Type Certificate Data Sheet

Number: E-6
Issue No.: 26
Approval Date: December 12, 1963
Issue Date: February 28, 2005

This Data Sheet which is part of Type Certificate No. E-6 prescribes the conditions and limitations under which the product(s) for which the Type Certificate was granted meet(s) the standards of airworthiness required by the Canadian Aviation Regulations.

Type Approval Holder:
Pratt & Whitney Canada Corp.
1000 Marie-Victorin
Longueuil, Quebec
Canada

Models

Pratt & Whitney

PT6A-6	PT6A-6/C20	PT6A-21	PT6A-28	PT6A-41
PT6A-6A	PT6A-20	PT6A-27	PT6A-29	PT6A-41AG
PT6A-6B	PT6A-20A	PT6A-34	PT6A-34B	
PT6A-15AG	PT6A-20B	PT6A-34AG	PT6A-36	

Type: Free turbine turbo-prop

Ratings (See NOTE 1)

	Equiv. Shaft H.P. (kW)	Shaft H.P. (kW)	Jet Thrust lbs (N)	Output RPM (max)	Gas Gen. RPM (max)
PT6A-6, -6A, -6B					
Maximum Continuous	525 (390)	500 (373)	62 (275)	2200	38100
Take-off (5 min)	578 (431)	550 (410)	70 (311)	2200	38100
Maximum Reverse	-	500* (373)	-	2100*	-
* PT6A-6A & PT6A-6B only					
PT6A-20, -20A, -20B, -6/C20					
Maximum Continuous	579 (432)	550 (410)	72 (320)	2200	38100
Take-off (5 min)	579 (432)	550 (410)	72 (320)	2200	38100
Maximum Reverse	-	500 (373)	-	2100	-

Ratings (Cont'd) (See NOTE 1)		Equiv. Shaft H.P. (kW)	Shaft H.P. (kW)	Jet Thrust lbs (N)	Output RPM (max)	Gas Gen. RPM (max)
	PT6A-21					
	Maximum Continuous	580 (432)	550 (410)	75 (333)	2200	38100
	Take-off (5 min)	580 (432)	550 (410)	75 (333)	2200	38100
	Maximum Reverse	-	550 (373)	-	2100	-
	PT6A-15AG, -27, -28					
	Maximum Continuous	715 (533)	680 (507)	90 (400)	2200	38100
	Take-off (5 min)	715 (533)	680 (507)	90 (400)	2200	38100
	Maximum Reverse	-	620 (462)	-	2100	-
	PT6A-29					
	Maximum Continuous	778 (580)	750 (559)	71 (316)	2200	38100
	Take-off (5 min)	778 (580)	750 (559)	71 (316)	2200	38100
	Maximum Reverse	-	750 (559)	-	2100	-
	PT6A-34, -34AG, -34B, -36					
	Maximum Continuous	783 (584)	750 (559)	82 (365)	2200	38100
	Take-off (5 min)	783 (584)	750 (559)	82 (365)	2200	38100
	Maximum Reverse	-	750 (559)	-	2100	-

Ratings (Cont'd) (See NOTE 1)

	Equiv. Shaft H.P. (kW)	Shaft H.P. (kW)	Jet Thrust lbs (N)	Output RPM (max)	Gas Gen. RPM (max)
PT6A-41, -41AG					
Maximum Continuous	903 (673)	850 (634)	134 (596)	2000	38100
Take-off (5 min)	903 (673)	850 (634)	134 (596)	2000	38100
Maximum Reverse	-	800 (596)	-	1900	-

Limitations

	Maximum Turbine Inlet Temperature (T.I.T.) °C	(F°)	Maximum Air Inlet Temperature for Rated Power (A.I.T.) °C	(F°)
PT6A-6, -6A, -6B				
Maximum Continuous	952	(1745)	18	(64)
Take-off (dry)	994	(1821)	21	(70)
Starting (5 secs)	1038	(1900)		

	Maximum Inter-turbine Temperature (I.T.T.) °C	(F°)	Maximum Air Inlet Temperature for Rated Power (A.I.T.) °C	(F°)
PT6A-20, -20A, -20B, -6/C20				
Maximum Continuous	750	(1382)	21	(70)
Take-off (-dry)	750	(1382)	21	(70)
Starting (5 secs)	1090	(1994)		

Limitations (Cont'd)

	Maximum Inter-turbine Temperature (I.T.T.)		Maximum Air Inlet Temperature for Rated Power (A.I.T.)	
	°C	(F°)	°C	(F°)
PT6A-21				
Maximum Continuous	695	(1283)	22	(71)
Take-off (-dry)	695	(1283)	22	(71)
Starting (5 secs)	1090	(1994)		
PT6A-15AG, -27				
Maximum Continuous	725	(1337)	22	(71)
Take-off (-dry)	725	(1337)	22	(71)
Starting (5 secs)	1090	(1994)		
PT6A-28				
Maximum Continuous	750	(1382)	21	(70)
Take-off (-dry)	750	(1382)	21	(70)
Starting (5 secs)	1090	(1994)		
PT6A-29				
Maximum Continuous	750	(1382)	23	(73)
Take-off (-dry)	750	(1382)	23	(73)
Starting (5 secs)	1090	(1994)		
PT6A-34, -34B, -34AG				
Maximum Continuous	790	(1454)	30	(86)
Take-off (-dry)	790	(1454)	30	(86)
Starting (5 secs)	1090	(1994)		
PT6A-36				
Maximum Continuous	805	(1481)	36	(97)
Take-off (-dry)	805	(1481)	36	(97)
Starting (5 secs)	1090	(1994)		
PT6A-41, -41AG				
Maximum Continuous	750	(1382)	41	(106)
Take-off (-dry)	750	(1382)	41	(106)
Starting (5 secs)	1000	(1832)		

Air Bleed	Maximum External (%)	5.25	
	During start (lb/min)	1.5	
Fuel Pressure	Refer to Installation Manual.		
Fuel Temperature			°C (°F)
	Maximum fuel pump inlet		57 (135)
	Minimum fuel pump inlet		-54 (-65)
Fuel Viscosity	Maximum cold starting S.L. (centistokes)		12
Oil Pressure	PT6A-6, -6A, -6B, -20, -20A, -20B, -6/C20		psig
	Gas generator speed		
	at or above 28000 rpm		65-85
	below 28000 rpm		40 (min)
	PT6A-15AG, -21, -27, -28, -29		
	Oil temperature		
	60° -70°C (140-160°F)		
	Gas generator speed		
	at or above 27000 rpm		80-100
	below 27000 rpm		40 (min)
	PT6A-34, -34B, -34AG, -36		
	Oil temperature		
	60° -70°C (140-160°F)		
	Gas generator speed		
	at or above 27000 rpm		85-105
	below 27000 rpm		40 (min)
	PT6A-41, -41AG		
	Oil temperature		
	60° -70°C (140-160°F)		
	Gas generator speed		
	at or above 27000 rpm		105-135
	below 27000 rpm		60 (min)

Oil Temperature	All Models Except PT6A41, 41AG		
		°C	(°F)
	Minimum	-40	(-40)
	Maximum Continuous	99	(210)
	Maximum (10 mins.)	104	(220)
	Maximum for PWA Type I oil (for applicable models)	85	(185)
	PT6A-41, PT6A-41AG		
	Maximum Continuous	104	(220)
	Maximum Ground Operation	110	(230)
	Maximum	104	(220)
Output Torque		Nm.	ft-lb
	PT6A-6, -6A, -6B, 20, -20A, -20B, -6/C20, PT6A-21		
	Maximum - steady state	1783	1315
	Transient	2034	1500
	PT6A-15AG, -27		
	Maximum - steady state	2207	1628
	Transient	2847	2100
	PT6A-28		
	Maximum - steady state	2421	1786
	Transient	2847	2100
	PT6A-29, -34, -34B, -34AG, -36		
	Maximum - steady state	2671	1970
	Transient	2847	2100
	PT6A-41, -41AG		
	Maximum - steady state	3023	2230
	Transient	3728	2750

Overspeeds

Propeller:

- may be employed to complete a flight in an in-flight emergency
- may be employed at all ratings

	rpm (max)
PT6A-41	2200
Other models	2425

Gas Generator:

- subject to temperature and other limits
- 10 seconds maximum 38500

Fuel Type

Refer to the applicable Service Bulletins, as follows, for the approved fuel types:

SB 1244	PT6A-6, -6A, -6B, -6/C20, -20, -20A, -20B, -21, -27, -28, -34, -34B, -36
SB 12144	PT6A-15AG
SB 1344	PT6A-34AG
SB 3044	PT6A-41

Oil Type

Refer to the applicable Service Bulletins, as follows, for approved oil types:

SB 1001	PT6A-6, -6A, -6B, -6/C20, -20, -20A, -20B, -21, -27, -28, -34, -34AG, -34B, -36
SB 12001	PT6A-15AG
SB 3001	PT6A-41

Oil Capacity

	Litres	Imperial gallons	U.S. gallons
PT6A-41, -41AG			
Usable	5.68	1.25	1.5
total	9.46	2.08	2.5
Other models			
Usable	5.68	1.25	1.5
Total	8.64	1.9	2.3

Equipment

Fuel Pump, fuel control unit, ignition system without power source, propeller governor and fuel heater are included as standard equipment as shown in the Approved Parts List. For additional information refer to Installation Manual. For output drive specification, accessory drives, principal dimensions, weight and C.G. locations, refer to Installation Manual.

Basis of Certification

CAR 13 effective 15 June, 1956 and Amendments 13-1 dated 12 August, 1957, 13-2 dated 17 May, 1958, 13-3 dated 1 October, 1959, 13-4 dated 3 May, 1962.

Dates of application for Type Certification

PT6A-6	June	4,	1962	PT6A-6/C20	Sept.	18,	1972
PT6A-6A	April	6,	1965	PT6A-20A	Oct.	18,	1972
PT6A-20	April	8,	1965	PT6A-20B	May	9,	1973
PT6A-27	Nov.	15,	1966	PT6A-36	Oct.	23,	1973
PT6A-29	Oct.	6,	1967	PT6A-21	Aug.	27,	1974
PT6A-6B	Nov.	30,	1967	PT6A-34B	June	23,	1976
PT6A-28	Jan.	20,	1969	PT6A-34AG	Dec.	3,	1976
PT6A-34	April	29,	1971	PT6A-15AG	Aug.	17,	1977
PT6A-41	March	27,	1972	PT6A-41AG	July	3,	1978

Approved Publications

a) DOT Approved Installation Manual for:
PT6A-6, PT6A-6A, PT6A-6B, PT6A-15AG, PT6A-6/C20, PT6A-20, PT6A-20A, PT6A-20B, PT6A-21, PT6A-27, PT6A-28, PT6A-29, PT6A-34, PT6A-34AG, PT6A-34B dated July, 1971.

PT6A-40 series dated April, 1975.

b) DOT Approved Parts List as follows:

Engine Model	Date of EAPL
PT6A-6	Jan 3, 1964
-6A	Jan 3, 1964
-6B	Jan 3, 1964
-15AG	Aug 22, 1978
-6/C20	Jan 3, 1964
-20	Oct 15, 1965
-20A	Feb 1, 1973
-20B	Oct 15, 1965
-21	May 28, 1975
-27	Jan 30, 1968

Approved Publications (Cont'd)	-28	April 15, 1969
	-29	Feb 13, 1968
	-34	July 15, 1971
	-34AG	March 31, 1977
	-34B	Sept 23, 1976
	-36	June 10, 1976
	-41	Aug 28, 1973
	-41AG	Aug 28, 1973

c) Transport Canada Approved Service Bulletins:

SBs defining approved lubricating oils, refer to the Oil Type section of this data sheet.

SBs defining approved fuels and additives refer to the Fuel Type section of this data sheet.

SB 1002	Defining Rotor Components Service Lives for the PT6A-6, -6A, -6B, -6/C20, -20, -20A, -20B, -21, -27, -28, -34, -34B, -36
SB 12102	Defining Rotor Components Service Lives for the PT6A-15AG
SB 1302	Defining Rotor Components Service Lives for the PT6A-34AG
SB 3002	Defining Rotor Components Service Lives for the PT6A-41
SB 1003	Defining Operating Time Between Overhaul (TBO) and Hot Section Inspection (HSI) Frequency for the PT6A-6, -6A, -6B, -34B
SB 1803	Defining Operating Time Between Overhaul (TBO) and Hot Section Inspection (HSI) Frequency for the PT6A-6/C20, -20, -20A, -20B, -21, -27, -28
SB 12103	Defining Operating Time Between Overhaul (TBO) and Hot Section Inspection (HSI) Frequency for the PT6A-15AG
SB 1303	Defining Operating Time Between Overhaul (TBO) and Hot Section Inspection (HSI) Frequency for the PT6A-34AG
SB 3003	Defining Operating Time Between Overhaul (TBO) and Hot Section Inspection (HSI) Frequency for the PT6A-41

Approved Publications (Cont'd)

d) Maintenance Manual:

PT6A-6/C20, -6, -20, -20A, -6A, -6B	3015442
PT6A-15AG	3030442
PT6A-21, -27, -28	3013242
PT6A-34, -34AG, -34B, -36	3021242
PT6A-41	3021442

e) Overhaul Manual:

PT6A -6, -6A, -6B	3008103
PT6A-20, -20A, -20B, -6/C20	3011403
PT6A-15AG	3030443
PT6A-21, -27, -28	3013243
PT6A-34, -34AG, -34B, -36	3021243
PT6A-41	3021443

NOTE 1 The engine ratings are based on dry sea level static ICAO Standard Atmospheric Conditions. Compressor intake screen installed; no external accessory loads and no airbleed.

NOTE 2 The engine meets FAA requirements for operation in icing conditions when the intake system conforms with Installation Manual Instructions for inertial separation of snow and icing particles; when the alternate approved alcohol system is used, flight in visible moisture is restricted as specified in the Installation Manual. The engine also meets FAA requirements for adequate disc integrity and rotor blade containment and does not require external armouring.

NOTE 3 The Service Life values for life-limited rotor components are defined in the applicable Service Bulletins shown in the Approved Publications section of this data sheet.

NOTE 4 The PT6A-20B engine is identical in all major respects to the PT6A-20A engine except for exhaust port area which conforms to PT6A-20 dimensions.

NOTE 5 For PT6A-34, PT6A-34B and PT6A-36 engines, power may be restored in hot day conditions by means of water or water/methanol injection when accomplished in accordance with the requirements of the Installation Manual.

NOTE 6 The PT6A-15AG, PT6A-34AG and PT6A-41AG are special purpose versions of the PT6A-27, PT6A-34 and PT6A-41 engines respectively, intended for operation in agricultural aviation.

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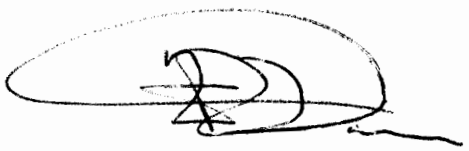

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