DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E13EA
Revision 12
GENERAL ELECTRIC
CT64-820-4

July 16, 1986

TYPE CERTIFICATE DATA SHEET NO. E13EA

Engines of models described herein conforming with this data sheet (which is a part of Type Certificate No. E13EA) 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: General Electric Company
Aircraft Engine Group
Lynn, Massachusetts 01910

Model Type	CT64-820-4
	Axial Flow 14 Stage Compressor
	Annular combustor
	2 Stage Gas Generator Turbine
	2 Stage Free Power Turbine
	Turboprop
	Reduction Ratio 13.44:1
	Propeller Shaft above
	Power Unit Centerline
Ratings	
Maximum continuous at sea level:	
Equivalent Shaft, hp	2830
Shaft, hp.	2745
Thrust, lb.	213
Output, r.p.m. (See NOTE 2)	1015
Takeoff (5 min.) at sea level:	
Equivalent Shaft hp.	3227
Shaft hp.	3133
Thrust, lb.	236
Output, r.p.m. (See NOTE 2)	1160
Propeller Shaft	AND 10152-60A
Fuel Control	Ham. Std. Model JFC-42-2 (Turboprop), & Pesco (Sundstrand) type 023966, 024836 gear type fuel pump
Fuel	Fuel conforming to G.E. Jet Fuel Spec. No. D50TF2, current revision. Kerosene JP-4 & JP-5 fuels are acceptable
Oil	Synthetic type conforming to G.E. specification D50TF1, current revision
Principal Dimensions	
Length, in.	110.20
Width, in.	26.90
Height, in.	40.40
Weight (dry) lb.	1145
(includes essential engine accessories & torque sensor for CT64-820-4 only)	
Center of Gravity Location, in.,	
Forward of rear mount forward face	19.76

Model Type	CT64-820-4
Engine Centerline	above 1.89 left 0.30
Ignition System (20-29 volts D.C., 150 watts)	Bendix Scintilla type 10-324830 or General Laboratory Associates type 43661 dual ignition unit with two ignitor plugs Champion type FHE111
NOTES	1 through 12

Certification basis:

Regulations & Amendments	Model	Date of Application	Date Type Certificate No. E13EA Issued/Revised	Inactive
CAR 13 effective June 15, 1956	CT64-410-1	September 19, 1963	March 25, 1965	August 30, 1967
as amended by 13-1, 13-2, 13-3,	CT64-610-1	September 19, 1963	March 25, 1965	August 30, 1967
13-4, 13-5, & 13-6	CT64-810-1	September 19, 1963	March 25, 1965	April 29, 1971
	T64-GE-10	September 19, 1963	March 25, 1965	April 29, 1971
	CT64-820-1	February 26, 1965	January 27, 1967	April 24, 1975
	CT64-820-2	January 9, 1967	January 27, 1967	April 24, 1975
	CT64-820-3	May 4, 1973	May 31, 1973	April 24, 1975
	CT64-820-4	February 12, 1974	October 21, 1974	
	CT64-630-1	February 15, 1966	June 28, 1968	May 20, 1983
	T64-GE-16	May 15, 1967	June 28, 1968	May 20, 1983
	CT64-630-1A	March 11, 1970	April 15, 1971	May 20, 1983

Production basis: Production Certificate No. 107

NOTE 1. Maximum permissible temperatures:

	CT64-820-4
Power turbine inlet (T_5)*	
Takeoff	1370°F
Maximum continuous	1300°F
Starting	1650°F (3 sec.)
Oil Inlet	240°F

*The power turbine inlet gas temperature is measured by thermocouples mounted in a radial plane in the turbine casing (14 thermocouples, 820-4).

NOTE 2. Engine Rotor Speeds, r.p.m.:

	CT64-820-4
Gas Generator (maximum permissible)	
Takeoff	18,230
Maximum continuous	17,800
Overspeed (10 seconds)	18,500
Output Shaft	
Operating Range	
Maximum	1,160*
Nominal	1.015*
Overspeed (Max. permissible, 5 sec.)	1,450*

*Propellers to be used with this engine must have the functioning characteristics compatible with the engine and control system. When these limits are exceeded, refer to General Electric Operation Instruction SEI-447 for appropriate action.

NOTE 3. Fuel and Oil Pressure Limits:

	CT64-820-4
Fuel	
Inlet Pressure	50 p.s.i.g. maximum
No Boost	0.45 V/L (Maximum) S.L. to 6000 ft.
Oil Pump Discharge	
Ground idle	
Engine	10 p.s.i.g. minimum
Speed Decreaser Gear	5 p.s.i.g. minimum
Operating Range	
Engine	50-90 p.s.i.d.
Speed Decreaser Gear	60-95 p.s.i.d.

Refer to applicable Operating/Maintenance Instructions for operating range limits and for reduced oil pressure limits above 15,000 feet altitude.

NOTE 4. Accessory Drive Provisions:

Drives	Type	Direction of Rotation*	Speed, r.p.m.	Maximum Torque in. lb. Cont	Maximum Torque in. lb. Static
		Engine Gearcase			
Engine Tach Generator	AND 20005 Type XVB Modified	CC	0.246**	7	50
Starter (used as starter pad)	AND 20002 Type X11S Modified	C	0.697**	1370	3000
Starter (used as driving pad)	AND 20002 Type X11S Modified	C	0.697**	370 (1)	3000
Fluid Power Pump	AND 20002 Type X11J	CC	0.259**	1000 (1)	4400
		Speed Decreaser Gearcase			
Power Turbine Tach Generator	AND 20005 Type XVB	C	0.270***	7	50
Fluid Power Pump	AND 20002 Type X11J Modified	C	0.237***	600	2700
Fluid Power Pump	AND 20000 Type XA Modified	CC	0.233***	100	800

* - Facing pad, "C" - Clockwise; "CC" - Counter-clockwise
** - Times gas generator r.p.m.
*** - Times power turbine r.p.m.

(1) Total combined power extraction from gas generator accessory gearcase pads not to exceed 55.6 s. hp. Refer to General Electric Installation Manual SEI-123 and SEI-429 for further accessory drive power limitations.

NOTE 5. Engine ratings are based on calibrated test stand performance under the following conditions:

Standard sea level static conditions of 59°F and 14.696 p.s.i.a.
Air inlet as defined by G.E. Drawing 1076678-335
Jet nozzle area of 450 sq. in.
No external air bleed or accessory drive loads
No anti-icing airflow
ESHP = Jet Thrust, lb./2.5 + s. hp.

Engines with individual performance characteristics and capabilities to develop the low temperature power ratings noted above at higher ambient temperatures may be operated up to these power limits at any ambient conditions providing the limits on all other engine parameters are not exceeded.

The CT64-820-4 model is flat rated at 3133 shaft h.p. to 100°F for takeoff and 2745 shaft h.p. to 86°F for maximum continuous.

Performance data is further described in General Electric Specification Nos. E1209 (CT64-820-4).

NOTE 6. Maximum permissible continuous air bleed extraction is 6%. See General Electric Installation Manual SEI-429 for further limitations.

NOTE 7. Output Shaft Torque Limits (ft. -lb.)

	CT64-820-4
Transient (5 sec.)	21,800
Steady state	14,200

NOTE 8. Torque signals are provided by the engine for airframe torque reading system.

NOTE 9. The CT64-820-4 engine when operating in icing conditions must have ignition on and be operated above flight idle.

NOTE 10. The only optional additives which may be used in approved fuels are as follows:

(1) Phillips PFA-55MB or anti-icing additives to specification MIL-1-27686E at a concentration not in excess of 0.15% by volume.

(2) S0H10 Biobor JF biocide additive at a concentration not in excess of 20 p.p.m. elemental boron (270 p.p.m. total additive).

(3) Shell ASA-3 antistatic additive at a concentration that will provide not in excess of 300 conductivity units which is approximately equivalent to 1 p.p.m.

NOTE 11. Certain engine parts are life limited. These limits are listed in CT64 Service Bulletin No. 93.

NOTE 12. Fuel venting emission control is not included on these engines; and therefore, beginning January 1, 1975, airframe compliance must be provided.

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