

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

E1NE  
Revision 1  
Pratt & Whitney Aircraft  
JT15D-1  
JT15D-4

October 23, 1981

TYPE CERTIFICATE DATA SHEET NO. E1NE

Engines of the described herein conforming with this data sheet (which is a part of type certificate No. E1NE) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

Type Certificate Holder Pratt & Whitney Aircraft of Canada, Ltd.  
(Formerly United Aircraft of Canada, Ltd.)  
Longueuil, Quebec, Canada J4K 4X9

Model	JT15D-1	JT15D-4
Type	Twin spool with single stage fan and centrifugal compressor, three stage turbine, annular reverse-flow combustor and full-length annular bypass duct	Twin spool with single stage fan, one axial stage and centrifugal compressor, three stage turbine, annular reverse-flow combustor and full-length annular bypass duct
Ratings		
Maximum continuous static thrust at sea level, lb.	2090	2375
Takeoff static thrust at sea level (5 min.), lb.	2200	2500
Fuel control	Aviation Electric DP-L1 and DP-L2	Aviation Electric DP-L2
Flow divider	Lucas-Rotax SCH 1210/13, FD206	Lucas-Rotax FD206
Fuel pump	Sundstrand (Pesco) 025493 Vickers PF4-094-2B	-- —
Fuel	See NOTE 9	--
Oil	Synthetic type conforming with the current PWA 521 (Type II) specifications, See NOTE 10	--
Principal Dimensions:		
Length, in. (Maximum including nose drive cover and the aft turbine bearing housing cone)	56.596	60.402
Envelope Diameter, in. (Maximum)	35.33	35.33
Weight (dry), lb. (Includes basic engine with oil cooler and all essential access., but excluding starter, propelling nozzle, and power source for ignition system)	509	557
Center of gravity, in. (dry weight)		
Rear of engine mount plane	11.310	10.20
Below engine centerline	2.110	1.81
Clockwise from vertical of engine	.090	.100
Ignition	Bendix Exciter TGLN-28, Ignitor plugs Bendix 10-380698-1 AC YB-15 or Champion FHE 246-4	--

NOTES

"- -" indicates "same as preceding model"

"—" indicates "does not apply"

Page No.	1	2	3
Rev. No.	1	1	1

Reformatted 12/94

Certification basis                      Applicable to model JT15D-1 serial numbers 076364 through 076672 and model JT15D-4 serial number 070011 through 070059 except 070038; FAR 21.21, FAR 33 effective February 1, 1965, as amended by 33-1, 33-2, 33-3, 33-4, and 33-5. (See Note 13)

<u>Model</u>	<u>Date of Application</u>	<u>Date Type Certificate Issued/Revised</u>
JT15D-1	March 26, 1974	May 28, 1974
JT15D-4	April 16, 1974	May 31, 1974

Production basis                      Production Certificate No. 2 issued to Pratt & Whitney Aircraft, Connecticut. Applicable to those model JT15D-1 and JT15D-4 engines listed above under "Certification Basis". There will be no further production of JT15 series engines or replacement parts under this production certificate. Replacement parts exported from Canada that conform to the design approved under this type certificate are eligible for installation on those model JT15 series engines manufactured in the United States and listed above provided the parts are issued a certificate of airworthiness for export. (See Note 13 for statement on identity.)

NOTE 1.    Maximum permissible engine operating speed is:	<u>JT15D-1</u>	<u>JT15D-4</u>
Low Rotor (N <sub>1</sub> ) RPM	15,840	16,540
High Rotor (N <sub>2</sub> )	31,120	31,450

NOTE 2.    Maximum permissible temperatures are as follows:

	<u>JT15D-1</u>	<u>JT15D-4</u>
Interturbine gas temperature		--
Takeoff (5 minutes)	1292°F (700°C)	--
Maximum continuous	1256°F (680°C)	--
Maximum for acceleration (2 minutes)	1292°F (700°C)	--
Starting	932°F (500°C)	--
Starting Transient (2 seconds)	1292°F (700°C)	--
Oil Inlet (Maximum)	250°F (121°C)	250°F (121°C)
(Minimum)	-40°F (-40°C)	--
(Transient) (90 secs.)	—	280°F (128°C)
External engine components, maximum temperature	The accessories shall be ventilated as necessary to keep the air temperature below 250°F as measured 0.5 inch from the surface of the gearbox or any accessory.	

NOTE 3.    Fuel and oil pressure limits are as follows:

Fuel pressure, at inlet to engine system pump, 5 p.s.i. above absolute fuel vapor pressure or if pump delivery bleed is used, the excess shall be 9 p.s.i. at sea level decreasing linearly with increasing altitude to 5 p.s.i. above vapor pressure at 35,000 feet with a maximum of 40 p.s.i. above absolute ambient atmospheric pressure with engine running and 85 p.s.i. with the engine stopped.

Oil pressure:	<u>JT15D-1</u>	<u>JT15D-4</u>
At idle	35 p.s.i.g. minimum	35 p.s.i.g. minimum
Operating range	65 - 80 p.s.i.g.	70 - 85 p.s.i.g.

NOTE 4.    Maximum permissible air bleed extraction is 10 percent of high compressor airflow to 20,000 feet pressure altitude, decreasing linearly to 5 percent at 42,000 feet pressure altitude.

NOTE 5.    The ratings are based upon static test stand operation under the following conditions:  
 Compressor inlet air at 59°F and 29.92 in. Hg.  
 Bypass nozzle EFD-33108 (JT15D-1), EFD-38406 (JT15D-4) and hot nozzle EFD-33107.  
 P&WA bellmouth on air inlet, EOF-32772-A.  
 No aircraft accessory loads or air extraction.  
 Inter-turbine gas temperature limit and engine rotor speed limits not exceeded.

NOTE 6. The following accessory drive provisions are incorporated:

Drive***	Rotation*	Speed to Ratio		Torque (in. -lb.)		Overhang (in. -lb.)
		Turbine Shaft	to Shaft	Continuous	Static	
High Rotor Tachometer	C	.1282:1		7	50	10
Low Rotor Tachometer	CC	.2642:1		7	50	10
Starter-Generator**	C	.3640:1		210	1600	180
Hydraulic Pump	C	.1282:1		225	1600	125

\* C - Clockwise, CC - Counter-clockwise

\*\*Starter generator pad may be overloaded to 340 in. -lbs. for periods up to 5 minutes subject to a total accessory power not exceeding 40 HP.

\*\*\*Total accessory power limit is 22.5 HP at 50% N<sub>2</sub> increasing linearly to 30 HP at 100% N<sub>2</sub>.

NOTE 7. This engine meets FAA requirements for adequate turbine disk integrity and rotor blades containment and does not require external armoring.

NOTE 8. The maximum continuous static thrust at sea level at 59°F ambient temperature and below is 2200 lb. for the JT15D-1 and 2500 lb. for the JT15D-4.

NOTE 9. JP-1, JP-4, and JP-5 fuels conforming to P&WA Specification No. 522 and later revisions and ASTM Specification ES-2-74 may be used separately or mixed in any proportions without adversely affecting the engine operation or power output. No fuel control adjustment is required when switching fuel types.

Phillips PFA-55MB anti-icing additive at the use concentration not in excess of 0.15 volume is approved for use in fuels conforming to P&WA Specification No. 522D and icing inhibitor - fuel system - to C.G.S.B. Specification 3-GP-526a in the absence of an approved fuel heater.

Shell ASA-3 anti-static additive at a concentration that will provide not in excess 300 conductivity units, which is approximately equivalent to 1 p.p.m., is approved for use in fuels conforming to P&WA Specification No. 522E or later revisions.

SOHIO Biobor JF biocide additive at a use concentration not in excess of 20 p.p.m. elemental boron (270 p.p.m. total additive) is approved for use in fuel conforming to P&WA Specification No. 522.

NOTE 10. P&WAC Service Bulletin 7001 lists approved brand oil.

NOTE 11. The above models incorporate the following general characteristics:

<u>JT15 Model</u>	<u>Characteristics</u>
D-1	Basic model
D-4	Similar to D-1 except increased power rating, incorporation of single compressor axial stage

NOTE 12. Certain engine parts are life limited. These limits are listed in P&WAC Engine Service Bulletin No. 7002.

NOTE 13. This Type Certificate Data Sheet reflects the certification basis and approval for those serial numbered model JT15D-1 and JT15D-4 engines listed under "Certification Basis."

Two Type Certificates were issued for administrative purposes: E25EA under FAR 21.29 for engines produced in Canada, and; E1NE under FAR 21.21 for engines produced in the United States. The type design for each engine, regardless of where produced, is identical. There will be no further production under this type certificate. The information on this Type Certificate Data Sheet applies to Pratt & Whitney model JT15D-1 and JT15D-4 engines, including:

- (A) Those serial numbered engines listed above, certificated under this FAA Type Certificate, E1NE, originally issued to Pratt & Whitney Aircraft Division of United Technologies Corporation, East Hartford, Connecticut, U.S.A., and reissued to Pratt & Whitney Aircraft of Canada, Ltd. (Formerly United Aircraft of Canada, Ltd.), Longueuil, Quebec, Canada.
- (B) Those engines listed on and certificated under FAA Type Certificate E25EA, issued to Pratt & Whitney Aircraft of Canada, Ltd., (Formerly United Aircraft of Canada, Ltd.), Longueuil, Quebec, Canada.

.....END.....