

INFORMATION LEAFLET

PC-12, PC-12/45 AND PC-12/47

HIGH ALTITUDE FIELD PERFORMANCE

LEAFLET NO. 02222

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GENERAL

The PC-12, PC-12/45 and PC-12/47 Pilot's Operating Handbooks (POH) provides performance data for takeoff, landing and accelerate-stop distances up to 10,000 feet. This Information Leaflet gives high altitude field performance information for altitudes above 10,000 feet to a limit of 14,000 feet.

Figure 1 gives the static takeoff torque values for altitudes up to 14,000 feet and can be used to check that the engine is giving the minimum expected performance level for the information given in this leaflet.

The existing approved performance data at 10,000 feet was re-run for altitudes from 10,000 feet to 14,000 feet. The results were then normalized to the same point but at 10,000 feet pressure altitude. This gave a factored distances which are given in the Table below.

Phase	Flaps	Factored Distance / 1,000' above 10,000'
Takeoff	15°	1.16
Takeoff	30°	1.20
Landing	40°	1.06
Landing (with reverse)	40°	1.06
Accelerate Stop	15°	1.11
Accelerate Stop	30°	1.11
Accelerate Stop (with reverse)	15°	1.12
Accelerate Stop (with reverse)	30°	1.12

Table 1: Factored Distances (with respect to 10,000')

EQUATION

To determine the correct field performance distance for pressure altitudes above 10,000' but equal to or less than 14,000' the following equation may be used:

$$s = s_{10,000'} \times \left[\left(\frac{\text{Altitude} - 10,000}{1,000} \right) \times (\text{Factor} - 1) + 1 \right]$$

Equation 1: Corrected estimated distance.

Where:

- s - The distance (same units as s_{10,000})
- s_{10,000} - The distance determined at a pressure altitude of 10,000'
- Altitude - The pressure altitude (feet)
- Factor - The factor from table 1 according to the performance parameter and configuration.

EXAMPLE

To estimate the accelerate stop distance (without using reverse) with flaps set to 30° with an aircraft weighing 4,500 kg at 12,500 ft with an OAT of 4° then:

1. Determine the performance but at 10,000 ft. This is found as 1,600m.
2. To correct this distance for a pressure altitude of 12,500' then the accelerate stop distance is determined as:

$S_{10,000}$ - 1,600m
 Altitude - 12,500 ft
 Factor - 1.11 - from table 1 for accelerate stop without reverse,
 flaps 30°

IN THIS EXAMPLE:

$$s_{ac} = 1,600m \times \left[\left(\frac{12,500 - 10,000}{1,000} \right) \times (1.11 - 1) + 1 \right] = 2,040m$$

The distance to perform an accelerate stop with flaps set to 30° at 12,500 ft, OAT 4° and a weight of 4,500 kg is 2,040m

STATIC TAKEOFF TORQUE

TORQUE WILL INCREASE
WITH INCREASING AIRSPEED

PROPELLER SPEED 1700 RPM

INERTIAL SEPARATOR CLOSED

MAXIMUM TORQUE REDUCTION WITH

- INERTIAL SEPERATOR OPEN:
- 1.2 PSI IN NON ICING CONDITIONS
- 2.1 PSI IN ICING CONDITIONS

EXAMPLE:

ALTITUDE	8000 FT
OAT	26 °C
ENGINE TORQUE	35.5 PSI

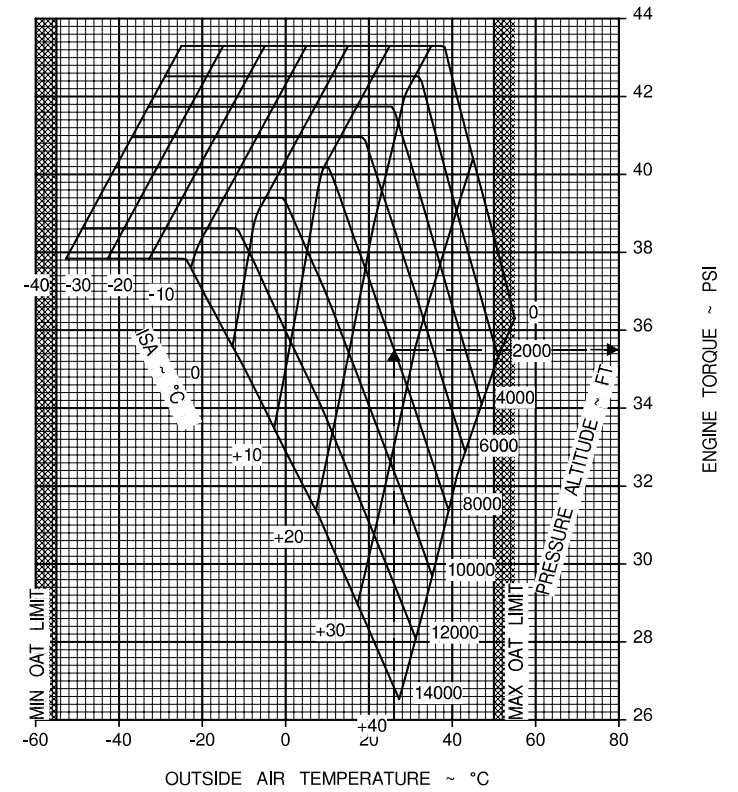


Figure 1. Static Takeoff Torque