



European Aviation Safety Agency

EASA

**TYPE-CERTIFICATE
DATA SHEET**

No. 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

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TABLE OF CONTENTS

SECTION 1: MBB-BK117 A-1	10
I. General	10
1. Type/ Model/ Variant.....	10
2. Airworthiness Category.....	10
3. Manufacturer	10
4. EASA Type Certification Application Date.....	10
5. State of Design Authority	10
6. State of Design Authority Type Certificate Date	10
7. EASA Type Certification Date	10
II. Certification Basis	10
1. Reference Date for determining the applicable requirements.....	10
2. Airworthiness Requirements	10
3. Special Conditions	10
4. Exemptions.....	10
5. (Reserved) Deviations	10
6. Equivalent Safety Findings	11
7. Environmental Protection Requirements	11
III. Technical Characteristics and Operational Limitations	11
1. Type Design Definition.....	11
2. Description.....	11
3. Equipment	11
4. Dimensions.....	11
5. Engine	11
6. Fluids (Fuel/ Oil/ Additives)	12
7. Fluid capacities.....	12
8. Air Speeds Limits.....	12
9. Rotor Speed Limits	12
11. Operating Limitations	12
12. Maximum Weight.....	12
13. Centre of Gravity Range	12
14. Datum.....	13
15. Levelling Means.....	13
16. Minimum Flight Crew	13
17. Maximum Passenger Seating Capacity	13
18. Passenger Emergency Exit.....	13
19. Maximum Baggage/ Cargo Loads.....	13
20. Rotor Blade control movement.....	13
21. Auxiliary Power Unit (APU)	13
22. Life- limited parts	13
IV. Operating and Service Instructions	13
V. Notes	14
SECTION 2: MBB-BK117 A-3	15
I. General	15
1. Type/ Model/ Variant.....	15
2. Airworthiness Category.....	15
3. Manufacturer	15
4. EASA Type Certification Application Date.....	15
5. State of Design Authority	15
6. State of Design Authority Type Certificate Date	15
7. EASA Type Certification Date	15
II. Certification Basis	15

1. Reference Date for determining the applicable requirements.....	15
2. Airworthiness Requirements	15
3. Special Conditions	15
4. Exemptions.....	15
5. (Reserved) Deviations	15
6. Equivalent Safety Findings	16
7. Environmental Protection Requirements.....	16
III. Technical Characteristics and Operational Limitations.....	16
1. Type Design Definition.....	16
2. Description.....	16
3. Equipment	16
4. Dimensions.....	16
5. Engine	16
6. Fluids (Fuel/ Oil/ Additives)	17
7. Fluid capacities.....	17
8. Air Speeds Limits.....	17
9. Rotor Speed Limits	17
11. Operating Limitations	17
12. Maximum Weight.....	17
13. Centre of Gravity Range	17
14. Datum.....	18
15. Levelling Means.....	18
16. Minimum Flight Crew	18
17. Maximum Passenger Seating Capacity	18
18. Passenger Emergency Exit.....	18
19. Maximum Baggage/ Cargo Loads.....	18
20. Rotor Blade control movement.....	18
21. Auxiliary Power Unit (APU)	18
22. Life- limited parts	18
IV. Operating and Service Instructions	18
V. Notes.....	19
SECTION 3: MBB-BK117 A-4	20
I. General.....	20
1. Type/ Model/ Variant.....	20
2. Airworthiness Category.....	20
3. Manufacturer	20
4. EASA Type Certification Application Date.....	20
5. State of Design Authority	20
6. State of Design Authority Type Certificate Date	20
7. EASA Type Certification Date.....	20
II. Certification Basis	20
1. Reference Date for determining the applicable requirements.....	20
2. Airworthiness Requirements	20
3. Special Conditions	20
4. Exemptions.....	20
5. (Reserved) Deviations	20
6. Equivalent Safety Findings	21
7. Environmental Protection Requirements.....	21
III. Technical Characteristics and Operational Limitations.....	21
1. Type Design Definition.....	21
2. Description.....	21
3. Equipment	21
4. Dimensions.....	21
5. Engine	21
6. Fluids (Fuel/ Oil/ Additives)	22

7. Fluid capacities.....	22
8. Air Speeds Limits.....	22
9. Rotor Speed Limits.....	22
11. Operating Limitations.....	22
12. Maximum Weight.....	22
13. Centre of Gravity Range.....	22
14. Datum.....	23
15. Levelling Means.....	23
16. Minimum Flight Crew.....	23
17. Maximum Passenger Seating Capacity.....	23
18. Passenger Emergency Exit.....	23
19. Maximum Baggage/ Cargo Loads.....	23
20. Rotor Blade control movement.....	23
21. Auxiliary Power Unit (APU).....	23
22. Life- limited parts.....	23
IV. Operating and Service Instructions.....	23
V. Notes.....	24
SECTION 4: MBB-BK117 B-1.....	25
I. General.....	25
1. Type/ Model/ Variant.....	25
2. Airworthiness Category.....	25
3. Manufacturer.....	25
4. EASA Type Certification Application Date.....	25
5. State of Design Authority.....	25
6. State of Design Authority Type Certificate Date.....	25
7. EASA Type Certification Date.....	25
II. Certification Basis.....	25
1. Reference Date for determining the applicable requirements.....	25
2. Airworthiness Requirements.....	25
3. Special Conditions.....	25
4. Exemptions.....	25
5. (Reserved) Deviations.....	25
6. Equivalent Safety Findings.....	26
7. Environmental Protection Requirements.....	26
III. Technical Characteristics and Operational Limitations.....	26
1. Type Design Definition.....	26
2. Description.....	26
3. Equipment.....	26
4. Dimensions.....	26
5. Engine.....	26
6. Fluids (Fuel/ Oil/ Additives).....	27
7. Fluid capacities.....	27
8. Air Speeds Limits.....	27
9. Rotor Speed Limits.....	27
11. Operating Limitations.....	27
12. Maximum Weight.....	27
13. Centre of Gravity Range.....	27
14. Datum.....	28
15. Levelling Means.....	28
16. Minimum Flight Crew.....	28
17. Maximum Passenger Seating Capacity.....	28
18. Passenger Emergency Exit.....	28
19. Maximum Baggage/ Cargo Loads.....	28
20. Rotor Blade control movement.....	28
21. Auxiliary Power Unit (APU).....	28

22. Life- limited parts	28
IV. Operating and Service Instructions	28
V. Notes.....	29
SECTION 5: MBB-BK117 B-2	30
I. General.....	30
1. Type/ Model/ Variant.....	30
2. Airworthiness Category.....	30
3. Manufacturer	30
4. EASA Type Certification Application Date.....	30
5. State of Design Authority	30
6. State of Design Authority Type Certificate Date	30
7. EASA Type Certification Date	30
II. Certification Basis	30
1. Reference Date for determining the applicable requirements.....	30
2. Airworthiness Requirements	30
3. Special Conditions	30
4. Exemptions.....	31
5. (Reserved) Deviations	31
6. Equivalent Safety Findings	31
7. Environmental Protection Requirements.....	31
III. Technical Characteristics and Operational Limitations.....	31
1. Type Design Definition.....	31
2. Description.....	31
3. Equipment	31
4. Dimensions.....	31
5. Engine	31
6. Fluids (Fuel/ Oil/ Additives)	32
7. Fluid capacities.....	32
8. Air Speeds Limits.....	32
9. Rotor Speed Limits	32
11. Operating Limitations.....	33
12. Maximum Weight.....	33
13. Centre of Gravity Range	33
14. Datum.....	33
15. Levelling Means.....	33
16. Minimum Flight Crew	33
17. Maximum Passenger Seating Capacity	33
18. Passenger Emergency Exit.....	33
19. Maximum Baggage/ Cargo Loads.....	33
20. Rotor Blade control movement.....	34
21. Auxiliary Power Unit (APU)	34
22. Life- limited parts	34
IV. Operating and Service Instructions	34
V. Notes.....	34
SECTION 6: MBB-BK117 C-1	36
I. General.....	36
1. Type/ Model/ Variant.....	36
2. Airworthiness Category.....	36
3. Manufacturer	36
4. EASA Type Certification Application Date.....	36
5. State of Design Authority	36
6. State of Design Authority Type Certificate Date	36
7. EASA Type Certification Date	36
II. Certification Basis	36
1. Reference Date for determining the applicable requirements.....	36

2. Airworthiness Requirements	36
3. Special Conditions	37
4. Exemptions.....	37
5. (Reserved) Deviations	37
6. Equivalent Safety Findings	37
7. Environmental Protection Requirements.....	37
III. Technical Characteristics and Operational Limitations.....	37
1. Type Design Definition.....	37
2. Description.....	37
3. Equipment	37
4. Dimensions.....	37
5. Engine	37
6. Fluids (Fuel/ Oil/ Additives)	38
7. Fluid capacities	38
8. Air Speeds Limits.....	38
9. Rotor Speed Limits	38
11. Operating Limitations	38
12. Maximum Weight	38
13. Centre of Gravity Range	39
14. Datum.....	39
15. Levelling Means.....	39
16. Minimum Flight Crew	39
17. Maximum Passenger Seating Capacity	39
18. Passenger Emergency Exit.....	39
19. Maximum Baggage/ Cargo Loads.....	39
20. Rotor Blade control movement.....	39
21. Auxiliary Power Unit (APU)	39
22. Life- limited parts	39
IV. Operating and Service Instructions	39
V. Notes.....	40
SECTION 7: MBB-BK117 C-2	41
I. General.....	41
1. Type/ Model/ Variant.....	41
2. Airworthiness Category.....	41
3. Manufacturer	41
4. EASA Type Certification Application Date.....	41
02 October 1997.....	41
5. State of Design Authority	41
6. State of Design Authority Type Certificate Date	41
7. EASA Type Certification Date	41
II. Certification Basis	41
1. Reference Date for determining the applicable requirements.....	41
2. Airworthiness Requirements	41
3. Special Conditions	41
4. Exemptions.....	42
5. (Reserved) Deviations	42
6. Equivalent Safety Findings	42
7. Environmental Protection Requirements.....	42
III. Technical Characteristics and Operational Limitations.....	42
1. Type Design Definition.....	42
2. Description.....	42
3. Equipment	42
4. Dimensions.....	42
5. Engine	42
6. Fluids (Fuel/ Oil/ Additives)	43

7. Fluid capacities.....	43
8. Air Speeds Limits.....	43
9. Rotor Speed Limits.....	43
11. Operating Limitations.....	43
12. Maximum Weight.....	44
13. Centre of Gravity Range.....	44
14. Datum.....	44
15. Levelling Means.....	44
16. Minimum Flight Crew.....	44
17. Maximum Passenger Seating Capacity.....	44
18. Passenger Emergency Exit.....	44
19. Maximum Baggage/ Cargo Loads.....	44
20. Rotor Blade control movement.....	44
21. Auxiliary Power Unit (APU).....	44
22. Life- limited parts.....	44
IV. Operating and Service Instructions.....	44
V. Notes.....	45
SECTION 8: MBB-BK117 D-2.....	47
I. General.....	47
1. Type/ Model/ Variant.....	47
2. Airworthiness Category.....	47
3. Manufacturer.....	47
4. EASA Type Certification Application Date.....	47
27 February 2009.....	47
5. State of Design Authority.....	47
6. State of Design Authority Type Certificate Date.....	47
7. EASA Type Certification Date.....	47
II. Certification Basis.....	47
1. Reference Date for determining the applicable requirements.....	47
2. Airworthiness Requirements.....	47
3. Special Conditions.....	48
4. Exemptions.....	48
5. (Reserved) Deviations.....	48
6. Equivalent Safety Findings.....	48
7. Environmental Protection Requirements.....	48
III. Technical Characteristics and Operational Limitations.....	48
1. Type Design Definition.....	48
2. Description.....	48
3. Equipment.....	48
4. Dimensions.....	48
5. Engine.....	48
6. Fluids (Fuel/ Oil/ Additives).....	49
7. Fluid capacities.....	49
8. Air Speeds Limits.....	49
9. Rotor Speed Limits.....	49
11. Operating Limitations.....	50
12. Maximum Weight.....	50
13. Centre of Gravity Range.....	50
14. Datum.....	50
15. Levelling Means.....	50
16. Minimum Flight Crew.....	50
17. Maximum Passenger Seating Capacity.....	50
18. Passenger Emergency Exit.....	50
19. Maximum Baggage/ Cargo Loads.....	50
20. Rotor Blade control movement.....	50

21. Auxiliary Power Unit (APU)	51
22. Life- limited parts	51
IV. Operating and Service Instructions	51
V. Notes	51
SECTION 9: ADMINISTRATIVE	53
I. Acronyms and Abbreviations	53
II. Type Certificate Holder Record	53
III. Change Record	53

SECTION 1: MBB-BK117 A-1

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	A-1
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

AIRBUS HELICOPTERS DEUTSCHLAND GmbH

4. EASA Type Certification Application Date -

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

Luftfahrt-Bundesamt, Germany

6. State of Design Authority Type Certificate Date

09 December 1982 (LBA TC No. 3049)

7. EASA Type Certification Date

-

II. Certification Basis

1. Reference Date for determining the applicable requirements

-

2. Airworthiness Requirements

FAR 29 amendments 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter dated 10 December 1979 and revised on 03 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

-

5. (Reserved) Deviations

-

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. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Master List Drawing No. 117-A1-99

2. Description

Rigid 4-bladed main rotor, twin-bladed tail rotor, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, fin and tail plane fitted with endplate fins, powered by 2 independent turbo shaft engines, skid-type landing gear

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	1,60 m
	Height	3,36 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	2 blades, diameter	1,956 m

5. Engine

5.1 Model Honeywell LTS 101-650B-1 Turbo shaft engines

5.2 Type Certificate EASA.IM.E.228

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm min ⁻¹ [%]	Power turbine rpm min ⁻¹ [%]	Temperature TOT °C
<i>All Engine Operation (AEO)</i>				
AEO-TOP (5 min)	2 x 71	49159 [102.7]	6120 [102]	782
AEO-MCP	2 x 71	49159 [102.7]	6120 [102]	763
<i>One Engine Inoperative (OEI)</i>				
2 ¹ / ₂ min OEI-TOP	1 x 100	50548 [105.6]	6120 [102]	832
30 min OEI-TOP	1 x 91.5	50169 [104.8]	6120 [102]	796
OEI-MCP	1 x 83	49159 [102.7]	6120 [102]	763

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	Refer to EASA approved Flight Manual, Section 2
6.2 Oil	Refer to EASA approved Flight Manual, Section 2
6.3 Additives	Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

7.1 Fuel	fuel tank capacity:	607,6 l
	useable fuel:	598,0 l
7.2 Oil		4,33 l
7.3 Coolant system capacity		n/a

8. Air Speeds Limits

VNE = 150 knots

refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

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 2000 kg
	minimum	85 % (325.5 rpm) above 2000 kg
Transient:	refer to EASA approved Flight Manual	

10. Maximum Operating Altitude and Temperature

10.1 Altitude	4572 m [15,000 ft] 3353 m [11,000 ft DA] for TO, LDG and Hover in ground effect
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10.2 Temperature	refer to EASA approved Flight Manual
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11. Operating Limitations

VFR Day and Night, No flight into known icing condition

For IFR and for Cat A Operation refer to the EASA approved RFM

Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

2850 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,

maximum forward limit:	4375 mm	aft of DP at 1700 kg
	4337 mm	aft of DP at 2000 kg
	4415 mm	aft of DP at 2850 kg
maximum rearward limit:	4670 mm	aft of DP at 1700 kg
	4565 mm	aft of DP at 2850 kg

Lateral C.G Limits,

maximum deviation on right / left:	100 mm
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14. Datum

Longitudinal: 4000 mm forward of the levelling point 4/5 on the cabin floor in the rear door aperture
Lateral: fuselage median plane

15. Levelling Means

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

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

seven (or ten if the kit described in FMS 10-8 is installed and operated)
refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

1200 kg (250 kg in aft of rear seat bank) with maximum loading of 600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

The periods specified in the latest revision of the Airworthiness Limitations section in Appendix A of the Maintenance Manual MBB-BK117 A/B must not be exceeded.

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

BK117 A-1, firstly LBA approved on 09.12.1982, including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

2. Maintenance Manual

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

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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 Section 10 and 11

V. Notes

1. Eligible serial numbers: 7001 to 7006, 7008 to 7046, 7048 to 7054
2. Record of Manufacturer:
 - Messerschmidt-Bölkow-Blohm GmbH, 8012 Ottobrunn
 - Eurocopter Hubschrauber GmbH, Postfach 1353,
W-8850 Donauwörth.
 - Eurocopter Deutschland GmbH, Postfach 1353,
W-8850 Donauwörth or 86603 Donauwörth or
86607 Donauwörth.
 - AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
Industriestrasse 4, D-86609 Donauwörth.

SECTION 2: MBB-BK117 A-3

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	A-3
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

AIRBUS HELICOPTERS DEUTSCHLAND GmbH

4. EASA Type Certification Application Date -

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

Luftfahrt-Bundesamt, Germany

6. State of Design Authority Type Certificate Date

15 March 1985 (LBA TC No. 3049)

7. EASA Type Certification Date

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II. Certification Basis

1. Reference Date for determining the applicable requirements

-

2. Airworthiness Requirements

FAR 29 amendments 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter dated 10 December 1979 and revised on 03 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

-

5. (Reserved) Deviations

-

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. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Master List Drawing No. 117-A3-99

2. Description

Rigid 4-bladed main rotor, twin-bladed tail rotor, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, fin and tail plane fitted with endplate fins, powered by 2 independent turbo shaft engines, skid-type landing gear

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	1,60 m
	Height	3,36 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	2 blades, diameter	1,956 m

5. Engine

5.1 Model Honeywell LTS 101-650B-1 Turbo shaft engines

5.2 Type Certificate EASA.IM.E.228

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm min ⁻¹ [%]	Power turbine rpm min ⁻¹ [%]	Temperature TOT °C
<i>All Engine Operation (AEO)</i>				
AEO-TOP (5 min)	2 x 71	49159 [102.7]	6120 [102]	782
AEO-MCP	2 x 71	49159 [102.7]	6120 [102]	763
<i>One Engine Inoperative (OEI)</i>				
2 ¹ / ₂ min OEI-TOP	1 x 100	50548 [105.6]	6120 [102]	832
30 min OEI-TOP	1 x 91.5	50169 [104.8]	6120 [102]	796
OEI-MCP	1 x 83	49159 [102.7]	6120 [102]	763

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	Refer to EASA approved Flight Manual, Section 2
6.2 Oil	Refer to EASA approved Flight Manual, Section 2
6.3 Additives	Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

7.1 Fuel	fuel tank capacity:	607,6 l
	useable fuel:	598,0 l
7.2 Oil		4,33 l
7.3 Coolant system capacity		n/a

8. Air Speeds Limits

VNE = 150 knots

refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

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 2000 kg
	minimum	85 % (325.5 rpm) above 2000 kg
Transient:	refer to EASA approved Flight Manual	

10. Maximum Operating Altitude and Temperature

10.1 Altitude	4572 m [15,000 ft] up to 3000 kg
	3048 m [10,000 ft] above 3000 kg
	3658 m [12,000 ft] if OAT is below -30°C
	3353 m [11,000 ft DA] for TO, LDG and Hover in ground effect
10.2 Temperature	refer to EASA approved Flight Manual

11. Operating Limitations

VFR Day and Night, No flight into known icing condition

For IFR and for Cat A Operation refer to the EASA approved RFM

Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

3200 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,

maximum forward limit:	4375 mm	aft of DP at 1700 kg
	4337 mm	aft of DP at 2000 kg
	4447 mm	aft of DP at 3200 kg
maximum rearward limit:	4670 mm	aft of DP at 1700 kg
	4533 mm	aft of DP at 3200 kg

Lateral C.G Limits,

maximum deviation on right / left:

100 mm	up to 2850kg
80mm	above 2850kg

14. Datum

Longitudinal: 4000 mm forward of the levelling point 4/5 on the cabin floor in the rear door aperture

Lateral: fuselage median plane

15. Levelling Means

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

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

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

refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

1200 kg (250 kg in aft of rear seat bank) with maximum loading of 600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

The periods specified in the latest revision of the Airworthiness Limitations section in Appendix A of the Maintenance Manual MBB-BK117 A/B must not be exceeded.

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

BK117 A-3, firstly LBA approved on 15.03.1985, including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

2. Maintenance Manual

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

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

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5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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 Section 10 and 11

V. Notes

1. Eligible serial numbers: 7055 to 7073, 7075 to 7099, 7101 to 7121
plus upgraded MBB-BK 117 A-1 model according to
SB-MBB-BK 117-10-4
2. Record of Manufacturer:
Messerschmidt-Bölkow-Blohm GmbH, 8012 Ottobrunn
Eurocopter Hubschrauber GmbH, Postfach 1353,
W-8850 Donauwörth.
Eurocopter Deutschland GmbH, Postfach 1353,
W-8850 Donauwörth or 86603 Donauwörth or
86607 Donauwörth.
AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
Industriestrasse 4, D-86609 Donauwörth.

SECTION 3: MBB-BK117 A-4

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	A-4
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

AIRBUS HELICOPTERS DEUTSCHLAND GmbH

4. EASA Type Certification Application Date -

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

Luftfahrt-Bundesamt, Germany

6. State of Design Authority Type Certificate Date

29 July 1986 (LBA TC No. 3049)

7. EASA Type Certification Date

-

II. Certification Basis

1. Reference Date for determining the applicable requirements

-

2. Airworthiness Requirements

FAR 29 amendments 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter dated 10 December 1979 and revised on 03 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

-

5. (Reserved) Deviations

-

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. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Master List Drawing No. 117-A4-99

2. Description

Rigid 4-bladed main rotor, twin-bladed tail rotor, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, fin and tail plane fitted with endplate fins, powered by 2 independent turbo shaft engines, skid-type landing gear

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	1,60 m
	Height	3,36 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	2 blades, diameter	1,956 m

5. Engine

5.1 Model Honeywell LTS 101-650B-1 Turbo shaft engines

5.2 Type Certificate EASA.IM.E.228

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm min ⁻¹ [%]	Power turbine rpm min ⁻¹ [%]	Temperature TOT °C
<i>All Engine Operation (AEO)</i>				
AEO-TOP (5 min)	2 x 83	49159 [102.7]	6120 [102]	782
AEO-MCP	2 x 71	49159 [102.7]	6120 [102]	763
<i>One Engine Inoperative (OEI)</i>				
2 ¹ / ₂ min OEI-TOP	1 x 100	50548 [105.6]	6120 [102]	832
30 min OEI-TOP	1 x 91.5	50169 [104.8]	6120 [102]	796
OEI-MCP	1 x 83	49159 [102.7]	6120 [102]	763

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	Refer to EASA approved Flight Manual, Section 2
6.2 Oil	Refer to EASA approved Flight Manual, Section 2
6.3 Additives	Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

7.1 Fuel	fuel tank capacity:	607,6 l
	useable fuel:	598,0 l
7.2 Oil		4,33 l
7.3 Coolant system capacity		n/a

8. Air Speeds Limits

VNE = 150 knots

refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

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 2000 kg
	minimum	85 % (325.5 rpm) above 2000 kg
Transient:	refer to EASA approved Flight Manual	

10. Maximum Operating Altitude and Temperature

10.1 Altitude	4572 m [15,000 ft] up to 3000 kg
	3048 m [10,000 ft] above 3000 kg
	3658 m [12,000 ft] if OAT is below -30°C
	3353 m [11,000 ft DA] for TO, LDG and Hover in ground effect
10.2 Temperature	refer to EASA approved Flight Manual

11. Operating Limitations

VFR Day and Night, No flight into known icing condition

For IFR and for Cat A Operation refer to the EASA approved RFM

Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

3200 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,

maximum forward limit:	4375 mm	aft of DP at 1700 kg
	4337 mm	aft of DP at 2000 kg
	4447 mm	aft of DP at 3200 kg
maximum rearward limit:	4670 mm	aft of DP at 1700 kg
	4533 mm	aft of DP at 3200 kg

Lateral C.G Limits,

maximum deviation on right / left:

100 mm	up to 2850kg
80mm	above 2850kg

14. Datum

Longitudinal: 4000 mm forward of the levelling point 4/5 on the cabin floor in the rear door aperture

Lateral: fuselage median plane

15. Levelling Means

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

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

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

refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

1200 kg (250 kg in aft of rear seat bank) with maximum loading of 600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

The periods specified in the latest revision of the Airworthiness Limitations section in Appendix A of the Maintenance Manual MBB-BK117 A/B must not be exceeded.

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

BK117 A-4, firstly LBA approved on 29.07.1986, including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

2. Maintenance Manual

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

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

-

5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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 Section 10 and 11

V. Notes

1. Eligible serial numbers: 7047, 7074, 7100, 7122 to 7139
plus upgraded MBB-BK 117 A-3 model according to
SB-MBB-BK 117-80-105
2. Record of Manufacturer:
Messerschmidt-Bölkow-Blohm GmbH, 8012 Ottobrunn
Eurocopter Hubschrauber GmbH, Postfach 1353,
W-8850 Donauwörth.
Eurocopter Deutschland GmbH, Postfach 1353,
W-8850 Donauwörth or 86603 Donauwörth or
86607 Donauwörth.
AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
Industriestrasse 4, D-86609 Donauwörth.

SECTION 4: MBB-BK117 B-1

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	B-1
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

AIRBUS HELICOPTERS DEUTSCHLAND GmbH

4. EASA Type Certification Application Date -

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

Luftfahrt-Bundesamt, Germany

6. State of Design Authority Type Certificate Date

10 December 1987 (LBA TC No. 3049)

7. EASA Type Certification Date

-

II. Certification Basis

1. Reference Date for determining the applicable requirements

-

2. Airworthiness Requirements

FAR 29 amendments 29-1 through 29-16

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter dated 10 December 1979 and revised on 03 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

-

5. (Reserved) Deviations

-

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. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Master List Drawing No. 117-B1-99

2. Description

Rigid 4-bladed main rotor, twin-bladed tail rotor, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, fin and tail plane fitted with endplate fins, powered by 2 independent turbo shaft engines, skid-type landing gear

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	1,60 m
	Height	3,36 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	2 blades, diameter	1,956 m

5. Engine

5.1 Model Honeywell LTS 101-750B-1 Turbo shaft engines

5.2 Type Certificate EASA.IM.E.228

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm min ⁻¹ [%]	Power turbine rpm min ⁻¹ [%]	Temperature TOT °C
<i>All Engine Operation (AEO)</i>				
AEO-TOP (5 min)	2 x 83	49159 [102.7]	6120 [102]	786
AEO-MCP	2 x 71	49159 [102.7]	6120 [102]	765
<i>One Engine Inoperative (OEI)</i>				
2 ¹ / ₂ min OEI-TOP	1 x 100	50548 [105.6]	6120 [102]	836
30 min OEI-TOP	1 x 91.5	50169 [104.8]	6120 [102]	800
OEI-MCP	1 x 83	49159 [102.7]	6120 [102]	765

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel	Refer to EASA approved Flight Manual, Section 2
6.2 Oil	Refer to EASA approved Flight Manual, Section 2
6.3 Additives	Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

7.1 Fuel	fuel tank capacity:	607,6 l
	useable fuel:	598,0 l
7.2 Oil		4,33 l
7.3 Coolant system capacity		n/a

8. Air Speeds Limits

VNE = 150 knots

refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

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 2000 kg
	minimum	85 % (325.5 rpm) above 2000 kg
Transient:		refer to EASA approved Flight Manual

10. Maximum Operating Altitude and Temperature

10.1 Altitude	4572 m [15,000 ft] up to 3000 kg
	3048 m [10,000 ft] above 3000 kg
	3658 m [12,000 ft] if OAT is below -30°C
	5182 m [17,000 ft DA] or 4572 m [15,000 ft PA] whichever is less for TO, LDG and Hover in ground effect

10.2 Temperature refer to EASA approved Flight Manual

11. Operating Limitations

VFR Day and Night, No flight into known icing condition

For IFR and for Cat A Operation refer to the EASA approved RFM

Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

3200 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,

maximum forward limit:	4375 mm	aft of DP at 1700 kg
	4337 mm	aft of DP at 2000 kg
	4447 mm	aft of DP at 3200 kg
maximum rearward limit:	4670 mm	aft of DP at 1700 kg
	4533 mm	aft of DP at 3200 kg

Lateral C.G Limits,

maximum deviation on right / left:

100 mm	up to 2850kg
80mm	above 2850kg

14. Datum

Longitudinal: 4000 mm forward of the levelling point 4/5 on the cabin floor in the rear door aperture

Lateral: fuselage median plane

15. Levelling Means

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

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

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

refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

1200 kg (250 kg in aft of rear seat bank) with maximum loading of 600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

The periods specified in the latest revision of the Airworthiness Limitations section in Appendix A of the Maintenance Manual MBB-BK117 A/B must not be exceeded.

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

BK117 B-1, firstly LBA approved on 10.12.1987, including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

2. Maintenance Manual

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

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

-

5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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 Section 10 and 11

V. Notes

1. Eligible serial numbers: 7140-7202, 7204-7243 plus upgraded MBB-BK 117 A-4 model according to the drawing 117 KM 80024-1.
2. Record of Manufacturer:
Messerschmidt-Bölkow-Blohm GmbH, 8012 Ottobrunn.
Eurocopter Hubschrauber GmbH, Postfach 1353,
W-8850 Donauwörth.
Eurocopter Deutschland GmbH, Postfach 1353,
W-8850 Donauwörth or 86603 Donauwörth or
86607 Donauwörth.
AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
Industriestrasse 4, D-86609 Donauwörth.

SECTION 5: MBB-BK117 B-2

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	B-2
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

AIRBUS HELICOPTERS DEUTSCHLAND GmbH

4. EASA Type Certification Application Date -

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

Luftfahrt-Bundesamt, Germany

6. State of Design Authority Type Certificate Date

17 January 1992 (LBA TC No. 3049)

7. EASA Type Certification Date

-

II. Certification Basis

1. Reference Date for determining the applicable requirements

-

2. Airworthiness Requirements

FAR 29 amendments 29-1 through 29-16, and including

FAR 29 Amendment 29-17 for:

- FAR 29.927

FAR 29 Amendment 29-21 for:

- FAR 29.1, FAR 29.1517

FAR 29 Amendment 29-24 for:

- FAR 29.143, FAR 29.672, FAR 29.1329, FAR 29.1587

FAR 29 Amendment 29-26 for:

- FAR 29.923

FAR 29 Amendment 29-32 for:

- FAR 29.2

JAR 29 (First Issue) for:

- JAR 29.45 to JAR 29.87

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter dated 10 December 1979 and revised on 03 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

-

5. (Reserved) Deviations

-

6. Equivalent Safety Findings

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

7. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Master List Drawing No. 117-B2-99

2. Description

Rigid 4-bladed main rotor, twin-bladed tail rotor, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, fin and tail plane fitted with endplate fins, powered by 2 independent turbo shaft engines, skid-type landing gear

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	1,60 m
	Height	3,36 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	2 blades, diameter	1,956 m

5. Engine

5.1 Model Honeywell LTS 101-750B-1 Turbo shaft engines

5.2 Type Certificate EASA.IM.E.228

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm min ⁻¹ [%]	Power turbine rpm %	Temperature TOT °C
<i>All Engine Operation</i>				
AEO-TOP (5 min)	2 x 83	49159 [102.7]	102	786
AEO-MCP	2 x 71	49159 [102.7]	102	765
<i>One Engine Inoperative (up to S/N 7252, if SB-MBB-BK117-60-113 is not installed)</i>				
2 ¹ / ₂ min OEI-TOP	1 x 100	50548 [105.6]	102	836
30 min OEI-TOP	1 x 91.5	50169 [104.8]	102	800
OEI-MCP	1 x 83	49159 [102.7]	102	765
<i>One Engine Inoperative (from S/N 7253, or if SB-MBB-BK117-60-113 is installed)</i>				
2 ¹ / ₂ min OEI-TOP	1 x 125	50548 [105.6]	102	836
30 min OEI-TOP	1 x 91.5	50169 [104.8]	102	800
OEI-MCP	1 x 91.5	49159 [102.7]	102	765

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel Refer to EASA approved Flight Manual, Section 2

6.2 Oil Refer to EASA approved Flight Manual, Section 2

6.3 Additives Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

7.1 Fuel fuel tank capacity: 607,6 l
useable fuel: 598,0 l

7.2 Oil 4,33 l

7.3 Coolant system capacity n/a

8. Air Speeds Limits

VNE = 150 knots

refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

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 2000 kg
minimum 85 % (325.5 rpm) above 2000 kg

Transient: refer to EASA approved Flight Manual

10. Maximum Operating Altitude and Temperature

10.1 Altitude Up to S/N 7252:
4572 m [15,000 ft] up to 3000 kg
3048 m [10,000 ft] above 3000 kg

3658 m [12,000 ft] if OAT is below -30°C
5182 m [17,000 ft DA] or 4572 m [15,000 ft PA]
whichever is less for TO, LDG and Hover in
ground effect

From S/N 7253 or if SB-MBB-BK 117-80-111 is installed:

5486 m [18,000 ft] up to 3000 kg
3048 m [10,000 ft] above 3000 kg
3658 m [12,000 ft] if OAT is below -30°C
5182 m [17,000 ft DA] or 5486 m [18,000 ft PA]
whichever is less for TO, LDG and Hover in
ground effect

10.2 Temperature refer to EASA approved Flight Manual

11. Operating Limitations

VFR Day and Night, No flight into known icing condition
For IFR and for Cat A Operation refer to the EASA approved RFM
Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

3350 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,
maximum forward limit: 4375 mm aft of DP at 1700 kg
4337 mm aft of DP at 2000 kg
4400 mm aft of DP at 3350 kg
maximum rearward limit: 4670 mm aft of DP at 1700 kg
4520 mm aft of DP at 3350 kg

Lateral C.G Limits,
maximum deviation on right / left:
100 mm up to 2850kg
80mm above 2850kg

14. Datum

Longitudinal: 4000 mm forward of the levelling point 4/5 on the cabin
floor in the rear door aperture
Lateral: fuselage median plane

15. Levelling Means

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

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

seven (or ten if the kit described in FMS 10-8 is installed and operated)
refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

1200 kg (250 kg in aft of rear seat bank) with maximum loading of 600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

The periods specified in the latest revision of the Airworthiness Limitations section in Appendix A of the Maintenance Manual MBB-BK117 A/B must not be exceeded.

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

- a. BK117 B-2, firstly LBA approved on 17.01.1992,
- b. BK117 B-2-7203, firstly LBA approved on 21.04.1993,
including the supplements for Special Operations and Optional Equipment, or
subsequent approved issues

2. Maintenance Manual

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

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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 Section 10 and 11

V. Notes

- 1. Eligible serial numbers: 7203, 7244 and upwards plus upgraded MBB-BK 117 B-1 model according to the drawing 117-800121.
- 2. Record of Manufacturer:
Messerschmidt-Bölkow-Blohm GmbH, 8012 Ottobrunn.
Eurocopter Hubschrauber GmbH, Postfach 1353,

W-8850 Donauwörth.
Eurocopter Deutschland GmbH, Postfach 1353,
W-8850 Donauwörth or 86603 Donauwörth or
86607 Donauwörth.
AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
Industriestrasse 4, D-86609 Donauwörth.

SECTION 6: MBB-BK117 C-1

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	C-1
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

AIRBUS HELICOPTERS DEUTSCHLAND GmbH

4. EASA Type Certification Application Date -

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

Luftfahrt-Bundesamt, Germany

6. State of Design Authority Type Certificate Date

02 October 1992 (LBA TC No. 3049)

7. EASA Type Certification Date

-

II. Certification Basis

1. Reference Date for determining the applicable requirements

-

2. Airworthiness Requirements

FAR 29 amendments 29-1 through 29-16, and including

FAR 29 Amendment 29-17 for:

- FAR 29.927, FAR 29.1091, FAR 29.1103, FAR 29.1195

FAR 29 Amendment 29-21 for:

- FAR 29.1, FAR 29.1517, FAR 29.1587

FAR 29 Amendment 29-24 for:

- FAR 29.143

FAR 29 Amendment 29-26 for:

- FAR 29.901, FAR 29.903, FAR 29.908, FAR 29.955, FAR 29.961

- FAR 29.1041, FAR 29.1043, FAR 29.1045, FAR 29.1047, FAR 29.1093

FAR 29 Amendment 29-32 for:

- FAR 29.2

JAR 29 (First Issue) for:

- JAR 29.45 to 29.87

3. Special Conditions

LBA Special Conditions for MBB-BK 117 helicopter dated 10 December 1979 and revised on 03 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

-

5. (Reserved) Deviations

-

6. Equivalent Safety Findings

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

7. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Master List Drawing No. 117-C1-99

2. Description

Rigid 4-bladed main rotor, twin-bladed tail rotor, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, fin and tail plane fitted with endplate fins, powered by 2 independent turbo shaft engines, skid-type landing gear

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	1,60 m
	Height	3,36 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	2 blades, diameter	1,956 m

5. Engine

5.1 Model Turbomeca Arriel 1E2 Turbo shaft engines

5.2 Type Certificate EASA.E.073

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm min ⁻¹ [%]	Power turbine rpm %	Temperature TOT °C
<i>All Engine Operation</i>				
AEO-TOP (5 min)	2 x 83	52111 [100.6]	102 ^{*)}	845
AEO-MCP	2 x 71	51800 [100.0]	102 ^{*)}	845
<i>One Engine Inoperative</i>				
2 ¹ / ₂ min OEI-TOP	1 x 125	53509 [103.3]	102	885
OEI-MCP	1 x 91.5	51955 [100.3]	102	845

*) Maximum power turbine rpm for pressure altitude > 8000 ft and v < 55 KIAS is 104%

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

- 6.1 Fuel Refer to EASA approved Flight Manual, Section 2
- 6.2 Oil Refer to EASA approved Flight Manual, Section 2
- 6.3 Additives Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

- 7.1 Fuel fuel tank capacity: 707,6 l
useable fuel: 697,4 l
- 7.2 Oil 4,33 l
- 7.3 Coolant system capacity n/a

8. Air Speeds Limits

VNE = 150 knots

refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

- Power on: maximum 102 %
maximum 104% (for PA > 8000 ft and v < 55 KIAS)
minimum 98 %
- Power off: maximum 104 %
minimum 80 % up to 2000 kg
minimum 85 % above 2000 kg
- Transient: refer to EASA approved Flight Manual

10. Maximum Operating Altitude and Temperature

- 10.1 Altitude 5486 m [18,000 ft]
- 10.2 Temperature refer to EASA approved Flight Manual

11. Operating Limitations

- VFR Day and Night, No flight into known icing condition
- For IFR and for Cat A Operation refer to the EASA approved RFM
- Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

3350 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,

maximum forward limit:	4375 mm	aft of DP at 1700 kg
	4337 mm	aft of DP at 2000 kg
	4400 mm	aft of DP at 3350 kg
maximum rearward limit:	4670 mm	aft of DP at 1700 kg
	4520 mm	aft of DP at 3350 kg

Lateral C.G Limits,

maximum deviation on right / left:

100 mm	up to 2850kg
80mm	above 2850kg

14. Datum

Longitudinal: 4000 mm forward of the levelling point 4/5 on the cabin floor in the rear door aperture

Lateral: fuselage median plane

15. Levelling Means

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

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

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

refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

1200 kg (250 kg in aft of rear seat bank) with maximum loading of 600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

The periods specified in the latest revision of the Airworthiness Limitations section in Appendix A of the Maintenance Manual MBB-BK117 C-1 must not be exceeded.

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

- a. BK117 C-1, firstly LBA approved on 02.10.1992,
- b. BK117 C-1C, firstly CAA-UK approved on 28.08.1995,
including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

2. Maintenance Manual

- a. Maintenance Manual MBB-BK117 C-1
- b. Wiring Diagram Manual MBB-BK117
- c. Engine documents as per Engine TCDS EASA.E.073

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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 Section 10 and 11

V. Notes

- 1. Eligible serial numbers: 7007, 7500 and upwards
- 2. Record of Manufacturer:
Eurocopter Deutschland GmbH, Postfach 1353,
W-8850 Donauwörth or 86603 Donauwörth or
86607 Donauwörth.
AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
Industriestrasse 4, D-86609 Donauwörth.
- 3. 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 (Documents No. 9/31/R Y2601)

SECTION 7: MBB-BK117 C-2

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	C-2
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

- a. AIRBUS HELICOPTERS DEUTSCHLAND GmbH
- b. AIRBUS HELICOPTERS INC. (USA)

4. EASA Type Certification Application Date -

02 October 1997

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

Luftfahrt-Bundesamt, Germany

6. State of Design Authority Type Certificate Date

20 December 2000 (LBA TC No. 3049)

7. EASA Type Certification Date

-

II. Certification Basis

1. Reference Date for determining the applicable requirements

02 October 1997

2. Airworthiness Requirements

FAR 29 amendments 29-1 through 29-40, including Appendix B

- FAR 29 amendment 26 for:
FAR 29.903 (see CRI No. E-4), FAR 29.923 (see CRI No. E-2)
- FAR 29 amendment 17 for:
FAR 29.927 (see CRI No. E-2)
- FAR 29 amendment 16 for:
FAR 29.547 (for unchanged parts), FAR 29.571 (see CRI No. C-1),
FAR 29.863 (see CRI No. D-6), FAR 29.901(c) (see CRI No. E-4)
FAR 29.917, FAR 29.1011, FAR 29.1019(a), FAR 29.1021, FAR 29.1163
FAR 29.1181, FAR 29.1183, FAR 29.1189
FAR 29.1309 (b), (d), (e) (see CRI No. F-2, F-4), FAR 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), (CRI No. F-1)
- SC No. 7: BK117 C-2 Primary structures designed with composite material

4. Exemptions

- FAR 29.610(d)(4) for unchanged parts categorized as "Essential"- (CRI No. D-4)
- FAR 29.631 (CRI No. D-2)
- FAR 29.1027
- FAR 29.1305(a)(21) and (23)
- FAR 29.1337(e)

5. (Reserved) Deviations

-

6. Equivalent Safety Findings

- FAR 29.807 (a)(4) Emergency exits (CRI No. D-1)
- FAR 29.1303 (a),(j) VNE indication (CRI No. F-3)
- FAR 29.1549 (b) Powerplant Instruments (CRI No. G-1)
- FAR 29.1151 (b) Rotor Brake Controls

7. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Master List Drawing No. 117-C2-99

2. Description

Rigid 4-bladed main rotor, twin-bladed tail rotor, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, fin and tail plane fitted with endplate fins, powered by 2 independent turbo shaft engines, skid-type landing gear

3. Equipment

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

4. Dimensions

4.1 Fuselage	Length	6,186 m
	Width	1,845 m
	Height	3,450 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	2 blades, diameter	1,962 m

5. Engine

5.1 Model Turbomeca Arriel 1E2 Turbo shaft engines

5.2 Type Certificate EASA.E.073

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm min ⁻¹ [%]	Power turbine rpm %	Temperature TOT °C
<i>All Engine Operation</i>				
AEO-TOP (5 min)	2 x 88	52835 [101,9]	104	845
AEO-MCP	2 x 71	51955 [100,0]	104	845
<i>One Engine Inoperative</i>				
2½ min OEI-TOP	1 x 125,0	53509 [103,3]	104	885
OEI-MCP	1 x 91,5	52835 [101,9]	104	845

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel Refer to EASA approved Flight Manual, Section 2

6.2 Oil Refer to EASA approved Flight Manual, Section 2

6.3 Additives Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

7.1 Fuel

Standard Fuel Tank:	total fuel:	879,1 l
	usable fuel:	867,5 l
self-sealing fuel tank:	total fuel:	861.6 l
	useable fuel:	850.0 l

7.2 Oil 4,33 l

7.3 Coolant system capacity n/a

8. Air Speeds Limits

VNE = 150 knots

refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

Power on: maximum 104 %
minimum 96 %

Power off: maximum 104 %
minimum 80 % (up to 2000 kg)
minimum 85 % (above 2000 kg)

Transient: (see EASA approved RFM)

10. Maximum Operating Altitude and Temperature

10.1 Altitude 5486 m [18,000 ft]

10.2 Temperature refer to EASA approved Flight Manual

11. Operating Limitations

VFR Day and Night, No flight into known icing condition

For IFR and for Cat A Operation refer to the EASA approved RFM

Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

3585 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,

maximum forward limit: 4337 mm aft of DP at 2000 kg
4377 mm aft of DP at 3585 kg

maximum rearward limit: 4667 mm aft of DP at 1750 kg
4544 mm aft of DP at 3585 kg

Lateral C.G Limits,

maximum deviation on right / left:
100 mm (up to 3000 kg)
80 mm (above 3000 kg)

14. Datum

Longitudinal: 3950 mm forward of the levelling point in the aft door frame

Lateral: fuselage median plane

15. Levelling Means

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

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

Nine (or ten if the kit described in FMS 9.2-27 is installed and operated)

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

The periods specified in the latest revision of the Airworthiness Limitations section in Chapter 04 of the Master Servicing Manual MBB-BK117 C-2 must not be exceeded.

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

BK117 C-2, firstly LBA approved on 20.12.2000, including the supplements for

Special Operations and Optional Equipment, or subsequent approved issues

2. Maintenance Manual

- a. Aircraft Maintenance Manual (AMM) MBB-BK117 C-2
- b. Wiring Diagram Manual (WDM) MBB-BK117 C-2
- c. Engine documents as per Engine TCDS EASA.E.073
- d. Master Servicing Manual (MSM) MBB-BK117 C-2

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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. Eligible serial numbers: 9004 and upwards
2. Record of Manufacturer:
Until January 2014:
 - a) Eurocopter Deutschland GmbH, Postfach 1353, W-8850 Donauwörth or 86603 Donauwörth or 86607 Donauwörth.
 - b) American Eurocopter LLC, Columbus, Mississippi 39701 USA.
January 2014 onwards:
 - a) AIRBUS HELICOPTERS DEUTSCHLAND GmbH, Industriestrasse 4, D-86609 Donauwörth.
 - b) AIRBUS HELICOPTERS INC.(AHI), , Columbus, Mississippi 39701, USA, Production Certificate No. 343CE.
3. Designation: EC145 and UH145 are used as marketing designation for MBB-BK117 C-2 helicopters.
4. Night Vision Goggles Operational Capability:
Night Vision Goggles aided operations are enabled according to Rotorcraft Flight Manual Supplement 9.2-48 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles is described in the serial number specific ECD NVIS Substantiation Report.

Subsequent modifications and deviations to the NVG helicopter configuration are managed by ECD in accordance with ECD document ECD-TN-ETZN-025-2009. Modifications that add or change systems that emit or reflect light, have the potential to alter or change the NVIS lighting – NVG compatibility. For this reason they require an engineering evaluation and related airworthiness approval.

5. Ditching:

The emergency floatation system according to Rotorcraft Flight Manual Supplement 9.2-6 is certified as ditching provision in accordance with FAR29.

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 D-2

I. General

1. Type/ Model/ Variant

1.1 Type	MBB-BK117
1.2 Model	D-2
1.3 Variant	n/a

2. Airworthiness Category

Large Rotorcraft, Category A and B

3. Manufacturer

AIRBUS HELICOPTERS DEUTSCHLAND GmbH

4. EASA Type Certification Application Date -

27 February 2009

Note: State of Design Authority certification application date for grandfathered products

5. State of Design Authority

EASA

6. State of Design Authority Type Certificate Date

-

7. EASA Type Certification Date

16 April 2014

II. Certification Basis

1. Reference Date for determining the applicable requirements

01 February 2010

2. Airworthiness Requirements

- CS-29, Amendment 2 for the requirements listed below:

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

- FAR 29 Amendment 47:
FAR 29.865 (External Loads)
- FAR 29 Amendment 16:
FAR 29.863 (for unaffected parts of BK117 C-1)
FAR 29.917 (for unaffected parts of BK117 C-1)
FAR 29.1309 (b), (d), (e) (for unaffected parts of BK117 C-1)
- FAR 29 effective Feb. 1, 1965 plus Amendments 29-1 through 29-40,

for all other requirements that are not listed in CS/FAR 29 requirements above

3. Special Conditions

- 30 min Extended Power Rating.(CRI E-05)
- Lithium Battery Installations (CRI F-09)
- High-intensity Radiated Fields (HIRF) Protection: JAA INT/POL/27&29/1, Issue 3 (CRI F-01)

4. Exemptions

-

5. (Reserved) Deviations

- FAR 29.631 for Cockpit Windows (for unaffected parts of BK117 C-2)
- FAR 29.1027 for Main Gear Box (for unaffected parts of BK117 A-1)

6. Equivalent Safety Findings

- FAR 29.807 (a)(4), (for emergency exit) (CRI D-01 and CRI D-07)
- FAR 29.1305, FAR 29.1321(e), FAR 29.1351(b)(6) , FAR 29.1435(a)(3), (for Part Time Display of vehicle parameters) (CRI D-05)
- FAR 29.1545(b)(4), 29.1549(b), (for Airspeed & Powerplant indication green marking) (CRI F-29)

7. Environmental Protection Requirements

See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

TDD D0000M170200

2. Description

Rigid 4-bladed main rotor, fanned tail rotor with composite tail rotor blades, rotor blades made from fiber-reinforced plastic, semi-monocoque fuselage, powered by 2 independent turbo shaft engines, engines controlled by a dual channel digital engine control, Integrated modular avionics suites, 4-axis dual duplex autopilot, skid-type landing gear.

3. Equipment

As required by compliance with the Certification Basis and listed in the Type Design Definition Document.

4. Dimensions

4.1 Fuselage	Length	6,170 m
	Width	1,845 m
	Height	3,450 m
4.2 Main Rotor	4 blades, diameter	11,0 m
4.3 Tail Rotor	10 blades, diameter	1,150 m

5. Engine

5.1 Model	Turbomeca Arriel 2E Turbo shaft engines
5.2 Type Certificate	EASA.E.001
5.3 Limitations	

5.3.1 Installed Engine Limits and Transmission Torque Limits

	Torque Limits %	Gas generator rpm %	Power turbine rpm %	Temperature TOT °C
<i>All Engine Operation (AEO)</i>				
AEO-TOP (5 min)	2 x 95	100.6	108.3	918
AEO-MCP (unlimited)	2 x 74	89.5	108.3	901
Extended Power Rating (30 min)	2 x 95	100.6	108.3	918
<i>One Engine Inoperative (OEI)</i>				
30 seconds OEI-TOP	1 x 150	105.7	108.3	1006
2 minutes OEI-TOP	1 x 130	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 2x104.5% is available for unintended use below Vy + 10 kt for a maximum duration of 12 sec.
- An AEO transient limit of 2x79% is available for unintended use above Vy + 10 kt for a maximum duration of 12 sec.

5.3.2 Other Engine and Transmission Torque Limits

Refer to EASA approved Flight Manual

6. Fluids (Fuel/ Oil/ Additives)

- 6.1 Fuel Refer to EASA approved Flight Manual, Section 2
- 6.2 Oil Refer to EASA approved Flight Manual, Section 2
- 6.3 Additives Refer to EASA approved Flight Manual, Section 2

7. Fluid capacities

- 7.1 Fuel Standard Fuel Tank: total fuel: 915,8 l
usable fuel: 903,8 l
- 7.2 Oil 5,5 l
- 7.3 Coolant system capacity n/a

8. Air Speeds Limits

VNE = 150 knots
refer to EASA approved Flight Manual for reduction in VNE with altitude and other speed limitations

9. Rotor Speed Limits

- Power on: maximum 108,3 %
minimum 94 %

Power off: maximum 109 %
 minimum 80 % (up to 2200 kg)
 minimum 85 % (above 2200 kg)

Transient: (see EASA approved RFM)

10. Maximum Operating Altitude and Temperature

10.1 Altitude 6095 m [20,000 ft]
 4877 m [16,000 ft PA or DA whichever is less] for Hover
 in ground effect , take-off and landing

10.2 Temperature refer to EASA approved Flight Manual

11. Operating Limitations

VFR Day and Night, IFR, No flight into known icing condition

For IFR and for Cat A Operation refer also to the EASA approved RFM

Additional limitations for take-off and landing: (see EASA approved RFM)

12. Maximum Weight

3650 kg

13. Centre of Gravity Range

Longitudinal C.G Limits,

maximum forward limit: 4347 mm aft of DP at 2400 kg
 4379 mm aft of DP at 3650 kg

maximum rearward limit: 4700 mm aft of DP at 2000 kg
 4540 mm aft of DP at 3650 kg

Lateral C.G Limits,

maximum deviation on right / left:
 100 mm (up to 3000 kg)
 80 mm (above 3000 kg)

14. Datum

Longitudinal: 3950 mm forward of the levelling point in the aft door
 frame

Lateral: fuselage median plane

15. Levelling Means

refer to Maintenance Manual MBB-BK117 D-2, Chapter 08

16. Minimum Flight Crew

One Pilot

17. Maximum Passenger Seating Capacity

Nine

Refer to RFM for the approved seat configurations

18. Passenger Emergency Exit

two (one on each side of the passengers cabin)

19. Maximum Baggage/ Cargo Loads

600 kg/m²

20. Rotor Blade control movement

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

21. Auxiliary Power Unit (APU)

n/a

22. Life- limited parts

EASA approved Airworthiness Limitation Section Chapter 04 of the Master Servicing Manual

23. Wheels and Tyres

Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual

BK117 D-2, firstly EASA approved on 16 April 2014, including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

2. Maintenance Manual

- a. Aircraft Maintenance Manual (AMM) MBB-BK117 D-2
- b. Wiring Diagram Manual (WDM) MBB-BK117 D-2
- c. Engine documents as per Engine TCDS EASA.E.001
- d. Master Servicing Manual (MSM) MBB-BK117 D-2

3. Structural Repair Manual

Structural Repair Manual (SRM) BK117

4. Weight and Balance Manual

5. Illustrated Parts Catalogue

Illustrated Parts Catalog BK117

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. Eligible serial numbers: 20003 and upwards
- 2. Record of Manufacturer: AIRBUS HELICOPTERS DEUTSCHLAND GmbH, Industriestrasse 4, D-86609 Donauwörth.
- 3. Designation: EC145T2 is used as marketing designation for MBB-BK117 D-2 helicopters.
- 4. Night Vision Goggles Operational Capability:
Night Vision Goggles aided operations are enabled according to Rotorcraft Flight Manual Supplement 9.2-11 and the related serial number specific Flight Manual Appendix FMA 11-x, when the rotorcraft is accordingly equipped. The helicopter configuration involving internal/external emitting/reflecting equipment approved for use with Night Vision Goggles

is described in the serial number specific AHD NVIS Substantiation Report. Subsequent modifications and deviations to the NVG helicopter configuration are managed by AHD in accordance with AHD document TN-ETZM-515-2013. Modifications that add or change systems that emit or reflect light, have the potential to alter or change the NVIS lighting – NVG compatibility. For this reason they require an engineering evaluation and related airworthiness approval

SECTION 9: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative
AHD	Airbus Helicopters Deutschland GmbH
DA	Density Altitude
DP	Datum Point
ECD	Eurocopter Deutschland GmbH
IFR	Instrument Flight Rules
MBB	Messerschmitt-Bölkow-Blohm GmbH
MCP	Maximum Continuous Power
OEI	One Engine Inoperative
PA	Pressure Altitude
RFM	Rotorcraft Flight Manual
TOP	Take-Off Power
VFR	Visual Flight Rules

II. Type Certificate Holder Record

Name	Address	From	To
Messerschmitt-Bölkow-Blohm GmbH	85521 Ottobrunn	18.11.1969	01.04.1992
Eurocopter Hubschrauber GmbH	Prandtlstrasse, 85521 Ottobrunn	28.11.1991	05.05.1992
Eurocopter Deutschland GmbH	Industriestrasse 4, 86609 Donauwörth	05.05.1992	07.01.2014
AIRBUS HELICOPTERS DEUTSCHLAND GmbH	Industriestrasse 4, 86609 Donauwörth	07.01.2014	

III. Change Record

Issue	Date	Changes	TC issue
01	23 Mar 2007	Initial issue of EASA TCDS, based on the LBA TCDS 3049 at Issue 9 dated 21.04.1993.	EASA TC issued, 23 March 2007
02	05 Sep 2007	Addition of American Eurocopter as additional manufacturer for model MBB-BK117 C-2.	Re-issued, 17 April 2007
03	29 Nov 2010	Addition of new notes for NVIS and Ditching	-
04	07 Jan 2014	incorporation of new company name "AIRBUS HELICOPTERS DEUTSCHLAND" for TC-holder and Manufacturer..	Re-issued, 07 January 2014
05	05 May 2014	Incorporation of new model "MBB-BK117 D-2". New formatting	Re-issued, 16 April 2014.

-END-