DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

H3EU
Revision 21
EUROCOPTER
DEUTSCHLAND
BO-105A
BO-105C
BO-105S
BO-105LS A-1

February 21, 2007

TYPE CERTIFICATE DATA SHEET NO. H3EU

This data sheet which is a part of Type Certificate No. H3EU prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Air Regulations.

Type Certificate Holder — EUROCOPTER DEUTSCHLAND GMBH (ECD)
D-88607 Donauworth
Germany

Type Certificate Holder Record — Messerschmitt-Bolkow-Blohm-Gmbh transferred TC H3EU to EUROCOPTER DEUTSCHLAND GMBH (ECD) on October 14, 1992.

I. MODEL BO-105 A (Normal Category) Helicopter, approved 19 April 1971.

Engines — 2 Allison, Model 250-C18

Fuel — MIL-T-5624 Grade JP-4 and JP-5

ASTM-D-1655A
ASTM-D-1655A-1
ASTM-D-1655B
(See NOTES 4 and 5)

Engine Limits

	Torque Pressure	N2 Output Shaft Speed	Turbine Temp.	N1 Gas Generator Speed
Takeoff (5 min.)	100% (317HP)	100% (6000rpm)	749°C (1380°F)	101% (51600rpm)
Maximum continuous	85% (270HP)	100% (6000rpm)	693°C	97.3% (1280°F) (49760rpm)

(See FLM for other limitations including speed and temperature transients).

Rotor Limits

Power off:	Power on:
Maximum 467 r.p.m. (Triple tach reading 110%)	Maximum 433 r.p.m. (Triple tach reading 102%)
Minimum 361 r.p.m. (Triple tach reading 85%)	Minimum 403 r.p.m. (Triple tach reading 95%)
See FLM for transient limits	

Airspeed Limits — Never Exceed Speed (Vne) (CAS) - 135 knots (155.5 m.p.h.)
Never Exceed Speed (Vne) (CAS) for steady autorotation -100 knots (115 m.p.h.)
Decrease Never Exceed Speed Vne with altitude in accordance with FLM.CAS

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I. MODEL BO-105 A (cont'd)

C.G. Range

Longitudinal C.G. limits:
122.1 in. to 133.7 in. aft RD at 4629 lbs.
121.3 in. to 133.7 in. aft RD at 3968 lbs.
Straight line variation between points given.
Lateral C.G. Limits:
3.9 in., left or right of longitudinal plane of symmetry of the helicopter.

Empty Weight C.G. Range

None.

Maximum Weight

4629.0 lbs.

Minimum Crew

1 at 68.3 in. to 76.2 in. aft RD.

Passengers

1 at 68.3 in. to 76.2 in. aft RD.
3 at 105.9 in. aft RD.

Maximum Baggage

Small compartment:
44.0 lbs., at 167.3 in. aft RD.
Cargo compartment:
Maximum cargo floor loading is 120 p.s.f. Maximum cargo load is limited by weight-and-balance consideration.

Fuel Capacity

153 gal., total (150.5 gal., usable; 126 gal. in main tank at 126.8 in. aft RD and 24.5 gal. in supply tank at 89.6 in. aft RD).
(See NOTE 1 for unusable fuel data)

Oil Capacity

Engine oil:
2.4 gal., total (1.2 gal, at 129.7 in. aft RD for each engine)
(See NOTE 1 for undrainable oil data)

Transmission oil:
2.7 gal., total at 129.7 in. aft RD.
(See NOTE 1 for undrainable oil data)

Maximum Operating Altitude

13,700 ft.

Rotor Blade and Control Movements

For rigging information refer to the Model BO 105 Maintenance and Overhaul Manual.

II. Model BO-105 C (Normal Category) Helicopter, approved 20 April 1972.

Engines

2 Allison Model 250-C20, or
2 Allison Model 250-C20B
MIL-T5624 Grade JP-4 and JP-5
ASTM-D-1655A
ASTM-D-1655A-1
ASTM-D-1655B
(See NOTES 4 and 5)

Engine Limits

Allison Model 250-C20

	Torque Power	Output Shaft Speed	Turbine Temp.	Gas Generator Speed
Takeoff (5 min.)	100% (400SHP)	100% (6016rpm)	793°C (1460°F)	102% (52000 rpm)
Maximum continuous	96.3% (385SHP)	100% (6016rpm)	777°C (1430°F)	101% (51490rpm)

II. Model BO-105 C (cont'd)

Engine Limits (continued)

Allison Model 250-C20B

	Torque Power	Output Shaft Speed	Turbine Temp.	Gas Generator Speed
Takeoff (5 min.)	105% (420SHP)	100% (6016rpm)	810°C (1490°F)	104% (53000 rpm)
Maximum continuous	100% (400SHP)	100% (6016rpm)	779°C (1434°F)	102% (52220rpm)

(See FLM for other limitations including speed and temperature transients).

Transmission Limits

Helicopter Variant C-2
Takeoff and maximum continuous (all engines operating) 317 SHP/Engine (Corresponding to 79% torque.)

Takeoff and maximum continuous (one-engine-inoperative) 371 SHP (93% torque.)

Helicopters, equipped with main transmission ZF FS 72 B and modified according to MBB Service Bulletin No. 60-44 have the same power limitations as Variant CB-2

Helicopter Variant CB-2
For helicopters from S/N 321 and up, of for helicopters up to S/N 320 incl. incorporating MBB Service Bulletin No. 60-33, or parts list MBB 105-80020 and MBB 105-80019, or MBB 105-80021 and MBB 105-80019. The following apply:
Takeoff and maximum continuous (all engines operating) 345 SHP/Engine (corresponding to 86% torque.)

Takeoff and maximum continuous (one-engine-inoperative) 380 SHP (95% torque.)

Helicopter Variant CB-4
For helicopters which are identical with Variant CB-2 and equipped with MBB Service Bulletin No. 80-77 or Kit No. 105-80026 which are valid for S/N 1 to S/N 7 and in addition for all helicopters S/N 751and up, the transmission limits for the Variant CB-2 apply.

Helicopter Variant CB-5
For helicopters which are identical with Variant CB-4 and equipped with ECD-Kit No. 105-80081/105-80082 the transmission limits for the variant CB-2 apply. (See NOTE 13).

Rotor Limits

Power off:
Maximum 467 rpm (Triple tach reading 110%)
Minimum 361 rpm (Triple tach reading 85%)

Power on:
Maximum 433 rpm (Triple tach reading 102%)
Minimum 403 rpm for airspeeds up to and including Never Exceed Speed (Vne)-20 Knots. (Triple tach reading 95%)
Minimum 416 rpm for airspeed above Never Exceed Speed (Vne)-20 Knots (Triple tach reading 98%)
See FLM for transient limits.

Airspeed Limits

Never exceed speed (Vne) (CAS) - 145 Knots (167 m.p.h.) up to 5291 lbs.
Never exceed speed (Vne) (CAS) - 130 Knots (150 m.p.h.) above 5291 lbs.
Decrease Never Exceed Speed (Vne) (CAS) with altitude in accordance with FLM.
Never Exceed Speed (Vne) (CAS) for steady autorotation - 100 Knots (115 m.p.h.)

II. Model BO-105 C (cont'd)

Airspeed Limits.(cont'd)

Helicopter Variant CB-5
Never Exceed Speed (Vne) (CAS) - 145 kts (167 m.p.h.) up to 5070 lb.
Never Exceed Speed (Vne) (CAS) - 135 kts (156 m.p.h.) above 5070 lb.
Decrease Never Exceed Speed (Vne) with altitude in accordance with RFM.
Never Exceed Speed (Vne) (CAS) in steady autorotation – 100 kts (115 m.p.h.)

C.G. Range

Longitudinal C.G. limits for Variant C-2:
Maximum forward up to 3968 lbs - 121.3 in. aft RD.
Maximum forward up to 4629 lbs - 122.1 in. aft RD.
Maximum forward up to 5070 lbs - 123.0 in. aft RD.
Maximum rearward up to 5070 lbs - 129.7 in. aft RD.
Maximum rearward up to 4629 lbs- 133.7 in. aft RD.

Longitudinal C.G. limits for Variant CB-2:
Maximum forward up to 3968 lbs - 121.3 in. aft RD.
Maximum forward at 5291 lbs - 123.0 in. aft RD.
Maximum rearward at 5291 lbs - 129.7 in. aft RD.
Maximum rearward up to 4409 lbs- 133.7 in. aft RD.
(See NOTE 6 and 7)
Straight line variation between points given.

Longitudinal C.G. limits for Variant CB-4, CB-5:
The limits are identical with Variant CB-2 which are equipped with OPT 49. (See NOTE 6).

Lateral C.G. Limits:
3.9 in., left or right of longitudinal plane of symmetry of the helicopter up to 5291 lbs
3.15 in. left or right of longitudinal plane of symmetry of the helicopter above 5291 lbs

Empty Weight C.G. Range

None

Maximum weight

5070 lbs
5291 lbs (See NOTE 6)
5512 lbs (See NOTE 7)

Minimum Crew

1 at 68.3 in. to 76.2 in. aft RD.

Passengers

1 at 68.3 in. to 76.2 in. aft RD.
3 at 105.9 in. aft RD.

Maximum Baggage

Small compartment:
44.0 lbs, at 167.3 in. aft RD.

Cargo compartment:
Maximum cargo floor loading is 120 p.s.f. Maximum cargo load is limited by weight-and-balance considerations.

Fuel Capacity

153 gal., total (150.5 gal., usable; 126 gal. in main tank at 126.8 in. aft RD and 24.5 gal. in supply tank at 89.6 in. aft RD).

(See NOTE 1 for unusable fuel data).

Oil Capacity

Engine oil:
2.4 gal., total (1.2 gal., at 129.7 in. aft RD for each engine)
Transmission oil:
2.7 gal. total at 129.7 in. aft RD.
(See NOTE 1 for undrainable oil data)

II. Model BO-105 C (cont'd)

Maximum Operating: Up to and including 5291 lbs

Altitude: 17,000 ft. when operating on MIL-T-5624 Grade JP5 or ASTM-D-1655 J Jet A-1.
13,700 ft. when operating on MIL-T-5624 Grade JP4 or ASTM-D-1655 Jet B or alternate fuel (AVGAS mixture).
Above 5291 lbs.: 10,000 ft.

III. Model BO-105 S (Normal Category) Helicopter, Approved July 25, 1977

The Model BO 105 S differs from the Model BO 105 C by an extended cabin. Helicopters Model BO-105 C can be modified to Model BO-105 S by parts list MBB 105-S-00001 or MBB 105-S-00002 (S/N 161 to S/N 300) or MBB 105-S-00003 (from S/N 301 and up).

Engines: 2 Allison Model 250-C20, or
2 Allison Model 250-C20B

Fuel: MIL-T5624 Grade JP-4 and JP-5
ASTM-D-1655A
ASTM-D-1655-A1
ASTM-D-1655B
(See NOTES 4 and 5)

Engine Limits

Allison Model 250-C20

	Torque Power	Output Shaft Speed	Turbine Temp.	Gas Generator Speed
Takeoff (5 min.)	100% (400SHP)	100% (6016rpm)	793°C (1460°F)	102% (52000rpm)
Maximum continuous	96.3% (385SHP)	100% (6016rpm)	777°C (1430°F)	101% (51490rpm)

Allison Model 250-C20B

	Torque Power	Output Shaft Speed	Turbine Temp.	Gas Generator Speed
Takeoff (5 min.)	105% (420SHP)	100% (6016rpm)	810°C (1490°F)	104% (53000rpm)
Maximum continuous	100% (400SHP)	100% (6016rpm)	779°C (1434°F)	102% (52220rpm)

(See RFM for other limitations including speed and temperature transients).

Transmission Limits.

Helicopter Variant CS-2
Takeoff and maximum continuous (all engines operating) 317 SHP/Engine (Corresponding to 79% torque)
Takeoff and maximum continuous (one engine inoperative) 371 SHP. (93% torque)

Helicopters equipped with main transmission ZF FS 72B and modified according to MBB Service Bulletin No. 60-44 have the same power limitations as Variant CBS-2.

Helicopter Variant CBS-2
For helicopters in series from S/N 321 and up or for helicopters incorporating MBB Service Bulletin No. 60-33, or parts list MBB 105-80020 and MBB 105-80019 or MBB 105-80021 and MBB 105-80019 (helicopter S/N up to S/N 320 incl.), the following apply:
Takeoff and maximum continuous (all engines operating) 345 SHP/Engine (Corresponding to 86% torque)
Takeoff and maximum continuous (one engine inoperative) 380 SHP (95% torque)

III. Model BO-105 S (cont'd)

Transmission Limits. (Continued)

Helicopter Variant CBS-4
For helicopters which are identical with the Variant CBS-2 and equipped with MBB Service Bulletin No. 80-77 or Kit No. 105-80026 which are valid for S/N 1 to S/N 750, and in addition for all helicopters S/N 751 and up, the transmission limits for the Variant CBS-2 apply.

Helicopter Variant CBS-5
For helicopters which are identical with the Variant CBS-4 and equipped with ECD-Kit No. 105-80038/105-80033 (up to helicopter serial number 901), or 105-80838/105-80833 (helicopter serial number 902 and up the transmission limits for the Variant CBS-2 apply. (See NOTE 13).

Rotor Limits.

Power off:
Maximum 442 rpm (Triple tach reading 104%)
Minimum 361 rpm (Triple tach reading 85%)

Power on:
Maximum 433 rpm (Triple tach reading 102%)
Minimum 403 rpm for airspeeds up to and including Vne - 20 kts. (Triple tach reading 95%)

Minimum 416 rpm for airspeeds above Vne - 20 kts. (Triple tach reading 98%)
See RFM for transient limits.

Airspeed Limits.

Never Exceed Speed (Vne) (CAS) - 145 Knots (167 m.p.h.) up to 5291 lb.
Never Exceed Speed (Vne) (CAS) - 130 Knots (150 m.p.h.) above 5291 lb.
Decrease Never Exceed Speed (Vne) with altitude in accordance with RFM.
Never Exceed Speed (Vne) (CAS) in steady autorotation - 100 Knots (115 m.p.h.)

Helicopter Variant CBS-5
Never Exceed Speed (Vne) (CAS) - 145 kts (167 m.p.h.) up to 5070 lb.
Never Exceed Speed (Vne) (CAS) - 135 kts (156 m.p.h.) above 5070 lb.
Decrease Never Exceed Speed (Vne) with altitude in accordance with RFM.
Never Exceed Speed (Vne) (CAS) in steady autorotation - 100 kts (115 m.p.h.)

C.G. Range.

Longitudinal C.G. limits for Variant CS-2.
Maximum forward up to 3968 lbs. - 121.3 in. aft RD.
Maximum forward up to 4629 lbs. - 122.1 in. aft RD.
Maximum forward up to 5070 lbs. - 123.0 in. aft RD.
Maximum rearward up to 5070 lbs. - 129.7 in. aft RD.
Maximum rearward up to 4629 lbs. - 133.7 in. aft RD.

Longitudinal C.G. limits for Variant CBS-2.
Maximum forward up to 3968 lbs. - 121.3 in. aft RD.
Maximum forward at 5291 lbs. - 123.0 in. aft RD.
Maximum rearward at 5291 lbs. - 129.7 in. aft RD.
Maximum rearward up to 4409 lbs. - 133.7 in. aft RD.
(See NOTE 6 and 7)
Straight line variation between points given.

Longitudinal C.G. limits for Variant CBS-4, CBS-5. The limits are identical with the Variant CBS-2 which are equipped with OPT 49.
See NOTE 6

Lateral C.G. Limits
3.9 in., left or right of longitudinal plane of symmetry of the helicopter
3.15 in., left or right of longitudinal plane of symmetry of the helicopter for weights above 5291 lbs.

III. Model BO-105 S (cont'd)

Empty Weight C.G. Range	None.
Maximum Weight	5070 lbs. 5291 lbs. (See NOTE 6) 5512 lbs. (See NOTE 6 and 7)
Minimum Crew	1 at 58.3 in. to 66.2 in. aft RD.
Passengers	1 at 68.3 in. to 76.2 in. aft RD; 3 at 105.9 in. aft RD or 4 at 100.4 in. aft RD if the optional equipment "Back to Back 4 seat bench" (MBB105S - 82660) is installed.
Maximum Baggage	Small compartment: 44.0 lbs. at 167.3 in. aft RD. Cargo compartment: Maximum Cargo floor loading is 120 p.s.f. Maximum cargo load is limited by weight-and-balance considerations.
Fuel Capacity	153 gal., total (150.5 gal., usable; 126 gal. in main tank at 126.8 in. aft RD and 24.5 gal. in supply tank at 89.6 in. aft RD. (See NOTE 1 for unusable fuel data).
Oil Capacity	Engine oil: 2.4 gal., total (1.2 gal., at 129.7 in. aft RD for each engine). Transmission oil: 2.7 gal., total at 129.7 in. aft RD. (See NOTE 1 for undrainable oil data).
Maximum Operating Altitude	Up to and including 5291 lbs.: 17,000 ft. when operating on MIL-T-5624 Grade JP5 or ASTM-D-1655 J Jet A-1 13,700 ft. when operating on MIL-T-5624 Grade JP4 or ASTM-D-1655 Jet B, or alternate fuel (AVGAS Mixture). Above 5291 lbs.: 10,000 ft.
Rotor Blade and Control Movements	For rigging information refer to the Model BO-105 Maintenance and Overhaul Manual.

IV. Model BO-105 LS A-1 (Normal Category) Helicopter, March 10, 1986

The Model BO-105 LS differs from the Model BO-105 S by new engines and a new transmission, both with higher power level, more efficiency in the engine oil cooling-system and an improved electrical system.
(See NOTE 8 and 9)

Engines	2 Allison Model 250-C28C
Fuel	MIL-T5624 Grade JP-4 and JP-5 ASTM-D-1655A ASTM-D-1655A-1 ASTM-D-1655B (See NOTES 4 and 5)

IV. Model BO-105 LS A-1 (cont'd)

Installed Engine Limits

	Output Shaft Torque (FT-LBS)	Speed - N1 (RFM)	Speed - N2 (RFM)	Gas Temperature (C° (°F)
Normal Operation				
Takeoff power (5 minutes)	54 (333)	104 (52980)	102 (6136)	791 (1455)
Max. Continuous	49 (302)	104 (52980)	102 (6136)	741 (1365)
One Engine Inoperative				
2.5 min. power	78 (481)	104 (52980)	102 (6136)	810 (1490)
Max. continuous	70 (432)	104 (52980)	102 (6136)	791 (1455)

(See FLM for other limitations including speed and temperature transients).

Rotor Limits

Power off:
Maximum 442 rpm (Triple tach reading 104%)
Minimum 361 rpm (Triple tach reading 85%)

Power on:
Maximum 433 rpm (Triple tach reading 102%)
Minimum 424 rpm (Triple tach reading 100%) above 12000 ft.
Minimum 416 rpm (Triple tach reading 98%) below 12000 ft.
See FLM for transient limits.

Airspeed Limits

Never Exceed Speed Vne (CAS) - 145 knots (167 mph).
Decrease Vne with altitude in accordance with FLM.
Vne for steady autorotation is limited to 90 Knots
(104 m.p.h.) or less (see FLM)

C.G. Range

Longitudinal C.G. Limits
Maximum forward up to 3968 lbs. - 121.3 in. aft RD.
Maximum forward at 5291 lbs. - 123.0 in. aft RD.
Maximum rearward at 5291 lbs. - 129.7 in. aft RD.
Maximum rearward up to 4409 lbs. - 133.7 in. aft RD.
Straight line variation between points given.

Lateral C.G. Limits
3.9 in., left or right of longitudinal plane of symmetry of the helicopter.

Empty Weight C.G. Range

None

Maximum Weights

5291 lbs.

Minimum Crew

1 at 58.3 in. to 66.2 in. aft RD.

Passengers

1 at 68.3 in. to 76.2 in. aft RD;
3 at 105.9 in. aft RD or 4 at 100.4 in. aft RD if the optional equipment "Back to Back 4 Seat Bench" (MBB105S-82660) is installed.

Maximum Baggage

Small compartment:
44.0 lbs., at 167.3 in. aft RD.

Cargo compartment:
Maximum cargo floor loading is 120 p.s.f.
Maximum cargo load is limited by weight-and-balance considerations.

IV. Model BO-105 LS A-1 (cont'd)

Fuel Capacity	153 gal., total (150.5 gal., usable; 126 gal. in main tank at 126.8 in. aft RD and 24.5 gal. in supply tank at 89.6 in. aft RD). (See NOTE 1 for unusable fuel data).
Oil Capacity	Engine oil: 2.64 gal., total (1.32 gal., at 129.7 in. aft RD for each engine) Transmission oil: 3.5 gal., total at 129.7 in. aft RD. (See NOTE 1 for undrainable oil data)
Maximum Operating Altitude	20,000 ft. when operating on MIL-T-5624 Grade JP5 or ASTM-D-1655 Jet A, Jet A-1 or MIL-T-5624 Grade JP4 or ASTM-D-1655 Jet B, or alternate fuel (AVGAS Mixture).
Rotor Blade and Control Movements	For rigging information refer to the Model BO 105 LS A-1 Maintenance Manual.

DATA PERTINENT TO ALL MODELS

Datum	118.1 in., forward of bulkhead No. 7.
Leveling Means	Leveling point on bulkhead No. 7
Serial Nos. Eligible	A German Luftfahrt-Bundesamt (LBA) Certificate of Airworthiness endorsed as noted below under "Import Requirements" must be submitted for each individual Rotorcraft for which application for FAA Certification is made (See NOTE 8 and 12). For applications for Standard Airworthiness Certificates made after May 1, 2004, a review of historical records is needed to determine if the helicopter was delivered to and operated by the military. If the helicopter has a military history, the helicopter is not eligible for a Standard Airworthiness Certificate unless a copy of a Standard Airworthiness Certificate issued at the time of delivery to the military is submitted.
Certification Basis	FAR 21.29 and FAR 27 effective 1 February 1965 plus Amendments 27-1 through 27-3 plus Special Condition No. 27-31-EU-6 issued November 8, 1970. For the Model BO-105 A: Date of application for Type Certificate: November 11, 1967. Type Certificate No. H3EU issued April 19, 1971. For the Model BO-105 C: Date of application for Amended Type Certificate: November 15, 1971. Amended Type Certificate No. H3EU issued: April 20, 1972. For the Model BO-105 S: Date of application for Amended Type Certificate: July 8, 1977. Amended Type Certificate No. H3EU issued: July 25, 1977. For the Model BO-105 LS A-1: The following amendments have been incorporated in the certification basis: 27-5 (§ 27.1195), 27-11 (§ 27.939), 27-12 (§ 27.923/.927) and 27-14 (§ 27.67/.75). Equivalent Safety Findings in NOTE 10. Date of application for Amended Type Certificate: July 8, 1984. Amended Type Certificate No. H3EU issued: March 10, 1986.

"The German (Luftfahrt-Bundesamt Authority) LBA originally type certificated this under its type certificate number (LBA 3025). The FAA validated this product under U.S. Type Certificate Number (H3EU). Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of the German LBA."

Import Requirements

U.S. Standard Airworthiness Certificate may be issued on the basis of 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 rotorcraft covered by this certificate has been examined, tested and found to comply with the type design approved under Type Certificate H3EU and to be in condition for safe operation".

The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the German LBA on behalf of the European Community.

The Export C of A should contain the following statement: "The aircraft covered by this certificate has been examined, test, and found to comply with the German LBA TC Number 3025 approved under the U.S. Type Certificate Number H3EU and to be in a condition for safe operation."

Equipment

The minimum equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the helicopter for certification. In addition the following items of equipment are required:

(a) Engine-out Warning System (light)
(b) Outside Air Temperature Indicator
(c) LBA-approved Flight Manual

Service Information

MBB Service Bulletins (Technical Information), published in the English language for the U.S. Type Design that carry a statement "Approved by the Luftfahrt-Bundesamt (LBA)" may be interpreted as FAA-approved.

Available documents for MBB BO-105 A, C and S: - Flight Manual:

1) Model BO-105 A: LBA-approved MBB BO-105 A Flight Manual third issue dated November 1, 1978, Code A-1, or later LBA-approved issue.

2) Model BO-105 C:

a) LBA-approved MBB BO-105 C Flight Manual third issue dated November 1, 1978, Code C-2 or later LBA-approved issue.

b) For helicopters with Allison Model 250C20B engines in series from S/N 321 and up, or for helicopters up to S/N 320 inclusive incorporating MBB Service Bulletin No. 60-33, or Parts List MBB 105-80020 and MBB 105-80019, or MBB 105-88021 and MBB 105-0019, LBA-approved MBB BO-105 C Flight Manual third issue dated November 1, 1978, including Revision 4, dated November 19, 1976, Code CB-2, or later LBA-approved issue.

c) Helicopter Variant CB-5: For helicopters which are identical with the Variant CB-4 and equipped with ECD-Kit No. 105-80081/105-80082: LBA approved Flight Manual MBB BO-105 CB-5/CBS-5 Second Issue, Rev. 0 or later LBA-approved issue.

d) See also NOTE 6 and 7.

Service Information (continued)

3) Model BO-105 S:

a) LBA-approved MBB BO-105 S Flight Manual third issue dated November 1, 1978, revised May 25, 1977, Code CBS-2, or later LBA-approved issue.

b) For helicopters with Allison Model 250-C20B engines, in series from S/N 321 and up, and for helicopters up to S/N 320 inclusive incorporating MBB Service Bulletin No. 60-33, or Parts List MBB 105-80020 and MBB 105-80019, or MBB 105-80021 and MBB 105-80019, LBA-approved MBB BO- 105 S Flight Manual third issue dated November 1, 1978, revised May 25, 1977, Code CBS-2, or later LBA-approved issue.

c) For helicopters described in this section with MBB Service Bulletin 80-77 and 80-86 incorporated and for helicopters from S/N 751 and up: LBA-approved MBB

BO-105 S Flight Manual third issue dated November 1, 1978, Code CBS-2 or later LBA-approved issue.

d) Helicopter Variant CBS- For helicopters which are identical with the Variant CBS-4 and equipped with ECD-Kit No. 105-80038/105-80033 (up to helicopter serial number 901), or 105-80838/105-80833 (helicopter serial number 902 and up): LBA approved Flight Manual MBB 105 CB-5/CBS-5 Second Issue, Rev. 0. or later LBA-approved issue.

e) See also NOTE 6 and NOTE 7.

Subsequent to the release of the LBA-approved Flight Manual - third issue, revisions to the earlier issues of the BO-105 Flight Manual have been discontinued (this statement is not effective to BO-105 Variant CB-5/CBS-5)

Maintenance and Overhaul Manual, Chapter 11 "AIRWORTHINESS LIMITATIONS: dated October 13, 1970.

Available documents for MBB BO-105 LS A-1:
Flight Manual: LBA-approved MBB BO-105 LS A-1
Flight Manual dated July 19, 1984, or later LBA-approved issue.

"Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003 – by the German LBA. Any such documents are accepted by the FAA and are considered FAA approved.

- Service Bulletin,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

This applies only to the acceptance of the type design data."

NOTES

NOTE 1.

Current weight and balance report including list of required equipment and list of equipment included in certificated empty weight and loading instructions when necessary, must be provided for each helicopter at the time of original certification. The certificated empty weight and corresponding center of gravity location must include unusable fuel of 17.6 lbs., at 120 in. aft RD and undrainable engine and transmission oil of zero (0) lb.

NOTE 2.

For the Models BO-105 A, C and S:
The following placard must be displayed in clear view of the pilot:

"This helicopter must be operated in compliance with the operating limitations specified in the LBA-approved Rotorcraft Flight Manual. The "AIRWORTHINESS LIMITATIONS" section of the Maintenance and Overhaul Manual must be complied with".

For the Model BO-105 LS A-1:
The following placard must be displayed in clear view of the pilot:

"This helicopter must be operated in compliance with the operating limitations specified in the LBA-approved Rotorcraft Flight Manual. The INSPECTIONS and AIRWORTHINESS LIMITATIONS" section of the Maintenance Manual must be complied with".

In addition, all placards required in the LBA-approved Rotorcraft Flight Manual must be installed in the appropriate locations.

NOTE 3.

For the Model BO-105 A, C and S:
Refer to the Messerschmitt-Bolkow-Blohm GmbH Model BO-105 Maintenance and Overhaul Manual, Chapter 11, "AIRWORTHINESS LIMITATIONS" dated October 13, 1970 or a later LBA-approved issue for the retirement life limitations of the helicopter parts which are critical from a fatigue standpoint. These values of retirement of service life cannot be increased without FAA approval.

For the Model BO-105 LS A-1:
Refer to the Messerschmitt-Bolkow-Blohm GmbH Model BO-105 LS A-1 Maintenance Manual Appendix A "INSPECTIONS AND AIRWORTHINESS LIMITATIONS" dated June 1, 1984 or later LBA-approved issue for the retirement life limitations of the helicopter part which are critical from a fatigue standpoint. These values of retirement or service life cannot be increased without FAA approval.

NOTE 4.

For operation below 40^{o} F ambient temperature, all fuel used must contain Phillips PFA-55MB (MIL-I-27686) anti-icing additive in concentrations of not less than 0.035% nor more then 0.15% by volume. Blending this additive into the fuel and checking its concentration must be conducted in the manner prescribed by the Rotorcraft Flight Manual. Eligible with or without glycerine.

NOTE 5.

For emergency use, an alternate fuel mixture consisting of 1/3 by volume of 80/87 aviation gasoline and 2/3 by volume of ASTM D 1655 Jet A or A1 aviation turbine fuel may be used at outside air temperatures of 40^{o} F
(4^{o} C) or below.

NOTE 6.

For the Model BO-105 C Variant CB-2 and the Model BO-105 S Variant CBS-2 operation at a maximum weight of 5291 lbs. (2400 kg) is permitted in accordance with the appropriate Flight Manual as follows:

1) Model BO-105 CB-2: Flight Manual BO-105, Third Issue of FLM CB-2 dated November 1, 1978; or later LBA-approved issue.

2) Model BO-105 CBS-2; Flight Manual BO-105, Third Issue of FLM CBS-2,
- dated November 1, 1978; or later LBA-approved issue.

With the optional equipment required in OPT 49-1 installed (LBA-approved) 20 February 1984), the Model BO 105 C Variant CB-2 and the Model BO-105 S Variant CBS-2 is permitted to operate at a maximum weight of 5512 lb and the following center of gravity limits:

Forward C.G. at 4189 lbs. (1900 kg) 119.6 in (3038 mm) aft of RD
Forward C.G. at 5512 lbs. (2500 kg) 121.3 in (3082 mm) aft of RD
Forward C.G. at 2513 lbs. (1140 kg) 121.3 in (3082 mm) aft of RD
Aft C.G. up to 4409 lbs. (2000 kg) 133.7 in (3395 mm) aft of RD
Aft C.G. at 5512 lbs. (2500 kg) 128.7 in (3270 mm) aft of RD

3) Model BO-105 Variant CB-4: Flight Manual BO-105, third issue of FLM CB-2, dated November 1, 1978, Revision 2, dated February 8, 1980. This variant includes basically OPT 49 or is retrofitted with MBB Service Bulletin 80-77 and 80-86.

4) Model BO-105 Variant CBS-4: Flight Manual BO-105, third issue of FLM CBS-2 dated November 1, 1978, Revision 2, dated February 8, 1980. This variant includes basically OPT 49 or is retrofitted with MBB Service Bulletin 80-77 and 80-86.

NOTE 7. For the CB-2 and CBS-2 variants with MBB Service Bulletin 80-67 or MBB 105-82921 incorporated:

a) Operation with emergency floats installed must be in accordance with BO-105 Rotorcraft Flight Manual supplement Optional Equipment No. 48.

b) The longitudinal C.G. limits are as given in Supplement No. 48.

NOTE 8. The Model BO-105 LS A-1 is limited to the following serial numbers: 459, 651, 652, 653 and 655.

NOTE 9. The replacement of any part on the Model BO-105 LS A-1 must be approved by MBB helicopters.

NOTE 10. Equivalent Safety Findings for the Model BO-105 LS A-1:
FAR 27.175 (b) and (c),
FAR 27.923, and
FAR 27.927 (b) (2).

NOTE 11. The limits shown are installed limits. For computation purposes 100 percent engine output shaft (N_2) speed is 6016 r.p.m. and 100 percent gas generator speed is 50.942 r.p.m.

NOTE 12. Effective February 25, 1991, design responsibility for all BO-105 LS A3 helicopters were transferred from Messerschmitt-Bolkow-Blohm GmbH Helicopter and Transport Division D-8000 Munchen 80, and Luftfahrt-Bundesamt to MBB Helicopter Canada Limited and Transport Canada Aviation Group. Refer to Type Certificate No. H6NE and Type Certificate Data Sheet No. H6NE.

NOTE 13. For helicopters of the Variant CB-5/CBS-5 with Kit No. 105-80037 installed the following limits apply:
Normal operation: no change;
One engine inoperative: Max. continuous power: 105% torque (corresponding to 420 shp with 100% torque); 2 1/2 min power: 110% torque (corresponding to 420 shp with 95% torque); Transient power (max. 16 sec.): 123% torque (corresponding to 420 shp with 85% torque).

NOTE 14

Any changes to the type design of this helicopter by means of a amended type certificate (TC), supplemental type certificate (STC), or amended STC, requiring instructions for continued airworthiness (ICA's) must be submitted thru the project aircraft certification office (ACO) for review and acceptance by the Fort Worth -Aircraft Evaluation Group (FTW-AEG) Flight Standards District Office (FSDO) prior to the aircraft delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later as prescribed by Title 14 CFR 21.50. Type design changes (major repairs or alterations) by means of a FAA Form 337 (field approval) that require ICA's must have those ICA's reviewed by the field approving FSDO.

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