

# Surrendered October 27, 2009

## DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

A39EU  
Revision 3  
VFW  
Type VFW-614  
March 2, 2010

### TYPE CERTIFICATE DATA SHEET NO. A39EU

This data sheet which is part of type certificate No. A39EU prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder VFW - Vereinigte Flugtechnische Werke, G.m.b.H.

- (1) This TC was surrendered for cancellation on October 27, 2009. Only standard airworthiness certificates issued prior to October 27, 2009 are valid.
- (2) Future unsafe conditions existing in the aircraft may result in the revocation of the airworthiness certificates of the aircraft if there is no entity to comply with 14 CFR § 21.99(a), "Required design changes."
- (3) Replacement parts may not be available in the future.

#### I - Model VFW-614, (Transport Category Airplane), approved December 4, 1975

Engines 2 - Rolls Royce Turbofan, Model M45H Mark 501

APU 1 - AiResearch Model GTC P 36-28

Fuel (a) The following fuels are eligible for engines and APU

	<u>Kerosene</u>	<u>Wide-cut</u>
American	ASTM D 1655 Jet A-1	ASTM D 1655 Jet B
British	D.Eng.R.D.2453, 2494	D.Eng.R.D. 2486
Canadian	3-GP-23	3-GP-22
IATA	1973 Kerosene Type	Wide-cut Type

- (b) The following additives may be used in approved fuels for engines and APU.
- (1) Anti-static additive, Shell ASA 3, in concentrations not exceeding 1.0 mg per liter (378,5 mg, or 0.013 oz, per 100 U.S. gal.,)
  - (2) Fuel system icing inhibitor (F.S.I.I.) to Specification D.Eng.R.D.2451, or MIL-I-27686E, in concentrations not exceeding 0.15% by volume.
  - (3) Anti-corrosion additive, Hitec E.515, in concentrations not exceeding 14.3 mg per liter (5.4 grams, or 0.191 oz., per 100 U.S. gal.,)

Oil The following oils are eligible for engines and APU.

Shell ASTO 390, 500, and 555.  
Esso Turbo Oil ETO 2380  
Mobil Jet II

Engine limits Static thrust at sea level, ISA:  
Takeoff (5 min.) 7280 lb.  
Maximum continuous 7090 lb.

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Maximum permissible engine rotor operating speeds:

	<u>N1- Low compressor</u>	<u>N2- High Compressor</u>
Takeoff r.p.m. (5 min.)	10150 (101.4%)	17890 ( 99.7%)
Maximum continuous r.p.m.	10050 (100.4%)	17660 ( 98.4%)
Transient overspeed r.p.m.	10190 (101.8%)	17960 (100.1%)
Minimum ground idle/flight idle r.p.m.		10588 ( 59.0%)

Maximum permissible engine temperatures:

Turbine exhaust gas temperature (with T2N compensation)

Takeoff (5 min. limit)	601°C	
Maximum continuous	Anti-icing	
	<u>Auto</u>	<u>On</u>
Airspeed below 160 kts	595°C	600°C
Airspeed 160 kts and above	580°C	585°C

Starting (5 sec. limit)

Oil temperature -5°C and above	500°C
Oil temperature below -5°C	565°C

Oil inlet (continuous)	130°C
Oil inlet (transient, 10 sec. limit)	160°C

Fuel heater outlet	65°C
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APU limits

AiResearch GTC P 36-28

Power rating	31.5 hp.	
Maximum limits	<u>Speed</u>	<u>EGT</u>
Starting	64468 r.p.m. (110%)	705°C
Continuous	61538 r.p.m. (105%)	605°C
Transient (10 sec. limit)	64468 r.p.m. (110%)	705°C

Airspeed limits (IAS)

Vmo (Maximum Operating)	Sealevel	288 knots
(Linear interpolation between values shown)	10,000 ft	291 knots
	21,200 ft	294 knots
Mmo (Maximum Operating)	Above 21,200 ft	0.65
Va (Maneuvering)	Sealevel	193 knots
(Linear interpolation between values shown)	25,000 ft	196 knots
Vfe (Flaps extended)		
Flaps 1°		225 knots
Flaps 5°		220 knots
Flaps 15°		200 knots
Flaps 35°		165 knots
Vlo (Landing Gear Operation)		
Extension and Retraction		190 knots
Vle (Landing Gear Extended)		190 knots
Vmca (Minimum Control-air)		88 knots
V (Spoiler Operation)		Vd/Md(330K/0.74M)
V (Tire Limit) (Ground speed)		156 knots

C.G. range - % MAC  
(Landing gear extended)

Gross Weight (lb)	FORWARD		AFT	
	Enroute*	Takeoff & Landing	Enroute	Takeoff & Landing
25850 to 38580	14%	16%	34%	32%
44,000	15.5%	16%	34%	32%

\* Linear variation between values shown.

Landing gear retraction moment is +4644 in.lb., moving c.g. forward.

Datum

Station 0 (38.3 inches forward of fuselage nose)

MAC

124.6 inches in length (Leading edge at Station 368.2)

Leveling means	1) Plumb bob and grid plate inside cockpit, or 2) Leveling by means of theodolite. (Ref. VFW-614 Maintenance Manual, Chapter 8.)		
Maximum weight	Ramp and Taxi	44,210 lb.	
	Takeoff	44,000 lb.	
	Landing	44,000 lb.	
	Zero fuel	36,600 lb.	
Minimum weight (flight)		27,681 lb.	
Minimum crew	2 - Pilot and Copilot		
Maximum passengers	44 - based on approved seating arrangement. 59 - based on FAR Part 25 emergency exit requirements.		
Maximum baggage		<u>Max. Capacity</u>	<u>Max. Floor Loading</u>
	Forward lower	628 lb.	40 lb/ft <sup>2</sup>
	Aft Lower	511 lb.	40 lb/ft <sup>2</sup>
	Forward upper **	1500 lb.	.100 lb/ft <sup>2</sup>
	**Class "A" compartment - usable only when crew includes one or more cabin attendants.		
Fuel capacity (at 6.7 lb/U.S. gal.)	Total (all tanks)	11188 lb.	
	Usable (all tanks)	11073 lb.	
	See NOTE 1 for unusable and system fuel definition. See VFW-614 Weight and Balance Manual for moment arms and weight of unusable and system fuel.		
Oil capacity (at 7.84 lb/U.S. gal.)	Total (per engine)	17.6 lb.	
	Usable (per engine)	9.4 lb.	
	Moment arm	458 in.	
	See NOTE 1 for unusable oil definition.		
De-icing fluid (at 9.2 lb/U.S. gal.)	<u>Maximum</u>	<u>Usable</u>	<u>Arm</u>
	118.8 lb.	114 lb.	154 in.
Maximum operating altitude	25,000 ft.		
Control surface movements	To insure proper operation of the airplane, the movement of the various control surfaces must be carefully controlled by proper rigging of the Flight Control Systems. The airplane must therefore be rigged in accordance with the relevant chapters of the VFW-614 Maintenance Manual, ATA 27, Page Blocks 500.		
Serial Numbers eligible	A German Luftfahrt-Bundesamt (LBA) Certificate of Airworthiness for Export, endorsed as noted under "Import Requirements", must be submitted for each individual airplane for which application for U.S. airworthiness certification is made.		
Import requirements	A U.S. Standard Airworthiness Certificate may be issued on the basis of a Federal Republic of Germany Certificate of Airworthiness for Export signed by an authorized representative of the German Luftfahrt-Bundesamt (LBA) containing the following statement: "The airplane covered by this certificate has been examined, tested, and found to conform to the type design approved under U.S. Type Certificate No. A39EU, and to be in condition for safe operation."		
Certification basis	FAR 21.29, FAR 25, including Amend. Nos 25-1, through 25-22, plus 25-23 except paragraphs 25.145, 25.305, 25-307, 25.571, and 25.733; 25-24, 25-25, 25-26, 25-28, 25-30, 25-31, and 25-32 except paragraphs 25.809(f)(1)(i) and 25.812(b), and (e); plus Special Conditions No. 25-60-EU-19, dated January 23, 1975; plus FAR Part 36 including Amendment 36-1.		

Compliance has been shown with the following optional requirements:

Ice Protection 25.1419

Date of Application: July 25, 1969  
Type Certificate No. A39EU was issued on December 4, 1975.

Equipment	<p>The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for airworthiness certification. VFW-614 Equipment List Report No. 9546-N identifies all approved required and optional equipment.</p> <p>In addition the following are required:</p> <ol style="list-style-type: none"><li>1) FAA-approved Airplane Flight Manual (included in VFW-614 Flight Handbook) approved December 4, 1975.</li><li>2) Stall warning system in accordance to VFW-Drawing AL 614-980 137.</li></ol>
Service information	<p>All Service Bulletins published by VFW-Fokker, including categories Mandatory, Recommended and Optional, carry a statement "Approved by LBA". This statement may be interpreted as "FAA-approved". Other available service documents for the VFW-614 include:</p> <ol style="list-style-type: none"><li>(1) VFW-614 Maintenance Manual</li><li>(2) VFW-614 Maintenance Schedule</li><li>(3) VFW-614 Illustrated Parts Catalogue</li><li>(4) VFW-614 Structural Repair Manual.</li></ol>
Life-limited components	<p>VFW-614 airplane components which are life-limited are listed in Chapter 5 of VFW-614 Maintenance Manual and must be replaced as indicated therein.</p>

#### NOTES

- NOTE 1.
- (a) Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions, must be in each aircraft at the time of original certification and at all times thereafter except in the case of operators having an approved weight control system. The "VFW-614 Weight and Balance Manual" contains loading information for each airplane and interior arrangement configuration as delivered. This manual contains, or refers to, information relative to location of all passengers and crew member seats, location and capacity of all cargo and baggage compartments, buffet, storage spaces, location and capacity of lavatory, and the required placards in the passenger compartment.
  - (b) The airplane must be loaded so that the C.G. is within specified limits at all times, considering fuel loading and usage, gear retraction, and movement of crew and passengers from their assigned positions.
  - (c) The weight of unusable fuel, system fuel and oil, as defined in paragraph (d) below, and hydraulic fluid, all of which must be included in the airplane empty weight, are listed for each airplane in the VFW-614 Weight and Balance Manual specified in paragraph (a) above.
  - (d) System fuel is the weight of all fuel required to fill all lines and tanks up to the drain point of the tank. The unusable fuel is the amount of fuel in the tanks which is unavailable to the engines under critical flight conditions as defined in FAR Part 25.959. Unusable of system oil is the oil remaining in the engine, constant speed drive, lines and tanks after subtracting the usable oil in the tanks which is above the standpipe (zero gage) level.
- NOTE 2. Placards  
All placards listed in the LBA-approved Airplane Flight Manual must be installed in the appropriate locations.
- NOTE 3. A FAA Certificate of Airworthiness is not to be issued until compliance is found to SFAR 88.

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