
Type Acceptance Report

TAR 12/21B/22

Bell 214B/B-1

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Executive Summary

New Zealand Type Acceptance has been granted to the Bell 214B Series based on validation of FAA Type Certificate number H6SW. 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).

1. Introduction

This report details the basis on which Type Acceptance Certificate No. 12/21B/22 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.

2. ICAO Type Certificate Details

Manufacturer:	Bell Helicopter Textron, Inc.	
Type Certificate:	H6SW	
Issued by:	Federal Aviation Administration	
Model:	214B 214B-1	
MCTOW	13,800 lbs	214B
	12,500 lbs	214B-1
	16,000 lbs	214B, 214B-1 external cargo operations
Max. No. of Seats:	16	
Noise Standard:	Not Applicable	
Engine:	Honeywell (formerly Lycoming) T5508D	
	Type Certificate:	E4NE
	Issued by:	Federal Aviation Administration

3. Type Acceptance Details

The application for New Zealand type acceptance was from McDermott Supply Company, dated 1 May, 2012. The first-of-type example was serial no. 28036, registered ZK-HAU. The Model 214B is a large single-engined two-bladed main rotor helicopter with a conventional configuration using an anti-torque tail-rotor.

Type Acceptance Certificate No. 12/21B/22 was granted on 12 July 2012 to the Bell Model 214B/B-1 based on validation of FAA Type Certificate number H6SW, and includes the T5508D engine based on FAA Type Certificate number E4NE. There are no special requirements for import into New Zealand.

The Bell 214B BigLifter is the civil version of the Model 214A utility helicopter produced for the Iranian armed forces. It was developed from the UH-1 series helicopter by fitting a more powerful engine and new rotor system, specifically for lifting capability and hot-and-high performance. The 214B and 214B-1 are identical, differing only in MCTOW (intended to allow different FAA regulatory classifications), data-plate and flight manual.

The Honeywell T5508D engine is a free-turbine turboshaft engine composed of five major assemblies. It has a seven-stage axial and single-stage centrifugal compressor that is driven by a single-stage gas generator turbine. Gas flow is directed through a reverse flow annular combustor through the gas generator turbine and then through a two-stage power turbine. The T5508D engine is takeoff and maximum continuous rated at 2,250 shaft horsepower with a rated output speed of 14,750 rpm.

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) ICAO Type certificate:

FAA Type Certificate Number H6SW

FAA Type Certificate Data Sheet number H6SW at Revision 5 dated Oct 16, 2007

- Model 214B approved January 27, 1976

- Model 214B-1 approved February 3, 1976

FAA Type Certificate Data Sheet number E4NE at Revision 6 dated Feb 1, 2000

- Model T5508D approved September 16, 1975

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the Bell 214B is FAR Part 29 dated February 1, 1965 (Transport Category B), including Amendments 29-1 through 29-9 and 29-11. One special condition was applied. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41 and Advisory Circular 21-1A, as FAR 29 is the basic standard for Transport Category 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.

The certification basis of the T5508D is FAR Part 33 effective February 1, 1965, as amended by 33-1 through 33-4. This is the basic standard for aircraft engines called up under Part 21 Appendix C.

(ii) *Special Conditions:*

29-65-SW-5 – These establish an equivalent level of safety to FAR 29 for novel or unusual design features, and include; Means to determine available engine power prior to take-off; Low rotor speed warning; Induction icing system protection indication; Powerplant controls failure; and Operation without normal electrical power.

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Airworthiness Limitations:*

See Chapter 4 of the 214B Maintenance Manual

T5508D limits are listed in FAA-Approved Service Bulletin No. 5508D-0002.

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

N/A

(ii) *Compliance Listing:*

N/A

(4) Certification Compliance Listing:

Bell 214B – Bell Helicopter Textron letter 81:JJM:clb-1752 and Attachment 1.

T5508D – List of Reports submitted to FAA for certification T5508D – Email from Honeywell Airworthiness & Certification dated 6 July 2012.

(5) Flight Manual: FAA-Approved Rotorcraft Flight Manual for the Bell 214B
Document BHT-214B-FM-1 – CAA Accepted as AIR 3214

FAA-Approved Rotorcraft Flight Manual for the Bell 214B-1
Document BHT-214B1-FM-1 – CAA Accepted as AIR 3222

(6) Operating Data for Aircraft and Engine:

(i) *Maintenance Manual:*

Bell 214B Maintenance Manual BHT-214B-MM-1 *

Bell 214B Component Repair & Overhaul Manual BHT-214B-CR&O-1 *

T5508D Engine Operator Handbook T5508-1 **

T5508D Engine Maintenance Manual T5508-2 **

T5508D Engine Overhaul Manual T5508-3 **

(ii) *Current service Information:*

Bell 214B Alert Service Bulletins, Technical Bulletins, Service Installation Instructions, Operations Safety Notices, Information letters *

Honeywell T5508D Service Bulletins and Service Information Letters **

(iii) *Illustrated Parts Catalogue:*

Bell 214B Illustrated Parts Breakdown BHT-214B-IPB-1 *

T5508D Illustrated Parts Catalog T5508-4 **

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

* Provided by the manufacturer through access to their website

<http://www.bellhelicopter.net/>

** Provided by the manufacturer through access to their website

<https://myaerospace.honeywell.com/wps>

(8) Other information:

Nil.

5. Additional New Zealand Requirements

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 Appdx. B # .35	Not Applicable – Agricultural Aircraft only

Appendix E – Helicopters

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
E.1	Doors and Exits	FAR Part 29.783(c) and (e)
E.2.1	Emergency Exit Marking	FAR Part 29.809(c)

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	Fitted as standard – MM 25-7.
91.507	Pax Information Signs – Smoking, safety belts fastened	N/A – Has direct communication with cockpit (See Note 5 of TCDS for a limitation on any partitions or linings).
91.509 Min. VFR	(1) ASI (2) Machmeter (3) Altimeter (4) Magnetic Compass (5) Fuel Contents (6) Engine RPM (7) Oil Pressure	FAR §29.1303(a) N/A – No Mach limitations FAR §29.1303(b) FAR §29.1303(c) FAR §29.1305(a)(3) FAR §29.1305(a)(11) FAR §29.1205(a)(6)
91.511 Night	(1)Turn and Slip (2) Position Lights	Slip ball attached to AHI Fitted as Std. MM 96.273
91.513	VFR Communication Equipment	<i>To be determined on an individual aircraft basis (See Note 6 on TCDS for installation limitations)</i>
91.517 IFR	(1) Gyroscopic AH (2) Gyroscopic DI (3) Gyro Power Supply (4) Sensitive Altimeter	Not applicable – Not certificated for IFR flight
91.519	IFR Communication and Navigation Equipment	Not applicable – Not certificated for IFR flight
91.523 Emrgcy Eqpmt.	(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	<i>Operating Rule – Compliance to be determined by operator</i> <i>Operating Rule – Compliance to be determined by operator</i> Not applicable – less than 20 pax Not applicable – less than 61 pax
91.529	ELT - TSO C126 406 MHz after 22/11/2007	<i>To be determined on an individual aircraft basis</i>
91.531	Oxygen Indicators - Volume/Pressure/Delivery	<i>Operating Rule – Compliance to be determined by operator</i>
91.533 Unpress. A/c	>30 min above FL100 - Supplemental for crew, 10% Pax - Therapeutic for 3% of Pax Above FL100 - Supplemental for all Crew, Pax - Therapeutic for 1% of Pax - 120l PBE for each crew member	<i>Operating Rule – Compliance to be determined by operator</i> (Not fitted as standard)
91.541	SSR Transponder and Altitude Reporting Equipment	<i>Operating Rule – Compliance to be determined by operator</i>
91.543	Altitude Alerting Device - Turbojet or Turbofan	Not applicable – not turbojet or turbofan
91.545	Assigned Altitude Indicator	Not applicable – Aeroplanes only
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 – Shoulder harness flight-crew seats	Fitted as standard – MM 25-7.
135.357	Additional Instruments (Powerplant and Propeller)	FAR §29.1305
135.359	Night Flight	Landing light, Pax compartment
135.361	IFR Operations	Speed, Alt, spare bulbs/fuses
135.363	Emergency Equipment (Part 91.523 (a) and (b))	<i>Operating Rule – Compliance to be determined by operator</i>
135.367	Cockpit Voice Recorder	<i>Operating Rule – Compliance to be determined by operator</i>
135.369	Flight Data Recorder	<i>Operating Rule – Compliance to be determined by operator</i>
135.371	Additional Attitude Indicator	Not Applicable – Not turbo jet or turbofan powered

Attachments

The following documents form attachments to this report:

- Three-view drawing Bell Model 214B
- Copy of FAA Type Certificate Data Sheet Number H6SW

Sign off

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 Peter Gill
 Airworthiness Engineer

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 Checked – David Gill
 Team Leader Airworthiness

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
214B, 214B-1	McDermott Supply Company	12/21B/22	12 July 2012