# **Type Acceptance Report**

TAR 95/15 – Revision 2

**SCHWEIZER RSG 269 Series** 

## TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	1
2. AIRCRAFT CERTIFICATION DETAILS	1
3. APPLICATION DETAILS AND BACKGROUND INFORMATION	2
4. NZCAR §21.43 DATA REQUIREMENTS	4
5. NEW ZEALAND OPERATIONAL RULE COMPLIANCE	7
ATTACHMENTS	8
APPENDIX 1	8

i

## **Executive Summary**

New Zealand Type Acceptance has been granted to the Schweizer RSG Model 269 Series light helicopter based on validation of FAA Type Certificate number 4H12. There are no special requirements for import.

Applicability is currently limited to the Models and/or serial numbers detailed in Appendix 1, 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: Information in this report is correct as at the date of issue. The report is 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 State-of-Design Type Certificate Data Sheet.

## 1. Introduction

This report details the basis on which Type Acceptance Certificate No. 95/15 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. Appendix 1 details the type acceptance history under 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:

Type Cert. Holder:	Schweizer RSG LLC	[from January 25, 2018]
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Sikorsky Aircraft Corporation (from September 26, 2011) Schweizer Aircraft Corporation (from November 21, 1986) Hughes Helicopter, Inc. (from December 31, 1980) Hughes Helicopters (from April 15, 1973) Hughes Tool Company

Type Certificate:	4H12
Issued by:	Federal Aviation Administration

Production Approval: FAA PC 22SW

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

(i) Models:	269A, 269A-1	l, 269B, 269C, 269C-1	
MCTOW:	1600 lb. [726 kg] 1670 lb. [757 kg] 1750 lb. [794 kg] 1900 lb. [862 kg]	<ul> <li>269A s/n 0001 through 0314</li> <li>269A s/n 0011 through 0314 with specific components installed, as listed on the TCDS</li> <li>269A s/n 0315 and up, 269A-1, 269B</li> <li>269C-1</li> <li>269C s/n 0004 through 0209</li> <li>269C s/n 0210 up, or with Mod. M10078</li> </ul>	
Max. No. of Seats:	2 (269A, 269A-1),	3 (269B, 269C, 269C-1)	
Noise Standard:	FAR Part 36 Appendix J (269C-1)		
Engine:	Lycoming 0-360-C2D (269A)		
	Lycoming HO-360-B1A or HO-360-B1B (269A)		
	Lycoming HO-360-C1A (269C-1)		
	51	E-286 Federal Aviation Administration	
	Lycoming HIO-360-A1A (269B)		
	Lycoming HIO-360-B1A or HIO-360-B1B (269A, 269A-1)		
	Lycoming HIO-360-D1A (269C)		
	Lycoming HIO-360-G1A (269C-1)		
	<b>J</b> 1	1E10 Federal Aviation Administration	

## 3. Application Details and Background Information

There have been examples of the 269 Series in New Zealand prior to 1995 when Part 21 was introduced, and therefore those particular model years or serial number ranges were deemed to have a type acceptance certificate under the transitional arrangements of Part 21 Appendix A(c). The first application for type acceptance under Part 21B was for the Model 269C-1 from the manufacturer, Schweizer Aircraft Corporation, by letter dated 16 October 1995. The first-of-type example was serial number S0030, registered ZK-ICB. The Model 269 is a piston-powered two or three seat light training helicopter with a three blade articulated main rotor system.

Type Acceptance Certificate No. 95/15 was granted on 25 January 1996 to the Model 269C-1 based on validation of FAA Type Certificate 4H12. Specific applicability is limited to the coverage provided by the operating documentation supplied. <u>There are no special requirements for import into New Zealand</u>.

This report was raised to Issue 1 to record the change in type certificate holder to Sikorsky Aircraft Corporation in 2011, and to update to the latest format. Revision 2 was issued to note the sale to Schweizer RSG LLC, who have just achieved the issue of a production certificate to re-start manufacture.

The Model 269A was designed by the Hughes Tool Company in the late 1950s, using the rotor system from the McCulloch MC-4. Hughes followed the two seat 269A with the slightly larger three seat 269B, which was marketed as the Hughes 300. This was followed from 1969 by the improved 300C, which introduced a more powerful 190hp engine and increased diameter main rotor. In 1986 Schweizer, which had been manufacturing the helicopter since 1983, acquired all rights to the design.

The 269C-1 (commercial designation "300CB") is a modified version of the 269C with gross weight reduced to 1750 lb. and using the HO-360-C1A engine, which has 180 hp instead of the 190 hp of the HO-360-D1A but with an increased TBO. It uses the same drivetrain, three-bladed main rotor and flight control system as the 269C. The pilot-in-command seat has been switched to the right hand side and only two seats are fitted, emphasising the intended role as a low-cost training aircraft.

The first example of the 269 Series in New Zealand was a Model 269B registered in 1965 (ZK-HBA), followed by the first Model 269C in 1970 (ZK-HDO) and the first Model 269A in 1972 (ZK-HEC).

## 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:

FAA Type Certificate Number 4H12

FAA Type Certificate Data Sheet no. 4H12 at Revision 33 dated April 29, 2020 – Model 269A approved April 9, 1959

- Model 269A-1 approved August 23, 1963
- Model 269B approved December 30, 1963
- Model 269C approved May 15, 1970
- Model 269C-1 approved July 31, 1995
- (2) Airworthiness design requirements:
  - (i) Airworthiness Design Standards:

The certification basis of the 269 Series in the normal category is CAR Part 6, dated 15 Jan 1951, including amendments 6-1 through 6-8, plus some additions and one exception, as noted on the TCDS. This is an acceptable certification basis in accordance with CAR Part 21B Paragraph §21.41 and Advisory Circular 21-1A, as CAR 6 is the predecessor of FAR Part 27, which is the basic standard for Rotorcraft called up under Part 21 Appendix C. There are no non-compliances and no additional special conditions have been prescribed by the Director under §21.23.

- (ii) Special Conditions: Nil
- (iii) Equivalent Level of Safety Findings: Nil
- *(iv) Airworthiness Limitations:* For retirement times of critical parts see Notes 3 and 9 on the TCDS

#### (3) Aircraft Noise and Engine Emission Standards:

- (i) Environmental Standard: The Models 269C and 269C-1 have been certificated for noise under FAR Part 36 Appendix J, including Amendments 36-1 through 36-20.
- (ii) Compliance Listing: Schweizer Report SA-269C-27-4 – External Fly-Over Noise Substantiation – Model 269C-1 dated March 29, 1995. Flight Manual data below:

Model:	Exhaust Configuration:	Gross Weight:	Noise Level:
269C	269A8257-3/-9 Exhaust Pipe Installation	2050 lb.	78.8 dB(A)
269C	269A880 1-5 Exhaust Muffler	2050 lb.	81.1 dB(A)
269C	269A8245-BSC Exhaust Muffler and Resonator	2050 lb.	79.2 dB(A)
269C-1	269A8257-9 Exhaust Pipe Installation	1750 lb.	78.8 dBA SEL
269C-1	269A8263-1 Exhaust Diffuser Installation	1750 lb.	81.8 dBA SEL

(4) Certification Compliance Listing:

Schweizer Report No. SA-269C-28-1 – Model 269C-1 Certification Proposal – Revision D 28 June 95

Schweizer Report No. SA-269C-18-3 – Compliance Checklist dated 28 June 1995

(5) Flight Manual:

FAA Approved Rotorcraft Flight Manual for the Hughes Model 269A (configuration "a") Publication No. CSP-AA-1 – CAA Approved as AIR 2325

FAA Approved Rotorcraft Flight Manual for the Hughes Model 269A (configuration "b") Publication No. CSP-AB-1 – CAA Approved as AIR 2336

FAA Approved Rotorcraft Flight Manual for the Hughes Model 269A (configuration "c") Publication No. CSP-AC-1 – CAA Approved as AIR 2386

FAA Approved Rotorcraft Flight Manual for the Hughes 200 Model 269A-1 Publication No. CSP-AA-2 – CAA Approved as AIR 2064

FAA Approved Rotorcraft Flight Manual for the Hughes 300 Model 269B (configuration "a") Publication No. CSP-BA-1, and (configuration "b") Publication No. CSP-BA-2 – CAA Approved as AIR 3201

Pilot's Flight Manual and FAA Approved Rotorcraft Flight Manual Schweizer S-300C Model 269C Publication No. CSP-C-1 – CAA Approved as AIR 2164

Pilot's Flight Manual for Schweizer 300CB Model 269C-1 – Publication No. CSP-C1-1 – CAA Accepted as AIR 2544

NOTES: Configurations "a"/"b"/"c"/"d" for the 269A and "a"/"b" for the 269B are defined in the Configuration Table on page 1-2 of the Flight Manuals:

Configuration d was the military training variant TH-55A helicopter which is not a type certificated model.

Model:	Config:	Components:
269A	а	O-360-C2D engine with 4605 tachometer and 4603 manifold pressure gage
269A	b	HO-360-B1A or HO-360-B1B engine with 4251 tachometer and 4250 manifold pressure gage
269A	С	HO-360-B1A or HO-360-BlB engine; 1131, B1145, or B1145-1 main rotor blades; 1222 dampers - main rotor blade; 3240 landing gear assembly; 4251 tachometer; 4250 manifold pressure gage
269A	d	HTC-AD Primary Trainer Kit Part Number 4256 "D"; HIO-360-BIA engine; B-1145 or B1145-1 main rotor blade; 1222 dampers - main rotor blade; 3240 landing gear assembly
269B	а	As noted in the Equipment List
269B	b	269A9975-9 Fuel Tank Assy; 269A9927 Firewall Assy; 269A4111-9 Instrument Cluster Assy

- (6) Operating Data for Aircraft and Engine:
  - (i) Maintenance Manual:

Sikorsky Models 269A, TH-55A, A-1, B & C Helicopters Basic Handbook of Maintenance Instructions – Publication No. CSP-C-2

Sikorsky S-300C Model 269C Helicopter Basic Handbook of Maintenance Instructions (Effective S/N S1809 and Subsequent)

Schweizer 300CB Model 269C-1 Basic Handbook of Maintenance Instructions – Publication No. CSP-C1-2

(ii) Current service Information:

269 Series: Service Bulletins and Alert SB; Customer Service Notices and Letters

(iii) Illustrated Parts Catalogue:

Model 269A, 200 Model 269A-1, 300 Model 269B, 300C Model 269C, U.S. Army Model TH-55A Illustrated Parts Catalog – Publication No. CSP-C-7

Schweizer Model 269C Helicopter Illustrated Parts Catalog (IPC) Serial Numbers 1166 and subsequent – Publication No. CSP-C-9

Schweizer Model 269C-1 Helicopter Illustrated Parts Catalog (IPC) – Publication No. CSP-C1-6

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

Access to technical manuals is now provided at <u>www.sikorsky360.com</u>

(8) Other information:

Schweizer Report SA-269C-17-9 – Company Flight Test Results Model 269C-1

Information Folder containing descriptive information, FAA correspondence, production certificates, production flight test schedule, master equipment list

Schweizer Report SA-269C-18-2 – Position & Anticollision Light Analysis – Model 269C-1 dated April 10, 1995

## 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 Rule 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	To be determined on an individual aircraft basis
E.2.1	Emergency Exit Marking	CAR §6.357(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 Rule Part 91**

#### Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:		MEANS OF COMPLIANCE:	
91.505	Seating and Restraints – Safety belt/Shoulder Harness		CAR §6.605(b)	
91.507	Pax Information Signs -	Smoking, safety belts fastened	Not Applicable – Less than 10 passenger seats	
91.509	(1) ASI	CAR §6.603(a)	(8) Coolant Temp	N/A – Air-cooled engine
Min.	(2) Machmeter	N/A	(9) Oil Temperature	CAR §6.604(a)(3)
VFR	(3) Altimeter	CAR §6.603(b)	(10) Manifold Pressure	CAR §6.604(b)(3)
	(4) Magnetic Compass	CAR §6.603(c)	(11) Cylinder Head Temp.	CAR §6.604(b)(1)
	(5) Fuel Contents	CAR §6.604(a)(1)	(12) Flap Position	N/A – Helicopter
	(6) Engine RPM	CAR §6.604(a)(4)	(13) U/C Position	N/A – Fixed skid landing gear
	(7) Oil Pressure	CAR §6.604(a)(2)	(14) Ammeter/Voltmeter	Compliance as applicable
91.511	(1)Turn and Slip	Compliance as applicable	(3) Anti-collision Lights	CAR §6.637
Night	(2) Position Lights	CAR §6.632	(4) Instrument Lighting	CAR §6.630
91.513	VFR Communication Equ	ipment	Operational Requirement – Compliance as applicable	
91.517	IFR Instruments and Equ	lipment	Not Applicable – Not approved for IFR operations	
91.519	IFR Communication and Navigation Equipment		Not Applicable – Not approved for IFR operations	
91.523				
	(a) More Than 9 pax – First Aid Kits per Table 7		Not Applicable – Less than 10 passenger seats	
	– Fire	Extinguishers per Table 8	Not Applicable – Less than 1	0 passenger seats
	(b) More than 20 pax – A	xe readily accessible to crew	Not Applicable – Less than 2	20 passenger seats
	(c) More than 61 pax – P	ortable Megaphones per Table 9	Not Applicable – Less than 6	51 passenger seats
91.529	ELT – TSO C126 406 MH	z after 22/11/2007	<b>Operational Requirement</b>	- Compliance as applicable
91.531	Oxygen Indicators – Volu	ume/Pressure/Delivery	Not fitted as standard	
91.533	Oxygen for Non-Pressur	ised Aircraft	<b>Operational Requirement</b>	- Compliance as applicable
	>30 min above FL100 -	Supplemental for crew, 10% Pax		
	– Therapeutic for 3% of Pax			
91.541	SSR Transponder and Altitude Reporting Equipment		<b>Operational Requirement – Compliance as applicable</b>	
91.543	Altitude Alerting Device - Turbojet or Turbofan		Not Applicable – Not turbo jet or turbofan powered	
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 Rule Part 135**

#### Subpart F – Instrument and Equipment Requirements

PARA:	REQUIREMENT:		MEANS OF COMPLIANCE:	
135.355	Seating/Restraints – Shoulder harness flight-crew seats		CAR §6.605(b)	
135.357	Additional Instruments (Powerplant and Propeller)		Operational Requirement – Compliance as applicable	
135.359	Night Flight	Landing light, Pax compartment	Operational Requirement – Compliance as applicable	
135.361	IFR Operations	Speed, Alt, spare bulbs/fuses	<b>Operational Requirement – Compliance as applicable</b>	
135.363	Emergency Equipment (Part 91.523 (a) and (b))		Operational Requirement – Compliance as applicable	
135.367	Cockpit Voice Recorder		Operational Requirement – Compliance as applicable	
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 FAA Type Certificate Data Sheet Number 4H12

#### Sign off

David Gill Team Leader Aircraft Inspection

0606

Checked – Greg Baum Team Leader Product Certification

## Appendix 1

#### List of Type Accepted Variants:

Model:	Applicant:	CAA Work Request:	Date Granted:
269A, 269A-1	Advisory Circular 21-1.2/NZ		
269B, 269C	Advisory Circular 21-1.2/NZ	CAR Part 21 Appendi	x A(c)
269C-1	Schweizer Aircraft Corporation	on 96/21B/15	25 January 1996
TC Change	Sikorsky Aircraft Corporation	16/21B/8	29 April 2016

## Appendix 2

3-View Drawing Schweizer RSG Model 269C

