candela showing through angles of 70° from dead astern to each side in the horizontal plane.

10.2 An airship while flying at night shall display, if it is not under command, or has voluntarily stopped its engines, or is being towed, the following steady lights:

- (a) the white lights referred to in 10.1(a) and (d);
- (b) two red lights, each of at least 5 candela and showing in all directions suspended below the control car so that one is at least 4 metres above the other and at least 8 metres below the control car; and
- (c) if the airship is making way but not otherwise, the green and red lights referred to in 10.1(b) and (c):

Provided that an airship while picking up its moorings, notwithstanding that it is not under command, shall display only the lights specified in paragraph (1).

10.3 An airship, while moored within Singapore by night, shall display the following lights:

- (a) when moored to a mooring mast, at or near the rear a white light of at least 5 candela showing in all directions;
- (b) when moored otherwise than to a mooring mast —
 - (i) a white light of at least 5 candela showing through angles of 110° from dead ahead to each side in the horizontal plane; and
 - (ii) a white light of at least 5 candela showing through angles of 70° from dead astern to each side in the horizontal plane.

10.4 An airship while flying by day, if it is not under command, or has voluntarily stopped its engines, or is being towed, shall display two black balls suspended below the control car so that one is at least 4 metres above the other and at least 8 metres below the control car.

10.5 For the purpose of 10.1 to 10.4 —

- (a) an airship shall be deemed not to be under command when it is unable to execute a manoeuvre which it may be required to execute by or under this Part; and
- (b) an airship shall be deemed to be making way when it is not moored and is in motion relative to the air.

Weather Reports and Forecasts

11.1.—(1) Immediately before an aircraft flies the pilot-in-command of the aircraft shall examine the current reports and forecasts of the weather conditions on the proposed flight path, being reports and forecasts which it is reasonably practicable for him to obtain in order to determine whether Instrument Meteorological Conditions prevail or are likely to prevail during any part of the flight.

11.2 An aircraft which is unable to communicate by radio with an air traffic control unit at the aerodrome of destination shall not begin a flight to an aerodrome within a control zone if the information which it is reasonably practicable for the pilot-in-command of the aircraft to obtain indicates that it will arrive at that aerodrome when the ground visibility is less than 8 km or the cloud ceiling is less than 1,500 feet, unless the pilot-in-command of the aircraft has obtained from an air traffic control unit at that aerodrome permission to enter the aerodrome traffic zone.

Right-hand Traffic Rule

12. An aircraft which is flying within Singapore in sight of the ground and following a road, railway, canal or coastline, or any other line of landmarks, shall keep such line of landmarks on its left.

Visual Signals

13. The pilot-in-command of an aeroplane on, or in the traffic zone of an aerodrome shall observe such visual signals as may be displayed at, or directed to him from, the aerodrome by the authority of the person in charge of the aerodrome and shall obey any instruction which may be given to him by means of such signals:

Provided that he shall not be required to obey the signals referred to in rule 5.1 of Appendix 1 of Part I if in his opinion it is inadvisable to do so in the interests of safety.

Dropping of Tow Ropes, etc

14. Tow ropes, banners or similar articles towed by aircraft shall not be dropped from aircraft except at an aerodrome and —

- (a) in accordance with arrangements made with an air traffic control unit at the aerodrome and with the aerodrome operator; and
- (b) in the area designated by a yellow cross with two arms 6 metres long by 1 metre wide at right angles and when the aircraft is flying in the direction appropriate for landing.

Special Rules for Certain Aerodromes

15. The Chief Executive may make special rules for the operation of aircraft in the vicinity of notified aerodromes. Such special rules unless expressly stated otherwise, shall apply in addition to the other rules in this Schedule.

Low Flying

16.1. Rules 4.6 and 5.1.2 of Part I shall not apply to an aircraft which is being used for police purposes.

16.2 Subject to paragraph 55A(4) and (7) of the Order, rules 4.6 and 5.1.2 of Part I shall not apply to military aircraft in an exhibition of flying organised by the Republic of Singapore Air Force in which the only participating aircraft are military aircraft.

16.3. Nothing in rules 4.6 and 5.1.2 of Part I shall prohibit any aircraft from flying in such a manner as may be necessary for the purpose of saving any life.

TWELFTH SCHEDULE

Paragraph 77

FEES

Certificate of Registration

(Paragraph 4 (8)).

1. The fee to be paid for the issue of a certificate of registration of an aircraft pursuant to paragraph 4 (8) of the Order shall be in accordance with the following scale:

where the maximum total weight —

- | | |
|------------------------------|---|
| (a) does not exceed 3,000 kg | \$55 |
| (b) exceeds 3,000 kg | \$55 plus \$ 6.60 per 1,000 kg or part thereof in excess of 3,000 kg. |

For the purposes of this paragraph, “maximum total weight” means the maximum total weight authorised in the Certificate of Airworthiness in force in respect of the aircraft, or if no such certificate is in force, in the Certificate of Airworthiness last in force in respect of that aircraft. In any other case “maximum total weight” means the maximum total weight authorised of the prototype or modification thereof to which the aircraft in the opinion of the Chief Executive conforms.

Permit for an aircraft to fly without a Certificate of Airworthiness

(Paragraph 6 (1)).

2. The fees to be paid in respect of an application for a permit to fly in pursuance of proviso (i) (b) to paragraph 6 (1) of the Order shall be as follows:
 - (a) for any investigation required by the Chief Executive in connection with the application, a fee of an amount equivalent to the cost of making such investigation but not exceeding \$6 per kg of the maximum total weight of the aircraft for any year, or part of a year, of the period required for carrying out the investigation;
 - (b) for the permit, a fee of \$370.

For the purposes of this paragraph, “maximum total weight” means the maximum total weight specified in the application for the permit.

First issue of Certificate of Airworthiness

(Paragraph 7 (1)).

3. Where an application is made for a Certificate of Airworthiness in respect of an aircraft there shall be paid for the investigation required by the Chief Executive in pursuance of paragraph 7 (1) of the Order (not including the investigation of any aircraft engine) a fee of \$198 per 1,000 kg maximum total weight of the aircraft or part thereof for any year, or part of a year, of the period required for carrying out the investigation. The fee for gliders and unpowered aircraft shall be one-half of the fee for a powered aircraft of the same maximum total weight.

For the purposes of this paragraph, "maximum total weight" means the maximum total weight specified in the application for the certificate.

Approval of Engine

(Paragraph 7 (1)).

4. In respect of an application for the approval of an engine or an auxiliary power unit, the applicant shall pay for the investigations required by the Chief Executive, including investigations concerning defects in or modifications to an approved engine or an approved auxiliary power unit, a charge of such amount as may be decided by the Chief Executive having regard to the expense incurred by him in making the investigation but not exceeding:
 - (a) in the case of gas turbine engines, \$110,000.
 - (b) in the case of any other engines of 300 kW or less, \$11,000.
 - (c) in the case of any other engines or auxiliary power units, \$22,000,for any year, or part of the year, during which the investigations are carried out.

Second or Subsequent Issue or Renewal of Certificate of Airworthiness

(Paragraph 7 (1) and (8)).

5. When an application is made for the second or subsequent issue or the renewal of a Certificate of Airworthiness in pursuance of paragraph 7 (1) or (8) of the Order, the fee to be paid in respect thereof (including any investigation required in connection with the application) shall be \$198 per 1,000 kg maximum total weight or part thereof. The fee for gliders and unpowered aircraft shall be one-half of the fee for the powered aircraft of the same maximum total weight.

Validation of Certificate of Airworthiness

(Paragraph 7 (7) and (8)).

6. The fee to be paid in respect of an application for —
 - (a) the first issue of a certificate of validation of a Certificate of Airworthiness in respect of any aircraft in pursuance of paragraph 7 (7) of the Order (including any investigation required in connection with the application) shall be the same as the fee which would be paid under paragraph 3 in respect of an application for the first issue of a Certificate of Airworthiness in respect of that aircraft.
 - (b) the second or subsequent issue or the renewal of such a certificate of validation in pursuance of paragraph 7 (7) and (8) of the Order shall be the same as the fee which would be paid under paragraph 5 of this Schedule in respect of the second or subsequent issue or the renewal of a Certificate of Airworthiness in respect of that aircraft.

Approval or certificate for design, production or distribution of aircraft, aircraft components or aircraft materials

(Paragraph 8 (1) and (2))

- 6A. The fee to be paid by an applicant for the issue of a certificate or other form of written approval under paragraph 8 (1) and (2) of the Order for the design, production or distribution of aircraft, aircraft components or aircraft materials shall be as follows:

- (a) in respect of a Design Organisation Approval, a Production Organisation Approval or a Certificate of Approval for Distributors specified in the Singapore Airworthiness Requirements (SAR), the fee shall be \$1,100 per annum for each branch of the applicant's organisation in a different geographical location;
- (b) in respect of any other certificate or approval, there shall be no fee.

Approval or certificate for inspection, overhaul, repair, replacement and modification of aircraft or aircraft components

(Paragraph 8A(2))

- 6B. The fee to be paid by an applicant for the issue of a certificate or other form of written approval under paragraph 8A(2) of the Order for the maintenance of aircraft or aircraft components shall be as follows:
- (a) in respect of a Maintenance Organisation Approval specified in the Singapore Airworthiness Requirements (SAR), the fee shall be \$1,100 per annum for each branch of the applicant's organisation in a different geographical location; and
 - (b) in respect of any other certificate or approval, there shall be no fee.

Approval of persons, simulators and courses of training or instruction

(Paragraphs 11 (9) (c), 20 (13) (c) and (d) and 73A)

7.

- (1) The fee to be paid by a person for the grant of an approval for the purposes of paragraph 73A of the Order shall be \$1,100 per annum for each branch of the person's organisation in a different geographical location.
- (2) The fee to be paid for the grant of an approval of a person to provide a course of training or instruction under paragraph 11 (9) (c) of the Order shall be \$1,100 per annum for each branch of the person's organisation in a different geographical location.
- (3) The fee to be paid for the grant of an approval or renewal of approval for an approved flying school to provide a course of training or instruction under paragraph 20 (13) (c) of the Order shall be \$4,500 per annum.
- (4) The fee to be paid for the grant of approval or renewal of approval for the use of a flight simulation training device for the purpose of flight training under paragraph 20(13)(d) of the Order shall be \$1,100 per annum.

Approval in respect of aircraft equipment required under Fifth Schedule

(Paragraph 12 (2)).

8. In respect of an application for the grant of an approval under paragraph 12 (2) of the Order of aircraft equipment or the manner of installation thereof, the applicant shall pay for all expenses incurred by reason of anything done during, in or incidental to the investigation, including the cost of manpower of \$90 per man-hour.

Approval of type, etc. of radio equipment

(Paragraph 13 (5)).

9. In respect of an application for the grant of an approval under paragraph 13 (5) of the Order of radio equipment or the manner of the installation thereof, the applicant shall pay for all expenses incurred by reason of anything done during, in or incidental to the investigation, including the cost of manpower of \$90 per man-hour.

Approval of Aircraft Radio Operators

(Paragraph 35 (1)).

10. The fees to be paid in respect of an aircraft radio operator's approval (for ground use only) in pursuance of paragraph 35 (1) of the Order shall be —
- | | |
|---|-------|
| (a) in respect of each examination | \$ 17 |
| (b) in respect of the grant or renewal of an approval | \$ 14 |

Aircraft Maintenance Licences

(Paragraph 11).

11. The fees to be paid in respect of an aircraft maintenance licence in pursuance of paragraph 11 of the Order shall be —
- | | |
|--|--------|
| (a) in respect of each subject of an examination for either — | |
| (i) the grant of a licence; | |
| (ii) the renewal of a licence (if required); or | |
| (iii) an inclusion or extension of a rating included in a licence | \$ 80 |
| (aa) in respect of the cancellation by a candidate of a booking for an examination of a subject referred to in sub-paragraph (a) | \$ 30 |
| (ab) in respect of the re-scheduling by a candidate of an examination of a subject referred to in sub-paragraph (a) | \$ 20 |
| (b) in respect of the grant or renewal of a licence | \$ 132 |
| (c) in respect of the inclusion of an additional rating in a licence, for each additional rating | \$ 66 |

The fee specified in sub-paragraph (a) above shall cover only one subject of an examination and, if an additional subject of an examination or a re-examination is required, the fee to be paid for such additional subjects of an examination or re-examination shall be \$80 per subject.

Licences for Flight Crew

(Paragraph 20 (1)) and Rating therein (Paragraph 20 (3) and (4)).

- 12.
- (1) The following fees shall be paid on application for the grant or renewal of:

- | | |
|--|----------|
| a) an Airline Transport Pilot's Licence (Aeroplanes), an Airline Transport Pilot's Licence (Helicopters and Gyroplanes), a Commercial Pilot's Licence (Aeroplanes), or a Commercial Pilot's Licence (Helicopters and Gyroplanes) — | |
| (i) for a period of 6 months | \$ 72 |
| (ii) for a period of 12 months | \$ 144 |
| b) a Commercial Pilot's Licence (Balloons), a Commercial Pilot's Licence (Airships), or a Commercial Pilot's Licence (Gliders), a Private Pilot's Licence (Aeroplanes), a Private Pilot's Licence (Helicopters and Gyroplanes), or a Private Pilot's Licence (Balloons and Airships) — | |
| (i) for a period of 6 months | \$ 19.50 |
| (ii) for a period of 12 months | \$ 39 |
| (iii) for a period of 24 months | \$ 72 |
| (iv) for a period of 60 months | \$ 195 |
| (c) a Student's Pilot's Licence | \$ 28 |
| (d) a Flight Navigator's Licence | \$ 66 |
| (e) a Flight Engineer's Licence for a period of 12 months | \$ 66 |
| (f) a Flight Radiotelephony Operator's Licence | \$ 28 |
| (2) The following fees shall be paid on application for the grant or renewal of any licence to act as a member of the flight crew of an aircraft or for the inclusion or renewal of a rating in such a licence, in respect of such of the following examinations as may be required — | |
| (a) for a general examination or part of the examination on aircraft | \$ 55 |
| (b) for an examination on the performance of aircraft | \$ 66 |
| (c) for a technical examination on application for the inclusion of an aircraft rating for a single type of aircraft in a licence or for the extension of such a rating to include any additional type of aircraft | \$ 55 |
| (d) for an examination in radiotelephony which consists of not more than two parts — for each part of the examination, on occasion when that part is taken | \$ 11 |
| (e) -Deleted- | |
| (f) for any other official technical examination — | |
| (i) for each part of the examination or re-examination to be taken in respect of the grant of the Private Pilot's Licence | \$ 11 |
| (ii) for each part of the examination on each occasion when that part is taken in respect of the grant of — | |
| (a) A Commercial Pilot's Licence (Aeroplanes, Helicopters and Gyroplanes), or an Airline Transport Pilot's Licence (Helicopters and Gyroplanes) on Radio Aids, Instruments, Flight Planning, Navigation, Meteorology (Theory and Practical) | \$ 200 |
| (b) A Flight Navigator's Licence, or an Airline Transport Pilot's Licence (Aeroplanes) on Radio Aids, Instruments, Flight Planning, Navigation, Meteorology (Theory and Practical) | \$300 |
| (iii) for the examination of Air Law, Flight rules and the procedures for professional pilots and flight engineers | \$ 33 |

- (g) for a flying test —
 - (i) General Flying Test or Type Rating Test \$ 132
 - (ii) Instrument Rating Test \$ 132
- (h) for a medical evaluation \$ 40
- (i) for an examination on Human Performance and Limitations \$ 165
- (j) for an examination for the exemption from the ground examination for a Commercial Pilot's Licence, Airline Transport Pilot's Licence or Flight Engineer's Licence (Special Assessment Paper) \$ 375

13. Where an application is made for the issue of a certificate of validation of a licence under this Order the following fees shall be paid:

- (a) for a technical examination (if required)
 - (b) for a medical examination (if required)
 - (c) for a flying test (if required)
 - (d) for a certificate
- In each case of the fee appropriate to the grant of a licence equivalent to that for which validation is sought.

Copies of Documents.

14. The fee to be paid for the issue by the Minister or the Chief Executive of a copy or replacement of a document issued under this Order shall be \$33 except that the fee for a copy or replacement of a flight manual or performance schedule relating to a Certificate of Airworthiness shall be an amount equal to the cost of preparing the copy or replacement as the case may be but shall not exceed \$220.

Permit for carriage of munitions of war

(Paragraph 50C)

15. The fees to be paid for the issue of a permit for carriage of munitions of war shall be as follows:
- (a) ad hoc permit for a single return flight \$ 45
 - (b) block permit for more than 10 return flights over a period of 6 months \$ 380

Permit for carriage of dangerous goods

(Paragraph 50D)

16. The fees to be paid for the issue of a permit for carriage of dangerous goods shall be as follows:
- (a) ad hoc permit for a single return flight \$ 50
 - (b) block permit for more than 10 return flights over a period of 6 months \$ 600

Aerodrome (helipad) licence

(Paragraph 67).

17. The fee to be paid for the issue of an aerodrome (helipad) licence is \$1,000 per annum.

Fees where functions are performed abroad.

18.

- (1) When an application is made for the Chief Executive to perform a function as a result of which the Chief Executive considers it necessary for an officer of the Authority to travel outside Singapore, the applicant shall pay, in addition to the appropriate fee specified in this Schedule, a charge equal to the additional cost thereby incurred plus a daily fee for each day that such officer is outside Singapore while performing that function.
- (2) The daily fee in sub-paragraph (1) shall be —
 - (a) \$1,280 for a flight operations officer; and
 - (b) \$610 for any other officer.

Permission to organise an exhibition of flying

(Paragraph 55A)

19. The fee to be paid for the grant of a written permission to organise an exhibition of flying shall be \$20,000.

Air Operator Certificate application fee

(Paragraph 87).

20. The fee to be paid for the evaluation of an applicant's competency for the grant of an Air Operator Certificate shall be \$150,000.

Aerodrome certificate

(Paragraph 67(2)).

21. (1) The fee to be paid for the grant of an aerodrome certificate shall be \$150,000, which shall accompany the application under paragraph 67(2) of the Order.

(2) The annual fee for an aerodrome certificate shall be as follows:

- (a) for an aerodrome with one runway - \$200,000;
- (b) for an aerodrome with 2 runways - \$400,000; and
- (c) for an aerodrome with 3 or more runways - \$600,000.

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THIRTEENTH SCHEDULE

Paragraph 80

PENALTIES

PART A : PROVISIONS REFERRED TO IN PARAGRAPH 80 (5)

Paragraph 3.

Paragraph 5.

Paragraph 10 (5).

Paragraph 15.

Paragraph 16 (3).

Paragraph 20A.

Paragraph 22.

Paragraph 24.

Paragraph 25.

Paragraph 28 (5).

Paragraph 35 (except sub-paragraph (2)).

Paragraph 50G(1) and (2).

Paragraph 47 (1).

Paragraph 48 (1).

Paragraph 50E, in respect of paragraph 7(1) and (2) of Part II, and paragraph 1 of Part IV, of Nineteenth Schedule.

Paragraph 51.

Paragraph 53 (3).

Paragraph 54 (2).

Paragraph 55.

Paragraph 55(A)

Paragraph 58(2).

Paragraph 59.

Paragraph 60(3).

Paragraph 67A(1).

Paragraph 67G.

Paragraph 69.

Paragraph 72 (1).

Paragraph 72A (1).

Paragraph 72A (3).

Paragraph 75.

Paragraph 88A (3).

PART B : PROVISIONS REFERRED TO IN PARAGRAPH 80 (6)

Paragraph 6.

Paragraph 8.

Paragraph 8A.

Paragraph 9 (1).

Paragraph 10 (except sub-paragraph (5)).

Paragraph 11(7) and (8).

Paragraph 12.

Paragraph 13.

Paragraph 14(2).

Paragraph 16 (except sub-paragraph (3)).

Paragraph 17A.

Paragraph 18.

Paragraph 19.

Paragraph 20(2), (3A) and (7).

Paragraph 23.

Paragraph 24A(1) and (2).

Paragraph 27.

Paragraph 28 (except sub-paragraph (5)).

Paragraphs 29 to 34, inclusive.

Paragraph 35 (2).

Paragraph 36.

Paragraph 36A.

Paragraph 37.

Paragraphs 38 to 46, inclusive.

Paragraph 47 (2).

Paragraph 47 (3).

Paragraph 48 (2).

Paragraph 49.

Paragraph 50.

Paragraph 50A.

Paragraph 50C.

Paragraph 50D(1) and (2).

Paragraph 50E, in respect of paragraphs 1, 2, 3, 4(2) and 7(3) of Part II, and paragraph 1 of Part III, of Nineteenth Schedule.

Paragraph 50F(4).

Paragraph 53 (1).

Paragraph 53 (2).

Paragraph 54 (1).
Paragraph 61 (except sub-paragraph (3))
Paragraph 62(3) and (5)
Paragraph 62A(1).
Paragraph 62F.
Paragraph 62G(1) and (2).
Paragraph 63.
Paragraph 64.
Paragraph 65.
Paragraph 67 (1).
Paragraph 67C.
Paragraph 67E(2) and (3).
Paragraph 67F.
Paragraph 67H.
Paragraph 67I.
Paragraph 67J(1) and (2).
Paragraph 67K.
Paragraph 67L(2).
Paragraph 71.
Paragraph 72A (4).
Paragraph 76.
Paragraph 87(1) and (5).
Paragraph 88.

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FOURTEENTH SCHEDULE

(Paragraphs 2 (1), 20, 62A and 62E (1))

MEDICAL EXAMINATION AND MEDICAL FITNESS REQUIREMENTS

1. This Schedule specifies the medical examination and medical fitness requirements for the grant and renewal of a licence to a flight crew member under paragraph 20 (1) (a) to (m) of the Order and to an air traffic controller under paragraph 62A of the Order.
2. Every applicant for the grant or renewal of a flight crew member licence or an air traffic controller licence shall —
 - (a) be free from any congenital or acquired abnormality or any active, latent, acute or chronic disability or any effect or side-effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken or to be taken by him, which would result in any functional incapacity likely to interfere with the safe operation of an aircraft or with the performance in a safe manner of the functions to which such licence relates; and
 - (b) undergo a medical examination for the purpose of ascertaining whether his physical and mental conditions satisfy the required standard of medical fitness applicable to such licence, as specified in paragraph 7.
3.
 - (1) The medical examination referred to in paragraph 2 (b) shall be conducted in Singapore or elsewhere by a designated medical examiner.
 - (2) The designated medical examiner shall assess whether the applicant satisfies the standard of medical fitness required for the licence for which the applicant has applied for a grant or renewal and submit a report of his assessment to the evaluating medical examiner for evaluation and clearance.
 - (3) Where —
 - (a) the applicant does not meet the medical fitness requirements specified in paragraph 7; or
 - (b) the medical case is complicated or unusual,the designated medical examiner shall refer the case to an evaluating medical examiner for assessment, evaluation and clearance.
4. An applicant who presents himself for the medical examination referred to in paragraph 2 (b) shall be required to furnish —
 - (a) a declaration signed by him stating —
 - (i) whether he has previously undergone such medical examination, and if so, the place, date and result of such medical examination; and
 - (ii) in a case where the medical examination has been previously refused, revoked or suspended, the reason for such refusal, revocation or suspension; and
 - (b) a complete and accurate statement of the medical facts concerning his personal, family and hereditary history, personally certified by him.
5. An applicant who has been assessed by the evaluating medical examiner as not having satisfied the standard of medical fitness required for the licence for which he has applied for a grant or renewal may, at the discretion of the Chief Executive, be accepted as eligible for such grant or renewal if —
 - (a) accredited medical conclusion indicates that in specific circumstances, the applicant's failure to meet any requirement, whether numerical or otherwise, will not affect the performance of the functions to which his licence relates in a manner which is likely to jeopardise flight safety;
 - (b) the relevant ability, skill and experience of the applicant have been given due consideration; and

- (c) the licence is endorsed with any special restrictions or conditions which must be complied with to ensure the performance in a safe manner of the functions to which the licence relates.
6. If an applicant for the renewal of a licence is, during the period he is required to undergo the medical examination referred to in paragraph 2 (b), on duty as a member of the flight crew of an aircraft in a distant location outside Singapore where a designated medical examiner is not available, the Chief Executive may, on application and in his discretion, allow the medical examination to be deferred on an exceptional basis subject to the following conditions:
- (a) the period for which the medical examination is deferred does not exceed —
 - (i) a period of 6 consecutive months in the case of a flight crew member of a private category aircraft;
 - (ii) a period of 6 consecutive months in the case of a member of the operating crew of a transport category or aerial work category aircraft; or
 - (iii) a period of 24 consecutive months in the case of a private pilot;
 - (b) the applicant has, in the location in which he is situated, undergone the medical examination referred to in paragraph 2 (b) by a qualified medical practitioner acceptable to the Chief Executive; and
 - (c) the report of such medical practitioner has been evaluated by an evaluating medical examiner who has assessed the applicant's medical fitness as satisfactory.
7. The medical examination and medical fitness requirements applicable to the various classes of licence granted or renewed under paragraphs 20 (1) (a) to (m) and 62A of the Order are as follows:
- (a) Class 1 Medical Requirements (as specified in the Singapore Air Safety Publication (SASP)) —
 - (i) Commercial pilot's licence (aeroplanes);
 - (ii) Commercial pilot's licence (helicopters and gyroplanes);
 - (iii) Airline transport pilot's licence (aeroplanes);
 - (iv) Airline transport pilot's licence (helicopters and gyroplanes);
 - (v) Commercial pilot's licence (airships);
 - (vi) – *deleted* -
 - (b) Class 2 Medical Requirements (as specified in the Singapore Air Safety Publication (SASP)) —
 - (i) Student pilot's licence;
 - (ii) Private pilot's licence (aeroplanes);
 - (iii) Private pilot's licence (helicopters and gyroplanes);
 - (iv) Private pilot's licence (balloons and airships);
 - (v) Commercial pilot's licence (balloons);
 - (vi) - *deleted* -
 - (vii) Commercial pilot's licence (gliders);
 - (viii) Flight navigator's licence;
 - (ix) Flight engineer's licence;
 - (c) Class 3 Medical Requirements (as specified in the Singapore Air Safety Publication (SASP)) —
Air traffic controller licence.
8. Notwithstanding paragraph 7, an applicant for or a holder of a Private pilot's licence (aeroplanes) or a Private pilot's licence (helicopters) who also applies for or has been granted an Instrument Rating (Aeroplanes) or Instrument Rating (Helicopters), as the case may be, shall also satisfy Class 1 Medical Requirements (as specified in the Singapore Air Safety Publication (SASP)).

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FIFTEENTH SCHEDULE

Paragraph 18 (4)

Areas specified in connection with the carriage of flight navigators as members of the flight crews or approved navigational equipment on public transport aircraft.

The following areas are specified for the purposes of paragraph 18 (4) of the Order:

Area A — Arctic

All that area north of latitude 68° north but excluding any part thereof within the area enclosed by rhumb lines joining successively the following points:

68° north latitude 00° east/west longitude

73° north latitude 15° east longitude

73° north latitude 30° east longitude

68° north latitude 45° east longitude

68° north latitude 00° east/west longitude

Area B — Antarctic

All that area south of latitude 55° south.

Area C — Sahara

All that area enclosed by rhumb lines joining successively the following points:

30° north latitude 05° west longitude

24° north latitude 11° west longitude

14° north latitude 11° west longitude

14° north latitude 28° east longitude

24° north latitude 28° east longitude

28° north latitude 23° east longitude

30° north latitude 15° east longitude

30° north latitude 05° west longitude

Area D – *deleted*

Area E — South America

All that area enclosed by rhumb lines joining successively the following points:

04° north latitude 72° west longitude

04° north latitude 60° west longitude
08° south latitude 42° west longitude
18° south latitude 54° west longitude
18° south latitude 60° west longitude
14° south latitude 72° west longitude
05° south latitude 76° west longitude
04° north latitude 72° west longitude

Area F — Pacific Ocean

All that area enclosed by rhumb lines joining successively the following points:

60° north latitude 180° east/west longitude
20° north latitude 128° east longitude
04° north latitude 128° east longitude
04° north latitude 180° east/west longitude
55° south latitude 180° east/west longitude
55° south latitude 82° west longitude
25° south latitude 82° west longitude
60° north latitude 155° west longitude
60° north latitude 180° east/west longitude

Area G — Australia

All that area enclosed by rhumb lines joining successively the following points:

18° south latitude 123° east longitude
30° south latitude 118° east longitude
30° south latitude 135° east longitude
18° south latitude 123° east longitude

Area H — Indian Ocean

All that area enclosed by rhumb lines joining successively the following points:

35° south latitude 110° east longitude
55° south latitude 180° east/west longitude
55° south latitude 10° east longitude
40° south latitude 10° east longitude
25° south latitude 60° east longitude
20° south latitude 60° east longitude
05° south latitude 43° east longitude
10° north latitude 55° east longitude
10° north latitude 73° east longitude

04° north latitude 77° east longitude
04° north latitude 92° east longitude
10° south latitude 100° east longitude
10° south latitude 110° east longitude
35° south latitude 110° east longitude

Area I — North Atlantic Ocean

All that area enclosed by rhumb lines joining successively the following points:

55° north latitude 15° west longitude
68° north latitude 28° west longitude
68° north latitude 60° west longitude
45° north latitude 45° west longitude
40° north latitude 60° west longitude
40° north latitude 19° west longitude
55° north latitude 15° west longitude

Area J — South Atlantic Ocean

All that area enclosed by rhumb lines joining successively the following points:

40° north latitude 60° west longitude
18° north latitude 60° west longitude
05° south latitude 30° west longitude
55° south latitude 55° west longitude
55° south latitude 10° east longitude
40° south latitude 10° east longitude
02° north latitude 05° east longitude
02° north latitude 10° west longitude
15° north latitude 25° west longitude
40° north latitude 19° west longitude
40° north latitude 60° west longitude

Area K — Northern Canada

All that area enclosed by rhumb lines joining successively the following points:

68° north latitude 130° west longitude
55° north latitude 115° west longitude
55° north latitude 70° west longitude
68° north latitude 60° west longitude
68° north latitude 130° west longitude

Area L — Northern Asia

All that area enclosed by rhumb lines joining successively the following points:

- 68° north latitude 56° east longitude
- 68° north latitude 160° east longitude
- 50° north latitude 125° east longitude
- 50° north latitude 56° east longitude
- 68° north latitude 56° east longitude

Area M — South Asia

All that area enclosed by rhumb lines joining successively the following points:

- 50° north latitude 56° east longitude
- 50° north latitude 125° east longitude
- 40° north latitude 110° east longitude
- 30° north latitude 110° east longitude
- 30° north latitude 80° east longitude
- 35° north latitude 80° east longitude
- 35° north latitude 56° east longitude
- 50° north latitude 56° east longitude

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SIXTEENTH SCHEDULE

Paragraph 36

MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS — SPECIFIED AIRSPACE AND NAVIGATION PERFORMANCE CAPABILITY

1. For the purpose of paragraph 36 of the Order, the following navigation performance capability is specified, that is to say, a capability to ensure that:
 - (a) the standard deviation of lateral errors in the track of the aircraft is not more than 6.3 nautical miles;
 - (b) the proportion of the flight time of the aircraft during which the actual track of the aircraft is 30 nautical miles or more off the track along which it has been given an air traffic control clearance to fly less than 5.3×10^{-4} ; and
 - (c) the proportion of the flight time of the aircraft during which the actual track of the aircraft is between 50 and 70 nautical miles off the track along which it has been given an air traffic control clearance to fly is less than 1.3×10^{-5} .
2. The North Atlantic airspace from flight level 285 to flight level 420 and defined by rhumb lines joining successive coordinates as tabulated below, is designated as North Atlantic Minimum Navigation Performance Specification (NAT MNPS) airspace.

No	Coordinates	No	Coordinates	No	Coordinates
1	34° 10'N 17° 48'W	2	36° 30'N 15° 00'W	3	42° 00'N 15° 00'W
4	43° 00'N 13° 00'W	5	45° 00'N 13° 00'W	6	45° 00'N 08° 00'W
7	51° 00'N 08° 00'W	8	51° 00'N 15° 00'W	9	54° 00'N 15° 00'W
10	54° 34'N 10° 00'W	11	61° 00'N 10° 00'W	12	61° 00'N 00° 00'
13	82° 00'N 00° 00'	14	82° 00'N 30° 00'E	15	North Pole
16	82° 00'N 60° 00'W	17	78° 00'N 75° 00'W	18	76° 00'N 76° 00'W
19	65° 00'N 57° 45'W	20	65° 00'N 60° 00'W	21	64° 00'N 63° 00'W
22	61° 00'N 63° 00'W	23	57° 00'N 59° 00'W	24	53° 00'N 54° 00'W
25	49° 00'N 51° 00'W	26	45° 00'N 51° 00'W	27	45° 00'N 53° 00'W
28	43° 36'N 60° 00'W	29	41° 52'N 67° 00'W	30	39° 00'N 67° 00'W
31	38° 35'N 68° 53'W	32	38° 30'N 69° 15'W	33	38° 30'N 60° 00'W
34	27° 00'N 60° 00'W	35	27° 00'N 40° 00'W	36	22° 18'N 40° 00'W
37	17° 00'N 37° 30'W	38	24° 00'N 25° 00'W	39	30° 00'N 25° 00'W
40	30° 00'N 20° 00'W	41	31° 39'N 17° 25'W	42	void

Thence by that part of the arc of a circle radius 100 nautical miles (185.2 km) centered on 33° 04'N 16° 21'W to 34° 10'N 17° 48'W.

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SEVENTEENTH SCHEDULE

Paragraph 62A (7)

AIR TRAFFIC CONTROLLER RATINGS

1. The following ratings may be specified in an air traffic controller licence in respect of air traffic services:
 - (a) aerodrome control rating, which shall authorise the holder of the air traffic controller licence to provide or supervise the provision of aerodrome control service, or both;
 - (b) approach control surveillance rating, which shall authorise the holder of the licence to provide or supervise the provision of approach control service, or both;
 - (c) area control procedural rating, which shall authorise the holder of the licence to provide or supervise the provision of area control service, or both;
 - (d) area control surveillance rating, which shall authorise the holder of the licence to provide or supervise the provision of area control service, or both.
2. A rating specified in an air traffic controller licence shall become invalid when an air traffic controller has not provided the air traffic service specified in that rating for a period of 6 months or more.
3. If a rating specified in an air traffic controller licence becomes invalid, that rating shall remain invalid until the Chief Executive is satisfied that the ability to provide the air traffic service specified in that rating by the air traffic controller concerned has been re-established.

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EIGHTEENTH SCHEDULE

Paragraph 67 (3) (a) and (4) (b)

AERODROME MANUAL

Section A — Format of the aerodrome manual

1. The aerodrome manual shall —
 - (a) be typewritten or printed, and signed by the aerodrome operator;
 - (b) be in a format that is easy to revise;
 - (c) have a system for recording the currency of the pages and amendments thereto, including a page for logging revisions; and
 - (d) be organised in a manner that will facilitate the preparation, review and acceptance or approval process.

Section B — Organisation of the Aerodrome Manual

2. The aerodrome operator shall include the following particulars in an aerodrome manual, to the extent that they are applicable to the aerodrome, under the following parts:
 - Part 1. General information on the purpose and scope of the aerodrome manual; the legal requirement for an aerodrome certificate and an aerodrome manual as prescribed under this Order; conditions for use of the aerodrome; the aeronautical information services, air traffic services, meteorological services and security provision available and the procedures for their promulgation; the system for recording aircraft movements and the obligations of the aerodrome operator as specified in paragraphs 67, 67A and 67C to 67L of this Order.
 - Part 2. Particulars of the aerodrome site.
 - Part 3. Particulars of the aerodrome required to be reported to the Aeronautical Information Services provider.
 - Part 4. The aerodrome operating procedures and safety measures. This may include references to air traffic procedures such as those relevant to low-visibility operations. Air traffic management procedures are normally published in the air traffic services manual with a cross-reference to the aerodrome manual.
 - Part 5. Details of the aerodrome administration and the safety management system.

Section C — Particulars to be included in an aerodrome manual

3. The particulars to be included in an aerodrome manual shall be as specified in the Manual of Aerodrome Standards.

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NINETEENTH SCHEDULE

Paragraphs 50D(6), 50E(1) and (2) and 50F(1), (2) and (3)

PART I : DEFINITIONS

In this Schedule, unless the context otherwise requires —

“acceptance checklist” means a document used to assist in carrying out a check on the external appearance of packages of munitions of war or dangerous goods and their associated documents to determine that all appropriate requirements have been met;

“overpack” means an enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage;

“package” means the complete product of the packing operation consisting of the packaging and its contents prepared for transport;

“packaging” means receptacles and any other components or materials necessary for the receptacle to perform its containment function;

“unit load device” means any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

PART II : OPERATORS’ RESPONSIBILITIES

1. The operator of any aircraft, or any agent of the operator, shall not accept any munitions of war or dangerous goods for carriage by air unless —
 - (a) the munitions of war or dangerous goods are accompanied by a completed and properly executed dangerous goods transport document and a signed declaration, except where the Technical Instructions specify that such a document is not required; and
 - (b) the package, overpack or freight container containing the munitions of war or dangerous goods has been inspected in accordance with the acceptance procedures contained in the Technical Instructions and all accompanying transport documents have been verified.
2.
 - (1) For the purposes of each of the inspections required by paragraphs 1 and 3, the operator of an aircraft, or any agent of the operator, shall develop and use an acceptance checklist and the results of the inspections shall be recorded therein.
 - (2) The acceptance checklist shall be in such form and shall provide for the entry of such details as will enable the relevant inspection to be fully and accurately made by reference to the completion of that list.
3. The operator of any aircraft on which munitions of war or dangerous goods are to be carried, or any agent of the operator, shall ensure that —
 - (a) all packages and overpacks containing munitions of war or dangerous goods and freight containers containing radioactive materials are loaded, properly secured and stowed on an aircraft in accordance with the provisions of the Technical Instructions;
 - (b) before a unit load device is loaded on board the aircraft, the device has been inspected and found free from any evidence of leakage from, or damage to, any munitions of war or dangerous goods contained therein;
 - (c) no leaking or damaged packages, overpacks or freight containers are loaded on the aircraft;
 - (d) no munitions of war or dangerous goods are carried in an aircraft cabin occupied by passengers or on the flight deck of the aircraft, except in circumstances permitted by the provisions of the Technical Instructions;
 - (e) any hazardous contamination found on the aircraft as a result of leakage or damage to munitions of war or dangerous goods is removed without delay and if the aircraft has been

contaminated by radioactive materials, it shall immediately be taken out of service and not returned to service until the radiation level at any accessible surface and the non-fixed contamination are not more than the values specified in the Technical Instructions;

- (f) any packages containing munitions of war or dangerous goods which might react dangerously one with another shall not be stowed on the aircraft next to each other or in a position that would allow interaction between them in the event of leakage;
- (g) any packages of toxic or infectious substances shall be stowed on the aircraft in accordance with the provisions of the Technical Instructions;
- (h) any packages of radioactive materials shall be separated from persons, live animals and undeveloped film, in accordance with the provisions in the Technical Instructions, when stowed on the aircraft;
- (i) the goods are secured in the aircraft in such a manner that will prevent any movement in flight which would change the orientation of the packages or which would cause damage to the packages;
- (j) in the case of packages containing radioactive materials, the securing shall be adequate to ensure that the separation requirements as specified in the Technical Instructions are met at all times;
- (k) packages of munitions of war or dangerous goods bearing the "Cargo aircraft only" label shall be loaded in such a manner that a crew member or other authorised person can see, handle and, where size and weight permit, separate such packages from other cargo in flight; and
- (l) passengers are warned as to the type of goods that they are prohibited from transporting on board the aircraft as checked baggage or carry-on articles.

4.

- (1) The operator of any aircraft flying for the purposes of public transport shall ensure that all flight crew members and other employees are provided with such information and training as will enable them to carry out their responsibilities with regard to the carriage of munitions of war or dangerous goods, including the actions to be taken in the event of emergencies involving munitions of war or dangerous goods.
- (2) The operator of any aircraft on which munitions of war or dangerous goods are to be carried as cargo, or any agent of the operator, shall ensure that, as soon as practicable and before any flight begins, the pilot-in-command of the aircraft is provided with such information as is specified in paragraphs 4.1 and 4.8 of Part 7 of the Technical Instructions and in particular —
 - (a) written information of the identity of any munitions of war or dangerous goods on board the aircraft, the danger to which they may give rise, the weight or quantity of the goods and the loading position in the aircraft's cargo compartment; and
 - (b) information for use in responding to an in-flight emergency as specified in the Technical Instructions.

5. The operator of a Singapore aircraft which is involved —

- (a) in a dangerous goods accident whilst carrying any dangerous goods as cargo on the aircraft; or
- (b) in a dangerous goods incident in which, in the reasonable opinion of the operator, dangerous goods carried as cargo on the aircraft may be involved,

shall provide information, without delay, to emergency services or rescue personnel responding to the dangerous goods accident or dangerous goods incident and the appropriate authorities and the State in which the dangerous goods accident or dangerous goods incident occurred about the dangerous goods on board, as shown on the written information to the pilot-in-command.

- 6. In the event of any in-flight emergency, the operator of the aircraft shall require its pilot-in-command carrying munitions of war or dangerous goods as cargo to inform the appropriate air traffic services unit, as soon as the situation permits, of those munitions of war or dangerous goods in detail or as a summary or by reference to the location from where the detailed information can be obtained immediately.

7.

- (1) The operator of any aircraft on which munitions of war or dangerous goods are to be carried, or any agent of the operator, shall ensure that all packages or overpacks containing munitions of war or dangerous goods and freight containers containing radioactive materials are inspected for signs of damage or leakage upon unloading from the aircraft or into a unit load device.
- (2) If evidence of damage or leakage is found, the operator of an aircraft, or any agent of the operator, shall inspect, for damage or contamination, the area where the munitions of war, dangerous goods or unit load device were stowed.
- (3) The operator of any aircraft shall ensure that the aircraft is not permitted to fly for the purpose of carrying passengers or cargo if the operator knows or suspects that radioactive materials have leaked in or contaminated the aircraft, unless the radiation level resulting from the fixed contamination at any accessible surface and the non-fixed contamination are not more than the values specified in paragraph 3.2 of Part 7 of the Technical Instructions.

PART III : SHIPPER'S RESPONSIBILITIES

1. Before consigning any munitions of war or dangerous goods for carriage by air, the shipper or his agent shall —
 - (a) ensure that the munitions of war or dangerous goods are not forbidden for carriage by air in any circumstances under the provisions of the Technical Instructions;
 - (b) ensure that the munitions of war or dangerous goods are properly classified, packed, marked, labelled and accompanied by a properly executed dangerous goods transport document, as specified in Annex 18 to the Chicago Convention and the Technical Instructions;
 - (c) provide to the operator of the aircraft on which the munitions of war or dangerous goods are to be carried, or to any agent of the operator, the duly executed dangerous goods transport document, which shall contain the information required by the Technical Instructions;
 - (d) sign a declaration that the munitions of war or dangerous goods are fully and accurately described by their proper shipping names and that they are classified, packed, marked, labelled, and in proper condition for carriage by air in accordance with the Technical Instructions;
 - (e) provide to their employees such information as will enable them to carry out their responsibilities with regard to the carriage of munitions of war or dangerous goods and instructions as to the action to be taken in the event of emergencies arising involving munitions of war or dangerous goods; and
 - (f) ensure that the English language is used for all dangerous goods transport documents.

PART IV : TRAINING

1. The shipper, and any agent thereof, shall ensure that before a consignment of munitions of war or dangerous goods is offered by him for carriage by air, all persons involved in its preparation have received initial and recurrent dangerous goods training as specified in the Technical Instructions, to enable them to carry out their responsibilities with regard to the carriage of munitions of war or dangerous goods by air.
2.
 - (1) The operator of a Singapore aircraft or a shipper, or any agent of either of them shall —
 - (a) establish a programme for initial and recurrent dangerous goods training in accordance with the requirements specified in the Technical Instructions;
 - (b) ensure that all relevant staff involved in the carriage of passengers or cargo by air receive initial and recurrent dangerous goods training in accordance with that programme; and
 - (c) maintain records of such training as specified in paragraph 4.2 of the Technical Instructions.

- (2) The operator of a Singapore aircraft shall submit the programme for initial and recurrent dangerous goods training it has established to the Chief Executive for approval, which may be granted subject to such conditions as the Chief Executive thinks fit.

PART V : DOCUMENTS AND RECORDS, ENFORCEMENT POWERS AND GENERAL

1.

- (1) The operator of any aircraft carrying munitions of war or dangerous goods as cargo shall ensure that a copy of the dangerous goods transport document required by paragraph 1(a) of Part II of this Schedule and the written information to the pilot-in-command required by paragraph 4(2) of Part II of this Schedule are retained at a readily accessible location until after the full period of the flight on which the munitions of war or dangerous goods were carried.
- (2) The operator of any aircraft on which munitions of war or dangerous goods are carried shall preserve for not less than 3 months —
- (a) any dangerous goods transport document or other document in respect of munitions of war or dangerous goods which has been furnished to him by the shipper in accordance with paragraph 1(a) of Part II of this Schedule;
 - (b) the record of any acceptance check list completed in accordance with paragraph 2 of Part II of this Schedule; and
 - (c) the written information to the pilot-in-command as required by paragraph 4(2) of Part II of this Schedule.
- (3) The record referred to in sub-paragraph (2)(b) may be in a legible or a non-legible form so long as the recording is capable of being reproduced in a legible form.

2.

- (1) The operator of any aircraft on which munitions of war or dangerous goods are to be or have been carried and any agent thereof shall, within a reasonable time after being requested so to do by an authorised person, cause to be produced to that person such of the following documents as may have been requested by that person:
- (a) the munitions of war permit granted under paragraph 50C(3) or the dangerous goods permit granted under paragraph 50D(3);
 - (b) the dangerous goods transport document or other document in respect of any munitions of war or dangerous goods, referred to in paragraph 1(a) of Part II of this Schedule;
 - (c) the completed acceptance check list in a legible form in respect of any munitions of war or dangerous goods, referred to in paragraph 2 of Part II of this Schedule; and
 - (d) a copy of the written information provided to the pilot-in-command of the aircraft in respect of any dangerous goods, referred to in paragraph 4(2) of Part II of this Schedule.
- (2) The aircraft operator or shipper, or any agent of either of them, shall, within a reasonable time after being requested so to do by an authorised person, cause to be produced to that person any document which relates to goods which the authorised person has reasonable grounds to suspect may be munitions of war or dangerous goods in respect of which the provisions of Part VB of this Order have not been complied with.

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