
Type Acceptance Report

TAR 10/21B/6

HONEYWELL LTS101 Series

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Executive Summary

New Zealand Type Acceptance has been granted to the Honeywell Model LTS101 Series turboshaft engines based on validation of FAA Type Certificate no. E5NE. There are no special requirements for import.

Applicability is limited to the Models and/or serial numbers detailed in Appendix 1, which are now eligible for installation on a NZ-registered aircraft. 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.10/21B/6 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 product in New Zealand; and
- (b) Identify any special conditions for import applicable to any model(s) covered by the Type Acceptance Certificate.

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 at Amendment 6 or later are listed in Section 2 of this report. Models which were accepted prior to that under the Transitional Arrangements of Part 21 Appendix A are listed in Appendix 1 of this report.

2. ICAO Type Certificate Details

Manufacturer: Honeywell International Inc. [since December 14, 1999]
AlliedSignal Inc. [from January 31, 1995]
Avco Lycoming/Textron

Type Certificate: E5NE
Issued by: Federal Aviation Administration

Model: LTS101-850B-2

3. Type Acceptance Details

The application for New Zealand type acceptance of the LTS101-850B-2 engine was from the manufacturer, dated 20 August 2009. The LTS101 is a turbine engine family in the 4-5 pound per second airflow class. The modular engine configuration consists of single-stage axial and centrifugal compressors driven by a single-stage gas generator turbine, separated by a reverse-flow annular combustor. A single-stage free power turbine transmits power to the front-mounted reduction gearbox, on which are located all the engine accessories.

Type Acceptance Certificate Number 10/21B/6 was granted on 30 April 2010 to the Model LTS101-850B-2 based on validation of FAA Type Certificate E5NE. Specific applicability is limited to the coverage provided by the operating documentation supplied. There are no special requirements for import into New Zealand.

The LTS101 series was originally developed by Avco Lycoming as a simple modular turboshaft powerplant with a range of output power ratings and shaft speeds. The engine family was sold to AlliedSignal, now part of the Honeywell group, in 1995. Earlier variants have been widely used in New Zealand on various versions of the Kawasaki/MBB BK117A/B, Bell 222B and Eurocopter AS350D, and more recently on the AS350B/BA “Super D” Soloy STC conversions.

The latest LTS101-850B-2 version was developed to provide increased thermodynamic power, by the incorporation of a high flow cooled gas producer turbine assembly. It was originally designed as a contender for the US Coast Guard HH-65A upgrade. The first application is now on the BK117B-2 Series helicopter under STC numbers 9/21E/13 and 9/21E/17 being developed to improve high altitude performance by Airwork (NZ) Limited.

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 E5NE first issued October 24, 1975

FAA Type Certificate Data Sheet no. E5NE at Revision 18 dated March 22, 2010

- Model LTS101-600A-3A approved July 21, 1999
- Model LTS101-650B-1 approved June 03, 1981
- Model LTS101-700D-2 approved February 13, 2004
- Model LTS101-750B-1 approved June 17, 1986
- Model LTS101-750C-1 approved August 07, 1981
- Model LTS101-850B-2 approved February 13, 2004

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of the LTS101 Series is FAR Part 33 effective February 1, 1965, as amended by 33-1 through 33-5. This is an acceptable certification basis in accordance with NZCAR Part 21B para §21.41, as FAR 33 is the basic standard for aircraft engines called up under Part 21 Appendix C.

(ii) *Special Conditions:*

Nil

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Airworthiness Limitations:*

See FAA-Approved Service Bulletin Number LT 101-71-00-0002

(3) Environmental Certification:

Emissions compliance per FAR Part 34 is not applicable to turboshaft engines

(4) Certification Compliance Listing:

Honeywell Document 21-12277A – Summary Report, Federal Aviation Administration Certification of Turboshaft Engine LTS101-850B-2

(5) Flight Manual: N/A

(6) Operating Data for Engine:

(i) *Maintenance Manual:*

LTS101-2.4 Maintenance Manual Gas Turbine Engine – Models LTS101-750B-1 (P/N 4-001-000-25) and LTS101-850B-2 (P/N 4-001-000-42)

(ii) *Current service Information:*

Honeywell Report 21-11045C (Rev.C dated 18 Jan 2010) – Operating Instructions Engine Modules LTS101-600A-2 through LTS101-850B-2

Service Bulletins and Service Letters are available on the Honeywell website at <https://portal.honeywell.com/wps/portal/aero>

(iii) *Illustrated Parts Catalogue:*
Still to be issued.

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

See CAA 2171 from Honeywell International Inc. Airworthiness dated 20-8-09

(8) Other information:

Honeywell Report IM-8022A – Installation Manual for the LTS101-850B-2 Engine

Attachments

The following documents form attachments to this report:

Copy of FAA Type Certificate Data Sheet Number E5NE

Sign off

Checked

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David Gill
Team Leader Airworthiness

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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>
LTS101-600A-3A	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
LTS101-650B-1	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
LTS101-700D-2	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
LTS101-750B-1	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
LTS101-750C-1	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
LTS101-850B-2	Honeywell International Inc.	10/21B/6	30 April 2010