
Type Acceptance Report

TAR 98/15

Aerostar S-81A

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Introduction

This report details the basis on which Type Acceptance Certificate No.98/15 was granted in the standard category in accordance with NZCAR Part 21 Subpart B.

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: A15CE

Issued by: Federal Aviation Administration

Manufacturer: Aerostar International, Inc.

Model: S-81A

MCTOW 3800 lb. (1723 kg) (Or as temperature limited)

Noise Category: N/A

The certification basis of the S-81A is Part 31 of the Federal Aviation Regulations dated 1 July, 1964, as amended by 31-1 and 31-2.

This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41, as FAR Part 31 is the basic airworthiness standard for Manned Free Balloons called up under Appendix C. There are no non-compliances and no special conditions have been prescribed by the Director under §21.23.

Type Acceptance Application

The application for New Zealand type acceptance was from the importer, Aoraki Balloon Safaris dated 16th February 1998. (Two other Aerostar models have been type accepted, the S-71A [TAR4/91 on 22-11-91] and the S-49A [TAR10/91 on 23-1-92].)

Type Acceptance Certificate No.98/15 was granted on 25 March 1998.

The S-81A is a new size envelope which is mated with existing basket and burner designs to form a complete system. The various combinations of basket and burner approved are listed in Page 1-3aa of the Flight Manual (Revised 26/9/96 to increase the maximum gross weight). The maximum allowable gross weight is dependent on the burner/basket types fitted. The S-81A has a volume of 245,000 cubic feet.

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 TC A15CE -Model S-81A Approved May 12, 1994
FAA TCDS No.A15CE at Revision 33 dated July 24, 1997
- (2) Airworthiness design requirements: Already held by the CAA.
- (3) Certification compliance listing:
 - Aerostar Report No.A-0494-07 Final Report for Type Certification of Hot Air Balloon Model S-81A - dated April 25, 1994.
 - FAA Letter dated May 13, 1994 advising FAA Approval of Model S-81A.
 - Report No.A-099431 Final Report Triple Burner Model HP3T - Sept, 1994.
 - FAA letter dated Sep 22, 1994 advising FAA Approval of HP3 for S-81A.
 - Aerostar Report No.A-039504 RB-8 II (now RB-12) Justification - April 1995.
 - FAA Letter dated May 8, 1995 advising Approval of modified RB-8 Gondola.
 - FAA Letter dated Sep 4, 1996 issuing TIA for gross weight increase for S-81A.
- (4) Flight manual: Aerostar Model S-81A Hot Air Balloon FAA Approved Flight Manual dated April 25, 1994 - CAA Accepted as AIR 2611
- (5) IPC, Maintenance manual and service data (Contained in one volume):
 - Instructions for Continued Airworthiness for Aerostar (Raven) Balloons ACAI Part 1 Date Dec 23, 1981 - Reissued May 1, 1995 - Revised Nov 1, 1996
 - Aerostar Service Bulletins, Service Letters, Airworthiness Directives
 - Aerostar Parts Lists; Parts Manuals for: Gondola (various); burners (various); envelopes; instruments; suspension cables; and accessories
- (6) Agreement from manufacturer to supply updates of data in (4) and (5):
 - CAA 2171 form from Asst. Sales Manager dated 17 March 1998.
 - (and confirmation letter from National sales Manager dated 27 March, 1998.)

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:

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	N/A
B.2	Crew Protection Requirements - Agricultural Aircraft	N/A

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	N/A to a balloon
91.507	Pax Information Signs - Smoking, safety belts fastened	N/A to a balloon
91.509	Minimum instruments and equipment	N/A - Applies to powered aircraft
91.511	Night VFR instruments and equipment	N/A - Applies to powered aircraft
91.513	VFR communication equipment	Operating Rule - Compliance to be determined by operator
91.517	(a) More Than 10 pax - First Aid Kits per Table 7	N/A - No limit on occupants specified in Flight Manual.
	- Fire Extinguishers per Table 8	Balloons do not have a certificated seating capacity.
	(b) More than 20 pax - Axe readily acceptable to crew	N/A
	(c) More than 61 pax - Portable Megaphones per Table 9	N/A
91.529	ELT - TSO C91a after 1/4/97 (or replacement)	N/A to manned free balloons

NOTE: Minimum equipment required under the type certification requirements is listed on page vii of the Flight Manual.

Summary

Type Acceptance Certificate No.98/15 has been granted to the Aerostar Model S-81A which is now eligible for the issue of a New Zealand Airworthiness Certificate in the Standard Category in accordance with CAR §21.177.

Attachments

The following documents form attachments to this report:

Copy of Type Certificate/ Type Certificate Data Sheet A15CE

Sign off

David Gill
Airworthiness Engineer

Date: 25 March 1998