
Type Acceptance Report

TAR 7/21B/25 – Revision 1

Cameron Balloons US

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	1
2. AIRCRAFT CERTIFICATION DETAILS	1
3. APPLICATION DETAILS AND BACKGROUND INFORMATION	3
4. NZCAR §21.43 DATA REQUIREMENTS	4
5. NEW ZEALAND OPERATIONAL RULE REQUIREMENTS	6
ATTACHMENTS	6

Executive Summary

New Zealand Type Acceptance has been granted to the Cameron Balloons US hot air balloon series based on validation of FAA Type Certificates number B3GL and B4GL. There are no special requirements for import.

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(b).

NOTE: The information in this report was correct as at the date of issue. The report is generally only updated when an application is received to revise the Type Acceptance Certificate. For details on the current type certificate holder and any specific technical data, refer to the latest revision of the State-of-Design Type Certificate Data Sheet referenced herein.

1. Introduction

This report details the basis on which Type Acceptance Certificate No.7/21B/25 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. Aircraft Certification Details

(a) State-of-Design Type and Production Certificates:

Manufacturer: Cameron Balloons US

Type Certificate: B3GL (*N, M, Z, ZL Series and Special Shapes*)
B4GL (*V Series and Special Shapes*)

Issued by: Federal Aviation Administration

Production Approval: FAA Production Certificate No. 327CE

(b) Models Covered by the Part 21B Type Acceptance Certificate:

- (i) **Model:** V-77
- MCTOW: 1540 lb. (700 kg) *
- (ii) **Model:** N-90
- MCTOW: 1800 lb. (816 kg) *

* may be limited to the weight requiring maximum continuous envelope temperature of 250°F

Applicable to all Models:

Max. No. of Seats: No of occupants determined by weight and basket capacity

Noise Standard: Not Applicable

3. Application Details and Background Information

The application for New Zealand type acceptance of the V-77 was from the importer P J Hickey, dated 4 January 2007. The first-of-type example was serial number 5568, registered ZK-VLI. The Viva balloon series has eight bulbous gores and range in size from 31 to 90 x10³ cubic feet (which determines the model designation). It has eight flying cables and can use any approved combination of burner and basket as listed on the type certificate data sheet.

Type Acceptance Certificate No.7/21B/25 was granted on 3 February 2007 to the Cameron Balloons US Model V-77 based on validation of FAA Type Certificate B4GL. There are no special requirements for import into New Zealand.

This report was raised to Revision 1 to add the N-90 model. The applicant was Azure Ballooning Partnership and the first of type example was serial number 6027, to be registered ZK-SEL. The N Series is made of narrow vertically-oriented panels, with either 24 or 36 gores. Pairs of adjacent load tapes converge at the envelope base to attach to one suspension cable.

Type Acceptance was granted on 10 February 2017 to the Cameron Balloons US N-90 based on validation of FAA Type Certificate B3GL. There are no special requirements for import into New Zealand.

4. NZCAR §21.43 Data Requirements

The type data requirements of NZCAR Part 21B paragraph §21.43 have been satisfied by supply of the following documents, or were already held by the CAA:

(1) State-of-Design Type certificate:

FAA Type Certificate Data Sheet no. B3GL at Revision 46 dated March 3, 2015
– Model N-90 approved May 9, 1986

FAA Type Certificate Data Sheet no. B4GL at Revision 24 dated 21 Nov, 2005
– Model V-77 approved August 18, 1982

(2) Airworthiness design requirements:

(i) *Airworthiness Design Standards:*

The certification basis of all Cameron Balloons US series under both FAA Type Certificates number B3GL and B4GL is FAR Part 31 dated 1 July 1964, as amended by 31-1 and 31-4 inclusive. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41, as FAR 31 is the basic standard for Manned Free Balloons 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:*

Nil

(iii) *Equivalent Level of Safety Findings:*

Nil

(iv) *Airworthiness Limitations:*

See ICA Appendix D for a Replacement Interval Summary.

(3) Aircraft Noise and Engine Emission Standards:

(i) *Environmental Standard:*

Not Applicable.

(4) Certification Compliance Listing:

The Cameron Balloons US models are direct license manufactured examples of approved UK designs, and call up the same drawings.

N-90 (CB390) Compliance Substantiation – February 2, 1986
Part 2 – Stress Calculations for 12-Gore “N” Type Balloons
Cameron Balloons US – Model N-90 – Drawing List

(5) Flight Manual: FAA Approved Balloon Flight Manual – Cameron Balloons US
Model V-77 – CAA Accepted as AIR 2990

FAA Approved Balloon Flight Manual – Cameron Balloons US
Model N-90 – CAA Accepted as AIR 3375

(6) Operating Data for Aircraft:

(i) *Maintenance Manual:*

Cameron Balloons US – Instructions for Continued Airworthiness – Issue 3

(ii) *Current Service Information:*

ICA, Service Letters and Service Bulletins are available on the website

(iii) *Illustrated Parts Catalogue:*

Not Applicable

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

Email from Cameron Balloons US dated 8 August 2006

CAA2171 from General Manager Cameron Balloons US dated 24/1/2017

5. New Zealand Operational Rule Compliance

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 – Balloons excluded from the requirement
91.507	Pax Information Signs - Smoking, safety belts fastened	Not Applicable – Balloons excluded from the requirement
91.509	Minimum Instruments and Equipment *	Not Applicable – Unpowered aircraft
	* See TCDS and Flight Manual Section 2.6 for Required Equipment	
91.511	Night VFR Instruments and equipment	Not Applicable – Unpowered aircraft
91.513	VFR Communication Equipment	<i>Operational requirement – Compliance as applicable</i>
91.517	IFR Instruments and Equipment	Not Applicable – Not approved for IFR Flight
91.519	IFR Communication and Navigation Equipment	Not Applicable – Not approved for IFR Flight
91.523	Emergency Equipment	Not Applicable – No certificated seating capacity
91.529	ELT – TSO C91a after 1/4/97 (or replacement)	Not Applicable – Balloons excluded from the requirement
91.531	Oxygen Indicators – Volume/Pressure/Delivery	<i>Operational requirement – Compliance as applicable</i>
91.533	Oxygen for non-Pressurised Aircraft	<i>Operational requirement – Compliance as applicable</i> Max. Takeoff Altitude is 18,000 feet MSL – See FM §2.11
91.541	SSR Transponder and Altitude Reporting Equipment	<i>Operational requirement – Compliance as applicable</i>
91.543	Altitude Alerting Device – Turbojet or Turbofan	Not Applicable – Not turbojet or turbofan
91.545	Assigned Altitude Indicator	Not Applicable – Not approved for IFR Flight
A.15	ELT Installation Requirements	Not Applicable – Balloons excluded from the requirement

NOTES: 1. A Design Rule reference in the Means of Compliance column indicates the Design Rule was directly equivalent to the CAR requirement, and compliance is achieved for the basic aircraft type design by certification against the original Design Rule.

2. The CAR Compliance Tables above were correct at the time of issue of the Type Acceptance Report. The Rules may have changed since that date and should be checked individually.

3. Some means of compliance above are specific to a particular model/configuration. Compliance with Part 91/119 operating requirements should be checked in each case, particularly oxygen system capacity and emergency equipment.

Attachments

The following documents form attachments to this report:

- Copy of FAA Type Certificate Data Sheet Number B3GL
- Copy of FAA Type Certificate Data Sheet Number B4GL

Sign off

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David Gill
Team Leader Airworthiness

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Checked – Jason Ashworth
Team Leader Product Certification

Appendix 1

List of Type Accepted Variants:

<i>Model:</i>	<i>Applicant:</i>	<i>CAA Work Request:</i>	<i>Date Granted:</i>
V-90	AC 21-1.2/NZCAR Part 21 Appendix A(c)		
V-77	P J Hickey	7/21B/25	3 February 2007
N-90	Azure Ballooning Partnership	16/21B/24	10 February 2017