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S.I. 2011 No. 2

Civil Aviation Act
(Act 2004-18)

CIVIL AVIATION (INSTRUMENTS AND EQUIPMENT) (AMENDMENT) REGULATIONS, 2011

The Minister, in exercise of the powers conferred on him by section 10(2) of the *Civil Aviation Act,* makes the following Regulations:

1. These Regulations may be cited as the *Civil Aviation (Instruments and Equipment) (Amendment) Regulations, 2011.*

2. Regulation 2 of the *Civil Aviation (Instruments and Equipment Regulations, 2007,* in these Regulations referred to as the principal regulations, is amended by inserting the following definitions in their appropriate alphabetical order: S.I. 2007 No. 178.

""aircraft operating manual" means a manual that is acceptable to the State of the Operator and contains normal, abnormal and emergency procedures, checklists, limitations, performance information, details of aircraft systems and other material which is relevant to the operation of the aircraft;

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

"continuing airworthiness" means the set of processes by which an aircraft, aircraft engine, propeller or part complies with the applicable airworthiness requirements and remains in a condition that is safe for operation throughout its operating life;

"engine" means a unit used or intended to be used for aircraft propulsion and consists of at least those components and equipment necessary for the functioning and control of the aircraft but excludes the propellers and rotors;

"enhanced vision system (EVS)" means a system which displays electronic real-time images of the external scene which is achieved through the use of image sensors;

"flight safety document system" means a set of inter-related documentation that is established by the operator by compiling and organising the information that is necessary for flight and ground operations and comprising as a minimum the operations manual and the operators maintenance control manual;

"head-up display (HVD)" means a display system that represents flight information into the pilots forward external field of view;".

3. Regulation 13 of the principal regulations is amended

(a) by deleting paragraph (4) and substituting the following:

"(4) Where an operator is conducting operations in an aeroplane in defined portions of airspace based on a Regional Air Navigation Agreement and where a Reduced Vertical Separation Minimum of 1000 feet is applied between FL290 and FL410, he shall ensure that the aeroplane

(a) has the required equipment that is capable of

(i) indicating to the flight crew the flight level being flown;

(ii) automatically maintaining a selected flight level;

(iii) automatically reporting pressure-altitude;

(iv) providing an alert at a maximum threshold of plus or minus 300 feet to the flight crew when a deviation occurs from the selected flight level;

(b) is authorised by the Director for operations in the airspace concerned; and

(c) has demonstrated a vertical navigation performance in accordance with the Instrument and Equipment Standards.";

(b) by inserting immediately after paragraph (4) the following:

"(5) An operator prior to receiving a Reduced Vertical Separation Minimum approval, shall satisfy the Director that

(a) the vertical navigation performance capability of the aeroplane satisfies the altimetry system performance requirements for the operations in Reduced Vertical Separation Minimum airspace;

(b) the operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes; and

(c) the operator has instituted appropriate flight crew procedures for operations in Reduced Vertical Separation Minimum airspace.

(6) An operator shall ensure that, in respect of those aeroplanes authorised to operate in Reduced Vertical Separation Minima airspace, adequate provisions exist for:

(a) receiving the reports of height-keeping performance issued by monitoring agencies; and

(b) taking immediate corrective action for individual aircraft or aircraft type groups identified in such reports as not complying with the height-keeping requirements for operation in airspace where Reduced Vertical Separation Minima is applied.

(7) An operator who has been issued a Reduced Vertical Separation Minima, approval by the Director, shall ensure that a minimum of two aircraft of each aircraft type grouping of the operator have their height-keeping performance monitored, at least once every two years or within intervals of 1000 flight hours per aeroplane, whichever period is longer.

(8) Where an operator has an aircraft type grouping that consists of a single aircraft, the monitoring of the height keeping performance shall be carried out at intervals specified by the Director.".

4. Regulation 15 of the principal Regulations is amended by inserting immediately after paragraph (7) the following:

"(8) For flights in defined portions of airspace or on routes where a Required Communication Performance (RCP) type has been prescribed, an aeroplane shall, in addition to the requirements specified in paragraph (2), be

(a) provided with communication equipment which will enable it to operate in accordance with the prescribed Required Communication Performance (RCP) type; and

(b) authorised by the Director for operations in that airspace.

(9) In this Regulation, "Required Communication Performance (RCP) type" means a label that represents the values assigned to RCP parameters for communication transactions time, continuity availability and integrity.".

5. The principal Regulations are amended by deleting regulation 29 and substituting the following:

"Flight recorder system requirements.

29. (1) No operator shall conduct operations in an aircraft in Barbados unless the aircraft is equipped with the applicable flight recorder system specified for such aircraft under this Regulation.

(2) Every operator of an aircraft referred to in paragraph (1) shall ensure that the aircraft is equipped with a crash protected flight recorder system which shall consist of:

(a) a flight data recorder (FDR) system;

(b) a cockpit voice recorder;

(c) an airborne image recorder (AIR) system; and

(d) a data link recorder (DLR) system.

(3) In a crash protected flight recorder system, information from the airborne image recorder and the data link recorder may be recorded either on the flight data recorder or the cockpit voice recorder.

(4) Every operator of an aircraft referred to in paragraph (1) that carries a lightweight flight recorder system shall ensure that the recorder system shall be comprised of:

(a) an aircraft data recording system (ADRS);

(b) a cockpit audio recording system (CARS);

(c) an airborne image recording system (AIRS); and

(d) a data link recording system (DLRS).

(5) In a lightweight flight recorder system, information from the airborne image recording system and the data link recording system may be recorded on either the cockpit audio recording system or the aircraft data recording system.

(6) An operator referred to in paragraph (1) shall ensure that the flight recorder system in an aircraft

(a) is constructed, located and installed on the aircraft so as to provide maximum protection for the recordings to ensure that the recorded information is preserved, recovered and transcribed;

(b) is calibrated, where required by the Director;

(c) meets the specifications approved or accepted by the Director for protection from fire and destruction as a result of a crash; and

(d) is not switched off or disabled during flight time.

(7) An operator shall ensure that where an aircraft accident or incident occurs, the flight recorder system on board the aircraft is de-activated by the pilot in command upon completion of flight time so as to preserve data.

(8) No person shall re-activate a flight recorder system under paragraph (7) before the system is examined and approval has been granted to re-activate the system by the authority responsible for the investigation of the aircraft accident or incident.

(9) An operator of an aircraft involved in an accident or incident shall comply with the instructions of the authority responsible for investigating the accident or incident in the State conducting the investigation where, after giving due regard to the seriousness of the aircaft accident or incident and the circumstances, the authority responsible for investigating the accident or incident requires the operator to remove the cockpit voice recorder and the flight data recorder units from the aircraft.

(10) The pilot in command of an aircraft involved in an accident or incident specified in paragraph (7) shall ensure the preservation of

(a) all related flight recorder records; and

(b) the associated flight recorders

and shall retain them in safe custody pending their disposition by the authority responsible for investigating the accident or incident.

(11) An operator of an aircraft shall ensure that the operational checks and evaluations of recordings from flight data recorder and cockpit voice recorder systems are conducted once every 12 months to ensure the continued serviceability of the recorders.

(12) An operator of an aircraft shall ensure that where a flight recorder system utilizes a combination of both a flight data recorder and a cockpit voice recorder contained in a single unit to meet the flight recorder equipment requirements, the combination of recorders shall be installed in accordance with these regulations.

(13) An operator shall ensure when conducting operations on an aeroplane of a maximum certificated take-off mass of over 1500 kg, for which the type certificate is first issued on or after 1 January, 2016, and which is required to be equipped with both a cockpit voice recorder and a flight data recorder, that the aeroplane is equipped with two combination recorders.

(14) An operator shall ensure that one of the flight recorders mentioned in paragraph (13) is located as close to the cockpit as practicable and the other recorder is located as far aft as is practicable.

(15) In order to facilitate the location and indentification of the cockpit voice recorder and the flight data recorder units of the flight recorder system referred to in paragraph (1), where and aircraft incident or accident occurs, an operator shall ensure that the cockpit voice recorder and flight data recorder units

(a) are either bright orange or bright yellow in colour;

(b) have reflective tape affixed to the external surface to facilitate their location under water; and

(c) have an approved underwater locating device on or adjacent to each unit, which is secured in such a manner that it is not likely to be separated during a crash impact.

(16) All flight recorder systems shall meet the specifications contained in the Instruments and Equipment Standards.".

6. Regulation 30 of the principal Regulations is amended

(a) in paragraph (1)*(b)* by deleting the words "3180" and substituting the words "3175";

(b) by deleting paragraph (2) and substituting the following:

"(2) No air operator shall operate

(a) a turbine-engined aeroplane for which the individual certificate of airworthiness was first issued before 1 January, 1987, with a maximum certificated take-off mass of over 27000 kg that is of a type in respect of which the prototype was certificated after 20 September, 1969; or

(b) a helicopter with a maximum certified take-off mass of over 7000 kg, for which an individual certificate of airworthiness was first issued before 1 January, 1987;

unless the aeroplane or helicopter is equipped with a cockpit voice recorder system installed for the recording of the aural environment on the cockpit during flight time.";

(c) by inserting immmediately after paragraph (3) the following:

"(4) No operator shall operate a turbine-engined aeroplane for which a type certificate is first issued on or after 1 January, 2016 and that is required to be operated by more than one pilot, unless it is equipped with either a cockpit voice recorder system or a cockpit audio recording system.

(5) No operator shall use a magnetic tape and wire cockpit voice recorder after 31 December, 2015.".

7. The principal Regulations are renumbered by renumbering regulation 31 as regulation 31 (1) and by inserting immediately after paragraph (1) the following:

"(2) An operator shall ensure that from 1 January, 2016 all cockpit voice recorders are capable of retaining the information recorded during at least the last two hours of their operations.".

8. Regulation 32 of the principal Regulations is amended

(a) by deleting paragraphs (1) and (2) and substituting the following:

"(1) An operator shall ensure that an aeroplane for which the individual certificate of airworthiness is first issued on or after 1 January, 2016 and which

(a) utilizes any of the data link communication applications listed in the Instruments and Equipment Standards; and

(b) is required to carry a cockpit voice recorder

shall record on a flight recorder the data link communications messages.

(2) An operator shall ensure that an aeroplane which is modified on or after 1 January, 2016 to install and utilize any of the data link communication applications listed in the Instruments and Equipment Standards and is required to carry a cockpit voice recorder shall record on a flight recorder the data link communication messages."; and

(b) deleting paragraph (4).

9. Regulation 33 of the principal regulations is amended

(a) by deleting paragraph (1)*(a)* and substituting the following:

"*(a)* the aeroplane flight path, speed, altitude, engine power

(i) configuration and operation specified in the Instruments and Equipment Standards for Types I and IA flight data recorders;

(ii) configuration of lift and drag devices specified in the Instruments and Equipment Standards for Types II and IIA flight data recorders;";

(b) in paragraph (7)(*b*) by deleting the word "2700" and substituting the word "2730";

(c) in paragraph (7)(*c*) by deleting the word "3180" and substituting the word "3175";

(d) by deleting paragraph (8) and substituting the following:

"(8) An operator shall ensure that when operating a turbine-engined aeroplane of a maximum certificated take-off mass of 5700 kg or less for which a type certificate is first issued on or after 1 January, 2016 the aeroplane shall be equipped with

(a) a Type II flight data recorder;

(b) a Class C airborne image recording system capable of recording flight paths and speed parameters displayed to the pilots; or

(c) an aircraft data recording system that is capable of recording the essential parameters defined in the Instruments and Equipment Standards.

(9) An operator shall ensure that, when conducting operations in an aeroplane which is required to record normal acceleration, lateral acceleration and longitudinal acceleration for which a type certificate is first issued on or after 1 January, 2016, the aeroplane is required to be fitted with a flight data recorder which will record those parameters at a maximum sampling and recording interval of 0.0625 seconds.

(10) An operator shall ensure that, when conducting operations in an aeroplane which is required to record pilot input or control surface position of primary controls such as pitch, roll and yaw for which a type certificate is first issued on or after 1 January, 2016, the aeroplane is required to be fitted with a flight data recorder which will record those parameters at a maximum sampling and recording interval of 0.125 seconds.

(11) No operator shall use magnetic tape flight data recorders on his aircraft after 1 January, 2016.

(12) No operator shall use on his aircraft a flight data recorder system which utilizes

(a) engraving metal foil;

(b) analogue frequency modulation; or

(c) photographic film.".

10. The principal Regulations are amended by deleting regulation 45 and substituting the following:

"First-aid, medical and universal precaution kits.

45. (1) No air operator shall conduct passenger carrying operations on an aircraft unless the aircraft is equipped with accessible first-aid kits.

(2) Where an air operator conducts passenger carrying operations on an aeroplane, required to carry cabin crew as a part of the operating crew of the aeroplane, that air operator shall equip that aircraft with one accessible universal precaution kit.

(3) Where an air operator conducts passenger carrying operations on an aeroplane, required to carry cabin crew as a part of the operating crew of the aeroplane and that aeroplane is authorised to carry more than 250 passengers, that air operator shall equip that aeroplane with two accessible universal precaution kits.

(4) Where an air operator operates an aeroplane which is authorised to carry 100 passengers on a sector length that has a flight time of more than two hours, that air operator shall equip the aeroplane with one accessible medical kit.

(5) First-aid kits, medical kits and universal precaution kits shall be constituted in the manner specified by the Instruments and Equipment Standards."

11. Regulation 46 of the principal Regulations is amended by deleting paragraph (8) and substituting the following:

"(8) When a pressurised aeroplane is on a flight referred to in paragraph (7) and the flight altitude is more than 25000 feet, and the pressurised aeroplane cannot descend safely within 4 minutes to a flight altitude of 13000 feet, there shall be on board a supply of no less than 10 minutes of breathing oxygen for the occupants of the passenger compartment of the aeroplane."

12. Regulation 52 of the principal Regulations is amended by deleting paragraph (2) and substituting the following:

"(2) No operator shall conduct operations on an aeroplane authorised to carry more than 19 passengers for which the individual certificate of airworthiness was first issued after the 1st day of July, 2008 unless the aeroplane is equipped with at least two Emergency Locator Transmitters, one of which shall be automatic."

13. The principal Regulations are amended by deleting regulation 71 and substituting the following:

"Airborne Collision Avoidance System II (ACAS II).

71. (1) No operator shall conduct operations in a turbine-engined aeroplane of a maximum certified take-off mass in excess of 5700 kilogrammes and having a maximum approved passenger seating configuration of more than 19 passengers, unless the turbine-engined aeroplane is equipped with an Airborne Collision Avoidance System II (ACAS II).

(2) An air operator shall, to avoid unnecessary Airborne Collision Avoidance System II (ACAS II) resolution advisories, make a pilot aware of another aircraft at or approaching the altitude or flight level and shall specify the procedures by which an aeroplane climbs or descends to an assigned altitude or flight level, especially where an autopilot is engaged, unless otherwise specified in an air traffic control instruction.

(3) Where an air operator under paragraph (2) specifies the procedures by which an aeroplane climbs or descends to an assigned altitude or flight level, he shall specify those procedures throughout the last 300 metres or 1000 feet of the climb or descent and the pilot may cause the aeroplane to climb or descend at a rate less than 8 metres per second or 1500 feet per minute depending on the instrumentation available.

(5) In this Regulation,

"Airborne Collision Avoidance System" or "ACAS" means an aircraft system based on Secondary Surveillance Radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with Secondary Surveillance Radar (SSR) transponders;

"Airborne Collision Avoidance System II (ACAS II)" means an ACAS which provides vertical resolution in addition to traffic advisories.".

14. The principal Regulations are amended by deleting regulation 72 and substituting the following:

"Presure reporting transponder.

72. (1) No operator shall operate an aircraft unless the aircraft is equipped with a pressure altitude reporting transponder.

(2) The Director may prescribe the manner in which a pressure altitude reporting transponder shall operate.

(3) An aeroplane for which a certificate of airworthiness is issued after the 1st day of January, 2009, shall be equipped with a data source that provides pressure altitude information with a resolution of 7.62 metres (25 feet) or better.

(4) After the 1st day of January, 2012, all aeroplanes shall be equipped with a data source that provides pressure altitude information with a resolution of 7.62 metres (25 feet) or better.".

15. The principal Regulations are amended by inserting immediately after regulation 72 the following:

"Electronic navigation data management.

72.A (1) An operator shall not employ electronic navigation data products that have been processed for application in the air and on the ground unless the Director has approved the operator's procedures for ensuring that the process applied and the product delivered have met acceptable standards of integrity, and that the products are compatible with the intended functions of the equipment that will use them.

(2) Where an operator employs electronic navigation data products the operator shall

(a) continuously monitor the process and the product to ensure that the standards are maintained; and

(b) implement procedures that ensure timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.

"Aircraft equipped with head-up displays and enhanced vision systems.

72B. An operator shall, before operating an aircraft that is equipped with head-up displays or enhanced vision systems to gain operational benefit, ensure that he has obtained the approval of the Director for the use of the aircraft in this manner."

Made by the Minister this 14th day of January, 2011.

EDWIN G. HUTSON
Minister responsible for Civil Aviation.