Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.R.00016

for

MBB-BK117

Type Certificate Holder

Airbus Helicopters Deutschland GmbH

Industriestrasse 4

D-86609 Donauwörth

Germany

Model(s):	MBB-BK117 A-1 MBB-BK117 A-3, MBB-BK117 A-4, MBB-BK117 B-1, MBB BK117 B-2, MBB-BK117 C-1, MBB-BK117 C-2, MBB-BK117 D-2, MBB-BK117 D-2m MBB-BK117 D-3, MBB-BK117 D-3m.
Issue:	3
Date of issue:	20/12/2023

Copies of this document are not controlled and printed copies only valid on date of print.

TABLE OF CONTENTS

Copies of this document are not controlled and printed copies only valid on date of print.

Copies of this document are not controlled and printed copies only valid on date of print.

Note: In this TCDS, references to EU regulations are to those regulations as retained and amended in UK domestic law under the European Union (Withdrawal) Act 2018 and are referenced as “UK Regulation (EU) year/number or UK Regulation (EU) No. number/year”.

Copies of this document are not controlled and printed copies only valid on date of print.

Section 1 MBB-BK117 A-1

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 A-1

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, II.3

5. Type Certification Application Date

Not recorded.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: ---

For Operational Suitability Data (OSD) elements: N/A

2. Airworthiness Requirements

FAR 29 Amdts. 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter, dated 10 December 1979, and revised on 3 January 1980, consisting of:

- SC No. 1: Check Procedures
- SC No. 2: Engine Failure Warning System
- SC No. 3: Turbine Engine Bleed Air System
- SC No. 4: One Engine Inoperative Maximum Continuous Power
- SC No. 5: Lightning Protection of Structure and Occupants

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.175 (b) Demonstration of static longitudinal stability
- FAR 29.811 (h) (1) Emergency exit marking
- FAR 29.1151 (b) Rotor brake controls

7. Requirements elected to comply

None.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

N/A

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

Note: OSD not required for rotorcraft that are no longer in production. UK (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Master List Drawing No. 117-A3-99.

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	9.98 m
Width hull:	2.71 m
Height:	3.36 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Honeywell International Inc
2 x Model LTS 101-650B-1

5.2. Type Certificate

FAA TC/TCDS No.: E5NE.
CAA TC/TCDS No.: EASA.IM.E.228.

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 71	49 159 (102.7)	6 120 (102)	782
AEO-MCP	2 x 71	49 159 (102.7)	6 120 (102)	763
2½ min OEI-TOP	1 x 100	50 548 (105.6)	6 120 (102)	832
30 min OEI-TOP	1 x 91.5	50 169 (104.8)	6 120 (102)	796
OEI-MCP	1 x 83	49 159 (102.7)	6 120 (102)	763

Copies of this document are not controlled and printed copies only valid on date of print.

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM

6.2. Oil

Refer to approved RFM

6.3. Additives

Refer to approved RFM

7. Fluid Capacities

7.1. Fuel

Fuel tank capacity:	607.6 litres
Usable fuel:	598.0 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Maximum	102 %	390.7 rpm
Minimum	98 %	375.3 rpm

Power off:

Maximum	104 %	398.3 rpm
Minimum	80 %	306.4 rpm (up to 2 000 kg)
Minimum	85 %	325.5 rpm (above 2 000 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

15 000 ft (4 572 m),
11 000 ft (3 353 m) DA for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

Copies of this document are not controlled and printed copies only valid on date of print.

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Mass

2850 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 375 mm aft of DP at 1 700 kg
4 337 mm aft of DP at 2 000 kg
4 415 mm aft of DP at 2 850 kg
maximum rearward limit:
4 670 mm aft of DP at 1 700 kg
4 565 mm aft of DP at 2 850 kg
Lateral C.G Limits
maximum deviation on right / left: 100 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 4 000 mm forward of the levelling point 4/5 in the rear door aperture
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 A/B, Appendix C

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

Seven (or ten, if the kit described in RFMS 10-8 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

1 200 kg (250 kg aft of rear seat bank), loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 A/B

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Appendix A of the Maintenance Manual MBB-BK117 A/B

Copies of this document are not controlled and printed copies only valid on date of print.

IV Operating and Service Instructions

1. Flight Manual

BK117 A-1, initially LBA-approved, dated 9 December 1982, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

- MBB-BK117 A/B Maintenance Manual
- Wiring Diagram Manual MBB-BK117
- Engine documents as per TCDS EASA.IM.E.228

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

6. 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 Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 – Series

2. Flight Crew Data

Reserved.

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers: s/n 7001 to 7006, 7008 to 7046, 7048 to 7054.

Copies of this document are not controlled and printed copies only valid on date of print.

2. According to AHD fleet data MBB-BK117 A-1 models are no longer in service since 2005. Consequently, AHD issued Technical Information Letter N° BK117 006-2005 to inform about the decision to stop the revision service for the Flight Manual of the BK 117 to AHD A-1.

   Nonetheless, some rotorcraft have been altered from MBB-BK117 A-1 type design to MBB-BK117 B-1 or MBB-BK117 B-2 type design.

   Therefore, it has been decided to keep for this TCDS UK.TC.R.00016 for all MBB-BK117 A-1 data as reference for any potential future need.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 2 MBB-BK117 A-3

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 A-3

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, subsection II.3

5. Type Certification Application Date

Not recorded.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: Not Recorded
For Operational Suitability Data (OSD) elements: N/A

2. Airworthiness Requirements

FAR 29 Amdts. 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter, dated 10 December 1979, and revised on 3 January 1980, consisting of:

- SC No. 1: Check Procedures
- SC No. 2: Engine Failure Warning System
- SC No. 3: Turbine Engine Bleed Air System
- SC No. 4: One Engine Inoperative Maximum Continuous Power
- SC No. 5: Lightning Protection of Structure and Occupants

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.175 (b) Demonstration of static longitudinal stability
- FAR 29.811 (h) (1) Emergency exit marking
- FAR 29.1151 (b) Rotor brake controls

7. Requirements elected to comply

None.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

N/A

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

Note: OSD not required for rotorcraft that are no longer in production. UK (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Master List Drawing No. 117-A3-99.

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	9.98 m
Width hull:	2.71 m
Height:	3.36 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Honeywell International Inc
2 x Model LTS 101-650B-1

5.2. Type Certificate

FAA TC/TCDS No.: E5NE.
CAA TC/TCDS No.: EASA.IM.E.228.

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 71	49 159 (102.7)	6 120 (102)	782
AEO-MCP	2 x 71	49 159 (102.7)	6 120 (102)	763
2½ min OEI-TOP	1 x 100	50 548 (105.6)	6 120 (102)	832
30 min OEI-TOP	1 x 91.5	50 169 (104.8)	6 120 (102)	796
OEI-MCP	1 x 83	49 159 (102.7)	6 120 (102)	763

Copies of this document are not controlled and printed copies only valid on date of print.

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Fuel tank capacity:	607.6 litres
Usable fuel:	598.0 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Maximum	102 %	390.7 rpm
Minimum	98 %	375.3 rpm

Power off:

Maximum	104 %	398.3 rpm
Minimum	80 %	306.4 rpm (up to 2 000 kg)
Minimum	85 %	325.5 rpm (above 2 000 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

15 000 ft (4 572 m) up to 3 000 kg,
10 000 ft (3 048 m) above 3 000 kg,
12 000 ft (3 658 m) if OAT is below -30°C
11 000 ft (3 353 m) DA for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

Copies of this document are not controlled and printed copies only valid on date of print.

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Mass

3200 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 375 mm aft of DP at 1 700 kg
4 337 mm aft of DP at 2 000 kg
4 447 mm aft of DP at 3 200 kg
maximum rearward limit:
4 670 mm aft of DP at 1 700 kg
4 533 mm aft of DP at 3 200 kg
Lateral C.G Limits
maximum deviation on right / left:

up to 2 850 kg	100 mm
above 2 850 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 4 000 mm forward of the levelling point 4/5 in the rear door aperture
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 A/B, Appendix C

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

seven (or ten, if the kit described in RFMS 10-8 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

1 200 kg (250 kg aft of rear seat bank), loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 A/B

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Appendix A of the Maintenance Manual MBB-BK117 A/B

Copies of this document are not controlled and printed copies only valid on date of print.

IV Operating and Service Instructions

1. Flight Manual

BK117 A-3, initially LBA-approved, dated 15 March 1985, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

- MBB-BK117 A/B Maintenance Manual
- Wiring Diagram Manual MBB-BK117
- Engine documents as per TCDS EASA.IM.E.228

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

6. 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 Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 – Series

2. Flight Crew Data

Reserved.

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers: s/n 7055 to 7073, 7075 to 7099, 7101 to 7121, and upgraded MBB-BK 117 A-1 models according to SB-MBB-BK 117-10-4.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 3 MBB-BK 117 A-4

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 A-4

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, subsection II.3

5. Type Certification Application Date

Not recorded.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: Not Recorded
For Operational Suitability Data (OSD) elements: N/A

2. Airworthiness Requirements

FAR 29 Amdts. 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter, dated 10 December 1979, and revised on 3 January 1980, consisting of:

- SC No. 1: Check Procedures
- SC No. 2: Engine Failure Warning System
- SC No. 3: Turbine Engine Bleed Air System
- SC No. 4: One Engine Inoperative Maximum Continuous Power
- SC No. 5: Lightning Protection of Structure and Occupants

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.175 (b) Demonstration of static longitudinal stability
- FAR 29.811 (h) (1) Emergency exit marking
- FAR 29.1151 (b) Rotor brake controls

7. Requirements elected to comply

None.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

N/A

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

Note: OSD not required for rotorcraft that are no longer in production. UK (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Master List Drawing No. 117-A4-99.

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	9.98 m
Width hull:	2.71 m
Height:	3.36 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Honeywell International Inc
2 x Model LTS 101-650B-1

5.2. Type Certificate

FAA TC/TCDS No.: E5NE.
CAA TC/TCDS No.: EASA.IM.E.228.

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 83	49 159 (102.7)	6 120 (102)	782
AEO-MCP	2 x 71	49 159 (102.7)	6 120 (102)	763
2½ min OEI-TOP	1 x 100	50 548 (105.6)	6 120 (102)	832
30 min OEI-TOP	1 x 91.5	50 169 (104.8)	6 120 (102)	796
OEI-MCP	1 x 83	49 159 (102.7)	6 120 (102)	763

Copies of this document are not controlled and printed copies only valid on date of print.

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Fuel tank capacity:	607.6 litres
Usable fuel:	598.0 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Maximum	102 %	390.7 rpm
Minimum	98 %	375.3 rpm

Power off:

Maximum	104 %	398.3 rpm
Minimum	80 %	306.4 rpm (up to 2 000 kg)
Minimum	85 %	325.5 rpm (above 2 000 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

15 000 ft (4 572 m) up to 3 000 kg,
10 000 ft (3 048 m) above 3 000 kg,
12 000 ft (3 658 m) if OAT is below -30°C
11 000 ft (3 353 m) DA for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

Copies of this document are not controlled and printed copies only valid on date of print.

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Mass

3200 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 375 mm aft of DP at 1 700 kg
4 337 mm aft of DP at 2 000 kg
4 447 mm aft of DP at 3 200 kg
maximum rearward limit:
4 670 mm aft of DP at 1 700 kg
4 533 mm aft of DP at 3 200 kg
Lateral C.G Limits
maximum deviation on right / left:

up to 2 850 kg	100 mm
above 2 850 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 4 000 mm forward of the levelling point 4/5 in the rear door aperture
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 A/B, Appendix C

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

seven (or ten, if the kit described in RFMS 10-8 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

1 200 kg (250 kg aft of rear seat bank), loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 A/B

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Appendix A of the Maintenance Manual MBB-BK117 A/B

Copies of this document are not controlled and printed copies only valid on date of print.

IV Operating and Service Instructions

1. Flight Manual

BK117 A-4, initially LBA-approved, dated 29 July 1986, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

- MBB-BK117 A/B Maintenance Manual
- Wiring Diagram Manual MBB-BK117
- Engine documents as per TCDS EASA.IM.E.228

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

6. 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 Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 – Series

2. Flight Crew Data

Reserved.

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers: s/n 7047, 7074, 7100, 7122 to 7139, and upgraded MBB-BK 117 A-3 models according to SB-MBB-BK 117-80-105.

Copies of this document are not controlled and printed copies only valid on date of print.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 4 MBB-BK117 B-1

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 B-1

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, II.3

5. Type Certification Application Date

Not recorded.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: Not Recorded
For Operational Suitability Data (OSD) elements: N/A

2. Airworthiness Requirements

FAR 29 Amdts. 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter, dated 10 December 1979, and revised on 3 January 1980, consisting of:

- SC No. 1: Check Procedures
- SC No. 2: Engine Failure Warning System
- SC No. 3: Turbine Engine Bleed Air System
- SC No. 4: One Engine Inoperative Maximum Continuous Power
- SC No. 5: Lightning Protection of Structure and Occupants

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.175 (b) Demonstration of static longitudinal stability
- FAR 29.811 (h) (1) Emergency exit marking
- FAR 29.1151 (b) Rotor brake controls

7. Requirements elected to comply

None.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

N/A

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

Note: OSD not required for rotorcraft that are no longer in production. UK (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Master List Drawing No. 117-B1-99.

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	9.98 m
Width hull:	2.71 m
Height:	3.36 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Honeywell International Inc
2 x Model LTS 101-750B-1

5.2. Type Certificate

FAA TC/TCDS No.: E5NE.
CAA TC/TCDS No.: EASA.IM.E.228.

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 83	49 159 (102.7)	6 120 (102)	786
AEO-MCP	2 x 71	49 159 (102.7)	6 120 (102)	765
2½ min OEI-TOP	1 x 100	50 548 (105.6)	6 120 (102)	836
30 min OEI-TOP	1 x 91.5	50 169 (104.8)	6 120 (102)	800
OEI-MCP	1 x 83	49 159 (102.7)	6 120 (102)	765

Copies of this document are not controlled and printed copies only valid on date of print.

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Fuel tank capacity:	607.6 litres
Usable fuel:	598.0 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Maximum	102 %	390.7 rpm
Minimum	98 %	375.3 rpm

Power off:

Maximum	104 %	398.3 rpm
Minimum	80 %	306.4 rpm (up to 2 000 kg)
Minimum	85 %	325.5 rpm (above 2 000 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

15 000 ft (4 572 m) up to 3 000 kg,
10 000 ft (3 048 m) above 3 000 kg,
12 000 ft (3 658 m) if OAT is below -30°C
17 000 ft (5 182 m) DA for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

Copies of this document are not controlled and printed copies only valid on date of print.

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Mass

3200 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 375 mm aft of DP at 1 700 kg
4 337 mm aft of DP at 2 000 kg
4 447 mm aft of DP at 3 200 kg
maximum rearward limit:
4 670 mm aft of DP at 1 700 kg
4 533 mm aft of DP at 3 200 kg
Lateral C.G Limits
maximum deviation on right / left:

up to 2 850 kg	100 mm
above 2 850 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 4 000 mm forward of the levelling point 4/5 in the rear door aperture
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 A/B, Appendix C

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

seven (or ten, if the kit described in RFMS 10-8 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

1 200 kg (250 kg aft of rear seat bank), loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 A/B

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Appendix A of the Maintenance Manual MBB-BK117 A/B

Copies of this document are not controlled and printed copies only valid on date of print.

IV Operating and Service Instructions

1. Flight Manual

BK117 B-1, initially LBA-approved, dated 10 December 1986, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

- MBB-BK117 A/B Maintenance Manual
- Wiring Diagram Manual MBB-BK117
- Engine documents as per TCDS EASA.IM.E.228

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

6. 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 Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 – Series

2. Flight Crew Data

Reserved.

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

VI Notes

1. Manufacturer's eligible serial numbers: s/n 7140 to 7202, 7204 to 7243, and upgraded MBB-BK 117 A-4 models according to the drawing 117 KM 80024-1

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 5 MBB-BK117 B-2

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 B-2

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, subsection II.3

5. Type Certification Application Date

Not recorded.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: Not Recorded
For Operational Suitability Data (OSD) elements: N/A

2. Airworthiness Requirements

- FAR 29 Amdts. 29-1 through 29-16
- FAR 29 Amdt. 29-17 for FAR 29.927
- FAR 29 Amdt. 29-21 for FAR 29.1, 29.1517
- FAR 29 Amdt. 29-24 for FAR 29.143, 29.672, 29.1329, FAR 29.1587
- FAR 29 Amdt. 29-26 for FAR 29.923
- FAR 29 Amdt 29-32 for FAR 29.2
- JAR 29 (first Issue) for JAR 29.45 to JAR 29.87

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter, dated 10 December 1979, and revised on 3 January 1980, consisting of:

- SC No. 1: Check Procedures
- SC No. 2: Engine Failure Warning System
- SC No. 3: Turbine Engine Bleed Air System
- SC No. 4: One Engine Inoperative Maximum Continuous Power
- SC No. 5: Lightning Protection of Structure and Occupants

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.811 (h) (1) Emergency exit marking
- FAR 29.1151 (b) Rotor brake controls

7. Requirements elected to comply

None.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

N/A

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

Copies of this document are not controlled and printed copies only valid on date of print.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

Note: OSD not required for rotorcraft that are no longer in production. UK (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Master List Drawing No. 117-B2-99.

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	9.98 m
Width hull:	2.71 m
Height:	3.36 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Honeywell International Inc
2 x Model LTS 101-750B-1

5.2. Type Certificate

FAA TC/TCDS No.: E5NE.
CAA TC/TCDS No.: EASA.IM.E.228.

Copies of this document are not controlled and printed copies only valid on date of print.

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 83	49 159 (102.7)	102	786
AEO-MCP	2 x 71	49 159 (102.7)	102	756
One Engine Inoperative (up to s/n 7252, if SB-MBB-BK117-60-113 is not installed)				
2½ min OEI-TOP	1 x 100	50 548 (105.6)	102	836
30 min OEI-TOP	1 x 91.5	50 169 (104.8)	102	800
OEI-MCP	1 x 83	49 159 (102.7)	102	765
One Engine Inoperative (from s/n 7253, or if SB-MBB-BK117-60-113 is installed)				
2½ min OEI-TOP	1 x 125	50 548 (105.6)	102	836
30 min OEI-TOP	1 x 91.5	50 169 (104.8)	102	800
OEI-MCP	1 x 91.5	49 159 (102.7)	102	765

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Fuel tank capacity: 607.6 litres

Usable fuel: 598.0 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Copies of this document are not controlled and printed copies only valid on date of print.

Maximum 102 % 390.7 rpm
Minimum 98 % 375.3 rpm
Minimum 99 % (after SB-MBB-BK117-60-110)

Power off:
Maximum 104 % 398.3 rpm
Minimum 80 % 306.4 rpm (up to 2 000 kg)
Minimum 85 % 325.5 rpm (above 2 000 kg)
Transient: Refer to approved RFM

10. Maximum Operating Altitude and Temperature

10.1. Altitude

Up to s/n 7252:
15 000 ft (4 572 m) up to 3 000 kg
10 000 ft (3 048 m) above 3 000 kg
12 000 ft (3 658 m) if OAT is below -30°C
17 000 ft (5 182 m) DA or 15 000 ft (4 572 m) PA, whichever is less for TO, LDG and HIGE
From s/n 7253, or if SB-MBB-BK 117-80-111 is installed:
18 000 ft (5 486 m) up to 3 000 kg
10 000 ft (3 048 m) above 3 000 kg
12 000 ft (3 658 m) if OAT is below -30°C
17 000 ft (5 182 m) DA or 18 000 ft (5 486 m) PA, whichever is less for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Mass

3350 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 375 mm aft of DP at 1 700 kg
4 337 mm aft of DP at 2 000 kg
4 400 mm aft of DP at 3 350 kg
maximum rearward limit:
4 670 mm aft of DP at 1 700 kg
4 520 mm aft of DP at 3 350 kg
Lateral C.G Limits
maximum deviation on right / left:
up to 2 850 kg 100 mm
above 2 850 kg 80 mm

Copies of this document are not controlled and printed copies only valid on date of print.

14. Datum

Longitudinal: the datum plane (STA 0) is located at 4 000 mm forward of the levelling point 4/5 in the rear door aperture

Lateral: Fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 A/B, Appendix C

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

seven (or ten, if the kit described in RFMS 10-8 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

1 200 kg (250 kg aft of rear seat bank), loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 A/B

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Appendix A of the Maintenance Manual MBB-BK117 A/B

IV Operating and Service Instructions

1. Flight Manual

- BK117 B-2, initially LBA-approved, dated 17 January 1992
- BK117 B-2-7203, initially LBA-approved, dated 21 April 1993, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

- MBB-BK117 A/B Maintenance Manual
- Wiring Diagram Manual MBB-BK117
- Engine documents as per TCDS EASA.IM.E.228

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

Copies of this document are not controlled and printed copies only valid on date of print.

6. 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 Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 – Series

2. Flight Crew Data

Reserved

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers: s/n 7203 to 7244 and subsequent, and upgraded MBB-BK 117 B-1 models according to the drawing 117 KM 800121.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 6 MBB-BK 117 C-1

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 C-1

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, II.3

5. Type Certification Application Date

Not recorded.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: Not Recorded

For Operational Suitability Data (OSD) elements: N/A

2. Airworthiness Requirements

- FAR 29 Amdts. 29-1 through 29-16, and including
- FAR 29 Amdt. 29-17 for FAR 29.927, 29.1091, 29.1103, 29.1195
- FAR 29 Amdt. 29-21 for FAR 29.1 and 29.1517, 29.1587
- FAR 29 Amdt. 29-24 for FAR 29.143
- FAR 29 Amdt. 29-26 for FAR 29.901, 29.903, 29.908, 29.955, 29.961, 29.1041, 29.1043, 29.1045, 29.1047, 29.1093
- FAR 29 Amdt 29-32 for FAR 29.2
- JAR 29 (first Issue) for JAR 29.45 to JAR 29.87

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter, dated 10 December 1979, and revised on 3 January 1980, consisting of:

- SC No. 1: Check Procedures
- SC No. 2: Engine Failure Warning System
- SC No. 3: Turbine Engine Bleed Air System
- SC No. 4: One Engine Inoperative Maximum Continuous Power
- SC No. 5: Lightning Protection of Structure and Occupants

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.811 (h) (1) Emergency exit marking
- FAR 29.1151 (b) Rotor brake controls

7. Requirements elected to comply

None.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

N/A

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

Copies of this document are not controlled and printed copies only valid on date of print.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

Note: OSD not required for rotorcraft that are no longer in production. UK (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Master List Drawing No. 117-C1-99.

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	9.98 m
Width hull:	2.71 m
Height:	3.36 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Safran Helicopter Engines (former: Turbomeca)
2 x Model Arriel 1E2

5.2. Type Certificate

EASA TC/TCDS No.: EASA.E.073
CAA TC/TCDS No.: EASA.E.073

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

Copies of this document are not controlled and printed copies only valid on date of print.

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 83	52 111 (100.6)	102*)	845
AEO-MCP	2 x 71	51 800 (100.0)	102*)	845
2½ min OEI-TOP	1 x 125	53 209 (103.3)	102	885
OEI-MCP	1 x 91.5	51 955 (100.3)	102	845

*) Maximum power turbine rpm for PA > 8 000 ft and V < 55 KIAS is 104%

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Fuel tank capacity: 707.6 litres

Usable fuel: 697.4 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Maximum 102 % 390.7 rpm

Maximum 104 % (for PA > 8 000 ft and V < 55 KIAS)

Minimum 98 %

Power off:

Maximum 104 %

Minimum 80 % (up to 2 000 kg)

Minimum 85 % (above 2 000 kg)

Transient: Refer to approved RFM

Copies of this document are not controlled and printed copies only valid on date of print.

10. Maximum Operating Altitude and Temperature

10.1. Altitude

18 000 ft (5 486 m)

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Masses

12.1 Maximum gross mass 3 350 kg
12.2 Alternative maximum gross mass 3 170 kg, in accordance with SB MBB-BK117-10-127 and associated RFM Appendix 14-1

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 375 mm aft of DP at 1 700 kg
4 337 mm aft of DP at 2 000 kg
4 400 mm aft of DP at 3 350 kg
maximum rearward limit:
4 670 mm aft of DP at 1 700 kg
4 520 mm aft of DP at 3 350 kg
Lateral C.G Limits
maximum deviation on right / left:

up to 2 850 kg	100 mm
above 2 850 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 4 000mm forward of the levelling point 4/5 in the rear door aperture
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 C-1, Appendix C

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

seven (or ten, if the kit described in RFMS 10-8 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

Copies of this document are not controlled and printed copies only valid on date of print.

19. Maximum Baggage/ Cargo Loads

1 200 kg (250 kg aft of rear seat bank), loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 C-1

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Appendix A of the Maintenance Manual MBB-BK117 C-1

IV Operating and Service Instructions

1. Flight Manual

- BK117 C-1, initially LBA-approved, dated 2 October 1992,
- BK117 C-1C, initially CAA UK-approved, dated 28 August 1995, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

- MBB-BK117 C-1 Maintenance Manual
- Wiring Diagram Manual (WDM) MBB-BK117
- Engine documents as per TCDS EASA.E.073

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

6. 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 Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 - Series

Copies of this document are not controlled and printed copies only valid on date of print.

2. Flight Crew Data

Reserved.

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers: s/n 7007, 7500 and subsequent.
2. Designation:
   The designation MBB-BK117 C-1C is used for UK registration. It differs from MBB-BK117 C-1 only by the modifications necessary for compliance with the UK additional requirements (Document No. 9/31/RY2601).

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 7 MBB-BK117 C-2

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 C-2

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, II.3

5. Type Certification Application Date

Not recorded.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: 2 October 1997
For Operational Suitability Data (OSD) elements: N/A

2. Airworthiness Requirements

- FAR 29 Amdts. 29-1 through 29-40, including Appendix B
  FAR 29.631, Amdt. 40 for roof cover, overhead panel and centre beam
  Reversions to former Amendments:
- FAR 29 Amdts. 29-1 through 29-40, including Appendix B
- FAR 29 Amdt. 26 for FAR 29.903, 29.923
- FAR 29 Amdt. 17 for FAR 29.927
- FAR 29 Amdt. 16 for FAR 29.547 (for unchanged parts), 29.571, 29.863, 29.901 (c), 29.917, 29.1011, 29.1019, 29.1021, 29.1163, 29.1181, 29.1183, 29.1189, 29.1309 (b), (d), (e), 29.1521

3. Special Conditions

- SC No. 3: Turbine Engine Bleed Air System
- SC No. 6: HIRF (JAA INT/POL/27&29/1, dated June 1, 1997)
- SC No. 7: BK117 C-2 Primary structures designed with composite material
- SC Non-rechargeable Lithium battery installations

4. Exemptions

- FAR 29.610 (d)(4) for unchanged parts categorised as ”Essential”
- FAR 29.1027
- FAR 29.1305 (a)(21)
- FAR 29.1337 (e)(2)

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.807 (a)(4) Emergency Exits
- FAR 29.1303 (a),(j) VNE Indication
- FAR 29.1549 (b) Powerplant Instruments
- FAR 29.1151 (b) Rotor brake controls
- FAR 29.1457 (a), (c) CVR, communication during winch operation
- FAR 29.1301, 29.1457 (a)(4) Cockpit Voice Recorder DH audio signal recording
- FAR 29.1457 (c)(1,2) Cockpit Voice Recorder – separate channel recording for DH audio signal
- FAR 29.601, 29.603, 29.605 (a), 29.865 (a), 29.1301 (d) Hoist Installation

7. Requirements elected to comply

N/A

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

N/A

Copies of this document are not controlled and printed copies only valid on date of print.

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

Note: OSD not required for rotorcraft that are no longer in production. UK (EU) 748/2012, as amended by UK (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.)

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Master List Drawing No. 117-C2-99.

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	10.20 m
Width hull:	3.12 m
Height:	3.26 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Safran Helicopter Engines (former: Turbomeca)
2 x Model Arriel 1E2

Copies of this document are not controlled and printed copies only valid on date of print.

5.2. Type Certificate

EASA TC/TCDS No.: EASA.E.073
CAA TC/TCDS No.: EASA.E.073

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 88	52 835 (101.9)	104	845
AEO-MCP	2 x 71	51 955 (100.0)	104	845
2½ min OEI-TOP	1 x 125	53 509 (103.3)	104	885
OEI-MCP	1 x 91.5	52 835 (101.9)	104	845

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Standard fuel tank

Fuel tank capacity: 879.1 litres

Usable fuel: 867.5 litres

Self-sealing fuel tank

Fuel tank capacity: 861.6 litres

Usable fuel: 850.0 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

Copies of this document are not controlled and printed copies only valid on date of print.

9. Rotor Speed Limitations

Power on:
Maximum 104 %
Minimum 96 %

Power off:
Maximum 104 %
Minimum 80 % (up to 2 000 kg)
Minimum 85 % (above 2 000 kg)
Transient: Refer to approved RFM

10. Maximum Operating Altitude and Temperature

10.1. Altitude

18 000 ft (5 486 m)

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Mass

3585 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 337 mm aft of DP at 2 000 kg
4 377 mm aft of DP at 3 585 kg
maximum rearward limit:
4 667 mm aft of DP at 1 750 kg
4 544 mm aft of DP at 3 585 kg
Lateral C.G Limits
maximum deviation on right / left:
up to 3 000 kg 100 mm
above 3 000 kg 80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 3 950 mm forward of the levelling point in aft door frame
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 C-2, Chapter 08 and Levelling Procedure TS-B082M0101X02

16. Minimum Flight Crew

One (1) pilot (right seat)

Copies of this document are not controlled and printed copies only valid on date of print.

17. Maximum Passenger Seating Capacity

nine (or ten, if the kit described in RFMS 9.2-27 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 C-2

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Chapter 4 of the Maintenance Manual MBB-BK117 C-2

IV Operating and Service Instructions

1. Flight Manual

- BK117 C-2, initially LBA-approved, dated 20 December 2000, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

- Airworthiness Limitations Section (ALS) MBB-BK117 C-2, C-2e
- Master Servicing Manual (MSM) MBB-BK117 C-2, C-2e
- Aircraft Maintenance Manual (AMM) MBB-BK117 C-2, C-2e
- Wiring Diagram Manual (WDM) MBB-BK117 C-2, C-2e
- Engine documents as per TCDS EASA.E.073

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

6. 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 Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements FMS 9.1 and FMS 9.2

Copies of this document are not controlled and printed copies only valid on date of print.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 C-2

2. Flight Crew Data

Flight Crew Operational Suitability Data as per document OSD_L0000M410901, first Issue 10 September 2015, or later approved revisions

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers:
   s/n 9004 and susequent manufactured by Airbus Helicopters Deutschland GmbH, or Airbus Helicopters, Inc., as detailed in document:
   TN_EXG_2022_001_MBB-BK117 Serial Production References.

2. Designation: EC145 and UH145 are used as marketing designation for MBB-BK117 C-2 helicopters.

3. Night Vision Goggles Operational Capability: Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement RFMS 9.2-48 in conjunction with a serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is equipped accordingly and a competent authority has granted operational authorisation only. The helicopter configuration containing NVIS lighting components approved for the use with Night Vision Goggles is described in a serial number specific AHD NVIS Substantiation Report for operators having received an approval for their NVIS configuration.

4. Ditching: The emergency floatation system is approved as a ditching provision according to FAR 29.801 Amdt. 40 (ref. Rotorcraft Flight Manual Supplement 9.2-9).
   In order for the helicopter to be fully approved for ditching the following additional equipment must be installed in accordance with FAR 29.801, 29.1411 and 29.1415:
   - approved survival type emergency locator transmitter,
   - approved liferafts along with survival equipment,
   - approved life preserver for each occupant.

   It is the operator’s responsibility to ensure that the equipment not covered under ditching certification meets all applicable airworthiness and operational requirements.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 8 MBB-BK117 C-2e

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 C-2

1.3. Variant

MBB-BK117 C-2e

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

See Section 13: Administration, II.3

5. Type Certification Application Date

31 October 2012.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

17 April 2015

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: 31 October 2012
For Operational Suitability Data (OSD) elements: 31 October 2012

2. Airworthiness Requirements

- For newly installed equipment on BK117 C-2e:

  CS 29, Amdt. 2, CS 29.771, CS 29.773, CS 29.777, CS 29.1301, CS 29.1303, except V_{NE} indication, CS 29.1321, CS 29.1353 (a), CS 29.1381, CS 29.1431, CS 29.1581
- FAR 29 Amdts. 29-1 through 29-40, including Appendix B

FAR 29.631, Amdt. 40 for roof cover, overhead panel and centre beam

Reversions to former Amendments for:
- FAR 29 Amdt. 26 for FAR 29.903, 29.923
- FAR 29 Amdt. 17 for FAR 29.927
- FAR 29 Amdt. 16 for FAR 29.547 (for unchanged parts), 29.571, 29.863, 29.901 (c), 29.917, 29.1011, 29.1019, 29.1021, 29.1163, 29.1181, 29.1183, 29.1189, 29.1309 (b), (d), (e), 29.1521

3. Special Conditions

- SC No. 3: Turbine Engine Bleed Air System
- SC No. 6: HIRF (JAA INT/POL/27&29/1, dated 1 June 1997)
- SC No. 7: BK117 C-2 Primary structures designed with composite material

4. Exemptions

- FAR 29.610 (d)(4) for unchanged parts categorised as ”Essential”
- FAR 29.1027
- FAR 29.1305 (a)(21)
- FAR 29.1337 (e)(2)

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.807 (a)(4) Emergency Exits
- FAR 29.1303 (a), (j) V_{NE} Indication
- FAR 29.1549 (b) Powerplant Instruments
- FAR 29.1151 (b) Rotor Brake Controls
- FAR 29.601, 29.603, 29.605 (a), 29.865 (a), 29.1301 (d) Hoist Installation

7. Requirements elected to comply

N/A

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

Fuel venting: ICAO Annex 16, Volume II, Amdt. 6, Part II, Chapter 2, (CS-34 initial issue)

Copies of this document are not controlled and printed copies only valid on date of print.

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Type Design Definition TDD B0000M281120

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	2 blades
Fuselage:	semi-monocoque metal structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	10.20 m
Width hull:	3.12 m
Height:	3.26 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.96 m

5. Engine

5.1. Model

Safran Helicopter Engines (former: Turbomeca)
2 x Model Arriel 1E2

5.2. Type Certificate

EASA TC/TCDS No.: EASA.E.073
CAA TC/TCDS No.: EASA.E.073

Copies of this document are not controlled and printed copies only valid on date of print.

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C]
AEO-TOP (5 min)	2 x 88	52 835 (101.9)	104	845
AEO-MCP	2 x 71	51 955 (100.0)	104	845
2½ min OEI-TOP	1 x 125	53 509 (103.3)	104	885
OEI-MCP	1 x 91.5	52 835 (101.9)	104	845

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Standard fuel tank

Fuel tank capacity: 879.1 litres

Usable fuel: 867.5 litres

Self-sealing fuel tank

Fuel tank capacity: 861.6 litres

Usable fuel: 850.0 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Maximum 104 %

Minimum 96 %

Copies of this document are not controlled and printed copies only valid on date of print.

Power off:

Maximum	104 %	398.3 rpm
Minimum	80 %	306.4 rpm (up to 2 000 kg)
Minimum	85 %	325.5 rpm (above 2 000 kg)

Transient: Refer to approved RFM

10. Maximum Operating Altitude and Temperature

10.1. Altitude

18 000 ft (5 486 m)

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

VFR day and night
Non-icing conditions
For Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Mass

3585 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 337 mm aft of DP at 2 000 kg
4 377 mm aft of DP at 3 585 kg
maximum rearward limit:
4 667 mm aft of DP at 1 750 kg
4 544 mm aft of DP at 3 585 kg
Lateral C.G Limits
maximum deviation on right / left:

up to 3 000 kg	100 mm
above 3 000 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 3 950 mm forward of the levelling point in aft door frame
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 C-2,
Chapter 08 and Levelling Procedure TS-B082M0101X02

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

Nine,

Refer to RFM for the approved seat configurations

Copies of this document are not controlled and printed copies only valid on date of print.

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 C-2

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Chapter 04 of the Maintenance Manual MBB-BK117 C-2

IV Operating and Service Instructions

1. Flight Manual

BK117 C-2e, EASA-approved, dated 17 April 2015,
including the supplements for Special Operations and
Optional Equipment, or later approved revisions

2. Maintenance Manual

- Airworthiness Limitations Section (ALS) MBB-BK117 C-2, C-2e
- Master Servicing Manual (MSM) MBB-BK117 C-2, C-2e
- Aircraft Maintenance Manual (AMM) MBB-BK117 C-2, C-2e
- Wiring Diagram Manual (WDM) MBB-BK117 C-2, C-2e
- Engine documents as per TCDS EASA.E.073

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

BK117 Illustrated Parts Catalogue

6. Service Letters and Service Bulletins

Safety Information Notice, Information Notice, Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets.

7. Required Equipment

Special equipment and kits necessary for intended kind of operations as defined in the approved Flight Manual Supplements FMS Section 9.1 and FMS 9.2

Copies of this document are not controlled and printed copies only valid on date of print.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 C-2

2. Flight Crew Data

Flight Crew Operational Suitability Data as per document OSD_L0000M410901, first Issue 10 September 2015, or later approved revisions

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers:

   S/n 9601 and subsequent manufactured by Airbus Helicopters Deutschland GmbH, or Airbus Helicopters, Inc., as detailed in document:

   TN_EXG_2022_001_MBB-BK117 Serial Production References.

2. Designation: EC145 is used as marketing designation for MBB-BK117 C-2e helicopters.

3. Ditching: The emergency floatation system is approved as a ditching provision according to FAR 29.801 Amdt. 40 (ref. Rotorcraft Flight Manual Supplement 9.2-9).

   In order for the helicopter to be fully approved for ditching the following additional equipment must be installed in accordance with FAR 29.801, 29.1411 and 29.1415:

   - approved survival type emergency locator transmitter,
   - approved liferafts along with survival equipment,
   - approved life preserver for each occupant.

   It is the operator’s responsibility to ensure that the equipment not covered under ditching certification meets all applicable airworthiness and operational requirements.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 9 MBB-BK 117 D-2

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 D-2

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

AIRBUS HELICOPTERS

See Section 13: Administrative, II.3.

5. Type Certification Application Date

27 February 2009.

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

16 April 2014

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: 1 February 2010
For Operational Suitability Data (OSD) elements: 1 February 2010

2. Airworthiness Requirements

- CS-29, Amdt. 2 for the requirements listed below:
  CS 29.1, CS 29.25, CS 29.59, CS 29.62, CS 29.67, CS 29.77, CS 29.81, CS 29.85, CS 29.143, CS 29.173, CS 29.175, CS 29.177, CS 29.351, CS 29.602, CS 29.923, CS 29.1323, CS 29.1329, CS 29.1351, CS 29.1359, CS 29.1457, CS 29.1459, CS 29.1587, CS 29 Appendix B.V, CS 29 Appendix B.VII

- CS 29.1465 Amdt. 5, when configured with:
  DMAU P/N: D313M4011051 (HMS DMAU SW V2.1 HLX2EIS), or later approved
  HELIONIX Step 2 EIS (AMC STEP2 EIS SW V5.0.2, D462C01S0502; AMC STEP2R SW V5.0.2, D462C03S0502, MFD SW V5.0.1 D463C01S0501), or later approved;
  and/or
  DMAU P/N: D313M4015051 (HMS DMAU SW V3.2 HLX2EIS), or later approved
  HELIONIX Step 2 EIS (AMC STEP2 EIS SW V5.0.2, D462C01S0502; AMC STEP2R SW V5.0.2, D462C03S0502, MFD SW V5.0.1 D463C01S0501), or later on approved;
  and/or
  DMAU P/N: D313M4012051 (HMS DMAU SW V3.2 HLX MR1), or later on approved
  HELIONIX Maintenance Release 1 (AMC STEP2 SW V6.0, D462C01S0600; AMC STEP2R SW V6.0, D462C03S0600; MFD SW V6.0, D463C01S0600), or later on approved

- FAR 29.631, Amdt. 40 for roof cover, overhead panel, centre beam, nose cover and entire tail section
- FAR 29.865, Amdt. 43 for External Loads
- FAR 29 effective 1 February 1965 plus Amdts. 29-1 through 29-40, for all other requirements that are not listed in CS/FAR 29 requirements above

Reversion to former amendments:

- FAR 29 Amdt. 16 for FAR 29.863 (for unaffected parts of BK117 C-1), 29.917 (for unaffected parts of BK117 C-1), 29.1309 (b), (d), (e) (for unaffected parts of BK117 C-1)
- FAR 29 Amdts. 29-1 through 29-16 for MGB (see Note 5)

3. Special Conditions

- 30 min Extended Power Rating
- Lithium Battery Installations
- High-Intensity Radiated Fields (HIRF) Protection: JAA INT/POL/27&29/1, Issue 3
- Non-rechargeable Lithium Battery Installations

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.807 (a)(4), (for emergency exit)
- FAR 29.1305, 29.1321 (e), 29.1351 (b)(6), 29.1435 (a)(3), (for part time display of vehicle parameters)
- FAR 29.1545 (b)(4), 29.1549 (b), (for Airspeed & Powerplant indication green marking)
- FAR 29.1305, 29.1309, 29.1549, (for OEI training mode)

Copies of this document are not controlled and printed copies only valid on date of print.

- FAR 29.601, 29.603, 29.605 (a), 29.865 (a), 29.1301 (d), (for hoist installation)
- CS 29.1457 (a), (c), (for CVR, communication during winch operation)
- CS/FAR 29.1555 (c)(1) (for usable fuel capacity marking)
- ESF for CS 29.1587 (a)(6) (for alternative Category A continued take-off and balked landing procedures)

7. Requirements elected to comply

N/A

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

Fuel venting: ICAO Annex 16, Volume II, Amdt. 5, Part II, Chapter 2, (CS-34 initial issue)

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1, for retained items from the model MBB-BK11 C-2

CS-MMEL, Initial Issue, dated 31 January 2014, for all other items

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Type Design Definition TDD D0000M170200

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	fanned, 10 composite rotor blades
Fuselage:	semi-monocoque structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines, engines controlled by a dual channel digital engine control,
Avionics:	Integrated modular avionics suites
Auto-Pilot:	4-axis dual duplex autopilot

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length: 11.69 m

Copies of this document are not controlled and printed copies only valid on date of print.

Width hull: 2.72 m

Height: 3.95 m

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.15 m

5. Engine

5.1. Model

Safran Helicopter Engines (former: Turbomeca)
2 x Model Arriel 2E

5.2. Type Certificate

EASA TC/TCDS No.: EASA.E.001
CAA TC/TCDS No.: EASA.E.001

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C](2)	Temperature TOT [°C](3)
AEO-TOP (5 min)	2 x 95	100.6	108.3	918	933
AEO-MCP	2 x 74	98.5	108.3	901	916
Extended Power Rating (30 min)	2 x 95	100.6	108.3	918	933
30 sec OEI-TOP	1 x 150	105.7	108.3	1006	1021
2 min OEI-TOP	1 x 130 1)	104.3	108.3	987	1002
OEI-MCP	1 x 100	101.7	108.3	945	960

- In AEO, the torque of one engine is allowed to exceed the given MCP resp. TOP limit value by up to 3% as long as the average torque of both engines is below 74% resp. 95%.

- An AEO transient limit of 2 x 104.5% is available for unintended use below VY +10 kts for a maximum duration of 12 sec.

- An AEO transient limit of 2 x 79% is available for unintended use above Vy +10 kts for a maximum duration of 12 sec.

- (1): With FADEC EECU software TU206 incorporated (change E-4362) the 2 min OEI-TOP is 1 x 142.8 %

- (2): Without FADEC EECU software TU225 incorporated (change E-6768)

- (3): With FADEC EECU software TU225 incorporated (change E-6768)

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

Copies of this document are not controlled and printed copies only valid on date of print.

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Standard fuel tank

Fuel tank capacity:	915.8 litres
Usable fuel:	903.8 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL

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

9. Rotor Speed Limitations

Power on:

Maximum	108.3 %	
Minimum	94 %	

Power off:

Maximum	109 %	
Minimum	80 %	(up to 2 200 kg)
Minimum	85 %	(above 2 200 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

20 000 ft (6 095 m)

20 000 ft (6 095 m) PA or DA whichever is less for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

VFR day and night

Non-icing conditions

For IFR, Category A operation refer to approved RFM

Additional limitations for TO and LDG refer to approved RFM

Copies of this document are not controlled and printed copies only valid on date of print.

12. Maximum Masses

12.1 Maximum gross mass:	3 650 kg
12.2 Alternative maximum gross mass:	3 700 kg, operation permitted only in accordance with EASA Major Change Approval 10055804.
12.3 Alternative maximum gross mass:	3 800 kg, operation permitted only in accordance with FMA 11-19 and EASA Major Change Approval 10061863.

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 347 mm aft of DP at 2 400 kg
4 379 mm aft of DP at 3 700 kg
4 383 mm aft of DP at 3 800 kg
maximum rearward limit:
4 700 mm aft of DP at 2 000 kg
4 540 mm aft of DP at 3 700 kg
4 525 mm aft of DP at 3 800 kg
Lateral C.G Limits
maximum deviation on right / left:

up to 3 000 kg	100 mm
above 3 000 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 3 950 mm forward of the levelling point in aft door frame
Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 D-2, Chapter 8

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

Nine

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 D-2

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Chapter 4 of the Master Servicing Manual

Copies of this document are not controlled and printed copies only valid on date of print.

IV Operating and Service Instructions

1. Flight Manual

a) BK117 D-2, EASA-approved in accordance with Major Change E-1702, dated 16 April 2014, including the supplements for Special Operations and Optional Equipment, or later approved revisions

b) BK117 D-2 (Helionix Step 2), in accordance with Major Change E-3475, dated 11 December 2015, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

Airworthiness Limitations Section (ALS)	MBB-BK117 D-2
Master Servicing Manual (MSM)	MBB-BK117 D-2
Aircraft Maintenance Manual (AMM)	MBB-BK117 D-2/D-3
Wiring Diagram Manual (WDM)	MBB-BK117 D-2/D-3
Standard Practices Manual (MTC)	MBB-BK117
Corrosion and Erosion Control Guide (CECG)	MBB-BK117
Engine documents	as per TCDS EASA.E.001

3. Structural Repair Manual

Structural Repair Manual (SRM) MBB-BK117

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue (IPC)

MBB-BK117 D-2

6. Service Letters and Service Bulletins

Safety information notice, Information Notice, Alert Service Bulletin, Service Bulletin, Repair Design Approval Sheets.

7. Required Equipment

Refer to approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 D-2/D-2m/D-3/D-3m

2. Flight Crew Data

Flight Crew Operational Suitability Data as per document OSD_L0000M410901, first Issue 10 September 2015, or later approved revisions

3. SIM Data

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers:

   1.1 S/n 20003 and subsequent (except s/n 20293) are manufactured by Airbus Helicopters Deutschland GmbH as detailed in document: TN_EXG_2022_001_MBB-BK117 Serial Production References.

   1.2 S/n 20293 is manufactured by KHI, Japan.

2. Designation: H145 is used as marketing designation for MBB-BK117 D-2 helicopters.

3. Night Vision Goggles Operational Capability: Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement RFMS 9.2-11 in conjunction with a serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is equipped accordingly and a Competent Authority has granted operational authorisation only. The helicopter configuration containing NVIS lighting components approved for the use with Night Vision Goggles is described in a serial number specific AHD NVIS Substantiation Report for operators having received an approval for their NVIS configuration.

4. Ditching: The emergency floatation system is approved as a ditching provision according to FAR 29.801 Amdt. 40 (ref. Rotorcraft Flight Manual Supplement 9.2-9).
   In order for the helicopter to be fully approved for ditching the following additional equipment must be installed in accordance with FAR 29.801, 29.1411 and 29.1415:
   - approved survival type emergency locator transmitter,
   - approved liferafts along with survival equipment,
   - approved life preserver for each occupant.

   It is the operator’s responsibility to ensure that the equipment not covered under ditching certification meets all applicable airworthiness and operational requirements.

5. The Main Gear Box (MGB) itself is unaffected area as only the Tail Gear Box design was changed.

   FAR 29.1027 did not exist at the time of initial certification of the MGB and compliance was shown to FAR 29.1011, FAR 29.1019 and FAR 29.1021 up to Amdt. 16.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 10 MBB-BK117 D-2m

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 D-2

1.3. Variant

MBB-BK117 D-2m

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

Manufacturer AIRBUS HELICOPTERS
See Section 13: Administrative, II.3

5. Type Certification Application Date

6 May 2014

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

8 May 2015

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: 6 May 2014

For Operational Suitability Data (OSD) elements: 6 May 2014

2. Airworthiness Requirements

- CS-29, Amdt. 2 for the requirements listed below:

  CS 29.1, CS 29.25, CS 29.59, CS 29.62, CS 29.67, CS 29.77, CS 29.81, CS 29.85, CS 29.143, CS 29.173, CS 29.175, CS 29.177, CS 29.351, CS 29.602, CS 29.923, CS 29.1323, CS 29.1329, CS 29.1351, CS 29.1359, CS 29.1457, CS 29.1459, CS 29.1587, CS 29 Appendix B.V, CS 29 Appendix B.VII

  CS 29.1465 Amdt. 5, when configured with:

  DMAU P/N: D313M4011051 (HMS DMAU SW V2.1 HLX2EIS), or later approved HELIONIX Step 2 EIS (AMC STEP2 EIS SW V5.0.2, D462C01S0502; AMC STEP2R SW V5.0.2, D462C03S0502, MFD SW V5.0.1 D463C01S0501), or later approved;

  and/or

  DMAU P/N: D313M4015051 (HMS DMAU SW V3.2 HLX2EIS), or later approved HELIONIX Step 2 EIS (AMC STEP2 EIS SW V5.0.2, D462C01S0502; AMC STEP2R SW V5.0.2, D462C03S0502, MFD SW V5.0.1 D463C01S0501), or later approved.

  - FAR 29.631, Amdt. 40 for roof cover, overhead panel, centre beam, nose cover and entire tail section

  - FAR 29.865, Amdt. 43 for External Loads

  - FAR 29 effective 1 February 1965 plus Amdts. 29-1 through 29-40, for all other requirements that are not listed in CS/FAR 29 requirements above.

Reversion to former amendments:

- FAR 29 Amdt. 16 for FAR 29.863 (for unaffected parts of BK117 C-1), 29.917 (for unaffected parts of BK117 C-1), 29.1309 (b), (d), (e) (for unaffected parts of BK117 C-1)
- FAR 29 Amdts. 29-1 through 29-16 for MGB (see Note 5)

3. Special Conditions

- 30 min Extended Power Rating
- Lithium Battery Installations
- High-Intensity Radiated Fields (HIRF) Protection: JAA INT/POL/27&29/1, Issue 3
- Non-rechargeable Lithium Battery Installations

4. Exemptions

None.

5. Deviations

None.

6. Equivalent Safety Findings

- FAR 29.807 (a)(4), (for emergency exit)
- FAR 29.1305, 29.1321 (e), 29.1351 (b)(6), 29.1435 (a)(3), (for part time display of vehicle parameters)
- FAR 29.1545 (b)(4), 29.1549 (b), (for Airspeed & Powerplant indication green marking)
- FAR 29.1305, 29.1309, 29.1549, (for OEI training mode)
- FAR 29.601, 29.603, 29.605 (a), 29.865 (a), 29.1301 (d), (for hoist installation)
- CS 29.1457 (a), (c), (for CVR, communication during winch operation)
- CS/FAR 29.1555 (c)(1) (for usable fuel capacity marking)
- ESF for CS 29.1587 (a)(6) (for alternative Category A continued take-off and balked landing procedures)

7. Requirements elected to comply

Copies of this document are not controlled and printed copies only valid on date of print.

N/A

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

8.2. Emission Requirements

Fuel venting: ICAO Annex 16, Volume II, Amdt. 7, Part II, Chapter 2, (CS-34 Amdt. 1)

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1, for retained items from the model MBB-BK11 C-2

CS-MMEL, Initial Issue, dated 31 January 2014, for all other items

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Type Design Definition TDD D0000M302300

2. Description

Main rotor:	hingeless, 4 blades
Tail rotor:	fanned, 10 composite rotor blades
Fuselage:	semi-monocoque structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines, engines controlled by a dual channel digital engine control
Avionics:	Integrated modular avionics suites
Auto-Pilot:	4-axis dual duplex autopilot

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	11.69 m
Width hull:	2.72 m
Height:	3.95 m

Copies of this document are not controlled and printed copies only valid on date of print.

4.2. Main Rotor

Diameter: 11.00 m

4.3. Tail Rotor

Diameter: 1.15 m

5. Engine

5.1. Model

Safran Helicopter Engines (former: Turbomeca)
2 x Model Arriel 2E

5.2. Type Certificate

EASA TC/TCDS No.: EASA.E.001
CAA TC/TCDS No.: EASA.E.001

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C](2)	Temperature TOT [°C](3)
AEO-TOP (5 min)	2 x 95	100.6	108.3	918	933
AEO-MCP	2 x 74	89.5	108.3	901	916
Extended Power Rating (30 min)	2 x 95	100.6	108.3	918	933
30 sec OEI-TOP	1 x 150	105.7	108.3	1006	1021
2 min OEI-TOP	1 x 130 1)	104.3	108.3	987	1002
OEI-MCP	1 x 100	101.7	108.3	945	960

- In AEO, the torque of one engine is allowed to exceed the given MCP resp. TOP limit value by up to 3% as long as the average torque of both engines is below 74% resp. 95%.

- An AEO transient limit of 2 x 104.5% is available for unintended use below V_Y +10 kts for a maximum duration of 12 sec.

- An AEO transient limit of 2 x 79% is available for unintended use above V_Y +10 kts for a maximum duration of 12 sec.

- (1): With FADEC EECU software TU206 incorporated (change E-4362) the 2 min OEI-TOP is 1 x 142.8 %

- (2): Without FADEC EECU software TU225 incorporated (change E-6768)

- (3): With FADEC EECU software TU225 incorporated (change E-6768)

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

Copies of this document are not controlled and printed copies only valid on date of print.

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Standard fuel tank

Fuel tank capacity:	915.8 litres
Usable fuel:	903.8 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

V_{NE}: 150 KIAS at MSL
Refer to approved RFM for reduction in V_{NE} with altitude and other speed limitations

9. Rotor Speed Limitations

Power on:

Maximum	108.3 %	
Minimum	94 %	

Power off:

Maximum	109 %	
Minimum	80 %	(up to 2 250 kg)
Minimum	85 %	(above 2 250 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

20 000 ft (6 095 m)
20 000 ft (6 095 m) PA or DA whichever is less for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

VFR day and night
Non-icing conditions
For IFR, Category A operation refer to approved RFM
Additional limitations for TO and LDG refer to approved RFM

12. Maximum Masses

12.1 Maximum gross mass:	3700 kg
12.2 Alternative maximum gross mass:	3 800 kg, operation permitted only in accordance with FMA 11-19 and EASA Major Change Approval 10061863.

Copies of this document are not controlled and printed copies only valid on date of print.

13. Centre of Gravity Range

Longitudinal C.G. limits

maximum forward limit:

4 347 mm aft of DP at 2 400 kg

4 379 mm aft of DP at 3 700 kg

4 383 mm aft of DP at 3 800 kg

maximum rearward limit:

4 700 mm aft of DP at 2 000 kg

4 540 mm aft of DP at 3 700 kg

4 525 mm aft of DP at 3 800 kg

Lateral C.G Limits

maximum deviation on right / left:

up to 3 000 kg	100 mm
above 3 000 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 3 950 mm forward of the levelling point in aft door frame

Lateral: fuselage median plane

15. Levelling Means

Refer to Maintenance Manual MBB-BK117 D-2m, Chapter 8

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

Nine

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Maintenance Manual MBB-BK117 D-2m

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved ALS Section in Chapter 04 of the Master Servicing Manual

IV Operating and Service Instructions

1. Flight Manual

a) BK117 D-2m, approved in accordance with Major Change E-3023, dated 8 May 2015, including the supplements for Special Operations and Optional Equipment, or later approved revisions

Copies of this document are not controlled and printed copies only valid on date of print.

b) BK117 D-2 (Helionix Step 2), EASA approved, in accordance with Major Change E-3475, dated 11 December 2015, including the supplements for Special Operations and Optional Equipment, or later approved revisions

2. Maintenance Manual

Airworthiness Limitations Section (ALS)	MBB-BK117 D-2m
Master Servicing Manual (MSM)	MBB-BK117 D-2m
Aircraft Maintenance Manual (AMM)	MBB-BK117 D-2m
Wiring Diagram Manual (WDM)	MBB-BK117 D-2m
Standard Practices Manual (MTC)	MBB-BK117
Corrosion and Erosion Control Guide (CECG)	MBB-BK117
Engine documents	as per TCDS EASA.E.001

3. Structural Repair Manual

Structural Repair Manual (SRM) MBB-BK117

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue (IPC)

MBB-BK117 D-2m

6. Service Letters and Service Bulletins

Safety information notice, Information Notice, Alert Service Bulletin, Service Bulletin, Repair Design Approval Sheets.

7. Required Equipment

Refer to approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 D-2/D-2m/D-3/D-3m

2. Flight Crew Data

Flight Crew Operational Suitability Data as per document OSD_L0000M410901, first Issue 10 September 2015, or later approved revisions

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

VI Notes

1. Manufacturer's eligible serial numbers:

1.1. S/n 20016 and subsequent;

1.2. Manufactured by Airbus Helicopters Deutschland GmbH as detailed in document: TN_EXG_2022_001_MBB-BK117 Serial Production References.

2. Designation: H145 is used as marketing designation for MBB-BK117 D-2m helicopters.

3. Night Vision Goggles Operational Capability:

   Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement RFMS 9.2-11 in conjunction with a serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is equipped accordingly and a Competent Authority has granted operational authorisation only. The helicopter configuration containing NVIS lighting components approved for the use with Night Vision Goggles is described in a serial number specific AHD NVIS Substantiation Report for operators having received an approval for their NVIS configuration.

4. Ditching: The emergency floatation system is approved as a ditching provision according to FAR 29.801 Amdt. 40 (ref. Rotorcraft Flight Manual Supplement 9.2-9).
   In order for the helicopter to be fully approved for ditching the following additional equipment must be installed in accordance with FAR 29.801, 29.1411 and 29.1415:
   - approved survival type emergency locator transmitter,
   - approved liferafts along with survival equipment,
   - approved life preserver for each occupant.

   It is the operator’s responsibility to ensure that the equipment not covered under ditching certification meets all applicable airworthiness and operational requirements.

5. The Main Gear Box (MGB) itself is unaffected area as only the Tail Gear Box design was changed.

   FAR 29.1027 did not exist at the time of initial certification of the MGB and compliance was shown to FAR 29.1011, FAR 29.1019 and FAR 29.1021 up to Amdt. 16.

6. The MBB-BK117 D-2m does not meet Category A performance when operated at a gross mass above 3 700 kg, refer to FMA 11-19.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 11 MBB-BK117 D-3

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 D-3

1.3. Variant

–

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

Manufacturer AIRBUS HELICOPTERS
See Section 13: Administrative, II.3

5. Type Certification Application Date

2 March 2018

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

19 June 2020

Copies of this document are not controlled and printed copies only valid on date of print.

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: 2 March 2018
For Operational Suitability Data (OSD) elements: 2 March 2018

2. Airworthiness Requirements

- For significantly affected areas with respect to MBB-BK117 D-2:
  CS-29 Amdt. 4 for the following requirements: CS 29.571, CS 29.573.
- For the remaining areas, systems, parts or appliances:
  CS 29.865 Amdt. 8;
  CS 29.1465 Amdt. 5;
  CS-29 Amdt. 4 for the requirements listed below:
  CS 29.610, CS 29.631, CS 29.1316, CS 29.1317, CS 29.1501, CS 29.1593, CS 29 Appendix A 29.4;
  CS-29 Amdt. 2 for the requirements listed below:
  CS 29.1, CS 29.25, CS 29.59, CS 29.62, CS 29.67, CS 29.77, CS 29.81, CS 29.85, CS 29.143, CS 29.173, CS 29.175, CS 29.177, CS 29.351, CS 29.602, CS 29.923, CS 29.1323, CS 29.1329, CS 29.1351, CS 29.1359, CS 29.1457, CS 29.1459, CS 29.1587, CS 29 Appendix B.V, CS 29 Appendix B.VII;
  FAR 29 Amdt. 40 for all he other applicable requirements with reversion up to FAR 29 Amdt. 16 for:
    FAR 29.631 (for cockpit windscreens only)
    FAR 29.863 (for unaffected parts from BK117 C-1),
    FAR 29.1011 (b),(e), FAR 29.1019 and FAR 29.1021 (for MGB only) (see Note 5).

3. Special Conditions

- 30 min Extended Power Rating
- Rechargeable Lithium Battery Installations
- Non-rechargeable Lithium Battery Installations
- Cybersecurity

4. Exemptions

None.

5. Deviations

- EASA CRI D-16: CS 29.865(a), CS 29.1301(d), CS 29.1309(a)(b) Amdt. 8 for COLLINS AEROSPACE ‘Population 2’ Hoist System Installation

6. Equivalent Safety Findings

- FAR 29.807 (a)(4), (for emergency exit)
- FAR 29.1305, 29.1321 (e), 29.1351 (b)(6), 29.1435 (a)(3), (for part time display of vehicle parameters)
- FAR 29.1545 (b)(4), 29.1549 (b), (for Airspeed & Powerplant indication green marking)
- FAR 29.1305, 29.1309, 29.1549, (for OEI training mode)
- CS 29.1457 (a), (c), (for CVR, communication during winch operation)
- CS/FAR 29.1555 (c)(1) (for usable fuel capacity marking)
- CS 29.1587 (a)(6) (for alternative Category A continued take-off and balked landing procedures)

7. Requirements elected to comply

Reserved.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

Copies of this document are not controlled and printed copies only valid on date of print.

8.2. Emission Requirements

Fuel venting: ICAO Annex 16, Volume II, Amdt. 9, Part II, Chapter 2, (CS-34 Amdt. 2)

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1, for retained items from the model MBB-BK11 C-2
CS-MMEL, Initial Issue, dated 31 January 2014, for all other items

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Type Design Definition TDD D0000M505303

2. Description

Main rotor:	hingeless, 5 blades
Tail rotor:	fanned, 10 composite rotor blades
Fuselage:	semi-monocoque structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines, engines controlled by a dual channel digital engine control
Avionics:	Integrated modular avionics suites
Auto-Pilot:	4-axis dual duplex autopilot

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	11.69 m
Width hull:	2.73 m
Height:	3.98 m

4.2. Main Rotor

Diameter: 10.80 m

4.3. Tail Rotor

Diameter: 1.15 m

Copies of this document are not controlled and printed copies only valid on date of print.

5. Engine

5.1. Model

Safran Helicopter Engines (former: Turbomeca)
2 x Model Arriel 2E

5.2. Type Certificate

EASA TC/TCDS No.: EASA.E.001
CAA TC/TCDS No.: EASA.E.001

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C](7)	Temperature TOT [°C](8)
AEO-MCP	2 x 74(1)	98.5	108.3	901	916
AEO TOP (30 min)	2 x 95 (1)(2)	100.6	108.3	918	933
AEO Transients	(3)	(4)		(5)	(6)
OEI-MCP	1 x 100	101.7	108.3	945	960
OEI 2 min	1 x 143	104.3	108.3	987	1002
OEI 30 sec	1 x 150	105.7	108.3	1006	1021

(1) In AEO, the torque of one engine is allowed to exceed the given MCP resp. TOP limit value by up to 3% as long as the average torque of both engines is below 74% resp. 95%.

(2) Up to V_Y+10kt, then linearly reducing down to AEO MCP limit at and above V_Y+25kt.

(3) An AEO transient up to 9.5% above the TOP/ MCP limit is available for unintended use for up to 12 sec. Any exceedance of the transient limit or any use of the transient range for longer than 12 seconds will be recorded by the Usage Monitoring System and will require maintenance.

(4) An AEO transient limit of 101.7% (or the value calculated as a function of altitude and OAT) is available for unintended use for a maximum duration of 20 sec.

(5) An AEO transient limit up to 945 °C is available for unintended use for a maximum duration of 20 sec.

(6) An AEO transient limit up to 960 °C is available for unintended use for a maximum duration of 20 sec.

(7) Without FADEC EECU software TU225 installed (change E-6768)

(8) With FADEC EECU software TU225 installed (change E-6768)

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

6.3. Additives

Refer to approved RFM, Section 2

Copies of this document are not controlled and printed copies only valid on date of print.

7. Fluid Capacities

7.1. Fuel

Standard fuel tank

Fuel tank capacity:	915.8 litres
Usable fuel:	903.8 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

Max V_{NE} Power-on (AEO):	150 KIAS
Max V_{NE} Power-on (OEI):	110 KIAS
Max V_{NE} Power-off:	90 KIAS
	Refer to approved RFM for variation of V_{NE} with gross weight, altitude, temperature and NR.
Other air speed limitations	refer to approved RFM

9. Rotor Speed Limitations

Power on:

Maximum	107.5 %	
Minimum	94 %	

Power off:

Maximum	109 %	
Minimum	80 %	(up to 2 250 kg)
Minimum	85 %	(above 2 250 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

20 000 ft (6 095 m) PA

20 000 ft (6 095 m) PA or DA whichever is less for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

Category A and B

VFR day and night

IFR

Non-icing conditions

Refer to approved RFM for any other limitations

12. Maximum Masses

12.1 Maximum gross mass: 3 800 kg

Copies of this document are not controlled and printed copies only valid on date of print.

13. Centre of Gravity Range

Longitudinal C.G. limits

maximum forward limit:

4 347 mm aft of DP at 2 400 kg

4 383 mm aft of DP at 3 800 kg

maximum rearward limit:

4 700 mm aft of DP at 2 000 kg

4 550 mm aft of DP at 3 800 kg

Lateral C.G Limits

maximum right / left deviation from B.L.:

up to 3 000 kg	100 mm
above 3 000 kg	80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 3 950 mm forward of the levelling point in aft door frame

Lateral: fuselage median plane

15. Levelling Means

Refer to Aircraft Maintenance Manual (AMM), Chapter 8

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

Nine

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Aircraft Maintenance Manual (AMM)

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved Airworthiness Limitations Section (ALS)

IV Operating and Service Instructions

1. Flight Manual

a) BK117 D-3, Flight Manual including the supplements for Special Operations and Optional Equipment, Original Issue dated 19 June 2020, or later approved revisions**.**

b) BK117 D-3 (Helionix SW V10), in accordance with Major Change E-7033 (EASA Major Change Approval 10082539, dated 04 August 2023) including the supplements for Special Operations and Optional Equipment, or later EASA-approved revisions.

Copies of this document are not controlled and printed copies only valid on date of print.

2. Maintenance Manual

Airworthiness Limitations Section (ALS)	MBB-BK117 D-3
Master Servicing Manual (MSM)	MBB-BK117 D-3
Aircraft Maintenance Manual (AMM)	MBB-BK117 D-2/D-3
Wiring Diagram Manual (WDM)	MBB-BK117 D-2/D-3
Standard practices manual (MTC)	MBB-BK117
Corrosion and Erosion Control Guide (CECG)	MBB-BK117
Engine documents	as per TCDS EASA.E.001

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

MBB-BK117 D-3

6. Service Letters and Service Bulletins

Safety information notice, Information Notice, Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets.

7. Required Equipment

Refer to approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 D-2/D-2m/D-3/D-3m

2. Flight Crew Data

Flight Crew Operational Suitability Data as per document OSD_L0000M410901, first Issue 10 September 2015, or later approved revisions

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

VI Notes

1. Manufacturer's eligible serial numbers:

   1.1. s/n 21001 and subsequent;

   1.2. any MBB-BK117 D-2 converted into MBB-BK117 D-3 through SB MBB-BK117 D-2-00-003.

   1.3. Manufactured by Airbus Helicopters Deutschland GmbH, or Kawasaki Heavy Industries, Ltd or Airbus Helicopters, Inc., as detailed in document:

Copies of this document are not controlled and printed copies only valid on date of print.

2. Designation:

   H145 is used as marketing designation for MBB-BK117 D-3 helicopters

3. Night Vision Goggles Operational Capability:

   Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement RFMS 9.2-11 in conjunction with a serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is equipped accordingly, and a Competent Authority has granted operational authorisation only. The helicopter configuration containing NVIS lighting components approved for the use with Night Vision Goggles is described in a serial number specific AHD NVIS Substantiation Report for operators having received an approval for their NVIS configuration.

4. Ditching: The emergency floatation system is approved as a ditching provision according to FAR 29.801 Amdt. 40 (ref. Rotorcraft Flight Manual Supplement 9.2-9).
   In order for the helicopter to be fully approved for ditching the following additional equipment must be installed in accordance with FAR 29.801, 29.1411 and 29.1415:
   - approved survival type emergency locator transmitter,
   - approved liferafts along with survival equipment,
   - approved life preserver for each occupant.

   It is the operator's responsibility to ensure that the equipment not covered under ditching certification meets all applicable airworthiness and operational requirements

5. FAR 29.1027, introduced with Amdt. 26, was never adopted for the Main Gearbox and is actually replaced by FAR 29.1011 (b),(e), FAR 29. 1019 and FAR 29.1021 up to Amdt. 16.

****

Copies of this document are not controlled and printed copies only valid on date of print.

Section 12 MBB-BK 117 D-3m

I General

1. Type / Variant / Model

1.1. Type

MBB-BK117

1.2. Model

MBB-BK117 D-3m

1.3. Variant

---

2. Airworthiness Category

Large Rotorcraft, Category A and B.

3. Type Certificate Holder

Airbus Helicopters Deutschland GmbH Helicopters
Industriestrasse 4
D-86609 Donauwörth,
Germany
See Section 13: Administrative, II.2

4. Manufacturer

Manufacturer AIRBUS HELICOPTERS
See Section 13: Administrative, II.3

5. Type Certification Application Date

2 March 2018

6. State of Design Authority

European Union Aviation Safety Agency (EASA).

7. EASA Type Certification Date

19 June 2020

II Certification Basis

1. Reference Date for determining the applicable requirements

For Airworthiness and Environmental Protection: 2 March 2018
For Operational Suitability Data (OSD) elements: 2 March 2018

2. Airworthiness Requirements

- For significantly affected areas with respect to MBB-BK117 D-2:
  CS-29 Amdt. 4 for the following requirements: CS 29.571, CS 29.573.
- For the remaining areas, systems, parts or appliances:
  CS 29.865 Amdt. 8;
  CS 29.1465 Amdt. 5;
  CS-29 Amdt. 4 for the requirements listed below:
  CS 29.610, CS 29.631, CS 29.1316, CS 29.1317, CS 29.1501, CS 29.1593, CS 29 Appendix A 29.4;

  CS-29 Amdt. 2 for the requirements listed below:
  CS 29.1, CS 29.25, CS 29.59, CS 29.62, CS 29.67, CS 29.77, CS 29.81, CS 29.85, CS 29.143, CS 29.173, CS 29.175, CS 29.177, CS 29.351, CS 29.602, CS 29.923, CS 29.1323, CS 29.1329, CS 29.1351, CS 29.1359, CS 29.1457, CS 29.1459, CS 29.1587, CS 29 Appendix B.V, CS 29 Appendix B.VII;

  FAR 29 Amdt. 40 for all the other applicable requirements with reversion up to FAR 29 Amdt. 16 for:
  FAR 29.631 (for cockpit windscreens only)
  FAR 29.863 (for unaffected parts from BK117 C-1),
  FAR 29.1011 (b),(e), FAR 29.1019 and FAR 29.1021 (for MGB only) (see Note 5).

3. Special Conditions

- 30 min Extended Power Rating
- Rechargeable Lithium Battery Installations
- Non-rechargeable Lithium Battery Installations
- Cybersecurity

4. Exemptions

None.

5. Deviations

- EASA CRI D-16: CS 29.865(a), CS 29.1301(d), CS 29.1309(a)(b) Amdt. 8 for COLLINS AEROSPACE ‘Population 2’ Hoist System Installation

6. Equivalent Safety Findings

- FAR 29.807 (a)(4), (for emergency exit)
- FAR 29.1305, 29.1321 (e), 29.1351 (b)(6), 29.1435 (a)(3), (for part time display of vehicle parameters)
- FAR 29.1545 (b)(4), 29.1549 (b), (for Airspeed & Powerplant indication green marking)
- FAR 29.1305, 29.1309, 29.1549, (for OEI training mode)
- CS 29.1457 (a), (c), (for CVR, communication during winch operation)
- CS/FAR 29.1555 (c)(1) (for usable fuel capacity marking)
- CS 29.1587 (a)(6) (for alternative Category A continued take-off and balked landing procedures)

7. Requirements elected to comply

Reserved.

8. Environmental Protection Requirements

8.1. Noise Requirements

See TCDSN UK.TC.R.00016.

Copies of this document are not controlled and printed copies only valid on date of print.

8.2. Emission Requirements

Fuel venting: ICAO Annex 16, Volume II, Amdt. 9, Part II, Chapter 2, (CS-34 Amdt. 2)

9. Operational Suitability Data (OSD)

9.1. Master Minimum Equipment List (MMEL)

JAR-MMEL Section 1 Subpart A&B at Amdt. 1, for retained items from the model MBB-BK11 C-2
CS-MMEL, Initial Issue, dated 31 January 2014, for all other items

9.2. Flight Crew Data (FCD)

Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data, CS-FCD, initial issue, dated 31 January 2014.

9.3. Simulation Data (SIMD)

Reserved.

9.4. Maintenance Certifying Staff Data (MCSD)

Reserved.

III Technical Characteristic and Operating Limitations

1. Type Design Definition

Type Design Definition TDD D0000M505305

2. Description

Main rotor:	hingeless, 5 blades
Tail rotor:	fanned, 10 composite rotor blades
Fuselage:	semi-monocoque structure
Landing gear:	skid-type
Powerplant:	2 independent freewheel turbines, engines controlled by a dual channel digital engine control
Avionics:	Integrated modular avionics suites
Auto-Pilot:	4-axis dual duplex autopilot

3. Equipment

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

4. Dimensions

4.1. Fuselage

Length:	11.69 m
Width hull:	2.73 m
Height:	3.98 m

4.2. Main Rotor

Diameter: 10.80 m

4.3. Tail Rotor

Diameter: 1.15 m

Copies of this document are not controlled and printed copies only valid on date of print.

5. Engine

5.1. Model

Safran Helicopter Engines (former: Turbomeca)
2 x Model Arriel 2E

5.2. Type Certificate

EASA TC/TCDS No.: EASA.E.001
CAA TC/TCDS No.: EASA.E.001

5.3. Limitations

5.3.1. Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator rpm [min^{-1} (%)]	PWR turbine rpm [%]	Temperature TOT [°C](7)	Temperature TOT [°C](8)
AEO-MCP	2 x 74(1)	98.5	108.3	901	916
AEO TOP (30 min)	2 x 95 (1)(2)	100.6	108.3	918	933
AEO Transients	(3)	(4)		(5)	(6)
OEI-MCP	1 x 100	101.7	108.3	945	960
OEI 2 min	1 x 143	104.3	108.3	987	1002
OEI 30 sec	1 x 150	105.7	108.3	1006	1021

(1) In AEO, the torque of one engine is allowed to exceed the given MCP resp. TOP limit value by up to 3% as long as the average torque of both engines is below 74% resp. 95%.

(2) Up to V_Y+10kt, then linearly reducing down to AEO MCP limit at and above V_Y+25kt.

(3) An AEO transient up to 9.5% above the TOP/ MCP limit is available for unintended use for up to 12 sec. Any exceedance of the transient limit or any use of the transient range for longer than 12 seconds will be recorded by the Usage Monitoring System and will require maintenance.

(4) An AEO transient limit of 101.7% (or the value calculated as a function of altitude and OAT) is available for unintended use for a maximum duration of 20 sec.

(5) An AEO transient limit up to 945 °C is available for unintended use for a maximum duration of 20 sec.

(6) An AEO transient limit up to 960 °C is available for unintended use for a maximum duration of 20 sec.

(7) Without FADEC EECU software TU225 installed (change E-6768).

(8) With FADEC EECU software TU225 installed (change E-6768).

5.3.2. Other Engine and Transmission Torque Limits

Refer to approved RFM

6. Fluids (Fuel/Oil/Additives)

6.1. Fuel

Refer to approved RFM, Section 2

6.2. Oil

Refer to approved RFM, Section 2

Copies of this document are not controlled and printed copies only valid on date of print.

6.3. Additives

Refer to approved RFM, Section 2

7. Fluid Capacities

7.1. Fuel

Standard fuel tank

Fuel tank capacity:	915.8 litres
Usable fuel:	903.8 litres

7.2. Oil

Refer to approved RFM, Section 2 and 6

7.3. Coolant System Capacity

N/A

8. Air Speed Limitations

Max V_{NE} Power-on (AEO):	150 KIAS
Max V_{NE} Power-on (OEI):	110 KIAS
Max V_{NE} Power-off:	90 KIAS
	Refer to approved RFM for variation of V_{NE} with gross weight, altitude, temperature and NR.
Other air speed limitations	refer to approved RFM

9. Rotor Speed Limitations

Power on:

Maximum	107.5 %	
Minimum	94 %	

Power off:

Maximum	109 %	
Minimum	80 %	(up to 2 250 kg)
Minimum	85 %	(above 2 250 kg)
Transient:	Refer to approved RFM	

10. Maximum Operating Altitude and Temperature

10.1. Altitude

20 000 ft (6 095 m) PA
20 000 ft (6 095 m) PA or DA whichever is less for TO, LDG and HIGE

10.2. Temperature

Refer to approved RFM

11. Operating Limitations

Category A and B
VFR day and night
IFR
Non-icing conditions
Refer to approved RFM for any other limitations

Copies of this document are not controlled and printed copies only valid on date of print.

12. Maximum Masses

12.1 Maximum gross mass: 3 800 kg

13. Centre of Gravity Range

Longitudinal C.G. limits
maximum forward limit:
4 347 mm aft of DP at 2 400 kg
4 383 mm aft of DP at 3 800 kg
maximum rearward limit:
4 700 mm aft of DP at 2 000 kg
4 550 mm aft of DP at 3 800 kg
Lateral C.G Limits
maximum right / left deviation from B.L.:
up to 3 000 kg 100 mm
above 3 000 kg 80 mm

14. Datum

Longitudinal: the datum plane (STA 0) is located at 3 950 mm forward of the levelling point in aft door frame
Lateral: fuselage median plane

15. Levelling Means

Refer to Aircraft Maintenance Manual (AMM), Chapter 8

16. Minimum Flight Crew

One (1) pilot (right seat)

17. Maximum Passenger Seating Capacity

Nine

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

Two (2), one on each side of the passenger cabin

19. Maximum Baggage/ Cargo Loads

Loading 600 kg/m²

20. Rotor Blade Control Movement

For rigging information refer to Aircraft Maintenance Manual (AMM)

21. Auxiliary Power Unit (APU)

N/A

22. Life-limited Parts

See approved Airworthiness Limitations Section (ALS)

IV Operating and Service Instructions

1. Flight Manual

a) BK117 D-3m, Flight Manual including the supplements for Special Operations and Optional Equipment, Original Issue dated 19 June 2020, or later approved revisions.

b) BK117 D-3 (Helionix SW V10), in accordance with Major Change E-7033 (EASA Major Change

Copies of this document are not controlled and printed copies only valid on date of print.

Approval 10082539, dated 04 August 2023) including the supplements for Special Operations and Optional Equipment, or later EASA-approved revisions.

2. Maintenance Manual

Airworthiness Limitations Section (ALS)	MBB-BK117 D-3m
Master Servicing Manual (MSM)	MBB-BK117 D-3m
Aircraft Maintenance Manual (AMM)	MBB-BK117 D-3m
Wiring Diagram Manual (WDM)	MBB-BK117 D-3m
Standard practices manual (MTC)	MBB-BK117
Corrosion and Erosion Control Guide (CECG)	MBB-BK117
Engine documents	as per TCDS EASA.E.001

3. Structural Repair Manual

BK117 Structural Repair Manual (SRM)

4. Weight and Balance Manual

Refer to approved RFM.

5. Illustrated Parts Catalogue

MBB-BK117 D-3m

6. Service Letters and Service Bulletins

Safety information notice, Information Notice, Alert Service Bulletin, Service Bulletin Repair Design Approval Sheets.

7. Required Equipment

Refer to approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V Operational Suitability Data (OSD)

The OSD elements listed below were approved by the European Union Aviation Safety Agency (EASA) as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

Future revisions will be approved by the UK CAA in accordance with Regulation (EU) No. 748/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 and amended by the Aviation Safety (Amendment etc.) (EU Exit) Regulations 2019.

1. Master Minimum Equipment List (MMEL)

MMEL BK117 D-2/D-2m/D-3/D-3m

2. Flight Crew Data

Flight Crew Operational Suitability Data as per document OSD_L0000M410901, first Issue 10 September 2015, or later approved revisions

3. SIM Data

Reserved.

4. Maintenance Certifying Staff Data

Reserved.

Copies of this document are not controlled and printed copies only valid on date of print.

VI Notes

1. Manufacturer's eligible serial numbers:

   1.1. S/n 21001 and subsequent.

   1.2. Manufactured by Airbus Helicopters Deutschland GmbH as detailed in document: TN_EXG_2022_001_MBB-BK117 Serial Production References

2. Designation:

   H145 is used as marketing designation for MBB-BK117 D-3m helicopters

3. Night Vision Goggles Operational Capability:

   Night Vision Goggles aided operations are permitted according to Rotorcraft Flight Manual Supplement RFMS 9.2-11 in conjunction with a serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is equipped accordingly, and a Competent Authority has granted operational authorisation only. The helicopter configuration containing NVIS lighting components approved for the use with Night Vision Goggles is described in a serial number specific AHD NVIS Substantiation Report for operators having received an approval for their NVIS configuration.

4. Ditching: The emergency floatation system is approved as a ditching provision according to FAR 29.801 Amdt. 40 (ref. Rotorcraft Flight Manual Supplement 9.2-9).
   In order for the helicopter to be fully approved for ditching the following additional equipment must be installed in accordance with FAR 29.801, 29.1411 and 29.1415:
   - approved survival type emergency locator transmitter,
   - approved liferafts along with survival equipment,
   - approved life preserver for each occupant.

   It is the operator’s responsibility to ensure that the equipment not covered under ditching certification meets all applicable airworthiness and operational requirements.

5. FAR 29.1027, introduced with Amdt. 26, was never adopted for the Main Gearbox and is actually replaced by FAR 29.1011 (b),(e), FAR 29. 1019 and FAR 29.1021 up to Amdt. 16.

***

Copies of this document are not controlled and printed copies only valid on date of print.

Section 13 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
°C	Degree Celsius
AEO	All Engines Operative
ALS	Airworthiness Limitations Section
Amdt.	Amendment
B.L.	Buttock Line
C.G.	Centre of Gravity
CAA	Civil Aviation Authority
CRI	Certification Review Item
CS	Certification Specifications
DA	Density Altitude
Doc.	Document
EASA	European Union Aviation Safety Agency
FCD	Flight Crew Data
ft	Feet
IAS	Indicated Air Speed
ICAO	International Civil Aviation Organization
IFR	Instrumental Flight Rules
ITT	Interstage Turbine Temperature
HIRF	High intensity Radiated Field
HP	Pressure Altitude
JAA	Joint Aviation Authorities
KIAS	Knots Indicated Air Speed
LH	Left Hand
m	Metre(s)
mm	Millimetre(s)
MLG	Main Landing Gear
MMEL	Master Minimum Equipment List
p/n Nf	Power turbine (free turbine) rotation speed
Ng	Gas generator rotation speed
NLG	Nose Landing Gear
Nm	Newton per metre
No.	Number
NVG	Night Vision Goggles
OAT	Outside Air Temperature
OSD	Operational Suitability Data
P/N	Part Number
PA	Pressure Altitude
PWR	Power
RFM	Rotorcraft Flight Manual
RFMS	Rotorcraft Flight Manual Supplement
RH	Right Hand
rpm	Revolution per minute
S/N	Serial Number
STA	Station
SW	Software
TAS	True Air Speed
TC	Type Certificate
TCCA	Transport Canada
TCDS	Type Certificate Data Sheet
TCDSN	Type Certificate Data Sheet for Noise
TCH	Type Certificate Holder
TOP	Take-Off Power
TR	Tail Rotor
UK	United Kingdom
VFR	Visual Flight Rules
V_{NE}	Never Exceed Speed
$V_{NE\ PWR\ OFF}$	Power-off Speed (Autorotation)
$V_{NE\ PWR\ ON}$	Power-on speed

II. Type Certificate Holder Record

TCH Record

II.1 Type Certificate Holder (21.A.44)	**Period**
Messerschmidt-Bölkow-Blohm GmbH 8012 Ottobrunn, Germany	until 1 April 1992
Eurocopter Hubschrauber GmbH Postfach 13 53, W-8850 Donauwörth, Germany	until 5 May 1992
Eurocopter Deutschland GmbH Postfach 13 53, W-8850 Donauwörth, or, 86603 Donauwörth, or, 86607 Donauwörth, Germany	until 6 January 2014
Airbus Helicopters Deutschland GmbH Industriestrasse 4, 86609 Donauwörth, Germany	since 7 January 2014

II.2 Contracted Design Organisation Approval 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

II.3 Production Organisation Approval Holder (21.A.135)	**Period**
II.3.1 Manufacturer for all types and models	
Messerschmidt-Bölkow-Blohm GmbH 8012 Ottobrunn, Germany	until 1 April 1992
Eurocopter Hubschrauber GmbH Postfach 13 53, W-8850 Donauwörth, Germany	until 5 May 1992
Eurocopter Deutschland GmbH Postfach 13 53, W-8850 Donauwörth, or, 86603 Donauwörth, or, 86607 Donauwörth, Germany	until 6 January 2014
Airbus Helicopters Deutschland GmbH Industriestrasse 4, 86609 Donauwörth, Germany	Until 31 December 2017
Airbus Helicopters Aéroport International Marseille Provence, 13725 MARIGNANE, FRANCE	Since 1 January 2018
II.3.2 Manufacturer for MBB-BK117 C-2 and C-2e Alternative location (Production Certificate No. 343CE): Airbus Helicopters Inc. Columbus, Mississippi 39701, U.S.A.	Since 1 December 2000

II.3.3 Manufacturer for MBB-BK117 D-2 s/n 20293 only Alternative location (JCAB approved Production Organisation No. 005): Kawasaki Heavy Industries, Ltd. Kawasaki-Cho 1, Kakamigahara City, 504-8710 Gifu Prefecture, Japan	Since 1 October 2021
II.3.4 Manufacturer for MBB-BK117 D-3 only Alternative location (JCAB approved Production Organisation No. 005): Kawasaki Heavy Industries, Ltd. Kawasaki-Cho 1, Kakamigahara City, 504-8710 Gifu Prefecture, Japan Alternative location (Production Certificate No. 343CE): Airbus Helicopters Inc. Columbus, Mississippi 39701, U.S.A.	Since 1 October 2021

TCH Record

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	19 Jan 2022	The content of the initial issue of this UK CAA TCDS was taken from EASA TCDS No. EASA.R.010 Issue 17 dated 19 June 2020 which was the current EASA version at 31 December 2020 and therefore the version accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement. Other changes introduced are as follows: - Section 13 OSD moved to individual Sections for each helicopter model / variant. - Section 11 and 12: III.5.3.1.: Typo corrected; - Section 11 and 12: III.9.: Minimum power-off rotor speed limitations amended (was: up to 2 200 kg); - Section 11: VI.1.2: eligibility extended to “any MBB-BK117 D-2 converted into MBB-BK117 D-3”. - Section 2: III.9.: Typo corrected (was: Minimum 98 % 398.3 rpm). - Sections 7 to 12, VI 1: AHD s/n identification document ‘TN_EXG_2022_001_MBB-BK117 Serial Production References’ have been added. - II.5.: ESF CS 29.1587 (a)(6) added. - III.5.3.1.: Installed Engine Limitations limits updated to reflect increased TOT margins. - Section Administrative: II.1 amended by USA and Japan Production Organisations. All: Aadaptations to new UKCAA TCDS layout in accordance with CAA policy.	Issue 1 19 Jan 2022
2	09 Jun 2022	Section 11 and 12: II.2. and II.5.: Certification Basis updated to include airworthiness requirements for external loads and the deviation for COLLINS AEROSPACE “Population 2” Hoist System Installation (BK117/2020/E-6506). UK.MAJ.00081 refers.	Issue 1 19 Jan 2022
3	20 Dec 2023	General updates consistent with TCDS EASA.R.510 issue 21 including; N 9 and 10, I.3.: Change of ‘Manufacturer’ to ‘Airbus Helicopters’ to reflect the change to a single POA for Airbus Helicopters; II.5.: Addition of ESF for CS 29.1587 (a)(6) (for alternative Category A continued take-off and balked landing procedures); III. 5.3.1: Correction of ‘AEO-MCP of Gas Gen N1 rpm %’ value from ’89.5%’ to ’98.5%’. SECTION 11, I.3.: Change of ‘Manufacturer’ to ‘Airbus Helicopters’ to reflect the change to a single POA for Airbus Helicopters; II.2.: Correction of Note 4 reference, replaced by the correct Note 5 reference. IV.1.: Reference to Flight Manual for BK117 D-3	Issue 1 19 Jan 2022

	(Helionix SW V10) introduced (ref. EASA Major Change Approval 10082539). SECTION 12, I.3.: Change of 'manufacturer' to 'Airbus Helicopters' to reflect the change to a single POA for Airbus Helicopters; II.2.: Correction of Note 4 reference, replaced by the correct Note 5 reference. IV.1: I.3.: Reference to Flight Manual for BK117 D-3m (Helionix SW V10) introduced (ref. EASA Major Change Approval 10082539). SECTION: ADMINISTRATIVE, II.: reference to 'Airbus Helicopters' single POA added; III.: wrong EASA Major Change Approval reference 10068170 replaced with the correct EASA Major Change Approval reference 10080449.

– END –