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ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
T5317A High Performance Utility Data with the BLR Fast Fin Installed

FMS-D212-725-2

Eagle Single
Bell 212 Models

TCCA STC SH07-28
FAA STC SR02831NY

Sections 1 – 4 of this document comprise the Approved Flight Manual Supplement. Compliance with Section 1, Limitations is mandatory. Section 5 is unapproved and is provided for information only.

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By
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Log of Revisions

Revision A..... 2019.02.15

List of Effective Pages

Page	Revision
Intro-1	A
thru	-
Intro-5	A
1-1	A
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1-3	A
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4-15	A
5-1	A

Revisions

Revised text is indicated by a black vertical line. Insert latest revision pages; dispose of superseded pages.

General Information

This Flight Manual Supplement is required for aircraft that have been modified with the installation of a Honeywell T5317A engine as per TCCA STC SH07-28 / FAA STC SR02831NY and which have the BLR p/n FF212-201U or p/n FF212-201F Fast Fin installed per STC SH08-55/SR01865SE and require high performance for utility operations. This FMS supplements/replaces some of the information presented in FMS-D212-725-1 and must be in the helicopter when the high performance utility data is being utilized for operations. Performance data presented herein permit credit for an engine delivering above specification power where positive performance margin has been determined from the power assurance procedures defined in paragraph 4.2.

This FMS is divided into five sections as follows:

Section 1	Limitations
Section 2	Normal Procedures
Section 3	Emergency and Malfunction Procedures
Section 4	Performance Data
Section 5	Weight and Balance Data

Sections 1 through 4 contain Transport Canada approved data necessary to operate the helicopter in a safe and efficient manner.

Section 5 provides weight and balance data essential for safe operation of the helicopter.

Section 1

Limitations

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Section 1

Limitations

1.5 Configuration

1.5.1 Required Equipment

T5317A Engine and BLR p/n FF212-201U or p/n FF212-201F Fast Fin installed per STC SH08-55/SR01865SE

1.6 Weight and Center of Gravity

1.6.1 Weight

Refer to weight-altitude-temperature limitations for takeoff, landing and in ground effect maneuvers chart (Figure 1-1) for aircraft with the BLR Fast Fin installed.

Figure 1-1 – Weight-Altitude-Temperature (WAT) Chart for Aircraft with the BLR Fast Fin Installed

Section 2

Normal Procedures

No change from Flight Manual Supplement FMS-D212-725-1 Revision H, dated 2019 February 15, or later TCCA approved revision.

Section 3

Emergency Procedures

No change from Flight Manual Supplement FMS-D212-725-1 Revision H, dated 2019 February 15, or later TCCA approved revision.

Section 4

Performance Data

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Section 4

Performance Data

4.1 Engine Operation Check Charts (D)

The Power Assurance Check – EGT Limited chart (Figure 4-1) and Power Assurance Check – N1 Limited chart (Figure 4-2) are provided to aid the pilot in determining if the engine can produce installed power required to meet the published performance data. The power assurance checks can easily be made while the aircraft is in hover, using normal cockpit instruments and using the methods described herein. It is acceptable to use one (either Figure 4-1 or 4-2) or both charts to complete the power assurance check.

The power assurance checks outlined in this Section apply only to aircraft modified with the T5317A engine and which have the BLR p/n FF212-201U or p/n FF212-201F Fast Fin installed per STC SH08-55/SR01865SE.

When opting to operate in accordance with the Performance Charts presented in this Supplement, the power assurance check must be performed daily. Additional checks should be made if unusual operating conditions or indications arise. It is pilot responsibility to accomplish the procedure safely, considering passenger load, terrain being overflown, and qualifications of persons on board to assist in watching for other air traffic and to record power check data.

Failure of the engine to meet the requirements of the power assurance check may result in the inability of the aircraft to achieve the published performance. If this occurs, use of the hover performance charts in this FMS is not authorized and the aircraft may not be able to meet the guaranteed power performance to be able to operate under the required terms of contract.

In order to continue operation of the aircraft, the pilot may elect to consult the data provided in FMS-D212-725-3 or FMS-D212-725-1.

4.2 Power Assurance Checks (D)

4.2.1 Sample Problem – EGT Limited

Stabilize the helicopter headed into the wind at a hover with De-ice OFF and cabin heat OFF; the following is an example:

	Example
Pressure altitude	2000 ft
Torquemeter pressure	55.7 PSI (100%)

Read and record the following values from the aircraft instruments:

Ambient air temperature	30°C
Exhaust gas temperature	575°C

Enter chart (Figure 4-1) at Torquemeter pressure (Engine Torque). Proceed vertically to Pressure Altitude. Proceed horizontally to Outside Air Temperature (OAT). Proceed vertically to Exhaust Gas Temperature (EGT).

Figure 4-1 - Maximum Allowable EGT = 640°C

Since the actual exhaust gas temperature (575°C) is not greater than the charted exhaust gas temperature (640°C), the relation between power and exhaust gas temperature is satisfactory.

If this check is not satisfactory, there is reason to believe that the engine has deteriorated to the extent that the published performance may not be obtained.

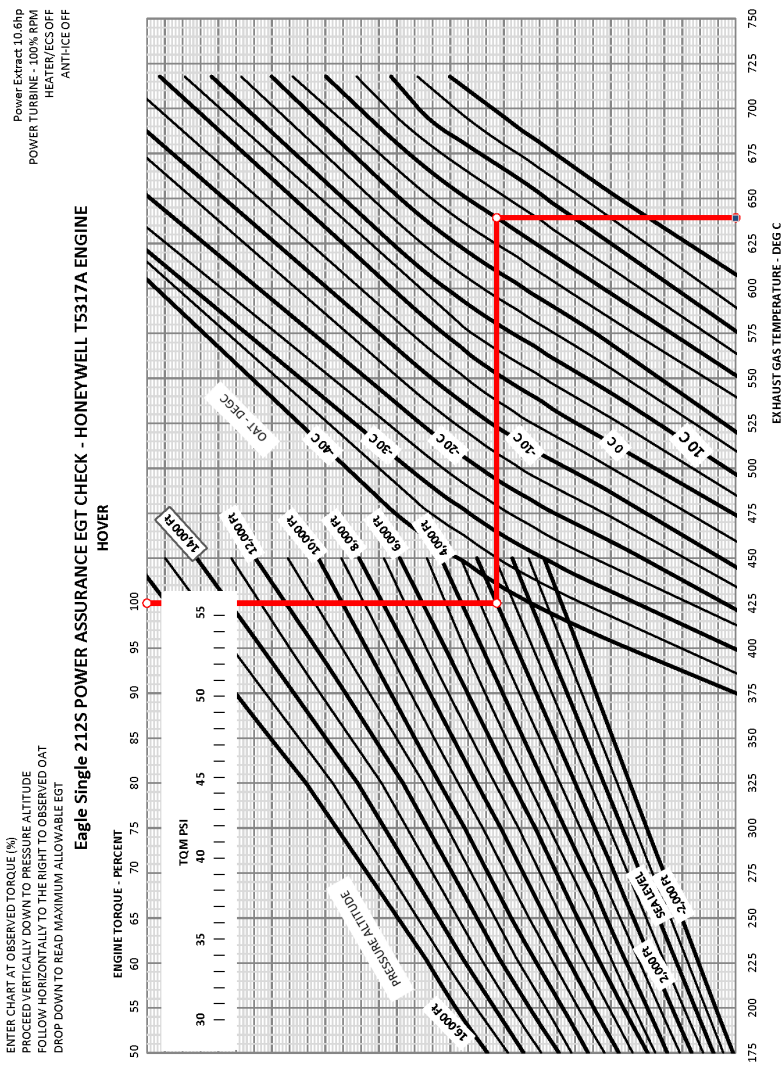

Figure 4-1 – Power Assurance Check – EGT Limited (D)

4.2.2 Sample Problem – N1 Limited

Stabilize the helicopter headed into the wind at a hover with De-ice OFF and cabin heat OFF; the following is an example:

	Example
Pressure altitude	2000 ft
Torquemeter pressure	55.7 PSI (100%)

Read and record the following values from the aircraft instruments:

Ambient air temperature	30°C
Gas Producer (N1) RPM	95.8%

Enter chart (Figure 4-2) at Torquemeter pressure (Engine Torque). Proceed vertically to Pressure Altitude. Proceed horizontally to Outside Air Temperature (OAT). Proceed vertically to Maximum Allowable Percent N1.

Figure 4-2 - Maximum Allowable Percent N1 = 97.6%

Since the actual Percent N1 (95.8%) is not greater than the charted Percent N1 (97.6%), the relation between power and Gas Producer RPM is satisfactory.

If this check is not satisfactory, there is reason to believe that the engine has deteriorated to the extent that the published performance may not be obtained.

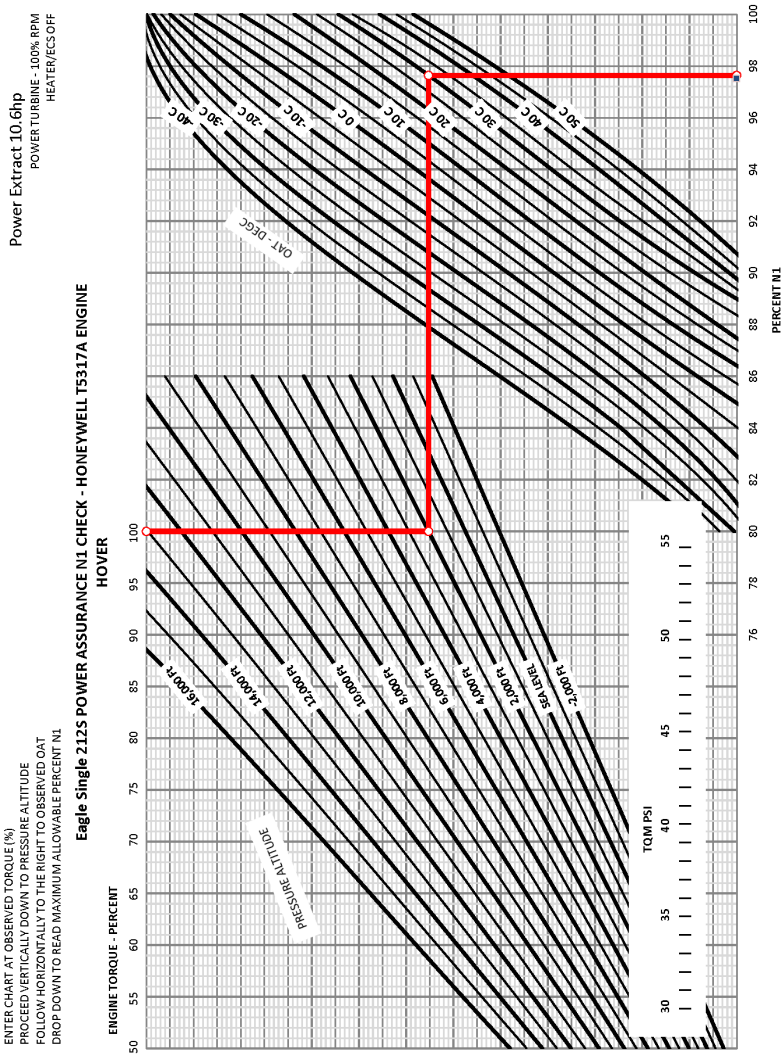

Figure 4-2 – Power Assurance Check – N1 Limited (D)

4.3 Hover Ceiling Charts (D)

The Hover Ceiling charts (See Figure 4-3 Sheets 1 – 8) present hover performance IGE and OGE (allowable gross weight) for conditions of pressure altitude and outside air temperature (OAT). For actual gross weight limitations during takeoff and landing, refer to Figure 1-1. The 204-704-037-003 particle separator kit is not approved as part of this modification.

Note

Dashed lines are included for interpolation purposes only.

Hover Ceiling (D)

In Ground Effect
4 Foot Skid Height

Takeoff Power
De-icing Off

Engine RPM 100%

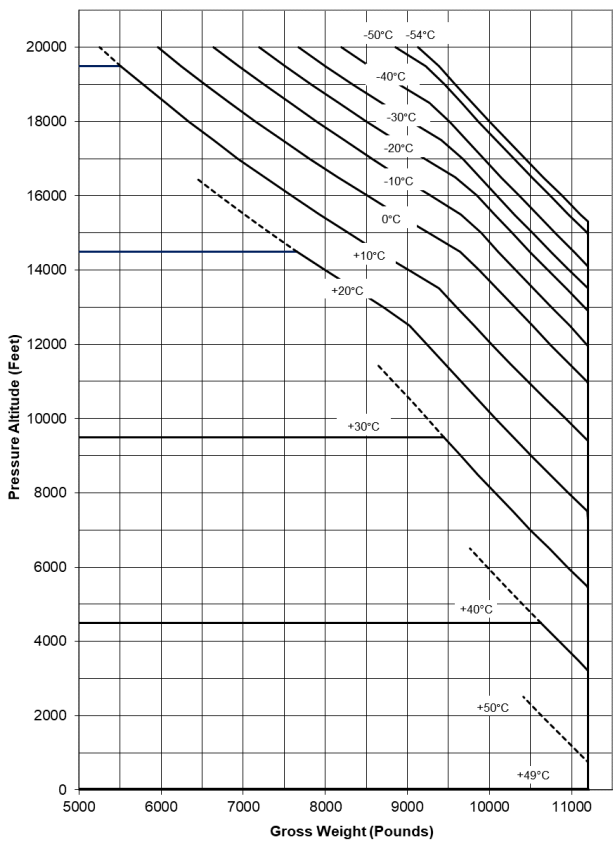

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 1 of 8)

Hover Ceiling (D)

In Ground Effect
4 Foot Skid Height

Takeoff Power
De-icing On

Engine RPM 100%

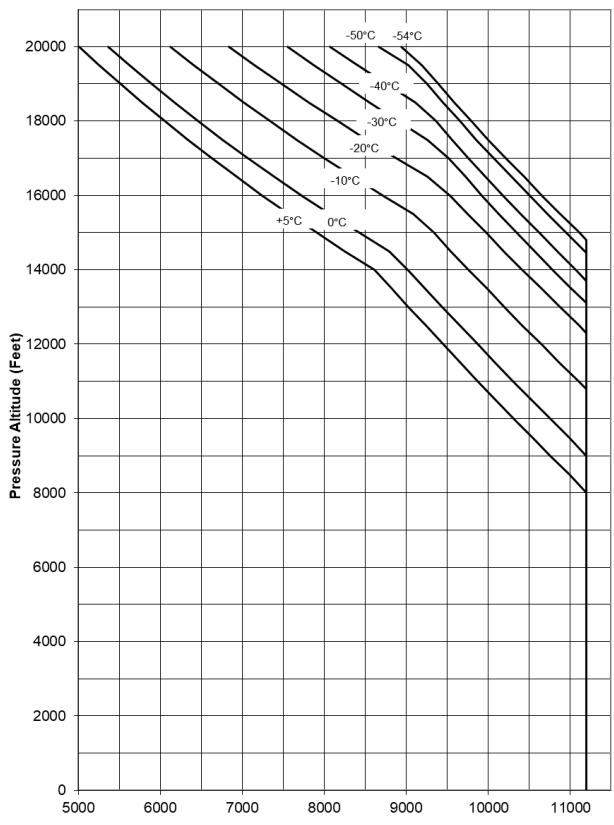

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 2 of 8)

Hover Ceiling (D)

In Ground Effect
4 Foot Skid Height

Max. Cont. Power
De-icing Off

Engine RPM 100%

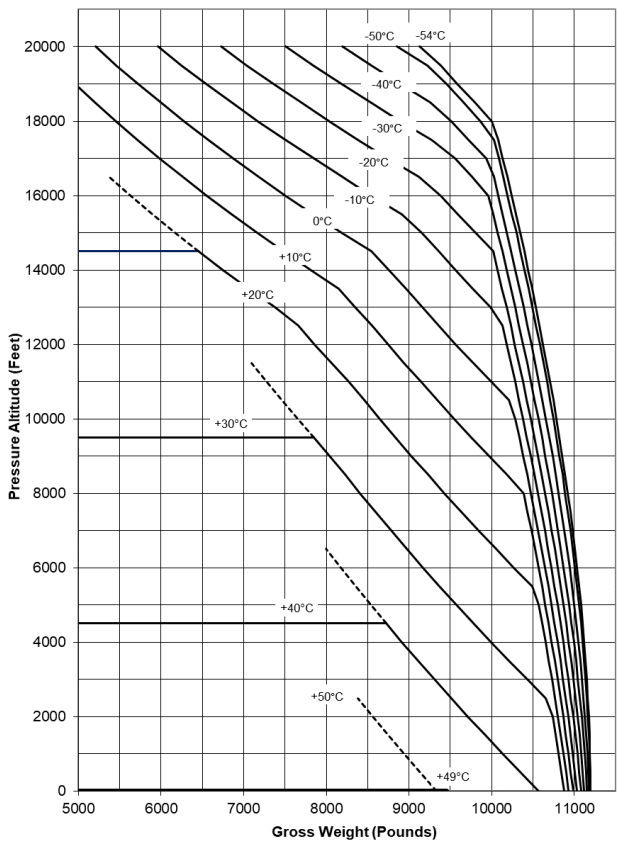

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 3 of 8)

Hover Ceiling (D)

In Ground Effect
4 Foot Skid Height

Max. Cont. Power
De-icing On

Engine RPM 100%

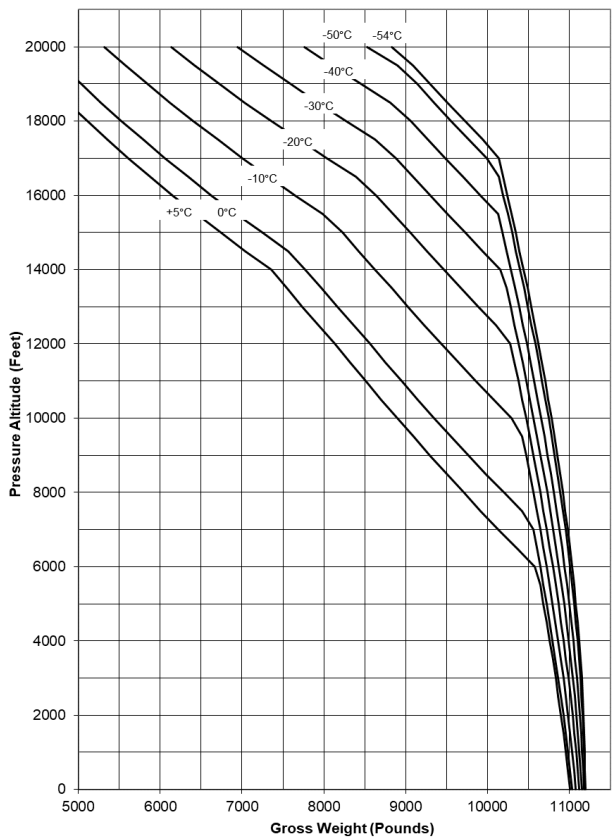

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 4 of 8)

Hover Ceiling (D)

Out of Ground Effect
60 Foot Skid Height

Takeoff Power
De-icing Off

Engine RPM 100%

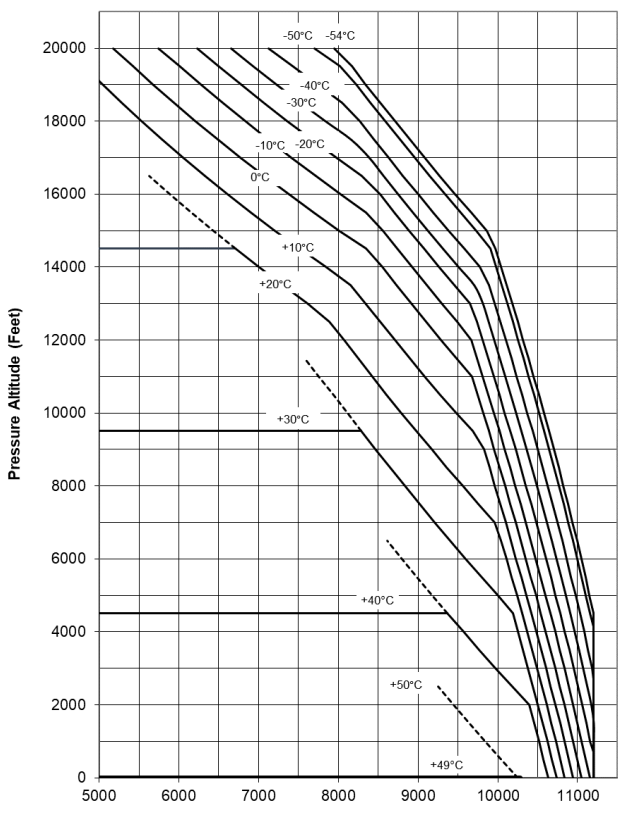

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 5 of 8)

Hover Ceiling (D)

Out of Ground Effect
60 Foot Skid Height

Takeoff Power
De-icing On

Engine RPM 100%

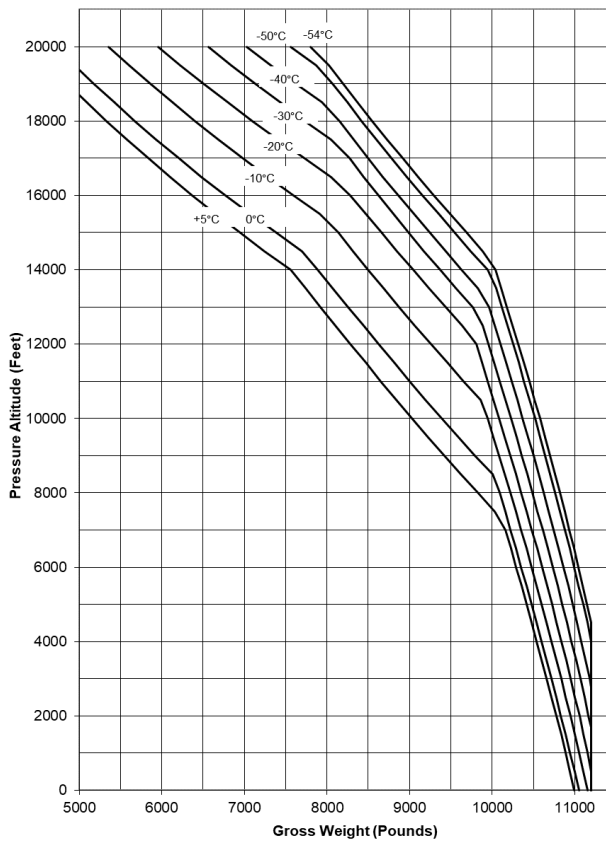

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 6 of 8)

Hover Ceiling (D)

Out of Ground Effect
60 Foot Skid Height

Max. Cont. Power
De-icing Off

Engine RPM 100%

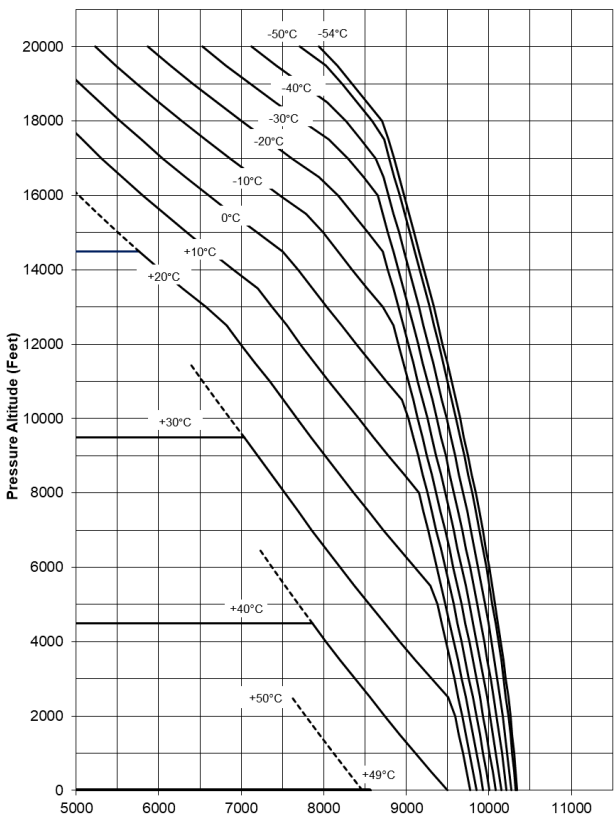

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 7 of 8)

Hover Ceiling (D)

Out of Ground Effect
60 Foot Skid Height

Max. Cont. Power
De-icing On

Engine RPM 100%

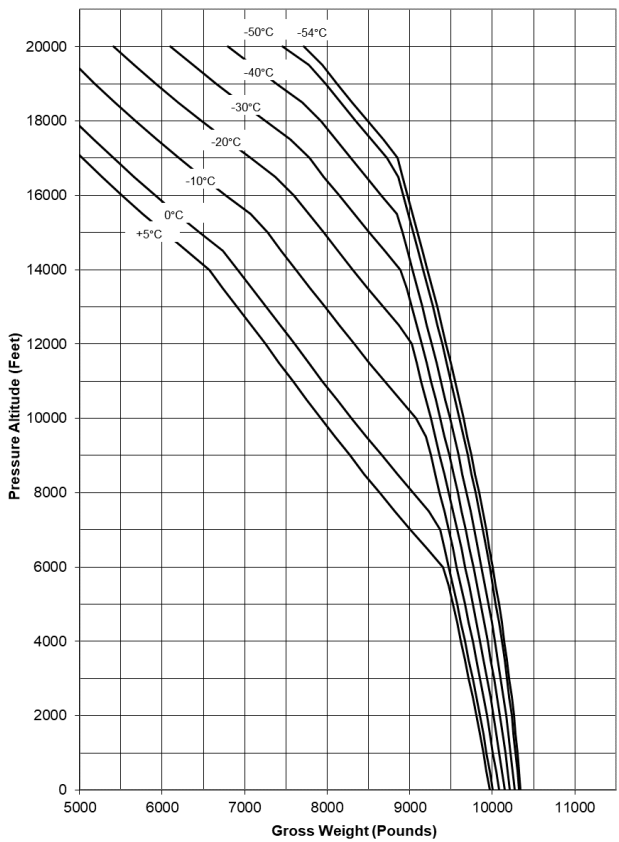

Figure 4-3 – Hover Ceiling (without Particle Separator) (Sht 8 of 8)

Section 5

Weight and Balance Data

No change from Flight Manual Supplement FMS-D212-725-1 Revision H, dated 2019 February 15, or later TCCA approved revision.