
Type Acceptance Report

TAR 5/21B/5

Bell 205A-1

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Executive Summary

New Zealand Type Acceptance has been granted to the Bell 205A-1 based on validation of FAA Type Certificate number H1SW. There are no special requirements for import.

Applicability is currently limited to the Model 205A-1, which is now eligible for the issue of an Airworthiness Certificate in the Standard Category in accordance with CAR §21.191(1), 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 approved under this type certificate can become type accepted after supply of the applicable documentation, in accordance with the provisions of CAR §21.43(c).

1. Introduction

This report details the basis on which Type Acceptance Certificate No.5/21B/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(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. Foreign Type Certificate Details

Type Certificate: H1SW

Issued by: Federal Aviation Administration

Manufacturer: Bell Helicopter Textron, Inc.

Model: 205A-1

Engines: Lycoming T5313A or T5313B (Other engine models by STC)

MCTOW 9,500 lbs (10,500 lbs for external load operations)

Noise Category: Nil

The certification basis of the 205A-1 is: *CAR 7 dated August 1, 1956, Amendments 7-1 through 7-4, Category B, and Special Conditions for Turbine Powered Rotorcraft dated June 16, 1961, and amended June 21, 1967. No exemptions.*

This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41, as CAR 7 is the predecessor to and equivalent of FAR 29 which is the basic

airworthiness standard for Standard Category Airplanes 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.

3. Type Acceptance Application

The application for New Zealand type acceptance was from Pacific Air Harvest (Fiji) Ltd (client no 64379) dated 9/8/04. Pacific Air Harvest (Fiji) Ltd intend to register and operate Bell 205A-1 serial number 30109 (ZK-IAJ) and this will be considered the first-of-type example. This aircraft has the T5317A engine model installed under an STC approval.

Type Acceptance Certificate No.5/21B/5 was granted on 15 September 2004 to the Bell Model 205A-1 based on validation of FAA Type Certificate H1SW. There are no special requirements for import into New Zealand.

There have been two Bell 205 series aircraft in New Zealand previously. Bell 205 serial number 30007 was registered as ZK-HCO on 27/8/68 before export to the USA in 1969. Bell 205A-1 serial number 30091 was registered as ZK-HUE on 22/12/83, and exported to Australia in 1986. As there were no examples of the type registered in 1995 the type was not deemed to be type accepted at the time of the introduction of CAR Part 21.

The Bell 204/205 series of transport helicopters are civil certificated models of the ubiquitous UH-1 “Huey” military transport helicopter. The 204B model is equivalent to the UH-1B while the 205 series are equivalent to the lengthened fuselage UH-1D/H series. The 205A-1 differs from the 205A in having a different engine model and the rotor drive system is modified for high take-off and maximum continuous power ratings.

4. Type Data

The type data requirements of NZCAR Part 21B Para §21.43 have been satisfied by supply of the following documents:

- (1) Type certificate: H1SW (Already held by the CAA.)
- (2) Airworthiness design requirements: CAR 7 - Already held by the CAA
- (3) Certification compliance listing:

Bell has supplied a list of certification reports. These Reports cover both the 205A and 205A-1 as earlier reports remain valid in a number of areas. The CAA already held copies of the following reports:

205-099-203	Fatigue life substantiation of dynamic components 205A
205-099-280	Flight test report for FAA certification 205A-1 (Vol II)
205-099-282	FAA certification 205A-1 with T5313A engine
205-099-598	Electrical load analysis
205-099-253	Operational proof load test – flight controls – 205A
205-099-192	Structural analysis of fuselage – 205A (Vol’s II & III)
205-099-190	Basic structural design criteria – 205A

- (4) Flight manual: 205A-1 Airplane Flight Manual BHT 205A-1-FM-2
CAA Accepted as AIR 2218
- (5) Illustrated Parts Catalogue: 205A1-IPB-1
IPB for T5313B & T5317 Report 330.4
- (6) Maintenance manual and service data for aircraft, engine and propeller:
205A-1-MM-1
205A1-CR&O-1
MM for T5313B/T5317 Report 330.2
- (7) Agreement from manufacturer to supply updates of data in (4), (5) and (6):
Email agreement dated 4/9/04 from Wayne Barbini, Head of Civil Certification for Bell helicopter Textron. CAA 2171 form awaiting clearance by Bell Contracts and Legal departments.

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 assessed for each example.</i>
B.2	Crew Protection Requirements - CAM 8 Appdx. B # .35	Agricultural Aircraft – <i>Not Applicable</i>

Appendix E - Helicopters

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
E.1	Doors and Exits	CAR 7.354(c) and (e), 7.357(d)(2)
E.2.1	Emergency Exit Marking	CAR 7.357(e)(1)

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	Shoulder Harness if Aerobatic; >10 pax; Flight Training	CAR 7.605(b)
91.507	Pax Information Signs - Smoking, safety belts fastened	<i>Operational Requirement – Compliance as applicable</i>
91.509 Min. VFR	(1) ASI (2) Machmeter (3) Altimeter (4) Magnetic Compass (5) Fuel Contents (6) Engine RPM (7) Oil Pressure	CAR 7.603(a) N/A – No Mach limitations CAR 7.603(b) CAR 7.603(h) CAR 7.437 CAR 7.604(n) CAR 7.604(h)
91.511 Night	(1) Turn and Slip (2) Position Lights	(3) Anti-collision Lights (4) Instrument Lighting CAR 7.637 CAR 7.630

91.513	VFR Communication Equipment		Operational Requirement – Compliance as applicable
91.517 IFR	(1) Gyroscopic AH (2) Gyroscopic DI (3) Gyro Power Supply (4) Sensitive Altimeter	CAR 7.603(e) CAR 7.603(g) Operational Requirement CAR 7.603(b)	(5) OAT (6) Time in hr/min/sec (7) ASI/Heated Pitot (8) Rate of Climb/Descent Operational Requirement CAR 7.603(i)
91.519	IFR Communication and Navigation Equipment		Operational Requirement – Compliance as applicable
91.523 Emrgcy Eqpmt.	(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 (c) More than 61 pax - Portable Megaphones per Table 9		Operational Requirement – Compliance as applicable Operational Requirement – Compliance as applicable <i>N/A – Max passenger number is 12.</i> <i>N/A – Max passenger number is 12.</i>
91.529	ELT – TSO C91a after 1/4/97 (or replacement)		To be determined on an individual aircraft basis
91.531	Oxygen Indicators - Volume/Pressure/Delivery		Operational Requirement – Compliance as applicable
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		Operational Requirement – Compliance as applicable
91.541	SSR Transponder and Altitude Reporting Equipment		Operational Requirement – Compliance as applicable
91.543	Altitude Alerting Device - Turbojet or Turbofan		Not Applicable – Requirement for aeroplanes only
91.545	Assigned Altitude Indicator		Not Applicable – Requirement for aeroplanes only
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 for flight-crew seats	Shoulder harness fitted as standard – See MM 25-7.
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 Operational Requirement – Compliance as applicable
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 Applicable as minimum crew is 2 and certificated seating capacity is 14.
135.369	Flight Data Recorder	Operational Requirement – Compliance as applicable Applicable as maximum passengers (excluding crew) is 12
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 helicopter Textron Model 205A-1
Copy of FAA Type Certificate Data Sheet Number H1SW

Sign off

Peter Gill
Airworthiness Engineer

Date: 15 September 2004

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
205A-1	Pacific Air harvest (Fiji) Ltd	5/21B/5	15 September 2004