

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A14EU
Revision 4
Hamburger Flugzeugbau
HFB 320 HANSA

August 19, 1971

TYPE CERTIFICATE DATA SHEET NO. A14EU

This data sheet, which is a part of Type Certificate No. A14EU, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Civil Air Regulations.

Type Certificate Holder Hamburger Flugzeugbau G.m.b.H.
10, Kreetslag
D 2103 Hamburg 95 Finkenwerder
Western Germany

I - Hamburger Flugzeugbau Model HFB 320 HANSA (Transport Aircraft), approved April 7, 1967

Engines	2 General Electric turbojet engines (See NOTE 7) CJ 610-1CJ 610-5			
Fuel	JP-1, JP-4, JP-5; in accordance with General Electric Specification D 50 T F 2 Class A, or later approved issue (See NOTE 3)			
Oil	Synthetic oils in accordance with General Electric Specification D 50 T F 1-S 2 or later approved Issue. (See NOTE 4)			
Engine limits	Take-off static thrust, (5 min.), standard day sea level	2850 lb.	2950 lb.	
	Maximum Continuous thrust, standard day sea level	2700 lb.	2780 lb.	
	Maximum permissible engine rotor operating speeds:			
	Take-off (5 min.)	101.2%	16,700 rpm	
	Max. Continuous	100.0%	16,500 rpm	
	Maximum permissible exhaust gas temperatures:			
	Take-off (5 min.)	704°C	716°C	
	Max. Continuous	677°C	702°C	
	Max. Transient (10 secs.)	782°C	782°C	
	Starting Transient (5 secs.)	854°C	854°C	
	Max. permissible oil scavenge temp.	193°C	193°C	
	Fuel and oil pressure limits:			
Fuel: Min., 5 psi above true fuel vapor pressure				
Max., 50 psi				
Oil: Min., 5 psig				
Max., 60 psig				
Maximum permissible air bleed extractions: 6% of compressor output				
Airspeed limits (IAS)	Vmo (Maximum operating)			
	Sea level	320 kts		
	10,000 ft.	324 kts		
	15,000 ft.	327 kts		
	20,000 ft.	330 kts		
	22,500 ft.	333 kts		
	Straight line variation between points			
	Mmo 22,500 ft. and above	M = 0,76		

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		Maximum Take-Off Weight	
		19,400 lbs	20,280 lbs
Va (Maneuvering)			
Sea level	202 kts		190 kts
10,000 ft.	203 kts		191 kts
20,000 ft.	205 kts		192 kts
30,000 ft.	208 kts		194 kts
38,000 ft.	210 kts		197 kts
Straight line variation between points			
Vfe (Flap Extension)	13° and 20°		190 kts
	50°		175 kts
Vse (Slat Extension)			200 kts
Vlo (Landing gear operation) Extend and retract			170 kts
Vle (Landing gear extended)			170 kts
Vab (Speed brake operating) (See NOTE 5)			380 kts/0,83 M
Vdc (Drag chute extended)			
3 - meter dia			150 kts
4 - meter dia			135 kts
Vmc (Minimum control speeds) Sea level, ISA			
Flight			105 kts
Ground			100 kts
		Maximum Take-Off Weight	
		19,400 lbs	20,280 lbs
Tire limit speed (groundspeed)	146 kts		156 kts
Datum	Reference Datum is fuselage Frame No. 1, located at Body Station (B.S.) 3000		
Leveling means	No permanent fixture. Two spirit levels are used on cabin seat rails in accordance with procedure specified in HFB 320 Weight and Balance Manual		
Mean aerodynamic chord	M.A.C. = 95.54 ins. (2427 mm) L.E. of M.A.C. at B.S. 10089		
C.G. range (Gear extended)	Weight (lb)	Forward Limit	Aft Limit
	All weights up to 15,400 lb (7000 kg)	10% MAC B.S. 10332	23% MAC B.S. 10648
	All weights between 16,500 lb (7500 kg) and 20,280 lb (9200 kg)	13% MAC B.S. 10405	23% MAC B.S. 10648
	Linear variation between points given Retracting gear moves C.G. forward 1,3% MAC		
Maximum weights	(See NOTES 7 and 8)		
	Taxi (Ramp)	19,620 lb (8900 kg)	20,500 lb (9300 kg)
	Take-off	19,400 lb (8800 kg)	20,280 lb (9200 kg)
	Landing	18,520 lb (8400 kg)	19,400 lb (8800 kg)
	Zero fuel weight	15,870 lb (7200 kg)	

Minimum crew	Two (Pilot and Copilot)
Maximum passengers	Twelve (See NOTE 6)
Maximum baggage	Passenger configuration: 660 lbs. in compartment at aft end of passenger cabin, B.S. 11194 Limit compt. floor loading 61.44 lbs/sq ft. (See NOTE 6 for cargo configuration)
Fuel capacity	Usable fuel. (See NOTE 1 for unusable fuel)

<u>LOCATION</u>	<u>Applicable to</u> SN 1023 to 1035		<u>Applicable to</u> SN 1036 and up
	<u>Arm Body</u> <u>Sta. No.</u>	<u>Volume</u> <u>U.S. Gals</u>	<u>Volume</u> <u>U.S. Gals</u>
Right or left tip tank (each)	9287	145.3	145.3
Right or left main wing tank (each)	10982	310.4	310.4
Fuselage tank	<u>11534</u>	<u>165.1</u>	<u>181.2</u>
Total (all tanks)	10609	1076.5	1092.6

Oil capacity Usable oil (Unusable oil is negligible)

<u>Location</u>	<u>Arm Body Sta. No.</u>	<u>Volume U.S. Galls</u>
Right or left tank (each)	13794	0.75

Maximum operating altitude 38,000 ft. Pressure Altitude

Other operating limitations Aircraft shall be operated in compliance with the Operating Limitations specified in the Luftfahrt-Bundesamt (LBA) approved HFB 320 HANSA Airplane Flight Manual.

<u>Surface</u>	<u>Travel</u>	<u>Tolerance</u>
Elevator	Up 19.5°	± 0.5°
	Down 15.5°	± 0.5°
Rudder	Right 19.5°	± 0.5°
	Left 19.5°	± 0.5°
Ailerons	Up 22.5°	± 0.5°
	Down 17.5°	± 0.5°
Flaps (total)	50°	
Speed brakes	75°	

For detailed rigging instructions refer to HFB 320 HANSA Maintenance Manual.

Serial Numbers eligible A Luftfahrt-Bundesamt (LBA) Certificate of Airworthiness for Export, endorsed as noted below under import Requirements, must be submitted for each individual aircraft for which application for an FAA Certificate of Airworthiness is made.

Certification basis FAR 21.29 and CAR 4b, dated December 1953; Amendments 4b-1 through 4b-12 thereto; the provisions of Special Civil Air Regulation SR-422 B; Special Conditions of the Deutsche Versuchsanstalt für Luftund Raumfahrt e.V. and Prüfstelle für Luftfahrtgerät (DVL - PfL) as listed in DVL-PfL report dated 21 March 1963 and HFB report dated 17 December 1963; and Special Conditions listed in Attachment A to FAA letter to Luftfahrt Bundesamt (LBA) dated 17 January 1966.

Type Certificate (Import) No. A14EU issued April 7, 1967
Date of Application for Type Certificate: February 6, 1963

Compliance with the following additional requirements has been established:

CAR Amendment 4b-14
 CAR 4b.361 - Ditching
 CAR 4b.640 - Ice Protection
 FAR 25 Amendment 25.15

Import requirements

A U.S. Certificate of Airworthiness may be issued on the basis of a Federal Republic of Germany Certificate of Airworthiness for Export signed by an authorized representative of the Luftfahrt Bundesamt containing the following statement: "The airplane covered by this certificate has been examined and found to comply with U.S. Civil Air Regulation Part 4b- issued December 31, 1953, including amendments 4b-1 through 4b-12, additional requirements as stated under Certification Basis of Type Certificate Data Sheet No. A14EU, conforms to Type Certificate A14EU issued on April 7, 1967 or later revision and is airworthy".

Required equipment

The basic required equipment as prescribed in the applicable airworthiness and operating regulations must be installed in the aircraft for certification.

A required Equipment List approved by Luftfahrt-Bundesamt is appended to the approved HFB 320 HANSA Airplane Flight Manual and contains under "Required Equipment" the minimum equipment required by the airworthiness regulations plus the additional equipment required for VFR/IFR Day/Night operation under FAR Part 91.

A current LBA-Approved HFB 320 HANSA Airplane Flight Manual must be carried on the aircraft at all times.

Service information

All HFB 320 HANSA Service Bulletins are approved by the Luftfahrt- Bundesamt, or an authorized representative of that authority, and carry a statement to that effect.

Supplementary and important information for operation and maintenance are provided in:

HFB 320 HANSA - Weight and Balance Manual
 - Operation Manual
 - Maintenance Manual
 - Structure Repair Manual
 - Illustrated Parts Catalog

NOTES

NOTE 1.

- (a) A current Weight and Balance Report including list of equipment in certificated empty weight and loading instructions, must be in each aircraft at the time of original certification and at all times thereafter.
- (b) The airplane must be loaded so that the C.G. is within the specified limits at all times.
- (c) The weight of system fuel as defined below and hydraulic fluid must be included in the empty weight of the airplane.
- (d) Unusable fuel
 Drainable unusable fuel is the amount of fuel in the tanks which is not available for engine supply under critical flight conditions. This drainable unusable fuel does not include the trapped fuel in the tanks and the unusable fuel in the feed lines. The total unusable fuel must be included in the airplane empty weight. The total unusable fuel is distributed as follows:

<u>Applicable to SN 1023 to 1035</u>	<u>Volume</u>	<u>Weight</u>	<u>Arm Body</u>
<u>Location</u>	<u>U.S. Gals.</u>	<u>lb</u>	<u>Station</u>
Fuselage tank (undrainable)	2.8	18.7	11515
Wing tanks (both) (undrainable)	2.6	17.6	11155
Tip tanks (both) (undrainable)	1.3	8.8	9345
Feedlines	1.8	12.1	13065
Fuselage tank (drainable)	3.3	22.1	11515
Wing tanks (both) (drainable)	7.0	46.3	11895
Tip tanks (both) (drainable)	<u>3.3</u>	<u>22.1</u>	<u>9345</u>
TOTAL unusable fuel	22.1	147.7	11267

Applicable to SN 1036 and up

Fuselage tank (undrainable)	1.0	6.6	11515
Wing tanks (both) (undrainable)	5.3	35.3	11155
Tip tanks (both) (undrainable)	1.3	8.8	9345
Feedlines	1.8	12.1	13065
Fuselage tank (drainable)	0.7	4.4	11515
Wing tanks (both) (drainable)	6.6	44.1	11895
Tip tanks (both) (drainable)	<u>3.3</u>	<u>22.0</u>	<u>9345</u>
TOTAL unusable fuel	19.9	133.5	11267

- NOTE 2. Service Life Limits
Structural components of which the service life is restricted, are identified in the HFB 320 HANSA Maintenance Manual, Volume 5, and the approved airplane Flight Manual.
- NOTE 3. Approved fuels by brand designation for the CJ 610 - series engines are listed in the Operation Manual, section 14.
- NOTE 4. Approved oils by brand designation for the CJ 610 - series engines are listed in the Operation Manual, section 14.
- NOTE 5. Design speed for the speed brakes is Vd (380 kts, IAS) and Md (M - 0,83)
In emergency the speed brakes may be operated up to this speed.
- NOTE 6. After removal of the passenger seats and installation of the cargo net the aircraft may be used for cargo. For detail information with regard to the conversion from one version into the other refer to the Operation Manual.
- Max. allowable compartment loadings for the cargo configuration are:
- | <u>Compt.</u> | <u>Body Station</u> | <u>Weight (lb)</u> | <u>Floor loading (lb/sq.ft.)</u> |
|----------------|---------------------|--------------------|----------------------------------|
| Cabin | 7315-10369 | 2,860 | 81.92 |
| Baggage compt. | 10369-12166 | 660 | 61.44 |
- NOTE 7. Variations in engine configurations listed are eligible by applying LBA approved Modification Kits or Service Bulletins.
- NOTE 8. Aircraft with CJ 610-1 engines are eligible for higher take-off weight by applying HFB Service Bulletins containing LBA approved AFM-Revision. In this case all weights, c.g. and speed data for 20,280 lbs maximum take-off weight apply.
- NOTE 9. The aircraft is eligible for a maximum operating altitude of 40,000 ft. by applying HFB Service Bulletin 28-13 and LBA approved AFM-Revision 19 (or subsequent LBA approved AFM Revisions).

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