
Type Acceptance Report

TAR 95/07

Beech A60 Duke

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Introduction

This report details the basis on which Type Acceptance Certificate No.95/07 was issued in accordance with NZCAR Part 21B.

Specifically the report aims to:

- (a) Record the airworthiness certification standard used for type acceptance of the applicable model(s) in New Zealand;
- (b) Summarise any outstanding requirements which must be complied with for the issue of a NZ Airworthiness Certificate to any models covered by the Type Acceptance Certificate.

Foreign Type Certificate Details

Type Certificate: A12CE
Issued by: FAA
Manufacturer: Beech Aircraft Corporation
Model: A60 Duke
Engines: Lycoming TIO-541-E1A4 or -E1C4
Propellers: Hartzell HC-F3YR-2 (various alternatives)
MCTOW 6775 lb

The certification basis of the A60 Duke is: FAR Part 23 effective Feb 1 1965, as amended by 23-1, 23-1, 23-3, and paragraph 23.959 of amendment 23-7, paras 23.1385(c), 23.1387(a), 23.1387(e) of amendment 23-12; FAR Part 36 as amended by 36-1 through 36-10, and special conditions dated May 16 1967. (See TCDS for additional details and list of equivalent safety findings).

This is an acceptable certification basis in accordance with NZCAR Part 21B Para 21.41, as FAR 23 is the basic standard for Standard Category Airplanes called up under Appendix C. There are no non-compliances and no special conditions have been prescribed by the Director under 21.23.

NOTE: A Beech Duke has been on the NZ register in the past. However no Beech 60 models were listed in AC 21-01 Appendix 6 as being deemed type accepted, principally as up-to-date manuals were not held. Therefore a type acceptance exercise was required, but abbreviated and no additional type design data was required.

Type Acceptance Application

The application for New Zealand type acceptance was from Mr F P Radisich by CAA Form 24021/02 dated 31/10/95.

Type Acceptance Certificate No.95/07 was granted on 19/12/95.

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: A12CE already held
- (2) Airworthiness design requirements: FAR 23 already held
- (3) Certification compliance listing: Type data already held was reviewed and found to satisfy 21.43(3).
- (4) Flight manual: A60 Duke Airplane Flight Manual
p/n 60-590000-5E CAA Approved as AIR 2545
- (5) Illustrated Parts Catalogue: Beech 60, A60 Illustrated parts catalogue p/n
60-5900001-1D3
- (6) Maintenance manual and service data for aircraft, engine and propeller:
Beech 60, A60, B60 Maintenance Manual
p/n 60-5900001-25A18
Manuals on engine and prop already held.
- (7) Agreement from manufacturer to supply updates of data in (4), (5) and (6):
CAA 2171 form still to come.

Additional New Zealand Certification requirements

Compliance with the following additional NZ requirements has been reviewed and were found to be covered by either the original certification requirements or the basic build standard of the aircraft, as noted:

NZCAR Section C4

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
2.13(a)	ASI shall be marked in knots	Basic build standard
2.1.3(b)	Altimeter main scale to be calibrated in feet	Basic build standard
3.1	Seats, Safety Belts and Harnesses	Basic FAR 23 certification

CASO 4

The A60 Duke is classified as a Group C aeroplane under CASO 4.

(FAA Approved flight manual, Section IV FAA Performance gives: At MAUW of 6775 lb and at Sea Level in ISA conditions, rate of climb = 300 ft/min. Section III Emergency Procedures states “the airplane can be safely manoeuvred or trimmed for normal hands off operation and sustained in this configuration as long as sufficient airspeed is maintained”).

However the performance charts required for Group C aircraft (Take-off, landing and single engine en-route) have not been supplied by the applicant or produced by the CAA. Any Beech Duke therefore will not be eligible for Air Transport operation until these charts have been prepared and approved.

CASO 11

Compliance with CASO 11 is detailed below:

Para 6.2.3 FLIGHTS ABOVE 10,000 ft AND UP TO 25,000 ft PRESSURE ALTITUDE

6.2.3.1 Scott 283 continuous-flow type masks provided for each pilot, fed through a demand regulator in the cockpit from an oxygen cylinder in the aircraft's nose. Portable oxygen is not required under the exemption provisions of para (d). High cabin altitude warning provided on central warning panel.

6.2.3.2 Not applicable

6.2.3.3 Oxygen outlet provided for each passenger seat. Fed from same oxygen cylinder as crew and controlled through the same regulator. A variety of cylinder capacities are available and it is therefore up to the aircraft operator to ensure he has sufficient for the number of passengers on board.

NOTE: The Duke flight manual altitude limitation is 30,000 ft. However, above 25,000 ft NZCAR C.4 requires a counter/pointer or drum/pointer altimeter at the pilot's station, and CASO 11 requires demand oxygen equipment at the flight station for flights between 25,000 ft and 30,000 ft (the Duke has continuous masks). Therefore a flight manual supplement has been raised limiting flight to 25,000 ft unless equipment meeting the requirements of NZCAR C.4.2.1.4(a) and CASO 11 6.2.4 is installed and approved.

Outstanding Requirements

The following additional NZ requirements are not covered by the original certification requirements or the basic build standard of the aircraft and require compliance with before issue of an airworthiness certificate:

NZCAR Section C4

2.1.4(a)	Counter / pointer altimeters	To be determined for each aircraft. NOTE: Not required if aircraft limited to operation below 25,000 ft.
2.1.6	Magnetic compass residual deviation as per NZCAR F.8	To be determined for each aircraft
3.2	Axe	To be determined for each aircraft
3.3.4	Fire extinguisher operating instructions and types	To be determined for each aircraft
3.3.5	Fire extinguisher approved types	To be determined for each aircraft
3.3.6	Fire extinguisher specifications	To be determined for each aircraft
3.4	First aid kits as prescribed in Appendix A	To be determined for each aircraft
4.1	Independent radio antenna	To be determined for each aircraft
4.2	Emergency locator beacon	To be determined for each aircraft
6(d)	Red anti-collision light	To be determined for each aircraft

7.1	Flight manual container	To be determined for each aircraft
8.2	Fireproof ID plate	To be determined for each aircraft
8.3	Passenger smoking notices	To be determined for each aircraft
8.9	Nationality and registration marks	To be determined for each aircraft

NZCAR Section C4

No AD schedule for the Duke has been raised at this point.

GEN AD:	TITLE:	REQUIREMENT:	MEANS OF COMPLIANCE
DCA/GEN/6	Cable end assys proof load	Test before installation	To be determined for each aircraft as applicable

Summary

The A60 Duke has been issued with Type Certificate No.95/07 and is eligible for a New Zealand Airworthiness Certificate in the Standard Category in accordance with CAR 21.177, subject to the outstanding requirements noted above being met:

Attachments

The following documents form attachments to this report:

- Three-view drawing A60 Duke
- Copy of Type Certificate Data Sheet
- Summary of outstanding requirements for NZ Certification

Sign off

Peter Gill
Airworthiness Engineer

Date: 4 January 1996