U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E13NE	TCDS NUMBER E13NE REVISION: Revision 22 Date: February 6, 2007 GENERAL ELECTRIC COMPANY MODELS: CF6-80A, CF6-80A1, CF6-80A2, CF6-80A3, CF6-80C2A1, CF6-80C2A2, CF6-80C2A3, CF6-80C2A5, CF6-80C2A8, CF6-80C2L1F, CF6-80C2B1, CF6-80C2B2, CF6-80C2B4, CF6-80C2B6, CF6-80C2B1F, CF6-80C2B2F, CF6-80C2B3F, CF6-80C2B4F, CF6-80C2B6F, CF6-80C2K1F, CF6-80C2B1F1, CF6-80C2D1F, CF6-80C2A5F, CF6-80C2B7F, CF6-80C2B1F2, CF6-80C2B6FA, CF6-80C2B5F, CF6-80C2B8F

Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E13NE) 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 (TC) HOLDER: GENERAL ELECTRIC COMPANY
AIRCRAFT ENGINES
1 NEUMANN WAY
CINCINNATI, OH 45215-6301

I. MODELS	**CF6-80A**	**CF6-80A1**	**CF6-80A2**	**CF6-80A3**
TYPE	Dual rotor, axial flow, high bypass turbofan. The 14-stage high pressure compressor is driven by a 2-stage high pressure turbine and the integrated front fan and low pressure compressor are driven by a 4-stage low pressure turbine.			
RATINGS (NOTE 5)				
Maximum continuous at sea level, static thrust, lb	43,660	43,610	45,720	45,800
Takeoff (5 min. see NOTE 23) at sea level, static thrust, lb	46,930	46,990	48,670	48,970
Flat rating ambient temperature				
Takeoff	92°F/33.3°C	- -	- -	- -
Maximum continuous	77°F/25.0°C	- -	- -	- -
MAIN ENGINE CONTROL, WOODWARD GE P/N	9238M79	9363M11	9238M79	9363M11
POWER MANAGEMENT CONTROL GE P/N	7076M98 1305M68	7084M12 ---	7076M98 1305M69	7084M12 1305M70

PAGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
REV	21	20	20	21	21	21	21	21	21	21	19	9	21	21	21	21	21	19	10	21	22

LEGEND: "- -" INDICATES "SAME AS PRECEDING MODEL"
"---" NOT APPLICABLE
NOTE: SIGNIFICANT CHANGES ARE BLACK-LINED IN THE LEFT MARGIN.

I. MODELS (Continued)	CF6-80A	CF6-80A1	CF6-80A2	CF6-80A3
EGT SHUNT JUNCTION BOX (NOTE 15)				
GE P/N				
FUEL PUMP				
GE P/N	9304M23	9039M45	9304M23	9039M45
IGNITION SYSTEM				
Two ignition units				
GE P/N	9101M52	- -	- -	- -
Or GE P/N	9238M66	- -	- -	- -
Two ignitor plugs				
GE P/N	9101M37	- -	- -	- -
Or GE P/N	1305M52	- -	- -	- -
PRINCIPAL DIMENSIONS				
Length (in) (fan spinner to LPT aft flange face)	166.9	- -	- -	- -
Width (in) (maximum envelope)	97.9	94.5	97.9	94.5
Height (in) (maximum envelope)	95.1	105.6	95.1	105.6
WEIGHT (DRY) (lb)	8,776	8,760	8,776	8,760
	NOTE: Weight includes basic engine accessories & optional equipment as listed in the manufacturer's engine specifications, including condition monitoring instrumentation sensors.			
CENTER OF GRAVITY LOCATIONS				
Station (in) (engine only)	222.8±2.0	219.4±2.0	222.8±2.0	219.4±2.0
Waterline (in) (engine only)	98.2±1.0	95.8±1.0	98.2±1.0	95.8±1.0
Buttline (in) (engine only)	99.8±0.5	98.7±0.5	99.8±0.5	98.7±0.5

II. MODELS	CF6-80C2A1	CF6-80C2A2	CF6-80C2B1	CF6-80C2B4
TYPE	Dual rotor, axial flow high bypass turbofan. The 14-stage compressor is driven by a 2-stage high pressure turbine and the integrated front fan and low pressure compressor are driven by a 5-stage low pressure turbine.			
RATINGS (NOTE 5)				
Maximum continuous at sea level, static thrust, lb	53,390	48,080	49,550	52,370
Takeoff (5 min. see NOTE 23) at sea level, static thrust, lb	57,860	52,460	55,980	57,180
Flat rating ambient temperature				
Takeoff	86°F/30°C	111°F/44°C	86°F/30°C	90°F/32.2°C
Maximum continuous	77°F/25.0°C	- -	- -	- -
MAIN ENGINE CONTROL, WOODWARD				
GE P/N	1332M18	- -	1332M19	- -
POWER MANAGEMENT CONTROL				
GE P/N	1339M18	1339M19	1339M21	1339M20

II. MODELS (Continued)	CF6-80C2A1	CF6-80C2A2	CF6-80C2B1	CF6-80C2B4
EGT SHUNT JUNCTION BOX (NOTE 15)				
GE P/N	1325M15P05	- -	- -	---
	1325M15P07	- -	- -	- -
	1383M97P03	- -	- -	- -
	1383M97P07	- -	- -	- -
FUEL PUMP				
GE P/N	9355M33	- -	- -	- -
IGNITION SYSTEM				
Two ignition units				
GE P/N	9238M66	- -	- -	- -
Or GE P/N	---	---	---	---
Two ignitor plugs				
GE P/N	9392M95	- -	---	---
Or GE P/N	9387M23	- -	- -	- -
PRINCIPAL DIMENSIONS				
Length (in) (fan spinner to LPT aft flange face)	168.26	- -	- -	- -
Width (in) (maximum envelope)	105.10	- -	- -	- -
Height (in) (maximum envelope)	105.97	- -	- -	- -
WEIGHT (DRY) (lb)	9,480	- -	9,670	- -
	NOTE: Weight includes basic engine accessories & optional equipment as listed in the manufacturer's engine specifications, including condition monitoring instrumentation sensors.			
CENTER OF GRAVITY LOCATIONS				
Station (in) (engine only)	223.93±2.0	- -	- -	223.86±2.0
Waterline (in) (engine only)	98.90±0.5	- -	- -	98.86±0.5
Buttline (in) (engine only)	100.00±0.5	- -	- -	99.97±0.5

III. MODELS	CF6-80C2A3	CF6-80C2B2	CF6-80C2B6	CF6-80C2A5	CF6-80C2A8
TYPE	Dual rotor, axial flow high bypass turbofan. The 14-stage compressor is driven by a 2-stage high pressure turbine and the integrated front fan and low pressure compressor are driven by a 5-stage low pressure turbine.				
RATINGS (NOTE 5)					
Maximum continuous at sea level, static thrust, lb	54,790	49,020	56,100	56,210	48,080
Takeoff (5 min. see NOTE 23) at sea level, static thrust, lb	58,950	51,950	60,070	60,100	57,860
Flat rating ambient temperature					
Takeoff	86°F/30°C	90°F/32.2°C	86°F/30°C	- -	95°F/35°C
Maximum continuous	77°F/25°C	86°F/30°C	77°F/25°C	- -	- -
MAIN ENGINE CONTROL, WOODWARD GE P/N	1332M18	1453M12	1538M66	1459M60	- -
POWER MANAGEMENT CONTROL GE P/N	1374M93	1374M94	1457M16	1459M13	1672M13

III. MODELS (Continued)	CF6-80C2A3	CF6-80C2B2	CF6-80C2B6	CF6-80C2A5	CF6-80C2A8
EGT SHUNT JUNCTION BOX (NOTE 1 & 19)					
GE P/N	1325M15P07	- -	---	---	---
	1383M97P03	- -	- -	- -	- -
	1383M97P07	- -	- -	- -	- -
FUEL PUMP					
GE P/N	9355M33	- -	- -	- -	- -
IGNITION SYSTEM					
Two ignition units / GE P/N	9238M66	- -	- -	- -	- -
Two ignitor plugs / GE P/N	9387M23	- -	- -	- -	- -
PRINCIPAL DIMENSIONS					
Length (in) (fan spinner to LPT aft flange face)	168.26	- -	- -	- -	- -
Width (in) (maximum envelope)	105.10	- -	- -	- -	- -
Height (in) (maximum envelope)	105.97	- -	- -	- -	- -
WEIGHT (DRY) (lb)	9,480	9,670	- -	9,480	- -
	NOTE: Weight includes basic engine accessories & optional equipment as listed in the manufacturer's engine specifications, including condition monitoring instrumentation sensors.				
CENTER OF GRAVITY LOCATIONS					
Station (in) (engine only)	223.86±2.0	- -	- -	- -	- -
Waterline (in) (engine only)	98.86±0.5	- -	- -	- -	- -
Buttline (in) (engine only)	99.97±0.5	- -	- -	- -	- -

IV. MODELS	CF6-80C2B1F	CF6-80C2B2F	CF6-80C2B4F	CF6-80C2B6F	CF6-80C2D1F
TYPE	Dual rotor, axial flow high bypass turbofan. The 14-stage compressor is driven by a 2-stage high pressure turbine and the integrated front fan and low pressure compressor are driven by a 5-stage low pressure turbine.				
RATINGS (NOTE 5)					
Maximum continuous at sea level, static thrust, lb	49,810	49,140	52,470	56,170	56,730
Takeoff (5 min. see NOTE 23) at sea level, static thrust, lb	57,160	52,010	57,280	60,030	60,690
Flat rating ambient temperature					
Takeoff	90°F/32.2°C	- -	- -	86°F/30°C	- -
Maximum continuous	77°F/25°C	86°F/30°C	77°F/25°C	- -	- -
HYDROMECHANICAL UNIT					
GE P/N	1383M68	- -	- -	- -	1471M24
ELECTRONIC CONTROL UNIT,					
GE P/N	1471M63	- -	- -	- -	1519M91
	2121M25	- -	- -	- -	1820M34
	2121M37	- -	- -	- -	1851M51
					1851M52
					1851M53

IV. MODELS (CONTINUED)	CF6-80C2B1F	CF6-80C2B2F	CF6-80C2B4F	CF6-80C2B6F	CF6-80C2D1F
ELECTRONIC CONTROL UNIT, (cont.) GE P/N	1519M89	- -	- -	- -	---
	1820M33	- -	- -	- -	---
	2121M26	- -	- -	- -	---
	2121M29	- -	- -	- -	---
	2121M38	- -	- -	- -	---
	2121M41	- -	- -	- -	---
IDENTIFICATION PLUG (NOTE 21)					
GE P/N	1851M56	- -	- -	- -	- -
	7161M98	- -	- -	- -	- -
	7157M87	- -	- -	- -	- -
EGT SHUNT JUNCTION BOX (NOTE 15, 19, & 20) GE P/N	1325M15P07	- -	- -	- -	---
	1383M97P03	- -	- -	- -	---
	1383M97P07	- -	- -	---	---
	1519M97P01	- -	- -	- -	- -
FUEL PUMP GE P/N	9355M33	- -	- -	- -	- -
IGNITION SYSTEM					
Two ignition units, GE P/N	9238M66	- -	- -	- -	- -
Two ignitor plugs, GE P/N	9387M23	- -	- -	- -	- -
RATING PLUG	7156M94G01	7156M94G02	7156M94G03	7156M94G04	7156M94G01
PRINCIPAL DIMENSIONS					
Length (in) (fan spinner to LPT aft flange face)	168.26	- -	- -	- -	- -
Width (in) (maximum envelope)	111.42	- -	- -	- -	- -
Height (in) (maximum envelope)	105.97	- -	- -	- -	- -
WEIGHT (DRY) (lb)	9,790	- -	- -	- -	9,850
	NOTE: Weight includes basic engine accessories & optional equipment as listed in the manufacturer's engine specifications, including condition monitoring instrumentation sensors.				
CENTER OF GRAVITY LOCATIONS					
Station (in) (engine only)	223.86±2.0	- -	- -	- -	- -
Waterline (in) (engine only)	98.86±0.5	- -	- -	- -	- -
Buttline (in) (engine only)	99.97±0.5	- -	- -	- -	- -

V. MODELS	CF6-80C2B1F1	CF6-80C2B3F	CF6-80C2A5F	CF6-80C2B7F*	CF6-80C2B1F2
TYPE	Dual rotor, axial flow high bypass turbofan. The 14-stage compressor is driven by a 2-stage high pressure turbine and the integrated front fan and low pressure compressor are driven by a 5-stage low pressure turbine.				
RATINGS (NOTE 5)					
Maximum continuous at sea level, static thrust, lb	49,810	39,850	56,210	56,170	49,810
Takeoff (5 min. see NOTE 23) at sealevel, static thrust, lb	60,030	52,010	60,100	60,030	- -
Flat rating ambient temperature	86°F/30°C	90°F/32.2°C	86°F/30°C	- -	- -
Takeoff	77°F/25°C	- -	- -	- -	- -
Maximum continuous					
HYDROMECHANICAL UNIT GE P/N	1383M68	- -	- -	- -	- -
ELECTRONIC CONTROL UNIT, GE P/N	1471M63	- -	1820M99	1471M63	- -
	1519M89	- -	1797M63	1519M89	- -
	1820M33	- -	---	1820M33	- -
	2121M25	- -	---	2121M25	- -
	2121M26	- -	---	2121M26	- -
	2121M29	- -	---	2121M29	- -
	2121M37	- -	---	2121M37	- -
	2121M38	- -	---	2121M38	- -
	2121M41	- -	---	2121M41	- -
IDENTIFICATION PLUG (NOTE 21) GE P/N	1851M56	- -	- -	- -	- -
	7161M98	- -	- -	- -	- -
EGT SHUNT JUNCTION BOX (NOTE 15, 19, & 20) GE P/N	1383M97P03	- -	---	1383M97P03	- -
	1383M97P07	- -	---	1383M97P07	- -
	1519M97P01	- -	- -	- -	- -
FUEL PUMP GE P/N *See NOTE 24	9355M33	- -	- -	- -	- -
IGNITION SYSTEM					
Two ignition units, GE P/N	9238M66	- -	- -	- -	- -
Two ignitor plugs, GE P/N	9387M23	- -	- -	- -	- -
RATING PLUG	7156M94G05	7156M94G06	7156M94G01	7156M94G07	7156M94G08
PRINCIPAL DIMENSIONS					
Length (in) (fan spinner to LPT aft flange face)	168.26	- -	- -	- -	- -
Width (in) (maximum envelope)	111.42	- -	- -	- -	- -
Height (in) (maximum envelope)	105.97	- -	- -	- -	- -
WEIGHT (DRY) (lb)	9,790	9,499	9,860	9,790	9,499
	NOTE: Weight includes basic engine accessories & optional equipment as listed in the manufacturer's engine specifications, including condition monitoring instrumentation sensors.				
CENTER OF GRAVITY LOCATIONS					
Station (in) (engine only)	223.86±2.0	- -	- -	- -	- -
Waterline (in) (engine only)	98.86±0.5	- -	- -	- -	- -
Buttline (in) (engine only)	99.97±0.5	- -	- -	- -	- -
*See NOTE 24					

VI. MODELS	CF6-80C2B6FA	CF6-80C2B5F	CF6-80C2B8F	CF6-80C2L1F	CF6-80C2K1F
TYPE	Dual rotor, axial flow high bypass turbofan. The 14-stage compressor is driven by a 2-stage high pressure turbine and the integrated front fan and low pressure compressor are driven by a 5-stage low pressure turbine.				
RATINGS (NOTE 5)					
Maximum continuous at sea level, static thrust, lb	56,170	49,810	56,170	44,100	43,400
Takeoff (5 min., see NOTE 23) at sea level, static thrust, lb	60,030	60,030	60,030	51,250	59,740
Flat rating ambient temperature					
Takeoff	86°F/30°C	- -	- -	95°F/35°C	86°F/30°C
Maximum continuous	77°F/25°C	- -	- -	95°F/35°C	77°F/25°C
HYDROMECHANICAL UNIT GE P/N	1383M68	- -	- -	2042M93	- -
ELECTRONIC CONTROL UNIT, GE P/N's	1471M63	- -	- -	---	---
	1820M33	- -	- -	---	---
	1519M89	- -	- -	---	---
	2121M25	- -	- -	---	---
	2121M26	- -	- -	---	---
	2121M29	- -	- -	---	---
	2121M37	- -	- -	---	---
	2121M38	- -	- -	---	---
	2121M41			---	---
Electronic Engine Control (EEC) GE P/N					
Hardware (H/W)	---	---	---	2042M67	- -
Software (S/W)	---	---	---	2044M12	2123M53
IDENTIFICATION PLUG (NOTE 21) GE P/N	1851M56	- -	- -	1754M25	- -
	7161M98	- -	- -	---	---
EGT SHUNT JUNCTION BOX (NOTE 15, 19, & 20) GE P/N	1519M97P01	- -	- -	---	---
FUEL PUMP GE P/N	9355M33	- -	- -	- -	- -
IGNITION SYSTEM					
Two ignition units, GE P/N	9238M66	- -	- -	- -	- -
Two ignitor plugs, GE P/N	9387M23	- -	- -	- -	- -
RATING PLUG, GE P/N	7156M94G10	7156M94G09	7156M94G12	1753M83P35	- -
PRINCIPAL DIMENSIONS					
Length (in) (fan spinner to LPT aft flange face)	168.26	- -	- -	- -	- -
Width (in) (maximum envelope)	111.42	- -	- -	- -	- -
Height (in) (maximum envelope)	105.97	- -	- -	- -	- -
WEIGHT (DRY) (lb)	9,768	9,790	9,790	9,798	- -
	NOTE: Weight includes basic engine accessories & optional equipment as listed in the manufacturer's engine specifications, including condition monitoring instrumentation sensors.				
CENTER OF GRAVITY LOCATIONS					
Station (in) (engine only)	223.86±2.0	- -	- -	223.9±2.0	- -
Waterline (in) (engine only)	98.86±1.0	- -	- -	98.9±1.0	- -
Buttline (in) (engine only)	99.97±1.0	- -	- -	100.0±1.0	- -

CERTIFICATION BASIS

CF6-80A SERIES

14 Code of Federal Regulations (CFR) Part 33, effective February 1, 1965, Amendments 33-1 through- 33-8 inclusive as revised by Grant of Exemption No. 3372 from Paragraphs 33.7(c)(17), 33.14, 33.23, 33.27, and 33.88 of Amendment 8.

TYPE CERTIFICATE E13NE

MODELS	APPLICATION DATE	ISSUED/AMENDED
CF6-80A	DEC 01, 1978	OCT 06, 1981
CF6-80A1	JUL 29, 1980	OCT 06, 1981
CF6-80A2	JUN 16, 1981	OCT 06, 1981
CF6-80A3	JUN 16, 1981	OCT 06, 1981

CF6-80C2 SERIES (Except CF6-80C2L1F and CF6-80C2K1F)

14 Code of Federal Regulations (CFR) Part 33 effective February 1, 1965, Amendments 33-1 through 33-8 inclusive except for the approved substitute compliance procedures, which are in accordance with Amendment 10.

The specific requirements of Amendment 10 met are those defined in Paragraphs 33.7, 33.14, 33.23, 33.27, 33.88, and 33.92.

All CF6 engines approved under Type Certificate No. E13NE comply with the fuel venting emissions and exhaust emissions requirements of Special FAR No. 27-5. The following engine models manufactured after December 31, 1999 meet the requirements of 14 CFR Part 34, effective September 10, 1990, Amendments 34-1 through 34-3 inclusive.: CF6-80C2A5F, CF6-80C2A8, CF6-80C2B1F, CF6-80C2B2F, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6F, CF6-80C2B6FA, CF6-80C2B7F, CF6-80C2D1F, CF6-80C2B8F.

CF6-80C2L1F (only)

14 Code of Federal Regulations (CFR) Part 33, effective February 1, 1965, Amendments 33-1 through 33-8 inclusive. Amendment 10 sections 33.7, 33.14, 33.23, 33.27, 33.88 and 33.92, Amendment 15 section 33.28 and Equivalent Level of Safety finding, 8040-ELOS-04-NE-02 for §33.89(a)(3)(ii) and (iii).

Also, 14 CFR Part 34, effective September 10, 1990, Amendments 34-1 through 34-3, inclusive.

CF6-80C2K1F (only)

14 Code of Federal Regulations (CFR) Part 33 effective February 1, 1965, Amendments 33-1 through 33-8 inclusive except for the approved substitute compliance procedures, which are in accordance with Amendments 9 and 10. The specific requirements of Amendment 9 met are those defined in Sections 33.4 and 33.5. The specific requirements of Amendment 10 met are those defined in Sections 33.7, 33.14, 33.23, 33.27, 33.88, and 33.92. Amendment 15 Section 33.28. Equivalent Level of Safety (ELOS) finding, 8040-ELOS-05-NE-03 for Section 33.89(a)(3)(ii) and (iii).

Also 14 CFR Part 34, effective September 10, 1990, Amendments 34-1 through 34-3 inclusive.

CF6-80C2 SERIES (continued)	MODELS	TYPE CERTIFICATE E13NE APPLICATION DATE	ISSUED/AMENDED
	CF6-80C2A1	SEP 11, 1984	JUN 28, 1985
	CF6-80C2B1	SEP 11, 1984	JUN 28, 1985
	CF6-80C2A2	SEP 11, 1984	DEC 30, 1985
	CF6-80C2B4	MAR 05, 1986	OCT 31, 1986
	CF6-80C2A3	MAR 05, 1986	DEC 09, 1986
	CF6-80C2B2	NOV 20, 1986	APR 06, 1987
	CF6-80C2B6	FEB 20, 1987	SEP 30, 1987
	CF6-80C2A5	MAY 12, 1987	OCT 26, 1987
	CF6-80C2B1F	MAR 26, 1987	MAR 31, 1988
	CF6-80C2B2F	MAY 18, 1988	SEP 23, 1988
	CF6-80C2B4F	MAY 18, 1988	SEP 23, 1988
	CF6-80C2B6F	MAY 18, 1988	SEP 23, 1988
	CF6-80C2D1F	MAY 18, 1988	DEC 20, 1988
	CF6-80C2B1F1	OCT 23, 1989	JUN 15, 1990
	CF6-80C2A8	JUN 22, 1990	FEB 26, 1991
	CF6-80C2B3F	APR 11, 1990	NOV 23, 1992
	CF6-80C2A5F	APR 02, 1993	OCT 13, 1993
	CF6-80C2B7F	JAN 27, 1993	OCT 13, 1993
	CF6-80C2B1F2	SEP 17, 1993	NOV 18, 1993
	CF6-80C2B6FA	JAN 31, 1994	SEP 21, 1995
	CF6-80C2B5F	AUG 11, 1994	MAY 22, 1997
	CF6-80C2B8F	SEP 02, 1997	MAR 18, 1999
	CF6-80C2L1F	JAN 30, 2002	AUG 30, 2004
	CF6-80C2K1F	JUL 14, 2004	FEB 22, 2006

PRODUCTION BASIS

Production Certificate No. 108 for engines produced by General Electric in the United States.

In addition, CF6-80A series engines and parts thereof produced in Europe are eligible in accordance with the following:

Societe National d'Etude et de Construction de Moteurs d'Aviation (SNECMA):
Production agreement No. 6-3032 between General Electric and SNECMA dated February 20, 1981, for complete engines and modules.

Identification plates for CF6-80A1/A3 engines manufactured by SNECMA shall contain the following information:

1. Manufacturer (SNECMA, France)
2. Model
3. Serial Number (Numbers 585- are assigned to CF6-80A1/A3 engines manufactured by SNECMA)
4. Type Certificate Number E13NE
5. Import TC No. M-IM13
6. Established ratings

Each individually imported engine must be accompanied by an airworthiness approval tag, JAA Form F1, issued by SNECMA on behalf of Director Generale de l'Aviation Civile under production certificate number P03 or a "Certificate de Navigabilite pour Exportation" delivered by the DGAC.

In addition, CF6-80C2 series engines (except for CF6-80C2L1F and CF6-80C2K1F models) and parts thereof produced in Europe are eligible in accordance with the following:

PRODUCTION BASIS (continued)

SNECMA:

Production agreement No. 6.3592 between the General Electric Company and SNECMA dated April 19, 1983, for complete engines and modules.

Identification plates for CF6-80C2 engines manufactured by SNECMA shall contain the following information:

1. Manufacturer (SNECMA, France)
2. Model
3. Serial Number (Numbers 695- are assigned to CF6-80C2 PMC engines manufactured by SNECMA and Numbers 703- and 705-204 and up are assigned to CF6-80C2 FADEC engines manufactured by SNECMA)
4. Type Certificate Number E13NE
5. Import TC No. M-IM13
6. Established ratings

Each individually imported engine must be accompanied by an airworthiness approval tag, JAA Form F1, issued by SNECMA on behalf of Director Generale de l'Aviation Civile under production certificate number P03 or a "Certificate de Navigabilite pour Exportation" delivered by the DGAC.

NOTES

NOTE 1. MAXIMUM PERMISSIBLE ENGINE ROTOR SPEEDS

	CF6-80A (ALL MODELS)	CF6-80C2 (ALL MODELS)
Low pressure rotor (N1).	4016 rpm (117.0%)	3854 rpm (117.5%)
High pressure rotor (N2).	10859 rpm (110.5%)	11055 rpm (112.5%)

NOTE 2. MAXIMUM PERMISSIBLE TEMPERATURES

Turbine exhaust gas temperature (T49):

Takeoff (5 min.)	1724°F (940°C)	1760°F (960°C) (NOTE 15 and 20))
Maximum continuous	1643°F (895°C)	1697°F (925°C)
120 second maximum transient		1769°F (965°C) for B8F only
Starting (max transient 40 secs)	1598°F (870°C)	- -
Starting (max no time limit)	1382°F (750°C)	- -

NOTE: Refer to CF6-80A Operating Instruction GEK 72506, or CF6-80C2 (except CF6-80C2L1F and CF6-80C2K1F), Operating Instruction GEK 92462 or GEK 112651 for CF6-80C2L1F (only) or GEK 112724 for CF6-80C2K1F (only) for time temperature envelope.

NOTE 2. MAXIMUM PERMISSIBLE TEMPERATURES (continued)

Fuel Pump Inlet	
CF6-80A / CF6-80A2	Refer to CF6-80A Installation Manual GEK 50460
CF6-80A1 / CF6-80A3	Refer to CF6-80A Installation Manual GEK 50490
CF6-80C2A1 / A2 / A3 / A5 / A8 / B1 / B2 / B4 / B6	Refer to CF6-80C2 Installation Manual GEK 50492
CF6-80C2B1F / B2F / B3F / B4F / B6F / D1F / B1F1 / A5F / B7F / B1F2 / B6FA / B5F / B8F	Refer to CF6-80C2 FADEC Installation Manual GEK 97284
CF6-80C2L1F	Refer to CF6-80C2L1F Installation Manual GEK 112655
CF6-80C2K1F	Refer to CF6-80C2K1F Installation Manual GEK 112723
Oil Outlet / All Models	
Continuous operation	320°F (160°C)
Transient operation (15 mins limit)	347°F (175°C)

NOTE 3 FUEL AND OIL PRESSURE LIMITS

FUEL PRESSURE LIMITS AT ENGINE PUMP INLET

CF6-80A / A2

GROUND STARTING

This limit is from minimum fuel pressure of not less than 12 psia (82.7 kPa, absolute) to a maximum of 64 psig (441.3 kPa gage) (relative to atmosphere) with vapor/liquid ratio of zero at all conditions.

OPERATION AND AIR STARTING

Operation and air starting pressure limit extends from a minimum fuel pressure of more than 5.0 psi (34.5 kPa) above the true vapor fuel pressure to a normal maximum fuel pressure of 64 psig (441.3 kPa gage) with transient pressure (2 minute maximum) up to 71 psig (489.5 kPa gage) permitted (relative to the atmosphere) at all conditions.

CF6-80A1 / A3

GROUND STARTING

This limit is from a minimum fuel pressure of not less than 12 psia (82.7 kPa, absolute) to a maximum of 50 psig (344.8 kPa gage) (relative to atmosphere) with vapor/liquid ratio of zero at all conditions.

OPERATION AND AIR STARTING

The engine fuel system will provide fuel flow and pressure required for starting and operating the engine throughout the defined operational envelope when the fuel pressure at the fuel pump inlet connections to the engine ranges from a minimum of true vapor pressure of the fuel plus 5.0 psi (34.5 kPa) to a maximum of 50 psig (344.8 kPa gage) supplied with vapor-free fuel for all normal operating conditions except idle power at altitudes greater than 10,000 feet (3.048 km). For altitudes greater than 10,000 feet (3.048 km) at least 15 psig (103.4 kPa gage) pressure is required at the main fuel pump inlet at metered fuel flow levels of 2500 pph (1134 kg/hr) or less.

CF6-80C2 (ALL MODELS)

GROUND STARTING, AIR STARTING, AND OPERATION

This limit is from a minimum fuel pressure of not less than 5.0 psia (34.34 kPa, absolute) above the true vapor pressure to a maximum of 70 psig (482.6 kPa gage) (relative to atmosphere) with vapor/liquid ratio of zero at all conditions.

NOTE 3 (continued)

OIL PRESSURE LIMITS AT IDLE

CF6-80A / A1 / A2 / A3

The pressure limit at idle is 10 psid (69.0 kPa diff) minimum; varying from 26 to 120 psid (179.4 to 827.6 kPa diff) in the normal operating range.

CF6-80C2 (ALL MODELS)

The pressure limit at idle is 9.5 psid (65.5 kPa diff) minimum; varying from 26 to 120 psid (179.4 to 827.6 kPa diff) in the normal operating range. See NOTE 16.

NOTE 4. ACCESSORY DRIVE PROVISIONS

CF6-80A / A2 **DRIVE PAD**	**Rotation Facing Gearbox Pad**	**Gear Ratio To Core Speed**	**Horsepower Continuous**	**Shear Torque (lb - in)**	**Static Overhung Moment (lb - in)**
Starter	CCW (*)	0.956	8,400 (torque lb-in)	16,800	400
IDG	CCW	0.832	175 hp	9,492	2,000
Hydraulic Pump (1)	CCW	0.344	85 hp	4,260	400
IDG Overload Limits	225 hp "kw" equivalent for 5 minutes per 1,000 hours of operation 225 hp "kw" equivalent for 5 seconds per hour of operation 450 hp "kw" equivalent for 5 seconds per 1,000 hours of operation				
	(*) Counterclockwise				
CF6-80A1 / A3 **DRIVE PAD**	**Rotation Facing Gearbox Pad**	**Gear Ratio To Core Speed**	**Horsepower Continuous**	**Shear Torque (lb - in)**	**Static Overhung Moment (lb - in)**
Starter	CCW (*)	0.956	10,800 (torque lb-in)	19,200	400
IDG	CCW	0.832	175 hp	9,492	2,000
Hydraulic Pumps (2)	CCW	0.350	85 hp	7,400	500
	(*) Counterclockwise				
CF6-80C2A1 / A2/ A3 / A5 / A8 / D1F / A5F **DRIVE PAD**	**Rotation Facing Gearbox Pad**	**Gear Ratio To Core Speed**	**Horsepower Continuous (For Qualification Testing)**	**Shear Torque (lb - in)**	**Static Overhung Moment (lb - in)**
Starter	CCW (*)	0.956	8,400 (torque lb-in) (949.07 N-m)	16,800 (1898.1 N-m)	400 (45.2 N-m)
IDG	CCW	0.832	215 hp (160.3 kw)	10,500 (1186.4 N-m)	2,000 (226.0 N-m)
Hydraulic Pumps (2)	CCW	0.344	42 hp (31.3 kw) each pump	4,260 (481.1 N-m)	400 (45.2 N-m)
IDG Overload Limits	225 hp (167.8 kw) for 5 minutes per 1,000 hours of operation 225 hp (167.8 kw) for 5 seconds per hour of operation 450 hp (335.6 kw) for 5 seconds per 1,000 hours of operation				
	(*) Counterclockwise				

NOTE 4. ACCESSORY DRIVE PROVISIONS (Cont.)

CF6-80C2B1 / B2 / B4 / B6 / B1F/ B2F / B3F / B4F / B6F / B1F1 / B7F / B1F2 / B5F / B8F DRIVE PAD	**Rotation Facing Gearbox Pad**	**Gear Ratio To Core Speed**	**Horsepower Continuous (For Qualification Testing)**	**Shear Torque (lb - in)**	**Static Overhung Moment (lb - in)**
Starter	CCW (*)	0.956	8,400 (torque lb-in) (949.07 N-m)	16,800 (1898.1 N-m)	400 (45.2 N-m)
IDG	CCW	0.832	220 hp (164.1 kw)	10,500 (1186.4 N-m)	2,000 (226.0 N-m)
Hydraulic Pump (1)	CCW	0.344	85 hp (63.4 kw)	4,260 (481.1 N-m)	400 (45.2 N-m)
IDG Overload Limits	270 hp (201.3 kw) for 5 minutes per 1,000 hours of operation 360 hp (268.5 kw) for 10 seconds per hour of operation 450 hp (335.6 kw) for 5 seconds per 1,000 hours of operation				
	(*) Counterclockwise				

CF6-80C2B6FA DRIVE PAD	**Rotation Facing Gearbox Pad**	**Gear Ratio To Core Speed**	**Horsepower Continuous (For Qualification Testing)**	**Shear Torque (lb - in)**	**Static Overhung Moment (lb - in)**
Starter	CCW(*)	0.956	8,400 (torque, lb-in) (949.07N-m)	16,800 (1898.1N-m)	400 (45.2 N-m)
IDG No. 1 (Aft)	CCW	0.832	270 hp (201.3 kw)	14,000 (1581.9N-m)	2,300 (260.0 N-m)
IDG No. 2 (Forward)	CCW	0.817	270 hp (201.3 kw)	14,000 (1581.9N-m)	2,300 (260.0 N-m)
Hydraulic Pump (1)	CCW	0.344	85.0 hp (63.4 kw)	4,260 (481.1N-m)	400 (45.2 N-m)
IDG Overload Limits	a. 325 hp (242.3 kw) for 5 minutes per 1,000 hours of operation. b. 435 hp (324.4 kw) for 10 seconds per 1,000 hours of operation. c. 525 hp (391.5 kw) for 1 second per 5,000 hours of operation.				
	* Counterclockwise				
See CF6-80C2 FADEC Installation Manual GEK 97284 for limits on allowable combinations of power extraction and compressor bleed for CF6-80C2B6FA.					

CF6-80C2L1F / CF6-80C2K1F DRIVE PAD	**Rotation Facing Gearbox Pad**	**Gear Ratio To Core Speed**	**Horsepower Continuous (For Qualification Testing)**	**Shear Torque (lb - in)**	**Static Overhung Moment (lb - in)**
Starter	CCW(*)	0.956	8,400 (torque, lb-in) (949.1N-m)	16,800 (1898.1N-m)	400 (45.2 N-m)
IDG	CCW	0.832	139 hp (103.7 kw)	9450 (1067.7 N-m)	2,000 (226.0 N-m)
Hydraulic Pump (2)	CCW	0.344	80 hp (59.7 kw)	8150 (920.8 N-m)	400 (45.2 N-m)
IDG Overload Limits	225 hp (167.86 kw) for 5 minutes and 5 seconds per fight . 375 hp (279.77 kw) for 5 seconds per flight.				
	(*) Counterclockwise				

NOTE 5. ENGINE RATINGS ARE DEFINED UNDER THE FOLLOWING CONDITIONS:

CF6-80 (ALL MODELS)

Fan inlet air at 59°F and 29.92 in. hg. abs. zero humidity.
Ideal engine inlet (100% bellmouth recovery).
No external air bleed or accessory drive power for aircraft accessories.
Turbine temperature and engine rotor speed limits not exceeded.

Also with the following flight exhaust system definition.

CF6-80A A1/A2/A3	CF6-80C2 A1 / A2/A3/A5/A8	CF6-80C2B1	CF6-80C2 B2/B4/B6
NS-CF6-1	ES-CF6-1G01	TR-CF6-F23G03	TR-CF6-F23G01
	ES-CF6-1G02	TR-CF6-F23G04	TR-CF6-F23G02
	ES-CF6-1G03	TR-CF6-F23G07	TR-CF6-F23G05
	ES-CF6-1G04	TR-CF6-F23G08	TR-CF6-F23G06
		TR-CF6-F23G11	TR-CF6-F23G09
		TR-CF6-F23G12	TR-CF6-F23G10
		TR-CF6-F23G13	
		TR-CF6-F23G14	

CF6-80C2B1F/ B1F1/B3F/B1F2/B5F	CF6-80C2 B2F/B4F/B6F/B7F/B8F	CF6-80C2D1F	CF6-80C2A5F
TR-CF6-F23FG03	TR-CF6-F23FG01	ES-CF6-2G01	ES-CF6-5G01
TR-CF6-F23FG04	TR-CF6-F23FG02	ES-CF6-2G02	ES-CF6-5G02
TR-CF6-F23FG07	TR-CF6-F23FG05	ES-CF6-2G03	ES-CF6-5G03
TR-CF6-F23FG08	TR-CF6-F23FG06	ES-CF6-2G04	ES-CF6-5G04
TR-CF6-F23FG11	TR-CF6-F23FG09	ES-CF6-2G05	
TR-CF6-F23FG12	TR-CF6-F23FG10	ES-CF6-2G06	CF6-80C2L1F (See Note 26)
TR-CF6-F23FG13		ES-CF6-2G07	491F5000100-501 (TR Position 1)
TR-CF6-F23FG14		ES-CF6-2G08	491F5000200-501 (TR Position 2)
		ES-CF6-2G09	491F5000300-501 (TR Position 3)
CF6-80C2B6FA		ES-CF6-2G10	491F5000400-501 (TR Position 4)
TR-CF6-F23FAG01		ES-CF6-2G11	737L827G01 (Primary Exhaust)
TR-CF6-F23FAG02		ES-CF6-2G12	

CF6-80C2K1F (See Note 26)
491J2000100-501 (TR Position 1)
491J2000200-501 (TR Position 2)
737L827G01 (Primary Exhaust)

NOTE 6. MAXIMUM PERMISSIBLE AIR BLEED EXTRACTION

BLEED LOCATION	CF6-80A/A2	CF6-80A1/A3
Stage 8, compressor airflow, normal	5.00%	5.00%
Stage 8, compressor airflow, intermittent*		
N2 RPM 8009-8600	5.75%	5.75%
N2 RPM 8600-8850	6.25%**	---
N2 RPM 8850-9680	5.75%	---
Compressor discharge		
Steady state at takeoff rating	5.00%	5.00%
Steady state between 80% N2 and maximum continuous	10.00%	10.00%
During acceleration above 80% N2	7.00%	7.00%
Operating at 80% N2 or below	12.50%	12.50%
Stage 10	2.00%	2.00%
Stage 11	---	---

*Intermittent operation is defined as "dispatch with a system inoperative, or bleed system, or engine failure inflight" and should be confined to the physical core speed (N2) range of 8009 (81.5%) to 9680 (98.5%) rpm as shown in the above tabulation. At all normal flight conditions, maximum bleed will remain 5% of core engine physical airflow. The manufacturer is to be consulted regarding conditions, number of occurrences, and duration of each occurrence within the limitations of:

The average of 2×10^{-3} occurrences per engine operating hour; and
a maximum of 0.5 hour duration per occurrence (cumulative total of 50 hours).

**5.75 maximum allowable stage 8 bleed when 10th stage customer bleed is also used.

BLEED LOCATION	CF6-80C2 FADEC* (Percent)	CF6-80C2 PMC (Percent)
Stage 8, compressor airflow, normal	8.8	8.8
Stage 11	1.5	1.5
Compressor discharge		
Steady state at takeoff rating	5.0	5.0
Steady state at maximum continuous or below	10.0	
Transient operation above maximum continuous rating	7.0	
Steady state between 80% N2 and maximum continuous		10.0
During acceleration above 80% N2		7.0
Operating at 80% N2 or below		12.0

*See CF6-80C2 FADEC Installation Manual for limits on allowable combinations of power extraction and compressor bleed for CF6-80C2B6FA.

NOTE 7. FUEL
Approved fuels must conform to GE Specification D50TF2. The latest revision of specification will apply.

NOTE 8. Life limits established for critical rotating components are published in the CF6-80A Engine Manual GEK 72501, CF6-80C2 Engine Manual GEK 92451, CF6-80C2L1F Engine Manual GEK112213 and CF6-80C2K1F Engine Manual GEK112721.

NOTE 9. Power setting, power checks and control of engine thrust output in all operations is to be based on GE engine charts referring to Fan Speed (N1). Speed sensors are included in the engine assembly for this purpose.

NOTE 10. RESERVED

NOTE 11. For CF6-80A inflight operation during icing conditions, the minimum permissible N1 rpm is 40% for CF6-80 series engines. However, momentary N1 excursions below 40%, not to exceed 60 seconds duration, are permissible for approach and landing operation below 10,000 feet pressure altitude. For CF6-80C2 operation, the minimum idle permissible inflight corresponds to N2 (core) = 6050 rpm, which is a preset limit within the Main Engine Control, (PMC engines) or Electronic Control Unit (FADEC engines) and is not field adjustable.

NOTE 12. CF6-80A1/A3 Models
The engine manufacturer supplies Nacelle System NS-CF6-1. The following kits listed, which are part of this Nacelle system, have been approved for installation on CF6-80A1/A3 engines in accordance with 14 CFR Part 33.

SYSTEM	**KIT NUMBER**
Nozzle & Centerbody	681L287
Engine Attach Fittings	
Lower Aft Mount	681L288
Upper Aft Mount	681L294
Engine Assembled EBU	681L185
Fan Reverser TR-CF6-F23G02	
Position #1	681L292
Position #2	681L293
Fan Reverser Actuation System	
Supply Air - Pylon Mounted	681L188
Supply Air - Engine Mounted	681L189
Compartment Cooling Air System	681L244
Fuel Flowmeter	681L250

CF6-80C2 Models
The engine manufacturer supplies the engine assembled EBU for CF6-80C2A1 / A2 / A3 / A5 / A8 / A5F; CF6-80C2B1 / B2 / B4 / B6; CF6-80C2B1F / B2F / B3F / B4F / B5F / B6F / B7F / B1F1/B1F2; and CF6-80C2D1F , CF6-80C2L1F and CF6-80C2K1F engines. The components, which had been approved for installation on CF6-80C2 engines in accordance with 14 CFR Part 33, are defined in the model lists CF6-80C2A1 / A2 / A3 / A5/ A8; CF6-80C2B1 / B2 /B4 / B6; CF6-80C2B1F / B2F / B3F / B4F / B5F / B6F / B7F / B1F1 / B1F2 / B6FA / B8F; CF6-80C2D1F; CF6-80C2A5F; CF6-80C2L1F; and CF6-80C2K1F.

The engine manufacturer also supplies total exhaust system and engine attach fittings for the CF6-80C2A1 / A2 / A3 / A5 / A8; the CF6-80C2A5F, the CF6-80C2L1F, the CF6-80C2K1F and CF6-80C2D1F (except D1F upper aft mount beam), but supplies only the Fan Reverser System for the CF6-80C2B1 / B2 / B4 / B6 and CF6-80C2B1F / B2F / B3F / B4F / B5F / B6F / B7F / B1F1 / B1F2 / B6FA / B8F engines.

The exhaust system (ES) and Fan Reverser (TR) Kit numbers approved for installation under 14 CFR Part 33 are listed in NOTE 5 of this TCDS.

NOTE 13. Overhaul of CF6-80C2L1F and CF6-80C2K1F engine components is not authorized until Instructions for Continued Airworthiness (ICA) become available. In the interim, components utilizing new part tolerance may be provided by the manufacturer.

NOTE 14. Oil synthetic type conforming to GE Specification D50TF1. GE Service Bulletin 79-0001 lists approved oils and applicable restrictions.

NOTE 15. The indicated 960°C EGT Redline for the CF6-80C2 engines using EGT Shunt Junction Box P/N 1325M15P05 or 1325M15P07 corresponds to an actual 1005°C EGT. The indicated 960°C EGT Redline for CF6-80C2 engines using EGT Shunt Junction Box P/N 1383M97P03 or 1383M97P07 corresponds to an actual 1020°C EGT. CF6-80C2A1/A2/A3/B1/B2/B4 and CF6-80C2B1F/B2F/B3F/B4F models equipped with EGT Shunt Junction Box P/N 1383M97P03/P07 must also incorporate the HP/LP turbine hardware and associated changes per General Electric CF6-80C2 Service Bulletins 72-201, 72-222, 72-240, 72-241, 72-248, 72-255, 72-268, 77-005, and 77-006. Refer to previous pages for EGT Shunt Junction Box applications to the various engine models.

NOTE 16. CF6-80C2 models only: During negative-g operation only, it is permissible to operate below minimum oil pressure (10 psid indicated) for a maximum of 30 seconds. See CF6-80C2 Specific Operating Instructions, GEK 92462, Section 6, GEK 112651 Section 6 for CF6-80C2L1F, GEK 112724 Section 6 for CF6-80C2K1F

NOTE 17. THESE MODELS INCORPORATE THE FOLLOWING GENERAL CHARACTERISTICS

SERIES CF6-80A	**CHARACTERISTICS**
CF6-80A	Basic model.
CF6-80A1	Same as CF6-80A, except the engine incorporates a fan case mounted gearbox.
CF6-80A2	Same as CF6-80A, except increased takeoff thrust rating. Corresponding PMC and MEC changes.
CF6-80A3	Same as CF6-80A1, except increased takeoff thrust rating. Corresponding PMC and MEC changes.
SERIES CF6-80C2	
CF6-80C2A1	Basic model (takeoff ideal thrust rating: 59,000 pounds).
CF6-80C2A2	Same as 80C2A1, except lower takeoff thrust rating (53,500 ideal). Corresponding PMC and MEC changes.
CF6-80C2A3	Same as 80C2A1, except higher takeoff thrust rating (60,200 ideal). Corresponding PMC and MEC changes.
CF6-80C2B1	Same as 80C2A1, except lower takeoff thrust rating (56,700 ideal). Corresponding PMC and MEC changes. Minor airframe related hardware changes, and added servo fuel heater.

NOTE 17. THESE MODELS INCORPORATE THE FOLLOWING GENERAL CHARACTERISTICS (Cont.) (cont.)

CF6-80C2B2	Same as 80C2A1, except lower takeoff thrust rating (52,500 ideal). Corresponding PMC and MEC changes. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B4	Same as 80C2A1, except lower takeoff thrust rating (57,900 ideal). Corresponding PMC and MEC changes. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B6	Same as 80C2A1, except higher takeoff thrust rating (60,800 ideal). Corresponding PMC and MEC changes. Minor HPT and LPT hardware changes, minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2A5	Same as 80C2A1, except higher takeoff thrust rating (61,300 ideal). Corresponding PMC and MEC changes. Minor HPT and LPT hardware changes.
CF6-80C2A8	Same as 80C2A1, except takeoff thrust is flat rated to 95ºF. Corresponding PMC and MEC changes. Minor HPT and LPT hardware changes.
CF6-80C2B1F	Same as 80C2A1, except lower takeoff thrust rating (58,000 ideal). Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, two levels of 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B1F1	Same as 80C2A1, except higher takeoff thrust rating (60,800 ideal) and maximum continuous rating same as 80C2B1F. Minor HPT and LPT hardware changes. Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, two levels of the 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B2F	Same as 80C2A1, except lower takeoff thrust rating (52,700 ideal). Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, two levels of 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B3F	Same as 80C2A1, except lower takeoff thrust rating (52,700 ideal). Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, two levels of 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B4F	Same as 80C2A1, except lower takeoff thrust rating (58,100 ideal). Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, two levels of 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.

NOTE 17 THESE MODELS INCORPORATE THE FOLLOWING GENERAL CHARACTERISTICS (cont.)
(cont.)

CF6-80C2B6F	Same as 80C2A1, except higher takeoff thrust rating (60,800 ideal). Minor HPT and LPT hardware changes. Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, two levels of 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2D1F	Same as CF6-80C2A1, except higher takeoff rating (61,960 ideal). Minor HPT and LPT hardware changes. Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, and two levels of 11th stage cooling to the HPT. Minor airframe related changes.
CF6-80C2A5F	Same as 80C2A1, except higher takeoff thrust rating (61,300 ideal). Minor HPT and LPT hardware changes. Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling. Minor airframe related hardware changes, and added servo fuel heating system.
CF6-80C2B7F	Same as 80C2A1, except higher takeoff thrust rating (60,800 ideal). Minor HPT and LPT hardware changes. Incorporates Full Authority Digital Engine Control (FADEC), modulating active clearance control for the HPT and LPT, modulated bore cooling, two levels of 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B1F2	Same as 80C2A1, except higher takeoff thrust rating (60,800 ideal). Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT and LPT, modulated bore cooling, two levels of 11th stage cooling to the HPT and redesigned accessory gearbox. Minor airframe related hardware changes, and added servo fuel heater.
CF6-80C2B6FA	Same as 80C2A1 except higher takeoff thrust rating (60,800 ideal). Minor HPT and LPT hardware changes. Redesigned accessory gearbox incorporating two IDG units. Second IDG cooler added. Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT, and a constant level of 11th stage cooling to HPT. Minor airframe related changes, and added servo fuel heater. Beginning with the 1995 Block 2 FADEC engine shipments (April 1995), the two levels of 11th stage cooling to the HPT were changed to a single level of cooling for all CF6-80C2 applications (Airbus, Boeing and Douglas) and the modulated bore cooling was changed to a single level of cooling for CF6-80C2 Boeing applications only. Beginning with the 1995 Block 3 engine shipments (July, 1995), the modulated active clearance control for the LPT was changed to a constant flow clearance control for CF6-80C2 Boeing applications only.

NOTE 17 THESE MODELS INCORPORATE THE FOLLOWING GENERAL CHARACTERISTICS (cont.)
(cont.)

CF6-80C2B5F	Same as 80C2A1 except higher takeoff thrust rating (60,800 ideal). Minor HPT and LPT hardware changes. Incorporates Full Authority Digital Engine Control (FADEC), modulated active clearance control for the HPT, and a constant level of 11th stage cooling to HPT. Minor airframe related changes, and added servo fuel heater.
CF6-80C2B8F	Same as CF6-80C2B7F except for increased thrust during takeoff. In addition, the CF6-80C2B8F incorporates a 965^{o}C transient EGT redline for a maximum of two minutes. Incorporates improved HPT and LPT rotors
CF6-80C2L1F	Same as 80C2A1 except lower takeoff thrust rating (52,500 ideal). Minor HPT and LPT hardware changes. Redesigned accessory gearbox incorporating two Hydraulic Pump units. Redesigned gearbox to handle higher hydraulic loads. Incorporates new generation Full Authority Digital Engine Control (FADEC 3), Modulated active clearance control for the HPT, and a constant level of 11th stage cooling to HPT. Minor airframe related changes, and added servo fuel heater. A constant flow clearance control for the LPT. Bore cooling is un-modulated single level of cooling.
CF6-80C2K1F	Same as CF6-80C2L1F except higher takeoff thrust rating (59,740 ideal). In addition, the Thrust Reverser Actuation System (TRAS) is same as CF6-80C2A5F.

NOTE 18. The CF6-80C2 FADEC engines criteria pertaining to the dispatch and maintenance requirements for engine control systems are specified in General Electric Documents No. GEK 98408 (Boeing models), No. GEK 98497 (Douglas models) and GEK 103028 (Airbus models), which define the various configurations and maximum operating intervals.

A control system reliability monitoring program is in place at General Electric, to verify that overall engine control system and specific component failure rates do not exceed the maximum engine values permitted as given in GEK 98408, GEK 98497, GEK 103028.

For CF6-80C2L1F, the criteria pertaining to the dispatch and maintenance requirements for engine control systems are defined in the Airworthiness Limitation Section of the CF6-80C2L1F Engine Manual GEK 112213.

For CF6-80C2K1F, the criteria pertaining to the dispatch and maintenance requirements for engine control systems are defined in the Airworthiness Limitation Section of the CF6-80C2K1F Engine Manual GEK 112721.

NOTE 19. The CF6-80C2A5/A8/B5F/B6/B6F/B6FA/B7F/B1F1/B1F2/D1F/A5F engine models require the incorporation of General Electric CF6-80C2 Service Bulletins 72-201, 72-222, 72-240, 72-241, 72-248, 72-255, 72-268, 77-005 and 77-006.

NOTE 20. Incorporation of EGT Junction Box P/N 1519M97P01 (direct readout) in lieu of EGT Shunt Junction box P/N 1325M15P07 or 1383M97P03/P07 is applicable to CF6-80C2 FADEC engine models only and requires the simultaneous introduction of ECU P/N's 1471M63P16 (or later) or 1519M89P08 (or later) or 1820M33P01 (or later) for CF6-80C2B1F/B2F/B3F/B4F/ B5F/ B6F/ B6FA/ B1F1/ B7F/ B1F2/ B8F engine models as listed on the data sheet. EGT Junction Box P/N 1519M97P01 is used on all CF6-80C2DF and CF6-80C2AF models.

The CF6-80C2L1F and CF6-80C2K1F engines do not have an EGT Junction Box. EGT system is made up of four sectors with two EGT probes in each sector. Output from each sector goes to both channels of the FADEC. FADEC software processes the EGT and calculates the indicated (shunted) EGT. Indicated 960ºC EGT is the redline value and corresponds to actual 1020ºC EGT.

NOTE 21. The incorporation of the Engine Identification Plug is applicable to the CF6-80C2 FADEC engine models only. The applicable part numbers are as follows:

CF6-80C2BF Engine Models

Engine Identification Plug P/N 7157M87 must be used with ECU P/N's 1471M63P07/P08/P11/ P12 and with 1519M89P05/P06.

Engine Identification Plug P/N 7161M98 must be used with ECU P/N's 1471M63P16 (or later) or 1519M89P08 (or later) or 1820M33P01 (or later). Engine Identification Plug P/N 7161M98 or 1851M56 must be used with ECU P/N's 1471M63P31 (or later) or 1519M89P21 (or later) or 1820M33P04 (or later) or 2121M25P01, or 2121M26P01, or 2121M29P01, or 2121M37P01, or 2121M38P01, or 2121M41P01. The exact Engine Identification Plug P/N is determined by engine hardware options and engine test results.

CF6-80C2DF Models

Engine Identification Plug P/N's 7161M98 must be used with ECU P/N 1519M91P04 (or later) or 1820M34P01 (or later). Engine Identification Plug P/N 7161M98 or 1851M56 must be used with ECU P/N's 1519M91P07 (or later) or 1820M34P02(or later) or 1851M51P01(or later) or 1851M52P01(or later) or 1851M53P01(or later). The exact Engine Identification Plug P/N is determined by engine hardware options and engine test results.

CF6-80C2AF Models

Engine Identification Plug P/N 7161M98 or 1851M56 must be used for all ECU P/N's. The exact Identification Plug P/N is determined by engine hardware options and engine test results.

CF6-80C2L1F and CF6-80C2K1F Models

Engine Identification Plug P/N 1754M25 must be used for all Electronic Engine Control (EEC) P/N's. P/N 1754M25 is an un-programmed, programmable identification Plug. When programmed, this part makes identification Plug P/Ns 1962M81P01 through 1962M81P08. The exact identification Plug P/N is determined by engine hardware options and engine test results.

NOTE 22. The CF6-80C2B3F does not require the incorporation of General Electric CF6-80C2 Service Bulletins 72-201, 72-222, 72-240, 72-241, 72-248, 72-255, 72-268, 77-005 and 77-006. If these bulletins are not incorporated, the engine must use one of the Identification Plug P/N's 7161M98G26 through G49 or P/N's 7161M98G74 through G97. See NOTE 21.

NOTE 23. The normal 5 minute takeoff time limit may be extended to 10 minutes for engine out contingency.

NOTE 24. A suffix may be added to the CF6-80C2B7F basic engine model number on the engine nameplate to identify minor variations in the engine configuration, installation components, or differences peculiar to aircraft requirements. For example: CF6-80C2B7FX.

1. CF6-80C2B7F1 – Same as CF6-80C2B7F except for a minor variation in the installation components and engine control software to interface with aircraft requirements for higher bleed demand. All hardware, limitations, and other ratings are identical.

NOTE 25 The CF6-80C2L1F and CF6-80C2K1F engine models will only be installed on non-FAA certified C-5M and C-X military aircrafts respectively. The C-X aircraft designation will change to C-2 in the year 2011. The models will therefore not be operated and maintained in accordance with the Federal Aviation Regulations contained in CFR Title 14. Use of CF6-80C2L1F and CF6-80C2K1F engines or engine parts in commercial service is prohibited unless specific prior FAA (Engine Certification Office, ANE-140)

NOTE 26 approval is granted.

The Fan Reverser Systems for CF6-80C2L1F and CF6-80C2K1F are certified for use only as a braking means on the ground.

End of TCDS.