

PART VII

FLIGHT RECORDERS

28. This Part prescribes the minimum requirements for flight recorder systems installed on aircraft operating in Trinidad and Tobago.

Applicability
of Part VII

Flight Recorder System Requirements

29. (1) An operator shall not conduct operations in an aircraft in Trinidad and Tobago unless such aircraft is equipped with the applicable flight recorder system specified for such aircraft under this regulation.

Flight
recorders
system
requirements

(2) An operator shall ensure that the flight recorder system required under subregulation (1) shall—

(a) be comprised of, where applicable—

- (i) a flight data recorder system;
- (ii) a cockpit voice recorder system; or
- (iii) both;

(b) be constructed, located and installed on such aircraft as to provide maximum practical protection for the recordings to ensure that the recorded information can be preserved, recovered and transcribed;

(c) be calibrated where required by the Authority;

(d) meet the specifications approved or accepted by the Authority for protection from fire and destruction as a result of a crash; and

(e) not be switched off or disabled during flight time.

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

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

(5) A flight recorder system under subregulation (4) shall not be re-activated before the examination of such flight recorder system and approval has been granted to re-activate the flight recorder system by the authority responsible for the investigation of the aircraft accident or incident.

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

(7) The pilot in command of an aircraft involved in an accident or incident specified in subregulation (4), in general aviation operations shall ensure the preservation of all related flight recorder records, and if necessary the associated flight recorders, and their retention in safe custody pending their disposition by the authority responsible for investigating the accident or incident.

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

(9) In order to facilitate the location and identification of the cockpit voice recorder and flight data recorder units of a flight recorder system required under subregulation (1) where an aircraft incident or accident occurs, an operator shall ensure such 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.

Cockpit Voice Recorder System Requirements

Cockpit Voice
recorder
system
requirements

30. (1) An operator shall not conduct operations in-
- (a) an aeroplane with a maximum certified take-off mass of over five thousand seven hundred kilogrammes for which a Certificate of Airworthiness was first issue after 31st December 1986;
 - (b) a helicopter with a maximum certified take-off mass of over three thousand one hundred and seventy- five kilogrammes for which a Certified of Airworthiness was first issued after 31st December, 1986;
 - (c) a multi-engine turbine – powered aeroplane with a maximum certified take-off mass of five thousand seven hundred and less for which an individual Certificate of Airworthiness was first issued after 31st December, 1989;

- (d) a turbine-engine aeroplane with a maximum certified take-off mass of over five thousand seven hundred kilogrammes for which the prototype was certified by the State of manufacture after 30th September, 1969 and for which the individual Certificate of Airworthiness was first issued before 1st January, 1987; or
- (e) a helicopter with a maximum certified take-off mass of over seven thousand kilogrammes for which an individual Certificate of Airworthiness was first issued before 1st January, 1987,

unless such aircraft has a cockpit voice recorder system installed for the recording of the aural environment in the cockpit during flight time.

(3) Where a helicopter under this regulation, is not equipped with a flight data recorder system, the operator or air operator, as applicable, shall ensure that at least the main rotor speed is recorded on one track of the cockpit voice recorder system.

Duration of Recordings of a Cockpit Voice Recorder System

31. An operator shall ensure that a Cockpit Voice Recorder System installed in an aircraft on which he conducts operations is capable of recording information during the last thirty minutes of operation of the aircraft, except where a cockpit voice recorder system is installed in—

Duration of recording of cockpit voice recorder system

- (a) an aeroplane with a maximum certified take-off mass of over five thousand, seven hundred kilogrammes for which the individual Certificate of Airworthiness was first issued after 1st January, 2003; and
- (b) a helicopter for which the individual Certificate of Airworthiness was first issued after 1st January, 2003, shall be capable of recording information of the operations during at least the last two hours of operation.

Recording of Data Link Communication

32. (1) An operator shall ensure that an aircraft in which he conducts operations and for which an individual Certificate of Airworthiness is first issued after 1st January, 2005, which utilizes data link communications has a cockpit voice recorder, records on a flight recorder system all data link communications to and from the aircraft.

Recording of data link communication

(2) An operator shall ensure that from 1st January, 2007, that an aircraft in which he conducts operations, which utilizes data link communications and has a cockpit voice recorder, records on a flight recorder system all data link communications to and from the aircraft.

(3) An operator under subregulations (1) and (2) shall ensure that the minimum recording duration is equal to the duration of the cockpit voice recorder system, and is correlated with the recorded cockpit audio.

(4) An operator shall ensure that where a data link communication specified in subregulation (1) and (2), is installed on his aircraft, sufficient information can be recorded on the flight recorder system to derive the content of the data link communication message and whenever practical, the time the message was displayed to or generated by the crew.

(5) Whenever time is utilized in the application of data link communications, it shall be accurate to within one second of co-ordinated universal time.

Requirements for Flight Data Recorder System

Requirements for flight data recorder system

33. (1) An operator shall ensure that a flight data recorder system required by these Regulations records the parameters required to determine accurately—

Part A of Schedule 2

(a) the aeroplane flight path, speed, attitude, engine power, configuration and operations specified in Part A of Schedule 2 for a Type I Flight Data Recorder;

Part B of Schedule 2

(b) the aeroplane flight path, speed, attitude, engine power, configuration and operations specified in Part B of Schedule 2 for a Type IA Flight Data Recorder;

Part A of Schedule 2

(c) the aeroplane flight path, speed, attitude, engine power and configuration of lift and drag devices specified in Part A of Schedule 2 for a Types II and IIA Flight Data Recorder;

Part C of Schedule 2

(d) the helicopter flight path, speed, attitude, engine power and operations specified in Part C of Schedule 2 for a Type IV Flight Data Recorder;

Part D of Schedule 2

(e) the helicopter flight path, speed, attitude, engine power, configuration and operations specified in Part D of Schedule 2 for a Type IVA Flight Data Recorder; or

Part C of Schedule 2

(f) the helicopter flight path, speed, attitude and engine power specified in Part C of Schedule 2 for a Type V Flight Data Recorder.

(2) An operator shall ensure when conducting operations on an aeroplane for which the individual Certificate of Airworthiness—

(a) was first issued after 31st December, 1988 and with a maximum certified take-off mass of over twenty-seven thousand kilogrammes such aeroplane is equipped with a Type I Flight Data Recorder;

(b) is first issued after 1st January, 2005 and with a maximum certified take-off mass of over five thousand, seven hundred kilogrammes such aeroplane is equipped with a Type IA Flight Data Recorder; and

(c) was first issued after 31st December, 1988 and with a maximum certified take-off mass of over five thousand, seven hundred kilogrammes up to and including twenty seven thousand kilogrammes such aeroplane is equipped with a Type II Flight Data Recorder.

(3) An air operator shall ensure when conducting operations in a turbine engined aeroplane with a maximum certified take-off mass of over five thousand, seven hundred kilogrammes and for which a Certificate of Airworthiness was first issued—

- (a) after 31st December, 1986 but before 1st January, 1989, such aeroplane is equipped with a flight data recorder to record the parameters required to determine accurately time, altitude, airspeed, normal acceleration and heading and such additional parameters as are necessary to determine pitch attitude, roll attitude, radio transmission keying and power on each engine;
- (b) before 1st January, 1987, such aeroplane is equipped with a flight data recorder to record time, altitude, airspeed, normal acceleration and heading.

(4) Notwithstanding subregulation (3), an air operator shall ensure when conducting operations in a turbine engined aeroplane with a maximum certified take-off mass of over twenty-seven thousand kilogrammes that is of a type of which the prototype was certified by the State of Design after 30th September, 1969 and the individual Certificate of Airworthiness was issued after 31st December, 1986 but before 1st January, 1989, shall be equipped with a Type II flight data recorder system.

(5) An air operator shall ensure that when conducting operations in a turbine engined aeroplane with a maximum certified take-off mass of over twenty seven thousand kilogrammes that is of a type for which its prototype was certified by the State of Design of the aeroplane after 30th September, 1969 for which an individual Certificate of Airworthiness was issued before 1st January, 1987, such turbine engined aeroplane is equipped with a flight data recorder system to record in addition to time, altitude, airspeed, normal acceleration and heading, such parameters as are necessary to meet the objectives of determining—

- (a) the attitude of the aeroplane in achieving the flight path of such aeroplane; and
- (b) the basic forces acting upon the aeroplane resulting in the achieved flight path and the origin of such basic forces.

(6) An air operator shall ensure that when conducting operations in a multi-engined turbine-powered aeroplane with a maximum certified take-off mass of five thousand seven hundred kilogrammes or less and which was first issued a Certificate of Airworthiness after 31st December, 1989, such multi-engined turbine engined aeroplane is equipped with a Type IIA flight data recorder.

(7) An operator shall ensure that when conducting operations on a helicopter for which a Certificate of Airworthiness was first issued—

- (a) after 31st December, 1988 and with a maximum certified take-off mass of over seven thousand kilogrammes such helicopter is equipped with a Type IV flight data recorder;
- (b) after 1st January, 2005 and with a maximum certified takeoff mass of over three thousand, one hundred and seventy-five kilogrammes such helicopter is equipped with a Type IVA flight data recorder.

(8) An operator shall not use on his aircraft a flight data recorder system which utilizes—

- (a) engraving metal foil;
- (b) analogue frequency modulation; or
- (c) photographic film.

Alternative Flight Recorder System

Alternative
flight
recorder
system

34. (1) An aeroplane with a maximum certified take-off mass of over five thousand, seven hundred kilogrammes and which is required to be equipped with a flight data recorder unit and a cockpit voice recorder unit, may alternatively be equipped with two combined cockpit voice recorder and flight data recorder units.

(2) A multi-engined turbine-engined aeroplane with a maximum certified take-off mass of five thousand, seven hundred kilogrammes or less, which is required to be equipped with—

- (a) a flight data recorder unit or a cockpit voice recorder unit; or
- (b) a flight data recorder unit and a cockpit voice recorder unit, may alternatively be equipped with a single combined cockpit voice recorder and flight data recorder unit.

(3) A helicopter with a maximum certified take-off mass over two thousand, seven hundred kilogrammes which is required to be equipped with—

- (a) a flight data recorder unit or a cockpit voice recorder unit; or
- (b) a flight data recorder unit and a cockpit voice recorder unit, may alternatively be equipped with a single combined cockpit voice recorder and flight data recorder unit.

Duration of Recordings of a Flight Data Recorder System

35. An operator shall ensure that a flight data recorder system installed in his aircraft in which he conducts operations is capable of retaining recorded information for the duration specified for such flight data recorder set out in Part E of Schedule 2.

Duration of recordings of flight data recorder system

Part E of Schedule 2

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