IMPLEMENTING STANDARD 6

Civil Aviation (Instruments and Equipment) Regulations 2007 Implementing Standards

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IMPLEMENTING STANDARD 6

Civil Aviation (Instruments and Equipment) Regulations 2007

Standard NO: - 6.1- **CATEGORY II OPERATIONS: INSTRUMENTS AND EQUIPMENT- REQUIREMENTS, APPROVAL AND MAINTENANCE**
Regulation 12

Standard NO: - 6.1.1- **Instruments And Equipment For Category II Operations**

The instruments and equipment listed in this subsection shall be installed, approved and maintained in accordance these standards for each aircraft operated in a Category II operation:

(a) Group I is comprised of the following equipment and this equipment must be inspected both within three calendar months of the previous inspection and must also have a bench inspection within 12 months of the previous bench inspection using procedures contained in the approved maintenance program.

(i) Two localizer and glide slope receiving systems.

Note: Each system shall provide a basic ILS display and each side of the instrument panel must have a basic ILS display. However, a single localizer antenna and a single glide slope antenna may be used.

(ii) A communications system that does not affect the operation of at least one of the ILS systems.

(iii) A marker beacon receiver that provides distinctive aural and visual indications of the outer and the middle markers.

(iv) Two gyroscopic pitch and bank indicating systems.

(v) Two gyroscopic direction indicating systems.

(vi) Two airspeed indicators.

(vii) Two sensitive altimeters adjustable for barometric pressure, having markings at 20 foot intervals and each having a placarded correction for altimeter scale error and for the wheel height of the aircraft.

(viii) One self-monitoring radio altimeter with dual display.

(ix) Two vertical speed indicators.

(x) A flight control guidance system that consists of either an automatic approach coupler or a flight director system.

Note: A flight director system must display computed information as steering command in relation to an ILS localizer and, on the same instrument, either computed information as pitch command in relation to an ILS glide slope or basic ILS glide slope information. An automatic approach coupler must provide at least automatic steering in relation to an ILS localizer. The flight control guidance system may be operated from one of the receiving systems required by paragraph (a)(1)(i).

(xi) For Category II operations with decision heights below 150 feet a radio altimeter is required.

(b) Group II is comprised of the following equipment and this equipment which, with the exception of the static system, does not require special maintenance procedures other than those necessary to retain the original approval condition. Group II equipment must be inspected within 12 months of the previous inspection using procedures contained in the approved maintenance program.

(i) Warning systems for immediate detection by the pilot of system faults in items (a)(1)(i), (a)(1)(iv), (a)(1)(v) and (a)(1)(ix), of Group I

(ii) Dual controls.

(iii) An externally vented static pressure system with an alternate static pressure source.

(iv) A windshield wiper or equivalent means of providing adequate cockpit visibility for a safe visual transition by either pilot to touchdown and rollout.

(v) A heat source for each airspeed system pitot tube installed or an equivalent means of preventing malfunctioning due to icing of the pitot system.

***Standard NO: - 6.1.2*. Instruments and Equipment Approval and Maintenance**

1.0 General

1.1 The instruments and equipment required by Regulation 12 shall be approved as provided in this implementing standard before being used in Category II operations. Before presenting an aircraft for approval of the instruments and equipment, it must be shown that since the beginning of the 12th month before the date of submission—

(a) the ILS localizer and glide slope equipment was bench checked according to the manufacturer's instructions and found to meet those standards specified in Radio Technical Commission for Aeronautics Paper 23-63/DO-177 dated March 14, 1963, "Standards Adjustment Criteria for Airborne Localizer and Glide slope Receivers."

(b) the altimeters and the static pressure systems were tested and inspected; and

(c) all other instruments and items of equipment specified in Regulation 12 that are listed in the proposed maintenance programme were bench checked and found to meet the manufacturer's specifications.

2.0 Flight Control

2.1 All components of the flight control guidance system shall be approved as installed by the evaluation programme specified in paragraph 5 if they have not been approved for Category III operations under applicable type or supplemental type certification procedures. In addition, subsequent changes to make, model, or design of the components must be approved under this paragraph. Related systems or devices, such as the autothrottle and computed missed approach guidance system, shall be approved in the same manner if they are to be used for Category II operations.

3.0 Radio Altimeter

3.1 A radio altimeter must meet the following performance criteria of this paragraph for original approval and after each subsequent alteration—

(a) it shall display to the flight crew clearly and positively the wheel height of the main landing gear above the terrain;

(b) it shall display wheel height above the terrain to an accuracy of ±5 feet or 5 percent, whichever is greater, under the following conditions:

(i) pitch angles of zero to ±5° about the mean approach attitude;

(ii) roll angles of zero to 20° in either direction;

(iii) forward velocities from minimum approach speed up to 200 knots;

and

(iv) sink rates from zero to 15 feet per second at altitudes from 100 to 200 feet;

(c) over level ground, it must track the actual altitude of the aircraft without significant lag or oscillation;

(d) with the aircraft at an altitude of 200 feet or less, any abrupt change in terrain representing no more than 10 per cent of the aircraft's altitude must not cause the altimeter to unlock, and indicator response to such changes must not exceed 0.1 seconds and, in addition, if the system unlocks for greater changes, it must reacquire the signal in less than 1 second;

(e) systems that contain a push to test feature must test the entire system (with or without an antenna) at a simulated altitude of less than 500 feet; and

(f) the system must provide to the flight crew a positive failure warning display any time there is a loss of power or an absence of ground return signals within the designed range of operating altitudes;

4.0 Other Instruments and Equipment

4.1 All other instruments and items of equipment required by Regulation 12 shall be capable of performing as necessary for Category II operations. Approval is also required after each subsequent alteration to these instruments and items of equipment.

5.0 Evaluation programme.

(a) *Application:* Approval by evaluation is requested as a part of the application for approval of the Category II manual;

(b) *Demonstrations:* Unless otherwise authorized by the Director, the evaluation programme for each aircraft requires the demonstrations specified in this paragraph. At least 50 ILS approaches shall be flown with at least five approaches on each of three different ILS facilities and no more than one half of the total approaches on any one ILS facility. All approaches shall be flown under simulated instrument conditions to a 100

foot decision height and 90 per cent of the total approaches made shall be successful. A successful approach is one in which—

(i) at the 100 foot decision height, the indicated airspeed and heading are satisfactory for a normal flare and landing (speed must be ±5 knots of programmed airspeed, but may not be less than computed threshold speed if autothrottles are used);

(ii) the aircraft at the 100 foot decision height, is positioned so that the cockpit is within, and tracking so as to remain within, the lateral confines of the runway extended;

(iii) deviation from glide slope after leaving the outer marker does not exceed 50 per cent of full-scale deflection as displayed on the ILS indicator;

(iv) no unusual roughness or excessive attitude changes occur after leaving the middle marker; and

(v) in the case of an aircraft equipped with an approach coupler, the aircraft is sufficiently in trim when the approach coupler is disconnected at the decision height to allow for the continuation of a normal approach and landing;

(c) *Records:* During the evaluation programme the following records of information shall be maintained by the applicant for the aircraft with respect to each approach and made available to the Director upon request:

(i) each deficiency in airborne instruments and equipment that prevented the initiation of an approach;

(ii) the reasons for discontinuing an approach, including the altitude above the runway at which it was discontinued;

(iii) speed control at the 100 foot DH if auto throttles are used;

(iv) trim condition of the aircraft upon disconnecting the auto coupler with respect to continuation to flare and landing;

(v) position of the aircraft at the middle marker and at the decision height indicated both on a diagram of the basic ILS display and a diagram of the runway extended to the middle marker. Estimated touchdown point shall be indicated on the runway diagram;

(vi) compatibility of flight director with the auto coupler, if applicable;

and

(vii) quality of overall system performance;

(d) *Evaluation:* A final evaluation of the flight control guidance system is made upon successful completion of the demonstrations. If no hazardous tendencies have been displayed or are otherwise known to exist, the system is approved as installed.

6.0 Each maintenance programme for Category II instruments and equipment shall contain the following:

(a) a list of each instrument and item of equipment specified in Regulation 12 that is installed in the aircraft and approved for Category II operations, including the make and model of those specified in Regulation 12;

(b) a schedule that provides for the performance of inspections under subparagraph (e) of this paragraph within 3 months after the date of the previous inspection. The inspection shall be performed by a person authorized by the Civil Aviation (Airworthiness) Regulations, 2007, except that each alternate inspection may be replaced by a functional flight check. This functional flight check shall be performed by a pilot holding a Category II pilot authorization for the type aircraft checked;

(c) a schedule that provides for the performance of bench checks for each listed instrument and item of equipment that is specified in Regulation 12 within 12 months after the date of the previous bench check;

(d) a schedule that provides for the performance of a test and inspection of each static pressure system within twelve months after the date of the previous test and inspection;

(e) the procedures for the performance of the periodic inspections and functional flight checks to determine the ability of each listed instrument and item of equipment specified in Regulation 12 to perform as approved for Category II operations including a procedure for recording functional flight checks;

(f) a procedure for assuring that the pilot is informed of all defects in listed instruments and items of equipment;

(g) a procedure for assuring that the condition of each listed instrument and item of equipment upon which maintenance is performed is at least equal to its Category II approval condition before it is returned to service for Category II operations; and

(h) a procedure for an entry in the maintenance records that shows the date, airport, and reasons for each discontinued Category II operation because of a malfunction of a listed instrument or item of equipment.

7.0 Bench Mark*:* A bench check required by this section shall comply with the following paragraph:

(a) except as specified in paragraph (b) of this subsection, it shall be performed by a certified repair station holding one of the following ratings as appropriate to the equipment checked:

(i) an instrument rating; and
(ii) an avionics rating;

(b) it shall be performed by a certified air operator on aircraft identified in its approved specific operating provisions with the approved authorizations to perform maintenance and approve for return to service its own aircraft maintained under a continuous

maintenance programme under an equivalent system identified in the Civil Aviation (Air Operator Certification and Administration) Regulations, 2007;

(c) it shall consist of removal of an instrument or item of equipment and performance of the following:

(i) a visual inspection for cleanliness, impending failure, and the need for lubrication, repair, or replacement of parts;

(ii) correction of items found by that visual inspection; and

(iii) calibration to at least the manufacturer's specifications unless otherwise specified in the approved Category II manual for the aircraft in which the instrument or item of equipment is installed.

8.0 Extensions

After the completion of one maintenance cycle of 12 months, a request to extend the period for checks, tests, and inspections is approved if it is shown that the performance of particular equipment justifies the requested extension.

Standard NO: - 6.2 **Requirements for Flight Data Recorder System**

Regulation 33 (1) (a) (i) & 33 (1) (a) (iii),

PART A

The following parameters are required to be recorded to satisfy the requirements for a Type I Flight Data Recorder and parameters marked with an asterisk (*) are required to be recorded to satisfy the requirements for Types II and IIA Flight Data Recorders:

(a) time*;
(b) pressure-altitude*;
(c) indicated airspeed*;
(d) heading*;
(e) normal acceleration*;
(f) pitch attitude*;
(g) roll attitude*;
(h) radio transmission keying*;
(i) record sufficient inputs to determine power in each engine*;
(j) trailing edge flap or cockpit control selection*;
(k) leading edge flap or cockpit control selection*;
(l) thrust reverser position*;
(m) ground spoiler or speed brake position*;
(n) outside air temperature*;
(o) autopilot or auto-throttle or Automatic Flight Control System mode and engagement status*;
(p) longitudinal acceleration;
(q) lateral acceleration;
(r) pilot input and or control surface position-primary control (pitch, roll and yaw). (For aeroplanes with conventional control system “or” applies. For aeroplanes with non-mechanical control system “and” applies. In aeroplanes with split surfaces, a suitable combination of inputs is acceptable in lieu of recording each surface separately);
(s) pitch trim position;
(t) radio altitude;
(u) glide path deviation;
(v) localizer deviation;
(w) marker beacon passage;
(x) master warning;
(y) navigation system (1) and (2) frequency selection where signal available in digital form;
(z) Distance Measuring Equipment System 1 and 2 distance where signal is available in digital form recording of latitude and longitude from Inertia Navigation System or other navigation system is a preferred alternative;
(aa) landing gear squat switch status;
(bb) Ground Proximity Warning System;
(cc) angle of attack;
(dd) low pressure warning on each hydraulics system;
(ee) Navigation data and
(ff) landing gear position and landing gear position selector.

Regulation 33 (1) (a) (ii)

PART B

The following parameters are required to be recorded to satisfy the requirements for a Type IA Flight Data Recorder:

Flight path and speed:

(a) pressure altitude;
(b) indicated airspeed or calibrated airspeed;
(c) air-ground status and each landing gear air-ground sensor when practicable;
(d) total or outside air temperature.
(e) heading from the primary flight crew reference;
(f) normal acceleration;
(g) lateral acceleration;
(h) longitudinal acceleration reference from the body axis;
(i) time or relative time count;
(j) navigation data*: drift angle, wind speed, wind direction, latitude and longitude;
(k) groundspeed*; and
(l) radio altitude*.

Attitude:

(a) pitch attitude;
(b) roll attitude;
(c) yaw or sideslip angle*; and
(d) angle of attack*.

Engine power:

(a) engine thrust or power: propulsive thrust or power on each engine, cockpit thrust or power lever position;
(b) thrust reverse status*;
(c) engine thrust command*;
(d) engine thrust target*;
(e) engine bleed valve position*; and
(f) additional engine parameters*: EPR, N1, indicated vibration level, N2, EGT, TLA, fuel flow, fuel cut-off lever position.

Configuration:

(a) pitch trim surface position;
(b) flaps*: trailing edge flap position, cockpit control selection;
(c) slats*: leading edge flap position, cockpit control selection;
(d) landing gear*: landing gear, gear selector position;
(e) yaw trim surface position*;
(f) roll trim surface position*;
(g) cockpit trim control input position pitch*;
(h) cockpit trim control input position roll*;
(i) cockpit trim control input position yaw*;
(j) ground spoiler and speed brake*: ground spoiler position;
(k) ground spoiler selection, speed brake position, and speed brake selection;
(l) de-icing and or anti-icing systems selection*;

(m) hydraulic pressure each system*;
(n) fuel quantity*;
(o) alternate circuit electrical bus status*;
(p) direct circuit electrical bus status*;
(q) auxiliary power unit bleed valve position*; and
(r) computed centre of gravity*.

Operation:

(a) warnings.
(b) primary flight control surface and primary flight control pilot input: pitch axis, roll axis, yaw axis;
(c) marker beacon passage;
(d) each navigation receiver frequency selection;
(e) manual radio transmission keying and cockpit voice recorder or Flight Data Recorder synchronization reference;
(f) autopilot or auto-throttle or Automatic Flight Control System mode and engagement status*;
(g) selected barometric setting*: pilot, first officer;
(h) selected altitude for all pilot selectable modes of operation*;
(i) selected speed for all pilot selectable modes of operation*;
(j) selected Mach for all pilot selectable modes of operation*;
(k) selected vertical speed for all pilot selectable modes of operation*;
(l) selected heading for all pilot selectable modes of operation*;
(m) selected flight path for all pilot selectable modes of operation*: course or desired track, path angle;
(n) selected decision height*;
(o) electronic flight engineer system display format*: pilot, first officer;
(p) multi-function or engine or alerts display format*;
(q) ground proximity warning system Terrain Awareness and Warning System Ground Awareness System status*: selection of terrain display mode including pop-up display status, terrain alerts, both cautions and warnings, and advisories, on or off switch position;
(r) low pressure warning*: hydraulic pressure, pneumatic pressure;
(s) computer failure*;
(t) loss of cabin pressure*;
(u) Traffic Collision Awareness System Airborne Collision Avoidance System*;
(v) ice detection*;
(w) engine warning each engine vibration*;
(x) engine warning each engine over temperature*;
(y) engine warning each engine oil pressure low*;
(z) engine warning each engine over speed*;
(aa) wind shear warning*;
(bb) operational stall protection, stick shaker and pusher activation*;
(cc) all cockpit flight control input forces*: control wheel, control column, rudder pedal cockpit input forces;
(dd) vertical deviation*: Instrument Landing System glide path, Microwave Landing System elevation, Global Navigation System approach path;

(ee) horizontal deviation*: Instrument Landing System localizer, Microwave Landing System azimuth, Global Navigational System approach path;
(ff) distance Measuring Equipment 1 and 2 distances*; and
(gg) primary navigation system reference*: Global Navigational System, Inertia Navigational System, Omni-directional Range or Distance Measuring Equipment, Microwave Landing System, Loran C.

Instrument Landing System:

(a) brakes*: left and right brake pressure, left and right brake pedal position;
(b) date*.
(c) event marker*;
(d) head up display in use*; and
(e) para visual display on*.

Note: The number of parameters to be recorded will depend on aeroplane complexity. Parameters without an (*) are to be recorded regardless of aeroplane complexity.
Those parameters designated by an (*) are to be recorded if an information source for the parameter is used by aeroplane systems and flight crew to operate the aeroplane.

Regulation 33 (b) (i) & 33 (b) (iii)

PART C

The following parameters satisfy the requirements for a Type IV Flight Data Recorder and the parameters marked with an asterisk (*) satisfy the requirements a Type V Flight Data Recorder:

(a) time*;
(b) pressure-altitude*;
(c) indicated airspeed*;
(d) heading*;
(e) normal acceleration*;
(f) pitch attitude*;
(g) roll attitude*;
(h) radio transmission keying*;
(i) record sufficient inputs to determine power in each engine;
(j) main rotor speed*;
(k) pilot input and control surface position-primary controls for collective pitch, longitudinal cyclic pitch. Lateral cyclic pitch, tail rotor pedal*;
(l) low pressure for each hydraulics system*;
(m) outside air temperature*;
(n) autopilot or auto-throttle Automatic Flight Control System mode and engagement status*;
(o) stability augmentation system engagement;
(p) main gearbox oil pressure;
(q) main gearbox oil temperature;
(r) yaw acceleration;
(s) sling load force;
(t) longitudinal acceleration;
(u) lateral acceleration;
(v) radio altitude;
(w) glide path deviation;
(x) localizer deviation;

(y) marker beacon passage;
(z) master Warning;
(aa) NAV 1 and 2 frequency selection where signal is in digital form;
(bb) distance measuring equipment systems 1 and 2 where signal available in digital forms recording latitude and longitude from Inertia Navigation System or other navigation system is a preferred alternative;
(cc) navigation data; and
(dd) landing gear position and gear selector position.

Regulation 33 (b) (ii)
PART D
The following parameters satisfy the requirements for a Type IVA Flight Data Recorder:
Flight path and speed:
(a) pressure altitude;
(b) indicated airspeed;
(c) outside air temperature;
(d) heading;
(e) normal acceleration;
(f) lateral acceleration;
(g) longitudinal acceleration (body axis);
(h) time or relative time count;
(i) navigation data*: drift angle, wind speed, wind direction, latitude/longitude; and
(j) radio altitude*.

Attitude:
(a) pitch attitude;
(b) roll attitude; and
(c) yaw rate.

Engine power:
(a) power on each engine: free power turbine speed (Nf), engine torque, engine gas generator speed (Ng), cockpit power control position;
(b) rotor: main rotor speed, rotor brake;
(c) main gearbox oil pressure*;
(d) gearbox oil temperature*: main gearbox oil temperature, intermediate gearbox oil;
(e) temperature, tail rotor gearbox oil temperature;
(f) engine exhaust gas temperature* and
(g) turbine inlet temperature*.

Configuration:
(a) landing gear or gear selector position*;
(b) fuel contents*; and
(c) ice detector liquid water content*.

Operation:
(a) hydraulics low pressure;
(b) warnings;

(c) primary Flight Controls—Pilot input and or control output position: collective pitch, longitudinal cyclic pitch, lateral cyclic pitch, tail rotor pedal, controllable stabilator, hydraulic selection;
(d) marker beacon passage;
(e) each navigation receiver frequency selection;
(f) Automatic Flight Control System mode and engagement status*;
(g) stability augmentation system engagement*;
(h) indicated sling load force*; and
(i) vertical deviation*: Instrument Landing System glide path, Microwave Landing System elevation.

Ground Navigational System approach path:

(a) horizontal deviation*: Instrument Landing System localizer, Microwave Landing System azimuth;
(b) Distance Measuring Equipment 1 and 2 distances*;
(c) altitude rate*;
(d) mice detector liquid water content*; and
(e) helicopter health and usage monitor system*: engine data, chip detectors, track timing, exceedances discretes, and broadband average engine vibration.

Note 1: The number of parameters to be recorded will depend on helicopter complexity.
Note 2: Parameters without an (*) are to be recorded regardless of helicopter complexity.
Note 3: Those parameters designated by an (*) are to be recorded if an information source for the parameter is used by helicopter systems or flight crew to operate the helicopter.

Table A — Aeroplanes
Parameters for Flight Data Recorders

Serial number	Parameter	Measurement range	Recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)
1	Time (UTC when available, otherwise elapsed time)	24 hours	4	+/-0.125% per hour
2	Pressure-altitude–	-300 m (-1 000 ft) to maximum certificated altitude of aircraft 1 500 m (5 000 ft)	1	+/-30 m to +/-200 m (+/-100 ft to +/-700 ft)
3	Indicated airspeed	95 km/h (50 kt) to max V_{So} (Note 1) V_{So} to 1.2 V_D (Note 2)	1	+/-5% +/-3%
4	Heading	360 degrees	1	+/-2%
5	Normal acceleration–	-3 g to +6 g	0.125	+/-1% of maximum range excluding datum error of +/-5%
6	Pitch attitude	+/-75 degrees	1	+/-2 degrees

7	Roll attitude	+/-180 degrees	1	+/-2 degrees
8	Radio transmission keying	On-off (one discrete)	1	
9	Power on each engine (Note 3)	Full range	1 (per engine)	+/-2%
10	Trailing edge flap or cockpit control selection	Full range or each discrete position	2	+/-5% or as pilot's indicator
11	Leading edge flap or cockpit control selection	Full range or each discrete position	2	+/-5% or as pilot's indicator
12	Thrust reverser position	Stowed, in transit, and reverse	1 (per engine)	
13	Ground spoiler/speed brake selection	Full range or each discrete position	1	+/-2% unless higher accuracy uniquely required
14	Outside air temperature	Sensor range	2	+/-2 degrees C
15	Autopilot/auto throttle/AFCS mode and engagement status	A suitable combination of discretes	1	
	Note—The preceding 15 parameters satisfy the requirements for a Type II FDR.			
16	Longitudinal acceleration	+/-1 g	0.25	+/-1.5% max range excluding datum error of +/-5%
17	Lateral acceleration	+/-1 g	0.25	+/-1.5% max range excluding datum error of +/-5%
18	Pilot input and/or control surface position-primary controls (pitch, roll, yaw) (Note 4)	Full range	1	+/-2 degrees unless higher accuracy uniquely required
19	Pitch trim position	Full range	1	+/-3% unless higher accuracy uniquely required
20	Radio altitude–	-6 m to 750 m (–20 ft to 2 500 ft)	1	+/-0.6 m (+/-2 ft) or +/-3% whichever is greater below 150 m (500 ft) and +/-5% above 150 m (500 ft)
21	Glide path deviation	Signal range	1	+/-3%
22	Localizer deviation	Signal range	1	+/-3%
23	Marker beacon passage	Discrete	1	
24	Master warning	Discrete	1	
25	NAV 1 and 2 frequency selection (Note 5)	Full range	4	As installed
26	DME 1 and 2 distance (Notes 5 and 6)	0 – 370 km	4	As installed
27	Landing gear squat switch	Discrete	1	

	status			
28	GPWS (ground proximity warning system)	Discrete	1	
29	Angle of attack	Full range	0.5	As installed
30	Hydraulics, each system (low pressure)	Discrete	2	
31	Navigation data (latitude/longitude, ground speed and drift angle) (Note 7)	As installed	1	As installed
32	Landing gear or gear selector position	Discrete	4	As installed
	Note—The preceding 32 parameters satisfy the requirements for a Type I FDR.			

Notes—

1. V_{So} stalling speed or minimum steady flight speed in the landing configuration.

2. V_D design diving speed.

3. Record sufficient inputs to determine power.

4. For aeroplanes with conventional control systems ‘‘or’’ applies. For aeroplanes with non-mechanical control systems ‘‘and’’ applies. In aeroplanes with split surfaces, a suitable combination of inputs is acceptable in lieu of recording each surface separately.

5. If signal available in digital form.

6. Recording of latitude and longitude from INS or other navigation system is a preferred alternative.

7. If signals readily available.

If further recording capacity is available, recording of the following additional information should be considered:

a) operational information from electronic display systems, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS). Use the following order of priority:

1) parameters selected by the flightcrew relating to the desired flight path, e.g. barometric pressure setting, selected altitude, selected airspeed, decision height, and autoflight system engagement and mode indications if not recorded from another source;

2) display system selection/status, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY, ETC.;

3) warnings and alerts;

4) the identity of displayed pages for emergency procedures and checklists;

b) retardation information including brake application for use in the investigation of landing overruns and rejected take-offs; and

c) additional engine parameters (EPR, N1, EGT, fuel flow, etc.).

Parameters for Flight Data Recorders

Serial number	Parameter	Measurement range	Recording interval (seconds)	Accuracy limits (sensor input compared to FDR read-out)
1	Time (UTC when available, otherwise elapsed time)	24 hours	4	+/-0.125% per hour
2	Pressure-altitude–	-300 m (–1 000 ft) to maximum certificated altitude of aircraft +1 500 m (+5 000 ft)	1	+/-30 m to +/-200 m (+/-100 ft to +/-700 ft)
3	Indicated airspeed	As the installed measuring system	1	+/-3%
4	Heading	360 degrees	1	+/-2 degrees
5	Normal acceleration–	-3 g to +6 g	0.125	+/-1%
6	Pitch attitude	+/-75 degrees	0.5	+/-2 degrees
7	Roll attitude	+/-180 degrees	0.5	+/-2 degrees
8	Radio transmission keying	On-off (one discrete)	1	
9	Power on each engine (Note 1)	Full range	1 (per engine)	+/-2%
10	Main rotor speed	50-130%	0.5	+/-2%
11	Pilot input and/or control surface position-primary controls (Collective pitch, longitudinal cyclic pitch, lateral cyclic pitch, tail rotor pedal) (Note 2)	Full range	1	+/-2% unless higher accuracy uniquely required.
12	Hydraulics, each system (low pressure)	Discrete	2	
13	Outside air temperature	Sensor range	2	+/-2 degrees C
14	Autopilot/auto throttle/AFCS mode and engagement status	A suitable combination of discretes	1	
15	Stability augmentation system engagement	Discrete	1	

Note: The preceding 15 parameters satisfy the requirements for a Type V FDR.

16	Main gearbox oil pressure	As installed	1	As installed
17	Main gearbox oil temperature	As installed	2	As installed
18	Yaw acceleration (or yaw rate)	+/-1 g	0.25	+/-1.5% max range excluding datum error of +/-5%
19	Sling load force	0-200% of certified load	0.5	+/-3% of max range
20	Longitudinal acceleration	+/-1 g	0.25	+/-1.5% max range excluding datum error of +/-5%
21	Lateral acceleration	+/-1 g	0.25	+/-1.5% max range excluding datum error of +/-5%
22	Radio altitude–	-6 m to 750 m (–20 ft to 2 500 ft)	1	+/-0.6 m (+/-2 ft) or +/-3% whichever is greater below 150 m (500 ft) and +/-5% above 150 m (500 ft)
23	Glide path deviation	Signal range	1	+/-3%
24	Localizer deviation	Signal range	1	+/-3%
25	Marker beacon passage	Discrete	1	
26	Master warning	Discrete	1	
27	NAV 1 and 2 frequency selection (Note 3)	Full range	4	As installed
28	DME 1 and 2 distance (Notes 3 and 4)	0-370 km	4	As installed
29	Navigation data (latitude/longitude, ground speed) (Note 5)	As installed	2	As installed
30	Landing gear or gear selector position	Discrete	4	As installed

Note: The preceding 30 parameters satisfy the requirements for a Type IV FDR.

Notes—

1. Record sufficient inputs to determine power.

2. For helicopters with conventional control systems ‘‘or’’ applies. For helicopters with non-mechanical control systems ‘‘and’’ applies.

3. If signal available in digital form.

4. Recording of latitude and longitude from INS or other navigation system is a preferred alternative.

5. If signals readily available.

If further recording capacity is available, recording of the following additional information should be

considered:

a) operational information from electronic display systems, such as electronic flight instrument systems (EFIS), electronic centralized aircraft monitor (ECAM) and engine indication and crew alerting system (EICAS). Use the following order of priority:

1) parameters selected by the flightcrew relating to the desired flight path, e.g. barometric pressure setting, selected altitude, selected airspeed, decision height, and auto flight system engagement and mode indications if not recorded from another source;

2) display system selection/status, e.g. SECTOR, PLAN, ROSE, NAV, WXR, COMPOSITE, COPY, etc.;

3) warnings and alerts data; and

4) the identity of displayed pages for emergency procedures and checklists; and

b) additional engine parameters (EPR, N1, EGT, fuel flow, etc.).

Standard NO: 6.2.1 **Duration of Recordings of a Flight Data Recorded System**
Regulation 35

FLIGHT DATA RECORDER TYPE	DURATION
Type I	25 hours
Type II	25 hours
Type IIA	30 minutes
Type IV	10 hours
Type IVA	10 hours
Type V	10 hours

***Standard NO: - 6.3-* EMERGENCY EXIT EQUIPMENT**
Regulation 38

1. The assisting means for a floor level emergency exit shall meet the requirements under which the aeroplane was type certified.

2. The location of each passenger emergency exit shall be—

(a) recognizable from a distance equal to the width of the cabin; and

(b) indicated by a sign visible to occupants approaching along the main passenger aisle.

3. There shall be an emergency exit locating sign—

(a) above the aisle near each over-the-wing passenger emergency exit, or at another ceiling location if it is more practical because of low headroom;

(b) next to each floor level passenger emergency exit, except that one sign may serve two such exits if they both can be seen readily from that sign; and

(c) on each bulkhead or divider that prevents fore and aft vision along the passenger cabin, to indicate emergency exits beyond and obscured by it, except that if this is not possible, the sign may be placed at another appropriate location.

4. Each passenger emergency exit marking and each locating sign shall be manufactured to meet the interior emergency exit marking requirements under which the aeroplane was type certified, unless the Director cites different requirements for compliance with this paragraph.
Note: No sign may continue to be used if its luminescence or brightness decreases to below 250 microlamberts.

5. Sources of general cabin illumination may be common to both the emergency and the main lighting systems if the power supply to the emergency light system is independent of the power supply to the main lighting system.

6. The emergency lighting system shall provide enough general lighting in the passenger cabin so that the average illumination, when measured at 40-inch intervals at seat armrest height, on the centreline of the main passenger aisle, is at least 0.05 foot-candles.

7. Each emergency light shall—

(a) be operable manually both from the flight crew station and from a point in the passenger compartment that is readily accessible to a normal flight attendant seat;

(b) have a means to prevent inadvertent operation of the manual controls;

(c) when armed or turned on at either station, remain lighted or become lighted upon interruption of the aeroplane's normal electric power; and.

(d) provide the required level of illumination for at least 10 minutes at the critical ambient conditions after emergency landing.

(e). Have a cockpit control device that has an "on", "off", and "armed" position.

8. The location of each passenger emergency exit operating handle and instructions for opening the exit shall be shown in accordance with the requirements under which the aeroplane was type certified, unless the Director cites different requirements for compliance with this paragraph.

9. No operating handle or operating handle cover may continue to be used if its luminescence or brightness decreases to below 100 microlamberts.

10. Access to emergency exits shall be provided as follows for each passenger carrying aeroplane:

(a) each passageway between individual passenger areas, or leading to a Type I or Type II emergency exit, shall be unobstructed and at least 20 inches wide;

(b) there shall be enough space next to each Type I or Type II emergency exit to allow a crew member to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required in paragraph (a) of this section;

(c) there shall be access from the main aisle to each Type III and Type IV exit. The access from the aisle to these exits shall not be obstructed by seats, berths, or other protrusions in a manner that would reduce the effectiveness of the exit. In addition, the access shall meet the emergency exit access requirements under which the aeroplane was type certified, unless the Director cites different requirements for compliance with this paragraph;

(d) if it is necessary to pass through a passageway between passenger compartments to reach any required emergency exit from any seat in the passenger cabin, the passageway shall not be obstructed. However, curtains may be used if they allow free entry through the passageway;

(e) no door may be installed in any partition between passenger compartments; and

(f) if it is necessary to pass through a doorway separating the passenger cabin from other areas to reach any required emergency exit from any passenger seat, the door shall have a means to latch it in open position, and the door shall be latched open during each takeoff and landing. The latching means shall be able to withstand the loads imposed upon it when the door is subjected to the ultimate inertia forces, relative to the surrounding structure, prescribed in the airworthiness standards for type certification in the transport category as cited by the Director.

11. Each passenger emergency exit and the means of opening that exit from the outside shall be marked on the outside of the aeroplane with a 2-inch coloured band outlining the exit on the side of the fuselage.

12. Each passenger emergency exit marking, including the band, shall be readily distinguishable from the surrounding fuselage area by contrast in colour and shall comply with the following:

(a) if the reflectance of the darker colour is 15 per cent or less, the reflectance of the lighter colour shall be at least 45 per cent;

(b) if the reflectance of the darker colour is greater than 15 percent, at least a 30 per cent difference between its reflectance and the reflectance of the lighter colour shall be provided; and

Note: "Reflectance" is the ratio of the luminous flux reflected by a body to the luminous flux it receives.

(c) exits that are not in the side of the fuselage shall have external means of opening and applicable instructions marked conspicuously in red or, if red is inconspicuous against the background colour, in bright chrome yellow and, when the opening means for such an

exit is located on only one side of the fuselage, a conspicuous marking to that effect shall be provided on the other side.

13. Each passenger-carrying aeroplane shall be equipped with exterior lighting that meets the requirements under which that aeroplane was type certified, unless the Director cites different requirement for compliance with this paragraph.

14. Each passenger-carrying aeroplane shall be equipped with a slip-resistant escape route that meets the requirements under which that aeroplane was type certified, unless the Director cites different requirements for compliance with this paragraph.

15. Each floor level door or exit in the side of the fuselage (other than those leading into a cargo or baggage compartment that is not accessible from the passenger cabin) that is 44 or more inches high and 20 or more inches wide, but not wider than 46 inches, each passenger ventral exit and each tail cone exit, shall meet the requirements of this section for floor level emergency exits.

Note 1. The Director may grant a deviation from this paragraph if he finds that circumstances make full compliance impractical and that an acceptable level of safety has been achieved.

16. Approved emergency exits in the passenger compartments that are in excess of the minimum number of required emergency exits shall meet all of the applicable provisions of this subsection section and shall be readily accessible.

17. On each large passenger-carrying turbojet powered aeroplane each ventral exit and tail cone exit shall be—

(a) designed and constructed so that it cannot be opened during flight; and

(b) marked with a placard readable from a distance of 30 inches and installed at a conspicuous location near the means of opening the exit, stating that the exit has been designed and constructed so that it cannot be opened during flight.

(18) Portable lights. No person may operate a passenger-carrying airplane unless it is equipped with flashlight stowage provisions accessible from each flight attendant seat.

***Standard NO:- 6.4-* PORTABLE FIRE EXTINGUISHERS**

Standard NO 6.4.1

Regulation 40 (1)

Any extinguishing agent used in a portable fire extinguishers in an aeroplane for which the individual certificate of airworthiness is first issued on or after December 31, 2016 shall meet applicable minimum performance requirements established by the Director, and not be of a type listed in Annex A, Group II of the *Montreal Protocol on Substances That Deplete the Ozone Layer*, 8th Edition, 2009.

Note 1: Information concerning extinguishing agents is contained in the UNEP Halons Technical Options Committee Technical Note No. 1 – New Technology Halon Alternatives and FAA Report No. DOT/FAA/AR-99-63, Options to the Use of Halons for Aircraft Fire Suppression Systems.

Standard NO 6.4.2
Regulation 40 (4)

Where an aeroplane has the seating capacity specification under column 1, it shall have the corresponding fire extinguisher under column 2 or board.

Passenger Seating Minimum	**Number of Hand Fire Extinguishers Capacity**
30 through 60	2
61 through 200	3
201 through 300	4
301 through 400	5
401 through 500	6
501 through 600	7
601 or more	8

***Standard NO:- 6.5 –* BUILT-IN FIRE EXTINGUISHERS**
Regulation 41 (1)

Any agent used in a built-in fire extinguisher for each lavatory disposable receptacle for towels, paper or waste in an aeroplane for which the individual certificate of airworthiness is first issued on or after December 31, 2011 shall meet applicable minimum performance requirements established by the Director, and not be of a type listed in Annex A, Group II of the *Montreal Protocol on Substances That Deplete the Ozone Layer*, 8th Edition, 2009.

Note 1: Information concerning extinguishing agents is contained in the UNEP Halons Technical Options Committee Technical Note No. 1 – New Technology Halon Alternatives and FAA Report No. DOT/FAA/AR-99-63, Options to the Use of Halons for Aircraft Fire Suppression Systems.

***Standard NO: - 6.6* FIRST-AID AND EMERGENCY MEDICAL KITS**
Regulation 45 (2)

***Standard NO: - 6.6.1*-First- Aid Kits**

(a) *All Aircraft Types*: One type of first-aid kit shall be provided for carriage in all aircraft.

(b) Air Operator Certificate Contents. The required first-aid kits shall include at least the following:

(i) A handbook on first aid.

(ii) ‘‘Ground-air visual signal code for use by survivors’’ as contained in ICAO Annex 12.

(iii) Materials for treating injuries.

(iv) Ophthalmic ointment.

(v) A decongestant nasal spray.

(vi) Insect repellent.

(vii) Emollient eye drops.

(viii) Sunburn cream.

(ix) Water-miscible antiseptic/skin cleanser.

(x) Materials for treatment of extensive burns.

(xi) Oral drugs as follows: analgesic, antispasmodic, central nervous system stimulant, circulatory stimulant, coronary vasodilator, antidiarrhoeic and motion sickness medications.

(xii) An artificial plastic airway and splints.

(c) Air Operator Certificate Number of first-aid kits. Each aircraft shall carry first-aid kits in accordance with the following schedule.

Number of passenger seats installed	**Number of first-aid kits required**
0 to 99	1
100 to 199	2
200 to 299	3
300 and more	4

(d) Air Operator Certificate Location.

(i) The required first-aid kits be distributed evenly throughout the aircraft, and shall be readily accessible to cabin crew members, if cabin crew members are required for the flight; and

(ii) The first-aid kits shall be located near the aircraft exits should their use be required outside the aircraft in an emergency situation.

***Standard NO: - 6.6.2*-Emergency Medical Kit -Aeroplanes**

(a) The required medical kit for a national air operator shall include the following equipment:

(i) One pair of sterile surgical gloves.

(ii) Sphygmomanometer.

(iii) Stethoscope.

(iv) Sterile scissors.

(v) Haemostatic forceps.

(vi) Haemostatic bandages or tourniquet.

(vii) Sterile equipment for suturing wounds.

(viii) Disposable syringes and needles.

(ix) Disposable scalpel handle and blade.

(b) The required medical kit for a national air operator shall include the following drugs:

(i) Coronary vasodilators.

(ii) Analgesics.

(iii) Diuretics.

(iv) Anti-allergics.

(v) Steroids.

(vi) Sedatives.

(vii) Ergometrine.

(viii) Where compatible with regulations of the appropriate authority, a narcotic drug in injectable form.

(ix) Injectable broncho dilator.

(c) The medical kit shall be stored in a secure location.

Standard NO: - 6.7- **OXYGEN STORAGE AND DISPENSING APPARATUS**
Regulation 46

1. The supplemental oxygen supply requirements for non-pressurized aircraft are as follows:

(a) A national air operator shall not operate a non-pressurised aeroplane at pressure altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required, is provided.

(b) The amount of supplemental oxygen for sustenance required for a particular operation shall be determined on the basis of flight altitudes and flight duration, consistent with the operating procedures, established for each operation in the Operations Manual and with the routes to be flown, and with the emergency procedures specified in the Operations Manual.

(c) An aeroplane intended to be operated above 10 000 ft pressure altitude shall be provided with equipment capable of storing and dispensing the oxygen supplies required.

(d) Oxygen supply requirements:

(a) each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Table 1. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply then they shall be considered as flight crew on flight deck duty for the purpose of oxygen supply; and

(b) cabin crew and passengers shall be supplied with oxygen in accordance with Table 1. Cabin crew carried in addition to the minimum number of cabin crew required, and additional crew, shall be considered as passengers for the purpose of oxygen supply.

Table 1—Supplemental Oxygen for Non-Pressurized Aeroplanes

SUPPLY FOR:	**DURATION AND PRESSURE ALTITUDE**
1. All occupants of flight deck seats on flight deck duty	Entire flight time at pressure altitudes above 10,000 feet
2. All required cabin crew members	Entire flight time at pressure altitudes above 13,000 feet and for any period exceeding 30 minutes at pressure altitudes above 10,000 feet but not exceeding 13,000 feet
3. 100% of passengers*	Entire flight time at pressure altitudes above 13,000 feet
4. 10% of passengers*	Entire flight time after 30 minutes at pressure altitudes greater than 10,000 feet but not exceeding 13,000 feet

**Note: For the purpose of this table "passengers" means actually carried and includes infants.*

2. The supplemental oxygen supply requirements for pressurized aircraft are as follows:

(a) An operator shall not operate a pressurised aeroplane at pressure altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required by this paragraph, is provided.

(b) the amount of supplemental oxygen required shall be determined on the basis of cabin pressure altitude, flight duration and the assumption that a cabin pressurization failure

will occur at the altitude or point of flight that is most critical from the standpoint of oxygen need, and that, after the failure, the aeroplane will descend in accordance with emergency procedures specified in the Aeroplane Flight Manual to a safe altitude for the route to be flown that will allow continued safe flight and landing;

(c) following a cabin pressurization failure, the cabin pressure altitude shall be considered the same as the aeroplane altitude, unless it is demonstrated to the Director that no probable failure of the cabin or pressurization system will result in a cabin pressure altitude equal to the aeroplane altitude. Under these circumstances, this lower cabin pressure altitude may be used as a basis for determination of oxygen supply;

(d) Oxygen equipment and supply requirements:

(i) Flight crew members:

(A) each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Table 2. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply then they shall be considered as flight crew on flight deck duty for the purpose of oxygen supply.

(B) Flight deck seat occupants, not supplied by the flight crew source, are to be considered as passengers for the purpose of oxygen supply;

(C) Oxygen masks shall be located so as to be within the immediate reach of flight crew members whilst at their assigned duty station.

(D) Oxygen masks for use by flight crew members in pressurised aeroplanes operating at pressure altitudes above 25 000 ft, shall be a quick donning type mask.

(ii) Cabin crew, additional crew, and passengers:

(A) cabin crew and passengers shall be supplied with supplemental oxygen in accordance with Table 2. Cabin crew carried in addition to the minimum number of cabin crew required, and additional crew, shall be considered as passengers for the purpose of oxygen supply;

(B) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft shall be provided sufficient spare outlets and masks and/or sufficient portable oxygen units with masks for use by all required cabin crew members. The spare outlets and/or portable oxygen units are to be distributed evenly throughout the cabin to ensure immediate availability of oxygen to each required cabin crew member regardless of his location at the time of cabin pressurisation failure.

(C) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft shall be provided an oxygen dispensing unit connected to oxygen supply terminals immediately available to each occupant, whenever seated. The total number of dispensing units and outlets shall exceed the number of seats by at least 10 percent. The extra units shall be evenly distributed throughout the cabin.

(D) Aeroplanes intended to be operated at pressure altitudes above 25 000 ft or which, if operated at or below 25 000 ft, cannot descend safely within four minutes to 13 000 ft, and for which the individual certificate of airworthiness was first issued on or after 9 November 1998, shall be provided with automatically deployable oxygen equipment immediately available to each occupant, wherever seated. The total number dispensing units and outlets shall exceed the number of seats by at least 10 percent. The extra units shall be evenly distributed throughout the cabin.

(E) the oxygen supply requirements, as specified in Table 2, for aeroplanes not certified to fly at altitudes above 25,000 feet, may be reduced to the entire flight time between 10,000 feet and 13,000 feet cabin pressure altitudes for all required cabin crew and for at least 10% of the passengers if, at all points along the route to be flown, the aeroplane is able to descend safely within 4 minutes to a cabin pressure altitude of 13,000 feet.

Table 2—Requirements for Supplemental Oxygen-Pressurized Aeroplane During and Following Emergency Descent (Note 1)

SUPPLY FOR:	DURATION AND CABIN PRESSURE ALTITUDE
1. All occupants of seats on flight deck duty	Entire flight time when the cabin pressure flight altitude exceeds 13,000 feet and entire time when the cabin pressure altitude exceeds 10,000 feet but does not exceed 13,000 feet after the first thirty minutes at those altitudes but in no case less than (a) thirty minutes for aeroplanes certified to fly at altitudes not exceeding 25,000 feet (Note 2); and (b) two hours for aeroplanes certified to fly at altitudes more than 25,000 feet (Note 3).
2. All required cabin crew members	Entire flight time when cabin pressure altitude exceeds 13,000 feet but not less than 30 minutes and entire flight time when cabin pressure altitude is greater than 10,000 feet but does not exceed 13,000 feet after the first thirty minute at these altitudes (Note 2).
3. 100% of passengers	10 minutes or the entire flight time when the cabin pressure altitude exceeds 15,000 feet whichever is the greater (Note 4).
4. 30% of passengers	Entire flight time when the cabin pressure altitude exceeds 13,000 feet but does not exceed 15,000 feet.
5. 10% of passengers	Entire flight time when the cabin pressure altitude exceeds 10,000 feet but does not exceed 13,000 feet after the first 30 minutes at these altitudes.

Note 1: The supply provided shall take account of the cabin pressure altitude and descent profile for the routes concerned.

Note 2: The required minimum supply is that quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certified operating altitude to 10,000 feet in 10 minutes and followed by 20 minutes at 10,000 feet.

Note 3: The required minimum supply is that quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certified operating altitude to 10,000 feet in 10 minutes and followed by 110 minutes at 10,000 feet. The oxygen required to meet the Crew Protective Breathing Equipment provisions of this Part may be included in determining the supply required.

Note 4: The required minimum supply is that quantity of oxygen necessary for a constant rate of descent from the aeroplane's maximum certified operating altitude to 15,000 feet.

Note 5: For the purpose of this table "passengers" means passengers actually carried and includes infants.

3. The supplemental oxygen supply requirements for non-pressurised helicopters are as follows:

(a) An operator shall not operate a non-pressurised helicopter at pressure altitudes above 10 000 ft unless supplemental oxygen equipment, capable of storing and dispensing the oxygen supplies required, is provided.

(b) The amount of supplemental oxygen for sustenance required for a particular operation shall be determined on the basis of flight altitudes and flight duration , consistent with the operating procedures, established for each operation in the Operations Manual and with the routes to be flown, and with the emergency procedures specified in the Operations Manual.

(c) A helicopter intended to be operated above 10 000 ft pressure altitude shall be provided with equipment capable of storing and dispensing the oxygen supplies required.

(d) Oxygen supply requirements:

(i) Flight crew members. Each member of the flight crew on flight deck duty shall be supplied with supplemental oxygen in accordance with Table 3. If all occupants of flight deck seats are supplied from the flight crew source of oxygen supply then they shall be considered as flight crew members on flight deck duty for the purpose of oxygen supply.

(ii) Cabin crew members, additional crew members and passengers. Cabin crew members and passengers shall be supplied with oxygen in accordance with Table 3. Cabin crew members carried in addition to the minimum number of cabin crew members required, and additional crew members, shall be considered as passengers for the purpose of oxygen supply.

Table 3- Supplemental Oxygen for Non-Pressurised Helicopters

SUPPLY FOR:	DURATION AND PRESSURE ALTITUDE
1. All occupants of flight deck seats on flight deck duty	Entire flight time at pressure altitudes above 10,000 feet
2. All required cabin crew members	Entire flight time at pressure altitudes above 13,000 ft and for any period exceeding 30 minutes at pressure altitudes above 10,000 ft but not exceeding 13,000 ft
3. 100% of passengers (see note)	Entire flight time at pressure altitudes above 13,000 ft
4.. 10% of passengers (see note)	Entire flight time after 30 minutes at pressure altitudes greater than 10,000 ft but not exceeding 13,000 ft

Note: For the purpose of this table "passengers" means passengers actually carried and includes infants