TYPE CERTIFICATE DATA SHEET

No. EASA.R.011

for

BO105

Type Certificate Holder

Airbus Helicopters Deutschland GmbH

Industriestrasse 4
D-86609 Donauwörth
Germany

For Models: BO105 A, BO105 C, BO105 S, BO105 LS A-1, BO105 LS A-3, BO105 D

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SECTION 1: BO105 A

I. General

1.	Type/ Model/ Variant	
	1.1 Type	BO105
	1.2 Model	BO105 A
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2.	Airworthiness Category	Small Rotorcraft (Normal Category)
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	13 October 1970
7.	Type Certificate n°	LBA: 3025 EASA: EASA.R.011
8.	Type Certificate Data Sheet n°	LBA: 3025 until issue 25, dated 15 March 2004 EASA: EASA.R.011 since 1 July 2009
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	FAR 27, first issue 1 February 1965, including Amdts. 27-1 through 27-3
3.	Special Conditions	none
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	none
7.	Requirements elected to comply	none
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	See TCDSN EASA.R.011
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition	105-A1.11
2.	Description	Main rotor: Hingeless four-bladed main rotor, blades made of fibreglass reinforced plastics Tail rotor: two-bladed tail rotor, blades made of fibreglass reinforced plastics Fuselage: airframe of semi-monocoque design

partly using honeycomb components
Landing gear: skid landing gear
Powerplant: two freewheel turbines
Additional info: horizontal stabiliser with end plates, five seat interior

3. Equipment — Basic equipment must be installed and operational prior to registration of the helicopter

4. Dimensions

4.1 Fuselage — Length: 4.30 m; Width hull: 1.58 m; Height: 3.00 m

4.2 Main Rotor — Diameter: 9.84 m

4.3 Tail Rotor — Diameter: 1.90 m

5. Engine

5.1 Model — Rolls-Royce Corporation (former: Allison)
2 x Model 250-C18

5.2 Type Certificate — EASA TC/TCDS n°: EASA.IM.E.052
FAA TC/TCDS n°: E4CE (State of Design)
LBA TC/TCDS n°: 7007

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	PWR/TQ limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine Operation:				
AEO-TOP (5 min)	2 x 317 (100)	51 600 (101)	6 000 (100)	749
AEO-MCP	2 x 270 (85)	49 760 (97)	6 000 (100)	693
Transient (6 sec)	- - -	- - -	- - -	843
Start-up (10 sec)	- - -	- - -	- - -	927
One engine inoperative:				
OEI-TOP (30 min)	1 x 317 (100)	51 600 (101)	6 000 (100)	749
OEI-MCP	1 x 270 (85)	49 760 (97)	6 000 (100)	693

Note: Engine limits at standard atmosphere and sea level

5.3.2 Other Engine and Transmission Torque Limits

Refer to approved FM

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Refer to approved FM

6.2 Oil — Refer to approved FM

6.3 Additives — Refer to approved FM

7. Fluid capacities

7.1 Fuel — Fuel tank capacity: 580.0 litres
Usable fuel: 570.0 litres

7.2 Oil — Engine oil reservoir capacity per engine: 4.5 litres

7.3 Coolant System Capacity — n/a

8.	Air Speed Limitations	V_{NE}: 135 KIAS (250 km/h) at MSL Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations.
9.	Rotor Speed Limitations	Power on: Maximum 102 % (433 rpm) Minimum 95 % (403 rpm) Power off: Maximum 110 % (467 rpm) Minimum 85 % (361 rpm) Transient: Refer to approved FM
10.	Maximum Operating Altitude and Temperature	
	10.1 Altitude	17 000 ft (5 182 m) PA For variation see approved FM
	10.2 Temperature	Refer to approved FM
11.	Operating Limitations	VFR day and night No flight into known icing condition Additional limitations for TO/LDG refer to approved FM
12.	Maximum Mass	2 100 kg
13.	Centre of Gravity Range	Longitudinal C.G. limits maximum forward limit: 3 081 mm aft of DP at 1 800 kg 3 102 mm aft of DP at 2 100 kg maximum rearward limit: 3 395 mm aft of DP at 2 100 kg Lateral C.G Limits maximum deviation on right/left: 100 mm
14.	Datum	Longitudinal: 3 000 mm in front of levelling point, frame 7 Lateral: fuselage median plane
15.	Levelling Means	See Maintenance Manual, Chapter 103.
16.	Minimum Flight Crew	one pilot (on right seat)
17.	Maximum Passenger Seating Capacity	four Refer to FM for the approved seat configurations
18.	Passenger Emergency Exit	two (one on each side of the passengers cabin)
19.	Maximum Baggage/ Cargo Loads	Maximum loading of 600 kg/m² Small baggage compartment: 20 kg
20.	Rotor Blade Control Movement	For rigging information refer to the Maintenance Manual
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	The periods specified in the latest EASA approved revision of the Airworthiness Limitations Section in Chapter 101 of the Maintenance Manual must not be exceeded.

IV. Operating and Service Instructions

1.	Flight Manual (FM)	1. BO105 A Flughandbuch, Drittausgabe, initially LBA approved on 1 November 1978, and subsequent approved revisions. 2. BO105 A, Flight Manual, 3rd issue, initially approved on 1 November 1978, and subsequent approved revisions
2.	Maintenance Manual	1. Maintenance Manual BO105, 2nd issue, dated 1 December 1990 2. Wartung- und Überholhandbuch, Hubschrauber BO105, Zweitausgabe vom 1 Dezember 1990
3.	Structural Repair Manual	Repair Manual BO105
4.	Weight and Balance Manual	Refer to approved FM
5.	Illustrated Parts Catalogue	Illustrated Parts Catalogue BO105
6.	Miscellaneous Manuals	- Wiring Diagram Manual BO105 - Engine documents as per Engine TCDS N° EASA.IM.E.052
7.	Service Letters and Service Bulletins	- Safety Information Notice (from October 2008 onwards, before: Alert Service Information), - Information Notice (from October 2008 onwards, before: Service Information), - Alert Service Bulletin, - Service Bulletin
8.	Required Equipment	Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual are required.

V. Notes

1. Manufacturer's eligible serial numbers:
   s/n 05, 06, 18, 19, 22, 24, 30, 53, 54.

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SECTION 2: BO105 C [C23, CB, CB-4, CB-5]

I. General

1.	Type/ Model/ Variant	
	1.1 Type	BO105
	1.2 Model	BO105 C
	1.3 Variant	C23, CB, CB-4, CB-5
2.	Airworthiness Category	Small Rotorcraft (Normal Category)
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	31 August 1971
7.	Type Certificate n°	LBA: 3025 EASA: EASA.R.011
8.	Type Certificate Data Sheet n°	LBA: 3025 until issue 25 dated 15 March 2004 EASA: EASA.R.011 since 1 July 2009
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded

2. Airworthiness Requirements

- FAR 27 (first issue 1 February 1965 including Amdts. 27-1 through 27-3)
- Additionally for the variants CB-4 and CB-5:
  - FAR 27.1501 and 27.1581 including Amdts. 27-1 through 27-8
  - JAR 29.45 to 29.87, first issue dated 6 September 1993
- Additionally for IFR operations:
  - FAR 29.51, 29.53, 29.59, 29.67, 29.75, 29.77, 29.141 (c), 29.1309, 29.1333 including Amdts. 29-1 through 29-3
  - FAA EU-100 Acceptable Criteria for Compliance with FAR 27.141 and FAR 29.141, Instrument Flight (Acceptable Means of Compliance) dated 15 February 1971, Revision dated 9 May 1975
- Additionally for VTOL operation for variants CB, CB-4, CB-5:
  - FAR 29.45 to 29.79 including Amdts. 29-1 through 29-17
- Additionally for Category A Operation (Equivalent) in accordance with IEM OPS 3.480 (a)(1) and (a)(2) for variants CB-4 and CB-5:
  - FAR 29 Engine Isolation in accordance with AC27-1B, MG-3
- JAR-29.1027 (a), 29.1187 (e), 29.1195 (a), (b), (d), 29.1197, 29.1199, 29.1201, 29.1323 (c)(1) first issue dated 5 November 1993

3.	Special Conditions	none
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	none
7.	Requirements elected to comply	none

8. Environmental Protection Requirements

8.1 Noise Requirements	See TCDSN EASA.R.011.
8.2 Emission Requirements	n/a
9. Operational Suitability Data (OSD)	Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: 105-C1.01

2. Description

Main rotor:	Hingeless four-bladed main rotor, blades made of fibreglass reinforced plastics
Tail rotor:	two-bladed tail rotor, blades made of fibreglass reinforced plastics
Fuselage:	airframe of semi-monocoque design partly using honeycomb components
Landing gear:	skid landing gear
Powerplant:	propulsion by two freewheel turbines
Additional info:	horizontal stabiliser with end plates, five seat interior
Differences:	The BO105 C differs from the BO105 A in having more powerful engines, higher all-up (take-off) mass and extended operating limits.

3. Equipment: Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage	Length:	4.30 m
	Width hull:	1.58 m
	Height:	3.00 m
4.2 Main Rotor	Diameter:	9.84 m
4.3 Tail Rotor	Diameter:	1.90 m

5. Engine

5.1 Model: Rolls-Royce Corporation (former: Allison)
Variant C23:
2 x Model 250-C20, or,
2 x Model 250-C20B
Variants CB, CB-4, CB-5:
2 x Model 250-C20B

5.2 Type Certificate

EASA TC/TCDS n°:	EASA.IM.E.052
FAA TC/TCDS n°:	E4CE (State of Design)
LBA TC/TCDS n°:	7007

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Engine: 250-C20	PWR/TQ limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine operation:				
AEO-TOP (5 min)	2 x 235 (79)	52 000 (102)	6 016 (100)	793
AEO-MCP	2 x 235 (79)	51 490 (101)	6 016 (100)	777

One engine Inoperative:				
Emergency Power	1 x 277 (93)	52 000 (102)	6 016 (100)	793

Engine: 250-C20B	PWR/TQ limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine operation:				
AEO-TOP (5 min) Variant C23[a]: Variants CB[b], CB-4[c], CB-5:	2 x 235 (79) 2 x 257 (86)	53 000 (104)	6 016 (100)	810
AEO-MCP Variant C23[a]: Variants CB[b], CB-4[c], CB-5:	2 x 235 [79] 2 x 257 [86]	52 220 (102)	6 016 (100)	779
One engine inoperative:				
Emergency PWR Variant C23[a]: Variants CB[b], CB-4[c], CB-5:	1 x 277 [93] 1 x 283 [95]	53 000 (104)	6 016 (100)	810
One engine inoperative[d]:				
OEI-MCP	1 x 313 (105)	53 510 (105)	6 016 (100)	810
2.5 min PWR	1 x 328 (110)	53 510 (105)	6 016 (100)	810

- Engine limits are at standard atmosphere and sea level, for temperature and RPM transients refer to the FM.
- Footnotes:
  - [a] Helicopters equipped with ZF FS72B main transmission and modified in accordance with MBB Service Bulletin N° 60-44 are subject to the same operating limits as Variant CB.
  - [b] Applicable to helicopters with equipment cited in the Service Bulletin N° 60-33 or according to drawings 105-80020 and 105-80019 or 105-80021 and 105-80019 (valid for helicopters s/n S 1 to S 320). This is also applicable for series configuration starting from s/n S 321 onward.
  - [c] Applicable to helicopters that fulfil the requirements of the Variant CB and is additionally fitted with optional equipment according to the MBB Service Bulletin N° 80-77 or with Kit 105-80026 by the manufacturer (valid for helicopters s/n S 1 to S 750). The CB-4 is also valid for s/n S 751 and higher.
  - [d] Applicable for the power transmission of the BO105 CB, CB-4 and CB-5 variants with ZF FS72E main transmission and other equipment according to SB-BO-105-80-110 or to MBB/ED engineering drawing 105-84521.

5.3.2 Other Engine and Transmission Torque Limits

Refer to approved FM

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Refer to approved FM

6.2 Oil — Refer to approved FM

6.3 Additives — Refer to approved FM

7. Fluid capacities

7.1 Fuel — Fuel tank capacity: 580.0 litres
Usable fuel: 570.0 litres

7.2 Oil — Engine oil reservoir capacity (per engine): 4.5 litres

7.3 Coolant System Capacity — n/a

8. Air Speed Limitations

Reference: MSL, unless specified otherwise

Variants C23, CB, CB-4:

V_{NE} = 145 knots (268 km/h) up to 2 400 kg
V_{NE} = 130 knots (240 km/h) above 2 400 kg
Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations.

Variant CB-5:

V_{NE} = 145 knots (268 km/h) up to 2 300 kg
V_{NE} = 130 knots (240 km/h) above 2 300 kg

Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations.

9. Rotor Speed Limitations

Power on:

Maximum	102 %	(433 rpm)
Minimum	98 %	(416 rpm)

Power off:

Maximum	110 %	(467 rpm)
Minimum	85 %	(361 rpm)

Transient: Refer to approved FM

Note:

For helicopters with a maximum certified mass of up to 2 400 kg a minimum power on rotor rpm of 95% is permissible at airspeeds of less than V_{NE} -20 knots if the triple tachometer indicator is marked accordingly.

10. Maximum Operating Altitude and Temperature

10.1 Altitude

17 000 ft (5 181.6 m) PA

For variation see approved FM

10.2 Temperature

Refer to approved FM

11. Operating Limitations

VFR day and night

No flight into known icing condition

IFR, when equipped and operated in accordance with FMS 11-2

Additional limitations for TO/LDG refer to approved FM

Variants CB-4/CB-5:
Category A (Equivalent) Operation, when equipped and operated in accordance with FMS 11-4

12. Maximum Mass

Variant C23: 2 300 kg
Variant CB: 2 400 kg
Variant CB: 2 500 kg (if the helicopter has been converted per SB n° 80-77 and is operated in accordance with OPT 49)
Variant CB-4: 2 500 kg
Variant CB-5: 2 500 kg

13. Centre of Gravity Range

13.1 Longitudinal

Variant C23:
maximum forward limit
3 081 mm aft of DP at 1 800 kg
3 102 mm aft of DP at 2 100 kg
3 125 mm aft of DP at 2 300 kg
maximum rearward limit

		3 395 mm aft of DP at 2 100 kg 3 295 mm aft of DP at 2 300 kg other values: straight line between the points given. Variant CB: maximum forward limit 3 081 mm aft of DP at 1 800 kg 3 125 mm aft of DP at 2 400 kg maximum rearward limit 3 395 mm aft of DP at 2 000 kg 3 295 mm aft of DP at 2 400 kg other values: straight line between the points given. Variant CB (for extended centre of gravity range according to Flight Manual OPT 48): maximum forward limit 3 081 mm aft of DP at 1 140 kg 3 038 mm aft of DP at 1 900 kg 3 075 mm aft of DP at 2 400 kg maximum rearward limit 3 395 mm aft of DP at 2 000 kg 3 295 mm aft of DP at 2 400 kg other values: straight line between the points given. Variant CB (for take-off mass between 2 400 kg and 2 500 kg according to Flight Manual OPT 49), Variants CB-4 and CB-5: maximum forward limit 3 081 mm aft of DP at 1 140 kg 3 038 mm aft of DP at 1 900 kg 3 082 mm aft of DP at 2 500 kg maximum rearward limit 3 395 mm aft of DP at 2 000 kg 3 270 mm aft of DP at 2 500 kg other values: straight line between the points given.
	13.2 Lateral	Maximum deviation on right/left 100 mm up to 2 400 kg 80 mm above 2 400 kg
14.	Datum	Longitudinal: 3 000 mm in front of levelling point, frame 7 Lateral: fuselage median plane
15.	Levelling Means	See Maintenance Manual, Chapter 103
16.	Minimum Flight Crew	one pilot (on right seat)
17.	Maximum Passenger Seating Capacity	four Refer to FM for the approved seat configurations
18.	Passenger Emergency Exit	two (one on each side of the passengers cabin)
19.	Maximum Baggage/ Cargo Loads	Maximum loading of 600 kg/m^2 Small baggage compartment: 20 kg
20.	Rotor Blade Control Movement	For rigging information refer to the Maintenance Manual
21.	Auxiliary Power Unit (APU)	n/a

22.	Life-limited Parts	The periods specified in the latest EASA approved revision of the Airworthiness Limitations Section in Chapter 101 of the Maintenance Manual must not be exceeded.

IV. Operating and Service Instructions

1.	Flight Manual (FM)	Variant C23: Flight Manual BO105 C/CS, 4th issue, initially approved on 21 October 1994, and subsequent approved revisions. Variants CB, CB-4: Flight Manual BO105 CB/CBS, 4th issue, initially approved on 23 November 1993, and subsequent approved revisions. Flughandbuch BO105 CB/CBS, 4th issue, initially approved on 23 November 1993, and subsequent approved revisions. Variant CB-5: BO105 CB-5/CBS-5, 2nd issue, initially approved on 10 April 1995, and subsequent approved revisions.
2.	Maintenance Manual	1. Maintenance Manual BO105, 2nd issue, dated 1 December 1990 2. Wartung- und Überholhandbuch, Hubschrauber BO105, Zweitausgabe vom 1 Dezember 1990
3.	Structural Repair Manual	Repair Manual BO105
4.	Weight and Balance Manual	Refer to approved FM
5.	Illustrated Parts Catalogue	Illustrated Parts Catalogue BO105
6.	Miscellaneous Manuals	- Wiring Diagram Manual BO105 - Engine documents as per Engine TCDS N° EASA.IM.E.052
7.	Service Letters and Service Bulletins	- Safety Information Notice (from October 2008 onwards, before: Alert Service Information), - Information Notice (from October 2008 onwards, before: Service Information), - Alert Service Bulletin, - Service Bulletin
8.	Required Equipment	Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual are required.

V. Notes

1. Eligible serial numbers:
   s/n 01 to 929 (except s/n for the BO105 A and LS A-1)
2. Convertibility:
   Helicopters of the model BO105 C, variant CB-4, may be converted into variant CB-5 according to the ECD drawings 105-80081/105-80082.

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SECTION 3: BO105 S [CS, CBS, CBS-4, CBS-5]

I. General

1.	Type/ Model/ Variant	
	1.1 Type	BO105
	1.2 Model	BO105 C
	1.3 Variant	CS, CBS, CBS-4, CBS-5
2.	Airworthiness Category	Small Rotorcraft (Normal Category)
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	25 May 1977
7.	Type Certificate n°	LBA: 3025 EASA: EASA.R.011
8.	Type Certificate Data Sheet n°	LBA: 3025 until issue 25, dated 15 March 2004 EASA: EASA.R.011 since 1 July 2009
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	

- FAR 27 (first issue 1 February 1965 including Amdts. 27-1 through 27-3)
- Additionally for the variants CBS-4 and CBS-5:
  - FAR 27.1501 and 27.1581 including Amdts.27-1 to 27-8
  - JAR 29.45 to 29.87 (Draft version, dated 19 March 1993)
- Additionally for the sub-variant CBS-5 KLH:
  - FAR 27.1501 and 27.1581 including Amdts.27-1 to 27-8
- Additionally for IFR operations:
  - FAA EU-100 Acceptable Criteria for Compliance with FAR 27.141 and FAR 29.141, Instrument Flight (Acceptable Means of Compliance) dated 15 February 1971, Revision dated 9 May 1975
- Additionally for VTOL operation for the variants CBS, CBS-4 and CBS-5:
  - FAR 29.45 to 29.79 including Amdts.29-1 to 29-17 (for VTOL operation)
- Additionally for Category A Operation (Equivalent) in accordance with IEM OPS 3.480 (a)(1) and (a)(2) for variants CBS-4 and CBS-5
  - FAR 29 Engine Isolation in accordance with AC27-1B, MG-3
- JAR-29.1027 (a), 29.1187 (e), 29.1195(a), (b), (d), 29.1197, 29.1199, 29.1201, 29.1323 (c)(1) first issue dated 5 November 1993

3.	Special Conditions	none
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	none
7.	Requirements elected to comply	none

8. Environmental Protection Requirements

8.1 Noise Requirements	See TCDSN EASA.R.011.
8.2 Emission Requirements	n/a
9. Operational Suitability Data (OSD)	Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: 105 CBS

2. Description

Main rotor:	Hingeless four-bladed main rotor, blades made of fibreglass reinforced plastics
Tail rotor:	two-bladed tail rotor, blades made of fibreglass reinforced plastics
Fuselage:	airframe of semi-monocoque design partly using honeycomb components
Landing gear:	skid landing gear
Powerplant:	propulsion by two freewheel turbines
Additional info:	horizontal stabiliser with end plates, five-seat interior

3. Equipment: Basic equipment must be installed and operational prior to registration of the helicopter

4. Dimensions

4.1 Fuselage	Length:	4.55 m
	Width hull:	1.58 m
	Height:	3.00 m
4.2 Main Rotor	Diameter:	
	Variants CS, CBS, CBS-4:	9.84 m
	Variant CBS-5:	9.80 m
4.3 Tail Rotor	Diameter:	1.90 m

5. Engine

5.1 Model: Rolls-Royce Corporation (former: Allison)
Variant CS:
2 x Model 250-C20, or,
2 x Model 250-C20B
Variants CBS, CBS-4, CBS-5:
2 x Model 250-C20B

5.2 Type Certificate

EASA TC/TCDS n°:	EASA.IM.E.052
FAA TC/TCDS n°:	E4CE (State of Design)
LBA TC/TCDS n°:	7007

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Engine: 250-C20	PWR/TQ limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine operation:				
Variant CS[a)]: AEO-TOP (5 min)	2 x 235 (79)	52 000 (102)	6 016 (100)	793

Variant CS[a)]: AEO-MCP	2 x 235 (79)	51 490 (101)	6 016 (100)	777
One engine inoperative:				
Variant CS[a)]: 30 min Emergency PWR	1 x 277 (93)	52 000 (102)	6 016 (100)	793

Engine: 250-C20B	TQ transm. limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine operation				
AEO-TOP (5 min) Variant CS[a)]: Variant CBS[b)], CBS-4[c)], CBS-5:	2 x 235 (79) 2 x 257 (86)	53 000 (104)	6 016 (100)	810
AEO-MCP Variant CS[a)]: Variant CBS[b)], CBS-4[c)], CBS-5:	2 x 235 (79) 2 x 257 (86)	52 220 (102)	6 016 (100)	779
One engine inoperative:				
30 min Emergency PWR Variant CS[a)]: Variant CBS[b)], CBS-4[c)], CBS-5:	1 x 277 (93) 1 x 283 (95)	53 000 (104)	6 016 (100)	810
One engine inoperative[d)]:				
OEI-MCP	1 x 313 (105)	53 510 (105)	6 016 (100)	810
2.5 min Power	1 x 328 (110)	53 510 (105)	6 016 (100)	810

- Engine limits are at standard atmosphere and sea level, for temperature and RPM transients refer to the FM.
- Footnotes:
  - a) Helicopters equipped with ZF FS72B main transmission and modified in accordance with. MBB Service Bulletin N° 60-44 are subject to the same operating limits as Variant CBS.
  - b) Applicable to helicopters with equipment cited in the Service Bulletin N° 60-33 or according to drawings 105-80020 and 105-80019 or 105-80021 and 105-80019 (valid for helicopters s/n S 1 to S 320). This is also applicable for series configuration starting from s/n S 321 onward.
  - c) Applicable to helicopters that fulfil the requirements of the Variant CBS and is additionally fitted with optional equipment according to the MBB Service Bulletin n° 80-77 or with Kit 105-80026 by the manufacturer (valid for helicopters s/n S 1 to S 750). The CBS-4 is also valid for s/n S 751 and higher.
  - d) Applicable for the power transmission of the BO105 CBS, CBS-4 and CBS-5 variants with main rotor transmissions ZF FS 72E and other equipment to SB-BO-105-80-110 or to MBB/ED engineering drawing 105-84521.

5.3.2 Other Engine and Transmission Torque Limits

Refer to approved FM

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Refer to approved FM

6.2 Oil — Refer to approved FM

6.3 Additives — Refer to approved FM

7. Fluid capacities

7.1 Fuel

Fuel tank capacity: 580.0 litres
Usable fuel: 570.0 litres

7.2 Oil

Engine oil reservoir capacity per engine: 4.5 litres

7.3 Coolant System Capacity

n/a

8. Air Speed Limitations

Reference. MSL, unless specified otherwise

Variants CS, CBS, CBS-4:

V_{NE} = 145 knots (268 km/h) up to 2 400 kg
V_{NE} = 130 knots (240 km/h) above 2 400 kg
Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations.

Variant CBS-5:

V_{NE} = 145 knots (268 km/h) up to 2 300 kg
V_{NE} = 130 knots (240 km/h) above 2 300 kg
Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations.

9. Rotor Speed Limitations

Power on:
Maximum 102 % (433 rpm)
Minimum 98 % (416 rpm)
Power off:
Maximum 104 % (442 rpm)
Minimum 85 % (361 rpm)
Transient: Refer to approved FM

Note:
For helicopters with a maximum certified mass of up to 2 400 kg a minimum power on rotor rpm of 95% is permissible at airspeeds of less than V_{NE} -20 kts if the triple tachometer indicator is marked accordingly)

10. Maximum Operating Altitude and Temperature

10.1 Altitude

17 000 ft (5 182 m) PA

For variation see approved FM

10.2 Temperature

Refer to approved FM

11. Operating Limitations

VFR day and night

No flight into known icing condition

IFR, when equipped and operated in accordance with FMS 11-2

Additional limitations for TO/LDG refer to approved FM

Variants CBS-4 and CBS-5:
Category A (equivalent) Operation, when equipped and operated in accordance with FMS 11-4

12. Maximum Mass

Variant CS: 2 300 kg
Variant CBS: 2 400 kg
Variant CBS: 2 500 kg, if the helicopter has been converted per SB n° 80-77 and is operated in accordance with OPT 49
Variant CBS-4: 2 500 kg
Variant CBS-5: 2 500 kg

13. Centre of Gravity Range

	13.1 Longitudinal	Variant CS: maximum forward limit 3 081 mm aft of DP at 1 800 kg 3 102 mm aft of DP at 2 100 kg 3 125 mm aft of DP at 2 300 kg maximum rearward limit 3 395 mm aft of DP at 2 100 kg 3 295 mm aft of DP at 2 300 kg other values: straight line between the points given. Variant CBS: maximum forward limit 3 081 mm aft of DP at 1 800 kg 3 125 mm aft of DP at 2 400 kg maximum rearward limit 3 395 mm aft of DP at 2 000 kg 3 295 mm aft of DP at 2 400 kg other values: straight line between the points given. Variant CBS (for extended centre of gravity range according to Flight Manual OPT 48): maximum forward limit 3 081 mm aft of DP at 1 140 kg 3 038 mm aft of DP at 1 900 kg 3 075 mm aft of DP at 2 400 kg maximum rearward limit 3 395 mm aft of DP at 2 000 kg 3 295 mm aft of DP at 2 400 kg other values: straight line between the points given. Variant CBS (for take-off mass between 2 400 kg and 2 500 kg according to Flight Manual OPT 49), Variants CBS-4 and CBS-5: maximum forward limit 3 081 mm aft of DP at 1 140 kg 3 038 mm aft of DP at 1 900 kg 3 082 mm aft of DP at 2 500 kg maximum rearward limit 3 395 mm aft of DP at 2 000 kg 3 270 mm aft of DP at 2 500 kg other values: straight line between the points given.
	13.2 Lateral	maximum deviation on right/left 100 mm up to 2 400 kg 80 mm above 2 400 kg
14.	Datum	Longitudinal: 3 000 mm in front of levelling point, frame 7 Lateral: fuselage median plane
15.	Levelling Means	See Maintenance Manual, Chapter 103
16.	Minimum Flight Crew	one pilot (on right seat)
17.	Maximum Passenger Seating Capacity	four, or, five, if the optional equipment “4-seater bench” MBB 105S-82660 is installed and operated

18.	Passenger Emergency Exit	two (one on each side of the passengers cabin)
19.	Maximum Baggage/ Cargo Loads	Maximum loading of 600 kg/m^2 Small baggage compartment: 20 kg
20.	Rotor Blade Control Movement	For rigging information refer to the Maintenance Manual
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	The periods specified in the latest EASA approved revision of the Airworthiness Limitations section in Chapter 101 of the Maintenance Manual must not be exceeded

IV. Operating and Service Instructions

1.	Flight Manual (FM)	Variant CS: Flight Manual BO105 C/CS, 4th issue, initially approved on 21 October 1994, and subsequent approved revisions. Variants CBS, CBS-4: Flight Manual BO105 CB/CBS, 4th issue, initially approved on 23 November 1993, and subsequent approved revisions. Variants CBS-5: BO105 CB-5/CBS-5, 2nd issue, initially approved on 10 April 1995, and subsequent approved revisions.
2.	Maintenance Manual	1. Maintenance Manual BO105, 2nd issue, dated 1 December 1990 2. Wartung- und Überholhandbuch, Hubschrauber BO105, Zweitausgabe vom 1 Dezember 1990
3.	Structural Repair Manual	Repair Manual BO105
4.	Weight and Balance Manual	Refer to approved FM
5.	Illustrated Parts Catalogue	Illustrated Parts Catalogue BO105
6.	Miscellaneous Manuals	- Wiring Diagram Manual BO105 - Engine documents as per Engine TCDS n° EASA.IM.E.052
7.	Service Letters and Service Bulletins	- Safety Information Notice (from October 2008 onwards, before: Alert Service Information), - Information Notice (from October 2008 onwards, before: Service Information), - Alert Service Bulletin, - Service Bulletin
8.	Required Equipment	Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual are required.

V. Notes

1. Eligible serial numbers:
   s/n 01 to 929 (except s/ns for the BO105 A and LS A-1)

2. Convertibility:
   The model BO105 C may be converted into the model BO105 S configuration according to the drawings n° 105 S-000001 or:
   - n° 105 S-000002 (s/n S 161 to 300), or,
   - n° 105 S-000003 (s/n S 301 to 550), or,
   - n° 105 S-000005 (s/n S 551 to 740), or,
   - n° 105 S-000006 (s/n S 741 to 780)

   The models BO105 C (s/n S 9 to S 160) may be converted in accordance with the drawing n° 105-80036 into the BO105 S variant CBS-4 configuration or into variant CBS, if Kit 105-80026 is not installed.

   The BO105 S variant CBS-4 (s/n up to and including 901) may be converted into the variant CBS-5 in accordance with the drawings n° 105-80038/105-80033.

   The BO105 S variant CBS-4, s/n from 902 and upwards, may be converted into the variant CBS-5 in accordance with the drawings n° 105-80838/105-80833.

   The BO105 S sub-variant CBS-5-KLH is fitted with various equipment items according to p/n 105-CBS-KLH. Only helicopters s/n 932 and 933 are of the variant CBS-5-KLH. These helicopters do not qualify for a civil registration.

* * *

SECTION 4: BO105 LS A-1

I. General

1.	Type/ Model/ Variant	
	1.1 Type	BO105
	1.2 Model	BO105 LSA-1
	1.3 Variant	n/a
2.	Airworthiness Category	Small Rotorcraft (Normal Category)
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	19 July 1984
7.	Type Certificate n°	LBA: 3025 EASA: EASA.R.011
8.	Type Certificate Data Sheet n°	LBA: 3025 until issue 25, dated 15 March 2004 EASA: EASA.R.011 since 1 July 2009
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	

- FAR 27 (first issue 1 February 1965 including Amdts. 27-1 through 27-3)
- FAR 27.67 and FAR 27.75 Amdt.27-14
- FAR 27.923 and FAR 27.927 Amdt.27-12
- FAR 27.939 Amdt. 27-11
- FAR 27.1195 Amdt. 27-5

3.	Special Conditions	none
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	none
7.	Requirements elected to comply	none
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	See TCDSN EASA.R.011
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: 105-LS-A1.01

2. Description

Main rotor:	Hingeless four-bladed main rotor, blades made of fibreglass reinforced plastics
Tail rotor:	two-bladed tail rotor, blades made of fibreglass reinforced plastics
Fuselage:	airframe of semi-monocoque design partly using honeycomb components
Landing gear:	skid landing gear
Powerplant:	propulsion by two freewheel turbines
Additional info:	horizontal stabiliser with end plates, five-seat interior
Differences:	The BO105 LS A-1 differs from the BO105 in having a more powerful engine and reinforced transmission, improvements in the engine oil cooler and in the on-board electrical system.

3. Equipment: Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage

Length:	4.55 m
Width hull:	1.58 m
Height:	3.00 m

4.2 Main Rotor — Diameter: 9.84 m

4.3 Tail Rotor — Diameter: 1.90 m

5. Engine

5.1 Model: Rolls-Royce Corporation (former: Allison)
2 x Model 250-C28 C

5.2 Type Certificate

EASA TC/TCDS n°:	EASA.IM.E.109
FAA TC/TCDS n°:	E1GL (State of Design)
LBA TC/TCDS n°:	7014

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Engine: 250-C28C	PWR/TQ limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	Power turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All Engine Operation:				
AEO-TOP (5 min)	2 x 283 (54)	52 980 (104)	6 016 (100]	791
AEO-MCP	2 x 258 (49)	52 980 (104)	6 016 (100]	741
One Engine Inoperative:				
2.5 min OEI-TOP	1 x 410 (78)	52 980 (104)	6 016 (100)	791
30 min OEI-MCP	2 x 368 (70)	52 980 (104)	6 016 (100)	791

Note:
Engine limits are at standard atmosphere and sea level, for temperature and RPM transients refer to the FM.

5.3.2 Other Engine and Transmission Torque Limits

Refer to approved FM

6.	Fluids (Fuel/ Oil/ Additives)	
	6.1 Fuel	Refer to approved FM
	6.2 Oil	Refer to approved FM
	6.3 Additives	Refer to approved FM
7.	Fluid capacities	
	7.1 Fuel	Fuel tank capacity: 580.0 litres Usable fuel: 570.0 litres
	7.2 Oil	Engine oil reservoir capacity per engine: 4.5 litres
	7.3 Coolant System Capacity	n/a
8.	Air Speed Limitations	V_{NE} = 145 knots (268 km/h) at MSL Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations.
9.	Rotor Speed Limitations	Power on: maximum 102 % (433 rpm) minimum 98 % (416 rpm) below 12 000 ft minimum 100 % (424 rpm) above 12 000 ft Power off: maximum 104 % (442 rpm) minimum 85 % (361 rpm) Transient: Refer to approved FM
10.	Maximum Operating Altitude and Temperature	
	10.1 Altitude	17 000 ft (5 182 m) PA For variation see approved FM
	10.2 Temperature	Refer to approved FM
11.	Operating Limitations	VFR day and night No flight into known icing condition Additional limitations for TO/LDG refer to approved FM
12.	Maximum Mass	2 400 kg
13.	Centre of Gravity Range	Longitudinal C.G Limits maximum forward limit: 3 081 mm aft of DP at 1 800 kg 3 125 mm aft of DP at 2 400 kg maximum rearward limit: 3 395 mm aft of DP at 2 000 kg 3 295 mm aft of DP at 2 400 kg other values: straight line between the points given. Lateral C.G Limits maximum deviation on right / left: 100 mm up to 2 400 kg
14.	Datum	Longitudinal: 3 000 mm in front of levelling point, frame 7 Lateral: fuselage median plane
15.	Levelling Means	See Maintenance Manual, Chapter 103
16.	Minimum Flight Crew	one pilot (on right seat)

17.	Maximum Passenger Seating Capacity	four, or, five, if the optional equipment “4-seater bench” MBB 105S-82660 is installed and operated.
18.	Passenger Emergency Exit	two (one on each side of the passengers cabin)
19.	Maximum Baggage/ Cargo Loads	Maximum loading of 600 kg/m² Small baggage compartment: 20 kg
20.	Rotor Blade Control Movement	For rigging information refer to the Maintenance Manual.
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	The periods specified in the latest revision Annex A, section 9 of the Maintenance Manual must not be exceeded.

IV. Operating and Service Instructions

1.	Flight Manual (FM)	BO105 LS A-1, initially LBA approved on 19 July 1984
2.	Maintenance Manual	Maintenance Manual BO105 LS A-1
3.	Structural Repair Manual	Repair Manual BO105
4.	Weight and Balance Manual	Refer to approved FM
5.	Illustrated Parts Catalogue	Illustrated Parts Catalogue BO105
6.	Miscellaneous Manuals	- Wiring Diagram Manual BO105 - Engine documents as per LBA Engine TCDS n° 7014
7.	Service Letters and Service Bulletins	- Safety Information Notice (from October 2008 onwards, before: Alert Service Information), - Information Notice (from October 2008 onwards, before: Service Information), - Alert Service Bulletin, - Service Bulletin
8.	Required Equipment	Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual are required.

V. Notes

1. Eligible serial numbers:
   s/n 459, 651, 652, 653, 654, 655.
   These serial numbers were retrofitted to BO105 LS A-1 in accordance with the drawing n° 105 LSA 1.01.

* * *

SECTION 5: BO105 LSA-3

I. General

1.	Type/ Model/ Variant	
	1.1 Type	BO105
	1.2 Model	BO105 LS A-3
	1.3 Variant	n/a
2.	Airworthiness Category	Small Rotorcraft (Normal Category)
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	12 June 1985
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	7 July 1986
7.	Type Certificate n°	LBA: 3058 EASA: EASA.R.011
8.	Type Certificate Data Sheet n°	LBA: 3058 until issue 1, dated 25 February 1991 TCCA: H-94 until issue 3, dated 31 July 1994 EASA: EASA.R.011 since 1 July 2009
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	12 June 1985
2.	Airworthiness Requirements	

- FAR 27 effective February 1, 1965, including Amendments 27-1 through 27-3.
- FAA Special Conditions 27-31 EU-6 issued November 8, 1970.
- The following amendments have been incorporated into the approval basis:
  - FAR 27.1195 Amdt. 27-5,
  - FAR 27.939 Amdt. 27-11,
  - FAR 27.923 and 27.927 Amdt. 27-12,
  - FAR 27.67 and 27.75 Amdt. 27-14.

3.	Special Conditions	none
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	for Static Longitudinal Stability FAR 27.175 (b) as detailed in MBB Opinion Sheet LHE32-61/87
7.	Requirements elected to comply	none
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	German Noise Prevention Requirement for Aircraft (Lärmschutzforderungen für Luftfahrzeuge LSL) Chapter 8 dated 1 August 1985 (equivalent to ICAO Annex 16 Chapter 8). See TCDSN EASA.R.011.

8.2	Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition	105-A3.01	
2.	Description	Main rotor:	Hingeless four-bladed main rotor, blades are made of fibreglass reinforced plastics
		Tail rotor:	two-bladed tail rotor, blades are made of fibreglass reinforced plastics
		Fuselage:	airframe of semi-monocoque design partly using honeycomb components
		Landing gear:	skid landing gear
		Powerplant:	propulsion by two freewheel turbines)
		Additional info:	horizontal stabiliser with end plates, five-seat interior
3.	Equipment	Basic equipment must be installed and operational prior to registration of the helicopter.	
4.	Dimensions		
4.1	Fuselage	Length:	4.55 m
		Width hull:	1.58 m
		Height:	3.00 m
4.2	Main Rotor	Diameter:	9.84 m
4.3	Tail Rotor	Diameter:	1.90 m
5.	Engine		
5.1	Model	Rolls-Royce Corporation (former: Allison) 2 x Model 250-C28 C	
5.2	Type Certificate	EASA TC/TCDS n°:	EASA.IM.E.109
		FAA TC/TCDS n°:	E1GL (State of Design)
		LBA TC/TCDS n°:	7014

5.3 Limitations

5.3.1 Installed Engine Limitations

Engine: 250-C28C	TQ limits [kW (shp)]	PWR turbine rpm [min^{-1} (%)]	Gas generator rpm [min^{-1} (%)]	Temperature TOT [°C]
All Engine Operative:				
AEO-TOP (5 min)	373 (500)	6 036 (102)	52 980 (104)	791
AEO-MCP	368 (494)	6 036 (102)	52 980 (104)	741

Note:

- Engine limits are at standard atmosphere and sea level.
- For temperature and RPM transients refer to FM.

5.3.2 Transmission Limits

	TQ limits		
	[kW]	[shp]	[%]
Both engines operating:			
AEO-TOP (5 min)	310	416	75

AEO-MCP	294	395	72
One engine inoperative			
2.5 min PWR	410	550	100
OEI-MCP	368	494	90

Note: For temperature and RPM transients refer to FM.

5.3.2 Other Engine and Transmission Torque Limits

Refer to approved FM

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Refer to approved FM

6.2 Oil — Refer to approved FM

6.3 Additives — Refer to approved FM

7. Fluid capacities

7.1 Fuel — Fuel tank capacity: 580.0 litres (127.6 Imp gal)
Usable fuel: 570.0 litres (125.4 Imp gal)

7.2 Oil — Engine oil reservoir capacity per engine:
5.0 litres (1.1 Imp gal)

7.3 Coolant System Capacity — n/a

8. Air Speed Limitations — V_{NE} = 145 knots (268 km/h) at MSL

Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations

9. Rotor Speed Limitations

Power on:

max. Transient	105 %	(446 rpm)
max. Continuous	102 %	(433 rpm)
min. Transient	95 %	(413 rpm)
min. Continuous	98 %	(416 rpm) below 8 000 ft
min. Continuous	100%	(424 rpm) above 8 000 ft

Power off:

max. Transient	110 %	(467 rpm)
max. Continuous	104 %	(442 rpm)
min. Transient	85 %	(361 rpm)
min. Continuous	85 %	(361 rpm)

10. Maximum Operating Altitude and Temperature

10.1 Altitude — 20 000 ft (6 096 m) PA

For variation see approved FM

10.2 Temperature — Refer to approved FM

11. Operating Limitations — VFR day and night

No flight into known icing condition

For additional operating limitations see approved FM

Additional limitations for TO/LDG refer to approved FM

12. Maximum Mass — 2 600 kg (5 733 lb)

13. Centre of Gravity Range — Longitudinal C.G Limits:
maximum forward limit
3 081 mm aft of DP at 1 800 kg
3 137 mm aft of DP at 2 600 kg

		maximum rearward limit 3 247 mm aft of DP at 2 600 kg 3 395 mm aft of DP at 2 000 kg other values: straight line between the points given. Lateral C.G Limits: Up to 2 400 kg 100 mm left/right of lateral reference datum. between 2 400 and 2 600 kg 80 mm left/right of lateral reference datum.
14.	Datum	Longitudinal: 3 000 mm in front of levelling point, frame 7 Lateral: fuselage median plane
15.	Levelling Means	See Maintenance Manual, Chapter 103
16.	Minimum Flight Crew	one pilot (on right seat)
17.	Maximum Passenger Seating Capacity	four, or, five, if the optional equipment “4-seater bench” MBB 105S-82660 is installed and operated.
18.	Passenger Emergency Exit	two (one on each side of the passengers cabin)
19.	Maximum Baggage/ Cargo Loads	Maximum loading of 600 kg/m^2 Small baggage compartment: 20 kg
20.	Rotor Blade Control Movement	For rigging information refer to the Maintenance Manual.
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	The periods specified in the latest revision Annex A, Section 9 of the Maintenance Manual must not be exceeded.

IV. Operating and Service Instructions

1.	Flight Manual (FM)	BO105 LS A-3, Issue 3 Rev. 3, firstly EASA approved on 30 June 2009
2.	Maintenance Manual	Maintenance Manual BO105 LS A-3
3.	Structural Repair Manual	Repair Manual BO105
4.	Weight and Balance Manual	Refer to approved FM
5.	Illustrated Parts Catalogue	Illustrated Parts Catalogue BO105
6.	Miscellaneous Manuals	- Wiring Diagram Manual BO105 - Engine documents as per LBA Engine TCDS n° 7014
7.	Service Letters and Service Bulletins	- Safety Information Notice (from October 2008 onwards, before: Alert Service Information), - Information Notice (from October 2008 onwards, before: Service Information), - Alert Service Bulletin, - Service Bulletin
8.	Required Equipment	Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual are required.

V. Notes

1. Eligible serial numbers:
   s/n 2001 through 2058

2. Responsibility Transfer
   Initial certification of BO105 LS A-3 by LBA on 7 July 1986 under TC n° 3025.
   As per 25 February 1991, the development responsibility for all BO105 LS A-3 model was transferred from MBB, D-8000 München 80, and the German Federal Aviation Office (LBA) to Messerschmitt-Bölkow-Blohm Helicopter Canada Limited (MCL), Fort Erie, Canada and Transport Canada.

   The Canadian TCDS was n° H-94. The German TCDS shifted to 3058.

   As per 30 June 2009, the development responsibility for all BO105 LS A-3 model was transferred from Eurocopter Canada Limited, Fort Erie, Canada, and Transport Canada to Eurocopter Deutschland GmbH and European Aviation Safety Agency. It was handled under TCDS n° EASA.R.011.

   The Canadian TCDS n° shifted back to H-79.

3. Airworthiness Directives
   The TCCA Airworthiness Directive that are applied at the time of design transfer (see Note 4) are:
   CF-88-07R2, CF-88-18
   CF-91-41
   CF-93-06
   CF-97-18
   CF-2005-17
   CF-2008-17R1
   CF-2009-12

* * *

SECTION 6: BO105 D [D, DS, DB, DB-4, DBS, DBS-4, DBS-5]

I. General

1.	Type/ Model/ Variant	
	1.1 Type	BO105
	1.2 Model	BO105 D
	1.3 Variant	D, DS, DB, DBS, DB-4, DBS-4, DBS-5
2.	Airworthiness Category	Small Rotorcraft (Normal Category)
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 86609 Donauwörth, Germany
4.	Type Certification Application Date	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by	CAA UK: 5 July 1973 LBA: 15 August 1985
7.	Type Certificate n°	CAA UK: FR.3 LBA: 3025 EASA: R.011
8.	Type Certificate Data Sheet n°	CAA UK: UK FR3 until issue n° 4 dated August 1996 LBA: 3025 until issue n° 25, dated 15 March 2004 EASA: EASA.R.011 since issue 1 July 2009
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	FAR 27 (first issue February 1, 1965 including amendments 27-1 through 27-3) amended by ARB Special Condition determined by Special Survey No. 4039 Note: BO105 DBS-5 Group A performance was certificated in accordance with JAR 27 (Appendix C) Issue 1
3.	Special Conditions	none
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	none
7.	Requirements elected to comply	none
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	See TCDSN EASA.R.011.
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	Not required for rotorcraft that are no longer in production. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: 105-800086

2. Description

Main rotor: Hingeless four-bladed main rotor, blades are made of fibreglass reinforced plastics

Tail rotor: two-bladed tail rotor, blades are made of fibreglass reinforced plastics

Fuselage: airframe of semi-monocoque design partly using honeycomb components

Landing gear: skid landing gear

Powerplant: propulsion by two freewheel turbines)

Additional info: horizontal stabiliser with end plates five-seat interior

Differences: The BO105 D differs from the BO105 C by changes to the electrical system and detailed changes to the engine and hydraulic installations. These changes have been defined for the purpose of export to Great Britain and are contained in TN-D13-1/72 (for variants D and DS), TN-DE 03-1/78 (for variant DB), Kit 105-80030 (for variants DBS), Kit 105-80030 in combination with SB BO105-10-106 (for variants DB-4 and DBS-4) and Kit 105800086 (for variant DBS-5).

The technical characteristics and differences of the variants are provided in the following subparagraphs.

3. Equipment: Basic equipment must be installed and operational prior to registration of the helicopter.

4. Dimensions

4.1 Fuselage

Length: 4.55 m
Width hull: 1.58 m
Height: 3.00 m

4.2 Main Rotor

Diameter:
Variants D, DS, DB, DBS, DB-4, DBS-4: 9.84 m
Variant DBS-5: 9.80 m

4.3 Tail Rotor

Diameter: 1.90 m

5. Engine

5.1 Model

Rolls-Royce Corporation (former: Allison)
Variants D, DS:
2 x Model 250-C20, or,
2 x Model 250-C20B
Variants DB, DBS, DB-4, DBS-4, DBS-5:
2 x Model 250-C20B

5.2 Type Certificate

EASA TC/TCDS n°: EASA.IM.E.052
FAA TC/TCDS n°: E4CE (State of Design)
LBA TC/TCDS n°: 7007

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

Engine: 250-C20 (Variants D, DS)	PWR/TQ limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine operation:				
AEO-TOP (5 min)	2 x 235 (79)	52 000 (102)	6 016 (100)	793
AEO-MCP	2 x 235 (79)	51 490 (101)	6 016 (100)	777
One engine inoperative:				
OEI-MCP	1 x 277 (93)	52 000 (102)	6 016 (100)	793

Engine: 250-C20B (Variants D, DS)	TQ transm. limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine operation				
AEO-TOP (5 min)	2 x 235 (79)	53 000 (104)	6 016 (100)	810
AEO-MCP	2 x 235 (79)	52 220 (102)	6 016 (100)	779
One engine inoperative:				
OEI-MCP	1 x 277 (93)	53 000 (104)	6 016 (100)	810

Engine: 250-C20B (Variants: DB, DB-4, DBS, DBS-4, DBS-5)	TQ transm. limits [kW (%)]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [min^{-1} (%)]	Temperature TOT [°C]
All engine operation				
AEO-TOP (5 min)	2 x 257 (86)	53 510 (105)	6 136 (102)	810
AEO-MCP	2 x 257 (86)	53 510 (105)	6 136 (102)	779
One Engine Inoperative				
OEI-MCP	1 x 313 (105)	53 510 (105)	6 016 (100)	810
2,5 min Power	1 x 328 (110)	53 510 (105)	6 016 (100)	810

- Engine limits are at standard atmosphere and sea level
- For temperature and RPM transients refer to the FM.

5.3.2 Other Engine and Transmission Torque Limits

Refer to approved FM

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Refer to approved FM

6.2 Oil — Refer to approved FM

6.3 Additives — Refer to approved FM

7. Fluid capacities

7.1 Fuel — Fuel tank capacity: 580.0 litres
Usable fuel: 570.0 litres

7.2 Oil — Engine oil reservoir capacity per engine: 4.5 litres

7.3 Coolant System Capacity — n/a

8. Air Speed Limitations — V_{NE} = 145 knots (268 km/h) at MSL

Refer to approved FM for reduction in V_{NE} with altitude and other speed limitations

9. Rotor Speed Limitations	Power on:	maximum	102 %	(433 rpm)
		minimum	98 %	(416 rpm)
	Power off:	maximum	110 %	(467 rpm)
		minimum	85 %	(361 rpm)
	Transient:	See EASA approved FM		

10. Maximum Operating Altitude and Temperature

10.1 Altitude

17 000 ft (5 182 m) PA

For variation see approved FM

10.2 Temperature

Refer to approved FM

11. Operating Limitations

VFR day and night

No flight into known icing condition
For additional TO/LDG limitations refer to approved FM.

Variant D, DS:
IFR day and night
Variant DB, DBS, DB-4, DBS-4, DBS-5:
IFR, when equipped and operated in accordance with FMS 11-2
Variant D, DS:
Group A Operation in dependence of applicable Rotorcraft Flight Manual
Variant DB, DBS, DB-4, DBS-4:
Group A Operation, when equipped and operated in accordance with FMS 11-4
Variant DBS-5:
Category A Operation, when equipped and operated in accordance with FMS 11-4

12. Maximum Mass

Variants D, DS:	2 300 kg
Variants DB, DBS:	2 400 kg
Variants DB-4, DBS-4, DBS-5:	2 500 kg

13. Centre of Gravity Range

Longitudinal C.G Limits:

Variants D, DS:
maximum forward limit
3 081 mm aft of DP at 1 800 kg
3 102 mm aft of DP at 2 100 kg
3 125 mm aft of DP at 2 300 kg
maximum rearward limit
3 395 mm aft of DP at 2 100 kg
3 295 mm aft of DP at 2 300 kg
other values on a straight line between the points given.

Variants DB, DBS:
maximum forward limit
3 081 mm aft of DP at 1 800 kg
3 125 mm aft of DP at 2 400 kg
maximum rearward limit
3 395 mm aft of DP at 2 000 kg
3 295 mm aft of DP at 2 400 kg
other values on a straight line between the points given.

		Variants DB-4, DBS-4, DBS-5: maximum forward limit 3 081 mm aft of DP at 1 140 kg 3 038 mm aft of DP at 1 900 kg 3 082 mm aft of DP at 2 500 kg maximum rearward limit 3 395 mm aft of DP at 2 000 kg 3 270 mm aft of DP at 2 500 kg other values on a straight line between the points given. Lateral C.G Limits: maximum deviation on right / left 100 mm up to 2 400 kg 80 mm above 2 400 kg
14.	Datum	Longitudinal: 3 000 mm in front of levelling point, frame 7 Lateral: fuselage median plane
15.	Levelling Means	See Maintenance Manual, Chapter 103
16.	Minimum Flight Crew	one pilot (on right seat)
17.	Maximum Passenger Seating Capacity	four
18.	Passenger Emergency Exit	two (one on each side of the passengers cabin)
19.	Maximum Baggage/ Cargo Loads	Maximum loading of 600 kg/m^2 Small baggage compartment: 20 kg
20.	Rotor Blade Control Movement	For rigging information refer to the Maintenance Manual.
21.	Auxiliary Power Unit (APU)	n/a
22.	Life-limited Parts	The periods specified in the latest revision of the Chapter 11 of the Maintenance Manual must not be exceeded.

IV. Operating and Service Instructions

1.	Flight Manual (FM)	Variants D, DS: Flight Manual BO105 D and BO105 DS, 2nd Issue, firstly approved on 01 September 1982, and subsequent revisions Variants DB, DB-4, DBS, DBS-4: Flight Manual BO105 DB/DBS, 3rd Issue, firstly approved on 10 February 1995 (by CAA-UK), and subsequent revisions. Variants DBS-5: Flight Manual BO105 DBS-5, 1st Issue, firstly approved on 22 November 1994 (by CAA-UK), and subsequent revisions.
2.	Maintenance Manual	Maintenance Manual BO105, issued on 13 October 1970. Plus Chapter 8+9 of MOM D
3.	Structural Repair Manual	Repair Manual BO105
4.	Weight and Balance Manual	Refer to approved FM
5.	Illustrated Parts Catalogue	Illustrated Parts Catalogue BO105
6.	Miscellaneous Manuals	- Wiring Diagram Manual BO105

		- Engine documents as per Engine TCDS n° EASA.IM.E.052
7.	Service Letters and Service Bulletins	- Safety Information Notice (from October 2008 onwards, before: Alert Service Information) - Information Notice (from October 2008 onwards, before: Service Information) - Alert Service Bulletin - Service Bulletin
8.	Required Equipment	Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual are required.

V. Notes

1. Eligible serial numbers:
   s/n 01 to 929 (except s/n for the BO105 A and BO105 LS A-1)

2. Data Plate
   The helicopter model/variant designation provided on the helicopter data plate under ‘Code’ or ‘Model’ or ‘Baumuster’, as applicable, refers to the model/variant as listed in this TCDS.

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SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative
AHD	Airbus Helicopters Deutschland GmbH
Amdt.	Amendment
Amdts.	Amendments
CAA UK	Civil Aviation Authority UK
C.G.	Centre of Gravity
CR	(European) Commission Regulation
DA	Density Altitude
DOA	Design Organisation Approval
DP	Datum Point/Plane
ECD	Eurocopter Deutschland GmbH
ECL	Eurocopter Canada Limited
EU	European Union
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FM	Flight Manual
FMS	Flight Manual Supplement
ft	foot
IFR	Instrument Flight Rules
Imp. Gal.	Imperial Gallons
JAR	Joint Aviation Requirements
KIAS	Knots Indicated Air Speed
km/h	Kilometer per hour
LBA	Luftfahrt-Bundesamt (German Federal Aviation Office)
LDG	Landing
max.	Maximum
MBB	Messerschmitt-Bölkow-Blohm GmbH
MCL	Messerschmitt-Bölkow-Blohm Helicopter Canada Limited
MCP	Maximum Continuous Power
min.	Minimum
MMEL	Master Minimum Equipment List
MSL	Mean Sea Level
n/a	not applicable
n°	Number
OEI	One Engine Inoperative
OSD	Operational Suitability Data
p/n	Part Number
PA	Pressure Altitude
PWR	Power
rpm	Rounds per minute
s/n	Serial Number
SB	Service Bulletin
sec	Seconds
shp	Shaft Horse Power
TC	Type Certificate
TCCA	Transport Canada Civil Aviation
TO	Take-Off
TOP	Take-Off Power
TOT	Turbine Outlet Temperature
TQ	Torque
VFR	Visual Flight Rules
V_{NE}	Never Exceed Speed
VTOL	Vertical Take-Off and Landing

II. Type Certificate Holder Record

II.1 Type Certificate Holder	**Period**
For models BO105 A, BO105 C, BO105 S, BO105 LS A-1, BO105 D	
Messerschmitt-Bölkow-Blohm GmbH (MBB) Postfach 801140 8000 München 80, Germany	From 13 October 1970 until 9 July 2009
Eurocopter Deutschland GmbH (ECD) 86607 Donauwörth, Germany	From 10 July 2009 until 6 January 2014
Airbus Helicopters Deutschland GmbH (AHD) Industriestraße 4 86609 Donauwörth, Germany	since 7 January 2014
For models BO105 LS A-3	
Messerschmitt-Bölkow-Blohm GmbH (MBB) Postfach 80 11 40 8000 München 80, Germany	From 13 October 1970 until 24 February 1991

II.1 Type Certificate Holder	**Period**
Messerschmitt-Bölkow-Blohm Helicopter Canada Limited (MCL) Fort Erie/Ontario, Canada	From 25 February 1991 until 19 March 1992
Eurocopter Canada Limited (ECL) Fort Erie/Ontario, Canada	From 20 March 1991 until 9 July 2009
Eurocopter Deutschland GmbH (ECD) 86607 Donauwörth, Germany	From 10 July 2009 until 6 January 2014
Airbus Helicopters Deutschland GmbH (AHD) Industriestraße 4 86609 Donauwörth, Germany	since 7 January 2014

II.2 Contracted DOA Holder (21.A.2)	**Period**
DOA Certificate No. EASA.21J.700 held by: Airbus Helicopters Aéroport International Marseille-Provence 13725 Marignane CEDEX, France	since 21 June 2016

III. Manufacturer Record

Manufacturer	**Period**
For models BO105 A, BO105 C, BO105 S, BO105 LS A-1, BO105 D	
Messerschmitt-Bölkow-Blohm GmbH (MBB) Unternehmensbereich Drehflügler und Verkehr bzw. Unternehmensgruppe Hubschrauber und Flugzeuge Postfach 1350 8850 Donauwörth 80, Germany	until December 1991
Eurocopter Hubschrauber Deutschland GmbH Postfach 1353 8850 Donauwörth, Germany	From December 1991 until May 1992
Eurocopter Deutschland GmbH (ECD) Postfach 1353 8850 Donauwörth 86603 Donauwörth 86607 Donauwörth, Germany	From May 1992 until January 2014
Airbus Helicopters Deutschland GmbH (AHD) Industriestraße 4 86609 Donauwörth, Germany	since January 2014
For models BO105 LS A-3	
Messerschmitt-Bölkow-Blohm GmbH (MBB) Postfach 801140 8000 München 80, Germany (s/n from 2001 up to 2016 under LBA TCDS n° 3025)	not available
Messerschmitt-Bölkow-Blohm Helicopter Canada Limited (MCL) Fort Erie/Ontario, Canada (s/n from 2017 up to 2032 under TCCA TCDS n° H-79, and, s/n from 2033 up to 2058 under TCCA TCDS n° H-94)	until 19 March 1991
Eurocopter Canada Limited (ECL) Fort Erie/Ontario, Canada	From 20 March 1991 until 9 July 2009
Eurocopter Deutschland GmbH (ECD) 86607 Donauwörth, Germany	From 10 July 2009 until 6 January 2014
Airbus Helicopters Deutschland GmbH (AHD) Industriestraße 4 86609 Donauwörth, Germany	since 7 January 2014

IV. Change Record

Issue	Date	Changes	TC issue
Issue 1	1 Jul 2009	Initial issue of EASA TCDS Transfer of grandfathered: - LBA TCDS n° 3025, Revision 25 dated 15 March 2004 (BO105 A, C, S, LS A-1, D) - CAA UK TCDS n° UK FR.3, Issue 4 dated August 1996 (BO105 D) - LBA TCDS n° 3058, Issue 1 dated 25 February 1991 (BO105 LS A-3) - TCCA TCDS n° H-94, Issue 3 dated 31 July 1994 (BO105 LS A-3)	Re-issued on 10 July 2009
Issue 2	7 Jan 2014	The company name has been changed to AIRBUS HELICOPTERS Deutschland GmbH	Re-issued on 7 January 2014
Issue 3	4 Jul 2017	New TCDS format; reference to OSD; minor editorial corrections; reference II.2 to contracted DOA added in Section: Administrative; correction of the IFR applicability; correction of the CAT-A, CAT-A (equivalent) and Group A applicability	- - -

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