



CIVIL AVIATION SAFETY AUTHORITY OF PNG

PNG
Civil Aviation Rules
Part 135

Air Operations — Small Aeroplanes

Effective 1 May 2017

DESCRIPTION

Part 135 prescribes the operating requirements for air operations conducted by a holder of an Air Operator Certificate issued in accordance with Part 119 using-

- an aeroplane that has a seating configuration of 9 seats or less, excluding any required crew member seat, except for a single engine aeroplane used for an air operation carrying a passenger under IFR (SEIFR passenger operation); or

The objective is to standardise the rules for all operators of aircraft in these categories by establishing rules applicable to-

- a person performing an air operation
- a holder of an air operator certificate conducting an air operation
- a pilot-in-command performing an air operation
- additional aircraft equipment, instrument, and certification requirements and specifications
- aircraft maintenance
- crew training and competency
- management of flight crew fatigue

Bulletin

This Part first came into force on 1 January 2004 and now incorporates the following amendments:

| Amendment | Effective Date |
|------------------|-----------------------|
| Amendment 1 | 1 January 2011 |
| Amendment 2 | 1 April 2015 |
| Amendment 3 | 1 May 2017 |

Summary of amendments:

Amendment 1:
(Docket 09/135/1)

Rule 135.73 is amended and change of fuel class designation inserted.

Rule 135.87 is revoked.

Rule 135.303 is amended to reflect crew and passenger baggage weights.

Consequential changes to Rule 135.305 in respect to load manifest.

Rule 135.403(b)(ii) is amended and maintenance performed by another State to be accepted on a Part 145 equivalence basis is inserted.

New Rule 135.404 on condition monitoring inserted.

Rule 135.405 is amended and Aircraft airworthiness review is inserted to replace maintenance review including specific programme of airworthiness compliance, and prohibiting extension to 365 day period within which AAR must be carried out.

Rule 135.505(c) inserted.

Rule 135.507 revoked and renumbered to Rule 135.509 inserted.

New Rule 135.511 inserted.

New Rule 135.561 inserted

New Rule 135.605 is amended for holder of AOC to ensure

that aeroplane or simulator is used for flight crew competency checks is approved for the purpose. Reference to re-currency training is removed.

Amendment 2:

(Docket 14/135/1)

Insertion into Rule 135-801 Fatigue Risk Management System.

Appendix A.2 and A.3 including all associated Tables and Flow Charts revoked.

Amendment 3:

(Docket 16/135/01)

Rule 135.159 specifies IFR aerodrome operating minima.

New rule 135.363 for fitment of cockpit voice recorder.

New rule 135.365 for fitment of flight data recorder.

Appendix A.2, A.3, Figure 1 and Table 1 inserted as consequential amendments to CVR and FDR fitment requirements.

Schedule of Rules

| | |
|---|-----------|
| Subpart A — General | 7 |
| 135.1 Purpose..... | 7 |
| 135.3 Definitions and Abbreviations | 7 |
| 135.5 Laws, regulations, and procedures | 7 |
| Subpart B — Operating rules | 7 |
| 135.51 Purpose | 7 |
| 135.53 Aircraft airworthiness..... | 7 |
| 135.55 Common language..... | 7 |
| 135.57 Authorisation and control of flight operations | 7 |
| 135.59 Flight preparation and flight planning..... | 7 |
| 135.61 Emergency and survival equipment information..... | 8 |
| 135.63 Fuel | 8 |
| 135.65 Cockpit check..... | 9 |
| 135.67 Passenger safety | 9 |
| 135.69 Manipulation of controls | 10 |
| 135.71 Flight recorder requirements | 10 |
| 135.73 Refuelling and de-fuelling operations | 11 |
| 135.75 Fuel spillage | 11 |
| 135.77 Use of aerodromes..... | 11 |
| 135.79 Operations of single engine aircraft — IFR..... | 12 |
| 135.81 Restriction or suspension of operations..... | 12 |
| 135.83 Minimum height for VFR flights..... | 12 |
| 135.85 Flights over water | 12 |
| 135.87 Reserved..... | 13 |
| 135.89 Reserved | 13 |
| 135.91 Reserved..... | 13 |
| Subpart C — Operating and Meteorological Requirements | 13 |
| 135.151 Purpose | 13 |
| 135.153 Meteorological information | 13 |
| 135.155 Meteorological conditions — VFR flight..... | 13 |
| 135.157 [Reserved] | 13 |
| 135.159 Aerodrome operating minima – IFR flight | 13 |
| 135.161 IFR departure limitations | 14 |
| 135.163 Reduced take-off minima | 14 |
| 135.165 IFR procedures..... | 14 |
| Subpart D — Performance | 15 |
| 135.201 Purpose..... | 15 |
| 135.203 Applicability..... | 15 |
| 135.205 General aeroplane performance..... | 15 |
| 135.207 Take-off limitations | 15 |
| 135.209 Runway surface and slope correction factors..... | 16 |
| 135.211 Net take-off flight path – aeroplane under IFR..... | 16 |
| 135.213 Engine inoperative – gradient and stall corections | 18 |
| 135.215 En-route – critical engine inoperative | 18 |
| 135.217 En-route – 90 minute limitation..... | 19 |
| 135.219 Approach and landing-climb – destination and alternate aerodromes | 19 |
| 135.221 Landing distance – dry runway..... | 19 |
| 135.223 Landing distance –contaminated runways | 20 |
| 135.225 Steep approach and short landing techniques | 20 |
| Subpart E — Weight and Balance | 20 |

| | | |
|---|--|-----------|
| 135.301 | Purpose | 20 |
| 135.303 | Goods, passenger, and baggage weights | 20 |
| 135.305 | Aircraft load limitations..... | 21 |
| Subpart F — Instruments and Equipment..... | | 22 |
| 135.351 | Purpose | 22 |
| 135.353 | General | 22 |
| 135.355 | Night flight | 22 |
| 135.357 | Instrument flight rules..... | 22 |
| 135.359 | Reserved..... | 23 |
| 135.361 | Restraints..... | 23 |
| 135.363 | Cockpit Voice Recorder..... | 23 |
| 135.365 | Flight Data Recorder | 23 |
| 135.367 | Additional attitude indicator | 23 |
| Subpart G — Airworthiness..... | | 23 |
| 135.401 | Purpose | 23 |
| 135.403 | Responsibility for airworthiness | 23 |
| 135.404 | Condition monitored maintenance programmes..... | 24 |
| 135.405 | Aircraft airworthiness review | 25 |
| Subpart H — Crew Member Requirements | | 25 |
| 135.501 | Purpose | 25 |
| 135.503 | Assignment of flight crew duties..... | 25 |
| 135.505 | Pilot-in-command consolidation of operating experience on type | 26 |
| 135.507 | Experience requirements for IFR pilots | 27 |
| 135.509 | Minimum flight crew - IFR | 27 |
| 135.511 | Flight crew member pairing limitations | 28 |
| Subpart I — Training..... | | 28 |
| 135.551 | Purpose | 28 |
| 135.553 | Training programme..... | 28 |
| 135.555 | Training records | 29 |
| 135.557 | Initial training for crew members | 29 |
| 135.559 | Transition training for crew members | 29 |
| 135.561 | Manoeuvres not authorized while carrying passengers | 29 |
| 135.563 | Flight crew training programme | 30 |
| 135.565 | Flight instructor qualifications | 30 |
| 135.567 | Reserved..... | 30 |
| Subpart J — Crew Member Competency and Recurrent Training Requirements | | 30 |
| 135.601 | Purpose..... | 30 |
| 135.603 | Operational competency assessment and recurrent training programme | 30 |
| 135.605 | Authorised flight examiner qualifications..... | 31 |
| 135.607 | Flight crew competency checks..... | 31 |
| 135.609 | Crew member – grace provisions | 32 |
| 135.611 | Competency and testing records..... | 32 |
| Subpart K — Fatigue of Flight Crew | | 32 |
| 135.801 | Flight and duty time limitations..... | 33 |
| Subpart L — Manuals, Logs, and Records..... | | 33 |
| 135.851 | Purpose | 33 |
| 135.853 | Operating information..... | 33 |
| 135.855 | Documents to be carried..... | 33 |
| 135.857 | Daily flight record | 33 |
| 135.859 | Retention period..... | 34 |
| Subpart M — Transition Provisions..... | | 34 |
| 135.901 | Transition | 34 |

| | |
|--|----|
| Appendix A — Instruments and Equipment Airworthiness Design Standards | 35 |
| A.1 Additional attitude indicator | 35 |
| A.2 Cockpit Voice Recorder | 35 |
| A.3 Flight Data Recorder | 35 |

Subpart A — General

135.1 Purpose

This Part prescribes rules governing air operations using an aeroplane having a certificated seating capacity of 9 seats or less, excluding any required crew member seat and MCTOW of 5700kg or less, except when they are used for SEIFR passenger operations.

135.3 Definitions and Abbreviations

In this Part—

Certificate holder means the holder of an air operator certificate.

135.5 Laws, regulations, and procedures

The holder of an air operator certificate must take reasonable care to ensure that all persons employed, engaged, or contracted by the holder of an air operator certificate to perform aviation activities, are familiar with the appropriate sections of the Act, Civil Aviation Rules, and procedures specified in the certificate holder's exposition.

Subpart B — Operating rules

135.51 Purpose

This Subpart prescribes operating rules governing air operations.

135.53 Aircraft airworthiness

The certificate holder shall ensure that each aircraft it uses on air operations has—

- (1) a current standard category airworthiness certificate; or
- (2) a current restricted category airworthiness certificate provided that the aircraft flight manual allows such an operation.

135.55 Common language

The certificate holder shall ensure that—

- (1) all crew members can communicate in a common language with at least one flight crew member being able to communicate in the English language; and
- (2) all operations personnel are able to understand the language in which the applicable parts of the certificate holder's exposition are written.

135.57 Authorisation and control of flight operations

The certificate holder shall establish procedures for the authorisation and control of air operations including initiation, continuation and termination of an air operation or series of air operations.

135.59 Flight preparation and flight planning

(a) The holder of an air operator certificate must ensure that for each air operation conducted under the authority of that certificate, appropriate information is available to the pilot-in-command to complete the preparation for the intended operation.

(b) The holder of an air operator certificate must ensure that prior to each air operation conducted under the authority of that certificate, a flight plan meeting the requirements of 91.307 or 91.407 as appropriate for the type of operation is prepared and if the flight plan is not prepared by the pilot-in-command, the pilot-in-command is informed of the contents of the flight plan before the intended operation.

(c) Where a person other than the pilot-in-command prepares a flight plan, the holder of the air operator certificate must ensure that the person—

- (1) is trained and competent to perform the task; and
- (2) is notified as soon as practicable of each change in equipment and operating procedure or facilities.

(d) For the purpose of paragraph (c) (2), notifiable changes including changes to the use of navigational aids, aerodromes, ATC procedures and regulations, local aerodrome traffic rules, and known hazards to flight including potentially hazardous meteorological conditions and irregularities in ground and navigation facilities.

(e) Notwithstanding 91.307(a), the holder of the air operator certificate must ensure that prior to any air operation the flight plan required by paragraph (b) is submitted to an appropriate ATS.

(f) Notwithstanding 91.307(a) and 91.407(a), the flight plan required to be submitted to an ATS unit under paragraph (e) may be submitted by the holder of the air operator certificate, in which case the pilot-in-command must be informed of the contents of the flight plan and that the flight plan has been submitted to ATS.

135.61 Emergency and survival equipment information

(a) The certificate holder shall have available, for immediate communication to rescue coordination centres, information on the emergency and survival equipment carried on board each of its aircraft.

(b) For flights in excess of 10 nm from shore the information required by paragraph (a) shall, if applicable, include—

- (1) the number, colour, and type of life rafts; and
- (2) whether pyrotechnics are carried; and
- (3) details of emergency medical supplies and water supplies; and
- (4) the type and operating frequencies of any emergency portable radio equipment.

135.63 Fuel

(a) The certificate holder shall establish a fuel policy for the purpose of flight planning, and en-route re-planning, to ensure that each aircraft carries sufficient fuel for the planned flight meeting the applicable requirements of Part 91, including reserves to cover deviations from the planned flight.

(b) The fuel policy shall ensure that the planning of fuel requirements is based upon—

- (1) fuel consumption—
 - (i) procedures, tables, and graphs, that are contained in, or derived from, the manufacturer's manuals and that conform to the parameters contained in the aircraft's type certificate; or
 - (ii) procedures derived from actual fuel consumption data compiled by the certificate holder that is acceptable to the Director; and
- (2) the operating conditions under which the planned flight is to be conducted, including—

- (i) normal aircraft fuel consumption data; and
- (ii) anticipated weights; and
- (iii) expected meteorological conditions; and
- (iv) ATS requirements and restrictions; and
- (v) the geographic location of the destination aerodrome; and
- (vi) the effect on fuel consumption of identified contingencies.

(c) The certificate holder shall ensure that the calculation of useable fuel required for a flight takes into account the following factors:

- (1) taxi fuel;
- (2) trip fuel;
- (3) reserve fuel, consisting of—
 - (i) contingency fuel; and
 - (ii) alternate fuel, if an alternate aerodrome is required; and
 - (iii) final reserve fuel; and
 - (iv) additional fuel, if required by the type of operation.

(d) The person flight planning or en-route re-planning an air operation shall comply with the fuel policy required by paragraph (a).

135.65 Cockpit check

The certificate holder shall ensure that flight crew members—

- (1) have available for use a cockpit checklist covering the procedures, including emergency procedures; and
- (2) use an appropriate practice for cockpit checks covering the procedures, including emergency procedures, for the operation of the aircraft in accordance—
 - (i) with the aircraft flight manual; or
 - (ii) procedures established by the certificate holder that are acceptable to the Director.

135.67 Passenger safety

(a) The certificate holder shall ensure that—

- (1) any passenger who appears to be under the influence of alcohol or drugs or exhibits behavioral characteristics, to the extent where the safety of the aircraft or its occupants is likely to be endangered, is refused embarkation or, where appropriate, removed from the aircraft; and
- (2) disabled passengers are appropriately cared for, including allocation of appropriate seating positions and handling assistance in the event of an emergency; and
- (3) escorted passengers do not constitute a safety hazard to other passengers or to the aircraft, and that prior arrangement for their carriage have been made in accordance with

procedures in the certificate holder's exposition.

(b) Notwithstanding (a)(1), where an operation is conducted for the purpose of search and rescue or is an air ambulance operation, passengers may be carried who are under the influence of alcohol or drugs or exhibit behavioral characteristics to the extent where the safety of the aircraft or its occupants is likely to be endangered, provided that reasonable action is taken by the operator to minimize the risk to the aircraft and its occupants from such passengers.

135.69 Manipulation of controls

(a) Except as provided in paragraph (b), a person must not manipulate the controls of an aircraft performing an air operation.

(b) A holder of an air operator certificate must take reasonable care to ensure that a person does not manipulate the flight controls of an aircraft performing an air operation under the authority of the certificate, unless the person is—

- (1) a flight crew member; or
- (2) an authorised representative of the Director who—
 - (i) has the permission of the certificate holder and the pilot-in-command; and
 - (ii) is performing a required duty.

135.71 Flight recorder requirements

(a) Flight crew members shall ensure that, when a cockpit-voice recorder is required by 135.363—

- (1) it is operated continuously from the start of the checklist commenced before engine start until the completion of the final checklist at the termination of flight; and
- (2) if the aircraft is equipped to record the uninterrupted audio signals received from a boom or a mask microphone, boom microphones are used below 10 000 feet altitude; and
- (3) if an erasure feature is used in the cockpit-voice recorder, only information recorded more than 2 hours earlier than the last record is erased or otherwise obliterated.

(b) Flight crew members shall ensure that, when a flight data recorder is required by 135.365—

- (1) it is operated continuously from the instant the aircraft begins the take-off until it has completed the landing; and
- (2) all recorded data is kept until the aircraft has been operated for at least 10 hours after each operating cycle; and
- (3) no more than 1 hour of recorded data is erased for the purpose of testing the flight recorder or the flight recorder system; and
- (4) any erasure made in accordance with paragraph (b)(3) is—
 - (i) of the oldest recorded data accumulated at the time of testing; and
 - (ii) recorded in the appropriate maintenance documentation.

135.73 Refuelling and de-fuelling operations

- (a) Despite the requirements of rule 91.15(3), a person operating an aeroplane under the authority of an air operator certificate may refuel or defuel the aeroplane with a Class 3.1C or a Class 3.1D flammable liquid (aviation turbine grade fuel) when a person is embarking, on board, or disembarking the aeroplane, if the person operating the aeroplane ensures that safety and aeroplane evacuation precautions are taken in accordance with procedures specified in the certificate holder's exposition.
- (b) A person operating an aeroplane under the authority of an air operator certificate may refuel or defuel the aeroplane with a Class 3.1C or a Class 3.1D flammable liquid (aviation turbine grade fuel) with one or more propulsion engines running, if-
- (1) the person ensures that safety and aeroplane evacuation precautions are taken in accordance with procedures specified in the certificate holder's exposition; and
 - (2) the pilot-in-command is responsible for every aspect of the fuelling operation.

135.75 Fuel spillage

The certificate holder shall ensure that while refuelling or de-fuelling, where fuel is spilled onto an impermeable surface and is likely to endanger persons or property—

- (1) refuelling or de-fuelling is stopped; and
- (2) immediate action is taken to cover the fuel with sand, sawdust, dry earth, or an agent such as foam or dry chemical extinguisher powder, to reduce the fire hazard.

135.77 Use of aerodromes

- (a) The certificate holder shall ensure that any aerodrome to be used in its operations has physical characteristics, obstacle limitation surfaces, and visual aids that meet the requirements for—
- (1) the characteristics of the aeroplane being used; and
 - (2) the lowest meteorological minima to be used.
- (b) The certificate holder shall ensure that any heliport to be used in its operations meets the requirements of 91.127.
- (c) The certificate holder shall, where its aeroplanes use an aerodrome not promulgated in the PNGAIP, maintain a register containing—
- (1) the aerodrome data; and
 - (2) procedures for ensuring that the condition of the aerodrome is safe for that operation; and
 - (3) procedures for ensuring that the condition of any required equipment, including safety equipment, is safe for that operation; and
 - (4) any limitations on the use of the aerodrome.
- (d) The certificate holder shall ensure that any aeroplane operating under VFR by day does not use any place for the purpose of landing or taking-off unless the runway used—
- (1) is at least twice the outer main gear span in width; and
 - (2) has a surface of sufficient strength and evenness for take-off and landing of the aeroplane being used.
- (e) The certificate holder shall ensure that any aeroplane operating under IFR or at night does not use

any place for the purpose of landing or taking-off unless the runway to be used meets the minimum runway width in accordance with Table 1.—

Table 1. Minimum Runway Width

| Runway Length | Minimum Runway Width |
|----------------------|-----------------------------|
| Less than 800 m | 18m |
| 800 m or more | 23 m |

(f) Notwithstanding paragraphs (d) and (e), a certificate holder may use a lesser minimum runway width than that prescribed in paragraph (d) or (e) for an aeroplane type if—

- (1) a lesser minimum runway width determined by certificated flight testing is prescribed in the aeroplane's flight manual; or
- (2) a lesser minimum runway width is acceptable to the Director.

135.79 Operations of single engine aircraft – IFR

A certificate holder may perform an air operation using a single engine aircraft under IFR providing that the air operation is for the carriage of mail or cargo only.

135.81 Restriction or suspension of operations

The certificate holder shall, on becoming aware of any condition that is a hazard to safe operations, restrict or suspend operations as necessary until the hazard is removed.

135.83 Minimum height for VFR flights

Notwithstanding 91.311(c), a pilot-in-command if necessary for the proper accomplishment of the operation, conduct approaches, departures, and manoeuvres below a height of 500 feet above the surface within the horizontal radius of 150 metres of any person, vessel, vehicle, or structure if the pilot-in-command—

- (1) prepares a plan for the operation in conjunction with every person and organisation involved in the operation; and
- (2) in addition to the requirements of 91.311(c), ensures that every passenger receives additional briefing or training in safety and emergency procedures appropriate to the characteristics of the operation; and
- (3) briefs every person and organisation involved in the operation on the plan required by paragraph (b)(1); and
- (4) takes reasonable care to conduct the operation without creating a hazard to any person or property.

135.85 Flights over water

(a) A person performing an air operation must not operate over water more than 50 nm from shore unless the aeroplane used for the operation is a multi-engine aeroplane capable of maintaining a height of 1500 feet AMSL with the critical engine inoperative.

(b) Each person performing an air operation over water beyond 100 nm from shore must conduct the flight under IFR.

135.87 Reserved

135.89 Reserved

135.91 Reserved

Subpart C — Operating and Meteorological Requirements

135.151 Purpose

This Subpart prescribes the rules governing VFR and IFR operations, and associated weather requirements.

135.153 Meteorological information

- (a) The certificate holder shall ensure that, if available, a flight conducted under VFR is planned, flown, and controlled using meteorological information provided by the holder of an aviation meteorological service organisation issued under Part 174 or otherwise from a reliable and accurate source.
- (b) The certificate holder shall ensure that flight conducted under IFR is planned, flown, and controlled using, if available, meteorological information provided for aviation purposes by the holder of an aviation meteorological service organisation certificate issued under Part 174.
- (c) A pilot-in-command may, for each IFR flight that originates and terminates within Papua New Guinea, if available, use a basic weather report that is provided in accordance with 174.6 to perform an instrument approach procedure and landing.

135.155 Meteorological conditions — VFR flight

- (a) The pilot-in-command shall ensure a flight under VFR is not commenced unless, if available, current meteorological information indicates VFR minima prescribed in 91.301 can be complied with along the route, or that part of the route to be flown under VFR.
- (b) A pilot-in-command shall not conduct a flight under VFR in an aircraft above more than broken cloud unless—
 - (1) the aircraft is authorised for IFR flight and the required minimum flight crew for IFR operation, holding current instrument rating qualifications, is performing the operation; and
 - (2) the instruments and equipment, including radio navigation equipment, required for IFR flight are operative; and
 - (3) the aircraft carries radio navigation equipment enabling it to be navigated by IFR to an aerodrome where an instrument approach procedure may be carried out for landing; and
 - (4) if the pilot-in-command cannot determine that the meteorological conditions at the destination aerodrome are suitable for an approach and landing under VFR, the aircraft carries sufficient fuel and fuel reserves to proceed under IFR to an aerodrome where an instrument approach procedure may be carried out for landing.

135.157 [Reserved]

135.159 Aerodrome operating minima – IFR flight

- (a) A pilot-in-command of an aircraft must not continue an instrument approach to an aerodrome past the final approach fix or, if a final approach fix is not used, must not commence the final approach segment of the instrument

approach procedure if, before passing the final approach fix or before commencing the final approach segment, current meteorological information indicates that the visibility at the aerodrome is less than the visibility published in the applicable AIP for the instrument approach procedure being used.

- (b) For the purpose of paragraph (a), the final approach segment begins—
- (1) at the final approach fix or facility specified in the instrument approach procedure; or
 - (2) if a final approach fix is not specified in the instrument approach procedure and the procedure includes a procedure turn, at the point where the procedure turn is completed and the aircraft is established on the final approach course within the distance specified in the instrument approach procedure.

135.161 IFR departure limitations

The pilot-in-command shall not commence a flight under IFR when meteorological conditions at the aerodrome of departure are below the authorised minimum altitude prescribed under Part 95 for the instrument approach procedure likely to be used at the aerodrome of departure, unless there is an aerodrome meeting the requirements of 135.77—

- (1) for a single-engine or two-engine aircraft, within a maximum of one hour flying time, in still air at one engine inoperative cruising speed, of the aerodrome of departure; or
- (2) for an aircraft having three or more engines, within a maximum of two hours flying time, in still air at one engine inoperative cruising speed, of the aerodrome of departure.

135.163 Reduced take-off minima

(a) A certificate holder may operate an aircraft at lower take-off minima than that prescribed in 91.413(a) provided they ensure that the operation is conducted in accordance with the reduced minima take-off procedure specified in their exposition.

(b) The reduced take-off minima procedure shall ensure that, in addition to 91.413(b)—

- (1) each flight crew member is qualified for reduced minima take-offs; and
- (2) the runway visibility is established using RVR; and
- (3) the method for observing and confirming that the required visibility exists for that take-off is acceptable to the Director.

135.165 IFR procedures

(a) The pilot-in-command shall conduct flights under IFR on routes prescribed under Part 95 except when—

- (1) it is necessary to avoid potentially hazardous conditions; or
- (2) operating under radar control from an ATS; or
- (3) operating under an off-route clearance obtained from an ATC unit; or
- (4) otherwise specified in the exposition of the holder of the air operator certificate that authorises the operation.

(b) Unless a clearance has been obtained from the appropriate ATC unit, in controlled airspace, the pilot-in-command shall comply with any IFR departure and approach procedures prescribed under Part 95 for the appropriate aerodrome.

(c) In uncontrolled airspace the pilot-in-command shall comply with any IFR departure and approach procedures prescribed under Part 95 for the appropriate aerodrome.

Subpart D — Performance

135.201 Purpose

This Subpart prescribes aeroplane performance operating limitations.

135.203 Applicability

- (a) A certificate holder shall ensure that each aeroplane it operates that is certificated to FAR Part 23 normal category or equivalent airworthiness standards complies with this Subpart.
- (b) A certificate holder shall ensure that each aeroplane it operates that is certificated to FAR Part 25 standards or equivalent airworthiness standards complies with the requirements of Subpart D of Part 121.
- (c) Notwithstanding paragraphs (a) and (b), limitations contained in the aeroplane flight manual relating to aircraft performance shall be complied with.
- (d) Notwithstanding paragraphs (a) and (b), a certificate holder may continue to operate into aerodromes classified as X, Y and Z aerodromes and promulgated in the AIP prior to 1 January 2004, in accordance with performance data approved by the Director prior to that date.
- (e) After 1 January 2004, a certificate holder that cannot fully comply with the requirements of this Subpart may be approved to operate in accordance with alternative performance operating data acceptable to the Director.

135.205 General aeroplane performance

A certificate holder shall ensure that, for each aeroplane it operates—

- (1) the take-off weight at the start of its take-off is not greater than the weight permitted under this Subpart for the flight to be undertaken allowing for the expected reductions in weight as the flight proceeds; and
- (2) the performance data used to determine compliance with the performance requirements of this Subpart is—
 - (i) contained in the aeroplane flight manual; or
 - (ii) in the case of contaminated landing distance data, provided by the aeroplane manufacturer and acceptable to the Director.

135.207 Take-off limitations

- (a) A certificate holder shall ensure that, for each aeroplane it operates—
- (1) the take-off weight does not exceed the maximum take-off weight specified in the flight manual; and
 - (2) the take-off distance required does not exceed 85% of the take-off distance available.
- (b) When calculating the take-off weight and distance to determine compliance with paragraph (a), the certificate holder shall take account of—
- (1) the take-off distance available; and

- (2) the weight of the aeroplane at the commencement of the take-off run; and
- (3) the pressure altitude of the aerodrome; and
- (4) ambient temperature at the aerodrome; and
- (5) the type of runway surface and the runway surface condition; and
- (6) the runway slope in the direction of take-off; and
- (7) not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

135.209 Runway surface and slope correction factors

(a) A certificate holder shall ensure that, unless performance data is available that authorises an alternative, the take-off distance calculated for a runway surface type under 135.207(b)(5) and the landing distance calculated under 135.221(c)(3)—

- (1) are corrected for use of other runway surface types by applying the factors in Table 1; and
- (2) are corrected for runway slope by—
 - (i) increasing the take-off distance by 5% for each 1% of uphill slope up to a maximum of 3% upslope; or
 - (ii) decreasing the landing distance by 5% for each 1% of uphill slope up to a maximum of 3% upslope; or
 - (iii) decreasing the take-off distance by 5% for each 1% downslope up to a maximum of 3% downslope; or
 - (iv) increasing the landing distance by 5% for each 1% downslope up to a maximum of 3% downslope.

Table 1

| Surface Type | Take-off distance Factor | Landing Distance Factor |
|--------------|--|-------------------------|
| Paved | x 1.00 | x 1.00 |
| Coral | x 1.00 | x 1.05 |
| Metal | x 1.05 | x 1.08 |
| Rolled earth | x 1.08 | x 1.16 |
| Grass | x 1.14 | x 1.18 |
| Water | In accordance with approved flight manual data | |

Where applicable, the slope corrections required by paragraph (a)(2) may be interpolated.

135.211 Net take-off flight path – aeroplane under IFR

- (a) A certificate holder shall ensure that, for each aeroplane it operates under IFR and, in the case of an aeroplane with two or more engines, assuming that the critical engine is inoperative, all obstacles within the net take-off flight path are cleared vertically by at least 50 feet.
- (b) For the purpose of paragraph (a), an obstacle shall be deemed to be within the net take-off flight path if the

lateral distance from the obstacle to the intended line of flight does not exceed—

- (1) where the intended flight path does not require a track change exceeding 15° —
 - (i) 45 m plus $0.10D$, to a maximum of 600 m or, if the certificate holder has established visual or radio navigation track guidance procedures for the pilot, to a maximum of 300 m; or
 - (ii) for day operations in VMC, 30 m plus $0.10D$ to a maximum of 600 m or, if the certificate holder has established visual or radio navigation track guidance procedures for the pilot, to a maximum of 300 m.
- (2) where the intended flight path requires a track change exceeding 15° —
 - (i) 45 m plus $0.10D$, to a maximum of 900 m or, if the certificate holder has established visual or radio navigation track guidance procedures for the pilot, to a maximum of 600 m; or
 - (ii) for day operations in VMC, 30 m plus $0.10D$ to a maximum of 600 m or, if the certificate holder has established visual or radio navigation track guidance procedures for the pilot, to a maximum of 300 m.

(c) For the purpose of paragraph (b), D is the horizontal distance the aeroplane will travel from the end of the take-off distance available.

(d) When calculating the net take-off flight path in accordance with paragraph (a), the certificate holder shall ensure that—

- (1) the following factors are taken into account—
 - (i) take-off weight at the commencement of the take-off run; and
 - (ii) aerodrome elevation; and
 - (iii) pressure altitude at the aerodrome when the atmospheric pressure varies by more than 1% from the International Standard Atmosphere; and
 - (iv) ambient temperature at the aerodrome; and
 - (v) not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component; and
- (2) a track change is not made before a height of 50 feet above the take-off surface has been achieved; and
- (3) unless otherwise authorised by the Director—
 - (i) a bank angle exceeding 15° is not made before a height of 50 feet above the take-off surface has been achieved; and
 - (ii) the bank angle up to and including a height of 400 feet above the take-off surface does not exceed 20° ; and
 - (iii) the bank angle above a height of 400 feet above the take-off surface does not exceed 25° ; and
- (4) allowance is made for—
 - (i) the effect of the bank angle on operating speeds and flight path; and
 - (ii) distance increments resulting from increased operating speeds; and
 - (iii) retention of stall margin and loss of climb gradient in accordance with 135.213.

- (5) in the case of an aeroplane with two or more engines, failure of the critical engine is assumed to occur after achieving a height above the runway surface of 50 feet.

135.213 Engine inoperative – gradient and stall corrections

Where flight manual data is available for 15° bank gradient loss and the flight manual declares a V_2 , a certificate holder shall, unless data is available that authorises an alternative, retain stall margin and calculate loss of climb gradient by applying the factors in Table 2.

Table 2

| Bank angle | Speed correction | Gradient correction |
|------------|------------------|---|
| 15° to 19° | V_2 | 1 x Aeroplane flight manual 15° gradient loss |
| 20° to 24° | $V_2 + 5$ knots | 2 x Aeroplane flight manual 15° gradient loss |
| 25° | $V_2 + 19$ knots | 3 x Aeroplane flight manual 15° gradient loss |

135.215 En-route – critical engine inoperative

(a) A certificate holder shall ensure that, for each aeroplane it operates having two or more engines, the aeroplane is capable of continuing flight at a positive slope at or above the relevant minimum safe altitudes, to a point 1000 feet above an aerodrome at which the performance requirements can be met under the following conditions—

- (1) in the forecasted meteorological conditions expected for the flight; and
- (2) with the critical engine inoperative; and
- (3) with the remaining engines operating within the maximum continuous power conditions specified.

(b) When calculating the en-route limitations in accordance with paragraph (a), the certificate holder shall ensure—

- (1) the aeroplane is not assumed to be flying at an altitude exceeding that at which the rate of climb has diminished to less than 300 feet per minute with all engines operating

within the maximum continuous power conditions specified in the aeroplane flight manual;
and
- (2) where applicable, the effect of bleed air, anti-ice or pressurisation are taken into account;
and
- (3) the assumed en-route gradient with one engine inoperative is the gross-gradient- minus-0.5% gradient.

135.217 En-route – 90 minute limitation

A certificate holder shall ensure that each aeroplane it operates with two engines is not more than 90 minutes away from an aerodrome at which the performance requirements specified in the aeroplane flight manual applicable at the expected landing weight are met.

135.219 Approach and landing-climb – destination and alternate aerodromes

A certificate holder shall ensure that, for each aeroplane it operates—

- (1) the landing weight of the aeroplane does not exceed the maximum approach and landing- climb weight, taking into account the altitude and the ambient temperature expected for the estimated time of landing at a destination and alternate aerodrome; and
- (2) for instrument approaches with decision heights below 200 feet, the approach weight of the aeroplane, taking into account the take-off weight and the fuel expected to be consumed in flight, allows a missed approach net-climb-gradient, assuming that the critical engine is inoperative in the approach configuration, of—
 - (i) at least 2.5%; or
 - (ii) at least the net-climb gradient required to clear any obstacles in the missed approach flight path in accordance with 135.211.

135.221 Landing distance – dry runway

(a) A holder of an air operator certificate must ensure that, for each aeroplane the certificate holder operates, the landing weight for the estimated time of landing does not exceed the landing weight specified in the aeroplane flight manual.

(b) A holder of an air operator certificate must ensure that, for each aeroplane the certificate holder operates, the landing weight of the aeroplane for the estimated time of landing at the destination aerodrome and at any alternate aerodrome allows a full-stop landing from 50 feet above the threshold within 85% of landing distance available.

(c) When calculating the landing weight in accordance with paragraph (b), the certificate holder must take account of—

- (1) aerodrome elevation; and
- (2) ambient temperature at the aerodrome; and
- (3) the type of runway surface and the runway surface condition ; and
- (4) the runway slope in the direction of landing; and
- (5) not more than 50% of the reported headwind component or not less than 150% of the reported tailwind component.

(d) For dispatch of an aeroplane to land in accordance with paragraphs (b) and (c), the certificate holder must assume that the aeroplane lands on the most favourable runway taking into account—

- (1) the forecast meteorological conditions; and
- (2) surrounding terrain; and
- (3) approach and landing aids; and
- (4) obstacles within the missed approach flight path.

(e) If the holder of an air operator certificate is unable to comply with paragraph (d) for the destination

aerodrome, the aeroplane may be dispatched if an alternate aerodrome is designated that permits compliance with paragraphs (a), (b), and (c).

135.223 Landing distance –contaminated runways

A certificate holder shall ensure that, for each aeroplane it operates when the appropriate weather reports or forecasts, or a combination of them, indicate that the runway at the estimated time of arrival of the aeroplane may be contaminated, the landing distance available is at least the landing distance determined by the certificate holder from approved data appropriate to the contamination present.

135.225 Steep approach and short landing techniques

A certificate holder may perform steep approach procedures using approach slope angles of 4.5°, or more, and with screen heights of less than 50 feet but not less than 35 feet, providing—

- (1) the aeroplane flight manual states the maximum approved approach slope angle, any other limitations, procedures, including emergency procedures, for the steep approach, as well as amendments for the landing distance data when using steep approach criteria; and
- (2) for IFR operations, an approach slope indicator system comprising of at least a visual approach slope indicating system is available at each aerodrome at which steep approach procedures are to be conducted; and
- (3) for IFR operations, weather minima are specified and approved for each runway to be used with a steep approach; and
- (4) for IFR operations, consideration is given to—
 - (i) obstacles; and
 - (ii) the type of approach slope indicator reference and runway guidance such as visual aids, MLS, GPS, ILS, LLZ, VOR, or NDB; and
 - (iii) the minimum visual reference to be required at DH and MDA; and
 - (iv) useable airborne equipment; and
 - (v) pilot qualification and special aerodrome familiarisation; and
 - (vi) aeroplane flight manual limitation and procedures; and
 - (vii) missed approach criteria.

Subpart E — Weight and Balance

135.301 Purpose

This Subpart prescribes the rules governing the control of loading and weight and balance on an aircraft.

135.303 Goods, passenger, and baggage weights

(a) Subject to paragraphs (b), (c), and (d), a holder of an air operator certificate must ensure that for every air operation conducted under the authority of the certificate the weights of the following items that are carried on the aeroplane are established:

- (1) the total weight of passengers;
- (2) the total weight of crew members;

- (3) the total weight of goods and baggage.
- (b) The total weight of passengers, (excluding their carry-on-baggage) must be established by using on 1 of the following:
- (1) the actual weight of every passenger;
 - (2) a standard weight for every passenger that is established by the certificate holder and detailed in the certificate holder's exposition;
 - (3) the following applicable standard weight for every passenger:
 - (i) 15 kg for a child under 2 years of age;
 - (ii) 46 kg for a child of the age of 2 years and under the age of 13 years;
 - (iii) 86 kg for a person of or over the age of 13 years.
- (c) The total weight of crew members and their carry-on baggage must be established by using only 1 of the following:
- (1) the actual weight of every crew member and their carry-on baggage;
 - (2) a standard weight for every crew member and their carry-on baggage that is established by the certificate holder and detailed in the certificate holder's exposition;
 - (3) a standard weight of 86 kg for every crew member and their carry-on baggage.
- (d) The weight of goods and baggage must be established by using-
- (1) the actual weight of the goods and baggage; or
 - (2) for operations from a remote aerodrome where it is not practicable to establish the actual weight of goods and baggage, the certificate holder must establish procedures to enable the pilot-in-command to assess the weight of goods and baggage.
- (e) A certificate holder who intends to establish a standard weight to be detailed in the certificate holder's exposition for use under paragraphs (b)(2) or (c)(3) must establish the respective standard weight in accordance with a survey programme that is acceptable to the Director.
- (f) A certificate holder who intends to use a standard weight for passengers under paragraphs (b)(2) or (b)(3), or for crew members under paragraphs (c)(2) or (c)(3) must establish procedures that are acceptable to the Director to ensure that, if the weight of a passenger or crew member with their carry-on baggage is clearly greater than the applicable standard weight being used, a weight that is more representative of the actual weight of the person and their carry-on baggage is used.

135.305 Aircraft load limitations

- (a) A holder of an air operator certificate must ensure that—
- (1) the limitations contained in the aircraft flight manual, or other approved document, relating to the weight and balance of an aircraft are complied with; and
 - (2) maximum allowable weights are not exceeded for zero fuel, manoeuvre, take-off, and landing; and
 - (3) the aircraft's centre of gravity is within the limits referred to in paragraph (a)(1) at departure, and will remain within those limits throughout the air operation.
- (b) A pilot-in-command of an aircraft must, before taking-off on an air operation, assess the information required

under rules 135.857(b)(11) to (b)(15) to ensure that the aircraft will remain within the weight and balance limitations specified in the flight manual for the duration of the flight.

Subpart F — Instruments and Equipment

135.351 Purpose

This Subpart prescribes the instruments and equipment required for aircraft.

135.353 General

A certificate holder shall ensure that an air operation does not commence unless—

- (1) the aircraft is equipped—
 - (i) with the type of instruments and equipment required by Part 91 and this Subpart; and
 - (ii) with the number of instruments and equipment to ensure that the failure of any independent system required for either communication or navigation purposes, or both, will not result in the inability to communicate and navigate safely as required for the route being flown; and
- (2) the instruments and equipment installed in the aircraft comply with the specifications and airworthiness design standards listed in—
 - (i) Appendix A to this Part; or
 - (ii) Appendix B to Part 21; or
 - (iii) Part 26; or
 - (iv) alternative specifications or standards acceptable to the Director; and
- (3) the instruments and equipment have been installed in accordance with the aircraft manufacturer's instructions or other instructions acceptable to the Director; and
- (4) except as may be provided by a MEL approved under 91.539 for use for that aircraft, the instruments and equipment installed in the aircraft are in operable condition.

135.355 Night flight

A certificate holder shall ensure that each of its aircraft operated at night is equipped with—

- (1) two landing lights or a single landing light unit with two independent filaments; and
- (2) a light providing general illumination in each passenger compartment.

135.357 Instrument flight rules

- (a) Except as provided in paragraph (b) a holder of an air operator certificate must ensure that every aeroplane that is operated under IFR under the authority of the certificate is equipped with—
 - (1) the following that must be in addition to, and independent of, the instruments and equipment required under Subpart F of Part 91:
 - (i) a means of indicating airspeed, calibrated in knots, with a means of

- preventing malfunctioning due to either condensation or icing; or
- (ii) a means of indicating sensitive pressure altitude, calibrated in feet; and
- (2) spare bulbs for flight compartment instrument illumination if these bulbs can be changed in flight; and
 - (3) spare fuses if the aeroplane is fitted with fuses which can be changed in flight.

135.359 Reserved

135.361 Restraints

After 1 January 2005, an operator must ensure that each of its aircraft is equipped with a safety belt and single diagonal shoulder strap or safety harness meeting the specifications in Part 91 Appendix A.4 paragraph (b) or (c) respectively for each passenger seat that can be occupied for takeoff and landing.

135.363 Cockpit-voice recorder

A holder of an air operator certificate must ensure that every turbine powered aeroplane with a MCTOW of greater than 2750 kg but less than 5700kg is equipped with a cockpit voice recorder in accordance with A.2 of Appendix A

135.365 Flight Data Recorder

A holder of an air operator certificate must ensure that each turbine powered aeroplane with a MCTOW of 5700 kg or less complies with the flight data recorder requirements in accordance with A.3 of Appendix A.

135.367 Additional attitude indicator

A certificate holder shall ensure that each of its turbojet or turbofan powered aeroplanes is equipped with a third presentation of attitude.

Subpart G — Airworthiness

135.401 Purpose

This Subpart prescribes rules for maintenance of aircraft operated under this Part.

135.403 Responsibility for airworthiness

- (a) A holder of an air operator certificate is responsible for the airworthiness of-
 - (1) every aeroplane that is operated under the authority of the certificate; and
 - (2) any equipment installed or attached to the aeroplane.

- (b) A holder of an air operator certificate must ensure that-
- (1) every aeroplane that is operated under the authority of the certificate is maintained in accordance with the maintenance programme required under rule 119.61; and
 - (2) the maintenance is performed by-
 - (i) a maintenance organisation certificated in accordance with Part 145; or
 - (ii) for maintenance that is performed in another State that is party to a technical arrangement, a maintenance organisation that is certificated or appropriately authorised by the State to perform maintenance on the aircraft type in accordance with the conditions specified in the technical arrangement.

135.404 Condition monitored maintenance programmes

The holder of an air operator certificate who utilises condition monitoring as part of a maintenance programme for an aeroplane must provide the Director, each month, with a maintenance reliability report that contains details of-

- (1) aeroplane utilisation; and
- (2) pilot reports regarding aeroplane airworthiness; and
- (3) aeroplane mechanical delay and flight cancellation; and
- (4) unscheduled engine shutdown; and
- (5) unscheduled engine removal; and
- (6) unscheduled component removal; and
- (7) confirmed component failure; and
- (8) incidents regarding aeroplane airworthiness; and
- (9) MEL usage.

135.405 Aircraft airworthiness review

(a) A holder of an air operator certificate may certify completion of an aircraft airworthiness review required by rule 91.615 on the basis of a continuing compliance assurance programme if—

- (1) the programme samples every requirement of rule 43.153(a) during the review period of 365 consecutive days; and
- (2) the operator's exposition required under rule 119.75 contains procedures acceptable to the Director for conducting the continuing assurance programme; and
- (3) the operator maintains records of every sample taken; and

(4) the airworthiness review is individually certified for each of the certificate holder's aeroplanes

(b) The holder of an air operator certificate must ensure that the person certifying completion of an aircraft airworthiness review carried out under paragraph (a)—

- (1) confirms that the records required by paragraph (a)(3) provide evidence of compliance with paragraph (a)(1); and
- (2) identifies in the statement of certification the sampling period over which the review is deemed to have been completed; and
- (3) enters the following statement in the appropriate maintenance aircraft logbook or other approved technical record:

“I hereby certify that an airworthiness review has been completed out on this aircraft for the period.....in accordance with the continuing compliance assurance programme requirements of Papua New Guinea Civil Aviation Rule 135.405” and

- (4) adjacent to statement required by paragraph (b)(3), enters:
 - (i) the person's name; and
 - (ii) the person's signature, except if the maintenance logbook is in electronic format; and
 - (iii) the person's inspection authorisation number; and
 - (iv) the date the review was completed; and
- (5) is independent of any direct involvement in the control of airworthiness of the aircraft under review.

(c) The procedures required by paragraph (a)(2) must include the means whereby the continuing compliance assurance programme sampling is recommence following certification of a completed review in accordance with paragraph (b).

(d) Notwithstanding rule 43.151, a person certifying completion of an aircraft airworthiness review under paragraph (b) may be a person authorised for the purpose by the holder of the air operator certificate if-

- (1) the person has qualifications that are at least equivalent to those of the holder of an inspection authorisation issued under Part 66 in respect to aircraft conformity and type design; and
- (2) the person has experience in the control of airworthiness and the conduct of maintenance on that type of aircraft.

Subpart H — Crew Member Requirements

135.501 Purpose

This Subpart prescribes the rules governing the use of flight crew.

135.503 Assignment of flight crew duties

(a) A holder of an air operator certificate must ensure that every person assigned as a flight crew member, on an air operation conducted under the authority of the certificate —

- (1) holds a current pilot licence and rating appropriate to the category of aircraft and to the

tasks assigned; and

- (2) holds a current class 1 medical certificate appropriate to the task assigned; and
- (3) meets all the experience, training, and competency requirements for the task assigned; and
- (4) meets all route and aerodrome qualification requirements for the intended operation.

(b) A holder of an air operator certificate must designate, for each period of an air operation conducted under the authority of the certificate—

- (1) a pilot-in-command; and
- (2) a second-in-command when two pilots or more pilots are assigned for the operation; and
- (3) any other flight crew member that may be required for the type of operation to be performed.

135.505 Pilot-in-command consolidation of operating experience on type

(a) A holder of an air operator certificate must ensure that before designating a pilot to act as a pilot-in-command of an aircraft on an air operation conducted under the authority of the certificate, the pilot has completed the following consolidation of operating experience, on the make and basic mode of the aircraft:

- (1) for a single engine aircraft, 5 hours flight time and 5 take-offs and landings;
- (2) for a multi-engine aircraft, 10 hours flight time and 10 take-offs and landings;
- (3) for a turbojet or turbofan aeroplane, 15 hours flight time and 10 take-offs and landings;
- (4) for single pilot air operations under IFR or VFR at night-
 - (i) 40 hours flight time on the aircraft type; or
 - (ii) for subsequent aircraft types of the same category, other than the initial aircraft type flown single pilot on air operations under IFR, or flow single pilot on air operations under VFR at night, the applicable flight time required by paragraphs (a)(1), (a)(2), or (a)(3).

(b) Subject to paragraphs (c) and (d), after the pilot has completed aircraft type rating training, initial training required under rule 135.557 or transition training required under rule 135.559, and the competency check required under rule 135.605, the consolidation of operating experience required by paragraph (a) must be acquired as follows:

- (1) in flight during air operations performed; and
- (2) for an aircraft not previously used to perform an air operation under the authority of the holder's air operator certificate, operating experience acquired in the aircraft type, during proving flights or ferry flights may be used to meet this requirement.
- (3) while performing the duties of a pilot-in-command under the supervision of a designated pilot-in-command who must –
 - (i) be authorised in writing by the certificate holder to supervise a pilot undergoing consolidation of operating experience on the aircraft type; and
 - (ii) occupy a flight crew member seat while supervising; and
- (4) for paragraph (a)(4)(i), the 40 hours flight time must include–

- (i) for air operations under IFR, a minimum of 10 hours flight time on air operations conducted under IFR; or
 - (ii) for air operations under VFR at night, a minimum of 10 take-offs and landings at night; and
- (5) the consolidation of operating experience required by paragraph (a) must be completed within 180 days from the successful completion of the competency check; and
- (6) if the pilot fails to complete the applicable consolidation of operating experience on or before the 180th day as required in paragraph (5), the pilot must complete a competency check before recommencing the required consolidation of operating experience.
- (c) For the purpose of the pilot acquiring the operating experience required under paragraph (a)-
- (1) the flight time and take-off and landing experience required in paragraphs (a)(1), (a)(2), and (a)(3) may be accrued in a flight simulator approved by the Director for the purpose; and
 - (2) (1) if the time required by paragraph (a) is conducted in a single-pilot aircraft, the flight time must be entered as *pilot-in-command under supervision* in the pilot's logbook and certified by the designated pilot-in-command who supervised the pilot performing the consolidation of operating experience.

135.507 Experience requirements for IFR pilots

A holder of an air operator certificate must not designate a person as pilot-in-command of an aircraft performing an air operation under IFR under the authority of the certificate, unless the person-

- (1) has at least 750 hours of flight time as a pilot, including 150 hours of cross-country flight time which must include at least 50 hours cross-country flight time conducted under an IFR flight plan; and
- (2) 50 hours of actual or simulated instrument time of which 25 hours may be in a flight simulator approved for this purpose; and
- (3) for night operations, 25 hours of night flight time.

135.509 Minimum flight crew - IFR

- (a) A holder of an air operator certificate must not operate an aircraft on an air operation under IFR under the authority of the certificate with one pilot unless—
- (1) the flight manual for the aircraft permits the aircraft to be operated by one pilot under IFR; and
 - (2) the aircraft is equipped with an operative autopilot or stabilisation system capable of operating the aircraft controls to maintain flight and manoeuvre the aircraft about the roll and pitch axes with an automatic heading and altitude hold; and
 - (3) the aircraft is fitted with a headset that includes a boom microphone and facility for control column transmit-receive switching at the pilot-in-command station; and
 - (4) the pilot-in-command has met the other applicable requirements of this Part.
- (b) A holder of an air operator certificate must not operate an aircraft on an air operation with 2 pilots unless the functions of each pilot relating to the operation and safety of the air

operation are assigned in writing by the certificate holder, and the aircraft is equipped with-

- (1) two pilot stations that allow either pilot to have an unobstructed view of every primary flight and engine instrument and control display; and a crew-member intercom system; and
- (2) either-
 - (i) fully functioning dual controls; or
 - (ii) pitch, roll, yaw, and engine power controls that can be operated at either pilot station.

135.511 Flight crew member pairing limitations

In air operations required to be crewed by more than one pilot, where the pilot-in-command is over the age of 60 years the holder of the air operator certificate must ensure that the other flight crew member is below the age of 60 years.

Subpart I — Training

135.551 Purpose

This Subpart prescribes rules governing the establishment and operation of a training programme for crew members.

135.553 Training programme

- (a) The certificate holder shall establish a training programme to ensure that each of its crew members are trained and competent to perform their assigned duties.
- (b) The certificate holder shall ensure that each crew member is trained in accordance with the training programme contained in the certificate holder's exposition.
- (c) The certificate holder shall control its training programme.
- (d) The certificate holder may—
 - (1) conduct the training programme; or
 - (2) contract with the holder of an aviation training organisation certificate issued under Part 141, to conduct the training programme where the Part 141 certificate authorises the holder to conduct that training; or
 - (3) use an external training programme acceptable to the Director that is carried out by an appropriately qualified holder of a flight instructor rating; or
 - (4) for a training programme conducted outside Papua New Guinea, contract with an organisation that meets an equivalent standard specified by Part 141.

135.555 Training records

The certificate holder shall maintain accurate records of all required training undertaken by its crew members.

135.557 Initial training for crew members

- (a) A holder of an air operator certificate must ensure that every crew member, who has not qualified

and served as a crew member on an aircraft operated under the authority of the certificate, completes initial training conducted—

- (1) in a structured manner; and
 - (2) in accordance with a syllabus that includes training applicable to—
 - (i) the aeroplane type to be used, including special equipment fitted for the intended operation; and
 - (ii) the routes and aerodromes appropriate to the intended operation; and
 - (iii) crew member assignments, functions, and responsibilities; and
 - (iv) location and operation of emergency equipment available for use by crew members; and
 - (v) if equipped, location and use of oxygen equipment; and
 - (vi) location and use of every normal and emergency exits, including any evacuation slide and escape rope; and
 - (vii) the certificate holder's policies and procedures appropriate to its air operations.
- (b) A holder of an air operator certificate may vary the syllabus for an individual crew member if—
- (1) the variation is recorded in the crew member's record of training; and
 - (2) the certificate holder certifies the variation made and the reasons for the variation in the crew member's record of training.

135.559 Transition training for crew members

- (a) The certificate holder shall ensure that each of its crew members already qualified and serving as a crew member, completes appropriate transition training if—
- (1) the crew member is changing from one aircraft type or variant to another type or variant; or
 - (2) new procedures or equipment are introduced on an existing aircraft type or variant.
- (b) The transition training shall address—
- (1) the use of all safety and emergency equipment and procedures applicable to the aircraft type or variant; and
 - (2) new procedures or equipment introduced on the existing aircraft type or variant.

135.561 Manoeuvres not authorized while carrying passengers

- (a) A holder of an air operator certificate must ensure an abnormal, unusual, or emergency training manoeuvre is not performed during an air operation conducted under the authority of the certificate while carrying passengers.
- (b) An abnormal, unusual or emergency manoeuvre referred to in paragraph (a) includes, but is not limited to the following:

- (1) simulated engine failure where engine power is reduced or stopped to

- simulate loss of engine power:
- (2) simulated asymmetric flight;
 - (3) any simulated aircraft system failure that activates a visual or oral warning system that can be seen or overheard by passengers;
 - (4) any other simulated system failure that can compromise the safe operation of the flight.

135.563 Flight crew training programme

- (a) The certificate holder shall establish a flight crew training programme.
- (b) The certificate holder shall ensure that its flight crew training programme includes initial, transition, and recurrent training requirements applicable to—
 - (1) the aircraft type to be used, including special equipment fitted for the intended operation; and
 - (2) the routes and aerodromes appropriate to the intended operation; and
 - (3) the certificate holder's policies and procedures appropriate to its operations.
- (c) The training programme shall include, where appropriate, both ground and flight instruction utilising an aircraft or an approved flight simulator.
- (d) The training shall be conducted by a person that meets the requirements of 135.565; and
- (e) The certificate holder shall accurately record each separate qualification of each flight crew member and inform the crew member involved in writing of the qualification gained.

135.565 Flight instructor qualifications

The certificate holder shall ensure that a person carrying out functions as an instructor in its flight crew member training programme established under this Part—

- (1) has satisfactorily completed the training required by this Subpart to serve as pilot-in-command in operations ; and
- (2) is—
 - (i) the holder an appropriate and current flight instructor rating; or
 - (ii) a person approved for that purpose; and
- (3) completes initial and recurrent training requirements applicable to the instruction carried out.

135.567 Reserved

Subpart J — Crew Member Competency and Recurrent Training Requirements

135.601 Purpose

This Subpart prescribes the rules governing the operational competency assessment and recurrent training of flight crew members.

135.603 Operational competency assessment and recurrent training programme

- (a) The certificate holder shall establish an operational competency assessment and recurrent training programme in accordance with this Subpart that is controlled by the certificate holder.
- (b) The certificate holder may—
- (i) conduct the operational competency assessment and recurrent training programme; or
 - (ii) contract with an organisation that holds a certificate issued under Part 141, to provide the operational competency assessment and recurrent training programme where the certificate authorises the holder to conduct that programme; or
 - (iii) use an external competency assessment and recurrent training programme acceptable to the Director that is carried out by an appropriately qualified holder of a flight examiner authorisation; or
 - (iv) for an operational competency assessment and recurrent training programme conducted outside Papua New Guinea, contract with an organisation that meets an equivalent standard specified by Part 141 to provide the operational competency assessment and recurrent training programme.

135.605 Authorised flight examiner qualifications

- (a) Except as provided in paragraph (b), the certificate holder shall ensure that each person performing the functions of an authorised flight examiner in its operational competency assessment programme established under this Part—
- (1) is type rated in the aircraft used to conduct the operation; and
 - (2) is familiar with the types of operations conducted by the certificate holder; and
 - (3) is—
 - (i) the holder of an appropriate and current flight examiner authorisation; or
 - (ii) a person approved for that purpose; and
 - (4) completes initial and recurrent training requirements applicable to the testing carried out.
- (b) Where the operational competency assessment referred to in paragraph (a) is carried out in a flight simulator, the person who is performing the functions of an authorised flight examiner shall—
- (1) have satisfactorily completed a competency check as pilot-in-command in a type of operation to which this Part applies; and
 - (2) be—
 - (i) the holder an appropriate and current flight examiner authorisation; or
 - (ii) a person approved for that purpose; and
 - (3) complete initial and recurrent training requirements applicable to the testing carried out.

135.607 Flight crew competency checks

- (a) A holder of an airoperator certificate must ensure that —
- (1) for each pilot acting as pilot-in-command has, within the immediately preceding 12 months, passed a check of route and aerodrome proficiency that is administered by a flight examiner and that —

- (i) consists of at least one flight over one route segment and one or more landings at aerodromes representative of the operations to be flown; and
 - (ii) establishes that the pilot can satisfactorily perform the duties and responsibilities of a pilot-in-command in air operations appropriate to this Part; and
- (2) for each pilot conducting VFR operations has, within the immediately preceding 12 months, successfully completed a competency check, that is administered by a flight examiner and that covers procedures, including emergency procedures, of the pilot's flying skill in an aeroplane type normally used by the pilot in the operation; and
- (3) for each pilot acting as a flight crew member of an aeroplane operating under IFR has, within the immediately preceding 6 months, passed a check that is administered by a flight examiner and that-
- (i) covers procedures, including emergency procedures, appropriate to the equipment fitted to the aircraft and to the type of air operations to which the pilot is assigned by the certificate holder; and
 - (ii) is conducted on rotation each 6-month period in each aeroplane type used by the pilot in the operation; and
- (4) for each pilot within the immediately preceding 12 months, successfully completed a written or oral test of the pilot's knowledge of the following:
- (i) the relevant Civil Aviation Rules and the certificate holder's operations specifications and exposition;
 - (ii) the aeroplane systems, performance, and operating procedures, and the content of the flight manual for each aeroplane type normally flown by the pilot;
 - (iii) navigation, ATC, and meteorology;
 - (iv) special flight operations as appropriate to the type of operation;
 - (v) new equipment, procedures, and techniques;
 - (vi) location and operation of items of emergency equipment fitted to an aeroplane of the type normally flown by the pilot.
- (5) the flight examiner who administered the check or test required under paragraphs (1), (2), (3) and (4),
- (i) certifies in the training record for the pilot that the check or test has been completed and certifies the result of the check or test; and
 - (ii) if the check or test was completed satisfactorily, certifies in the pilot logbook in accordance with rule 61.29(a)(3) satisfactory completion of the check or test; and
- (6) flight crew competency checks are carried out in an aircraft or flight simulator approved for this purpose.

135.609 Crew member – grace provisions

If a crew member who is required by Subparts H, I, or J, to take a test, a flight check, or be assessed completes the test, flight check or assessment within three calendar months before the date on which the test, flight check or assessment is required, the crew member is deemed to have completed the test, flight check or assessment on the date that it is required to be completed.

135.611 Competency and testing records

Each holder of an air operator certificate shall maintain accurate records of all competency assessments and testing of its crew members.

Subpart K — Fatigue of Flight Crew

135.801 Flight and duty time limitations

The certificate holder shall not assign a person for duty as a crew member, nor shall a person undertake duties as a crew member, unless that person can do so in compliance with the fatigue risk management system or flight and duty time limitations prescribed under Part 122.

Subpart L — Manuals, Logs, and Records

135.851 Purpose

This Subpart prescribes the rules governing the use and retention of the manuals, logs, and records required for air operations performed.

135.853 Operating information

The certificate holder shall ensure that the parts of its exposition relevant to the duties of each crew member are current and are accessible to the crew member.

135.855 Documents to be carried

The certificate holder shall ensure that the following documents where appropriate are carried on each individual flight—

- (1) if available NOTAM and aeronautical information service briefing documentation appropriate to the operation; and
- (2) meteorological information appropriate to the operation; and
- (3) notification of dangerous goods; and
- (4) copies of the relevant flight guide charts and plates.

135.857 Daily flight record

(a) A holder of an air operator certificate must keep accurate daily flight records for every aircraft, unless the information is recorded in another document in a manner that enables the daily flight record details for every flight to be constructed.

(b) Daily flight records must contain the following details for every flight:

- (1) the date of the flight;
- (2) the name of the operator;
- (3) the name of the pilot-in-command;
- (4) the registration markings of the aircraft;

- (5) the total flight time;
- (6) the number of passengers;
- (7) the type of air operation;
- (8) the name or identification of the departure and destination aerodromes;
- (9) the flight number or estimated time of departure;
- (10) the total of, the empty weight of the aircraft, the weight of any removable equipment, the weight of consumables, and the weight of crew members;
- (11) the total weight of-
 - (i) passengers; and
 - (ii) goods; and
 - (iii) baggage.
- (12) the total weight of usable fuel;
- (13) the take-off weight;
- (14) evidence that the centre of gravity is within the specified limits;
- (15) the maximum allowable weights for the operation, including zero fuel weight, take-off weight, and landing weight for the operation;
- (16) an indication of the occasions when a more indicative weight is used under rule 135.303(f).

(c) Before every air operation the holder of an air operator certificate must ensure that the information required in paragraphs (b)(11) to (b)(15) is made available to the pilot-in-command in a timely manner to enable the pilot to make the assessment required by rule 135.305(b) regarding the weight and balance of the aircraft.

135.859 Retention period

- (a) The certificate holder shall ensure that the following information is retained for 12 months from the day it was completed—
- (1) notification of dangerous goods; and
 - (2) daily flight record.
- (b) The certificate holder shall ensure that its records of training, checking, and qualifications of each crew member is retained until 12 months after the crew member has left the certificate holder's employment.

Subpart M — Transition Provisions

135.901 Transition

Transition provisions detailed in Part 20 apply to this Part.

Appendix A — Instruments and Equipment Airworthiness Design Standards

A1 Additional attitude indicator

The third presentation of attitude shall be—

- (1) operated independently of any other attitude indicating system; and
- (2) powered from a source independent of the main electrical generating system; and
- (3) capable of continuous reliable operation for at least 30 minutes after total failure of the electrical generating system; and
- (4) automatically operative without selection after total failure of the main electrical generating system and clear indication shall be given on the instrument panel that the attitude indicator is being operated by emergency power; and
- (5) appropriately lighted during all phases of operation.

A2 Cockpit voice recorder

Cockpit voice recorders must —

- (1) meet the requirements of the TSO C84 series or the TSO C123 series; and
- (2) be fitted with an underwater locating device that meets the requirements of the TSO C121 series; and
- (3) have a minimum capacity of 30 minutes continuous recording time before any erasure.

A3 Flight data recorder

Flight data recorders must —

- (1) meet the requirements of the TSO C124 series; or
- (2) be one that meets a standard equivalent to TSO C 124 that has been approved by an ICAO Contracting State and acceptable to the Director; and
- (3) be fitted with an underwater locating device that meets the requirements of TSO C 121 series; or
- (3) an audio/video recorder that has been determined by the Director as acceptable means of compliance; and
- (4) has in place a flight tracking system that permits the operator to accurately track the aircraft's location at all times; and
- (6) be of a non –ejectable type capable of recording and storing 25 hours of data

in a digital form; and

(7) except as provided in an MEL, record the parameters as detailed in

- Figure 1; and
- Table 1; or
- as determined acceptable by the Director.

Appendix A Figure 1- 135. 365 FDR parameter requirements

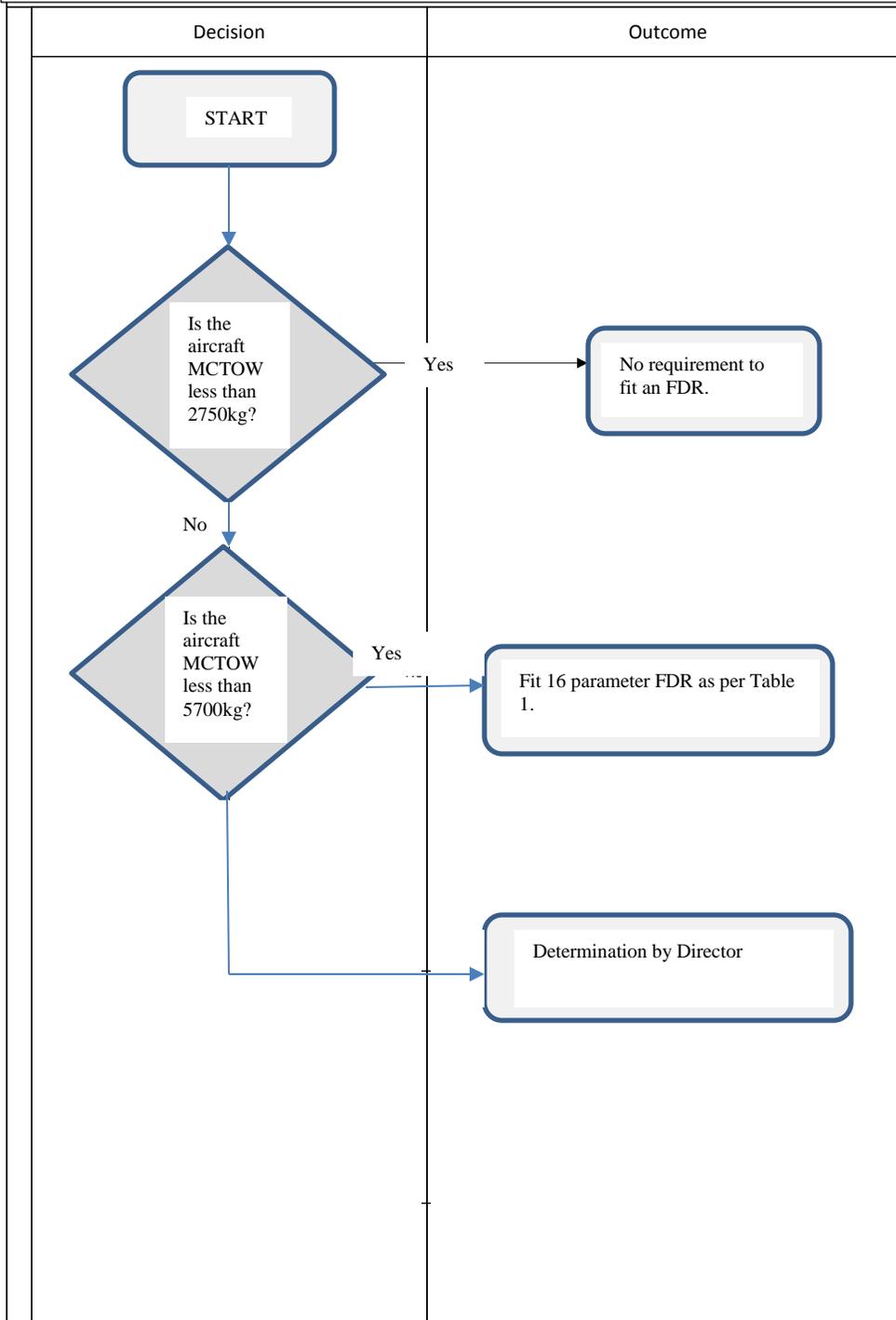


Table 1 – 135.365 Flight Data Recorder Parameter

| Serial number | Parameter | Measurement range | Maximum sampling and recording interval (seconds) | Accuracy limits (sensor input compared to FDR read-out) | Recording resolution |
|---------------|---|---|---|---|---|
| 1 | Time (UTC when available, otherwise relative time count or GPS time sync) | 24 hours | 4 | ±0.125% per hour | 1 second |
| 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) | 1.5 m (5 ft) |
| 3 | Indicated airspeed or calibrated airspeed | 95 km/h (50 kt) to max V_{S0} (Note 1) V_{S0} to 1.2 V_D (Note 2) | 1 | ±5% ±3% | 1 kt (0.5 kt recommended) |
| 4 | Heading (primary flight crew reference) | 360° | 1 | ±2° | 0.5° |
| 5 | Normal acceleration | –3 g to +6 g | 0.125 | ±1% of maximum range excluding datum error of ±5% | 0.004 g |
| 6 | Pitch attitude | ±75° or usable range whichever is greater | 0.25 | ±2° | 0.5° |
| 7 | Roll attitude | ±180° | 0.25 | ±2° | 0.5° |
| 8 | Radio transmission keying | On-off (one discrete) | 1 | | |
| 9 | Power on each engine (Note 3) | Full range | 1 (per engine) | ±2% | 0.2% of full range or the resolution required to operate the aircraft |
| 10* | Trailing edge flap and cockpit control selection | Full range or each discrete position | 2 | ±5% or as pilot's indicator | 0.5% of full range or the resolution required to operate the aircraft |
| 11* | Leading edge flap and cockpit control selection | Full range or each discrete position | 2 | ±5% or as pilot's indicator | 0.5% of full range or the resolution required to operate the aircraft |
| 12* | Thrust reverser position | Stowed, in transit, and reverse | 1 (per engine) | | |
| 13* | Ground spoiler/speed brake selection (selection and position) | Full range or each discrete position | 1 | ±2% unless higher accuracy uniquely required | 0.2% of full range |
| 14 | Outside air temperature | Sensor range | 2 | ±2°C | 0.3°C |
| 15* | Autopilot/auto throttle/AFCS mode and engagement status | A suitable combination of discretely | 1 | | |
| 16 | Longitudinal acceleration | ±1 g | 0.25 | ±0.015 g excluding a datum error of ±0.05 g | 0.004 g |

Note 1 – V_{S0} means stalling speed or minimum steady flight speed in the landing configuration.

Note 2 – V_D means design diving speed.

Note 3 – record sufficient inputs to determine power.