Type Acceptance Report

TAR 98/19 – Revision 8

AIRBUS HELICOPTERS AS 350 / EC 130 Series

TABLE OF CONTENTS

Executive Summary

New Zealand Type Acceptance has been granted to the Airbus Helicopters AS 350 / EC 130 Series based on validation of EASA Type Certificate number R.008. There are no special requirements for import.

Applicability is currently limited to the Models and/or serial numbers detailed in Section 2, which are now eligible for the issue of an Airworthiness Certificate in the Standard Category in accordance with NZCAR §21.177, subject to any outstanding New Zealand operational requirements being met. (See Section 5 of this report for a review of compliance of the basic type design with the operating Rules.) Additional variants or serial numbers approved under the foreign type certificate can become type accepted after supply of the applicable documentation, in accordance with the provisions of NZCAR §21.43(2).

NOTE: The information in this report was correct as at the date of issue. The report is generally only updated when an application is received to revise the Type Acceptance Certificate. For details on the current type certificate holder and any specific technical data, refer to the latest revision of the State-of-Design Type Certificate Data Sheet referenced herein.

1. Introduction

This report details the basis on which Type Acceptance Certificate No.98/19 was granted in the Standard Category in accordance with NZCAR Part 21 Subpart B.

Specifically the report aims to:

(a) Specify the foreign type certificate and associated airworthiness design standard used for type acceptance of the model(s) in New Zealand; and

(b) Identify any special conditions for import applicable to any model(s) covered by the Type Acceptance Certificate; and

(c) Identify any additional requirements which must be complied with prior to the issue of a NZ Airworthiness Certificate or for any subsequent operations.

The report covers all models included on the State-of-Design type certificate which have been granted type acceptance in New Zealand. Appendix 1 details which models have been type accepted in accordance with the provisions of CAR Part 21B and which models were certificated prior to that under NZCAR Section B.9 and are now type accepted under the transitional arrangements of Part 21 Appendix A(c).

2. Aircraft Certification Details

(a) State-of-Design Type and Production Certificates:

Manufacturer: Airbus Helicopters
Eurocopter (until 6 January 2014)
Eurocopter France (until 31 May 1997)
Aerospatiale (until 31 December 1991)

Type Certificate: Number R.008
Issued by: European Union Aviation Safety Agency

Production Approval: EASA.21G.0070

(b) Other State-of-Manufacture Type and Production Certificates:

(i) Manufacturer: Airbus Helicopters, Inc. (AS350B2 s/n 3951 and on, AS350B3 s/n 3995 and on)
American Eurocopter

Import TC: H9EU
Issued by: Federal Aviation Administration

Production Approval: FAA PC 343 CE

(ii) Manufacturer: Helibras – Helicópteros do Brazil S.A.

Import TC: 8812
Issued by: Agencia National de Aviacao Civile

Production Approval: ANAC COP Number E-8009-11

NOTE: Helicopters manufactured under license in the USA and Brazil are still considered to be covered by EASA.R.008 as the State-of-Design type certificate, although they may have the H9EU or 8812 (Import) type certificates on the dataplate.

(c) Models Covered by the Part 21B Type Acceptance Certificate:

(i) **Model:** AS 350 B

MCTOW 1950 kg (4300 lb)

Max. No. of Seats: 6 (or 7 with optional dual front seat)

Noise Standard: Not Applicable

Engine: Safran Helicopter Engines Arriel 1B
Type Certificate: E.073
Issued by: European Union Aviation Safety Agency

(ii) **Model:** AS 350 D

MCTOW 1950 kg (4300 lb)

Max. No. of Seats: 6 (or 7 with optional dual front seat)

Noise Standard: Not Applicable

Engine: Honeywell International LTS101-600A-2
Type Certificate: E5NE
Issued by: Federal Union Aviation Administration

(iii) **Model:** AS 350 B1

MCTOW 2200 kg (4850 lb)

Max. No. of Seats: 6 (or 7 with optional dual front seat)

Noise Standard: ICAO Annex 16 Volume 1

Engine: Safran Helicopter Engines Arriel 1D
Type Certificate: E.073
Issued by: European Union Aviation Safety Agency

(iv) **Model:** AS 350 B2

MCTOW 2250 kg (4960 lb)

Max. No. of Seats: 6 (or 7 with optional dual front seat)

Noise Standard: ICAO Annex 16 Volume 1

Engine: Safran Helicopter Engines Arriel 1D1
Type Certificate: E.073
Issued by: European Union Aviation Safety Agency

(v) **Model:** AS 350 BA

MCTOW 2100 kg (4630 lb)

Max. No. of Seats: 6 (or 7 with optional dual front seat)

Noise Standard: ICAO Annex 16 Volume 1

Engine: Safran Helicopter Engines Arriel 1B
Type Certificate: E.073
Issued by: European Union Aviation Safety Agency

(vi) **Model:** AS 350 BB

MCTOW	2100 kg (4630 lb)
Max. No. of Seats:	6 (or 7 with optional dual front seat)
Noise Standard:	ICAO Annex 16 Volume 1
Engine:	Safran Helicopter Engines Arriel 1D1 Type Certificate: E.073 Issued by: European Union Aviation Safety Agency

(vii) **Model:** AS 350 B3

MCTOW	2250 kg (4960 lb) 2370 kg (5220 lb) – with Modification OP-3369
Max. No. of Seats:	6 (or 7 with optional dual front seat)
Noise Standard:	ICAO Annex 16 Volume 1
Engine:	Safran Helicopter Engines Arriel 2B or Arriel 2B1 Safran Arriel 2D – with Modification OP-4305 Type Certificate: E.001 Issued by: European Union Aviation Safety Agency

(viii) **Model:** EC 130 B4

MCTOW	2427 kg (5350 lb)
Max. No. of Seats:	7 (or 8 after Modification OP-3673)
Noise Category:	FAR 36 Appendix H through Amendment 20 JAR 36 (first issue May 23, 1997) Subpart D, Section 1
Engine:	Safran Helicopter Engines Arriel 2B1 Type Certificate: E.001 Issued by: European Union Aviation Safety Agency

(ix) **Model:** EC 130 T2

MCTOW	2500 kg (5512 lb)
Max. No. of Seats:	7 (or 8 after Modification OP-3673, or OP-3888)
Noise Category:	ICAO Annex 16, Vol I, 5th Edition/Amendment 9 Chapter 11
Engine:	Safran Helicopter Engines Arriel 2D Type Certificate: E.001 Issued by: European Union Aviation Safety Agency

3. Application Details and Background Information

There have been examples of the AS 350 Series in New Zealand prior to 1995 when Part 21 was introduced, and those particular model years or serial number ranges were therefore deemed to have a type acceptance certificate under the transitional arrangements of Part 21 Appendix A(c). The first application for New Zealand type acceptance under CAR Part 21B was for the Eurocopter AS 350 B3, from the helicopter manufacturer dated 14 May 1998. The first-of-type example was serial number 3097 registered ZK-IWI. The AS 350 / EC 130 Series is a single turbine-engined seven-seat light helicopter with semi-rigid composite main rotor head.

Type Acceptance Certificate No. 98/19 was granted on 17 July 1998 to the AS 350 B3 based on validation of DGAC Type Certificate number 84, and included the Turbomeca Arriel 2B engine based on EASA Type Certificate number E.001. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

The application for New Zealand type acceptance of the Model EC 130 B4 was from the helicopter manufacturer, via the NZ agent, dated 22 April 2002. The first-of-type example was serial number 3564 registered ZK-HSW. Type Acceptance Certificate No. 2/21B/16 was granted to the EC 130 B4 on 28 June 2002, and included the Arriel 2B1 engine. (Now covered by a separate Type Acceptance Certificate.)

This report was raised to Revision 1 to include the latest version of the AS 350 B3 fitted with the Arriel 2B1 as standard (from s/n 3875 on), which uses a different Flight Manual. The opportunity was also taken to update the report to the latest format and recognise the issue of EASA type certificates to the helicopter type and the engine. Type Acceptance was granted on 12 January 2006. The first-of-type was serial number 3981 registered ZK-HBT.

Revision 2 was issued to include the latest version of the AS 350 B2 (s/n 4129 and up) with the VEMD display (Mod. AMS073264), which requires a new Flight Manual. The application was from the New Zealand agent dated 9 May 2007, and the first-of-type was serial number 4256 registered ZK-IVZ. Type acceptance was granted on 17 July 2007. This major modification effectively installs the AS 350 B3 instrument panel and displays on to the AS 350 B2.

Revision 3 added the "AS 350 B3e", which is not an official model but is the commercial designation for the helicopter with an Arriel 2D engine installed under factory modification OP-4305 plus three other design changes to the tail rotor blade, control mechanism and gearbox control lever. The first-of-type example was serial no. 7421 registered ZK-IDF. Type acceptance of this configuration was granted on 17 April 2012. The Arriel 2D engine was covered separately under Type Acceptance Certificate number 12/21B/2.

Revision 4 added the EC 130 T2 model. The application was from Eurocopter dated 23 October 2012, and Type Acceptance was granted on 28 June 2013. As part of the exercise, a project team from the CAA Aircraft Certification Unit undertook a familiarisation/validation visit to Eurocopter at Marignane.

Revision 5 to this report was issued to cover helicopters which are manufactured in Brazil and the USA. As per the details in the applicable type certificate data sheets noted below these aircraft are produced under a license agreement from a kitset which is supplied with an EASA Form One, and are in full conformity to the type design approved under the EASA State-of-Design type certificate.

TCDS EASA.R.008 states under production: *"For helicopters manufactured under license – see sub-paragraph V.1 – Eligible serial numbers".* This states *"The aircrafts whose s/n is listed in Airbus Helicopters document L102-001 are manufactured under Helibras license and those in L 102-002 under AE-MS license."*

FAA TCDS under Serial Numbers Eligible states *"Rotorcraft model AS350B3 S/N 3995 and subsequent, may be produced either by American Eurocopter in Columbus, Mississippi or Eurocopter France. Rotorcraft S/N 7814 and subsequent may be produced by Airbus Helicopters Inc. (AHI), in Columbus, Mississippi, or Airbus Helicopter (AH). Validate manufacturer by viewing the aircraft data plate."*

Note 7 on the Brazilian TCDS number ER-8812 states "*Helibras (Brazil) has signed with Eurocopter (France) a technical cooperation agreement contract to manufacture in Brazil the AS 350 BA, AS 350 B2 and AS 350 B3 models using kits produced by Eurocopter, in conformity to the DGAC France approved Type design. Helibras helicopters are produced under the Helibras Production Certificate, assembled and tested in accordance with procedures approved under the French Type design by Eurocopter and accepted by the Centro Tecnico Aeroespacial (CTA) under the terms and conditions of the Helibras Production Certificate."*

Confirmation of EASA recognition of the aircraft manufactured at Helibras is documented in Appendix F and sub-Appendix 03 of the Technical Implementation Procedure for Airworthiness and Environmental Certification under the Bilateral Agreement between ANAC and EASA. Confirmation of FAA recognition of the aircraft manufactured at Helibras is documented in Section 3.2.1.0.d of the Implementation Procedures under the BASA between ANAC and the FAA.

Revision 6 of this report added the AS 350 BB Model. The application was from the importer, Heli Support NZ Ltd, and the first-of-type example was serial number 2951 registered ZK-HOM. Type acceptance was granted on 29 November 2018.

Revision 7 was raised to update the certification basis for two type design updates. A crash resistant fuel system was part of the approved type design for the EC 130 T2, and has now been added to the AS 350 B3e in production. It is also available as a retrofit installation for the AS 350 B3e and EC 130 B4. The design change is approved by EASA STC (10060852 for design change ST.7500 for a compliant system, and 10061056 for design change ST.7501 for a not fully §27.952 compliant system for helicopters with an underslung hook system) and can be embodied retrospectively by Airbus Service Bulletins (SB N° AS350-28.00.28-STC and N° EC130-28-009-STC).

The second design change (Mod. 074581) is a new structure for the rear tailboom of the EC 130 T2. This is a production-only modification, which is intended to reduce manufacturing costs while also addressing an issue with crack propagation through the junction frame of the tail boom/Fenestron, which is the subject of an Airworthiness Directive. The mod. also improves harness and flight controls routing and supports.

Revision 8 of this report added the Special Conditions associated with the Avionics Step2 and the latest lightweight flight recorder modifications.

Helicopter Model Type Design History:
The AS 350 was an all-new design to replace the Alouette series, using Aerospatiale's new "Starflex" main rotor hub, made of glassfibre with elastomeric spherical stops and oleo-elastic frequency matchers. The three rotor blades are also manufactured from glassfibre. The "Ecureuil" has been progressively upgraded in engine power and lifting capability using developed versions of the Arriel 1B/D/D1 and then later 2B/2B1/2D engines, in the AS 350 B/B1/B2/B3 variants, most of which also use the wide-chord rotor blades from the AS 355 twin-engine variant. The AS 350 D variant uses the Lycoming LTS101 engine. Upgrade conversions can also be done by Service Bulletin. The AS 350 BB was a version of the BA with the de-rated Arriel 1D1 engine from the B2 Model, developed for the UK Ministry of Defence and operated by the Defence Helicopter Flying School.

The AS 350 B3 is a derivative of the AS 350 B2 incorporating the 632 kW Arriel 2B engine fitted with digital engine control system, upgraded main-gearbox, centralised LCD instrument display of operating parameters and an AS 355N type tail rotor.

The EC 130 B4 (formerly known as the AS 350 B4) is essentially a development of the AS 350 B3 at a higher gross weight, with the following changes: an enlarged cabin and cargo compartment incorporating triple front seats as standard and using EC 120 style windows; installation of the "moustache" type skid landing gear first used on the EC 120; and utilising an EC 135-type fenestron anti-torque tail rotor system. The Turbomeca Arriel 2B1 turboshaft engine is similar to the 2B with the addition of a dual channel FADEC control system with optional manual backup.

The EC 130 T2 is a derivative of the EC 130 B4 with the Arriel 2D engine first used on the AS 350 B3e but uprated to 598 kW and with MTOP extended to 30 minutes. Additional changes include: an increase in MAUW; the main gearbox is uprated; a crashworthy fuel tank is fitted; new front and rear seats are installed (with revised structure to incorporate a flat rear cabin floor); new metallic doors are installed with left and right sliding doors now standard; the instrument panel is revised with the pilot seat on the left as standard; a new active vibration reduction system is used; and some other minor improvements.

The first example of the AS 350 Series in New Zealand was an AS 350 B serial number 1299 registered ZK-HWW in November 1980. The first AS 350 D was serial number 1280 registered ZK-HZI in August 1984. The first AS 350 B1 was serial number 1985 registered ZK-HZM in September 1991. The first AS 350 B2 in New Zealand was serial number 2524 registered ZK-HGF in October 1991.

STC Applicability:
Based on several factors including grandfather rights, service history, and the manufacturers statement that there is no difference between the FAA and EASA type designs for later models, FAA STC's for the AS 350 / EC 130 series which supplement FAA type certificate H9EU, are under CAR 21.503(a) deemed to be acceptable technical data in New Zealand for all AS 350 / EC 130 series aircraft type accepted under DGAC type certificate 84 or EASA type certificate R.008.

4. NZCAR §21.43 Data Requirements

The type data requirements of NZCAR Part 21B Para §21.43 have been satisfied by supply of the following documents, or were already held by the CAA:

(1) State-of-Design Type Certificate:

EASA Type Certificate Data Sheet no. R.008 – Issue 17 dated 19 October 2022
- Model AS 350 B approved October 27, 1977
- Model AS 350 D approved July 4, 1978
- Model AS 350 B1 approved January 9, 1986
- Model AS 350 B2 approved April 26, 1989
- Model AS 350 BA approved November 26, 1991
- Model AS 350 BB approved November 15, 1996
- Model AS 350 B3 approved December 24, 1997
- Model EC 130 B4 approved December 14, 2000
- Model EC 130 T2 approved May 25, 2012

Supersedes:
DGAC Certificat de Navigabilite de Type Numero 84
DGAC Type Certificate Data Sheet No.157 – Issue 11, January 98
JAA Data Sheet No. JAA/27/00/003 EC 130 B4 – Issue n°2 June 2001

EASA Major Change Approval 10069131 – New Tailboom, consisting of MOD 07.4581; 07.4592; 07.4593; 07.9809 EC 130 T2 – dated 08 March 2019

EASA Major Change Approval 10072097 – Crash Resistant Fuel System installation (MOD 07.20034) AS 350 B3 – dated 18 Dec 2019

EASA STC 10060852 Rev.1 – AS 350 B3/EC 130 B4 – STC ST.7500 Crash Resistant Fuel System – dated 27 January 2020

EASA STC 10061056 Rev.1 – AS 350 B3/EC 130 B4 – STC ST.7501 Rupture Resistant Fuel System – dated 24 January 2020

EASA Major Change Approval 10078952 – AS 350 B3 – Lightweight Data Recorder (LDR) installation (EC OP.20089) – dated 01 April 2022

EASA Major Change Approval 10078953 – AS 350 B3 – Avionics step2 modification EC 07.20112 – dated 01 April 2022

EASA Major Change Approval 10080275 – EC 130 T2 – Lightweight Data Recorder (LDR) installation (EC OP.20090) – dated 06 April 2022

EASA Major Change Approval 10080276 – EC 130 T2 – Avionics step2 modification EC 07.20112 – dated 06 April 2022

(2) State-of-Manufacture license-production (Import) Type Certificate:

(i) FAA TCDS No. H9EU at Revision 23 dated November 18, 2014
Note: With respect to the Models EC 130 B4 and EC 130 T2 Eurocopter advise "*There are no differences between EASA (DGAC) and FAA definition*".

(ii) ANAC Certificado de Tipo Aeronave Importada number 8812
ANAC Type Certificate Data Sheet No. ER-8812-19 dated 18 December 2014

(3) Airworthiness design requirements:

(i) Airworthiness Design Standards:
The certification basis of the AS 350 Series is FAR Part 27, including Amendments 1 to 10, plus complementary and special conditions defined in DGAC letters 6518 dated August 17, 1976, and 6437 dated July 28, 1977, for the Models AS350B and D, while for the AS 350 B1, B2, BA and BB DGAC letter 53639 dated June 25, 1985, was added. For the AS 350 B3 the DGAC letter is reference 971726 dated April 03, 1997. Special conditions for HIRF were applied to the AS 350 B2 with VEMD. For the weight increase under OP-3369 the certification basis was updated with specified paragraphs of CS27 first issue, as noted on the TCDS. For the engine change under OP-4305 the certification basis included additional special condition changes and means of compliance interpretations, as detailed in CRI A-01(X1).

For AS 350 B3 helicopters fitted with mod. OP-4605 (installation of a fuel system improving crashworthiness) AH elected to comply with JAR §27.561(c) at Amendment 3 for certain elements of the fuel tank lower structure. (See CRI A-01.) For aircraft incorporating mod. 07.20034 (installation of a crash resistance fuel system compatible with an under-fuselage swing hook) AH elected to comply with certain paragraphs of CS-27 at Amendment 3 for the fuel system and airframe structure/fuel system interfaces, as specified on the TCDS, including CS §27.0952.

The certification basis of the EC 130 B4 is JAR 27 first issue dated September 6, 1993, plus the orange paper amendment 27/98/1 effective February 16, 1998, plus one Special Condition for HIRF. Two Equivalent Safety Findings were made, and two Exemptions granted. (These were reviewed by the CAA and found acceptable under §21.23.) The FAA certification basis was FAR Part 27 Amendment 27-1 through 27-32, except FAR §27.952 [fuel system crash resistance] was not adopted.

The certification basis of the EC 130 T2 is JAR 27 first issue dated September 6, 1993, plus the orange paper amendment 27/98/1 effective February 16, 1998, plus two Special Conditions, one for HIRF and one for the rotor system endurance test. The Two Equivalent Safety Findings for the B4 were carried over. The FAA certification basis was FAR 27 Amendment 27-1 through 27-32, plus §27.1317 at Amendment 42 and one special condition for the use of 30-minute power rating.

For the EC 130 T2 incorporating mod. 074581 (new tail boom, structure and flight controls) the certification basis was updated to CS-27 at Amendment 3 for some paragraphs, as listed on the TCDS.

These are an acceptable certification basis in accordance with NZCAR Part 21B Paragraph §21.41, because FAR 27 is the basic standard for Normal Category Rotorcraft called up under NZCAR Part 21 Appendix C. JAR/CS 27 is also an acceptable alternative under Advisory Circular 21-1A. There are no non-compliances and no additional special conditions have been prescribed by the Director under §21.23(3).

(ii) Special Conditions:

AS 350 B/B1/B2/BA/BB/D:

DGAC Letter 6437 – Adds a special condition for Lightning Protection of the structure.

DGAC Letter 6518 plus annexes – This adds special flight conditions for take-off power check procedures and main rotor low speed warning, and special propulsion conditions for engine controls, turbine engine bleed system and operation without normal electrical power.

AS 350 B1/B2/BA/BB/D:

DGAC Letter 53639 – Adds two special conditions for flight control loads under §27.143 and §27.695, and to provide an electrical circuitry overvoltage protection for the generator.

AS 350 B2 VEMD:

CRI n° A-1 EASA Type Certification Basis (Airworthiness and Environmental) – This specifies the Special Conditions proposed for the AS 350 B2 with this major change, which included HIRF and Lightning identical to the AS 350 B3. In addition EASA required an ESF for the powerplant instrument display markings, as also granted for the EC 130 B4.

AS 350 B3:

DGAC Letter No. 971726-SFACT/N.HE and Appendices 1 to 3. – Details Special Conditions for AS 350 B3 certification – involving reliability of the FADEC engine control system and the security of its electrical supply; Nicad battery overheat; electromagnetic interference and lightning protection.

AS 350 B3e:

CRI n° A-01 (X1) Issue 4 – Designation of Applicable Certification Specifications and Environmental Protection Requirements – This lists changes to previous special conditions for powerplant control [CRI E-02(X1)]; structural protection from lightning [CRI D-01(X1)]; HIRF [CRI F-01(X1)]; lightning protection [CRI F-02(X1)]; and rotor drive system HIP rating [CRI E-01(X1)] for aircraft with mod. OP-4305, and/or OP-4605 and/or 07.20024.

EC 130 B4 – CRI No F1:

EC 130 T2 – CRI No F-01 (X2):

Special Condition HIRF – Because the EC 130 B4 has digital electronic systems (including the engine) the SC was as per the interim policy INT/POL/27,29/1 Issue 2 dated 1/06/97. For the EC 130 T2, this was updated to Issue 3 dated 1/10/03.

EC 130 T2:

CRI No E-02 (X2) – JAR §27.923 Rotor System Endurance Test – As EC proposed to increase the use of MTOP from 5 minutes to 30 minutes, EASA required the value of MCP for the 27.923 endurance test to be defined. As part of this, EC proposed an additional limitation of a cumulative maximum of 1-hour MTOP per flight.

AS 350 B3/EC 130 T2:
CRI F-24 Installation of Lightweight Flight Recorder (LFR) on Small Rotorcraft – An LFR is designed to meet less demanding crash-protection requirements. SC.1458 was developed to specify the installation requirements. It must be approved, can be pre-checked and start automatically; it must be orange and located and mounted to minimise damage; it must record digitally; and have an erasure function which minimises inadvertent operation.

CRI F-25 Rechargeable Lithium Battery Installation – These have specific failure and operational characteristics, and maintenance requirements that differ significantly from nickel cadmium (Ni-Cd) and lead acid rechargeable batteries. EASA established detailed criteria to show there was no hazard due to overcharging, fast-discharging, or flammability of cell components. Note that the Minimum Operational Performance Standards (MOPS) for Rechargeable Lithium Batteries DO-311A is an acceptable AMC.

(iii) Equivalent Level of Safety Findings:
AS 350 B2 VEMD CRI Nº F-5:
EC 130 B4 CRI NºF3:
EC 130 T2 CRI G-01(X2):
JAR §27.1549(b) Powerplant Instrument Markings – No green range on the VEMD display as required by the Rule was accepted on the basis that the yellow cautionary range markings plus underlining of digital values were more effective as attention getters and the electronic screens are clearer to read.

EC 130 B4 – CRI No E4
EC 130 T2 – CRI No A-01 (X2)
JAR §27.1027(b)(2) Main GB Oil Filter Bypass Indicator – After negotiation the EC position was accepted based on filter oversize (a new type was also specified); any potential causes of contamination are reduced; and the filter is subject to regular maintenance.

(iv) Exemptions:
EC 130 B4:
CRI NºC1 Exemption – JAR §27.562 for the Rear Bench Seat – EC applied for a derivative-model exemption based on in-service experience (no failures, more fatalities for the front than for the rear occupants) and design compatibility with the existing AS 350 design. EC argued that the cost, weight penalty and substantial time delay for the development of a rear crashproof bench seat was not justified.

EC 130 B4:
CRI NºD1 Exemption – JAR §27.785(a)(b)(j) for Rear Bench Seat – As above.

EC 130 B4:
CRI NºE1 Exemption – JAR §27.952 Fuel System Crash Resistance – EC request for exemption based on service experience (The AS 350 B3 and EC 130 fuel systems are not pressurised, AS 350 has a post-crash fire rate much less than the FAA Study which resulted in the Rule), and the weight increase and development time and costs were not justified.

(v) Airworthiness Limitations:
See Maintenance Manual Chapter 4 “Master Servicing Recommendations”

(4) Aircraft Noise and Engine Emission Standards:

(i) Environmental Standard:

CRI N°A3 JAA Environment Standards – For noise: JAR 36 (1st issue dated May 23, 1997) subpart D or E of section 1 (equivalent to ICAO Annex 16 Volume 1 2nd Part, Chapter 8 or 11, 3rd Edition (July 1993)); For fuel venting: ICAO Annex 16, Volume 2, 2nd Part, 2nd Edition (July 1993)

AS 350 B1: ICAO Annex 16 Volume 1 Chapter 8 (1st Edition, Amendment 1)

AS 350 B2: ICAO Annex 16 Volume 1 Chapter 8 (1st Edition, Amendment 3)

AS 350 BA: ICAO Annex 16 Volume 1 Chapter 8 (1st Edition, Amendment 3)

AS 350 BB: ICAO Annex 16 Volume 1 Chapter 8 (1st Edition, Amendment 3)

AS 350 B3 (Arriel 2B/2250kg): ICAO Vol.1 Chapter 8 (2nd Edition, Amdnt. 4)

AS 350 B3 (after embodiment of modifications AMS 072803 and AMS 072808 – Extended MCP): ICAO Annex 16 Vol.1 Chapter 11 (3rd Edition, Amendment 5)

AS 350 B3 (Arriel 2B1/2370kg): ICAO Vol.1 Chapter 11 (3rd Edition, Amdnt. 7)

AS 350 B3 (Arriel 2D/2370kg): ICAO Vol.1 Chapter 11 (5th Edition, Amdnt. 9)

EC 130 B4 (Arriel 2B1/2427kg): ICAO Vol.1 Chapter 8 (3rd Edition. Amdnt. 5)

EC 130 T2 (Arriel 2D/2500kg): ICAO Vol I, Chapter 11 (5th Edition. Amdnt. 9)

(ii) Compliance Listing:

TCDSN EASA.R.008 Type-Certificate Data Sheet for Noise AS350 Series/EC130

AS 350 B1: Takeoff: 89.7; Overflight: 87.3; Approach 91.3 (EPNdB)
AS 350 B2: Takeoff: 89.8; Overflight: 87.6; Approach 91.4 (EPNdB)
AS 350 BA: Takeoff: 91.1; Overflight: 87.3; Approach 91.3 (EPNdB)
AS 350 BB: Takeoff: 93.2; Overflight: 92.2; Approach 94.2 (EPNdB)
AS 350 B3 (Arriel 2B/2250kg): TO: 89.7; O/F: 87.3; App.: 91.3 (EPNdB)
AS 350 B3 (Extended MCP): Overflight SEL: 84.6 dB(A)
AS 350 B3 (Arriel 2B1/2370kg): Overflight SEL: 84.1 dB(A)
AS 350 B3 (Arriel 2D/2370kg): Overflight SEL: 84.2 dB(A)
EC 130 B4: Takeoff: 85.5; Overflight: 84.2; Approach 90.5 (EPNdB)
EC 130 T2: Overflight: 81.1 (SEL dB)

Supersedes:
Certificat de Type de Limitation de Nuisances Numero N-84
Fiche de Donnes No. N84 – Edition No.8 dated Juin 2001
JAA Environmental Data Sheet JAA/27/00/003 – EC130B4 – Iss. 1 June 2001

(5) Certification Compliance Listing:

Eurocopter Document 350ABN0092 – Certification Plan – VEMD Ecureuil AS 350 B2 (AMS 07 3264) – Revision C dated 17 November 2006

AS 350 B2 Ecureuil Helicopter Description and Certification Programme

H/EV No.19.765 AS 350 B2/L2 Certification – Installation Losses

H/EV No.19.770 AS 350 B2/L2 Certification – Weight Limits
H/EV No.19.834 AS 350 B2/L2 Ecureuil Certification Performance Data
H/EV No.19.892 AS 350 B2/L2 Certification – Engine Power assurance Check
H/EV No.20.116 Certification of AS350 B2/L2 NG Instrument as per FAR 27-1337
H/EV No.20.199 AS 350 B2 Certification – FAR27-241 & 663 Ground Resonance
H/EV No.20.200 Certification Data Sheet AS350B-B1-B2 – Tail Boom Angle
H/EV No.20.201 AS 350 B2/L2 FAR 27.939 Gas Turbine Operating Characteristics

Eurocopter Document No.350ABN 0034 – Certification Plan AS 350 B3 – Issue B (Compliance checklist against FAR Part 27.)

Eurocopter Document No.350ABN 0091 – AS 350 B3 – Re-engining with the Arriel 2B1 – Certification Plan – Issue C dated 12/07/04

EC 130 B4 Compliance Record Document No. 350 ABN 0069

EC130B4 Joint Type Certification – Certification Review Items Issue 11:
CRI N°A1 JAA Type Certification Basis – Considered as a derivative of the AS 350 B3, EC applied for JAR 27 issue 6-9-1993 (Category B, VFR) and the use of principle of JAA NPA 21-7, which allows the granting of reversions to earlier requirements for derivative aircraft.

Certification Compliance Record Reference 350ABN0124 for Civil Modification No: OP 4305 – Title: X1 modification – Issue A dated 8 June 2011

EC 130 T2 – Certification Compliance Record 350ABN0200 Iss 1 23 May 2012

Airbus Helicopters Document L 102 001 – List of aircraft produced by HELIBRAS

Document 350 ABN 0040 – AS 350 BB – Conformite au Reglement de Certification FAR Part 27 (Amendements 1 à 10 inclus)

UK CAA Airworthiness Approval Note No: 25771 – Type Certification of the AS350BB Single Squirrel

CRD Reference: 350ABN0385E – Compliance Record Document for Civil Modification No. 07-20034: AS350B3e / AS350B3 with Crash Resistant Fuel System (drop test configuration)

CRD Reference: ST.7500 – Compliance Record Document for Civil Modification No. ST.7500: STC – Crash Resistant Fuel System on AS350B3e & EC130B4 (Compliant to §27.952)

CRD Reference: ST.7501 – Compliance Record Document for Civil Modification No. ST.7501: STC – Crash Resistant Fuel System on AS350B3e & EC130B4 (Not compliant to §27.952)

CRD Reference 350ABN0341 – Compliance Record Document for Civil Modification No. 07.4581, 07.4592, 07.4593, 07.9809 – EC130T2 New Tailboom

(6) Flight Manual: AS 350 B Flight Manual – DGAC Approved 24 December 1997
Code A – CAA Accepted as AIR 2083

AS 350 D Flight Manual – DGAC Approved 24 December 1997
Code A – CAA Accepted as AIR 2298

AS 350 B1 Flight Manual – DGAC Approved 24 December 1997
Code A – CAA Accepted as AIR 2431

AS 350 B2 Flight Manual – DGAC Approved 24 December 1997
Code A – CAA Accepted as AIR 2382

AS 350 BA Flight Manual – DGAC Approved 24 December 1997
Code A – CAA Accepted as AIR 2457

AS 350 B3 Flight Manual – DGAC Approved 24 December 1997
Code A – CAA Accepted as AIR 2627

EC 130 B4 Flight Manual – DGAC-Approved 29 November 2000
Code A – CAA Accepted as AIR 2782

AS 350 B3 (Arriel 2B1) Flight Manual – EASA Approved June 2004
Code A – CAA Accepted as AIR 2944

AS 350 B2 VEMD Flight Manual – EASA Approved November 22, 2006 – Code A – CAA Accepted as AIR 2970

AS 350 B3e Flight Manual – EASA Approved 17 July 2011 – Code A CAA Accepted as AIR 3210

EC 130 T2 Flight Manual – EASA Approved 25 May 2012 – Code A CAA Accepted as AIR 3248

AS 350 BB Flight Manual – DGAC Approved 15 November 1996
Code A – CAA Accepted as AIR 3873

(7) Operating Data for Aircraft:

(i) Maintenance Manual and Current service Information:

The following documents are available online for each AS 350 model:

Aircraft Maintenance Manual	Master Servicing Manual
System Description Section	Index of Modifications
Standard Practices Manual	Wiring Diagram Manual
Service Bulletins	

The following documents are available online for the EC130:

Operation and Description Manual	Maintenance Manual
Master Servicing Recommendations	Fault Isolation Manual
Mechanical Repair Manual	Index of Modifications
Standard Practices Manual	Structural Repair Manual
Wiring Diagrams Manual	Service Bulletins
Tools Catalog	Storage Manual

(ii) Illustrated Parts Catalogue:
AS350 Illustrated Parts Catalog
EC130 Illustrated Parts Catalog

(8) Agreement from manufacturer to supply updates of data in (4), (5) and (6):

CAA 2171 Eurocopter Head of Airworthiness Dept. dated 14.05.98 (AS350B3)
CAA 2171 Eurocopter Head of Airworthiness dated 22/04/02 (EC130B4)
See Eurocopter Certificate of Subscription No. 059890/0 dated 31/01/2012

Eurocopter now provides CAA access to technical publications through the Online Documents and Technical Publications O.R.I.O.N. and T.I.P.I. website https://keycopter.airbushelicopters.com

AIRBUS HELICOPTERS now provides access through the customer platform at: https://airbusworld.helicopters.airbus.com

(9) Other information:

Eurocopter Document No.350A.04.4805 – Ecureuil AS350B3 Version Definition (Defines the modifications required for the production of the single-engine Ecureuil AS 350 B3 aircraft, as well as the optional equipment associated with this new version.)

Certification Document No. 350A04.4821 – Description of the EC130B Helicopter

EC 130 B4 Technical Data – Document 130 B4 02.010.01 E

EC 130 T2 General Description – Document 350A047323

EASA Master Minimum Equipment List AS350/EC130

EASA Operational Suitability Data (OSD) Flight Crew Data (FCD) – Ecureuil /Single Engine Family AS350B/D/B1/B2/BA/BB/B3 and EC130B4/T2

5. New Zealand Operational Rule Compliance

Compliance with the retrospective airworthiness requirements of NZCAR Part 26 is a prerequisite for the grant of a type acceptance certificate.

Civil Aviation Rules Part 26

Subpart B – Additional Airworthiness Requirements

Appendix B – All Aircraft

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
B.1	Marking of Doors and Emergency Exits	***To be determined on an individual aircraft basis***
B.2	Crew Protection Requirements – CAM 8 Appdx. B # .35	Not Applicable – Agricultural Aircraft only

Appendix E – Helicopters

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
E.1	Doors and Exits	AS 350 Series: Complies by inspection and review of IPC EC 130 Series: JAR §27.783 and JAR §27.807(b)(2)
E.2.1	Emergency Exit Marking	FAR and JAR §27.807(b)(3)

Compliance with the following additional NZ operating requirements has been reviewed and were found to be covered by either the original certification requirements or the basic build standard of the aircraft, except as noted:

Civil Aviation Rules Part 91

Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:		MEANS OF COMPLIANCE:	
91.505	Seating and Restraints – Safety belt/Shoulder Harness		FAR and JAR §27.785(b)	
91.507	Pax Information Signs - Smoking, safety belts fastened		Not Applicable – Less than 10 passenger seats	
91.509 Min. VFR	(1) ASI (2) Machmeter (3) Altimeter (4) Magnetic Compass (5) Fuel Contents (6) Engine RPM (7) Oil Pressure	FAR and JAR §27.1303(a) N/A – No mach no. limitations FAR and JAR §27.1303(b) FAR and JAR §27.1303(c) FAR and JAR §27.1305(d) FAR and JAR §27.1305(k) FAR and JAR §27.1305(h)	(8) Coolant Temp (9) Oil Temperature (10) Manifold Pressure (11) Cylinder Head Temp. (12) Flap Position (13) U/c Position (14) Ammeter/Voltmeter	N/A – Turbine engine FAR and JAR §27.1305(j) N/A – Turbine engine N/A – Turbine engine N/A – Helicopter N/A – Fixed skids FAR and JAR §27.1351(d)
91.511 Night	(1)Turn and Slip (2) Position Lights	***Operating Requirement – Compliance as applicable***	(3) Anti-collision Lights (4) Instrument Lighting	***Operating Requirement – Compliance as applicable***
	NOTE: AS 350 B3 – Night VFR flight is prohibited in Flight Manual until MOD 350A 08-3929 is incorporated. EC 130 B4 – Limited to Day VFR unless Modification 07-3664 is embodied			
91.517	IFR Instruments and Equipment		Not Applicable – Not approved for IFR operations	
91.519	IFR Communication and Navigation Equipment		Not Applicable – Not approved for IFR operations	
91.523	Emergency Equipment (a) More Than 9 pax - First Aid Kits per Table 7 - Fire Extinguishers per Table 8 (b) More than 20 pax - Axe readily accessible to crew (c) More than 61 pax - Portable Megaphones per Table 9		 Not Applicable – Less than 10 passenger seats Not Applicable – Less than 10 passenger seats Not Applicable – Less than 20 passenger seats Not Applicable – Less than 61 passenger seats	
91.529	ELT - TSO C91a or C126 after 1/4/97 (or replacement)		***To be determined on an individual aircraft basis***	
91.531	Oxygen Indicators - Volume/Pressure/Delivery		Not fitted as Standard	
91.533	Oxygen for Non-pressurised Aircraft		***Operating Requirement – Compliance as applicable*** ***Maximum Operating Altitude (AS 350 B3) – 23,000 ft.*** ***Maximum Operating Altitude (EC 130 srs) – 23,000 ft.***	
91.541	SSR Transponder and Altitude Reporting Equipment		***Operating Requirement – Compliance as applicable***	
91.543	Altitude Alerting Device - Turbojet or Turbofan		Not Applicable – Less than 10 passenger seats	
91.545	Assigned Altitude Indicator		Not Applicable – Not approved for IFR operations	
A.15	ELT Installation Requirements		***To be determined on an individual aircraft basis***	

Civil Aviation Rules Part 135

Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:		MEANS OF COMPLIANCE:
135.355	Seating & Restraints – Shoulder harness flight-crew seats		FAR and JAR §27.785
135.357	Additional Instruments (Powerplant and Propeller)		FAR and JAR §27.1305
135.359	Night Flight	Landing light, Pax compartment	***Operating Requirement – Compliance as applicable***
135.361	IFR Operations	Speed, Alt, spare bulbs/fuses	Not Applicable – Not approved for IFR operations
135.363	Emergency Equipment (Part 91.523 (a) and (b))		***Operating Requirement – Compliance as applicable***
135.367	Cockpit Voice Recorder		N/A – Only for 2-crew helicopters with more than 10 pax
135.369	Flight Data Recorder		Not Applicable – Less than 10 passenger seats
135.371	Additional Attitude Indicator		Not Applicable – Not turbojet or turbofan aircraft

NOTES: 1. A Design Rule reference in the Means of Compliance column indicates the Design Rule was directly equivalent to the CAR requirement, and compliance is achieved for the basic aircraft type design by certification against the original Design Rule.

2. The CAR Compliance Tables above were correct at the time of issue of the Type Acceptance Report. The Rules may have changed since that date and should be checked individually.

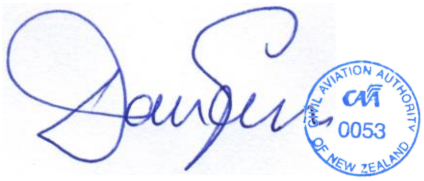
3. Some means of compliance above are specific to a particular model/configuration. Compliance with Part 91/135 operating requirements should be checked in each case, particularly oxygen system capacity and emergency equipment.

Attachments

The following documents form attachments to this report:

Copy of EASA Type Certificate Data Sheet Number R.008

Sign off



……..
David Gill
Team Leader Aircraft Inspection

……..
Checked – John Marshall
Airworthiness Inspector

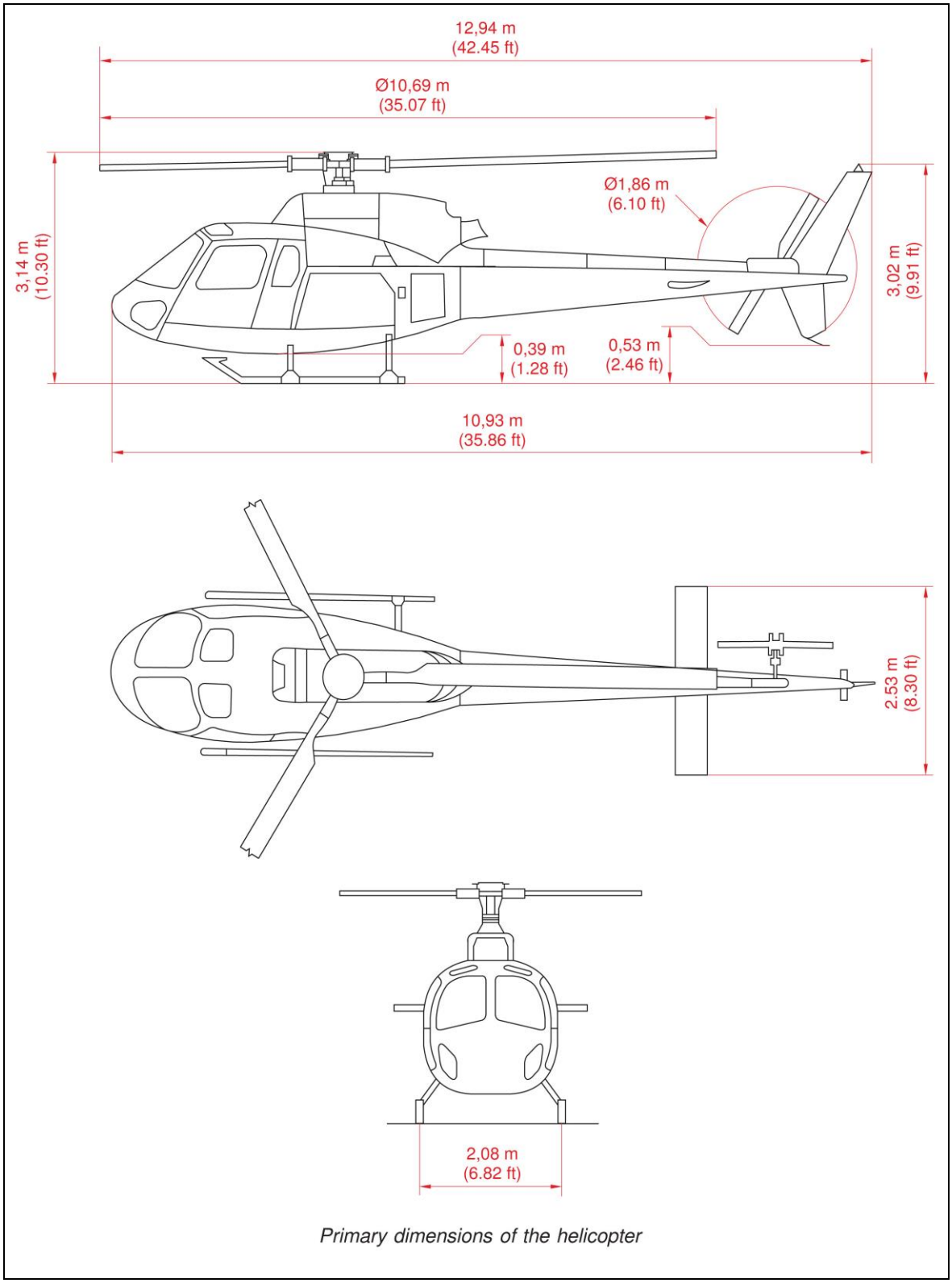
Appendix 1

List of Type Accepted Variants:

Model:	*Applicant:*	*CAA Work Request:*	*Date Granted:*
AS 350 B	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
AS 350 B1	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
AS 350 B2	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
AS 350 BA	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
AS 350 D	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
AS 350 B3	Eurocopter	98/21B/19	17 July 1998
EC 130 B4	Eurocopter International Pacific Ltd	2/21B/16	28 June 2002
AS 350 B3 (2B1)	Eurocopter International Pacific Ltd	6/21B/23	12 January 2006
AS 350 B2 (VEMD)	Eurocopter International Pacific Ltd	7/21B/39	17 July 2007
AS 350 B3 (e)	Eurocopter	12/21B/14	17 April 2012
EC 130 T2	Eurocopter	13/21B/10	28 June 2013
AS 350 BB	Heli Support New Zealand Ltd	19/21B/1	29 November 2018
STC 7500/7501	Airbus Helicopters	21/21B/9	14 December 2020
TCDS Issue 17	Airbus helicopters	23/21B/7	25 November 2022

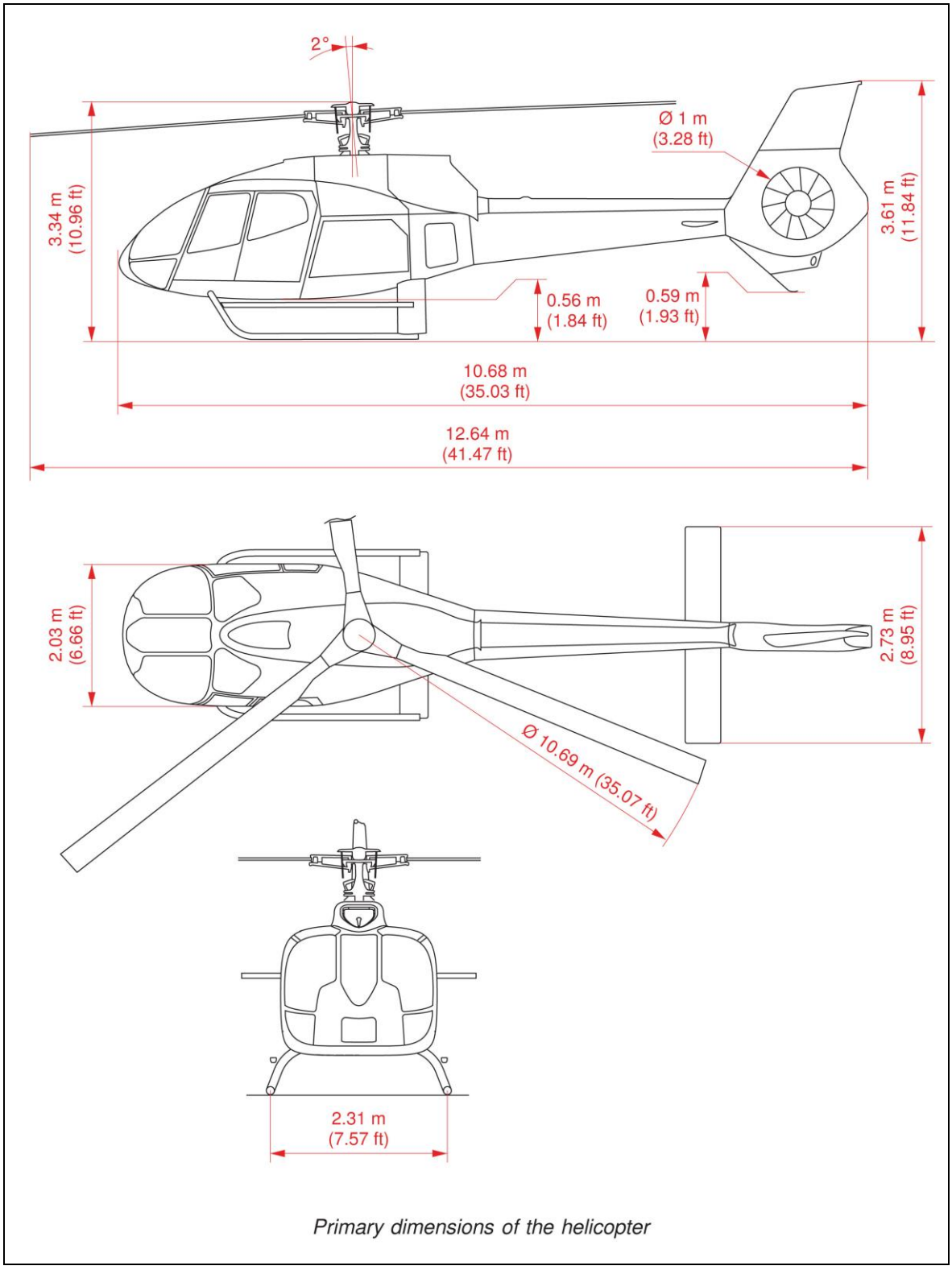
Appendix 2

3-View Drawing Airbus Helicopters AS 350 B3e.



Primary dimensions of the helicopter

3-View Drawing Airbus Helicopters EC 130 T2.



Primary dimensions of the helicopter