CHAPTER 15 IFR TAKE-OFF AND LANDING MINIMA

15.01 Purpose

For subregulation 91.307 (1), this Chapter prescribes:

(a) requirements relating to take-off minima for an aerodrome (the ***take-off minima requirements***); and

(b) requirements relating to landing minima for an aerodrome (the ***landing minima requirements***).

15.02 Definitions for this Chapter

In this Chapter:

qualifying multi-engine aeroplane means an IFR multi-engine aeroplane that is:

(a) operated by:

(i) at least 2 pilots; or

(ii) if powered by piston engines or turboprop engines, and fitted with operative autofeather — 1 pilot; or

(iii) if powered by turbojet engines — 1 pilot; and

(b) in the event of an engine failure — capable of maintaining terrain clearance until reaching the minimum height for IFR flight.

qualifying multi-engine rotorcraft means an IFR rotorcraft that:

(a) has a Category A performance supplement; and

(b) is operated to the Category A weights, limitations and procedures contained in the supplement; and

(c) in the event of an engine failure — is capable of maintaining terrain clearance until reaching the minimum height for IFR flight.

15.03 Take-off minima requirements

A pilot in command must not commence a take-off if, at the time of take-off:

(a) the meteorological conditions are less than the take-off minima for the aircraft; or

(b) the meteorological conditions that would exist if it were necessary to return to land at the departure aerodrome because of engine failure, are not:

(i) at or above the landing minima for any IAP that the pilot in command is able to conduct at the aerodrome; or

(ii) such as to allow a visual approach for the return to land.

15.04 Take-off minima for low-visibility operations

The take-off minima for a low-visibility operation at an aerodrome are the take-off minima stated in an approval granted for paragraph 91.315 (1) (b).

15.05 Take-off minima for qualifying multi-engine aeroplanes

(1) The take-off minima mentioned in this section apply to a take-off that:

(a) is not a low-visibility take-off; and

(b) is conducted using a qualifying multi-engine aeroplane.

(2) The take-off minima are:

(a) visibility of:

(i) 800 m, or

(ii) 550 m, but only if:

(A) the runway has illuminated edge lighting at spacing intervals not exceeding 60 m; and

(B) the runway has centreline lighting or centreline markings; and

(C) all lighting mentioned in sub-subparagraphs (A) and (B) is supported by a secondary power supply with a switchover capability of 1 second or less; and

(D) if the aerodrome is a non-controlled aerodrome or a controlled aerodrome where ATC is not in operation — the take-off is conducted by day and the aerodrome is one at which the carriage of radio is mandatory.

15.06 Take-off minima for other aeroplanes

(1) The take-off minima mentioned in this section apply to a take-off that:

(a) is not a low-visibility take-off; and

(b) is not conducted using a qualifying multi-engine aeroplane.

(2) The take-off minima are:

(a) a cloud ceiling of 300 ft; and

(b) visibility of 2 000 m.

15.07 Take-off minima for qualifying multi-engine rotorcraft

(1) The take-off minima mentioned in this section apply to a take-off that:

(a) is not a low-visibility operation; and

(b) is conducted using a qualifying multi-engine rotorcraft.

(2) The take-off minima are:

(a) a cloud ceiling not lower than the height at which the greater of the following can be achieved:

(i) V_y;

(ii) V_{min} IMC; and

(b) visibility of either:

(i) 800 m; or

(ii) 550 m, but only if:

(A) the relevant runway or FATO has illuminated edge lighting at spacing intervals not exceeding 60 m and centreline lighting; and

(B) all lighting mentioned in sub-subparagraph (A) is supported by a secondary power supply with a switchover capability of 1 second or less; and

(C) if the aerodrome is a non-controlled aerodrome or a controlled aerodrome where ATC is not in operation — the take-off is conducted by day and the aerodrome is one at which the carriage of radio is mandatory.

15.08 Take-off minima for other rotorcraft

(1) The take-off minima mentioned in this section apply to a take-off that:

(a) is not a low-visibility take-off; and

(b) is not conducted using a qualifying multi-engine rotorcraft.

(2) The take-off minima are:

(a) a cloud ceiling of 500 ft; and

(b) visibility of 800 m.

15.09 Landing minima requirements

(1) Subject to complying with the requirements of section 15.11, a pilot in command of an aircraft must not land at an aerodrome if the meteorological conditions are below the landing minima for the aircraft that are:

(a) for a low-visibility operation — specified in an approval granted for paragraph 91.315 (1) (b); or

(b) for a landing that is not a low-visibility operation — specified in section 15.10.

(2) For the determination of landing minima for paragraph (1) (b), the pilot in command of an aircraft must obtain the landing minima from an instrument approach chart in accordance with:

(a) the specified aircraft performance category; and

(b) the aircraft LNAV and VNAV capabilities.

15.10 Landing minima

(1) For an RNP APCH-LNAV/VNAV, an RNP APCH-LPV, or a precision approach procedure — the minimum altitude must not be below whichever of the following is the highest:

(a) the DA or DH specified on the instrument approach chart for the IAP being conducted;

(b) relevant minima specified in the AFM;

(c) relevant minima specified in the operator's exposition or operations manual.

(2) For an RNP APCH-LNAV/VNAV, an RNP APCH-LPV, or a precision approach procedure — the minimum visibility must not be below whichever of the following is the highest:

(a) the RVR or visibility specified on the instrument approach chart for the IAP being conducted;

(b) relevant minima specified in the AFM;

(c) relevant minima specified in the operator's exposition or operations manual;

(d) 800 m, but only if:

(i) the TDZ RVR report is not available; or

(ii) the approach lighting system normally available beyond 420 m from the runway threshold is inoperative;

(e) 1 200 m, but only if:

(i) the approach cannot be flown to at least the landing minima using a flight director, a HUD or an autopilot; or

(ii) the aircraft is not equipped with an operative failure warning system for the primary attitude and heading reference systems; or

(iii) high intensity runway edge lighting is not in operation; or

(iv) the approach lighting system normally available beyond 210 m from the runway threshold is inoperative;

(f) 1 500 m — but only if the approach lighting system normally available for the runway is inoperative;

(g) 1.5 times either the RVR or the visibility specified on the instrument approach chart for the IAP being conducted — but only if:

(i) a lighting failure has occurred on a runway at a controlled aerodrome; and

(ii) doubled spacing of runway edge lights results.

Note At a controlled aerodrome, in the event of failure of 1 electrical circuit on a runway equipped with interleaved circuitry lighting, pilots will be notified of a doubled spacing of runway edge lights, that is, from 60 m spacing to 120 m spacing.

(3) Subject to subsection (5), for an RNP APCH-LNAV, an RNP APCH-LP or another NPA — the minimum altitude must not be below whichever of the following is the highest:

(a) the MDA or MDH specified on the instrument approach chart for IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) relevant minima specified in the operator's exposition or operations manual.

(4) Subject to subsection (6), for an RNP APCH-LNAV, an RNP APCH-LP or another NPA — the minimum visibility must not be below whichever of the following is the highest:

(a) the visibility specified on the instrument approach chart for IAP being conducted;

(b) relevant minima specified in the AFM;

(c) relevant minima specified in the operator's exposition or operations manual;

(d) if the approach lighting system normally available for the runway is inoperative — the visibility specified on the instrument approach chart, plus a value equivalent to the published length of the approach lighting system.

(5) Despite subsection (3), if the aircraft is conducting a circling manoeuvre — the minimum altitude must not be below whichever of the following is the highest:

(a) the circling minimum altitude specified on the instrument approach chart for the IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

(6) Despite subsection (4), if the aircraft is conducting a circling manoeuvre — the minimum visibility must not be below whichever of the following is the highest:

(a) the circling minimum visibility specified on the instrument approach chart for the IAP being conducted;

(b) the relevant minima specified in the AFM;

(c) the relevant minima specified in the operator's exposition or operations manual.

(7) For an aerodrome without an authorised IAP, the minimum altitude must not be below the altitude at which the flight can comply with the requirements relating to visual approach approaches published in the authorised aeronautical information for the purposes of subparagraph 91.305 (3) (b) (i).

(8) For an aerodrome without an authorised IAP, the minimum visibility must not be below the flight visibility specified for the type of aircraft, the class of airspace and the height in Table 2.07 (3).

Note Table 2.07 (3) specifies the VMC criteria. The effect of this paragraph is that flight visibility must not be below the highest flight visibility relevant to the aircraft, if it were required to maintain VMC, during the flight to the aerodrome.

15.11 Missed approach

(1) During an IAP, the pilot in command of an aircraft must immediately execute the missed approach procedure for the IAP in any of the following circumstances:

(a) during the final segment of the IAP — if the aircraft is flown outside the navigational tolerance for the navigation aid being used;

(b) when using GNSS as a substitute or alternative to a ground-based navigation aid — if there is a sustained deviation from the centreline of the IAP other than during a transient manoeuvre;

(c) when below the MSA — if the navigational aid in use for the IAP becomes unreliable or inoperative;

Note 1 Examples of when a navigational aid for an approach becomes unreliable or inoperative include a RAIM warning for a GNSS approach, a red flag for a VOR approach, or a loss of the ident for an NDB approach.

Note 2 If, after the pilot in command has commenced the missed approach procedure, a RAIM warning ceases or there is no longer loss of data integrity, the pilot may execute the missed approach using GNSS-derived information.

(d) if the requirements in subsection (2) are not met for the IAP being flown, and the aircraft:

(i) for an RNP APCH-LNAV/VNAV, an RNP APCH-LPV, or a precision approach procedure:

(A) has arrived at the minimum altitude; or

(B) has passed the minimum altitude but has not touched down; or

(ii) for an RNP APCH-LNAV, an RNP APCH-LP or other NPA:

(A) has arrived at the missed approach point; or

(B) is being operated below minimum altitude;

(e) if the aircraft is conducting a circling manoeuvre and:

(i) the flight visibility reduces below the minimum visibility; or

(ii) an identifiable part of the aerodrome is not distinctly visible to the pilot in command (apart from loss of visibility due to normal aircraft manoeuvring during the approach).

(2) For paragraph (1) (d), the requirements are as follows:

(a) the aircraft must be continuously in a position from which a descent to a landing on the intended runway or, for a rotorcraft, flight to a landing or hover on or over the intended FATO, may be made:

(i) at a normal rate of descent; and

(ii) using normal manoeuvres; and

(iii) that allows touchdown to occur within the TDZ of the runway or TLOF of intended landing;

(b) for other than low-visibility operations;

(i) the flight visibility must be not less than the landing minima; and

(ii) at least 1 of the following visual references for the intended runway or FATO must be distinctly visible and identifiable to the pilot in command:

(A) elements of the approach lighting system;

(B) the threshold;

(C) the threshold markings;

(D) the threshold lights;

(E) the runway identification lights;
(F) the FATO itself;
(G) the visual approach slope indicator;
(H) the TDZ or TDZ markings;
(I) the TDZ lights;
(J) the FATO or runway lights;

Note There are certain NPAs that have a minimum flight visibility of 5 km, and where the geographical point of attaining the minimum altitude is more than 5 km from the visual references mentioned above. In these instances, noting that the minimum flight visibility is 5 km, if the requirements to conduct a visual approach procedure are met, effectively, the flight transitions from one conducting an IAP, to one conducting a visual approach at the minima.

(c) for a low-visibility operation, the following visual references for the intended runway must be continuously visible and identifiable to the pilot in command:

(i) for a CAT III approach using an FO landing system where use of a DH is prescribed — at least 1 centreline light;

(ii) for a CAT III approach utilising an FP landing system — at least 3 consecutive longitudinally-aligned lights;

(iii) for a CAT III approach utilising an FO hybrid landing system — at least 3 consecutive longitudinally-aligned lights;

(iv) for any other low-visibility operation:

(A) at least 3 consecutive longitudinally-aligned lights; and

(B) unless the approach is conducted using a HUD — a lateral element of lighting in the form of an approach lighting crossbar, a landing threshold light, or a barrette of TDZ lights.

(3) For paragraph (2) (c), ***consecutive longitudinally-aligned lights*** means any of the following:

(a) centreline lights of the approach lighting system;
(b) the TDZ lights;
(c) runway centreline lighting;
(d) runway edge lights;
(e) a combination of the lights mentioned in paragraphs (a) to (d).