Type Acceptance Report

TAR 99/21B/5 – Revision 1

AIRBUS HELICOPTERS EC 120 B

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Executive Summary

New Zealand Type Acceptance has been granted to the Airbus Helicopters EC 120 B based on validation of Type Certificate number EASA.R.508. 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 §21.191, 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(c).

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. 99/5 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 in New Zealand; and

(b) Identify any special conditions for import applicable to any model 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 notes the status of all models included under the State-of-Design type certificate which have been granted type acceptance in New Zealand, which are listed in Section 2. The history of the EC 120 B type acceptance in New Zealand under type certificate EASA.R.508 is listed in Appendix 1.

2. Aircraft Certification Details

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

Manufacturer:	Airbus Helicopters Eurocopter (until 6 January 2014)
Type Certificate:	EASA.R.508
Issued by:	European Union Aviation Safety Agency
Supersedes:	
Type Certificate:	Certificat de Navigabilite de Type Numéro 189
Issued by:	Direction Generale de L'Aviation Civile – Republique Francaise
Production Approval:	EASA.21G.0070

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

(i) **Model:** EC 120 B

MCTOW:	1715 kg (3777 lb.)
Max. No. of Seats:	5
Noise Standard:	ICAO Annex 16
Engine:	Safran Helicopter Engines Arrius 2F
	Type Certificate: E.031
	Issued by: European Union Aviation Safety Agency

3. Application Details and Background Information

The application for New Zealand type acceptance was from the manufacturer dated 30 June 1998. The first-of-type example was serial number 1015 registered ZK-HEC. The EC 120 B "Colibri" is a 5-seat light turbine-powered helicopter with skid landing gear and the typical Eurocopter Starflex-type rotorhead and fenestron tail rotor.

Type Acceptance Certificate No. 99/5 was granted on 16 October 1998 to the Model EC 120 B based on validation of DGAC Type Certificate No.189. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

The EC 120 B was a clean-sheet design of light helicopter, and entered service in 1998. In 2017 Airbus Helicopters announced that production of the helicopter would end after 700 examples had been manufactured.

This report was raised to Revision 1 to update the format and note the change in State-of-Design jurisdiction to EASA.

STC Applicability:
The EC120B has been type certificated by both EASA and FAA. Eurocopter advise that "no special requirement nor specific special condition was added by the FAA…". Based on this FAA STC's for the EC 120 B which supplement FAA type certificate R0001RD, are under CAR 21.503(a) deemed to be acceptable technical data in New Zealand for all EC 120 B aircraft type accepted under EASA type certificate R.508.

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 Number

EASA Type Certificate Data Sheet EASA.R.508 at Issue 04 dated 19 Sept 2019 – Model EC 120 B approved 19 June 1997

Supersedes:

DGAC Type Certificate No.189 for EC 120B dated 19 June 1997
JAA Data Sheet No. JAA/27/97/002 – EC 120B at Issue No.2 April 1998
JAA Environmental Data Sheet E/27/97/002 – EC 120B at Issue 2 June 1999

(2) Airworthiness design requirements:

(i) Airworthiness Design Standards:
The certification basis of the EC 120B is JAR 27 First Issue dated September 06, 1993. Special Conditions were imposed with respect to HIRF and equivalent safety findings were made relating to the main gearbox oil filter bypass and on the powerplant instrument markings. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41, as JAR 27 is equivalent to FAR 27 which is the basic standard for normal category helicopters called up under Appendix C. There are no non-compliances and no special conditions have been prescribed by the Director under §21.23.

(ii) Special Conditions:
CRI nº: E-9 Protection from the Effects of High Intensity Radiated Fields (HIRF) (INT/POL/25/2 Special Condition) at Issue 4 dated 24/01/97 – HIRF Protection required to be demonstrated at the level appropriate to essential digital electronic systems.

(iii) Equivalent Level of Safety Findings:
CRI nº: E-2 Main Gearbox Oil Filter Bypass (JAR 27.1027(b)(2) Equivalent Safety Finding) at Issue 14 dated 17/06/97 – Accepted on basis of the very high trapping capacity of the oversized filter; adequate replacement periods for the filter; and tests showing the filter will still operate with the bypass closed.

CRI nº: E-8 Powerplant Instrument Markings (JAR 27.1549(b)(c) Equivalent Safety Finding) at Issue 5 dated 24/01/97 – Electronic screens fitted without green arcs or lines approved on the basis of evaluation of the VEMD cautionary indications.

(iv) Airworthiness Limitations:
EC 120 B Master Servicing Manual – Chapter 04

(3) Aircraft Noise and Engine Emission Standards:

(i) Environmental Standard:
The EC 120 B has been certificated for noise under ICAO Annex 16 Volume 1

(ii) Compliance Listing:
TCDSN EASA.R.508 Type-Certificate Data Sheet for Noise EC 120 B

Chapter 11 Noise Level: Take-off: 78.7 (dBA SEL)

Supersedes:

DGAC Environmental Data Sheet No. E/27/97/002: EC 120B dated June 1997

(4) Certification Compliance Listing:

Doc: QDC000A0820E01 – EC 120 Certification Plan at Indice b dated 28/11/95

Certification Review Item n°: A1 – JAA Certification Basis at Issue 10 11/06/97

(5) Flight Manual: EASA-Approved Flight Manual EC 120 B – Issue 2
CAA Accepted as AIR 2630

(6) Operating Data for Aircraft:

(i) Maintenance Manual:
Eurocopter EC120B Colibri Aircraft Maintenance Manual

(ii) Current service Information:
Service Bulletins and Alert Service Bulletins

(iii) Illustrated Parts Catalogue:
Eurocopter EC120B Colibri Illustrated Parts Catalog

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

CAA 2171 form from Eurocopter Head of Airworthiness Dept. dated 30.06.98

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

(8) Other information:

Doc: TNC00A0412E01 – EC120 General Description (Certification Application)

Doc: DMDC000A0761 – EC120 Version B Initial Certified Configuration

Doc: TNC520A0403 F01 – EC120 Descriptif Mecanismes de Porte

Doc: TNC520A0402 E01 – EC 120 Cabin & Cargo Doors Technical Description

Master Minimum Equipment List EC 120 B

5. New Zealand Operational Rule Compliance

Compliance with the retrospective airworthiness requirements of NZCAR Part 26 has been assessed as they are a prerequisite for the grant of an airworthiness 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	JAR §27.783(b) – See FM Section 2 Placards
B.2	Crew Protection Requirements – CAM 8 Appendix B #.35	Not Applicable – Agricultural Aircraft only

Appendix E – Helicopters

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
E.1	Doors/Exits (1) Operable inside & out, (2) unobstructed; (3) prevent inadvertent operation, indicates if not closed	JAR §27.783 and JAR §27.807(b)(2) – Complies –see fax from Eurocopter Ref. E/TN935 98 dated 01 October 98
E.2.1	Emergency Exit Marking – Identity & Location; operation	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		JAR §27.785(b)	
91.507	Pax Information Signs – Smoking, safety belts fastened		Not Applicable – Less than 10 passenger seats	
91.509	Minimum Instruments and Equipment			
	(1) ASI	JAR §27.1303(a) See FM Figure.7-1 Item 16	(7) Oil Pressure (8) Coolant Temp	JAR §27.1305(h) * N/A – Turbine engine
	(2) Machmeter	N/A	(9) Oil Temperature	JAR §27.1305(j) *
	(3) Altimeter	JAR §27.1303(b) See FM Figure.7-1 Item 21	(10) Manifold Pressure (11) Cylinder Head Temp.	N/A – Turbine engine N/A – Turbine engine
	(4) Magnetic Compass	JAR §27.1303(c) See FM Figure.7-1 Item 14	(12) Flap Position (13) U/c Position	N/A – Helicopter N/A – Fixed skids
	(5) Fuel Contents (6) Engine RPM	JAR §27.1305(d) * JAR §27.1305(k) See FM Figure.7-1 Item 17	(14) Ammeter/Voltmeter	JAR §27.1351(d) *
	* These parameters are presented on the electronic Vehicle and Engine Management Display (VEMD)			
91.511	Night VFR Instruments and Equipment		***Operating Requirement – Compliance as applicable*** (Night operations permitted when SB 34.001 embodied)	
91.513	VFR Communication Equipment		***Operating Requirement – Compliance as applicable***	
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 C126 406 MHz after 22/11/2007		***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 – 20,000 ft.***	
91.541	SSR Transponder and Altitude Reporting Equipment		***Operating Requirement – Compliance as applicable***	
91.543	Altitude Alerting Device – Turbojet or Turbofan		Not Applicable – Not approved for IFR operations	
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 §27.785
135.357	Additional Instruments (Powerplant and Propeller)		FAR §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 turbo jet or turbofan powered

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.

Attachments

The following documents form attachments to this report:

Copy of Type Certificate Data Sheet Number EASA.R.508

Sign off

……..
David Gill
Team Leader Aircraft Inspection

……..
Checked – Rens Molenaar
Certification Engineer

Appendix 1

List of Type Accepted Variants:

Model:	*Applicant:*	*CAA Work Request:*	*Date Granted:*
EC 120 B	Eurocopter	99/21B/5	16 October 1998

Appendix 2

Three-view drawing

EUROCOPTER
AN EADS COMPANY

EC120 B
Technical Data

2.5. Main dimensions