# Type Acceptance Report

## TAR 4/21B/16

## Beech G17S

# TABLE OF CONTENTS

## Executive Summary

New Zealand Type Acceptance has been granted to the Beechcraft Model G17S based on validation of FAA Type Certificate number 779. There are no special requirements for import. All serial numbers are now eligible for the issue of an Airworthiness Certificate in the Standard Category in accordance with CAR §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.)

## 1. Introduction

This report details the basis on which Type Acceptance Certificate No.4/21B/16 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: | 779 |
| Issued by: | Federal Aviation Administration |
| Manufacturer: | Beech Aircraft Corporation |
| Model(s): | G17S |
| Engine: | Pratt & Whitney R-985-AN-4 |
| Propeller: | Hamilton Standard 2D30/6095A-15 |
| MCTOW | 4250 lb. |
| Noise Standard: | Not Applicable |

The certification basis of the Beech G17S is Aero Bulletin 7A and CAR 4 effective prior to 11/9/45. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41 and Advisory Circular 21-1A, as these were the applicable US standard category standards at the time. They were the predecessors to CAR 3/FAR 23, which 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.

## 3. Type Acceptance Certificate

The application for NZ type acceptance was from the importer, Mr Gerald Grocott, dated 2 December 2003. The first-of-type example was serial number B-14, registered ZK-MOE. The G17S is a five-seat reverse-stagger bi-plane retractable executive aircraft.

Type Acceptance Certificate No. 4/21B/16 was granted on 23 January 2004 to the Beech G17S based on validation of FAA Type Certificate 779. There are no special requirements for import into New Zealand.

Note: The TCDS states the aircraft is eligible for export, subject to provisions of MOP 2-4, to all other countries except New Zealand. However an Export certificate of airworthiness was issued, and the FAA Small Airplane Directorate advised the origin of the restriction could not be determined after this length of time.

Although on a new type certificate, the Model G17S is just a post-war development of the classic D17S Staggerwing, which has been previously type accepted in NZ under 95/09. It is essentially the same, but has numerous detail improvements. The principle difference was a new more streamlined engine mount and cowling, plus an enlarged vertical tail (extended chord) and changes to the undercarriage doors and retracting mechanism and ventilation/heating systems. The prototype G17S was a conversion of D17S serial number 424, and a total of 20 new examples were produced. (c/n B-1 through B-20.)

## 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:

FAA Aircraft Type Certificate and TCDS Number 779 issued October 11, 1946

(2) Airworthiness design requirements: Already held by the CAA or FAA Website.

(3) Certification compliance listing:

For TAR 95/09 Raytheon agreed to authorise CAA access to FAA engineering data for the Model 17, if required. Also for type design data, although Raytheon Aircraft Company is still the type certificate holder, all Model 17 manufacturing drawings have been transferred to the Staggerwing Club. They have undertaken to provide copies on request. (See letter from the President dated 22 January 2004.)

(4) Flight manual: A document provided by the applicant entitled "Model G17S – Operating Limitations" was reviewed and adopted as the Flight Manual in New Zealand, with an additional Limitations page. (It is identical to the document previously used for the D17S) – CAA Accepted as AIR 2853

(5) Illustrated Parts Catalogue: There is no civil IPC. However the applicant supplied a copy of USAAF T.O.No.01-90CC-4 for reference.

(6) Maintenance manual and service data for aircraft, engine and propeller:

The applicant provided a copy of "Model G17S Maintenance Manual" – Published by the Beech Engineering Service Division, dated September 1946 - However the TC holder advised the only currently available manual for the type is Publication D-170039 Beech Model 17 Service and Operation Data (already held by the CAA).

(7) Agreement from manufacturer to supply updates of data in (4), (5) and (6):

Beech confirmed the CAA is on the revisions list for all early model Beech aircraft. (See email from Raytheon Sr Regulatory Compliance Analyst dated 23 January 04.)

## 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 | ***To be determined on an individual aircraft basis*** |
| B.2 | Crew Protection Requirements - CAM 8 Appdx. B # .35 | Not Applicable – Agricultural Aircraft only |

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 | | Not Applicable – Not aerobatic, less than ten passenger seats | |
| 91.507 | Pax Information Signs - Smoking, safety belts fastened | | Not Applicable – Less than ten passenger seats | |
| 91.509 Min. VFR | (1) ASI<br>(2) Machmeter<br>(3) Altimeter<br>(4) Magnetic Compass<br>(5) Fuel Contents<br>(6) Engine RPM<br>(7) Oil Pressure | Fitted as Standard *<br>N/A – No mach limitations<br>Aero Bulletin 7A §72 (B)(4) *<br>Aero Bulletin 7A §72 (C) *<br>Aero Bulletin 7A §67 (D) *<br>Aero Bulletin 7A §72 (B)(1) *<br>Aero Bulletin 7A §72 (B)(2) * | (8) Coolant Temp<br>(9) Oil Temperature<br>(10) Manifold Pressure<br>(11) Cylinder Head Temp.<br>(12) Flap Position Ind.<br>(13) U/c Position<br>(14) Ammeter/Voltmeter | N/A – Air-cooled engine<br>Aero Bulletin 7A §72 (B)(3) *<br>Aero Bulletin 7A §72 (B)(5) *<br>Fitted as Standard *<br>Not Fitted (Can be easily seen)<br>Aero Bulletin 7A §41 (C) *<br>Ammeter fitted as Standard * |
| | * See D-170039 Section V – Performance Data for Model 17 standard instrument panel arrangement | | | |
| 91.511 | Night VFR Instruments and Equipment | | ***Operating Requirement – Compliance as applicable*** | |
| 91.513 | VFR Communication Equipment | | ***Operating Requirement – Compliance as applicable*** | |
| 91.517 | IFR Instruments and Equipment | | ***Operating Requirement – Compliance as applicable*** | |
| 91.519 | IFR Communication and Navigation Equipment | | ***Operating Requirement – Compliance as applicable*** | |
| 91.523 Emrgcy Eqpmt. | (a) More Than 10 pax - First Aid Kits per Table 7<br>- Fire Extinguishers per Table 8<br>(b) More than 20 pax - Axe readily acceptable to crew<br>(c) More than 61 pax - Portable Megaphones per Table 9 | | Not Applicable – Less than ten passenger seats<br>Aero Bulletin 7A Section 72 (A) (1)<br>Not Applicable – Less than twenty passenger seats<br>Not Applicable – Less than sixty-one passenger seats | |
| 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 | | ***Operating Requirement – Compliance as applicable*** | |
| 91.533 | Oxygen Equipment for Non-Pressurised Aircraft | | Not fitted as Standard | |
| 91.541 | SSR Transponder and Altitude Reporting Equipment | | ***Operating Requirement – Compliance as applicable*** | |
| 91.543 | Altitude Alerting Device - Turbojet or Turbofan | | Not Applicable – Reciprocating-engine powered | |
| 91.545 | Assigned Altitude Indicator | | ***Operating 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 | | Not fitted as standard |
| 135.357 | Additional Instruments (Powerplant and Propeller) | | ***Operating Requirement – Compliance as applicable*** |
| 135.359 | Night Flight | Landing light, Pax compartment | ***Operating Requirement – Compliance as applicable*** |
| 135.361 | IFR Operations | Speed, Alt, spare bulbs/fuses | ***Operating Requirement – Compliance as applicable*** |
| 135.363 | Emergency Equipment (Part 91.523 (a) and (b)) | | ***Operating Requirement – Compliance as applicable*** |
| 135.367 | Cockpit Voice Recorder | | Not Applicable – Not a 2-crew helicopter |
| 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 |

## Attachments

The following documents form attachments to this report:

Photographs first-of-type example Beech G17S s/n B-14 ZK-MOE
Three-view drawing Beechcraft Model G17S Staggerwing
Copy of FAA data sheet for Type Certificate Number 779

### Sign off

David Gill
Team Leader Airworthiness Date: 23 January 2004