TYPE CERTIFICATE DATA SHEET

No. EASA.R.010

for

MBB-BK117

Type Certificate Holder

Airbus Helicopters Deutschland GmbH

Industriestrasse 4
D-86609 Donauwörth
Germany

For Models: 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-3, MBB-BK117 D-3m.

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I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	9 December 1982
7.	Type Certificate n°	EASA: EASA.R.010 (LBA: 3049)
8.	Type Certificate Data Sheet n°	EASA: EASA.R.010 (LBA: 3049, until issue 9, dated 21 April 1993)
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	- - -
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 EASA.R.010
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	see SECTION 13 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition — Master List Drawing No. 117-A1-99

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: 5.89 m
Width hull: 1.60 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/CDS n°: E5NE
EASA TC/TCDS n°: 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	50 159 (104.8)	6 120 (102)	796
OEI-MCP	1 x 83	49 159 (102.7)	6 120 (102)	763

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	
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	2 850 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	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	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 A-1, initially LBA-approved, dated 9 December 1982, including the supplements for Special Operations and Optional Equipment, or later (LBA)/EASA-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 (LBA)/EASA-approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V. Notes

1. Manufacturer's eligible serial numbers:
   s/n 7001 to 7006, 7008 to 7046, 7048 to 7054.
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 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, EASA decided to keep for this TCDS EASA.R.010 all MBB-BK117 A-1 data as reference for any potential future need.

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SECTION 2: MBB-BK 117 A-3

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	15 March 1985
7.	Type Certificate n°	EASA: EASA.R.010 (LBA: 3049)
8.	Type Certificate Data Sheet n°	EASA: EASA.R.010 (LBA: 3049, until issue 9, dated 21 April 1993)
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	FAR 29 Amdts. 29-1 through 29-16
3.	Special Conditions	

LBA Special Conditions for MBB-BK117 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 EASA.R.010
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	see SECTION 13 below

III. Technical Characteristics and Operational 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: 5.89 m
Width hull: 1.60 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 n°: E5NE
EASA TC/TCDS n°: 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

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 % 398.3 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
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	3 200 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	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	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 A-3, initially LBA-approved, dated 15 March 1985, including the supplements for Special Operations and Optional Equipment, or later (LBA)/EASA-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 (LBA)/EASA-approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V. 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.

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SECTION 3: MBB-BK117 A-4

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	29 July 1986
7.	Type Certificate n°	EASA: EASA.R.010 (LBA: 3049)
8.	Type Certificate Data Sheet n°	EASA: EASA.R.010 (LBA: 3049, until issue 9, dated 21 April 1993)
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	FAR 29 Amdts. 29-1 through 29-16
3.	Special Conditions	

LBA Special Conditions for MBB-BK117 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 EASA.R.010
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	see SECTION 13 below

III. Technical Characteristics and Operational 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: 5.89 m
Width hull: 1.60 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 n°: E5NE
EASA TC/TCDS n°: 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

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
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	3 200 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	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	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 A-4, initially LBA-approved, dated 29 July 1986, including the supplements for Special Operations and Optional Equipment, or later (LBA)/EASA-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 (LBA)/EASA-approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V. Notes

1. Manufacturer's eligible serial numbers: s/n 7047, 7074, 7100, 7122 to7139, and upgraded MBB-BK 117 A-3 models according to SB-MBB-BK 117-80-105.

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SECTION 4: MBB-BK117 B-1

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	10 December 1987
7.	Type Certificate n°	EASA: EASA.R.010 (LBA: 3049)
8.	Type Certificate Data Sheet n°	EASA: EASA.R.010 (LBA: 3049, until issue 9, dated 21 April 1993)
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded
2.	Airworthiness Requirements	FAR 29 Amdts. 29-1 through 29-16
3.	Special Conditions	

LBA Special Conditions for MBB-BK117 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 EASA.R.010
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	see SECTION 13 below

III. Technical Characteristics and Operational 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: 5.89 m
Width hull: 1.60 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 n°: E5NE
EASA TC/TCDS n°: 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
30 sec OEI-TOP	1 x 100	50 548 (105.6)	6 120 (102)	836
2 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

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 or 15 000 ft (4 572 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	3 200 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	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	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-1, initially LBA-approved, dated 10 December 1986, including the supplements for Special Operations and Optional Equipment, or later (LBA)/EASA-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 (LBA)/EASA-approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V. Notes

1. Manufacturer's eligible serial numbers: s/n 7140 to 7202, 7204 to 7243,
   and upgraded MBB-BK117 A-4 models according to the drawing 117 KM 80024-1

* * *

SECTION 5: MBB-BK117 B-2

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	17 January 1992
7.	Type Certificate n°	EASA: EASA.R.010 (LBA: 3049)
8.	Type Certificate Data Sheet n°	EASA: EASA.R.010 (LBA: 3049, until issue 5, dated 16 January 1998)
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded

2. Airworthiness Requirements

- FAR 29 Amdts. 29-1 through 29-16, and including
- 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-BK117 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 EASA.R.010
8.2	Emission Requirements	n/a

9. Operational Suitability Data (OSD) see SECTION 13 below

III. Technical Characteristics and Operational 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:	5.89 m
		Width hull:	1.60 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 n°:	E5NE
EASA TC/TCDS n°:	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)	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: 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/LDG refer to approved RFM
12.	Maximum Mass	3 350 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
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	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	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 (LBA)/EASA-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 (LBA)/EASA-approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V. Notes

1. Manufacturer's eligible serial numbers: s/n 7203, 7244 and subsequent,
   and upgraded MBB-BK117 B-1 models according to the drawing 117 KM 800121.

* * *

SECTION 6: MBB-BK117 C-1

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	2 October 1992
7.	Type Certificate n°	EASA: EASA.R.010 (LBA: 3049)
8.	Type Certificate Data Sheet n°	EASA: EASA.R.010 (LBA: 3049, until issue 4, dated 9 July 1996)
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	not recorded

2. Airworthiness Requirements

- FAR 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-BK117 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 EASA.R.010
8.2	Emission Requirements	n/a

9. Operational Suitability Data (OSD) see SECTION 13 below

III. Technical Characteristics and Operational 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:	5.89 m
		Width hull:	1.60 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 n°: 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 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
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 4 000 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 C-1, Appendix C
16.	Minimum Flight Crew	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	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 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 (LBA)/EASA-approved revisions
2.	Maintenance Manual	- MBB-BK117 C-1 Maintenance Manual - Wiring Diagram Manual 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 (LBA)/EASA-approved Flight Manual Supplements RFMS Section 10 and 11, are permissible.

V. 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).

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SECTION 7: MBB-BK117 C-2

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany Airbus Helicopters Inc. Columbus, Mississippi 39701, U.S.A. (Production Certificate No. 343CE)
4.	Type Certification Application Date to LBA	not recorded
5.	State of Design Authority	EASA
6.	Type Certificate Date by LBA	20 December 2000
7.	Type Certificate n°	EASA: EASA.R.010 (LBA: 3049)
8.	Type Certificate Data Sheet n°	EASA: EASA.R.010 (LBA: 3049, until issue 5, dated 1 April 2003)
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 2nd bullet, 1st indented bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	2 October 1997

2. Airworthiness Requirements

- FAR 29 Amdts. 29-1 through 29-40, including Appendix B

  Note: regarding FAR 29.631 see elected to comply requirements under II.7

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: BK117 (Turbine Engine Bleed Air System, if installed)
- 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) V_{NE} 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 — FAR 29.631, Amdt. 40 for roof cover, overhead panel and centre beam

8. Environmental Protection Requirements

8.1 Noise Requirements — See TCDSN EASA.R.010

8.2 Emission Requirements — n/a

9. Operational Suitability Data (OSD) — see SECTION 13 below

III. Technical Characteristics and Operational 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:	6.19 m
Width hull:	1.85 m
Height:	3.45 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 n°: 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.
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	3 585 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	1 pilot (right seat)

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	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-2, initially LBA-approved, dated 20 December 2000, including the supplements for Special Operations and Optional Equipment, or later (LBA)/EASA-approved revisions
2.	Maintenance Manual	- Aircraft Maintenance Manual (AMM) MBB-BK117 C-2 - Wiring Diagram Manual (WDM) MBB-BK117 C-2 - Master Servicing Manual (MSM) MBB-BK117 C-2 - 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

V. Notes

1. Manufacturer's eligible serial numbers: s/n 9004 and subsequent.
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 according to Rotorcraft Flight Manual Supplement 9.2-9 is certified as ditching provision in accordance with FAR 29.
   The helicopter may be certified for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:
   - survival type emergency locator transmitter,
   - life raft installation,
   - life preserver.

SECTION 8: MBB-BK117 C-2e

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date	31 October 2012
5.	State of Design Authority	EASA
6.	EASA Type Certification Date	17 April 2015

II. Certification Basis

1. Reference Date for determining the applicable requirements: 31 October 2012
2. Airworthiness Requirements
   - Elect to comply 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

     Note: regarding FAR 29.631 see elected to comply requirements under II.7

   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: BK117 Turbine Engine Bleed Air System, if installed
   - 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: FAR 29.631, Amdt. 40 for roof cover, overhead panel and centre beam

8. Environmental Protection Requirements

8.1 Noise Requirements	See TCDSN EASA.R.010
8.2 Emission Requirements	Fuel venting: ICAO Annex 16, Volume II, Amdt. 6, Part II, Chapter 2, (CS-34 initial issue)

9. Operational Suitability Data (OSD) see SECTION 13 below

III. Technical Characteristics and Operational 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:	6.19 m
	Width hull:	1.85 m
	Height:	3.45 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 n°: 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.
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 Category A operation refer to approved RFM Additional limitations for TO and LDG refer to approved RFM
12.	Maximum Mass	3 585 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	1 pilot (right seat)
17.	Maximum Passenger Seating Capacity	nine, Refer to RFM for the approved seat configurations
18.	Passenger Emergency Exit	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 EASA-approved revisions
2.	Maintenance Manual	- Aircraft Maintenance Manual (AMM) MBB-BK117 C-2 - Wiring Diagram Manual (WDM) MBB-BK117 C-2 - Master Servicing Manual (MSM) MBB-BK117 C-2 - 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 9.1 and FMS 9.2

V. Notes

1. Manufacturer's eligible serial numbers: s/n 9601 and subsequent.
2. Designation: EC145 is used as marketing designation for MBB-BK117 C-2e helicopters.

* * *

SECTION 9: MBB-BK117 D-2

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date	27 February 2009
5.	State of Design Authority	EASA
6.	EASA Type Certification Date	16 April 2014

II. Certification Basis

1.	Reference Date for determining the applicable requirements	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

Reversion to former amendments:

- FAR 29 Amdt. 47 for FAR 29.865 (External Loads)
- FAR 29 Amdt. 40 for FAR 29.631 (entire tail section only)
- 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)
- 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.

  Note: regarding FAR 29.631 see elected to comply requirements under II.7

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)

7. Requirements elected to comply

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

8. Environmental Protection Requirements

8.1 Noise Requirements	See TCDSN EASA.R.010
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) see SECTION 13 below

III. Technical Characteristics and Operational 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:	6.17 m
	Width hull:	1.85 m
	Height:	3.46 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 n°: 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]
AEO-TOP (5 min)	2 x 95	100.6	108.3	918
AEO-MCP	2 x 74	89.5	108.3	901
Extended Power Rating (30 min)	2 x 95	100.6	108.3	918
30 sec OEI-TOP	1 x 150	105.7	108.3	1 006
2 min OEI-TOP	1 x 130 [1)]	104.3	108.3	987
OEI-MCP	1 x 100	101.7	108.3	945

- 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 %.

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: 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
12.	Maximum Masses	
	12.1 Maximum gross mass	3 650 kg
	12.2 Alternative maximum gross mass	3 700 kg, provided Major Change E-3811 is installed
	12.3 Alternative maximum gross mass	3 800 kg, provided Major Change E-4449 is installed, see Note 6.
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 08
16.	Minimum Flight Crew	1 pilot (right seat)
17.	Maximum Passenger Seating Capacity	nine Refer to RFM for the approved seat configurations
18.	Passenger Emergency Exit	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 04 of the Master Servicing Manual

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 EASA-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 EASA-approved revisions

2. Maintenance Manuals

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 (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 EASA-approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V. Notes

1. Manufacturer's eligible serial numbers:
   s/n 20003 and subsequent.
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 according to Rotorcraft Flight Manual Supplement 9.2-9 is certified as ditching provision in accordance with FAR 29.
   The helicopter may be certified for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:
   - survival type emergency locator transmitter,
   - life raft installation,
   - life preserver.
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-2 does not meet Category A performance when operated at a gross mass above 3 700 kg, refer to FMA 11-19.

* * *

SECTION 10: MBB-BK117 D-2m

I. General

1.	Type/ Model/ Variant	
	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.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date	6 May 2014
5.	State of Design Authority	EASA
6.	EASA Type Certification Date	8 May 2015

II. Certification Basis

1.	Reference Date for determining the applicable requirements	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

Reversion to former amendments:

- FAR 29 Amdt. 47 for FAR 29.865 (External Loads)
- FAR 29 Amdt. 40 for FAR 29.631 (entire tail section only)
- 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)
- 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.

  Note: regarding FAR 29.631 see elected to comply requirements under II.7

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

7. Requirements elected to comply

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

  deleted

8. Environmental Protection Requirements

8.1	Noise Requirements	See TCDSN EASA.R.010
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) — see SECTION 13 below

III. Technical Characteristics and Operational 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:	6.17 m
		Width hull:	1.85 m
		Height:	3.46 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 n°: 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]
AEO-TOP (5 min)	2 x 95	100.6	108.3	918
AEO-MCP	2 x 74	89.5	108.3	901
Extended Power Rating (30 min)	2 x 95	100.6	108.3	918
30 sec OEI-TOP	1 x 150	105.7	108.3	1 006
2 min OEI-TOP	1 x 130 (1)	104.3	108.3	987
OEI-MCP	1 x 100	101.7	108.3	945

- 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 %.

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: 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
12.	Maximum Masses	
	12.1 Maximum gross mass	3 700 kg
	12.2 Alternative maximum gross mass	3 800 kg, provided Major Change E-4449 is installed, see Note 6
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 08
16.	Minimum Flight Crew	1 pilot (right seat)
17.	Maximum Passenger Seating Capacity	nine, Refer to RFM for the approved seat configurations
18.	Passenger Emergency Exit	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, EASA-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 b) BK117 D-2m (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 EASA-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 (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 EASA-approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V. Notes

1. Manufacturer's eligible serial numbers:
   s/n 20016 and subsequent.
2. Designation:
   H145M 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 according to Rotorcraft Flight Manual Supplement 9.2-9 is certified as ditching provision in accordance with FAR 29.
   The helicopter may be certified for ditching provided the following additional equipment are fitted and approved in accordance with the relevant airworthiness requirements:
   - survival type emergency locator transmitter,
   - life raft installation,
   - life preserver.
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 with a gross mass above 3 700 kg, refer to FMA 11-19.

* * *

SECTION 11: MBB-BK117 D-3

I. General

1.	Type/ Model/ Variant	
	1.1 Type	MBB-BK117
	1.2 Model	MBB-BK117 D-3
2.	Airworthiness Category	Large Rotorcraft, Category A and B
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date	2 March 2018
5.	State of Design Authority	EASA
6.	EASA Type Certification Date	19 June 2020

II. Certification Basis

1.	Reference Date for determining the applicable requirements	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 29.1465 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 4).

3. Special Conditions

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

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)
- CS 29.1457 (a), (c), (for CVR, communication during winch operation)
- CS/FAR 29.1555 (c)(1) (for usable fuel capacity marking)

7.	Requirements elected to comply	*reserved*

8. Environmental Protection Requirements

8.1	Noise Requirements	See EASA TCDSN EASA.R.010
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) see SECTION 13 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Type Design Definition TDD D0000M505303

2. Description

Main rotor:	bearingless, 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:	6.17 m
		Width hull:	1.85 m
		Height:	3.90 m
4.2	Main Rotor	Diameter:	10.80 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 n°: EASA.E.001

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator (N_1) rpm [%]	PWR turbine (N_2) rpm [%]	Temperature TOT [°C]
AEO-MCP	2 x 74 (1)	89.5	108.3	901
AEO TOP (30 min)	2 x 95 (1) (2)	100.6	108.3	918
AEO transients	(3)	(4)		(5)
OEI-MCP	1 x 100	101.7	108.3	945
OEI 2 min	1 x 143	104.3	108.3	987
OEI 30 sec -	1 x 150	105.7	108.3	1 006

- (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 seconds. 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.

5.3.2 Other Engine and Transmission limitations

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: 915.8 litres Usable fuel: 903.8 litres
7.2 Oil	Refer to approved RFM, Section 2 and 6

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 operating limitation

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
4 525 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 08
16.	Minimum Flight Crew	1 pilot (right seat)
17.	Maximum Passenger Seating Capacity	Nine Refer to RFM for the approved seat configurations
18.	Passenger Emergency Exit	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	BK117 D-3 Flight Manual including the supplements for Special Operations and Optional Equipment, Original Issue dated 19 June 2020, or later EASA-approved revisions.
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 (SRM)	MBB-BK117
4.	Weight and Balance Manual	Refer to approved RFM
5.	Illustrated Parts Catalogue (IPC)	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 EASA-approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V. 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.
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. 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.

* * *

SECTION 12: MBB-BK117 D-3m

I. General

1.	Type/ Model/ Variant	
	1.1 Type	MBB-BK117
	1.2 Model	MBB-BK117 D-3m
2.	Airworthiness Category	Large Rotorcraft, Category A and B
3.	Manufacturer	Airbus Helicopters Deutschland GmbH Industriestrasse 4 D-86609 Donauwörth, Germany
4.	Type Certification Application Date	2 March 2018
5.	State of Design Authority	EASA
6.	EASA Type Certification Date	19 June 2020

II. Certification Basis

1. Reference Date for determining the applicable requirements: 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 29.1465 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 4).
3. Special Conditions

   - 30 min Extended Power Rating
   - Rechargeable Lithium Battery Installations
   - Non-rechargeable Lithium Battery Installations
   - Cybersecurity
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)
   - CS 29.1457 (a), (c), (for CVR, communication during winch operation)
   - CS/FAR 29.1555 (c)(1) (for usable fuel capacity marking)
7. Requirements elected to comply: *reserved*

8. Environmental Protection Requirements

8.1	Noise Requirements	See EASA TCDSN EASA.R.010
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) see SECTION 13 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Type Design Definition TDD D0000M505305

2. Description

Main rotor:	bearingless, 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:	6.17 m
		Width hull:	1.85 m
		Height:	3.90 m
4.2	Main Rotor	Diameter:	10.80 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 n°: EASA.E.001

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	TQ limits [%]	Gas generator (N_1) rpm [%]	PWR turbine (N_2) rpm [%]	Temperature TOT [°C]
AEO-MCP	2 x 74 (1)	89.5	108.3	901
AEO TOP (30 min)	2 x 95 (1) (2)	100.6	108.3	918
AEO transients	(3)	(4)		(5)
OEI-MCP	1 x 100	101.7	108.3	945
OEI 2 min	1 x 143	104.3	108.3	987
OEI 30 sec -	1 x 150	105.7	108.3	1 006

- (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 seconds. 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.

5.3.2 Other Engine and Transmission limitations

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: 915.8 litres Usable fuel: 903.8 litres
7.2 Oil	Refer to approved RFM, Section 2 and 6

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 operating limitation

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
4 525 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 08
16.	Minimum Flight Crew	1 pilot (right seat)
17.	Maximum Passenger Seating Capacity	Nine Refer to RFM for the approved seat configurations
18.	Passenger Emergency Exit	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	BK117 D-3m Flight Manual including the supplements for Special Operations and Optional Equipment, Original Issue dated 19 June 2020, 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 (SRM)	MBB-BK117
4.	Weight and Balance Manual	Refer to approved RFM
5.	Illustrated Parts Catalogue (IPC)	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 EASA-approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment and Master Minimum Equipment List.

V. Notes

1. Manufacturer's eligible serial numbers:
   s/n 21001 and subsequent.
2. Designation:
   H145M 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. 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.

* * *

SECTION 13: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulations (EU) No 69/2014 and 987/2019

I. OSD Certification Basis

I.1 Reference Date for determining the applicable OSD requirements

For MBB-BK117 A-1, A-3, A-4, B-1, B-2, C-1, C-2: n/a

For MBB-BK117 C-2e: 31 October 2012

For MBB-BK117 D-2: 1 February 2010

For MBB-BK117 D-2m: 6 May 2014

For MBB-BK117 D-3, D-3m: 2 March 2018

I.2 MMEL - Certification Basis

For MBB-BK117 A-1, A-3, A-4, B-1, B-2, C-1, C-2, C-2e:
JAR-MMEL Section 1 Subpart A&B at Amdt. 1

For MBB-BK117 D-2:
- JAR-MMEL Section 1 Subpart A&B at Amdt. 1, for retained items from model MBB-BK117 C-2
- CS-MMEL, Initial Issue, dated 31 January 2014, for all other items

For MBB-BK117 D-2m:

- JAR-MMEL Section 1 Subpart A&B at Amdt. 1, for retained items from model MBB-BK117 C-2
- CS-MMEL, Initial Issue, dated 31 January 2014, for all other items

For MBB-BK117 D-3, D-3m:
- JAR-MMEL Section 1 Subpart A&B at Amdt. 1, for retained items from model MBB-BK117 C 2
- CS MMEL Initial Issue, dated 31 January 2014, for new and affected items

I.3 Flight Crew Data - Certification Basis

CS-FCD, Initial Issue, dated 31 January 2014

I.4 SIM Data - Certification Basis

reserved

I.5 Maintenance Certifying Staff Data - Certification Basis

reserved

II. OSD Elements

II.1 MMEL

For MBB-BK117 A-1, A-3, A-4, B-1, B-2, C-1: MMEL BK117 - Series

For MBB-BK117 C-2, C-2e: MMEL BK117 C-2

For MBB-BK117 D-2, D-2m, D-3, D-3m: MMEL BK117 D-2/D-2m/D-3/D-3m

II.2 Flight Crew Data

For MBB-BK117 C-2, C-2e, D-2, D-2m, D-3, D-3m:

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

II.3 SIM Data

reserved

II.4 Maintenance Certifying Staff Data

reserved

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative	MCP	Maximum Continuous Power
AHD	Airbus Helicopters Deutschland	MGB	Main Gear Box
AMC	Aircraft Management Computer	MGM	Maximum gross mass
Amdt.	Amendment	MFD	Multi-Functional Display
C.G.	Centre of Gravity	min	Minute
CR	(European) Commission Regulation	MMEL	Master Minimum Equipment List
DA	Density Altitude	MSL	Mean Sea Level
DMAU	Digital Monitoring Acquisition Unit	OAT	Outside Air Temperature
DP	Datum Point	OEI	One Engine Inoperative
DH	Decision Height	OSD	Operational Suitability Data
ECD	Eurocopter Deutschland GmbH	PA	Pressure Altitude
EIS	Entry Into Service	PWR	Power
HIGE	Hover in Ground Effect	RFM	Rotorcraft Flight Manual
HIRF	High Intensity Radiated Field	RFMS	Rotorcraft Flight Manual Supplement
HMS	Health Monitoring System	s/n	Serial Number
HUMS	Health and Usage Monitoring System	SC	Special Condition
IFR	Instrument Flight Rules	sec	Seconds
JAA	Joint Aviation Authorities	STA	Station
JAR	Joint Aviation Requirements	SW	Software
KIAS	Knots Indicated Air Speed	TO	Take-Off
LBA	Luftfahrt-Bundesamt (German Federal Aviation Office)	TOP	Take-Off Power
		TQ	Torque
LDG	Landing	VFR	Visual Flight Rules
max	Maximum	V_{NE}	Never Exceed Speed

II. Type Certificate Holder Record

II.1 Type Certificate Holder	**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 DOA Holder (21.A.2)	**Period**
DOA Certificate No. EASA.21J.700 held by: Airbus Helicopters Aéroport International Marseille-Provence 13725 Marignane CEDEX, France	since 21 June 2016

III. Change Record

Issue	Date	Changes	TC issue
Issue 1	23 Mar 2007	Initial issue of EASA TCDS, based on LBA TCDS 3049 at Issue 9, dated 21 April 1993	Initial Issue, 23 March 2007
Issue 2	5 Sep 2007	Addition of American Eurocopter as additional manufacturer for model MBB-BK117 C-2	Re-issued, 17 April 2007
Issue 3	29 Nov 2010	Addition of new notes for NVIS and Ditching	- - -
Issue 4	7 Jan 2014	Incorporation of new company name "Airbus Helicopters Deutschland GmbH" for TC-holder and Manufacturer	Re-issued, 7 January 2014
Issue 5	5 May 2014	Incorporation of new model "MBB-BK117 D-2", new formatting	Re-issued, 16 April 2014.
Issue 6	17 Apr 2015	New formatting, incorporation of new model "MBB-BK117 C-2e"	Re-issued, 17 April 2015
Issue 7	8 May 2015	New formatting, addition of OSD elements, incorporation of new model "MBB-BK117 D-2m"	Re-issued, 8 May 2015
Issue 8	12 May 2015	SECTION header corrected	- - -
Issue 9	14 Dec 2015	New formatting/editing of TCDS, OSD data and certain RFM added	- - -
Issue 10	21 Jun 2016	Editorial correction of MBB-BK117 D-2 and D-2m RFM, alternative MGM MBB-BK117 D-2, Reference II.2 to contracted DOA added in SECTION: Administrative.	- - -
Issue 11	1 Jul 2016	Editorial correction TC holder in SECTION 7, I.3	- - -
Issue 12	16 Dec 2016	Clarification of certification basis of MBB-BK117 C-2/C-2e and D-2/D-2m.	- - -
Issue 13	23 Dec 2016	Further clarification of certification basis of MBB-BK117 D-2/D-2m (change bars related to Issue 12 still depicted)	- - -
Issue 14	18 May 2017	Note concerning MBB-BK117 A-1 continuity added; further clarification of certification basis of MBB-BK117 D-2/D-2m; alternative maximum gross mass added to III.12.	Re-issued, 13 March 2017
Issue 15	17 Nov 2017	MBB-BK117 C-2: in II.3 SC and II.6 ESF added.	- - -
Issue 16	6 Mar 2019	MBB-BK117 C-2, -2e: in II.6 ESF Hoist Installation added MBB-BK117 D-2, -2m: II.2: FAR 29 updated to Amdt. 47 for FAR 29.865; II.7: CS 29.1465 Amdt. 5 added; II.6: FAR 29.1309 (d) added to ESF Hoist Installation; III.5.3.1: opt. 2-min OEI-TOP TQ increase to 142.8 %; III.10.1: Alt. increased to 20 000 ft for TO, LDG, HIGE	- - -
Issue 17	19 Jun 2020	SECTION 1 through 10: II.9.: update section reference; SECTION 8: II.2.: typo corrected (was: 29.1019 (a)); SECTION 8 through 10: II.8.2.: emission requirements added; SECTION 9 and 10: III.4.1.: corrected height dimension (was: 3.45); IV.2., 3., 4.: updated references to applicable manuals; V.5.: note updated; SECTION 10: II.7.: reference to HLX MR1 removed; SECTION 11 and 12: added (D-3, D-3m); SECTION 13: OSD elements applicable to MBB-BK117	Re-issued, 19 Jun 2020

Issue	Date	Changes	TC issue
		D-2m/D-3/D-3m added.	
Issue 18	16 Apr 2021	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: V.1.: eligibility extended to “any MBB-BK117 D-2 converted into MBB-BK117 D-3”.	- - -

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