
Type Acceptance Report

TAR 0/21B/9 – Revision 1

AEROSPATIALE SE3160 / SA316B / SA315B

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Executive Summary

New Zealand Type Acceptance has been granted to the SE 3160/SA 316B Alouette III and SA 315B Lama Series based on validation of Type Certificate number EASA.R.123. 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. 0/21B/9 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 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 SE 3130 / SA 315B / SA 316B Series type acceptance in New Zealand under type certificate EASA.R.123 is listed in Appendix 1.

2. Aircraft Certification Details

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

Type Cert. Holder:	Airbus Helicopters (Since 7 January 2014)
Type Certificate:	EASA.R.123
Issued by:	European Aviation Safety Agency
Supersedes:	
Type Certificate:	Certificat de Navigabilité de Type Numéro 14
Issued by:	Républic Française – Secrétariat Général a l'Aviation Civile
Manufacturer:	Sud-Aviation (until 31 December 1969)
	Aérospatiale (from 1 January 1970 to 31 December 1991)

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

(i) Model:	SE 3160, SA 316B “Alouette III”
MCTOW:	2100 kg (4630 lb) – SE 3160 2200 kg (4850 lb) – SA 316B
Max. No. of Seats:	7
Noise Standard:	Not Applicable
Engine:	Turbomeca Artouste IIIB
Type Certificate:	EASA.E.091
Issued by:	European Aviation Safety Agency
(ii) Model:	SA 315B “Lama”
MCTOW:	1950 kg (4299 lb) – with non-releasable loads 2300 kg (5701 lb) – with releasable loads
Max. No. of Seats:	5
Noise Standard:	Not Applicable
Engine:	Turbomeca Artouste IIIB or IIIB1
Type Certificate:	EASA.E.091
Issued by:	European Aviation Safety Agency

3. Application Details and Background Information

The SE 3160 Alouette III was originally accepted into New Zealand under the provisions of NZCAR B.9. When CAR Part 21 was issued in July 1995 the transitional arrangements in Appendix A provided that where an aircraft had a certificate of airworthiness before Subpart B came into force that type or model shall be deemed to have a type acceptance certificate. In this case there had been no current airworthiness certificate for an Alouette III in force for many years prior to 30th June 1995, and therefore the type acceptance had lapsed.

The first application for New Zealand type acceptance of the SE 3160 Alouette III under Part 21B was from the importer, Heliquip International Limited, dated 15 December 1999. The first-of-type example was serial no. 1524 registered ZK-HYM. The SE 3160/SA 316B/SA 315B Series is a single-turbine-powered helicopter with conventional three-blade main rotor and three-blade tail rotor configuration

Type Acceptance Certificate Number 0/21B/9 was granted on 31 March 2000 to the SE 3130 and SA 315B based on validation of DGAC Type Certificate No. 14. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

The Alouette III was a development of the earlier Alouette II, with an enlarged seven-seat cabin, more powerful 870 shp Artouste IIIB engine de-rated to 550 hp and a fully covered tailboom. The prototype flew on 28 February 1959 and French production had totalled 1445 examples when manufacture ceased in 1983. The Alouette III has also been produced under license in India and Romania, and assembled in Switzerland. SGCA type certificate No. 14 covers four versions of the Alouette III, plus the SA 315B Lama. The SA 316B differs from the original SE 3160 Alouette III in having reinforced structural elements and improved mechanical equipment, which allow an increase in MAUW to 2200 kg. The aircraft can be converted in accordance with SB No.01-20. The SA 316C and SA 319B were developments with the Artouste IIID and Astazou XIV engines, respectively, and another maximum weight increase. The SA 316B can be converted to either of the later two Alouette III variants by application of the appropriate modifications listed in Aerospatiale Technical Note SA319A.04.00.025. The SA 315B is an Alouette II with the Alouette III drivetrain.

Two examples of the SE 3160, serial number 1614 registered ZK-HCX and serial number 1606 registered ZK-HCW, were operated between September 1969 and March 1971 by Helicopters (NZ) Ltd. Three examples of the SA 319B model were imported by the same company in 1975 and operated for three years: ZK-HIR s/n 2211 was exported to Australia in 1978; ZK-HIS s/n 2255 was damaged beyond repair in a flood in 1975; while ZK-HNY s/n 2273 was destroyed in 1978. The first example of the SA 315B Lama in New Zealand was serial number 2226 registered as ZK-HDX in October 1971.

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

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.R.123

Type Certificate Data Sheet EASA.R.123 at Issue 03 dated 14 February 2017

- Model SE 3160 approved 15 December 1961
- Model SA 316B approved 17 March 1970
- Model SA 315B approved 29 September 1970

Supersedes:

Certificat de Navigabilité de Type Numéro 14

Fiche de Navigabilite No.61, Edition No. 7 dated Mars 1993

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The SGAC certification basis of the SE 3130/SA 315/SA316 series is CAR 6 dated 20 December 1956, including Amendments 6.1 through 6.3, plus the special conditions for turbine helicopters notified to the French government by FAA letter dated 3 May 1960.

This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41, as CAR 6 is the predecessor to FAR 27 which is the basic standard for normal category rotorcraft called up under Part 21 Appendix C. There are no non-compliances and no special conditions have been prescribed by the Director under §21.23.

(ii) *Special Conditions:*

FAA Letter dated 3 May 1960.

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Airworthiness Limitations:*

See MDE

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

Not Applicable

(4) Certification Compliance Listing:

Certification of the SA 319B in New Zealand was originally carried out in 1975 through the NZ agents, Clyde Engineering. The following type documents are still held by the CAA:

Aerospatiale Dossier Technique – Matériel 3160-05-00.401 c
Summary of Stress Analysis for SE 3160, SA 316 (C) and 319 (B) Helicopters

Sud-Aviation NT 1967 – Regulations (Airworthiness)

Sud Aviation 3160.05.00.010 c – Caracteristiques du SE.3160

Sud-Aviation Dossier Technique 3160-05-23-804 – Fatigue Capabilities of the
Reinforced Tail Boom According to A.M.S. 1325 No. 3160-23-11.000.12
(translation)

Bilan Electrique de l’Helicoptere SE 3160 – Se3160.04.72.001

Liste des Modifications Definissant le SA 319B et le SA 316C par Rapport au SA 316B

Flight Test Report – Essais CEV No. 82147 – Civil Certification of Alouette III
“Astazou XIV” version SA 319 (translation)

SGAC Airworthiness Notice No. 61 – Edition No. 5 December 1975 (translation)

(5) Flight Manual: DGAC-Approved Flight Manual for Aerospatiale SA 315B Lama
– CAA Approved as AIR 2030

SAC-Approved Flight Manual for SE 3160 and SA 316B
Alouette III Helicopters – CAA Accepted as AIR 2693

(6) Operating Data for Aircraft:

(i) *Maintenance Manual:*

MDE – SE 3160 and SA 316B Maintenance Manual

MRS – Alouette III Repair Manual (Structural)

MRM – Repair Manual (Transmission System Components) Alouette and Lama

(ii) *Current service Information:*

Index of Modifications – Alouette II, Alouette III, Lama at Rev.5 – May 1988
Service Bulletins Alouette (2 volumes)

(iii) *Illustrated Parts Catalogue:*

IPC – SA3160_SA316B (2 volumes)

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

Email from Eurocopter Pacific Customer Services Co-ordinator dated 13/3/00

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	<i>To be determined on an individual aircraft basis</i>
B.2	Crew Protection Requirements – CAM 8 App. B # .35	Agricultural Aircraft – <i>Not Applicable</i>

Appendix E – Helicopters

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
E.1	Doors and Exits – operable each side, unobstructed	Complies by inspection
E.2.1	Emergency Exit Marking – visible across cabin	CAR 6.357(3)

Civil Aviation Rules Part 91

Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
91.505	Shoulder Harness if Aerobatic; >10 pax; Flight Training	AERAZUR harness fitted as standard
91.507	Pax Information Signs – Smoking, safety belts fastened	N/A – Maximum number of occupants is 7
91.509 Min. VFR	(1) ASI CAR 6.603(a) – <i>See Flight Manual Fig.2-1.4 # 4</i> (2) Machmeter N/A (3) Altimeter CAR 6.603(b) – <i>See Flight Manual Fig.2-1.4 # 73</i> (4) Magnetic Compass CAR 6.603(c) – <i>See Flight Manual Fig.2-1.4 # 2</i> (5) Fuel Contents CAR 6.604(d) <i>See Flight Manual §2.1.5.3</i> (6) Engine RPM CAR 6.604(k) – <i>See Flight Manual Fig.2-1.4 # 71</i>	(7) Oil Pressure CAR 6.604(h) – <i>See Flight Manual Fig.2-1.4 # 22</i> (8) Coolant Temp N/A – Turbine powered (9) Oil Temperature CAR 6.604(j) – <i>See Flight Manual Fig.2-1.4 # 22</i> (10) Manifold Pressure N/A – Turbine powered (11) Cylinder Head Temp. N/A – Turbine powered (12) Flap Position N/A – Helicopter (13) U/C Position N/A – Fixed landing gear (14) Ammeter/Voltmeter CAR 6.622– <i>See Flight Manual Fig.2-1.4 # 50</i>
91.511 Night	(1) Turn and Slip Fitted as standard– <i>See Flight Manual Fig.2-1.4 # 7</i> (2) Position Lights CAR 6.632	(3) Anti-collision Lights CAR 6.637 (4) Instrument Lighting CAR 6.630
	SE 3130 Alouette III is certificated for day and night VFR operations when appropriate equipment is installed	
91.517	IFR Instruments and Equipment	Not Applicable – Not IFR certificated
91.519	IFR Communication and Navigation Equipment	Not Applicable – Not IFR certificated
91.523 Emergency Eqmpt.	(a) More than 10 pax – First Aid Kits per Table 7 – Fire Extinguishers per Table 8 (b) More than 20 pax – Axe readily acceptable to crew	<i>Operational Requirement – Compliance as applicable</i> <i>Operational Requirement – Compliance as applicable</i> N/A – Maximum number of occupants is 7
91.529	ELT – TSO C91a after 1/4/97 (or replacement)	<i>To be determined on an individual aircraft basis</i>
91.531	Oxygen Indicators – Volume/Pressure/Delivery	Not fitted as standard
91.533	Oxygen for Un-pressurised Aircraft	Not fitted as standard – (Maximum Operating Altitude specified in the Alouette III Flight Manual is 21,300 feet.)
91.541	SSR Transponder and Altitude Reporting Equipment	<i>Operational Requirement – Compliance as applicable</i>
91.543	Altitude Alerting Device – Turbojet or Turbofan	Not Applicable – Not IFR certificated
91.545	Assigned Altitude Indicator	Not Applicable – Not IFR certificated
A.15	ELT Installation Requirements	<i>To be determined on an individual aircraft basis</i>

Civil Aviation Rules Part 135

Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
135.355	Seating and Restraints	Fitted as standard – See MDE §53.1.3
135.357	Additional Instruments (Powerplant and Propeller)	<i>Compliance with FAR§29.1305 to be shown as applicable</i>
135.359	Night Flight Landing light, Pax compartment	<i>Operational Requirement – Compliance as applicable</i>
135.361	IFR Operations Speed, Alt, spare bulbs/fuses	<i>To be determined on an individual aircraft basis</i>
135.363	Emergency Equipment (Part 91.523 (a) and (b))	<i>To be determined on an individual aircraft basis</i>
135.367	Cockpit Voice Recorder	Not Applicable – Less than 10 passenger seats
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.
3. Some means of compliance above are specific to a particular model/configuration. Compliance with Part 91/119 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 Type Certificate Data Sheet EASA.R.123

Sign off



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David Gill
Team Leader Aircraft Inspection



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Checked – Rens Molenaar
Certification Engineer

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
SA 315B SE 3160, SA 316B	AC 21-1 Appendix 2/NZCAR Part 21 Appendix A(c) Heliquip International Ltd	0/21B/9	3 April 2000

Appendix 2

3-view Drawing SE 3160 Alouette III

