Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.R.00040

for

AS 350 / EC 130

Type Certificate Holder

Airbus Helicopters

Aéroport International Marseille – Provence

13725 Marignane CEDEX

France

Model(s):	AS 350 B, AS 350 D, AS 350 B1, AS 350 B2, AS 350 BA, AS 350 BB, AS 350 B3 EC 130 B4, EC 130 T2
Issue:	3
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Note: In this TCDS, references to EU regulations are to those regulations as retained and amended in UK domestic law under the European Union (Withdrawal) Act 2018 and are referenced as “UK Regulation (EU) year/number or UK Regulation (EU) No. number/year”.

Section 1 AS 350B

I. General

1. **Type / Variant or Model**

Type	AS 350
Variant or Model	AS 350 B

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

4. **Type Certificate Application Date to DGAC FR**

19 June 1974

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

27 October 1977

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For Airworthiness and Environmental Protection:

19 June 1974 (see II.3.)

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

FAR Part 27, Amdts. 1 to 10 included

3. **Special Conditions**

See Note V.4

Complementary and Special Conditions defined in DGAC FR letters 6518, dated 17 August 1976 and 6437, dated 28 July 1977

4. **Exemptions**

None

5. **Deviations**

None

6. **Equivalent Safety Findings**

None

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data (OSD)**

see SECTION 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

350A000000

2. **Description**

Main rotor: three (3) blades

Tail rotor: two (2) blades

Fuselage: metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine.

3. **Equipment**

The approved items of equipment are listed in Airbus Helicopters document No. 350A044320. The basic required equipment specified in the applicable airworthiness regulations (see certification bases) must be installed on the aircraft at certification time and at every time after certification.

4. **Dimensions**

4.1 Fuselage

Length: 10.93m

Width hull: 1.87m

Height: 3.14m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.86m, 2 blades

5. **Engine**

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 1B14

5.2 Type Certificate

TC/TCDS n°: EASA.E.073 (former DGAC FR n° M5)

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	Gas generator NG ** [%]	Min. guaranteed PWR * [kW]	Temperature T4 [°C]
Max. transient (5 sec)	---	105	---	---
Max. TOP (5 min)	829	100	478	810
MCP		98	440	775

Notes: - Maximum T4 on starting: 840°C

- * ISA, ground level

- ** 100% = 51 800 rpm

5.3.1 Transmission Torque Limits

Max. TQ: 83% (100% corresponds to 396 kW power output at 386 rpm MR speed)

6. **Fluids (Fuel/ Oil/ Additives)**

6.1 Fuel

Refer to approved RFM

6.2 Oil

Refer to approved RFM

6.3 Additives

Refer to approved RFM

7. **Fluid Capacities**

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

Unusable fuel: 1.3 litre, post AMS 07 0289

7.2 Oil

Engine: 5.2 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. **Air Speed Limitiations**

VNE: 147 KIAS (272 km/h) from MSL up to 1000 ft (305 m).

- at higher altitudes, VNE reduced by 3.5 kt/1000 ft (20 km/h per 1000 m).

- at OAT between -30° C and -40° C, substract 10 kt (18.5 km/h) from the above decreasing law

9. **Rotor Speed Limitations**

Power on:

Maximum	386 rpm
Minimum	380 rpm

Power off:

Maximum	424 rpm
Minimum	320 rpm

(audio warning at 335 rpm)

The audio warning sounds when rotor speed drops below:

- 335 rpm, pre-modification 07.1891

- 360 rpm, post-modification 07.1891

10. **Maximum Operating Altitude and Temperature**

10.1 Altitude

TKOF/LDG: refer to approved RFM

En route: 16 000 ft (4 875 m)

10.2 Temperature

Refer to approved RFM

11. **Operating Limitations**

VFR day

VFR night, when the additional equipment required by operational regulations is installed and serviceable. (For more information refer to RFM).

Non-icing conditions

12. **Maximum Mass**

1950kg

13. **Centre of Gravity Range**

Longitudinal C.G. limits

Maximum forward limit:

3170 mm

Maximum rearward limit:

3550 mm up to 1300 kg

3430 mm for 1900 kg and up to 1950 kg.

Linear variation between the points

Lateral C.G Limits

L.H. limit: 150 mm

R.H. limit: 80 mm

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Transmission deck

16. **Minimum Flight Crew**

1 pilot (right seat)

17. **Maximum Passenger Seating Capacity**

5

When fitted with the forward 2-place seat optional equipment, the maximum number of passengers is increased to six (pilot not included). This option is to be used in accordance with the corresponding RFMS

18. **Passenger Emergency Exit**

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

19. **Maximum Baggage/Cargo Loads**

Max. load in:

R.H. side hold: 100 kg

L.H. side hold: 120 kg

Rear hold: 80 kg

Forward cabin floor: 150 kg

Rear cabin floor: 310 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The AS 350 Master Servicing Manual, Chapter 4 ‘Airworthiness Limitations’, originally approved by DGAC FR and subsequently by EASA, contains limitations which are mandatory

IV. Operating and Service Instructions

1. **Flight Manual**

AS 350 B Flight Manual, initially approved by DGAC FR on 27 October 1977, or later approved revision (reference: in French language).

2. **Maintenance Manual**

- AS 350 Master Servicing Manual

- AS 350 Maintenance Manual

Compatibility between optional items of equipment is described:

- from an installation aspect in the:

"Master Servicing Recommendations",

- from an operational aspect in:

"Supplements" chapter of the Flight Manual.

3. **Structural Repair Manual**

AS 350 Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

AS 350 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Aérospatiale, Eurocopter France, Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   For AS 350 B: s/n 1003, and subsequent

   For AS 350 D converted into AS 350 B, see Note 3

2. AS 350 D aircraft may be converted into AS 350 B by application of Service Bulletin 01.00.12.

3. The commercial designation is: Ecureuil.

4. Non-proprietary data contained in selected Special Conditions that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’.

Section 2 AS 350D

I. General

1. **Type / Variant or Model**

Type	AS 350
Variant or Model	AS 350 D

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

4. **Type Certificate Application Date to DGAC FR**

28 March 1978

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

4 July 1978

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For Airworthiness and Environmental Protection:

19 June 1974 (see II.3.)

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

FAR Part 27, Amdts. 1 to 10 included

3. **Special Conditions**

See Note V.4

Complementary and Special Conditions defined in DGAC FR letters 6518, dated 17 August 1976 and 6437, dated 28 July 1977

4. **Exemptions**

None

5. **Deviations**

None

6. **Equivalent Safety Findings**

None

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data (OSD)**

see SECTION 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

350A000000

2. **Description**

Main rotor: three (3) blades

Tail rotor: two (2) blades

Fuselage: metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine.

3. **Equipment**

The approved items of equipment are listed in Airbus Helicopters document No. 350A044320. The basic required equipment specified in the applicable airworthiness regulations (see certification basis) must be installed on the aircraft at certification time and at any time after certification.

4. **Dimensions**

4.1 Fuselage

Length: 10.93m

Width hull: 1.87m

Height: 3.14m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.83m, 2 blades

5. **Engine**

5.1 Model

Honeywell International Inc. (former: Lycoming Engines)

1 x Model LTS 101-600A-2

5.2 Type Certificate

FAA TC/TCDS n°: E5NE

DGAC FR TC/TCDS n°: M.IM 5

EASA TC/TCDS n°: EASA.IM.E.228

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	Gas generator NG ** [%]	Min. guaranteed PWR * [kW]	Temperature T4 [°C]
Max. transient (5 sec)	---	105.6	---	843***
Max. TOP (5 min)	733	103.7	459	782
MCP	704	102.2	440	763

The installed engine limitations at MCP are: NG = 48 930 rpm, and T4 = 755°C

Notes: - Maximum T4 on take-off: 899°C***

- * ISA, ground level
- ** 100% = 47 866 rpm
- *** Max. operating time with temperature above 818°C: 12 sec.rpm

5.3.1 Transmission Torque Limits

Max. TQ: 101% (100% corresponds to 396 kW power output at 386 rpm MR speed)

6. **Fluids (Fuel/ Oil/ Additives)**

6.1 Fuel

Refer to approved RFM

6.2 Oil

Refer to approved RFM

6.3 Additives

Refer to approved RFM

7. **Fluid Capacities**

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

Unusable fuel: 1.3 litre, post AMS 07 0289

7.2 Oil

Engine: 4.0 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. **Air Speed Limitiations**

VNE: 147 KIAS (272 km/h) from MSL up to 1083 ft (330 m).

- at higher altitudes, VNE reduced by 3.5 kt/1000 ft (20 km/h per 1000 m).

- at OAT between -30° C and -40° C, substract 10 kt (18.5 km/h) from the above decreasing law

9. **Rotor Speed Limitations**

Power on:

Maximum	386 rpm
Minimum	380 rpm

Power off:

Maximum	424 rpm
Minimum	320 rpm

(audio warning at 335 rpm)

10. **Maximum Operating Altitude and Temperature**

10.1 Altitude

TKOF/LDG: refer to approved RFM

En route: 15 000 ft (4575 m)

10.2 Temperature

Refer to approved RFM

11. **Operating Limitations**

VFR day

VFR night, when the additional equipment required by operational regulations is installed and serviceable. (For more information refer to RFM)

12. **Maximum Mass**

1950kg

13. **Centre of Gravity Range**

Longitudinal C.G. limits

Maximum forward limit:

3170 mm

Maximum rearward limit:

3550 mm up to 1300 kg

3430 mm for 1900 kg and up to 1950 kg.

Linear variation between the points

Lateral C.G Limits

L.H. limit: 150 mm

R.H. limit: 80 mm

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Transmission deck

16. **Minimum Flight Crew**

1 pilot (right seat)

17. **Maximum Passenger Seating Capacity**

5

When fitted with the forward 2-place seat optional equipment, the maximum number of passengers is increased to six (pilot not included). This option is to be used in accordance with the corresponding RFMS

18. **Passenger Emergency Exit**

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

19. **Maximum Baggage/Cargo Loads**

Max. load in:

R.H. side hold: 100 kg

L.H. side hold: 120 kg

Rear hold: 80 kg

Forward cabin floor: 150 kg

Rear cabin floor: 310 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The AS 350 Master Servicing Manual, Chapter 4 ‘Airworthiness Limitations’, originally approved by DGAC FR and subsequently by EASA, contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

AS 350 D Flight Manual, initially approved by DGAC FR on 4 July 1978, or later approved revision (reference: in French language).

2. **Maintenance Manual**

- AS 350 Master Servicing Manual

- AS 350 Maintenance Manual

Compatibility between optional items of equipment is described:

- from an installation aspect in the:

"Master Servicing Recommendations",

- from an operational aspect in:

"Supplements" chapter of the Flight Manual.

3. **Structural Repair Manual**

AS 350 Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

AS 350 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Aérospatiale, Eurocopter France, Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   For AS 350 D: s/n 1028, and subsequent

   For AS 350 C converted into AS 350 D, see Note 3

2. AS 350 C aircraft may be converted into AS 350 D by application of Service Bulletin 01.01.

3. The commercial designation is: AStar.

4. Non-proprietary data contained in selected Special Conditions that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 3 AS 350 B1

I. General

1. **Type / Variant or Model**

Type	AS 350
Variant or Model	AS 350 B1

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

4. **Type Certificate Application Date to DGAC FR**

13 December 1984

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

9 January 1986

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For Airworthiness and Environmental Protection:

19 June 1974 (see II.3.)

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

FAR Part 27, Amdts. 1 to 10 included

3. **Special Conditions**

See Note V.4

Complementary and Special Conditions defined in DGAC FR letters 6518, dated 17 August 1976 and 6437, dated 28 July 1977 and 53639, dated 25 June 1985

4. **Exemptions**

None

5. **Deviations**

None

6. **Equivalent Safety Findings**

None

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data (OSD)**

see SECTION 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

Document 350A044455

2. **Description**

Main rotor: three (3) blades

Tail rotor: two (2) blades

Fuselage: metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine

Designed as a derivative of model AS 350 B.

3. **Equipment**

The approved items of equipment are listed in Airbus Helicopters document No. 350A044320. The basic required equipment specified in the applicable airworthiness regulations (see certification bases) must be installed on the aircraft at certification time and at every time after certification.

4. **Dimensions**

4.1 Fuselage

Length: 10.93m

Width hull: 1.87m

Height: 3.14m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.86m, 2 blades

5. **Engine**

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 1D

5.2 Type Certificate

TC/TCDS n°: EASA.E.073 (former DGAC FR n° M5)

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	Gas generator NG ** [%]	Min. guaranteed PWR * [kW]	Temperature T4 [°C]
Max. transient (5 sec)	---	105.5	---	---
Max. TOP (5 min)	830	101.2 100.8	510	845
MCP		98	450	795

Notes: - * ISA, ground level

- ** 100% = 51800 rpm

5.3.1 Transmission Torque Limits

Max. TQ:

- IAS 40 kt - 74 km/h, or higher: 94%
- IAS below 40 kt - 74 km/h: 100%

100% TQ corresponds to:

- 488 kW power output at 394 rpm MR speed
- 478 kW power output at 386 rpm MR speed)

6. **Fluids (Fuel/ Oil/ Additives)**

6.1 Fuel

Refer to approved RFM

6.2 Oil

Refer to approved RFM

6.3 Additives

Refer to approved RFM

7. Fluid Capacities

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

Unusable fuel: 1.25 litre, post AMS 07 0289

7.2 Oil

Engine: 6.2 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. Air Speed Limitiations

V_{NE} power-on:

- 155 KIAS (287 km/h) for H_P =0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, for -30°C > OAT, subtract 10 kt (19 km/h) from the above V_{NE}.

V_{NE} power-off:

- 125 KIAS (231 km/h) for H_P=0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, substract the following values from the above V_{NE}:

- 10 kt (19 km/h), for -20°C > OAT > -30°C

- 20 kt (37 km/h), for -30°C > OAT, without V_{NE} being less than 65 KIAS (120 km/h).

9. Rotor Speed Limitations

Power on:

Maximum	394 rpm
Minimum	385 rpm

Power off:

Maximum	430 rpm
Minimum	320 rpm

(audio warning at 365 rpm)

10. Maximum Operating Altitude and Temperature

10.1 Altitude

TKOF/LDG: 14000ft PA (4267m)

En route: 20000ft PA (6096 m)

10.2 Temperature

Refer to approved RFM

11. **Operating Limitations**

VFR day

VFR night, when the additional equipment required by operational regulations is installed and serviceable. (For more information refer to RFM)

12. **Maximum Mass**

2200kg

13. **Centre of Gravity Range**

Longitudinal C.G. limits

Maximum forward limit:

3170 mm up to 2000 kg

Linear variation from 3170 mm to 3200 mm between

2000 kg and 2200 kg

3200 mm at 2200 kg

Maximum rearward limit:

3500 mm up to 1200 kg

Linear variation from 3500 mm to 3430 mm between

1200 kg and 2200 kg

3430 mm at 2200 kg

Lateral C.G Limits

L.H. limit: 180 mm

R.H. limit: 140 mm

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Transmission deck

16. **Minimum Flight Crew**

1 pilot (right seat)

17. **Maximum Passenger Seating Capacity**

5

When the aircraft is fitted with the forward two-place seat optional equipment, the maximum number of passengers is increased to six (pilot not included). This option is to be used in accordance with the corresponding RFMS.

18. **Passenger Emergency Exit**

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

19. **Maximum Baggage/Cargo Loads**

Max. load in:

R.H. side hold: 100 kg

L.H. side hold: 120 kg

Rear hold: 80 kg

Forward cabin floor: 150 kg

Rear cabin floor: 310 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The AS 350 Master Servicing Manual, Chapter 4 ‘Airworthiness Limitations’, originally approved by DGAC FR and subsequently by EASA, contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

AS 350 B1 Flight Manual, initially approved by DGAC FR on 9 January 1986, or later approved revision (reference: in French language).

2. **Maintenance Manual**

- AS 350 Master Servicing Manual

- AS 350 Maintenance Manual

Compatibility between optional items of equipment is described:

- from an installation aspect in the:

"Master Servicing Recommendations",

- from an operational aspect in:

"Supplements" chapter of the Flight Manual.

3. **Structural Repair Manual**

AS 350 Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

AS 350 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Aérospatiale, Eurocopter France, Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   For AS 350 B1: s/n 1822, and subsequent

2. The commercial designation is: Ecureuil.

3. Non-proprietary data contained in selected Special Conditions that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 4 AS 350 B2

I. General

1. **Type / Variant or Model**

Type	AS 350
Variant or Model	AS 350 B2

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

For helicopters manufactured under license see subparagraph V.1 Eligible serial numbers

4. **Type Certificate Application Date to DGAC FR**

6 October 1988

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

26 April 1989

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For Airworthiness and Environmental Protection:

19 June 1974 (see II.3.)

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

FAR Part 27, Amdts. 1 to 10 included

3. **Special Conditions**

See Note V.4

Complementary and special conditions defined in letters 6518, dated 17 August 1976, 6437, dated 28 July 1977, and 53639, dated 25 June 1985 (see letter 53151/SFACT/TC, dated 9 February 1989). For aircraft equipped with VEMD major modification, as above plus Special Conditions on protection against the effects of High Intensity Radiated Fields (F-01 HIRF) and Lightning (F-02).

4. **Exemptions**

None

5. **Deviations**

None

6. **Equivalent Safety Findings**

Equivalent Safety Findings for Powerplant Instrument Markings (F-05)

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data (OSD)**

see SECTION 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

Document 350A044541

2. **Description**

Main rotor: three (3) blades

Tail rotor: two (2) blades

Fuselage: metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine

Designed as a derivative of model AS 350 B1.

3. **Equipment**

The approved items of equipment are listed in Airbus Helicopters document No. 350A044320. The basic required equipment

specified in the applicable airworthiness regulations (see certification bases) must be installed on the aircraft at certification time and at every time after certification.

4. Dimensions

4.1 Fuselage

Length: 10.93m

Width hull: 1.87m

Height: 3.14m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.86m, 2 blades

5. Engine

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 1D1

5.2 Type Certificate

TC/TCDS n°: EASA.E.073 (former DGAC FR n° M5)

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	B2 without VEMD Gas generator NG ** (Δ Ng) [%]	B2 with VEMD Gas generator NG ** (Δ Ng) [%]	Min. guaranteed PWR * [kW]	Temperature T4 [°C]
Max. transient (5 sec)	---	107.5 % (+6)	103.1 % (+1)	---	---
Max. TOP (5 min)	830	without P2 air bleed (0) with P2 air bleed (-0.6)	Automatic P2 derating by VEMD	478***	845
MCP		98% (-3.5)	98% (-4)	449	795

Notes: - * ISA, ground level

- ** 100% = 51800 rpm

- *** The mechanical power has been limited to this value taking the fuel flow limit into account.

5.3.1 Transmission Torque Limits

- Max. continuous TQ: 94%
- TKOF TQ range from 0 to 40 kt: 94% to 100%
- Max. TKOF TQ: 100%

- Max. transient TQ (5s): 107%

100% TQ corresponds to: 478 kW at 386 rpm MR speed

6. **Fluids (Fuel/ Oil/ Additives)**

6.1 Fuel

Refer to approved RFM

6.2 Oil

Refer to approved RFM

6.3 Additives

Refer to approved RFM

7. **Fluid Capacities**

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

Unusable fuel: 1.3 litre, post AMS 07 0289

7.2 Oil

Engine: 5.2 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. **Air Speed Limitiations**

V_{NE} power-on:

- 155 KIAS (287 km/h) for H_P =0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, for -30°C > OAT, subtract 10 kt (19 km/h) from the above V_{NE}.

V_{NE} power-off:

- 125 KIAS (231 km/h) for H_P=0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, substract the following values from the above V_{NE}:

- 10 kt (19 km/h), for -20°C > OAT > -30°C

- 20 kt (37 km/h), for -30°C > OAT, without V_{NE} being less than 65 KIAS (120 km/h).

9. **Rotor Speed Limitations**

Power on:

Maximum	394 rpm
Minimum	385 rpm

Power off:

Maximum 430 rpm

(audio warning above 410 rpm)

Minimum 320 rpm

(audio warning at 360 rpm)

10. **Maximum Operating Altitude and Temperature**

10.1 Altitude

TKOF/LDG: Refer to approved RFM

En route: 20000ft PA (6096 m)

10.2 Temperature

Refer to approved RFM

11. **Operating Limitations**

VFR day

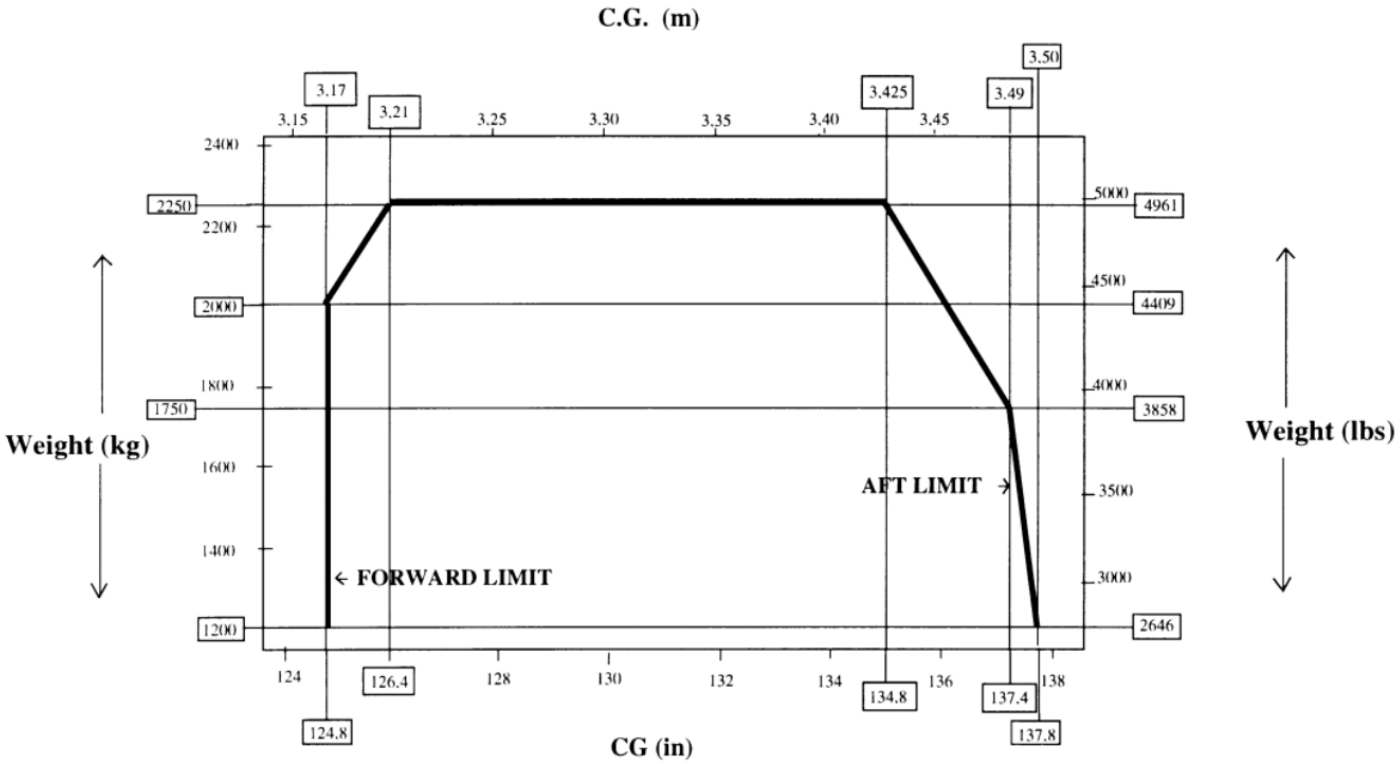
VFR night, when the additional equipment required by operational regulations is installed and serviceable. (For more information refer to RFM). Flight in falling snow: refer to approved RFM (For more information refer to approved RFM)

12. **Maximum Mass**

2250kg

13. **Centre of Gravity Range**

Longitudinal C.G. Limits



Lateral C.G. Limits

L.H. limit: 180 mm

R.H. limit: 140 mm

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Transmission deck

16. **Minimum Flight Crew**

1 pilot (right seat)

17. **Maximum Passenger Seating Capacity**

5

When the aircraft is fitted with the forward two-place seat optional equipment, the maximum number of passengers is increased to six (pilot not included). This option is to be used in accordance with the corresponding RFMS.

18. **Passenger Emergency Exit**

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

19. **Maximum Baggage/Cargo Loads**

Max. load in:

R.H. side hold: 100 kg

L.H. side hold: 120 kg

Rear hold: 80 kg

Forward cabin floor: 150 kg

Rear cabin floor: 310 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The AS 350 Master Servicing Manual, Chapter 4 ‘Airworthiness Limitations’, originally approved by DGAC FR and subsequently by EASA, contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

AS 350 B2 Flight Manual, approved by DGAC FR on 26 April 1989, or later approved revision (reference: in French language).

For VEMD major modification:

AS 350 B2 (VEMD) Flight Manual, approved under ref. EASA.R.C 01396 on 22 November 2006, or later approved revision (reference: in English language)

AS 350 B2 (VEMD) Flight Manual, approved under ref. 10029919 on 3 May 2010, or later approved revision (reference: in French language)

2. **Maintenance Manual**

- AS 350 Master Servicing Manual

- AS 350 Maintenance Manual

Compatibility between optional items of equipment is described:

- from an installation aspect in the:

"Master Servicing Recommendations",

- from an operational aspect in:

"Supplements" chapter of the Flight Manual.

3. **Structural Repair Manual**

AS 350 Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

AS 350 B2 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Aérospatiale, Eurocopter France, Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   For AS 350 B2: s/n 2100, and subsequent.

   For AS 350 B2 with VEMD major modification: s/n 4129, and subsequent.

   - AS 350 B1 converted into AS 350 B2 by application by application of Service Bulletin n° 01.26 or 01.00.26

   - AS 350 B aircraft converted into AS 350 B2 by application of Service Bulletin n° 01.00.51

   - AS 350 BA aircraft converted into AS 350 B2 by application of Service Bulletin n° 01.00.50 or Service Bulletin n° 01.90.61

   The aircraft, the s/n of which are listed in Airbus Helicopters document:

   - L102-001 are manufactured under Helibras license;

   - L 102-002 are manufactured under AE-MS license.

2. The commercial designation is: Ecureuil.

3. Non-proprietary data contained in selected Special Conditions and Equivalent Safety Findings that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 5 AS 350 BA

I. General

1. **Type / Variant or Model**

Type	AS 350
Variant or Model	AS 350 BA

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

For helicopters manufactured under license see subparagraph V.1 Eligible serial numbers

4. **Type Certificate Application Date to DGAC FR**

17 May 1991

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

26 November 1991

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For Airworthiness and Environmental Protection:

19 June 1974 (see II.3.)

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

FAR Part 27, Amdts. 1 to 10 included

3. **Special Conditions**

Complementary and special conditions defined in letters 6518, dated 17 August 1976, 6437, dated 28 July 1977, and 53639, dated 25 June 1985 (see letter 53881, dated 14 August 1991).

4. **Exemptions**

None

5. **Deviations**

None

6. **Equivalent Safety Findings**

None

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data**

See Section 10 below

7.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

7.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

Documents 350A044685

2. **Description**

Main rotor: three (3) blades

Tail rotor: two (2) blades

Fuselage: metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine

Designed as a derivative of models AS 350 B1 and AS 350 B2.

3. **Equipment**

The basic required equipment specified in the applicable airworthiness regulations (see certification bases) must be installed on the aircraft at certification time and at every time after certification.

4. **Dimensions**

4.1 Fuselage

Length:	10.93m
Width hull:	1.87m
Height:	3.14m

4.2 Main Rotor

Diameter:	10.69m, 3 blades

4.3 Tail Rotor

Diameter:	1.86m, 2 blades

5. **Engine**

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 1B

5.2 Type Certificate

TC/TCDS n°: EASA.E.073 (former DGAC FR n° M5)

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	Gas generator NG ** [%]	Min. guaranteed PWR * [kW]	Temperature T4 [°C]
Max. transient (5 sec)	reserved	105	---	---
Max. TOP (5 min)	reserved	100	478	810
MCP		98	440	775

Notes: - * ISA, ground level

- ** 100% = 51800 rpm
- Max . T4 starting: 840°C

5.3.2 Transmission Torque Limits

Max. TQ:

- IAS 40 kt - 74 km/h, or higher: 83%
- IAS below 40 kt - 74 km/h: 88%

100% TQ corresponds to 478 kW power output at 386 rpm MR speed

6. **Fluids (Fuel/ Oil/ Additives)**

6.1 Fuel

Refer to approved RFM

6.2 Oil

Refer to approved RFM

6.3 Additives

Refer to approved RFM

7. **Fluid Capacities**

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

Unusable fuel: 1.3 litre, post AMS 07 0289

7.2 Oil

Engine: 5.2 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. **Air Speed Limitiations**

V_{NE} power-on:

- 155 KIAS (287 km/h) for PA =0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, for -30°C > OAT, subtract 10 kt (19 km/h) from the above V_{NE}.

V_{NE} power-off:

- 125 KIAS (231 km/h) for PA=0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, substract the following values from the above V_{NE}:

- 10 kt (19 km/h), for -20°C > OAT > -30°C

- 20 kt (37 km/h), for -30°C > OAT, without V_{NE} being less than 65 KIAS (120 km/h).

9. **Rotor Speed Limitations**

Power on:

Maximum 394 rpm

Minimum 385 rpm

Power off:

Maximum 430 rpm

(audio warning above 410 rpm)

Minimum 320 rpm

(audio warning at 360 rpm)

10. **Maximum Operating Altitude and Temperature**

10.1 Altitude

TKOF/LDG: Refer to approved RFM

En route: 16000ft PA (4875 m)

10.2 Temperature

Refer to approved RFM

11. **Operating Limitations**

VFR day

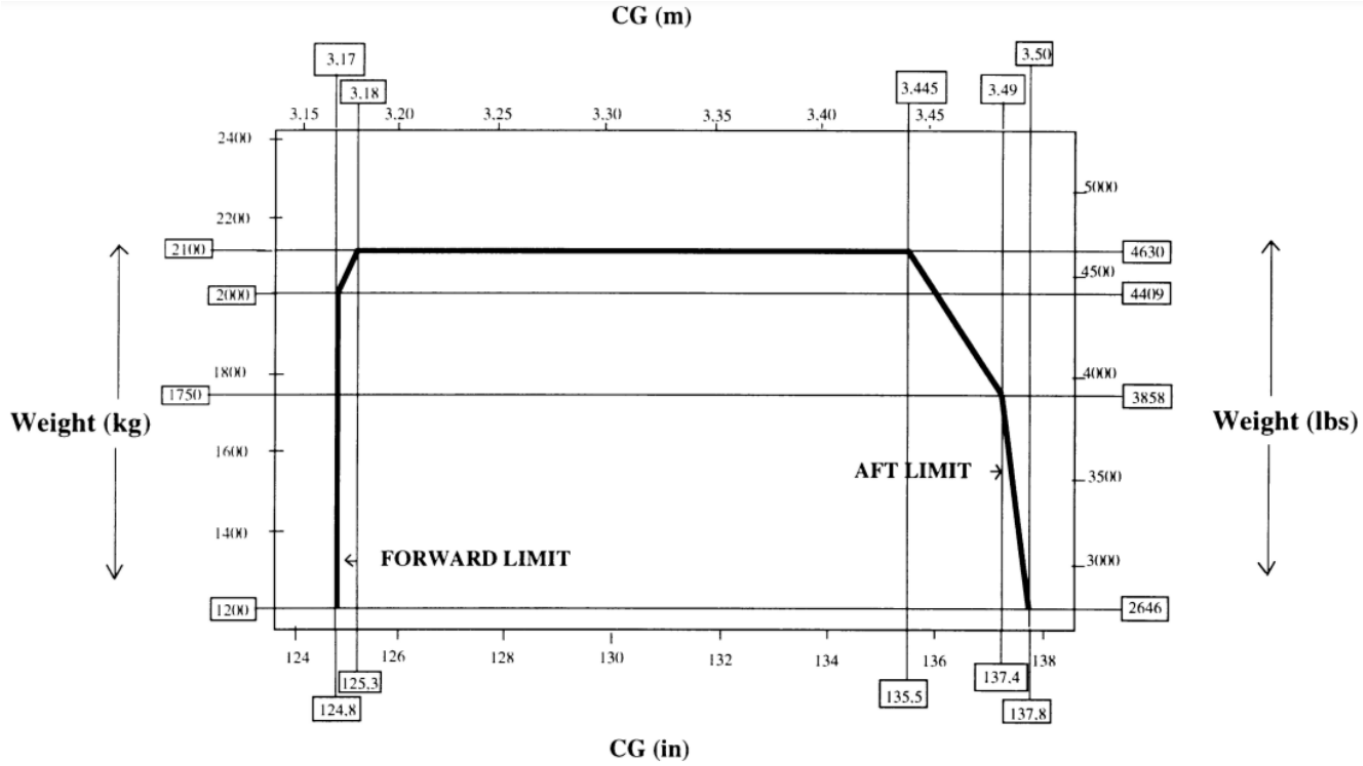
VFR night, when the additional equipment required by operational regulations is installed and serviceable. (For more information refer to RFM)

12. **Maximum Mass**

2100kg

13. **Centre of Gravity Range**

Longitudinal C.G. Limits



Lateral C.G. Limits

L.H. limit: 180 mm

R.H. limit: 140 mm

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Transmission deck

16. **Minimum Flight Crew**

1 pilot (right seat)

17. **Maximum Passenger Seating Capacity**

5

When the aircraft is fitted with the forward two-place seat optional equipment, the maximum number of passengers is increased to six (pilot not included). This option is to be used in accordance with the corresponding RFMS.

18. **Passenger Emergency Exit**

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

19. **Maximum Baggage/Cargo Loads**

Max. load in:

R.H. side hold: 100 kg

L.H. side hold: 120 kg

Rear hold: 80 kg

Forward cabin floor: 150 kg

Rear cabin floor: 310 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The AS 350 Master Servicing Manual, Chapter 4 ‘Airworthiness Limitations’, originally approved by DGAC FR and subsequently by EASA, contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

AS 350 BA Flight Manual, approved by DGAC FR on 26 November 1991, or later approved revision (reference: in French language)

2. **Maintenance Manual**

- AS 350 Master Servicing Manual

- AS 350 Maintenance Manual

Compatibility between optional items of equipment is described:

- from an installation aspect in the:

"Master Servicing Recommendations",

- from an operational aspect in:

"Supplements" chapter of the Flight Manual.

3. **Structural Repair Manual**

AS 350 Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

AS 350 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Aérospatiale, Eurocopter France, Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   For AS 350 BA: s/n 2588, and subsequent.

   - AS 350 B aircraft converted into AS 350 BA by application of Service Bulletin n° 01.00.35

   - AS 350 D aircraft converted into AS 350 BA by application of Service Bulletin n° 01.00.40

   The aircraft, the s/n of which are listed in Airbus Helicopters document:

   - L102-001 are manufactured under Helibras license;

   - L102-002 are manufactured under AE-MS license..

2. The commercial designation is: Ecureuil.

3. Non-proprietary data contained in selected Special Conditions that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 6 AS 350 BB

I. General

1. **Type / Variant or Model**

Type	AS 350
Variant or Model	AS 350 BB

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

For helicopters manufactured under license see subparagraph V.1 Eligible serial numbers

4. **Type Certificate Application Date to DGAC FR**

23 July 1996

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

15 November 1996

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For Airworthiness and Environmental Protection:

19 June 1974 (see II.3.)

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

FAR Part 27, Amdts. 1 to 10 included

3. **Special Conditions**

Complementary and special conditions defined in letters 6518, dated 17 August 1976, 6437, dated 28 July 1977, and 53639, dated 25 June 1985.

4. **Exemptions**

None

5. **Deviations**

None

6. **Equivalent Safety Findings**

None

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data**

See Section 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

350A044825

2. **Description**

Main rotor: three (3) blades

Tail rotor: two (2) blades

Fuselage: metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine

3. **Equipment**

The approved items of equipment are listed in Airbus Helicopters document n° 350A044320. The basic required equipment specified in the applicable airworthiness regulations (see certification bases) must be installed on the aircraft at certification time and at every time after certification.

4. **Dimensions**

4.1 Fuselage

Length: 10.93m

Width hull: 1.87m

Height: 3.14m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.86m, 2 blades

5. **Engine**

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 1D1 (with TU221)

5.2 Type Certificate

TC/TCDS n°: EASA.E.073 (former DGAC FR n° M5)

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	Gas generator NG ** [%]	Min. guaranteed PWR * [kW]	Temperature T4 ***[°C]
Max. transient (5 sec)	reserved	105.7	---	---
Max. TOP (5 min)		98.5	478	845
MCP		96.5	428	795

Notes: - * ISA, ground level

- ** Min. stabilised rating: 67% - 100% = 51800 rpm
- *** Max. transient during starting: 865°C

5.3.2 Transmission Torque Limits

- Max. continuous: 88% for IAS < 60 kt
  83% for IAS ≥ 60 kt
- Max. transient: 107% for IAS < 40 kt

88% TQ corresponds to 420 kW power output at 386 rpm MR speed,

or, 429 kW at 394 rpm MR speed.

6. **Fluids (Fuel/ Oil/ Additives)**

6.1 Fuel

Refer to approved RFM

6.2 Oil

Refer to approved RFM

6.3 Additives

Refer to approved RFM

7. Fluid Capacities

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

Unusable fuel: 1.3 litre, post AMS 07 0289

7.2 Oil

Engine: 5.2 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. Air Speed Limitiations

V_{NE} power-on:

- 155 KIAS (287 km/h) for PA =0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, for -30°C > OAT, subtract 10 kt (19 km/h) from the above V_{NE}.

V_{NE} power-off:

- 125 KIAS (231 km/h) for PA=0

- at altitude, speed decreases by 3 kt/1000 ft (18 km/h/1000 m)

- in cold weather, substract the following values from the above V_{NE}:

- 10 kt (19 km/h), for -20°C > OAT > -30°C

- 20 kt (37 km/h), for -30°C > OAT, without V_{NE} being less than 65 KIAS (120 km/h).

9. Rotor Speed Limitations

Power on:

Maximum 394 rpm

Minimum 385 rpm

Power off:

Maximum 430 rpm

(audio warning above 410 rpm)

Minimum 320 rpm

(audio warning at 360 rpm)

10. Maximum Operating Altitude and Temperature

10.1 Altitude

TKOF/LDG: Refer to approved RFM

En route: 16000ft PA (4875 m)

10.2 Temperature

Refer to approved RFM

11. **Operating Limitations**

VFR day

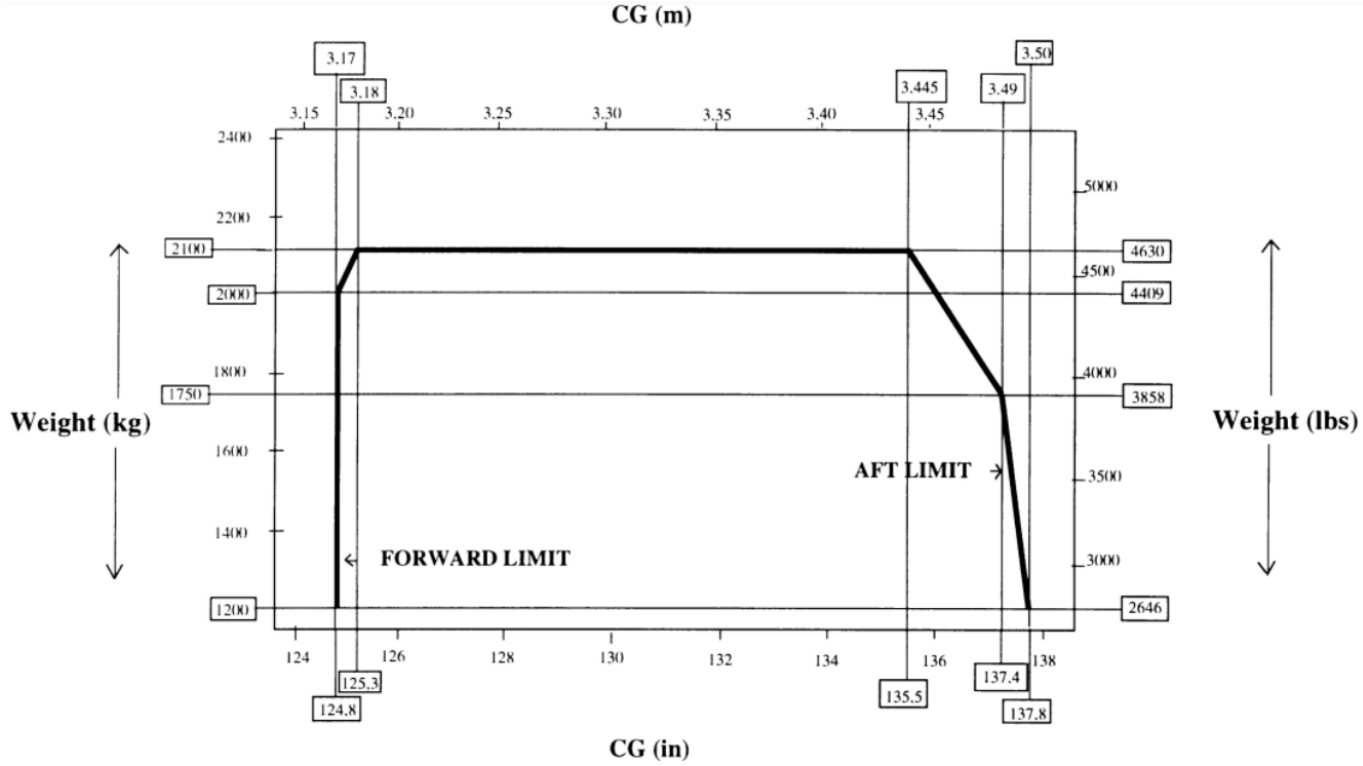
VFR night, when the additional equipment required by operational regulations is installed and serviceable. (For more information refer to RFM)

12. **Maximum Mass**

2100kg

13. **Centre of Gravity Range**

Longitudinal C.G. Limits



Lateral C.G. Limits

L.H. limit: 180 mm

R.H. limit: 140 mm

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Transmission deck

16. **Minimum Flight Crew**

1 pilot (right seat)

17. **Maximum Passenger Seating Capacity**

5

When the aircraft is fitted with the forward two-place seat optional equipment, the maximum number of passengers is increased to six (pilot not included). This option is to be used in accordance with the corresponding RFMS.

18. **Passenger Emergency Exit**

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

19. **Maximum Baggage/Cargo Loads**

Max. load in:

R.H. side hold: 100 kg

L.H. side hold: 120 kg

Rear hold: 80 kg

Forward cabin floor: 150 kg

Rear cabin floor: 310 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The AS 350 Master Servicing Manual, Chapter 4 ‘Airworthiness Limitations’, originally approved by DGAC FR and subsequently by EASA, contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

AS 350 BB Flight Manual, approved by DGAC FR on 15 November 1996, or later approved revision (reference: in French language)

2. **Maintenance Manual**

- AS 350 Master Servicing Manual

- AS 350 Maintenance Manual

Compatibility between optional items of equipment is described:

- from an installation aspect in the:

"Master Servicing Recommendations",

- from an operational aspect in:

"Supplements" chapter of the Flight Manual.

3. **Structural Repair Manual**

AS 350 Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

AS 350 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Aérospatiale, Eurocopter France, Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   For AS 350 BB: s/n 2945, and subsequent.

2. The commercial designation is: Ecureuil.

3. Non-proprietary data contained in selected Special Conditions that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 7 AS 350 B3

I. General

1. **Type / Variant or Model**

Type	AS 350
Variant or Model	AS 350 B3

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

For helicopters manufactured under license see subparagraph V.1 Eligible serial numbers

4. **Type Certificate Application Date to DGAC FR**

14 October 1996

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

24 December 1997

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For Airworthiness and Environmental Protection:

19 June 1974 (see II.3.)

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

2.1

FAR Part 27, Amdts. 1 to 10 included

2.2 For a/c incorporating mod. OP-3369 (2 370 kg weight extension), and/or, mod. OP-4305 (Arriel 2D engine installation)

As above (2.1) with the following requirements of CS 27, first issue, dated 14 November 2003 to replace the same numbered paragraphs of FAR 27: 27.1; 27.21; 27.25; 27.27; 27.33; 27.45; 27.51; 27.65; 27.71; 27.73; 27.75; 27.79; 27.141; 27.143; 27.173; 27.175; 27.177; 27.241; 27.301; 27.303; 27.305; 27.307; 27.309; 27.321; 27.337; 27.339; 27.341; 27.351; 27.471; 27.473; 27.501; 27.505; 27.521; 27.547; 27.549; 27.563 (b); 27.571; 27.602; 27.661; 27.663; 27.695; 27.723; 27.725; 27.727; 27.737; 27.751; 27.753; 27.801 (b),(d); 27.927 (c); 27.1041; 27.1043; 27.1045; 27.1301; 27.1501; 27.1519; 27.1529; 27.1581; 27.1583; 27.1585; 27.1587; 27.1589.

2.3 For a/c incorporating mod. OP-4605 (installation of a fuel system improving crashworthiness)

As above (2.2) with requirement CS 27.561 (c) Amdt. 3, dated 11 December 2012 replacing same numbered paragraph of FAR 27 for the following elements of the fuel tank lower structure, affected by this modification: cradles, longitudinal beams, X-stops and rods (C-03).

2.4 For a/c incorporating mod. 07.20034 (installation of a fuel system crash resistance compatible with swing installation)

As above (2.3) amended by the following additional or alternative airworthiness requirements CS-27 Amdt. 3, dated 11 December 2012: 27.863, 27.901 (b)(5), 27.952, 27.963 (e)(f)(g)(h), 27.967, 27.973, 27.975 (b) for the fuel system and airframe structure/fuel system interfaces.

3. **Special Conditions**

3.1

Complementary and special conditions definedin DGAC FR letter 971726, dated 3 April 1997.

-Rechargeable Lithium batteryinstallations (F-24),

-Lightweight Data Recorder installation(F-25).

3.2 For a/c incorporating mod. OP-3369 (2 370 kg weight extension)

As above (3.1)

3.3 For a/c incorporating mod. OP-4305 (Arriel 2D engine installation) and/or mod. OP-4605 (installation of a fuel system improving crashworthiness) and/or mod. 07.20034 (installation of a fuel system crash resistance compatible with swing installation)

as above (3.2) and:

- Part 21.A.21 (d) taking precedence over "Complementary Condition" CC 27.903 (a) in Appendix 1 to DGAC letter 971726,

- Power plant control (E-02 (X1)) replacing Special Condition B.1. in Appendix 2 to DGAC letter 971726,

- Structure protection against lightning (D-01 (X1)) replacing Special Condition D.1. in Appendix 2 to DGAC letter 971726,

- Protection from effects of HIRF (F-01 (X1)) replacing Special Condition E1 in Appendix 3 to DGAC letter 971726,

- Immunity from effects of lightning (F-02 (X1)) replacing Special Condition E2 per Appendix 3 to DGAC letter 971726,

- Rotor drive system endurance test for HIP (E-01 (X1)

4. **Exemptions**

None

5. **Deviations**

None

6. **Equivalent Safety Findings**

Powerplant Instrument Markings (G-01 (X1)) for a/c incorporating MOD OP-4305 (Arriel 2D engine installation)

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data**

See Section 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

Document 350A044805

Document 350A045426 for aircraft incorporating modification OP-3369 (2 370 kg weight extension).

Document 350A047343 for aircraft incorporating modification OP-4305 (Arriel 2D engine installation)

2. **Description**

Main rotor: three (3) blades

Tail rotor: two (2) blades

Fuselage: metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine

Designed as a derivative of model AS 350 B2.

3. **Equipment**

The approved items of equipment are listed in Airbus Helicopters document No. 350A044320. The basic required equipment specified in the applicable airworthiness regulations (see certification bases) must be installed on the aircraft at certification time and at every time after certification.

4. **Dimensions**

4.1 Fuselage

Length: 10.93m

Width hull: 1.87m

Height: 3.14m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.86m, 2 blades

5. **Engine**

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 2B, or,

1 x Model Arriel 2B1, or,

1 x Model Arriel 2D

5.2 Type Certificate

Same TC/TCDS for the 3 engines models, n°: EASA.E.001 (former DGAC FR n° M19)

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

On AS 350 B3 Arriel 2B (before modifications AMS 072803 and 072808):

	Limit TQ on shaft [Nm]	Gas generator NG ** (Δ Ng) [%]	Min. guaranteed PWR * [kW]	Temperature T4 ***[°C]
Max. transient (5 sec)	---	102.3 % (+1)	---	---
Max. TOP (5 min)	853	101.1 (0)	535	915
MCP	716	94.8 (-4) V_i > 70 kt	450	849
		97.1 (-4) V_i < 70 kt		

On AS 350 B3 Arriel 2B (after modifications AMS 072803 and 072808), and on AS 350 B3 Arriel 2B1:

	Limit TQ on shaft [Nm]	Gas generator NG ** (Δ Ng) [%]	Min. guaranteed PWR * [kW]	Temperature T4 ***[°C]
Max. transient (5 sec)	---	102.3 (+1)	---	---

Max. TOP (5 min)	853	101.1 (0)	535	915
MCP	791	97.1 (-4)	497	849

Notes: - * ISA, ground level at 386 rpm MR speed

- ** 100% = 52 110 rpm – with neither electrical nor P2 bleed, ISA ground level

On AS 350 B3 Arriel 2D ****:

	Limit TQ on shaft [Nm]	Gas generator NG *** (Δ Ng) [%]	Min. guaranteed PWR * [kW]	Temperature T4 ***[°C]
Max. transient (20 sec)	---	101.9 (+1)	---	---
Max. TOP (5 min)	853	100.9 (0)	535	949
Max. TOP/HIP (30 min) *****				
MCP	791	98.0 (-4)	497	905

Notes: - * ISA, ground level at 386 rpm MR speed.

- ** 100% = 52 110 rpm.

- *** As the actual Ng limitations depend on ambient conditions, the operational limitations are the Δ Ng values. Ng values correspond to the maximum Ng reached in the whole flight domain.

- **** The engine is not physically derated but its performance is limited when installed in the AS 350 B3. Specific limitations have been implemented in the VEMD, allowing the pilot to control the installed Arriel 2D at the same power limitations as when an Arriel 2B1 is installed, for each aircraft rating (MCP, MTOP and MTP).

- ***** Use of HIP (Hover Increased Power, TOP 30 min) is only allowed when enhanced thermal protection is fitted on the AS 350 B3 tail boom (modification OP-4309).

5.3.2 Transmission Torque Limits

On AS 350 B3 Arriel 2B (before modifications AMS 072803 and 072808):

For V < 40 kt (74 km/h):

- Max. transient TQ (10 sec): 104%
- Max. continuous TQ: 100%

For V ≥ 40 kt (74 km/h):

- Max. continuous TQ: 84%

On AS 350 B3 Arriel 2B (after modifications AMS 072803 and 072808):

For V < 40 kt (74 km/h):

- Max. transient TQ (10 sec): 104%
- Max. continuous TQ: 100%

For V ≥ 40 kt (74 km/h):

- Max. continuous TQ: 92.7%

On AS 350 B3 Arriel 2B1:

- Max. continuous TQ: 92.7%
- TKOF TQ range from 0 to 40 kt: 92.7% to 100%

- Max. TKOF TQ: 100%
- Max. transient TQ (5 sec): 104%

On AS 350 B3 Arriel 2D:

- Max. continuous TQ: 92.7%
- TKOF TQ range from 0 to 40 kt: 92.7% to 100%
- Max. TKOF TQ: 100%
- Max. transient TQ (5 sec): 104%

Note: 100% TQ corresponds to: 535 kW at 386 rpm MR speed.

6. **Fluids**

Refer to approved RFM

7. **Fluid Capacities**

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

538 litres post AMS OP 4605, or 07.20034

Unusable fuel: 1.3 litres, post AMS 07 0289

2 litres post AMS OP 4605, or 07.20034

7.2 Oil

Engine: 5.2 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. **Air Speed Limitiations**

8.1 For AS 350 B3 Arriel 2B (before modifications AMS 072803 and 072808), and for AS 350 B3 Arriel 2B1:

VNE power-on:

- 155 KIAS (287 km/h) for PA=0

- at altitude, speed decreases by 3 kt/1 000 ft (18 km/h/1 000 m)

- in cold weather, for -30°C > OAT, subtract 10 kt (19 km/h) from the above VNE.

VNE power-off:

- 125 KIAS (231 km/h) for PA =0

- at altitude, speed decreases by 3 kt/1 000 ft (18 km/h/1 000 m), without VNE being less than 65 KIAS (120 km/h)

- in cold weather, substract 20 kt (37 km/h) from the above VNE for OAT < -20°C, without VNE being less than 65 KIAS (120 km/h).

8.2 For AS 350 B3 Arriel 2B (after modifications AMS 072803 and 072808):

VNE power-on:

- 155 KIAS (287 km/h) for PA=0

- at altitude, speed decreases by 3 kt/1 000 ft (18 km/h/1 000 m)

- in cold weather, for -30°C > OAT, subtract 10 kt (19 km/h) from the above VNE.

- In the cross-hatched area in the C of G graph, VNE is limited to 133 KIAS (246 km/h) or the VNE defined above (the lowest value).

VNE power-off:

- 125 KIAS (231 km/h) for PA =0 - at altitude, speed decreases by 3 kt/1 000 ft (18 km/h/1 000 m), without VNE being less than 65KIAS (120 km/h)

- in cold weather, substract 20 kt (37 km/h) from the above VNE for OAT < -20°C, without VNE being less than 65 KIAS (120 km/h)

8.3 For AS 350 B3 Arriel 2D:

VNE power-on:

- 155 KIAS (287 km/h) for PA=0

- at altitude, speed decreases by 3 kt/1 000 ft (18 km/h/1 000)

- in cold weather, for -30°C > OAT, subtract 10 kt (19 km/h) from the above VNE.

- In the cross-hatched area in the C of G graph, VNE is limited to 133 KIAS (246 km/h) or the VNE defined above (the lowest value).

VNE power-off:

- 125 KIAS (231 km/h) for PA =0

- at altitude, speed decreases by 3 kt/1 000 ft (18 km/h/1 000 m), without VNE being less than 65 KIAS (120 km/h)

- in cold weather, substract 20 kt (37 km/h) from the above VNE for OAT < -20°C, without VNE being less than 65 KIAS (120 km/h).

9. **Rotor Speed Limitations**

9.1 For AS 350 B3 Arriel 2B

Power on:

Maximum	394 rpm
Minimum	385 rpm

9.2 For AS 350 B3 Arriel 2B1

Power on:

Maximum	405 rpm
Minimum	375 rpm

9.3 For AS 350 B3 Arriel 2D

Power on:

Maximum	405 rpm
Minimum	375 rpm

9.4 For all AS 350 B3

Power off:

Maximum	430 rpm (audio warning above 410 rpm)
Minimum	320 rpm (audio warning below 360 rpm)

10. **Maximum Operating Altitude and Temperature**

10.1 Altitude

TKOF/LDG: Refer to approved RFM

En route: 23000 ft PA (7010 m), see Note 3)

10.2 Temperature

Refer to approved RFM

11. **Operating Limitations**

VFR day

VFR night, when the additional equipment required by operational regulations is installed and serviceable. (For more information refer to RFM)

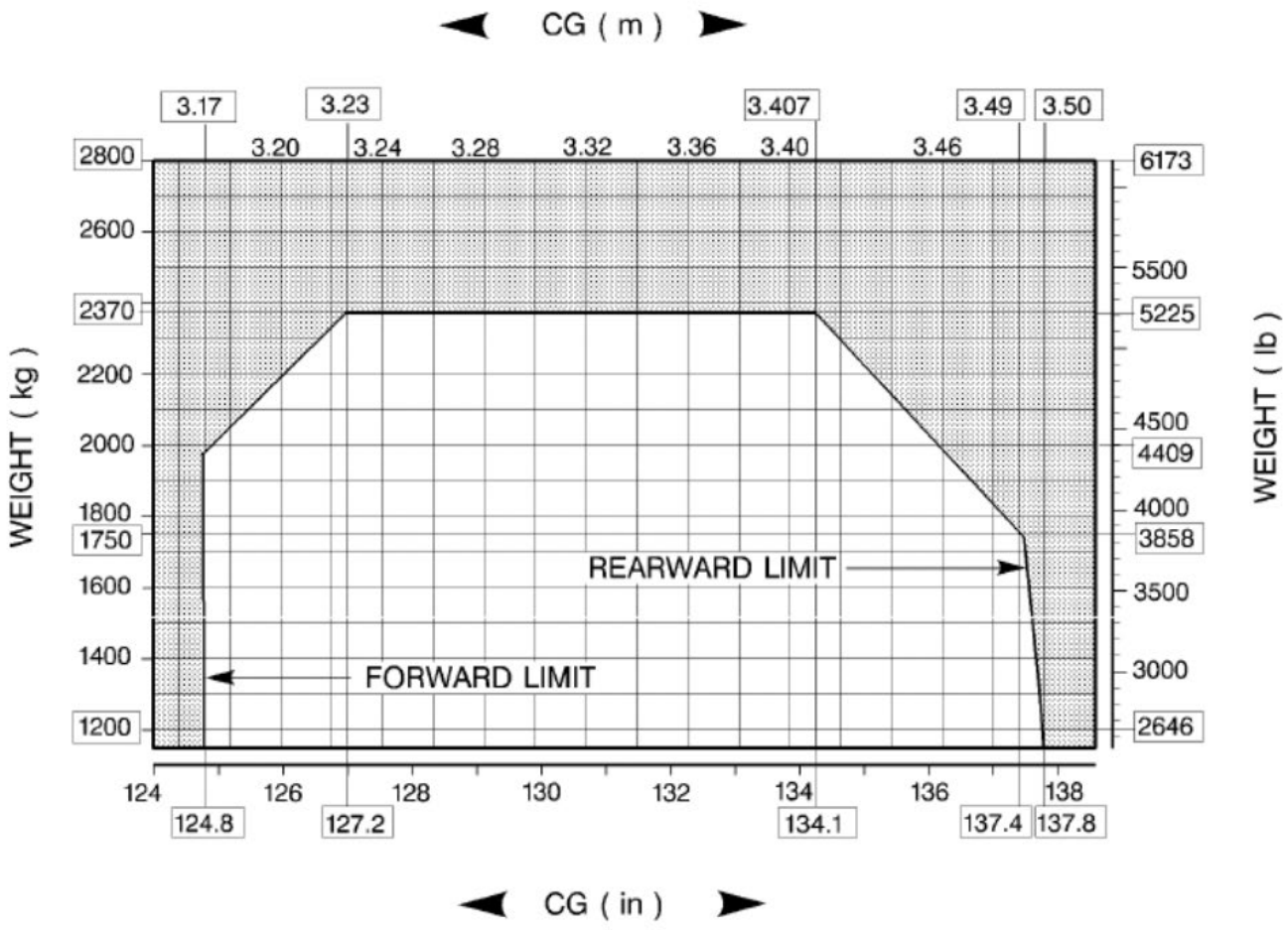
12. **Maximum Mass**

2250 kg

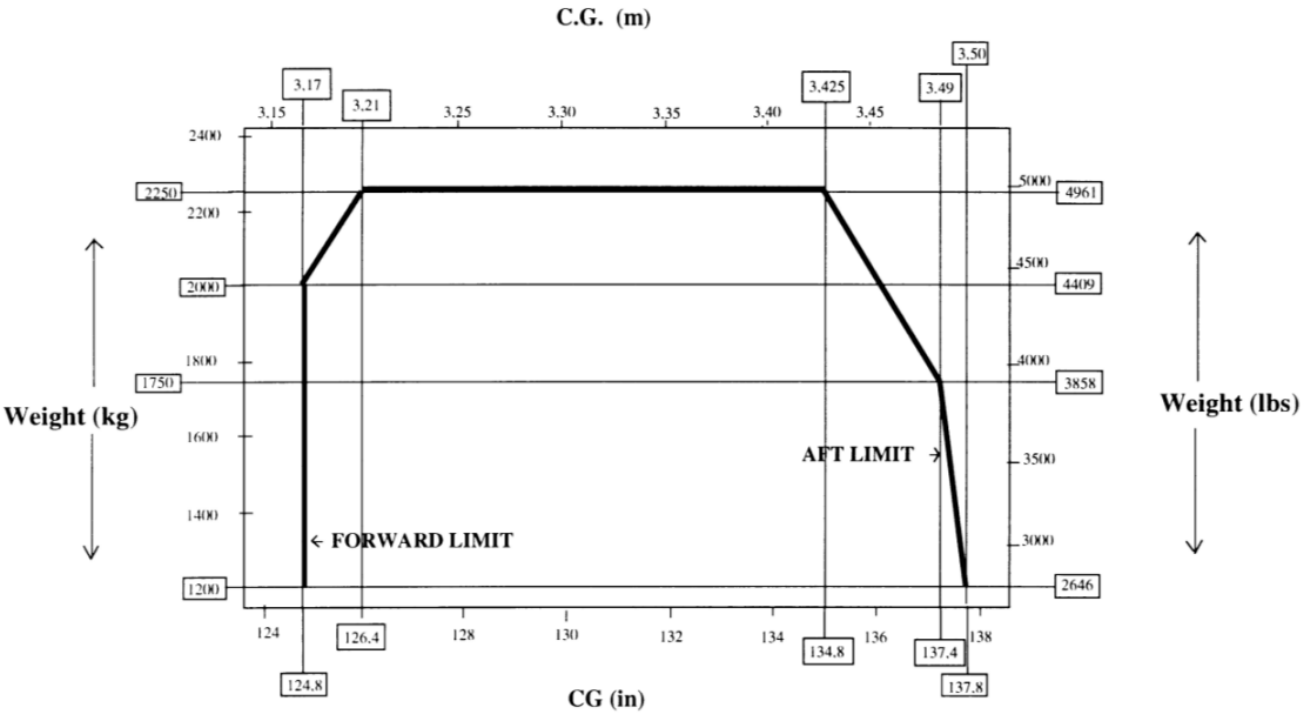
2370 kg, for aircraft incorporating modification OP 3369

13. **Centre of Gravity Range**

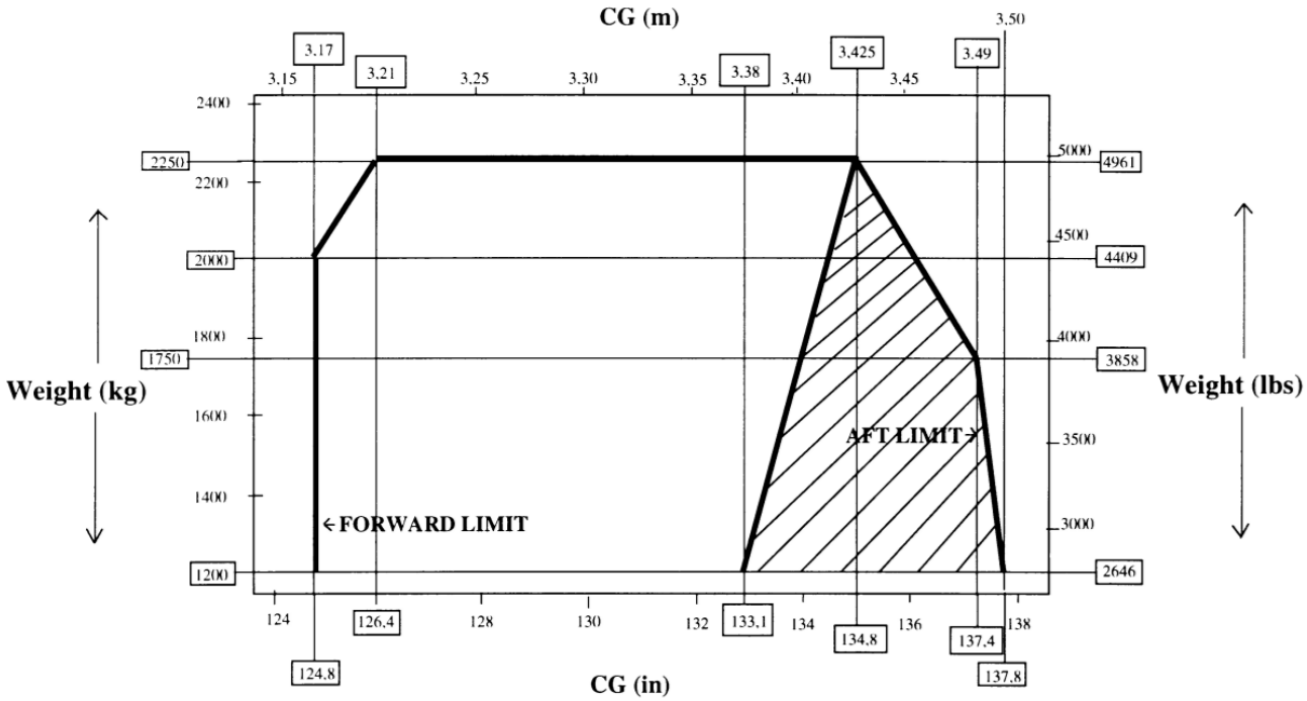
13.1 Longitudinal C.G. limits for AS 350 B3 Arriel 2B1 for aircraft incorporating modification OP-3369



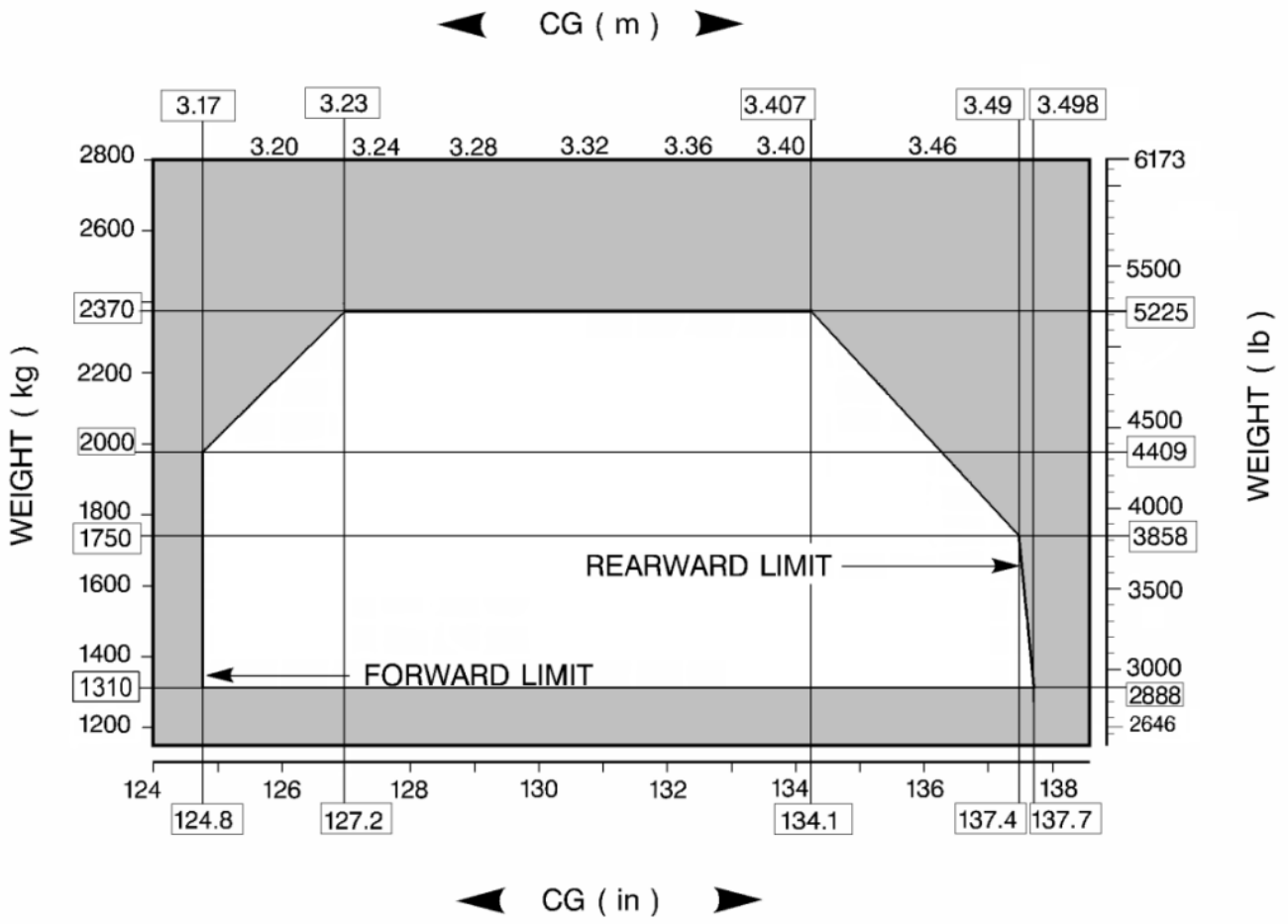
13.2 Longitudinal C.G. limits for AS 350 B3 Arriel 2B (before modifications AMS 072803 and 072808), and for AS 350 B3 Arriel 2B1:



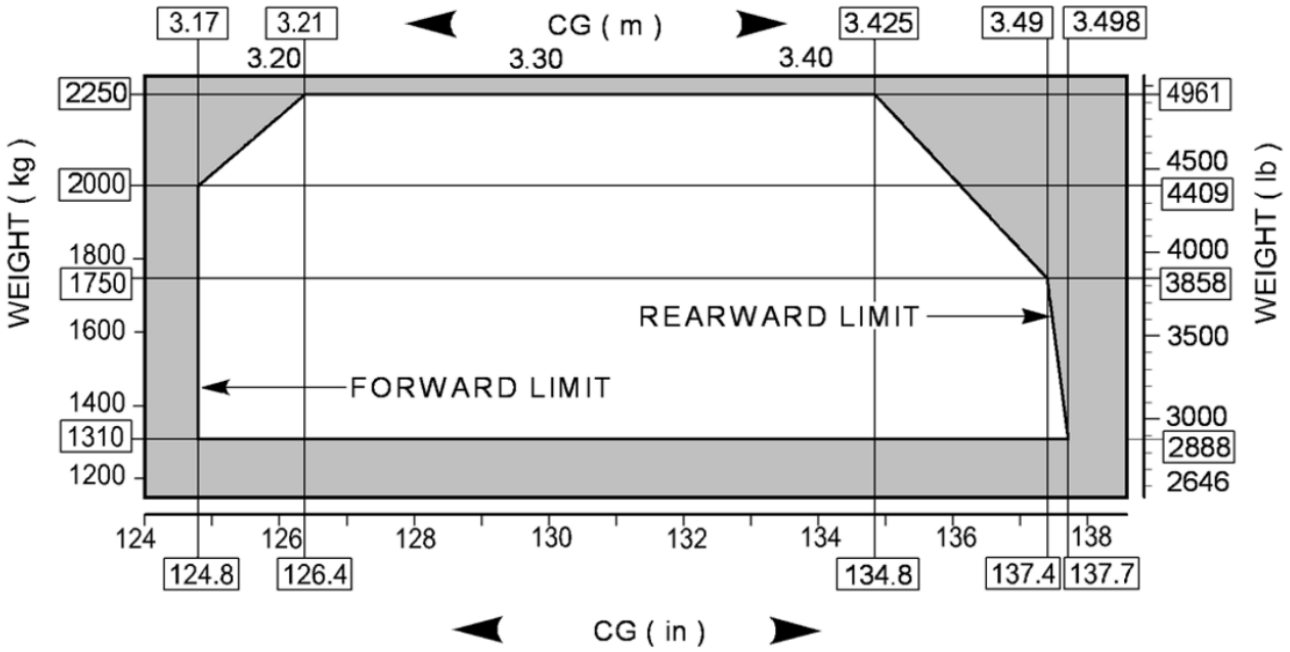
13.3 Longitudinal C.G. limits for AS 350 B3 Arriel 2B (after modifications AMS 072803 and 072808):



13.4 ongitudinal C.G. limits for AS 350 B3 Arriel 2D a/c incorporating modification OP-3369:



13.5 Longitudinal C.G. limits for AS 350 B3 Arriel 2D:



13.6 Lateral C.G Limits:

L.H. limit: 180 mm up to 2 250 kg, and

80 mm from 2 250 up to 2 370 kg for aircraft incorporating modification OP3369

R.H. limit: 140 mm up to 2 250 kg and

80 mm from 2 250 up to 2 370 kg for aircraft incorporating modification OP3369

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Transmission deck

16. **Minimum Flight Crew**

1 pilot (right seat)

17. **Maximum Passenger Seating Capacity**

5

When the aircraft is fitted with the forward two-place seat optional equipment, the maximum number of passengers is increased to six (pilot not included). This option is to be used in accordance with the corresponding RFMS.

18. **Passenger Emergency Exit**

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

19. **Maximum Baggage/Cargo Loads**

Max. load in:

R.H. side hold: 100 kg

L.H. side hold: 120 kg

Rear hold: 80 kg

Forward cabin floor: 150 kg

Rear cabin floor: 310 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The AS 350 Master Servicing Manual Chapter 4 "Airworthiness Limitations", originally approved by DGAC FR and subsequently by EASA (or DGCA-F), contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

AS 350 B3 Arriel 2B Flight Manual, approved by DGAC FR on 24 December 1997 plus rapid revision RR 1A (after modifications AMS 072803 and 072808), or later approved revisions (reference: in English language).

- AS 350 B3 Arriel 2B1 Flight Manual, approved by DGAC FR on 16 July 2004, or later approved revision (reference: in English language).

- AS 350 B3e Flight Manual, in English (for a/c incorporating mod. OP-4305 – Arriel 2D engine installation – and additional modifications to the tail rotor control system – see point 2 in section V. Notes), EASA-approved 17 June 2011, or later approved revisions

- AS 350 B3e Flight Manual, in French (for a/c incorporating mod. OP-4305 – Arriel 2D engine installation – and additional modifications to the tail rotor control system -see point 2 in section V. Notes), EASA-approved 17 June 2011, or later approved revisions.

2. **Maintenance Manual**

- AS 350 B3 Master Servicing Manual

- AS 350 Maintenance Manual

Compatibility between optional items of equipment is described:

- from an installation aspect in the:

"Master Servicing Recommendations",

- from an operational aspect in:

"Supplements" chapter of the Flight Manual.

3. **Structural Repair Manual**

AS 350 Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

AS 350 B3 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Aérospatiale, Eurocopter France, Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   for AS 350 B3: s/n 2968, s/n 3063, and subsequent.

   for AS 350 B3: s/n 4201, and subsequent for aircraft incorporating modification OP-3369 (2 370 kg weight extension).

   for AS 350 B3: s/n 4767, and subsequent for aircraft incorporating modification OP-4305 (with or without modification OP-3369).

   The aircraft, the s/n of which are listed in Airbus Helicopters document:

   - L102-001 are manufactured under Helibras license;

   - L 102-002 are manufactured under AE-MS license.For AS 350 BB: s/n 2945, and subsequent.

2. The commercial designation is: Ecureuil.

   The commercial designation related to particular modifications (MOD):

   - OP-4305 (Arriel 2D engine installation), and additionally,
   - 07-5601 (Tail rotor control mechanism modification),
   - 07-5600 (Tail rotor blade reinforcement),
   - 07-8551 (Tail Gear Box control lever modification)

   is H125 (previously AS 350 B3e).

3. For helicopters fitted with:

   - Arriel 2B engine and Pre-MOD 072810; or,
   - Arriel 2B1 or Arriel 2D engine, and Post-Mod 073368 and Pre-MOD AL-4236;

   en route altitude is 20 000 ft (6 096m).

4. Non-proprietary data contained in selected Special Conditions, Equivalent Safety Findings and Requirements elected to comply, that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 8 EC 130 B4

I. General

1. **Type / Variant or Model**

Type	EC 130
Variant or Model	EC 130 B4

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

4. **Type Certificate Application Date to JAA**

23 March 1998

5. **State of Design Authority**

EASA

(pre EASA: DGAC, France)

6. **Type Certificate Date by DGAC FR**

14 December 2000

(JAA recommendation date: same)

7. **Type Certificate Number**

UK.TC.R.00040

(former DGAC FR: 157)

8. **Type Certificate Data Sheet Number**

UK.TC.R.00040

(former DGAC FR: 157)

(based on JAA data sheet No JAA/27/00/003, Issue 6, dated June 2004)

9. **EASA Type Certification Date**

28 September 2003,

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

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For details about II.3., II.4. and II.6., see Note V.3

For Airworthiness and Environmental Protection:

23 March 1998

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

JAR 27, Issue 1, dated 6 September 1993, and Orange Paper Amdt. 27/98/1, effective 16 February 1998. Note: Administrative requirements (e.g. ANR) may apply.

3. **Special Conditions**

High intensity radiated field (HIRF) (F-01)

4. **Exemptions**

- Rear seat bench with regard to JAR 27.562(*) and JAR 27.785(*) (a),(b),(j) (C-01 and D-01)

- Fuel systems with regard to JAR 27.952 (a),(c),(d),(f),(g) (E-01)

(*): see Note 2

5. **Deviations**

None

6. **Equivalent Safety Findings**

- Main gearbox oil filter bypass (E-04)

- Powerplant instrument markings (F-03)

7. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

8. **Operational Suitability Data**

See Section 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

Document 350A047053

2. **Description**

Main rotor: three (3) blades

Tail rotor: Fan-in-fan, ten (10) blades

Fuselage: composite and metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine

Designed as a derivative of model AS 350 B3

3. **Equipment**

As per compliance with JAR 27 requirements and included in the original Type Design Standard or indicated on the Section 2 - Limitations of the RFM..

4. **Dimensions**

4.1 Fuselage

Length: 10.68m

Width hull: 2.03m

Height: 3.61m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.00m, 10 blades

5. **Engine**

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 2B1

5.2 Type Certificate

TC/TCDS n°: EASA.E.001 (former DGAC FR n° M19)

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	Gas generator NG * [%]	Min. guaranteed PWR [kW]	Temperature T4 **[°C]
Max. transient (5 sec)	reserved	102.3 (+1)	---	865 (10 sec)
Max. TOP (5 min)		101.1 (0)	reserved	915
MCP		97.1 (-4)	reserved	849

Notes: - * 100% = 52110 rpm

- ** Max. continuous during starting: 750°C

5.3.2 Transmission Torque Limits

- Max. transient (5 sec): 104%
- Max. take-off: 100%
- Max. continuous: 92.7%

100% TQ corresponds to 536 kW at 6 000 rpm engine speed = 386 rpm MR speed.

6. **Fluids**

Refer to approved RFM

7. **Fluid Capacities**

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538.7 litres, post AMS 07 0289

538 litres post AMS MC.8020 (retrofit installation of a crash resistant fuel system)

Unusable fuel: 1.3 litre, post AMS 07 0289

2 litres post AMS MC.8020 (retrofit installation of a crash resistant fuel system)

7.2 Oil

Engine: 5.2 litres

MGB: 6.5 litres (circuit included)

TGB: 0.33 litre

7.3 Coolant System Capacity

n/a

8. **Air Speed Limitiations**

V_{NE} power-on:

- 155 KIAS (287 km/h) for PA =0 less 3 kt/1000 ft

V_{NE} power-off:

- 125 KIAS (231 km/h) for PA=0 less 3 kt/1000 ft

9. **Rotor Speed Limitations**

Power on:

Maximum 405 rpm

Minimum 375 rpm

Power off:

Maximum 430 rpm

(audio warning above 410 rpm)

Minimum 320 rpm

(audio warning at 360 rpm)

10. **Maximum Operating Altitude and Temperature**

10.1 Altitude

TKOF/LDG: Refer to approved RFM

En route: 23000ft PA (7010 m)

10.2 Temperature

Minimum: -20°C or -40°C after modification 076302

Maximum: ISA +35°C limited to +50°C

11. **Operating Limitations**

- Day VFR

- Night VFR, if modification 07-3664 is installed

- Aerobatic manoeuvres are prohibited

- Flights under icing and in freezing rain are prohibited

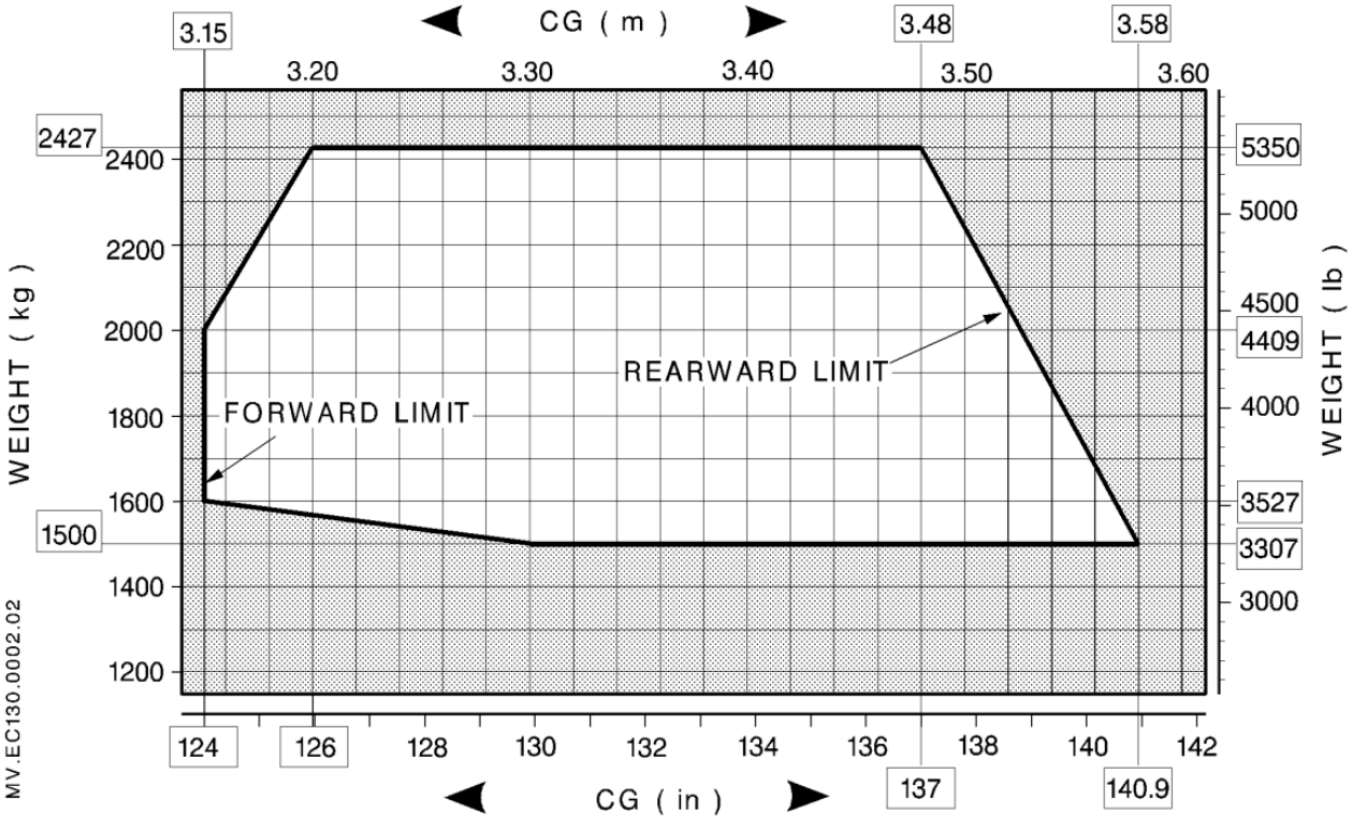
- Flights in falling snow are prohibited except if sand filter is installed (see RFMS 9-14)

12. **Maximum Mass**

2427kg

13. **Centre of Gravity Range**

Longitudinal C.G. limits



Lateral C.G. Limits

L.H. limit: 100 mm

R.H. limit: 100 mm

14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Mechanical floor

16. **Minimum Flight Crew**

1 pilot (left seat)

17. **Maximum Passenger Seating Capacity**

- 6 (2 in the front and 4 in the rear)

- 7 (3 in the front and 4 in the rear) after modification OP-3673.

18. **Passenger Emergency Exit**

2 (two), one on each side of the fuselage

19. **Maximum Baggage/Cargo Loads**

Loading 300 kg/m² except 145 kg/m² for rear cargo compartment.

Max. load in:

R.H. cargo compartment: 130 kg

L.H. cargo compartment: 155 kg

Rear cargo compartment: 80 kg

Forward cabin floor: 405 kg

Rear cabin floor: 495 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The EC 130 Master Servicing Manual, Chapter 4 "Airworthiness Limitations", originally approved by DGAC FR and subsequently by EASA (or DGCA FR), contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

- EC 130 B4 Flight Manual (in English), approved by DGAC FR on 29 November 2000, or later approved revision.

- EC 130 B4 Flight Manual (in French), approved by DGAC FR on 27 May 2002, or later approved revision.

2. **Maintenance Manual**

- EC 130 B4 Master Servicing Manual – Chapter 04 (Airworthiness Limitations), approved by DGAC FR on 6 December 2000, or later approved revision/edition (in English)

- EC 130 Maintenance Manual

3. **Structural Repair Manual**

EC 130 B4, T2 Structural Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

EC 130 B4 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Eurocopter or Airbus Helicopters

7. **Required Equipment**

Refer to EASA-approved

V. Notes

1. Manufacturer's eligible serial numbers:

   For EC 130 B4: s/n 3358, and subsequent.

2. OP-3640 is compliant with JAR 27.785 and FAR 27.562, Amdt. 32 (CRD 350ABN0071 issue c), unless further modifications have been performed.

3. Non-proprietary data contained in selected Special Conditions, Exemptions and Equivalent Safety Findings that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 9 EC 130 T2

I. General

1. **Type / Variant or Model**

Type	EC 130
Variant or Model	EC 130 T2

2. **Airworthiness Category**

Small Rotorcraft

3. **Manufacturer**

Airbus Helicopters

Aéroport International Marseille Provence

13725 Marignane CEDEX, France

4. **Type Certificate Application Date**

14 October 2010

5. **State of Design Authority**

EASA

6. **EASA Type Certification Date**

25 May 2012

II. Certification Basis

1. **Reference Date for determining the applicable requirements**

For details about II.3. and II.5., see Note V.3

For Airworthiness and Environmental Protection:

23 March 1998

for OSD elements:

17 February 2014

2. **Airworthiness Requirements**

2.1

JAR 27 1st issue, dated 6 September 1993, and Orange Paper Amdt. 27/98/1, effective 16 February 1998

2.2 For a/c incorporating MOD. 074581 (new tail boom: structure and flight controls)

As above (2.1) with the following requirements of CS 27 Amdt. 3 of 11 December 2012 as replacement of the same numbered paragraphs of JAR 27 1 st issue, dated 6 September 1993 and Orange Paper Amdt. 27/98/1, effective 16 February 1998:

- for the rear engine compartment: §305, §307, §351 (rear engine cowling), §471, §473-a, §501, §603, §609, §610, §613, §1529;

- for the tailboom: §305, §307, §471, §473 (a), §501,§571 (metallic cone junctions), §573 (composite spacer), §603, §609, §610, §613, §1529 with addition of §351, §1041, §1043, §1045, §1194 for the specific rear transmission fairing including thermal shield area;

- for the fenestron structure: §305, §307, §411, §471, §473 (a), §501, §571, §573 (Fenestron one-shot structure), §603, §609, §610, §613, §725 (a), §1529;

- for the cooling aspects of rear transmission: §1041, §1043, §1045.

3. **Special Conditions**

- High intensity radiated field (F-01 (X2))
- Rotor drive system endurance test for HIP rating (E-02 (X2))
- Rechargeable Lithium battery installations (F-24)
- Lightweight Data Recorder installation (F-25)

4. **Deviations**

None

5. **Equivalent Safety Findings**

- Main gearbox oil filter by pass (EC 130 B4 E-04)
- Powerplant instrument markings (G-01 (X2))

6. **Environmental Protection Requirements**

7.1 Noise Requirements

See TCDSN UK.TC.R.00040

7.2 Emission Requirements

n/a

7. **Operational Suitability Data**

See Section 10 below

8.1 Master Minimum Equipment List (MMEL)

JAR-MMEL Amdt.1, dated 1 August 2005

8.2 Flight Crew Data (FCD)

CS-FCD Initial Issue 31 January 2014

III. Technical Characteristic and Operating Limitations

1. **Type Design Definition**

Document 350A047422

2. **Description**

Main rotor: three (3) blades

Tail rotor: Fan-in-fan, ten (10) blades

Fuselage: composite and metal-sheet monocoque

Landing gear: skid type

Powerplant: one turbo-shaft engine

Designed as a derivative of model EC 130 B4

3. **Equipment**

As per compliance with EC 130 T2 certification basis and included in the original Type Design Standard or indicated on the section 2 - Limitations of the RFM.

4. **Dimensions**

4.1 Fuselage

Length: 10.68m

Width hull: 2.03m

Height: 3.61m

4.2 Main Rotor

Diameter: 10.69m, 3 blades

4.3 Tail Rotor

Diameter: 1.00m, 10 blades

5. **Engine**

5.1 Model

Safran Helicopter Engines (former: Turbomeca)

1 x Model Arriel 2D

5.2 Type Certificate

TC/TCDS n°: EASA.E.001

5.3 Limitiations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Limit TQ on shaft [Nm]	Gas generator *** NG ** (Δ Ng) [%]	Min. guaranteed PWR * [kW]	Temperature T45 [°C]
Max. transient (20 sec)	---	102.8 (+1)	---	---
Max. TOP (5 min)****	951	101.7 (0)	597.5	949
Max. TOP (30 min)****				
MCP	773	97.7 (-4)	485.7	905

Notes: - * ISA, ground level at 386 rpm MR speed.

- ** 100% = 52 110 rpm.

- *** As the actual Ng limitations depend on ambient conditions, the operational limitations are the Δ Ng values. Ng values correspond to the maximum Ng reached in the whole flight domain.

- **** Use of 'TOP (30 min)' power is limited to 30 min. continuous use. Cumulated use per flight of 'TOP (5 min)' and 'TOP (30 min)' powers is limited to 60 min.

5.3.2 Transmission Torque Limits

- Max. transient (5 sec): 104%
- Max. take-off: 100%
- Max. continuous: 81.3%

100% TQ corresponds to 598 kW at 386 rpm MR speed.

6. **Fluids**

Refer to approved RFM

7. **Fluid Capacities**

7.1 Fuel

Fuel tank capacity: 540 litres

Usable fuel: 538 litres

7.2 Oil

Refer to approved RFM

7.3 Coolant System Capacity

n/a

8. **Air Speed Limitiations**

V_{NE} power-on:

- 155 KIAS at MSL less 3 kt/1000 ft

- 136 KIAS at MSL less 3 kt/2000 ft below 12 750 ft PA for reduced V_{NE} area (refer to RFM)

V_{NE} power-off:

125 KIAS at MSL less 3 kt/1000 ft

9. **Rotor Speed Limitations**

Power on:

Maximum 405 rpm

Minimum 375 rpm

Power off:

Maximum 430 rpm

(audio warning above 410 rpm)

Minimum 320 rpm

(audio warning at 360 rpm)

10. **Maximum Operating Altitude and Temperature**

10.1 Altitude

TKOF/LDG: Refer to approved RFM

En route: 23000ft PA (7010 m)

10.2 Temperature

Minimum: -40°C

Maximum: ISA +35°C limited to +50°C

11. **Operating Limitations**

- Day VFR

- Night VFR, when additional equipment required by operational regulations is installed and serviceable

- Aerobatic manoeuvres are prohibited

- Flights under icing conditions and in freezing rain are prohibited

- Flights in falling snow are prohibited except if sand filter is installed (see RFMS SUP.14)

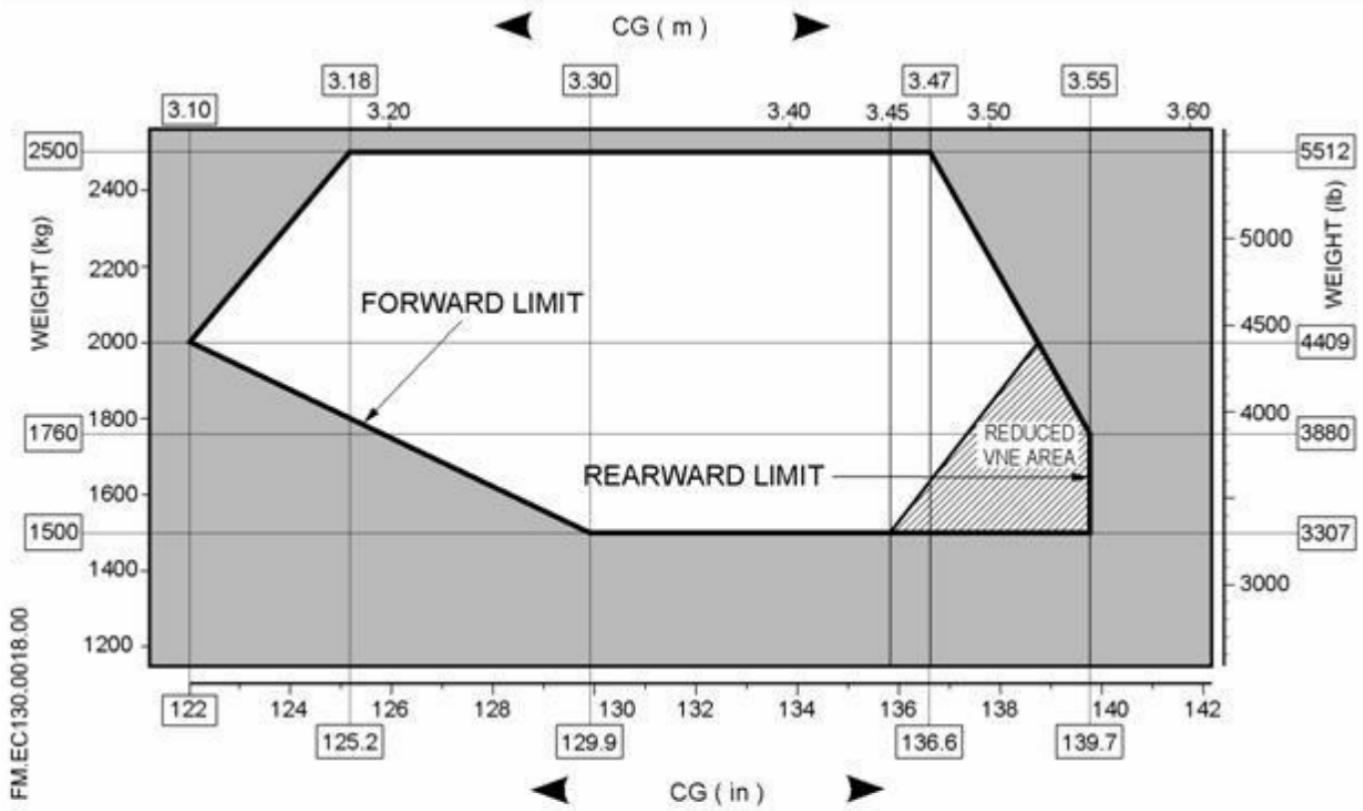
For more information refer to Flight Manual

12. **Maximum Mass**

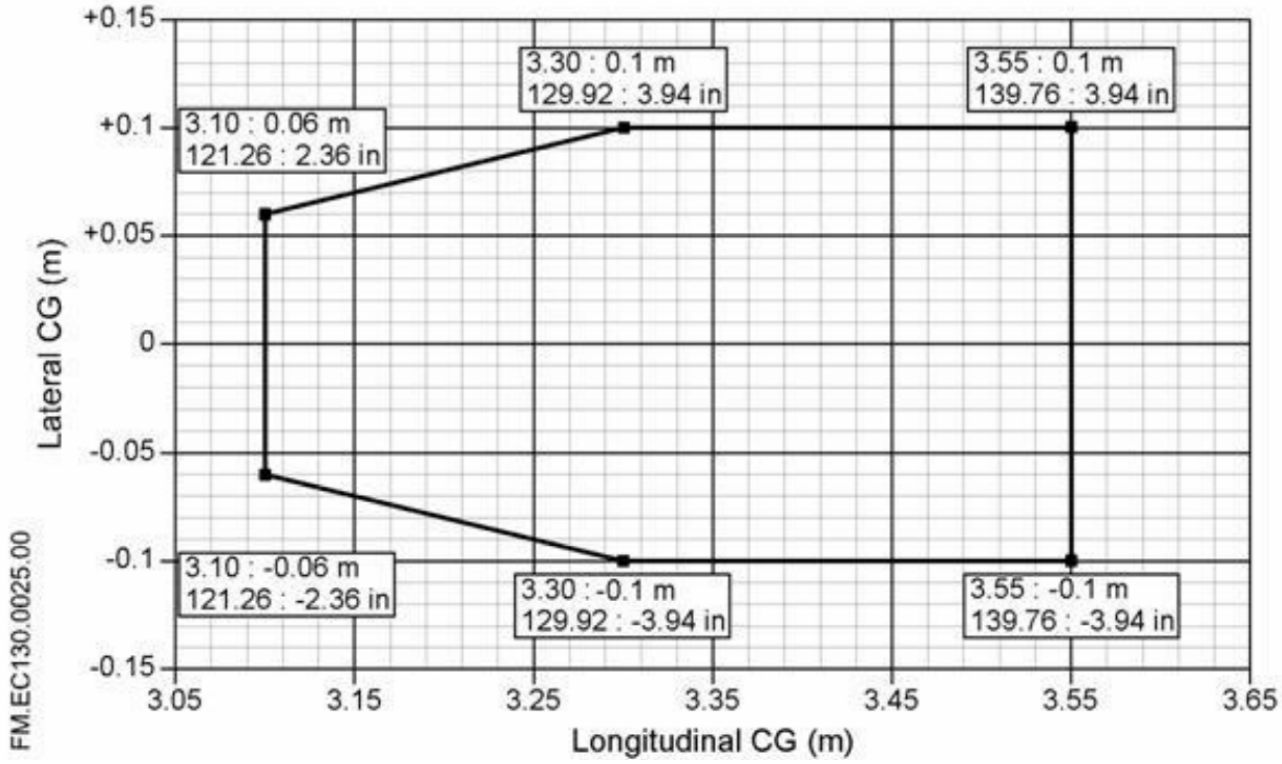
2500kg

13. **Centre of Gravity Range**

Longitudinal C.G. limits



Lateral C.G. Limits



14. **Datum**

Longitudinal: the datum plane (STA 0) is located at 3400 mm forward of MRH centre line.

Lateral: aircraft symmetry plane

15. **Levelling Means**

Mechanical floor

16. **Minimum Flight Crew**

1 pilot (left seat)

17. **Maximum Passenger Seating Capacity**

- 6 (2 in the front and 4 in the rear)

- 7 (3 in the front and 4 in the rear) if modification OP3673 or OP-3888 is installed.

18. **Passenger Emergency Exit**

2 (two), one on each side of the fuselage

19. **Maximum Baggage/Cargo Loads**

Loading 300 kg/m² except 145 kg/m² for rear cargo compartment.

Max. load in:

R.H. cargo compartment: 130 kg

L.H. cargo compartment: 155 kg

Rear cargo compartment: 80 kg

Forward cabin floor: 405 kg

Rear cabin floor: 495 kg

20. **Rotor Blade Control Movement**

For rigging information refer to Maintenance Manual

21. **Auxiliary Power Unit (APU)**

n/a

22. **Life-limited Parts**

The EC 130 Master Servicing Manual, Chapter 4 "Airworthiness Limitations", originally approved by DGAC FR and subsequently by EASA (or DGCA-F), contains limitations which are mandatory.

IV. Operating and Service Instructions

1. **Flight Manual**

EC 130 T2 Flight Manual (in English), EASA-approved on 25 May 2012, or later approved revision.

2. **Maintenance Manual**

- EC 130 Master Servicing Manual – Chapter 04 (Airworthiness Limitations Section), EASA-approved on 25 June 2012, or later approved revision/edition (in English).

- EC 130 Maintenance Manual

3. **Structural Repair Manual**

EC 130 B4, T2 Structural Repair Manual

4. **Weight and Balance Manual**

Refer to approved RFM

5. **Illustrated Parts Catalogue**

EC 130 T2 Illustrated Parts Catalogue

6. **Service Letters and Service Bulletins**

As published by Eurocopter or Airbus Helicopters

7. **Required Equipment**

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

V. Notes

1. Manufacturer's eligible serial numbers:

   For EC 130 T2: s/n 7355, and subsequent.

2. The commercial designation is: H130

3. Non-proprietary data contained in selected Special Conditions and Equivalent Safety Findings that are part of the Certification Basis are published in the ‘Explanatory Note No: TCDS EASA.R.008’. The document is not exhaustive.

Section 10 OPERATIONAL SUITABILITY DATA (OSD)

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

OSD Elements

1. MMEL

For all models:

MMEL AS 350 and EC 130, Normal Revision 4, Issue 2, Date code 12-06, dated 27 September 2015, or later approved revisions

2. Flight Crew Data

For all models:

EASA Operational Suitability Data (OSD) Flight Crew Data (FCD) ECUREUIL/SINGLE ENGINE FAMILY AS350B/D/B1/B2/BA/BB/B3 and EC130B4/T2, NR2, data code 19-50, or later approved revisions.

Section 11 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
ALS	Airworthiness Limitations Section
Amdt.	Amendment
B.L.	Butt Line
C.G.	Centre of Gravity
CAA	Civil Aviation Authority
CR	(European) Commission Regulation
CS	Certification Specification
DGAC FR	Direction Générale de l'Aviation Civile (France)
EASA	European Union Aviation Safety Agency
HIRF	High Intensity Radiated Field
IAS	Indicated Air Speed
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
kg	Kilogram
L.H.	Left-hand
LDG	Landing
Max	Maximum
MCP	Maximum Continuous Power
min	Minute
Min.	Minimum
MMEL	Master Minimum Equipment List
MOD	Modification
MR	Main Rotor
MRH	Main Rotor Hub
MSL	Mean Sea Level
MSM	Maintenance Servicing Manual
MTOP	Maximum Take-off Power
MTP	Maximum Transient Power
NG	Gas Generator
OSD	Operational Suitability Data
PA	Pressure Altitude
PWR	Power
R.H.	Right-hand
RFM	Rotorcraft Flight Manual
RFMS	Rotorcraft Flight Manual Supplement
RPM	Revolutions per minute
s/n	Serial Number
sec	Seconds
STA	Station
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCDSN	Type Certificate Data Sheet for Noise
TCH	Type Certificate Holder
TKOF	Take-Off
TO	Take-Off
TOP	Take-Off Power
TQ	Torque
VFR	Visual Flight Rules
V_{NE}	Never Exceed Speed

II. Type Certificate Holder Record

TCH Record	Period
Airbus Helicopters Aéroport International Marseille Provence 13725 Marignane CEDEX, France	Present. No changes.

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	14 Jul 2022	This certificate supersedes EASA.R.008. All technical data taken from EASA.R.008 Issue 16.	Issue 1 14 Jul 2022
2	18 Nov 2022	Correction to Section 7 5.3.1 tables MCP/Limit TQ	---
3	06 Apr 2023	Correction to Section 9, 2.2 and 3	---

– END –