TYPE-CERTIFICATE

DATA SHEET

NO. EASA.A.357

for
BÖLKOW BO 209

Type Certificate Holder
Airbus Defence and Space

Willy-Messerschmitt-Straße 1
82024 Taufkirchen
Germany

For models: Bölkow BO 209 MONSUN
Bölkow BO 209 S

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CONTENT

SECTION A: BÖLKOW BO 209 MONSUN

A.I. General

1.	a) Type:	Bölkow BO 209
	b) Model:	Bölkow BO 209 MONSUN
2.	Airworthiness Category:	Normal
	(see note A.V.2.)	Utility
3.	Type Certificate Holder:	Airbus Defence and Space GmbH Willy-Messerschmitt-Straße 1 82024 Taufkirchen, Germany
4.	Contracted DOA Holder:	N/A
5.	Manufacturer:	Messerschmitt-Bölkow-Blohm GmbH Am Flugplatz 7958 Laupheim, Germany Pneuma-Technik, E. Ficht Thomas-Mayr-Strasse 4 8018 Grafing, Germany
6.	(Reserved)	
7.	Type Certification in Federal Republic of Germany by Luftfahrt-Bundesamt	9 April 1970

The EASA TCDS is based on the LBA TCDS No. 680/SA for BO 209 MONSUN (at Issue 9, dated 12 April 2005).

A.II. EASA Certification Basis

1.	Airworthiness Requirements:	S/N 101 through 180: FAR-23, Amendment 23-1 through 23-6 S/N 181 and up: FAR-23, Amendment 23-1 through 23-9
2.	Environmental Standards:	ICAO Annex 16, Vol. I; for details see TCDSN.A.357

A.III. Technical Characteristics and Operational Limitations

1. Description: Single-engine, cantilever low-wing aircraft with nose wheel configuration, all-metal construction; nose wheel fixed or retractable

2. Equipment: Required equipment as per airworthiness requirements. Refer to Flight Manual BO 209 MONSUN for required equipment and information on possible equipment

3. Dimensions: Wing Span: 8,4 m
   Length: 6,6 m
   Height: 2,2 m

4. Engine:

   4.1 Model: Engine 1: Lycoming AIO-320-C1B
   Engine 2: Lycoming IO-320-D1A
   Engine 3: Lycoming IO-320-D1B
   Engine 4: Lycoming O-320-E1C
   Engine 5: Lycoming O-320-E1F
   Engine 6: Lycoming O-320-E2C
   Engine 7: Lycoming O-320-E2F

   4.2 Type Certificate: Engine 1 - 3: US 1E12
   Engine 4 - 7: US E-274

   4.3 Limitations: Engine 1: (from S/N 181, except 188) 160 HP at 2700 rpm
   Engine 2 - 3: 160 HP at 2700 rpm
   Engine 4 - 7: 150 HP at 2700 rpm

5. Propeller:

   5.1 Model: Propeller 1[1), 2)]: Hartzell HC-C2YL-1B/7663 A-6
   [1)] For engines 1, 2 and 3:
   Max. pitch 27°, min. pitch 14° 57', measured at R = 76.2 cm
   [2)] For engines 4 and 5:
   Max. pitch 27°, min. pitch 12° 12', measured at R = 76.2 cm

Propeller 2[3)]: McCauley 1C172/MGM 70.5-60 resp. -66

[3)] For engines 6 and 7:

Pitch: 60 inch resp. 66 inch

Rotating speed on ground: 2100 – 2400 rpm

See section V.2 for further engine-propeller combinations

5.2 Type Certificate: Propeller 1: EASA.IM.P.130
Propeller 2: US P-910

5.3 Number of blades: 2

5.4 Diameter: Propeller 1: 178 cm (70 inch)
Propeller 2: 179 cm (70,5 inch)

5.5 Sense of Rotation: Clockwise

6. Fluids:

6.1 Fuel: Engines 1 through 3: 100/130 octane or 100 LL
Engines 4 through 7: 80/87 octane or 100 LL

6.2 Oil: SAE 50 above 15°C (60°F)
SAE 40 from 0°C (32°F) to 32°C (90°F)
SAE 30 from -18°C (0°F) to 21°C (70°F)
SAE 20 below -12°C (10°F)

7. Fluid capacities:

7.1 Fuel: Max. fuel: 2 x 74 l (148 l)
Usable fuel quantity: 2 x 73 l (146 l)

7.2 Oil: 7,4 l

8. Air Speeds:

	No Ut1	 Ut2
Max. permissible Speed V_{NE}:	173 kt	183 kt
Manoeuvring speed V_A:	117 kt	127 kt
Cruising speed V_{NO}:	135 kt	134 kt
Flaps extended V_{FE}:	88 kt	94 kt
Speed for lowering		

landing gear V_{LO}:	104 kt	104 kt
Speed w/ landing gear extended V_{LE}:	173 kt	183 kt

No: Normal category
Ut1: Utility category (up to S/N 180 plus 188)
Ut2: Utility category (from S/N 181 except 188)

9. (Reserved)

10. Load factors:

Normal category: -1,9 g to +3,8 g
Utility category: -2,2 g to +4,4 g

11. Maximum Weights:

820 kg Normal category
710 kg Utility category up to S/N 180 plus 188
740 kg Utility category from S/N 181 except 188

12. Centre of Gravity Range:

<u>Normal category</u>

@ 820 kg	from 220,8 cm to 227,0 cm
@ 575 kg or less	from 217,1 cm to 227,0 cm

<u>Utility category up to S/N 180 plus 188</u>

@ 710 kg	from 219,1 cm to 227,0 cm
@ 575 kg or less	from 217,1 cm to 227,0 cm

<u>Utility category from S/N 181 except 188</u>

@ 740 kg	from 219,6 cm to 227,0 cm
@ 575 kg or less	from 217,1 cm to 227,0 cm

13. Datum:

Reference plane: 1918 mm forward of leading edge of wing profile at slit cladding joint
Attitude: levelling points on left side of fuselage horizontal
Empty-weight balance point: 215 to 217 cm aft of ref. plane

14. Levelling Means: Refer to Maintenance Manual

15. Control surface deflections: Refer to Section A.V, notes 6 through 8

16. Minimum Flight Crew: 1 pilot

17. Maximum Passenger Seating Capacity: 1 passenger

18. Baggage/Cargo Compartments: Max. 50 kg in baggage compartment

19. Wheels and Tyres: Refer to Maintenance Manual

20. (Reserved):

A.IV. Operating and Service Instructions

1. Manual for Operation:
   a) Flight Manual BO 209, Monsun, MBB-Nr. LF 5D-3/70 (up to S/N 180 plus 188), LBA-approved 9 April 1970, including relevant amendments.
   b) Flight Manual BO 209 Monsun, MBB-Nr. LF 36D-6/71 (from S/N 181, except S/N 188), LBA-approved 15 November 1971, including relevant amendments.
   c) Information labels pursuant to flight manual

2. Technical Manual:
   a) Maintenance Manual BO 209 MONSUN, MBB-Nr. LF 5D-7/70 (up to S/N 180 plus 188), resp. MBB-Nr. LF 40D-9/71 from S/N 181, except S/N 188)
   b) Spare parts catalogue
   c) Operating instructions as per engine data sheet No. 4578 (O-320 and AIO-320), resp. No. 4576 (IO-320 and AIO-320)
   d) Hartzell or McCauley propeller manual
   e) Technical Notes

   The operating instructions can be obtained from the holder of type approval.

A.V. Notes:

1. Eligible Serial Numbers
   101 through 201: MBB
   301 and following: Pneuma-Technik

2. Airworthiness categories
   Serial numbers 101 through 180 and 188: Normal and Utility
   From S/N 181 and up, except 188: originally approved for aerobatics, they have been limited to Normal, Utility as per the LBA LTA 1986-255/2 dated Jan. 27th 1987.

3. Information on type certification approval: Type Certification was granted on the basis of a type inspection on application of Messerschmitt-Bölkow-Blohm GmbH, Ottobrunn, Germany on 9 April 1970, expanded on 9 July 1971 and 5 November 1971. This certification applies for serial numbers 101 through 201 (MBB/Ottobrunn) and 301 and following (Pneuma-Technik, E. Ficht/Grafing near Munich).

4. Supplemental Type Certificates (without separate STC)

a) Sailplane towing is permissible when the towing gear acc. to drawing no. 209-85003 of MBB has been properly installed and is operated according to Flight Manual annex "Towing Flight". Towing of non-rigid tow-hook banners is permissible when the towing gear acc. to drawing no. 209-87000 of MBB has additionally been properly installed.

b) Aircraft with S/N 102, 121 through 180 and 188 can be converted to the build standard of S/N 181 according to MBB conversion instruction 209-09200. Operation of the converted aircraft must conform to operating instruction
LF 36D-6/71 (15 November 1971).

c) Aircraft with S/N V0 and from 131 on can be equipped with larger wing caps pursuant to MBB conversion instruction 209-09210. The large rudder specified in the conversion instruction must be used with the large wing caps. The operating limits specified in the flight manual remain unchanged. Flights in the airworthiness group aerobatic aircraft may not be executed. The maximum weight limit in the utility airworthiness class remains limited to 710 kg.

d) Installation of a Christen reflux oil system (extended modification) is permissible. Original Christen parts (equipment set) including the corresponding manual are to be used. Observe the Flight Manual annex BO 209 Christen System. The aforementioned documentation can be obtained from Christen Industries, Inc. 1048 Santa Ana Valley Road, Hollister, California 95023 or from the aircraft manufacturer.

e) Installation of the Hoffmann 3-blade propeller HO-V123L180R-10 in conjunction with the engines Lycoming IO-320-D1A und D1B is permissible. Conversion instruction 152 and the annex to the Flight Manual for the Hoffman adjustable propeller (153) are to be observed. The documentation is available from Hoffmann GmbH & Co. KG, Küpferlingstr. 9, 8200 Rosenheim 2, Germany.

f) Installation of the 3-blade propeller HO-V 123L/180R-10 in conjunction with the engines Lycoming O-320 E1C und E1F is permissible. Conversion instruction 152 and the appendix to the flight manual for the Hoffman adjustable propeller 153 (LBA-recognised 5 March 1984) are to be observed. The documentation is available from Hoffmann GmbH & Co. KG, Postfach 2 65, 8200 Rosenheim 2, Germany.

5. Rudder angles (degrees with reference to wing chord resp. longitudinal axis of aircraft):

Landing flaps down	35°	+0°/-3°			
Ailerons	up	29°	± 1°	down 14°	± 1°
Rudder	left	28°	± 2°	right 28°	± 2°
Elevator	up	18°	± 1°	down 9°	± 1°

6. Elevator trim tab for ailerons in normal position. Distances in mm between rear edge of trim tab and rear edge of aileron wing cap.

Trim nose-heavy	+ 5 mm	± 2 mm
Trim neutral	- 8 mm	± 2 mm

Trim tail-heavy	- 17 mm	± 2 mm
Overall trim range	22 mm	± 4 mm

7. Rudder angles of elevator trim tabs for engine AIO - 320:

Trim nose-heavy	+ 16 mm	± 2 mm
Trim neutral	+ 2 mm	± 2 mm
Trim tail-heavy	- 7 mm	± 2 mm
Overall trim range	23 mm	± 4 mm

SECTION B: BÖLKOW BO 209 S

B.I. General

1. a) Type:	Bölkow BO 209
b) Model:	Bölkow BO 209 S
2. Airworthiness Category:	Normal Utility
3. Type Certificate Holder:	Airbus Defence and Space GmbH Willy-Messerschmitt-Straße 1 82024 Taufkirchen, Germany
4. Contracted DOA Holder:	N/A
5. Manufacturer:	Messerschmitt-Bölkow-Blohm GmbH Am Flugplatz 7958 Laupheim, Germany Pneuma-Technik, E. Ficht Thomas-Mayr-Strasse 4 8018 Grafing, Germany
6. (Reserved)	
7. Type Certification in Federal Republic of Germany by Luftfahrt-Bundesamt	13 March 1972

The EASA TCDS is based on the LBA TCDS No. 680/SA for BO 209 S (at Issue 9, dated 12 April 2005)

B.II. EASA Certification Basis

1. Airworthiness Requirements:	FAR-23, Amendment 23-1 through 23-9
2. Environmental Standards:	ICAO Annex 16, Vol. I; for details see TCDSN.A.357

B.III. Technical Characteristics and Operational Limitations

1. Description: Single-engine, cantilever low-wing aircraft with nose wheel configuration, all-metal construction; nose wheel fixed

2. Equipment: Required equipment as per airworthiness requirements. Refer to Flight Manual BO 209 MONSUN (Edition LF 38D-9/71) for required equipment and information on possible equipment

3. Dimensions: Wing Span: 8,4 m
   Length: 6,6 m
   Height: 2,2 m

4. Engine:
   - 4.1 Model: Rolls Royce RR O-240-A
   - 4.2 Type Certificate: US E11EU
   - 4.3 Limitations: Engine 1: 130 HP at 2800 rpm

5. Propeller:
   - 5.1 Model: McCauley 1C172/EM 70,5-55
   - 5.2 Type Certificate: US P-910
   - 5.3 Number of blades: 2
   - 5.4 Diameter: 179 cm (70,5 inch)
     Pitch: 55 inch
     Max. speed 2250 – 2350 rpm
   - 6.5 Sense of Rotation: Clockwise

6. Fluids:
   - 6.1 Fuel: 100/130 octane or 100 LL
   - 6.2 Oil: SAE 30 below 5°C (41°F)
     SAE 50 above 5°C (41°F)

7. Fluid capacities:

7.1 Fuel:	Max. fuel: 2 x 74 l (148 l) Usable fuel quantity: 2 x 73 l (146 l)
7.2 Oil:	5,7 l

8. Air Speeds:	Speed V_{NE}:	173 kt
	Manoeuvring speed V_A:	117 kt
	Cruising speed V_{NO}:	135 kt
	Flaps extended V_{FE}:	88 kt

9. (Reserved)

10. Load factors:	Normal category: -1,9 g to +3,8 g Utility category: -2,2 g to +4,4 g
11. Maximum Weights:	Normal category 760 kg Utility category 710 kg

12. Centre of Gravity Range:	<u>Normal category</u>	
	@ 760 kg	from 220,0 cm to 227,0 cm
	@ 575 kg or less	from 217,1 cm to 227,0 cm
	<u>Utility category</u>	
	@ 710 kg	from 219,1 cm to 227,0 cm
	@ 575 kg or less	from 217,1 cm to 227,0 cm

13. Datum:	Reference plane: 1918 mm forward of leading edge of wing profile at slit cladding joint Attitude: levelling points on left side of fuselage horizontal Empty-weight balance point: 215 to 217 cm aft of ref. plane
14. Levelling Means:	Refer to Maintenance Manual
15. Control surface deflections:	See under B.V. notes 4 and 5
16. Minimum Flight Crew:	1 pilot
17. Maximum Passenger Seating Capacity:	1 passenger

18. Baggage/Cargo Compartments: Max. 50 kg in baggage compartment

19. Wheels and Tyres: Refer to Maintenance Manual

20. (Reserved):

B.IV. Operating and Service Instructions

1. Flight Manual
   a) Flight Manual BO 209 S Monsun, MBB-Nr. LF 38D-9/71, LBA-approved 15 November 1971, including relevant amendments.
   b) Information labels pursuant to flight manual

2. Technical Manual:
   a) Maintenance Manual BO 209 MONSUN, MBB-Nr. LF 40D-9/71, LBA-approved 15 November 1971 including relevant amendments
   b) Spare parts catalogue Bo 209 MONSUN
   c) Operating and Maintenance Handbook Rolls Royce Continental O-240
   d) McCauley Propeller Manual
   e) Technical Notes (Service Bulletins, Letters, Instructions)

B.V. Notes:

1. Eligible Serial Numbers:
   119, 131 through 201: MBB
   301 and following: Pneuma-Technik

2. Type approval was granted on the basis of a type inspection on application of Messerschmitt-Bölkow-Blohm GmbH, Ottobrunn, Germany on 9 April 1970, expanded on 9 July 1971 and 5 November 1971.

3. Aircraft with S/N 131 through 180 and 188 can be converted to the build state of S/N 181 according to MBB conversion instruction 209-09200. Operation of the converted aircraft must conform to operating instruction LF 36D-6/71 (15 November 1971).

4. Rudder angles (degrees with reference to wing chord resp. longitudinal axis of aircraft):

Landing flaps	down	35°	+0°/-3°				
Ailerons		up	29°	± 1°		down 14°	± 1°
Rudder		left	28°	± 2°		right 28°	± 2°
Elevator		up	18°	± 1°		down 9°	± 1°

5. Elevator trim tab for ailerons in normal position. Distances in mm between rear edge of trim tab and rear edge of aileron wing cap.

Trim nose-heavy	+ 5 mm	± 2 mm
Trim neutral	- 8 mm	± 2 mm
Trim tail-heavy	- 17 mm	± 2 mm
Overall trim range	22 mm	± 4 mm

ADMINISTRATIVE SECTION

I. Acronyms

CAR	Civil Aviation Regulations
DVL/PfL	Deutsche Versuchsanstalt für Luftfahrt / Prüfstelle für Luftfahrtgerät
FAA	Federal Aviation Administration
LBA	Luftfahrt-Bundesamt
LSL	Lärmschutzforderungen für Luftfahrzeuge
N/A	Not applicable
SAE	Society of Automotive Engineers
TCDS	Type Certificate Data Sheet

II. Type Certificate Holder Record

Day of Entry	Company name (Legal entity)
11.07.1969	Messerschmitt-Bölkow-Blohm GmbH
01.04.1992	Messerschmitt-Bölkow-Blohm AG
30.09.1992	Deutsche Aerospace AG
02.01.1995	Daimler-Benz Aerospace AG
17.11.1998	Daimler Chrysler Aerospace AG
10.07.2000	EADS Deutschland GmbH
01.07.2014	Airbus Defence and Space GmbH

III. Change Record

Issue	Date	Changes	TC Issue No. & Date
1	02/02/2015	Initial issue after TC transfer	1, 02/02/2015
2	22/06/2015	Type Certificate Holder Record revised	1, 02/02/2015
3	13/11/2018	Change of TC holder address. Note in section A.V. on airworthiness categories added	2, 13/11/2018