Type Acceptance Report

TAR 10/21B/18

SCHEMPP-HIRTH NIMBUS-3D

TABLE OF CONTENTS

Executive Summary

New Zealand Type Acceptance has been granted to the Schempp-Hirth Nimbus-3D based on validation of EASA Type Certificate number LBA 373. 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 §21.191, 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(c).

1. Introduction

This report details the basis on which Type Acceptance Certificate No. 10/21B/18 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. ICAO Type Certificate Details

Manufacturer:	Schempp-Hirth Flugzeugbau GmbH
Type Certificate:	Musterzulassungsschein Nr. 373
Issued by:	Luftfahrt-Bundesamt, Bundesrepublik Deutschland
Model(s):	Nimbus-3D
MCTOW	750 kg [1653 lb.]
Max. No. of Seats:	2
Noise Standard:	Not Applicable

3. Type Acceptance Details

The application for New Zealand type acceptance was from the importer Mr Colin Bryan, dated 24 December 2009. The first-of-type example was serial no. 11, registered ZK-GYB. The Nimbus-3D is a tandem 2-seat all-composite mid-wing high-performance glider with flaps and T-tail. (It was essentially developed by combining the two-seat Janus fuselage with the 24.6 metre span wings of the Nimbus-3 Open Class competition sailplane.)

Type Acceptance Certificate No. 10/21B/18 was granted on 4 March 2010 to the Schempp-Hirth Model Nimbus-3D based on validation of LBA Type Certificate 373. There are no special requirements for import into New Zealand.

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:

Type Certificate Nr.: 04-373 – Nimbus-3D – Date of Issue 20 January 1989
LBA Type Certificate Data Sheet No.373 – Nimbus-3D – Issue 3, dated 03.12.1992

(2) Airworthiness design requirements:

(i) Airworthiness Design Standards:
The certification basis of the Nimbus-3D was the Joint Airworthiness Requirements for Sailplanes and Powered Sailplanes (JAR-22), effective on December 15, 1982, along with "Orange Papers": Amendment 22/84/1 of 14.12.1984; Amendment 22/85/1 of 12.12.1985; and Amendment 22/86/1 of 22.10.1986. This is an acceptable certification basis in accordance with NZCAR Part 21B Para §21.41, as JAR 22 is the basic standard for sailplanes called up in Advisory Circular 21-1. There are no non-compliances and no special conditions have been prescribed by the Director under §21.23. The Nimbus-3D is approved for VFR-flying in daytime.

(ii) Special Conditions:
LBA Directions for the Stress Analysis of Components for Sailplanes and Powered Sailplanes Built from Glass Fiber and Carbon-Fiber Reinforced Plastic, Issue of May 1986.

Additional Requirements when using a Water Ballast Fin Tank – LBA-Letter No. I3-133/85 dated July 3rd, 1985.

(iii) Equivalent Level of Safety Findings:
Nil

(iv) Airworthiness Limitations:
See Maintenance Manual Section 3 – Inspections

(3) Aircraft Noise and Engine Emission Standards:

Not Applicable

(4) Certification Compliance Listing:

Nachweisliste (MZ) [Compliance Checklist] TC Nr.04-373 Type: Nimbus-3D

(5) Flight Manual: LBA-Approved Flight Manual for the Sailplane Model: Nimbus-3D
CAA Accepted as AIR 3124

(6) Operating Data for Aircraft:

(i) Maintenance Manual:
Maintenance Manual for the Sailplane Model Nimbus-3D – Edition: June 1988
(Includes Repair Instructions for "Nimbus-3D/DT")

(ii) Current service Information:
Summary of Schempp-Hirth Technical Notes and LBA Airworthiness Directives

Summary of Schempp-Hirth Modification Bulletins – Nimbus-3D (373)

(iii) Illustrated Parts Catalogue:
Not Applicable – None issued

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

CAA 2171 from Schempp-Hirth Head of Technical Office dated 22.12.2009

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	JAR §22.1307 – Required Equipment – See TCDS §III.11
91.507	Pax Information Signs - Smoking, safety belts fastened	Not Applicable – Two-seat glider
91.509	Minimum Instruments and Equipment	Not Applicable – Powered aircraft only
91.511	Night VFR Instruments and Equipment	Not Applicable – Certificated for Day VFR flight only
91.513	VFR Communication Equipment	***Operational requirement – compliance as applicable***
91.517	IFR Instruments and Equipment	Not Applicable – Certificated for Day VFR flight only
91.519	IFR Communication and Navigation Equipment	Not Applicable – Certificated for Day VFR flight only
91.523	Emergency Equipment	N/A – Two-seat glider [Superseded by §104.101(5)]
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	***Operational requirement – compliance as applicable***
91.533	Oxygen for Non-Pressurised Aircraft	***Operational requirement – compliance as applicable***
91.541	SSR Transponder and Altitude Reporting Equipment	***Operational requirement – compliance as applicable***
91.543	Altitude Alerting Device - Turbojet or Turbofan	Not Applicable – Not turbojet or turbofan powered
91.545	Assigned Altitude Indicator	Not Applicable – Certificated for Day VFR flight only
A.15	ELT Installation Requirements	***To be determined on an individual aircraft basis***

Civil Aviation Rules Part 104

Subpart C - Equipment and Maintenance Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
104.101	(1) Airspeed Indicator	Required as Minimum Equipment – See TCDS Section #III.11
	(2) Altimeter (Adjustable for barometric pressure)	Required as Minimum Equipment – See TCDS Section #III.11
	(3) Magnetic Compass	***Operational requirement – compliance as applicable***
	(4) Safety Harness for each seat	Required as Minimum Equipment – See TCDS Section #III.11
	(5) A First Aid Kit	***Operational requirement – compliance as applicable***
	(6) For powered gliders	Not Applicable
	(1) For IMC –	
	(i) A variometer	Not Applicable – Approved for Day VFR only
	(ii) Turn & Slip/Artificial Horizon	
	(iii) Radio transceiver	

Attachments

The following documents form attachments to this report:

Photographs first-of-type example Nimbus-3D serial no.11 ZK-GYB
Three-view drawing Schempp-Hirth Model Nimbus-3D
Copy of LBA Type Certificate Data Sheet Number 373

Sign off

…….. ……..

David Gill — Checked – Peter Gill
Team Leader Airworthiness — Airworthiness Engineer

Appendix 1

List of Type Accepted Variants:

Model:	*Applicant:*	*CAA Work Request:*	*Date Granted:*
Nimbus-3D	C F Bryan	10/21B/18	4 March 2010