
Type Acceptance Report

TAR 5/21B/32 – Revision 3

Beech 65 Series

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Executive Summary

New Zealand Type Acceptance has been granted to the Beech Models 65 Queen Air and 65-90 King Air Series based on validation of FAA Type Certificate number 3A20. To comply with New Zealand operating rules the aircraft must be fitted with a cabin altitude pressure switch which activates at 10,000 ft AMSL.

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 §21.177, 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(2).

1. Introduction

This report details the basis on which Type Acceptance Certificate No. 5/21B/32 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 also notes the status of all models included under the foreign type certificate which have been granted type acceptance in New Zealand. Models covered by the type acceptance certificate issued under Part 21B are listed in Section 2 of this report. Models which were accepted prior to that under NZCAR Section B.9 are listed in Appendix 1.

2. ICAO Type Certificate Details

Manufacturer: Hawker Beechcraft Corporation
(effective 26/03/07, serial numbers LJ-1827 and subsequent)
Raytheon Aircraft Company
(effective 15/4/96, serial numbers LJ-1437 through LJ-1826)
Beech Aircraft Corporation

Type Certificate: 3A20
Issued by: Federal Aviation Administration

MODEL: C90A

MCTOW 9650 lb. (s/n LJ-1063 thru LJ-1137 and LJ-1146)
10100 lb. (s/n LJ-1138 thru LJ-1755, except LJ-1146, and C90GT development aircraft LJ-1727 and LJ-1754)

Max. No. of Seats: 13

Noise Standard: FAR Part 36 through Amendment 36-10

Engine: Pratt & Whitney Canada PT6A-21
Type Certificate: E-6
Issued by: Transport Canada

Propeller: Hartzell HC-B3TN-2(B)/T10173B-8 (LJ-1063 thru LJ-1299)
Hartzell HC-B3TN-3()/T10173()K-8 (reversing propeller)
Type Certificate: P15EA
Issued by: Federal Aviation Administration

McCauley 4HFR34C768/94LMA-4 (s/n LJ-1300 and up)
Type Certificate: P10NE
Issued by: Federal Aviation Administration

MODEL: 65

MCTOW 7700 lb. [3492 kg.]
7900 lb. [3583 kg.] – STC SA444SW Rev.10 for 80” dia. prop.
8000 lb. [3628 kg.] – STC SA444SW Rev.17 for 82” dia. prop.

Max. No. of Seats: 9

Noise Standard: Not Applicable

Engine: Lycoming IGSO-480-A1A6 or –A1B6 or –A1E6
Type Certificate: E-284
Issued by: Federal Aviation Administration

Lycoming IO-720-A1A or A1B [with STC Number SA444SW]
Type Certificate: 1E15
Issued by: Federal Aviation Administration

Propeller: HC-93Z20-2C1 or HC-B3Z20-2A with 10151-8R or 10151B-8R
Type Certificate: P-891
Issued by: Federal Aviation Administration

Hartzell HC-A3VK-2A/V8433-2R [with STC No. SA444SW]
Type Certificate: P6EA
Issued by: Federal Aviation Administration

MODEL: C90GT, C90GTi

MCTOW 10100 lb.
10545 lb. (with STC SA10747SC)

Max. No. of Seats: 13

Noise Standard: FAR Part 36 through Amendment 36-25 or 36-28

Engine: Pratt & Whitney Canada PT6A-135A
Type Certificate: E-15
Issued by: Transport Canada

Propeller: Hartzell HC-E4N-3N/D8990SK
Type Certificate: P10NE
Issued by: Federal Aviation Administration

3. Type Acceptance Certificate

The application for New Zealand type acceptance of the Model C90A was from Air Wanganui Commuter Ltd, dated 26 April 2005. The first-of-type example was a C90SE serial number LJ-1367, to be registered ZK-MKG. The King Air is an all-metal low wing pressurised executive aircraft typically configured with 6-8 seats, equipped with two 550 hp reverse-flow free-turbine engines, and approved for IFR flight into known icing conditions when suitably equipped. (There had been two previous examples of the original short-fuselage King Air on the New Zealand Civil Aircraft Register in the early 1980s. One was a Model C90 serial no. LJ-525 registered ZK-UPA and the other was the similar E90 serial no. LW-318 registered ZK-RIL. None had airworthiness certificates valid on 1 July 1995 so the Transitional Arrangements of Appendix A para (c) did not apply.)

Type Acceptance Certificate Number 5/21B/32 was granted on 21 June 2005 to the Model C90A based on validation of FAA Type Certificate 3A20. Specific applicability is limited to the coverage provided by the operating documentation supplied, in this case the Flight Manual. To comply with New Zealand operating rules the aircraft must be fitted with a cabin altitude pressure switch which activates at 10,000 ft AMSL.

This report was raised to Revision 1 to include the application for type acceptance of the Model 65 Queen Air from the Tongan operator, Peau Vava'u Ltd dated 28 July 2006, under CAA Work Request number 7/21B/5. The first-of-type example was serial number LC-168, registered A3-FEW. It is an Excalibur conversion (STC SA444SW), which was included in the type acceptance because it uses a separate Flight Manual. The Queen Air is a twin piston-engined 7-passenger all-metal utility or business aircraft. Type Acceptance was granted on 12 September 2006. There are no special requirements for import.

Revision 2 to this report was added to include an earlier C90A serial number range. The applicant was the importer, and the First-of-Type example was serial number LJ-1127 registered ZK-SNM. Type acceptance was granted on 10 February 2010.

This report was raised to Revision 3 to add the latest two production versions, the C90GT and the C90GTi. The application was from the manufacturer, and the first-of-type was serial number LJ-1985 registered ZK-MMM. Type acceptance was granted on 9 July 2010.

The Model 65, first flown on August 28 1958, combined the wings, undercarriage, engines and tail surfaces of the Model E50 Twin Bonanza with a new and substantially larger fuselage. Many variants subsequently followed, including the 3630kg (8000lb) max takeoff weight Model 80 with more powerful 285kW (380hp) engines and swept fin and rudder. This evolved into the A80 in 1964, which had a redesigned nose and interior, increased wing span and a 227kg (500lb) greater takeoff weight. The pressurised 88 had round windows and the longer wingspan of the A80 and a 3992kg (8800lb) MTOW. The Model B80 was the last major production model and appeared in 1966. It featured the longer span wing and the 88's MTOW. The Model 70 entered production in 1969 with the longer span wings, 8200lb MTOW and 340hp engines. Production of the Queen Air ceased in 1977.

The Excalibur conversion, which was originally developed by the Swearingen Company, involves the substitution of Lycoming 400 hp IO-720 8-cylinder engines in new low-drag nacelles with fully enclosed wheel-well doors. Increased weights are also available. The

current STC holder is Bemidji Aviation Services, Inc. There have been previous examples of later Beech Queen Air models in New Zealand, the 65-A80-880 (ZK-TIK) and 65-B80 (ZK-CIA, PHA, SFC and TAK), several of which were also Excalibur conversions.

The first Model 65-90 King Air was a major development of the original Model 65 Queen Air, initially for the US Army, by the addition of PT6A-6 turboprop engines and for the civil version a new circular pressurised fuselage. There have been a range of civil (and military) derivatives with a succession of detail improvements over the years, as follows:

Model 65-90 – Original production version 1964: S/N LJ-1 thru LJ-113

Model 65-A90 – Increased weight with PT6A-20 derated to 500hp: S/N LJ-114 thru LJ317

Model B90 – Higher weight again and increased wingspan: S/N LJ318 thru LJ501

Model C90 – Developed version in 1970 with Model 100 systems: S/N LJ502 thru LJ667
– PT6A-21 engine introduced: S/N LJ668 thru LJ1010

* Model C90-1 – Increased cabin pressure differential: S/N LJ1011 thru LJ1062

Model C90A – Various improvements and increased MCTOW: S/N LJ1063 thru LJ1299

* Model C90SE – Various S/N in the range LJ1367 thru LJ-1538

* Model C90B – Cabin anti-vibration systems, 4-blade propellers: S/N LJ1300 on

* Note: These are commercial designations only.

The most obvious C90A change was the use of “pitot” engine cowlings, which are smaller but give much higher ram intake effect. The C90SE was an economy version introduced alongside the Model C90B, which retained C90A standard instrumentation without EFIS, 3-bladed (though still reversible) propellers and a simplified interior fit.

The C90GT superseded the C90A in full-rate production from LJ-1756 onwards. It differs only by installation of more powerful 750 shp PT6A-135A engines flat-rated to the same 550 shp at 1900 RPM, equipped with 90” diameter 4-bladed Hartzell propellers with shot-peened blades. The primary benefit of this propulsion change is increased cruise speed at altitude. The C90GTi is the same except for an avionics upgrade using the Rockwell Collins Proline 21 system, including file server with TAWS+. This became the standard production model from LJ-1853 and on, after two development aircraft. The latest version, marketed as the C90GTx (LJ-1977 and on), incorporates during production two Hawker Beechcraft STCs, numbers SA10747SC (Gross Weight Increase) and SA10969SC (WAAS/LPV), plus Boundary Layer Research STC SA02054SE (winglets).

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) Type certificate:

FAA Type Certificate Number 3A20

FAA Type Certificate Data Sheet no.3A20 at Revision 69 dated July 8, 2009

- Model 65 approved February 4, 1959
- Model 65-B80 approved October 22, 1965
- Model C90A approved December 1, 1983
- Model C90GT approved December 16, 2005
- Model C90GTi approved December 13, 2007

FAA STC Number SA444SW re-issued February 11, 1999

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the Model 65 Queen Air was CAR 3 of May 15, 1956, with Amendments 3-1, 3-2 and 3-8. This was updated with successive variants as noted on the TCDS. For the (65-)90 King Air Series this became CAR 3 of 15 May 1956, including Amendments up to 3-6, plus the Special Conditions outlined in three letters from the FAA to Beech in 1963. Additional FAR 23 paragraphs and Special Conditions were also applied, depending on the particular King Air variant. For the Model C90A, which was the latest version when type acceptance was applied for, compliance was shown with further FAR 23 paragraphs and one paragraph of FAR 25. The certification basis was unchanged for the C90GT, except that a couple of paragraphs were voluntarily updated. For the C90GTi some later paragraphs covering EFIS were added, with the usual Special Conditions for HIRF.

This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41 and Advisory Circular 21-1A, because CAR 3/FAR 23 is the basic standard for Normal Category Airplanes 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:*

FAA Letter to Beech dated January 21, 1963 – Airframe and Equipment Section's Special Conditions for Beech Model 65-90T

FAA Letter to Beech dated Feb 15, 1963 – Special Flight Conditions for 65-90T

FAA Letter to Beech dated Feb 27, 1963 – Turbine Powerplant Special Conditions

FAA Letter to Beech dated May 5, 1965 – Special Conditions for Propeller Reversing System and Reverse Thrust Lock/Stop for Model 65-90 (and subsequent)

23-108-SC (C90GTi) Protection of Systems for High Intensity Radiated Fields (HIRF) – Critical functions must not be affected when exposed to the defined HIRF environment.

(iii) *Equivalent Level of Safety Findings:*

ACE 07-06 (C90GTi) Installing Electronic Engine Indicating Systems (EIS) – FAR §23.1305 and §23.1549 – In lieu of round dial analog cockpit instruments Proline 21 uses digital only presentation of engine parameters that require an indicator. This was accepted on the basis the required trend or rate-of-change information is indicated by a colour change of the digital display, and that visibility, relative locations, and lighting aspects were verified as acceptable by flight test.

(iv) *Airworthiness Limitations:*

See TCDS Note 3, and Airworthiness Limitations Section of Maintenance Manual.
Note: C90 wing structural life limit reduced when STC SA02045SE is fitted.

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

The Model C90A has been certificated under SFAR 27, including Amendments through 27-4, and FAR Part 36, including Amendments through 36-10. For the C90GT and C90GTi this was updated to FAR 34 at Amendment 34-3 and FAR 36 at Amendment 36-25 (C90GT) and 36-28 (C90GTi).

(ii) *Compliance Listing:*

Engineering Structural Dynamics Report No. 90E1114 DA – Flyover Noise Certification of the Models C90 and E90 with a Three Blade T10173B-8 or T10173E-8 Hartzell Propeller at Maximum Continuous Power.
C90 (@ 9650 lb.) flyover noise level established in compliance with FAR 36 is 74.3 dB(A)

Engineering Acoustics Report 90E260334 – Takeoff Noise Certification C90GT
The average take-off noise level for the test aircraft in C90GT configuration at the ground level was 75.99 ± 0.44 dBA with 90% confidence.

(4) Certification compliance listing:

Excel file of Beech Model 65 Reports and Drawings supplied by Raytheon

Type Inspection Report – Beech Model 65-B80 (Microfiche)

68-54 – General Summary Structural Data Report for Export of Models B90 & C90

68-957 – Flutter and Divergence Clearance Report for the Model 65-90 Series

68-1606 – Cyclic Pressure and Ultimate Pressure Tests of Model 65-90 Fuselage

TIR 65-94 – Ground and Flight Inspection Report – Model 65-C90 with Installation of UACL PT6A-21 engine per 90-91005-3

Swearingen Aircraft Report 2801-DL Revision S dated 4-9-72 – Drawing List
Installation of IO-720-A1A/B Engines in Beech Model 65, A65, 65-80, 65-B80, 70

Excalibur Aviation Company – Report #2801-65-88 – Special Instructions
Applicable to Beech Model 65-88 Modified In Accordance With STC #SA444SW

Nayak Aviation Corporation – FAA Type Certificate Report Involving the Beech 65-B80 with IO-720-A1A Engines and Beech Extended Wings – June 26, 1972

RAC Engineering Report 90E235887 – Certification Plan Model C90GT

RAC Report 90E243021 – C90GT Certification Compliance Summary Report

HB Cert. Plan 90E295169 – C90GTi Avionics Upgrade – Proline 21 STC In-Draw

HB Eng. Report 90E301629 – C90GTi EMC, Lightning and HIRF Compliance

HB Engineering Report 90E301632 – C90GTi Structural Compliance Report
HB Engineering Compliance Report 90E305684 – C90GTi Weight and Balance
HB Engineering Report 90E305836 – Avionics/Software Compliance for C90GTi
HB Engineering Report 90E305837 – C90GTi Electrical Compliance Report
HB Engineering Report 90E305949 – C90GTi Cockpit Compliance Report
HB Engineering Report 90E305950 – C90GTi Mechanical System Compliance
HB Report 90E305960 – C90GTi Type Design Compliance – STC Direct In-Draw
HB Report 90E305961 – C90GTi Type Design Compliance – Production Mod.s

(5) Flight manual:

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual –
Beechcraft King Air C90SE (Model C90A) Specified Serial numbers LJ-1367 and
after – P/N 90-590024-61B – CAA Accepted as AIR 2921

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual –
Beechcraft King Air C90B (Model C90A) Serials LJ-1353 and after (except those
covered by -61B above) – P/N 90-590024-69B – CAA Accepted as AIR 2922

FAA Approved Airplane Flight Manual – Model 65 Landplane P/N 65-001021-35
CAA Accepted as AIR 2975

FAA Approved Flight Manual for Beech Model 65 Modified In Accordance With
STC SA444SW for Maximum Takeoff Gross Weight of 8000 Lbs. – Report No.
2801-R9 – CAA Accepted as AIR 2976

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual –
Beechcraft King Air C90A (Serials LJ-1063 thru LJ-1137 and LJ-1146) –
P/N 90-590024-5 – CAA Accepted as AIR 3119

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual – Hawker
Beechcraft King Air C90GT (Serials LJ-1727, LJ-1754, LJ-1756 thru LJ-1846 and
LJ-1848 thru LJ-1852) – P/N 90-590024-111 – CAA Accepted as AIR 3131

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual – Hawker
Beechcraft King Air C90GTi (Serials LJ-1847, and LJ-1853 and after)
P/N 90-590024-163 – CAA Accepted as AIR 3132

Pilot's Operating Handbook and FAA Approved Airplane Flight Manual – Hawker
Beechcraft King Air C90GTx (C90GTi) (Serials LJ-1977 and after)
P/N 90-590024-217 – CAA Accepted as AIR 3134

(6) Operating Data for Aircraft, Engine and Propeller:

(i) *Maintenance Manual:*

Maintenance Manual King Air Model 90 (/B/C/E) Series – P/N 90-590012-13 *

Structural Inspection and Repair Manual – Part Number 98-39006 *

Wiring Diagram Manual C90 (LJ-1063 and After) – Part Number 90-590024-11 *

Component Maintenance Manual – Part Number 101-59097-13 *

Printed Circuit Board Manual – King Air and 1900 Airline Series – P/N 98-39117 *

* Contained on REPS Maintenance Library – King Air 90 Series

C90GTi Avionics Wiring Diagram Manual – Part Number 90-590024-175

Shop Manual Model Queen Air 65/70/80 Series – Part Number 65-590010-5C
Queen Air 65/70/80 – Continuous Inspection Procedures Manual P/N 96-35313D

(ii) *Current service Information:*

Hawker Beechcraft On-Line Service Information OSI-B (90 Series)

(iii) *Illustrated Parts Catalogue:*

IPC (C90/E90 Series) – Part Number 90-590012-17

IPC (Model 65 through A80) – Part Number 65-590010-3D

IPC (C90GTi) – Part Number 90-590024-173

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

See letter from Raytheon Director Airworthiness and Certification dated 7-6-05

(8) Other information:

Beech Engineering Report No. 90E1750 – Electrical Load Analysis for LJ-1353

Beech 65 Queen Air Owner's Manual (LC-163 thru LC-239) – P/N 65-001021-33

HB Eng. Report 90E261244 – C90GT Electrical Load and Power Source Capacity

HB Eng. Report 90E301636 – C90GTi Electrical Load and Power Source Capacity

Beechcraft King Air C90GT Specification and Description – 892-33923 Oct 06

Beechcraft King Air C90GT 2007 Optional Equipment

Beechcraft King Air C90GT 2007 Standard Equipment

Beechcraft King Air C90GTi Specification and Description – 892-34966-2 Sept 09

Beechcraft King Air C90GTi Optional Equipment Description 2009 Model and on

Beechcraft King Air C90GTi 2008 to 2009 Standard Equipment Changes List

Beechcraft King Air C90GTx Specification and Description – 892-34967-1 Sept 09

Beechcraft King Air C90GTx Optional Equipment Description (LJ-1977 thru 2008)

Beechcraft King Air C90GTx Standard Equipment List (LJ-2044 and on)

5. Additional New Zealand Requirements

Compliance with the retrospective airworthiness requirements of NZCAR Part 26 is a prerequisite for the grant of a type acceptance 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 NOTE: External exit markings are NOT fitted as standard on the King Air C90GT Series.	<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 C – Air Transport Aircraft – More than 9 Pax

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
C.1	Doors and Exits	CAR 3 paragraph §3.387(a); A warning light illuminates if the door lock is not fully engaged
C.2.1	Additional Emergency Exits - per FAR 23.807(b) @ 10.5.93	CAR 3 paragraphs §3.387(a) and (b)(1)
C.2.2	Emergency Exit Evacuation Equipment – Descent means	Not Applicable – exit less than six feet from the ground
C.2.3	Emergency Exit Interior Marking - Size/self-illuminating	<i>To be determined if used for Air Transport operations</i>
C.3.1	Landing Gear Aural Warning - Automatic Flap Linking	CAR 3 paragraph §3.359

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 (for the King Air C90A):

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	<i>Operational requirement – Compliance as applicable</i>
91.507	Pax Information Signs - Smoking, safety belts fastened	Fitted as Standard (cockpit has direct comm.s with cabin)
91.509 Min. VFR	(1) ASI (2) Machmeter (3) Altimeter (4) Magnetic Compass (5) Fuel Contents (6) Engine RPM (7) Oil Pressure	CAR §3.655(a)(1) * N/A CAR §3.655(a)(2) * CAR §3.655(a)(3) * CAR §3.655(b)(1)(i) * CAR §3.655(b)(1)(v) * CAR §3.655(b)(1)(ii) *
91.511 Night	(1) Turn and Slip (2) Position Lights	(8) Coolant Temp (9) Oil Temperature (10) Manifold Pressure (11) Cylinder Head Temp. (12) Flap Position (13) U/c Position (14) Ammeter/Voltmeter
91.517 IFR	(1) Gyroscopic AH (2) Gyroscopic DI (3) Gyro Power Supply (4) Sensitive Altimeter	N/A – Turbine engine CAR §3.655(b)(1)(iii) * N/A – Turbine Engine N/A – Turbine Engine Combined selector/indicator * Fitted as standard equipment * Fitted as standard equipment
91.519	IFR Communication and Navigation Equipment	(3) Anti-collision Lights (4) Instrument Lighting
		CAR 3 paragraph §3.705 CAR 3 paragraph §3.696
		Fitted as standard equipment Fitted as standard equipment Fitted as standard equipment Fitted as standard equipment
		<i>Operational requirement – Compliance as applicable</i> Standard fit is Dual KY-196A Comm and KN-53 Nav *
		* Fitted as Standard – See Types of Operation Equipment List – Section 2 Limitations in Flight Manual
		⌘ See King Air C90SE Price List – Standard Bendix/King Package with CNI-5000 System and KFC-250 FCS
		See King Air POH Section 7 Systems Description for details of standard equipment fit and Typical Instrument Panel
		C90GT Specification includes dual Collins VHF-22C and VIR-32, with single ADF-60, DME-42 and Garmin GPS-400
		C90GTi with Collins Proline 21 avionics includes dual VHF-4000 and NAV-4000, with single DME-4000 and GPS-4000S
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	(5) OAT (6) Time in hr/min/sec (7) ASI/Heated Pitot (8) Rate of Climb/Descent
91.529	ELT - TSO C91a or C126 after 1/4/97 (or replacement)	Fitted as standard equipment Fitted as standard equipment Fitted as standard equipment
		<i>To be determined on an individual aircraft basis if used on Air Transport operations</i> Not Applicable – Less than 20 passenger seats Not Applicable – Less than 61 passenger seats
		<i>Operational requirement – Compliance as applicable</i>

91.531	Oxygen Indicators – Amount available and delivery	Oxygen capacity/pressure gauge is fitted in the cockpit.
	CAR §91.531(1)(ii) NON COMPLIANCE – On some Model C90A/GT Series aircraft the cabin pressure altitude warning annunciator illuminates when the cabin pressure altitude exceeds 12,500 ft. (See King Air 90 Series MM Table 201 for serial number effectivity of different switch part numbers.) The C90GTi model is designed to operate up to 30,000 feet, which at a pressure differential of 5.0 psi means a cabin altitude of 11,950 feet. To meet NZ operating requirements an alternate cabin altitude switch which activates at 10,000 ±500 feet can be installed per Hawker Beechcraft Kit and Drawing Number 90-3601 Rev.1. This calls up a Flight Manual Supplement which limits maximum operating altitude to 25,000 ft. (At which point the cabin altitude would be 9125 feet.)	
91.535	Oxygen for Pressurised Aircraft (1) Flight Crew Member On-Demand Mask; 15 min PBE (2) 1 Set of Portable 15 min PBE (3) Crew Member - Pax Oxygen Mask; Portable PBE 1201 (4) Spare Oxygen Masks/PBE (5) Min Quantity Supplement Oxygen (6) Required Supplemental/Therapeutic Oxygen Above FL250 – Quick-Donning Crew On-Demand Mask, Supplemental O ₂ Masks for all Pax/Crew, and in toilet (e) Operation at altitudes above 30,000 feet AMSL	Fitted as standard (BE Aerospace P/N 174250-92 on C90GT) N/A – No flight attendant carried. Oxygen system with 22 cu. ft. bottle is standard equipment. It is of the constant-flow type with individual passenger masks, which are stowed in underseat drawers. Two quad-outlets are in recessed ceiling panels. There is an outlet in the rear compartment/lavatory. Masks have built-in flow indicators. Quick-donning masks are provided for the pilots. Not Applicable – Maximum Operating Altitude is 30,000 ft.
	CAR §91.535(a)(4) Based on flow rate of 3.7 l/min and calculation of oxygen duration per Section 4 of the AFM, minimum quantity to meet 45 min. supply for two pilots and 12 min. supply for 6 passenger = 2x2x45x3.7 + 6x12x3.7 = 932 litres. Therefore aircraft MUST be equipped with a minimum size oxygen bottle of 33 cu.ft. (Optional sizes are 49 and 66 cu.ft)	
91.541	SSR Transponder and Altitude Reporting Equipment	Operational requirement – Compliance as applicable (C90SE Standard Package includes Dual KT-70 Mode S Tx); (C90GT/i includes dual TDR-94D as standard)
91.543	Altitude Alerting Device - Turbojet or Turbofan	Not Applicable – Not turbo jet or turbofan powered
91.545	Assigned Altitude Indicator	Operational requirement – Compliance as applicable
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 and Restraints – Shoulder harness flight-crew seats	Fitted as standard equipment on Model C90A
135.357	Additional Instruments (Powerplant and Propeller)	Model C90A has all the instruments required by FAR 23
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))	
135.367	Cockpit Voice Recorder	N/A – Only for 2-crew helicopters with more than 10 pax (Loral/Fairchild A100S part of C90SE Standard Avionics)
135.369	Flight Data Recorder	Not Applicable – Less than 10 passenger seats configuration
135.371	Additional Attitude Indicator	Not Applicable – Not turbo jet or turbofan powered

Attachments

The following documents form attachments to this report:

- Photographs first-of-type example C90SE s/n LJ-1367 ZK-MKG
- Photographs first-of-type example C90GTx s/n LJ-1985 ZK-MMM
- Three-view drawing Beechcraft Model 65 Queen Air
- Three-view drawing Beechcraft Model C90A King Air
- Copy of FAA Type Certificate Data Sheet Number 3A20

Sign off

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David Gill
Team Leader Airworthiness

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Checked – Peter Gill
Airworthiness Engineer

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
65-B80 (s/n LD270-511)	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
C90A (s/n LJ1353-1755)	Air Wanganui Commuter Ltd	5/21B/32	21 June 2005
65 (includes Model 65 and 65-B80 with STC SA444SW embodied)	Peau Vava'u Ltd	7/21B/4	12 September 2006
C90A (s/n LJ1063-1137)	Hawk Enterprises Ltd	10/21B/13	10 February 2010
C90GT, C90GTi	Hawker Beechcraft Corporation	10/21B/22	9 July 2010