



TYPE-CERTIFICATE DATA SHEET

No. EASA IM.E.078

for

PT6A-41 Series Engines

**Type Certificate Holder:
Pratt and Whitney Canada Corp.**

1000 Marie Victorin
Longueuil, Québec, J4G 1A1
Canada

For Models:

PT6A-41
PT6A-42
PT6A-42A
PT6A-45A
PT6A-45B
PT6A-45R
PT6A-52
PT6A-60A
PT6A-61
PT6A-62
PT6A-65AR
PT6A-65B
PT6A-65AG
PT6A-65SC



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TABLE OF CONTENTS

I. General	4
1. Type / Models:	4
2. Type Certificate Holder:	4
3. Manufacturer:	4
4. Date of Application for EASA Certification:	4
5. EASA Type Certification Date:	4
II. Certification Basis	4
1. State of Design Authority Certification Basis:	4
2. Reference Date for determining the applicable airworthiness requirements:	4
3. EASA Certification Basis	5
3.1. Airworthiness Standards.....	5
3.2. Special Conditions (SC)	5
3.3. Equivalent Safety Findings (ESF)	5
3.4. Deviations	5
3.5. Environmental Protection.....	5
III. Technical Characteristics	5
1. Type Design Definition:	5
2. Description:	5
3. Equipment	6
4. Dimensions and	6
5. Dry Weight	6
6. Ratings	6
7. Control System	6
8. Fluids (Fuel, Oil, Coolant, Additives)	6
9. Aircraft Accessory Drives	7
10. Maximum Permissible Air Bleed Extraction	7
IV. Operating Limitations	7
1. Temperature Limits	7
1.1 Maximum Interstage Turbine Temperature (ITT), oC :.....	7
1.2 Oil Temperature, °C	8
1.3 Fuel Temperature	8
2. Speed Limits	8
3. Pressure Limits	9
3.1 Fuel Pressure.....	9
3.2 Oil Pressure.....	9
4. Time Limited Dispatch (TLD)	9
5. ETOPS Capability	9
V. Operating and Service Instructions	9
VI. Notes	10
SECTION: ADMINISTRATIVE	12
I. Acronyms and Abbreviations	12
II. Type Certificate Holder Record	12
III. Change Record	12



I. General

1. Type / Models:

PT6A-41 series / PT6A-41, PT6A-42, PT6A-42A, PT6A-45A, PT6A-45B, PT6A-45R, PT6A-52, PT6A-60A, PT6A-62, PT6A-65AG, PT6A-65AR, PT6A-65B, PT6A-65SC

2. Type Certificate Holder:

Pratt and Whitney Canada Corp.
1000 Marie Victorin
Longueuil, Québec, J4G 1A1
Canada

3. Manufacturer:

Pratt and Whitney Canada Corp.

4. Date of Application for EASA Certification:

01 May 2006 for PT6A-52
08 January 2021 for PT6A-65SC

5. EASA Type Certification Date:

PT6A-41	PT6A-42	PT6A-42A	PT6A-45A	PT6A-45B
27 June 1977	19 April 1983	02 Oct. 2000	27 June 1977	19 April 1983

PT6A-45R	PT6A-52	PT6A-60A	PT6A-61	PT6A-62
19 April 1983	31 August 2007	06 Sept. 1984	08 May 1985	03 July 1990

PT6A-65AG	PT6A-65AR	PT6A-65B	PT6A-65SC	
14 Nov. 1988	04 Dec. 1987	06 Sept. 1984	17 March 2022	

EASA Type-Certification for the above mentioned engine models, except PT6A-52 and PT6A-65SC, is granted, in accordance with Article 2 paragraph 3(a)(i) of EU Commission Regulation EC 1702/2003, based on the respective CAA United Kingdom, DGAC France, LBA Germany and AustroControl validation letters issued following NAA approvals prior to 28 September 2003.

II. Certification Basis

1. State of Design Authority Certification Basis:

see Transport Canada TCDS E-12

2. Reference Date for determining the applicable airworthiness requirements:

24 October 1974



3. EASA Certification Basis

3.1. Airworthiness Standards

- FAR Part 33 effective 1 February 1965, and amendments 33-1 to 33-5

In addition for PT6A-52 and PT6A-65SC: Ingestion of rain and hail (CS-E 790 effective 24 October 2003)

3.2. Special Conditions (SC)

none

3.3. Equivalent Safety Findings (ESF)

none

3.4. Deviations

none

3.5. Environmental Protection

CS-34, Amendment 4 in accordance with CS-E 1010

III. Technical Characteristics

1. Type Design Definition:

As defined by the applicable PT6A-41, PT6A-42, PT6A-42A, PT6A-45A, PT6A-45B, PT6A-45R, PT6A-60A, PT6A-61, PT6A-62, PT6A-65AG, PT6A-65AR and PT6A-65B Engine Parts Lists.

For PT6A-52: Engine Assembly Drawing No. 3072554 Change A and subsequent revisions.

For PT6A-65SC: Engine Assembly Drawing No. 3134858 Change G and subsequent revisions.

2. Description:

The PT6A-41 and PT6A-60 series turboprop engines are comprised of a 2 stage reduction gearbox, 2 stage power turbine, single stage gas generator turbine and 4 stage gas generator compressor (3 axial, 1 centrifugal) for the PT6A-41, PT6A-42, PT6A-42A, PT6A-45A, PT6A-45B, PT6A-45R, PT6A-60A, PT6A-61, PT6A-62 and 5 stage gas generator compressor (4 axial, 1 centrifugal) for the PT6A-65AG, PT6A-65AR, PT6A-65B and PT6A-65SC. The fuel control is purely hydro-mechanical. The accessory gearbox design is common for all PT6A-41 and PT6A-60 series engines.



3. Equipment

Approved equipment is defined in the applicable Engine Parts List or the applicable Engine Assembly Drawing (see 1. Above).

4. Dimensions and

5. Dry Weight

Engine Model	Overall Length (mm)	Overall Diameter (mm)	Dry Spec. Weight (kg)
PT6A-41, -42, 42A	1688	464	190
PT6A-45A, -45B	1845	464	202
PT6A-45R	1845	464	208
PT6A-52	1696	464	204
PT6A-60A	1831	464	221
PT6A-61	1696	464	201
PT6A-62	1770	464	206
PT6A-65AG, -65AR	1900	464	227
PT6A-65B	1900	464	225
PT6A-65SC	1870	477	235

6. Ratings

Engine Model	Maximum Continuous Power (kW)	Take-off Power (5 minutes) (mm)
PT6A-41, -42, -42A, -52, -61	634	634
PT6A-45A	760	875
PT6A-45B	761	875
PT6A-45R	760	893 (875 Alternative)
PT6A-60A	783	783
PT6A-62	708	708
PT6A-65AG	910	969
PT6A-65AR	910	1062 (918 Alternative)
PT6A-65B	875	875
PT6A-65SC	828	828

7. Control System

The PT6A-41 and PT6A-60 series engines are controlled by a purely hydromechanically fuel control system. For fuel control system unit part numbers refer to the applicable Installation Manual.

8. Fluids (Fuel, Oil, Coolant, Additives)

8.1 Fuel:

The approved fuels and additives must conform to the latest revision of the applicable P&WC Service Bulletins (SB) or Maintenance Manuals (MM):

SB 3044 (PT6A-41, -42, -42A, -45A, -45B and -45R)

SB 13044 (PT6A-52, -60A, -61, -62, -65AR and -65B)



SB 13244 (PT6A-65AG)
MM 3135622 (PT6A-65SC)

8.2 Augmentation Fluid:

The augmentation fluid must conform to the latest revision of the P&W C Specification CPW No. 328.

8.3 Oil:

The approved oil and additives must conform to the latest revision of the applicable P&WC Service Bulletins (SB) or Maintenance Manuals (MM):

SB 3001 (PT6A-41, -42, -42A, -45A, -45B and -45R)
SB 13001 (PT6A-52, -60A, -61, -62, -65AR, -65AG and -65B)
MM 3135622 (PT6A-65SC)

9. Aircraft Accessory Drives

For accessory drives specifications, including direction of rotation, drive speed ratio to engine speed, torque continuous pad rating and maximum overhung moment, refer to model specific Installation Manual.

10. Maximum Permissible Air Bleed Extraction

For all engine models, the bleed extraction is as follows:

Maximum External (% of inlet flow): 5.25
Maximum during Start (kg/min): 0.68

IV. Operating Limitations

1. Temperature Limits

1.1 Maximum Interstage Turbine Temperature (ITT), °C :

Model	Maximum Continuous (°C)	Take-off (5 minutes) (°C)	Starting (Ground and Air) (°C)
PT6A-41	750	750	1000
PT6A-42	800	800	1000
PT6A-42A	800	800	1000
PT6A-45A	800	800	1000
PT6A-45B	800	800	1000
PT6A-45R	812	845 (800 Alternative)	1000
PT6A-52	820	820	1000
PT6A-60A	820	820	1000
PT6A-61	800	800	1000
PT6A-62	800	800	1000
PT6A-65AG	820	820	1000
PT6A-65AR	840	855 (820 Alternative)	1000
PT6A-65B	810	820	1000
PT6A-65SC	815	830	1000



1.2 Oil Temperature, °C :

Minimum, all models: -40

All models except PT6A-41, -42, -42A, -62 and -65SC

Maximum Continuous: 110
Maximum: 110

PT6A-41, -42, -42A, -62

Maximum Continuous: 104
Maximum Ground Operation: 110
Maximum: 104

PT6A-65SC

Maximum Continuous: 99
Maximum: 110

1.3 Fuel Temperature

Refer to the applicable Installation Manual.

2. Speed Limits, rpm

Engine Model	Gas Generator (N1)	Gas Generator (N1) Transient	Power Turbine Module Output (N2)	Power Turbine Module Output (N2) Transient
PT6A-41	38100	38500*	2000 (90.7%)	2205 (100%)
PT6A-42, -42A	38100	39000*	2000 (90.7%)	2205 (100%)
PT6A-45A, -45B, -45R, -60A, -65AG, -65AR, -65B, -65SC	39000	-	1700	1870 (110%)
PT6A-52, -61, -62	39000	-	2000 (90.7%)	2205 (100%)

*: 10 seconds

-100% gas generator speed is defined as 37468 rpm.

-For PT6A-41, -42, -42A, -52, -61 and -62 models the 90.7% propeller speed (N2) of 2000 rpm corresponds to a power turbine speed of 30145 rpm.

- For PT6A-45A, -45B, -45R, -60A, -65AG, -65AR, -65B and -65SC models the 100% propeller speed (N2) of 1700 rpm corresponds to a power turbine speed of 29894 rpm.



3. Pressure Limits

3.1 Fuel Pressure Limit at Engine Pump Inlet

Refer to the applicable Installation Manual.

3.2 Oil Pressure

Pressure range (gauge): 620.4 – 930.7 kPa (90-135 psi)
Gas Generator speed 27000 rpm or above and oil temperature 60-71°C

Minimum Pressure (gauge): 262 kPa (60 psi)
Gas Generator speed below 27000 rpm

4. Time Limited Dispatch (TLD)

The engine is not approved for Time Limited Dispatch in accordance with CS-E 1030.

5. ETOPS Capability

The engine is not approved for ETOPS capability in accordance with CS-E 1040.

V. Operating and Service Instructions

-Manuals:

Engine Model	Engine Operating Instructions	Engine Installation Manual
PT6A-41	3021441	3079922
PT6A-42	3031941	3079922
PT6A-42A	3040599	3079922
PT6A-45A	3029001	3079922
PT6A-45B	3031814	3079922
PT6A-45R	3033041	3079922
PT6A-52	3072151	ER6642
PT6A-60A	3033341	ER3732
PT6A-61	3033741	ER3732
PT6A-62	3034559	ER3306
PT6A-65AG	3034629	ER3732
PT6A-65AR	3037027	ER3732
PT6A-65B	3033241	ER3732
PT6A-65SC	See Engine Installation Manual	3135675



-Instructions for Continued Airworthiness (ICA):

Engine Model	Engine Maintenance Manual	Engine Overhaul Manual	Service Bulletins
PT6A-41	3021442	3021443	3000 Series
PT6A-42	3021442	3021443	3000 Series
PT6A-42A	3021442	3021443	3000 Series
PT6A-45A	3027042	3027043	3000 Series
PT6A-45B	3027042	3027043	3000 Series
PT6A-45R	3027042	3027043	3000 Series
PT6A-52	3072862	3072863	13000 Series
PT6A-60A	3034342	3034343	13000 Series
PT6A-61	3034342	3034343	13000 Series
PT6A-62	3034542	3034543	13000 Series
PT6A-65AG	3032842	3032843	13000 Series
PT6A-65AR	3032842	3032843	13000 Series
PT6A-65B	3032842	3032843	13000 Series
PT6A-65SC	3135622	3135623	13000 Series

VI. Notes

1. Dry weight includes basic engine accessories and optional equipment as listed in the engine specification of the manufacturer.
2. The engine ratings are based on dry sea level static ICAO Standard Atmospheric conditions. Compressor intake screen installed. No external accessory loads and no air bleed. The quoted ratings are obtainable on a test stand with the specified fuel and oil without intake ducting and using exhaust stubs P/N ESK7630. With fluid augmentation, the take-off rating is available to 21°C (69°F) for the PT6A-45A, and to 29°C (84°C) for the PT6A-45B. Use of fluid augmentation limited as follows:

PT6A-45A, PT6A-45B
10,000 ft altitude
176.9 kg/h (390 lb/hr) flow

PT6A-45B
5,000 ft. altitude
267.6 kg/h (590 lb/hr) flow

At temperatures between 5°C (41°F) and 57.3°C (135°F), minimum required flow 390 lb/hour provided by minimum pressure of 186 kPa (27 psig).



3.

Engine Model	Take off power is flat rated up to an ambient temperature °C (°F).	Maximum Continuous power is flat rated up to an ambient temperature °C (°F)
PT6A-41	41 (106)	41 (106)
PT6A-42	41 (106)	41 (106)
PT6A-42A	41 (106)	41 (106)
PT6A-45A	8 (46)	26 (79)
PT6A-45B	11 (52)	29 (84)
PT6A-45R	23 (73) (11 (52) Alternate)	33 (92)
PT6A-52	61 (142)	61 (142)
PT6A-60A	25 (77)	25 (77)
PT6A-61	46 (115)	46 (115)
PT6A-62	37 (99)	37 (99)
PT6A-65AG	22 (71)	38 (101)
PT6A-65AR	28 (82) (29 (84) Alternate)	38 (101)
PT6A-65B	43 (110)	38 (101)
PT6A-65SC	55 (131)	55 (131)

4. The time temperature limits are specified in the Specific Operating Instructions.
5. The engines meet the requirements of FAR 33.67 / 33.68 for operation in icing conditions as defined in FAR 25 Appendix C when the intake system conforms with the P&WC Installation Manual Instructions for inertial separation of snow and icing particles. The engines also meet the requirements of FAR 33.27 and do not require external armouring.
6. Certain engines when separated at "C" flange, may be overhauled or maintained as two modules; the Gas Generator Module and the Power Section Module as follows:

Engine Model	G.G. Module Part Number	P.S. Module Part Number
PT6A-45A	A 3030300	A 3030200
PT6A-45B	2A 3030300	A 3030200
PT6A-45R	3A 3030300	A 3030200
PT6A-65B	3100800	3100900
PT6A-65AR, -65AG	3100800	3100900
PT6A-60A, -60AG	3102600	3102000
PT6A-61	3102600	3103300
PT6A-62	3035000	3035200
PT6A-52	3072558	3072555
PT6A-65SC	3134857	3134856



7. The PT6A-45R, and -65AR models include provision for automatic power increase from Alternative Take-off Power to Take-off Power.
8. The PT6A-65AG is a special purpose version of the PT6A-60 Series of engines intended for use in agricultural aviation. This model may not be re-designated for other than agricultural operations.

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

n/a

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	31 August 2007	Initial Issue	Initial Issue, 31 August 2007
Issue 02	17 March 2022	<ul style="list-style-type: none">• Transfer initial issue into the current TCDS format.• Update dimensions of PT6A-65AG, -65AR and -65B models.• Include the PT6A-65SC model.	Issue 02, 17 March 2022

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