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 C-2e
MBB-BK117 D-2
MBB-BK117 D-2m
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Date: 08 May 2015
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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. Certifying Authority

   Luftfahrt-Bundesamt, Germany

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   [Reserved]

7. State of Design Authority Type Certificate Date

   09 December 1982 (LBA TC No. 3049)

8. EASA Type Certification Date

   [Reserved]

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

   [Reserved]
SECTION 2: MBB BK117 A-1

2. Reference Date for determining the applicable operational suitability requirements
   [Reserved]

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.
   [Reserved]

4. State of Origin Airworthiness Authority Certification Basis
   [Reserved]

5. EASA Airworthiness Requirements
   FAR 29 amendments 29-1 through 29-16

5.1 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.

5.2. Exemptions

5.3. Deviations
   [Reserved]

5.4. 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

5.5. Environmental Protection Requirements
   See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

6. Operational Suitability Requirements

6.1 MMEL
   - JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions
SECTION 2: MBB BK117 A-1

6.3. Exemptions
[Reserved]

6.4. Deviations
[Reserved]

6.5. Equivalent Safety Findings
[Reserved]

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
SECTION 2: MBB BK117 A-1

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

<table>
<thead>
<tr>
<th>All Engine Operation (AEO)</th>
<th>Torque Limits %</th>
<th>Gas generator rpm min⁻¹ [%]</th>
<th>Power turbine rpm min⁻¹ [%]</th>
<th>Temperature TOT °C</th>
</tr>
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<tr>
<td>AEO-TOP (5 min)</td>
<td>2 x 71</td>
<td>49159 [102.7]</td>
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<td>782</td>
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<td>AEO-MCP</td>
<td>2 x 71</td>
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<th>One Engine Inoperative (OEI)</th>
<th>Torque Limits %</th>
<th>Gas generator rpm min⁻¹ [%]</th>
<th>Power turbine rpm min⁻¹ [%]</th>
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<td>50548 [105.6]</td>
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<td>30 min OEI-TOP</td>
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<td>50169 [104.8]</td>
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<td>1 x 83</td>
<td>49159 [102.7]</td>
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<td>763</td>
</tr>
</tbody>
</table>

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 Limitations

$V_{NE} = 150$ knots

refer to EASA approved Flight Manual for reduction in $V_{NE}$ with altitude and other speed limitations
SECTION 2: MBB BK117 A-1

9. Rotor Speeds 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 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
   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 Masses
   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

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 Passengers Seating Capacity
   seven (or ten if the kit described in FMS 10-8 is installed and operated)
SECTION 2: MBB BK117 A-1

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 Tires
    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

   b. Wiring Diagram Manual MBB-BK117
   c. Engine documents as per Engine TCDS EASA.IM.E.228

   Structural Repair Manual (SRM) BK117


5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue BK117

6. Service Letters and Service Bulletins

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
SECTION 2: MBB BK117 A-1

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

   MMEL BK117 - SERIES (EXCEPT BK117 C-2 AND SUBSEQUENT)

2. Flight Crew Data
   [Reserved]
3. Cabin Crew Data
   n/a
4. SIM Data
   [Reserved]
5. Maintenance Certifying Staff Data
   [Reserved]
6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]

VI. 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 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. Certifying Authority

   Luftfahrt-Bundesamt, Germany

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   [Reserved]

7. State of Design Authority Type Certificate Date

   15 March 1985 (LBA TC No. 3049)

8. EASA Type Certification Date

   [Reserved]

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

   [Reserved]
SECTION 2: MBB BK117 A-3

2. Reference Date for determining the applicable operational suitability requirements
[Reserved]

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.
[Reserved]

4. State of Origin Airworthiness Authority Certification Basis
[Reserved]

5. EASA Airworthiness Requirements

   FAR 29 amendments 29-1 through 29-16

5.1 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.

5.2. Exemptions

5.3. Deviations
[Reserved]

5.4. 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

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL

   - JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions
SECTION 2: MBB BK117 A-3

[Reserved]

6.3. Exemptions
[Reserved]

6.4. Deviations
[Reserved]

6.5. Equivalent Safety Findings
[Reserved]

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

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</tbody>
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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 Limitations
V_{NE} = 150 knots
refer to EASA approved Flight Manual for reduction in V_{NE} with altitude and other speed limitations
SECTION 2: MBB BK117 A-3

9. Rotor Speeds Limitations

<table>
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<th>Condition</th>
<th>Maximum</th>
<th>Minimum</th>
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<td>85% (325.5 rpm) above 2000 kg</td>
</tr>
</tbody>
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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 Masses

- 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
SECTION 2: MBB BK117 A-3

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 Passengers 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 Tires
   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

   b. Wiring Diagram Manual MBB-BK117
   c. Engine documents as per Engine TCDS EASA.IM.E.228

   Structural Repair Manual (SRM) BK117

SECTION 2: MBB BK117 A-3

5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue BK117

6. Service Letters and Service Bulletins

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. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

   MMEL BK117 - SERIES (EXCEPT BK117 C-2 AND SUBSEQUENT)

2. Flight Crew Data
   [Reserved]

3. Cabin Crew Data
   n/a

4. SIM Data
   [Reserved]

5. Maintenance Certifying Staff Data
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]

VI. 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 Deutschland GmbH, Postfach 1353, W-8850 Donauwörth or 86603 Donauwörth or
SECTION 2: MBB BK117 A-3

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. Certifying Authority

   Luftfahrt-Bundesamt, Germany

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   [Reserved]

7. State of Design Authority Type Certificate Date

   29 July 1986 (LBA TC No. 3049)

8. EASA Type Certification Date

   [Reserved]
SECTION 3: MBB BK117 A-4

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements
   [Reserved]

2. Reference Date for determining the applicable operational suitability requirements
   [Reserved]

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.
   [Reserved]

4. State of Origin Airworthiness Authority Certification Basis
   [Reserved]

5. EASA Airworthiness Requirements
   FAR 29 amendments 29-1 through 29-16

5.1 Special Conditions
   LBA Special Conditions for MBB-BK 117 helicopter dated 10 December 1979
   and revised on 03 January 1980, consisting of:
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   - 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.

5.2. Exemptions

5.3. Deviations
   [Reserved]

5.4. 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

5.5. Environmental Protection Requirements
   See EASA Type Certificate Data Sheet for Noise: TCDSN.R.010

6. Operational Suitability Requirements
SECTION 3: MBB BK117 A-4

6.1 MMEL

- JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions
    [Reserved]

6.3. Exemptions
    [Reserved]

6.4. Deviations
    [Reserved]

6.5. Equivalent Safety Findings
    [Reserved]

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
SECTION 3: MBB BK117 A-4

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

<table>
<thead>
<tr>
<th>Torque Limits</th>
<th>Gas generator rpm min⁻¹ [%]</th>
<th>Power turbine rpm min⁻¹ [%]</th>
<th>Temperature TOT °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Engine Operation (AEO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AEO-TOP (5 min)</td>
<td>2 x 83</td>
<td>49159 [102.7]</td>
<td>6120 [102]</td>
</tr>
<tr>
<td>AEO-MCP</td>
<td>2 x 71</td>
<td>49159 [102.7]</td>
<td>6120 [102]</td>
</tr>
<tr>
<td>One Engine Inoperative (OEI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2¹/₂ min OEI-TOP</td>
<td>1 x 100</td>
<td>50548 [105.6]</td>
<td>6120 [102]</td>
</tr>
<tr>
<td>30 min OEI-TOP</td>
<td>1 x 91.5</td>
<td>50169 [104.8]</td>
<td>6120 [102]</td>
</tr>
<tr>
<td>OEI-MCP</td>
<td>1 x 83</td>
<td>49159 [102.7]</td>
<td>6120 [102]</td>
</tr>
</tbody>
</table>

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 Limitations
\( V_{NE} = 150 \) knots
refer to EASA approved Flight Manual for reduction in \( V_{NE} \) with altitude and other speed limitations
9. Rotor Speeds Limitations

<table>
<thead>
<tr>
<th>Condition</th>
<th>Power on</th>
<th>Power off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>102 %</td>
<td>104 %</td>
</tr>
<tr>
<td>Minimum</td>
<td>98 %</td>
<td>80 %</td>
</tr>
</tbody>
</table>

(390.7 rpm) (398.3 rpm) (306.4 rpm) (325.5 rpm)

Power off: minimum 85 % (325.5 rpm) above 2000 kg

Transients: 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 Masses
- 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
SECTION 3: MBB BK117 A-4

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 Passengers 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 Tires
   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

   b. Wiring Diagram Manual MBB-BK117
   c. Engine documents as per Engine TCDS EASA.IM.E.228

   Structural Repair Manual (SRM) BK117


5. Illustrated Parts Catalogue
SECTION 3: MBB BK117 A-4

Illustrated Parts Catalogue BK117

6. Service Letters and Service Bulletins

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. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
   MMEL BK117 - SERIES (EXCEPT BK117 C-2 AND SUBSEQUENT).

2. Flight Crew Data
   [Reserved]

3. Cabin Crew Data
   n/a

4. SIM Data
   [Reserved]

5. Maintenance Certifying Staff Data
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]

VI. 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 Deutschland GmbH, Postfach 1353, W-8850 Donauwörth or 86603 Donauwörth or 86607 Donauwörth.
   AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
SECTION 3: MBB BK117 A-4

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. Certifying Authority

   Luftfahrt-Bundesamt, Germany

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   [Reserved]

7. State of Design Authority Type Certificate Date

   10 December 1987 (LBA TC No. 3049)

8. EASA Type Certification Date

   [Reserved]

II. Certification Basis
SECTION 4: MBB BK117 B-1

1. Reference Date for determining the applicable airworthiness requirements
   [Reserved]

2. Reference Date for determining the applicable operational suitability requirements
   [Reserved]

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.
   [Reserved]

4. State of Origin Airworthiness Authority Certification Basis
   [Reserved]

5. EASA Airworthiness Requirements

   FAR 29 amendments 29-1 through 29-16

5.1 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.

5.2. Exemptions

5.3. Deviations
   [Reserved]

5.4. 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

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL
SECTION 4: MBB BK117 B-1

- JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions
[Reserved]
6.3. Exemptions
[Reserved]
6.4. Deviations
[Reserved]
6.5. Equivalent Safety Findings
[Reserved]

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
SECTION 4: MBB BK117 B-1

5.3 Limitations

5.3.1 Installed Engine Limits and Transmission Torque Limits

<table>
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<tr>
<th>Torque Limits %</th>
<th>Gas generator rpm min⁻¹ [%]</th>
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<td></td>
</tr>
<tr>
<td>2½ min OEI-TOP</td>
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<td>6120 [102]</td>
</tr>
<tr>
<td>30 min OEI-TOP</td>
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<td>6120 [102]</td>
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</tbody>
</table>

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 Limitations

\( V_{NE} = 150 \text{ knots} \)

refer to EASA approved Flight Manual for reduction in \( V_{NE} \) with altitude and other speed limitations
SECTION 4: MBB BK117 B-1

9. Rotor Speeds 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 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 Masses
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
SECTION 4: MBB BK117 B-1

15. Levelling Means
   refer to Maintenance Manual MBB-BK117 A/B, Appendix C

16. Minimum Flight Crew
   one Pilot

17. Maximum Passengers 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 Tires
   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

   b. Wiring Diagram Manual MBB-BK117
   c. Engine documents as per Engine TCDS EASA.IM.E.228

   Structural Repair Manual (SRM) BK117

   -

5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue BK117

6. Service Letters and Service Bulletins
   Safety information notice (from October 2008 onwards, before: Alert Service
SECTION 4: MBB BK117 B-1

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. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
   a. MMEL BK117 - SERIES (EXCEPT BK117 C-2 AND SUBSEQUENT)

2. Flight Crew Data
   [Reserved]

3. Cabin Crew Data
   n/a

4. SIM Data
   [Reserved]

5. Maintenance Certifying Staff Data
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]

VI. 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 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. Certifying Authority
   Luftfahrt-Bundesamt, Germany

4. Manufacturer
   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date
   [Reserved]

6. EASA Type Certification Application Date
   [Reserved]

7. State of Design Authority Type Certificate Date
   17 January 1992 (LBA TC No. 3049)

8. EASA Type Certification Date
   [Reserved]

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements
SECTION 5: MBB BK117 B-2

2. Reference Date for determining the applicable operational suitability requirements

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.

4. State of Origin Airworthiness Authority Certification Basis

5. EASA 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

5.1 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

5.2. Exemptions

5.3. Deviations

   [Reserved]

5.4. Equivalent Safety Findings
SECTION 5: MBB BK117 B-2

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

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL

- JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions
[Reserved]

6.3. Exemptions
[Reserved]

6.4. Deviations
[Reserved]

6.5. Equivalent Safety Findings
[Reserved]

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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Fuselage</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>5,89 m</td>
</tr>
<tr>
<td>Width</td>
<td>1,60 m</td>
</tr>
<tr>
<td>Height</td>
<td>3,36 m</td>
</tr>
</tbody>
</table>
SECTION 5: MBB BK117 B-2

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 TransmissionTorque Limits

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

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
SECTION 5: MBB BK117 B-2

7.3 Coolant system capacity

8. Air Speeds Limitations
\( V_{NE} = 150 \text{ knots} \)
refer to EASA approved Flight Manual for reduction in \( V_{NE} \) with altitude and other speed limitations

9. Rotor Speeds 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 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...
SECTION 5: MBB BK117 B-2

approved RFM)

12. Maximum Masses
   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 Passengers 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 Tires
    Skid type landing gear
SECTION 5: MBB BK117 B-2

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

   b. Wiring Diagram Manual MBB-BK117
   c. Engine documents as per Engine TCDS EASA.IM.E.228

   Structural Repair Manual (SRM) BK117


5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue 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

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. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European
Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per
Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No
69/2014.

1. Master Minimum Equipment List

   MMEL BK117 - SERIES (EXCEPT BK117 C-2 AND SUBSEQUENT)

2. Flight Crew Data
   [Reserved]

3. Cabin Crew Data
   n/a

4. SIM Data
   [Reserved]

5. Maintenance Certifying Staff Data
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]
SECTION 5: MBB BK117 B-2

VI. 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 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. Certifying Authority

   Luftfahrt-Bundesamt, Germany

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   [Reserved]

7. State of Design Authority Type Certificate Date

   02 October 1992 (LBA TC No. 3049)

8. EASA Type Certification Date

   [Reserved]

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

   [Reserved]
SECTION 6: MBB BK117 C-1

2. Reference Date for determining the applicable operational suitability requirements
[Reserved]

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.
[Reserved]

4. State of Origin Airworthiness Authority Certification Basis
[Reserved]

5. EASA 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

5.1 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.

5.2. Exemptions

5.3. Deviations
[Reserved]

5.4. Equivalent Safety Findings
SECTION 6: MBB BK117 C-1

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

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL

- JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions
[Reserved]

6.3. Exemptions
[Reserved]

6.4. Deviations
[Reserved]

6.5. Equivalent Safety Findings
[Reserved]

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
SECTION 6: MBB BK117 C-1

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

<table>
<thead>
<tr>
<th></th>
<th>Gas generator rpm min^{-1} [%]</th>
<th>Power turbine rpm %</th>
<th>Temperature TOT °C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Engine Operation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AEO-TOP (5 min)</td>
<td>2 x 83</td>
<td>52111 [100.6]</td>
<td>102 *)</td>
</tr>
<tr>
<td>AEO-MCP</td>
<td>2 x 71</td>
<td>51800 [100.0]</td>
<td>102 *)</td>
</tr>
<tr>
<td><strong>One Engine Inoperative</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2\frac{1}{2} min OEI-TOP</td>
<td>1 x 125</td>
<td>53509 [103.3]</td>
<td>102</td>
</tr>
<tr>
<td>OEI-MCP</td>
<td>1 x 91.5</td>
<td>51955 [100.3]</td>
<td>102</td>
</tr>
</tbody>
</table>

*) 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 n/a
    capacity

8. Air Speeds Limitations
SECTION 6: MBB BK117 C-1

$V_{NE} = 150$ knots
refer to EASA approved Flight Manual for reduction in $V_{NE}$ with altitude and other speed limitations

9. Rotor Speeds Limitations
   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 Masses
    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
SECTION 6: MBB BK117 C-1

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

16. Minimum Flight Crew
   one Pilot

17. Maximum Passengers 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 Tires
    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

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

   Structural Repair Manual (SRM) BK117


5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue 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

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
SECTION 6: MBB BK117 C-1

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List

   MMEL BK117 - SERIES (EXCEPT BK117 C-2 AND SUBSEQUENT)

2. Flight Crew Data  
   [Reserved]

3. Cabin Crew Data  
   n/a

4. SIM Data  
   [Reserved]

5. Maintenance Certifying Staff Data  
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)  
   [Reserved]

VI. Notes

1. Eligible serial numbers: 7007, 7500 and upwards.

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 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. Certifying Authority

   Luftfahrt-Bundesamt, Germany

4. Manufacturer

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

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   [Reserved]

7. State of Design Authority Type Certificate Date

   20 December 2000 (LBA TC No. 3049)

8. EASA Type Certification Date

   [Reserved]

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements
SECTION 7: MBB BK117 C-2

02 October 1997

2. Reference Date for determining the applicable operational suitability requirements [Reserved]

3. State of Origin Airworthiness Authority Type Certification Data Sheet No. [Reserved]

4. State of Origin Airworthiness Authority Certification Basis [Reserved]

5. EASA 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

5.1 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

5.2. 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)

5.3. Deviations [Reserved]

5.4. 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)
SECTION 7: MBB BK117 C-2

- FAR 29.1151 (b) Rotor Brake Controls

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL

- JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions

[Reserved]

6.3. Exemptions

[Reserved]

6.4. Deviations

[Reserved]

6.5. Equivalent Safety Findings

[Reserved]

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

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Property</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Fuselage</td>
<td>Length</td>
<td>6,186 m</td>
</tr>
<tr>
<td></td>
<td>Width</td>
<td>1,845 m</td>
</tr>
<tr>
<td></td>
<td>Height</td>
<td>3,450 m</td>
</tr>
<tr>
<td>4.2 Main Rotor</td>
<td>4 blades</td>
<td></td>
</tr>
<tr>
<td></td>
<td>diameter</td>
<td>11,0 m</td>
</tr>
</tbody>
</table>
SECTION 7: MBB BK117 C-2

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

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

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
SECTION 7: MBB BK117 C-2

8. Air Speeds Limitations
   \( V_{NE} = 150 \) knots
   refer to EASA approved Flight Manual for reduction in \( V_{NE} \) with altitude and other speed limitations

9. Rotor Speeds Limitations
   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 Masses
    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
SECTION 7: MBB BK117 C-2

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 Passengers 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 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 Tires
    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

   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

   Structural Repair Manual (SRM) BK117


5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue 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

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
SECTION 7: MBB BK117 C-2

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
   MMEL BK117 C-2

2. Flight Crew Data
   [Reserved]

3. Cabin Crew Data
   n/a

4. SIM Data
   [Reserved]

5. Maintenance Certifying Staff Data
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]

VI. 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.
SECTION 7: MBB BK117 C-2

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 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.

5. Ditching:
The emergency floatation system according to Rotorcraft Flight Manual Supplement 9.2-9 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 C-2e

I. General

1. Type/ Model/ Variant

   1.1 Type  MBB-BK117
   1.2 Model  C-2
   1.3 Variant  e

2. Airworthiness Category

   Large Rotorcraft, Category A and B

3. Certifying Authority

   EASA

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   31 October 2012

7. State of Design Authority Type Certificate Date

   17 April 2015

8. EASA Type Certification Date

   17 April 2015

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

   31 October 2012
2. Reference Date for determining the applicable operational suitability requirements
   31 October 2012

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.
   [Reserved]

4. State of Origin Airworthiness Authority Certification Basis
   [Reserved]

5. EASA Airworthiness Requirements

   Elect to comply: CS 29, Amdt. 2 for newly installed equipment on BK117 C-2e
   - CS 29.771
   - CS 29.773
   - CS 29.777
   - CS 29.1301
   - CS 29.1303, except VNE indication
   - CS 29.1321
   - CS 29.1353a
   - CS 29.1381
   - CS 29.1431
   - CS 29.1581

   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.

5.1 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

5.2. 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
SECTION 8: MBB BK117 C-2e

5.3. Deviations
[Reserved]

5.4. 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

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL

- JAR-MMEL Section 1 Subpart A&B at amendment 1

6.2. Special Conditions
[Reserved]

6.3. Exemptions
[Reserved]

6.4. Deviations
[Reserved]

6.5. Equivalent Safety Findings
[Reserved]

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

TDD B0000M281120

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

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SECTION 8: MBB BK117 C-2e

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

<table>
<thead>
<tr>
<th></th>
<th>Torque Limits</th>
<th>Gas generator rpm min⁻¹ [%]</th>
<th>Power turbine rpm [%]</th>
<th>Temperature TOT °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Engine Operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AEO-TOP (5 min)</td>
<td>2 x 88</td>
<td>52835 [101,9]</td>
<td>104</td>
<td>845</td>
</tr>
<tr>
<td>AEO-MCP</td>
<td>2 x 71</td>
<td>51955 [100,0]</td>
<td>104</td>
<td>845</td>
</tr>
<tr>
<td>One Engine Inoperative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2¹/₂ min OEI-TOP</td>
<td>1 x 125,0</td>
<td>53509 [103,3]</td>
<td>104</td>
<td>885</td>
</tr>
<tr>
<td>OEI-MCP</td>
<td>1 x 91,5</td>
<td>52835 [101,9]</td>
<td>104</td>
<td>845</td>
</tr>
</tbody>
</table>

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
SECTION 8: MBB BK117 C-2e

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
usable fuel: 850,0 l

7.2 Oil
4,33 l

7.3 Coolant system
capacity n/a

8. Air Speeds Limitations
$V_{NE} = 150$ knots
refer to EASA approved Flight Manual for reduction in $V_{NE}$ with altitude and other speed limitations

9. Rotor Speeds Limitations
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 Masses
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
SECTION 8: MBB BK117 C-2e

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 Passengers 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 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 Tires
Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual
BK117 C-2e, firstly EASA approved on 17.04.2015, including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

a. Aircraft Maintenance Manual (AMM) MBB-BK117 C-2
SECTION 8: MBB BK117 C-2e

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

   Structural Repair Manual (SRM) BK117


5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue BK117

6. Service Letters and Service Bulletins

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. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
   MMEL MBB BK 117 C-2

2. Flight Crew Data
   [Reserved]

3. Cabin Crew Data
   n/a

4. SIM Data
   [Reserved]

5. Maintenance Certifying Staff Data
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]
SECTION 8: MBB BK117 C-2e

VI. Notes

1. Eligible serial numbers: 9601 and upwards
2. Record of Manufacturer:
   Until January 2014:
   Eurocopter Deutschland GmbH, Postfach 1353,
   W-8850 Donauwörth or 86603 Donauwörth or
   86607 Donauwörth.

   January 2014 onwards:
   AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
   Industriestrasse 4, D-86609 Donauwörth.

3. 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      D-2
   1.3 Variant    n/a

2. Airworthiness Category

   Large Rotorcraft, Category A and B

3. Certifying Authority

   EASA

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   [Reserved]

6. EASA Type Certification Application Date

   27 February 2009

7. State of Design Authority Type Certificate Date

   16 April 2014

8. EASA Type Certification Date

   16 April 2014

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

   01 February 2010
SECTION 9: MBB BK117 D-2

2. Reference Date for determining the applicable operational suitability requirements
   01 February 2010

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.
   [Reserved]

4. State of Origin Airworthiness Authority Certification Basis
   [Reserved]

5. EASA 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 43:
     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

5.1 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)

5.2. Exemptions
   -

5.3. 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)

5.4. 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 F-29)
   - FAR 29.1545(b)(4), 29.1549(b), (for Airspeed & Powerplant indication green
SECTION 9: MBB BK117 D-2

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL

- JAR-MMEL Section 1 Subpart A&B at amendment 1 for retained items from MBB BK117 C-2 model.
- CS-MMEL Initial Issue for all other items.

6.2. Special Conditions
[Reserved]

6.3. Exemptions
[Reserved]

6.4. Deviations
[Reserved]

6.5. Equivalent Safety Findings
[Reserved]

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
SECTION 9: MBB BK117 D-2

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

<table>
<thead>
<tr>
<th>All Engine Operation (AEO)</th>
<th>Torque Limits</th>
<th>Gas generator rpm</th>
<th>Power turbine rpm</th>
<th>Temperature TOT °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEO-TOP (5 min)</td>
<td>2 x 95</td>
<td>100.6</td>
<td>108.3</td>
<td>918</td>
</tr>
<tr>
<td>AEO-MCP (unlimited)</td>
<td>2 x 74</td>
<td>89.5</td>
<td>108.3</td>
<td>901</td>
</tr>
<tr>
<td>Extended Power Rating (30 min)</td>
<td>2 x 95</td>
<td>100.6</td>
<td>108.3</td>
<td>918</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>One Engine Inoperative (OEI)</th>
<th>Torque Limits</th>
<th>Gas generator rpm</th>
<th>Power turbine rpm</th>
<th>Temperature TOT °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 seconds OEI-TOP</td>
<td>1 x 150</td>
<td>105.7</td>
<td>108.3</td>
<td>1006</td>
</tr>
<tr>
<td>2 minutes OEI-TOP</td>
<td>1 x 130</td>
<td>104.3</td>
<td>108.3</td>
<td>987</td>
</tr>
</tbody>
</table>

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 kts for a maximum duration of 12 sec.
- An AEO transient limit of 2x79% is available for unintended use above VY + 10 kts for a maximum duration of 12 sec.

5.3.2 Other Engine and Transmission Torque Limits

5.3.2 Other Engine and Transmission Torque Limits
Refer to EASA approved Flight Manual

6. Fluids (Fuel/Oil/Additives)
SECTION 9: MBB BK117 D-2

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 Limitations
   \( V_{NE} = 150 \) knots
   refer to EASA approved Flight Manual for reduction in \( V_{NE} \) with altitude and other speed limitations

9. Rotor Speeds Limitations
   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, 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 Masses
   3700 Kg

13. Centre of Gravity Range
   Longitudinal C.G Limits,
   \[ \text{maximum forward limit: } 4347 \text{ mm aft of DP at 2400 kg} \]
   \[ \text{4379 } \text{mm aft of DP at 3700 kg} \]
SECTION 9: MBB BK117 D-2

maximum rearward limit: 4700 mm aft of DP at 2000 kg
                   4540 mm aft of DP at 3700 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-2m, Chapter 08

16. Minimum Flight Crew
   one Pilot

17. Maximum Passengers 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 Maintenance Manual MBB-BK117 D-2m

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 Tires
   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
SECTION 9: MBB BK117 D-2

approved issues

   c. Engine documents as per Engine TCDS EASA.E.001
   d. Master Servicing Manual (MSM) MBB-BK117 D-2

   Structural Repair Manual (SRM) BK117


5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue BK117

6. Service Letters and Service Bulletins

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. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List
   MMEL MBB BK117 D-2

2. Flight Crew Data
   [Reserved]

3. Cabin Crew Data
   n/a

4. SIM Data
   [Reserved]

5. Maintenance Certifying Staff Data
   [Reserved]

6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]

VI. Notes

1. Eligible serial numbers: 20003 and upwards

2. Record of Manufacturer: AIRBUS HELICOPTERS DEUTSCHLAND GmbH,


SECTION 9: MBB BK117 D-2

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

4. 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.

5. Ditching:
The emergency floatation system according to Rotorcraft Flight Manual Supplement 9.2-9 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.
I. General

1. Type/ Model/ Variant

   1.1 Type          MBB-BK117
   1.2 Model         D-2
   1.3 Variant       m

2. Airworthiness Category

   Large Rotorcraft, Category A and B

3. Certifying Authority

   EASA

4. Manufacturer

   AIRBUS HELICOPTERS DEUTSCHLAND GmbH

5. State of Design Authority Certification Application Date

   n/a

6. EASA Type Certification Application Date

   06 May 2014

7. State of Design Authority Type Certificate Date

   n/a

8. EASA Type Certification Date

   08 May 2015

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

   06 May 2014
SECTION 10: MBB BK117 D-2m

2. Reference Date for determining the applicable operational suitability requirements

[Reserved]

3. State of Origin Airworthiness Authority Type Certification Data Sheet No.

[Reserved]

4. State of Origin Airworthiness Authority Certification Basis

[Reserved]

5. EASA 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 43:
  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

5.1 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)

5.2. Exemptions

- 

5.3. 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)
SECTION 10: MBB BK117 D-2m

5.4. 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 F-29)
- FAR 29.1545(b)(4), 29.1549(b), (for Airspeed & Powerplant indication green marking) (CRI G-03)
- FAR 29.1305, 29.1309, 29.1549 (for OEI training mode) (CRI G-01)
- FAR 29.1457(a), (c) (for CVR, communication during winch operation) (CRI F-10)

5.5. Environmental Protection Requirements

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

6. Operational Suitability Requirements

6.1 MMEL
[Reserved]

6.2. Special Conditions
[Reserved]

6.3. Exemptions
[Reserved]

6.4. Deviations
[Reserved]

6.5. Equivalent Safety Findings
[Reserved]

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

TDD D0000M302300

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

<table>
<thead>
<tr>
<th></th>
<th>Torque Limits %</th>
<th>Gas generator rpm %</th>
<th>Power turbine rpm %</th>
<th>Temperature TOT °C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Engine Operation (AEO)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AEO-TOP (5 min)</td>
<td>2 x 95</td>
<td>100.6</td>
<td>108.3</td>
<td>918</td>
</tr>
<tr>
<td>AEO-MCP (unlimited)</td>
<td>2 x 74</td>
<td>89.5</td>
<td>108.3</td>
<td>901</td>
</tr>
<tr>
<td>Extended Power Rating (30 min)</td>
<td>2 x 95</td>
<td>100.6</td>
<td>108.3</td>
<td>918</td>
</tr>
</tbody>
</table>

| **One Engine Inoperative (OEI)** | | | |
| 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 kts for a maximum duration of 12 sec.
- An AEO transient limit of 2x79% is available for unintended use above Vy + 10 kts 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
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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 Limitations
$V_{NE} = 150$ knots
refer to EASA approved Flight Manual for reduction in $V_{NE}$ with altitude and other speed limitations

9. Rotor Speeds Limitations
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, 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 Masses
3700 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 3700 kg

maximum rearward limit: 4700 mm aft of DP at 2000 kg
4540 mm aft of DP at 3700 kg
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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-2m, Chapter 08

16. Minimum Flight Crew
   one Pilot

17. Maximum Passengers 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 Maintenance Manual MBB-BK117 D-2m

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 Tires
   Skid type landing gear

IV. Operating and Service Instructions

1. Flight Manual
   BK117 D-2m, firstly EASA approved on 08.05.2015, including the supplements for Special Operations and Optional Equipment, or subsequent approved issues

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

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Structural Repair Manual (SRM) BK117

5. Illustrated Parts Catalogue
   Illustrated Parts Catalogue 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. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European
Aviation Safety Agency under the EASA Type Certificate No. EASA.R.010 as per
Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No
69/2014.

1. Master Minimum Equipment List
   [Reserved]
2. Flight Crew Data
   [Reserved]
3. Cabin Crew Data
   n/a
4. SIM Data
   [Reserved]
5. Maintenance Certifying Staff Data
   [Reserved]
6. Other (e.g. EFB, special operations and special equipment, …)
   [Reserved]

VI. Notes

1. Eligible serial numbers: 20016 and upwards
2. Record of Manufacturer: AIRBUS HELICOPTERS DEUTSCHLAND GmbH,
   Industriestrasse 4, D-86609 Donauwörth.
3. Designation: H145M is used as marketing designation for
   MBB-BK117 D-2m helicopters.

4. 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
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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.

5. Ditching:
The emergency floatation system according to Rotorcraft Flight Manual Supplement 9.2-9 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: ADMINISTRATIVE

I. Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AEO</td>
<td>All Engines Operative</td>
</tr>
<tr>
<td>AHD</td>
<td>Airbus Helicopters Deutschland GmbH</td>
</tr>
<tr>
<td>DA</td>
<td>Density Altitude</td>
</tr>
<tr>
<td>DP</td>
<td>Datum Point</td>
</tr>
<tr>
<td>ECD</td>
<td>Eurocopter Deutschland GmbH</td>
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<tr>
<td>IFR</td>
<td>Instrument Flight Rules</td>
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<tr>
<td>MBB</td>
<td>Messerschmitt-Bölkow-Blohm GmbH</td>
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<td>MMEL</td>
<td>Master Minimum Equipment List</td>
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<tr>
<td>MCP</td>
<td>Maximum Continuous Power</td>
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<tr>
<td>OEI</td>
<td>One Engine Inoperative</td>
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<tr>
<td>OSD</td>
<td>Operational Suitability Data</td>
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<tr>
<td>PA</td>
<td>Pressure Altitude</td>
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<tr>
<td>RFM</td>
<td>Rotorcraft Flight Manual</td>
</tr>
<tr>
<td>TOP</td>
<td>Take-Off Power</td>
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<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
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II. Type Certificate Holder Record

<table>
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<tr>
<th>Name</th>
<th>Address</th>
<th>From</th>
<th>To</th>
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<tr>
<td>Eurocopter Hubschrauber GmbH</td>
<td>Prandtlstrasse, 85521 Ottobrunn</td>
<td>28.11.1991</td>
<td>05.05.1992</td>
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<tr>
<td>Eurocopter Deutschland GmbH</td>
<td>Industriestrasse 4, 86609 Donauwörth</td>
<td>05.05.1992</td>
<td>07.01.2014</td>
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<td>AIRBUS HELICOPTERS DEUTSCHLAND GmbH</td>
<td>Industriestrasse 4, 86609 Donauwörth</td>
<td>07.01.2014</td>
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III. Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC issue</th>
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<tbody>
<tr>
<td>02</td>
<td>05 Sep 2007</td>
<td>Addition of American Eurocopter as additional manufacturer for model MBB-BK117 C-2.</td>
<td>Re-issued, 17 April 2007</td>
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<tr>
<td>03</td>
<td>29 Nov 2010</td>
<td>Addition of new notes for NVIS and Ditching</td>
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<td>04</td>
<td>07 Jan 2014</td>
<td>incorporation of new company name “AIRBUS HELICOPTERS DEUTSCHLAND” for TC-holder and Manufacturer..</td>
<td>Re-issued, 07 January 2014</td>
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<tr>
<td>05</td>
<td>05 May 2014</td>
<td>Incorporation of new model &quot;MBB-BK117 D-2&quot;. New formatting</td>
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## SECTION 10: MBB BK117 D-2m

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<td>06</td>
<td>17 April 2015</td>
<td>New formatting. Incorporation of new model “MBB-BK117 C-2e”.</td>
<td>Re-issued, 17 April 2015</td>
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-END-