
Type Acceptance Report

TAR 1/21B/4

Schempp-Hirth Discus CS

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Introduction

This report details the basis on which Type Acceptance Certificate No.1/21B/4 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 that 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: Typově osvědčeni způsobilosti k leteckému provozu 90-01

Issued by: Státní Letecká Inspekce, Československá Socialistická Republika

Manufacturer: **Orličan akciová společnost** (up to s/n 224)
Schempp-Hirth výroba letadel spol. s.r.o.

Model: **Discus CS**

MCTOW 525 kg (1157 lb.)

The certification basis of the Discus CS is the Joint Airworthiness Requirements for Sailplanes and Powered Sailplanes (JAR 22), Edition of June 27th, 1989 (Change 4 of the English Original Issue); with JAR 22.375 from Amendment 22/90/1 dated February 12th, 1991; and Preliminary Directions for the Stress Analysis of Components for Sailplanes and Powered Sailplanes constructed from Glass Fiber and Carbon Fiber Reinforced Plastic, Edition of January 1981.

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 21-2a. There are no non-compliances and no special conditions have been prescribed by the Director under §21.23. The Discus CS is approved for VFR-flying in daytime, cloud flying when fitted with the appropriate equipment, and restricted aerobatic manoeuvres.

Type Acceptance Application

The application for New Zealand type acceptance was from Shields Sailplane Services Ltd dated 10th August 2000. The first-of-type example was serial no. 266 CS, registered ZK-GNM.

Type Acceptance Certificate No.1/21B/4 was granted on 17 October 2000.

The Discus CS is a license-manufactured version of the Discus b produced by the Orlikan a.s. factory in the Czech Republic. The Czech type certificate states the Discus CS drawing list dated May 1990 is directly equivalent to the Discus b with Modification Bulletin No.

360-16 embodied. (The Discus a/b models were type accepted in New Zealand in 1985.) The Discus was the successor to the Standard Cirrus in the Standard Class and has a new wing design with compound swept-back leading edge and a claimed lift-to-drag ratio of 43.

The Discus CS is covered by the Czech Státní Letecká Inspekce (State Aviation Inspectorate SLI) type certificate. The design holder however is Schempp-Hirth and therefore Germany must be the state of design and the LBA the responsible national airworthiness authority. The Czech type certificate will be referenced on the Czech Export airworthiness certificate, and the flight and maintenance manuals are approved by the SLI. **Therefore the Czech Type Certificate will be the basis of type acceptance under NZCAR §21.43(a)(1).**

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:

Musterzulassungsschein Nr.: 360 – Discus CS – date of Issue 31. January 1991

Type Certificate Data Sheet No. 360 – Discus CS – Issue 4, 02.02.2000

Type Certificate of Airworthiness 90-01 – Sailplane Discus CS – Issued August 15, 1990

Czech SLI TCDS Nr 90-01 – Discus CS (German Translation only)

(2) Airworthiness design requirements: Already held by the CAA

(3) Certification compliance listing: Common with the Discus b.

(4) Flight manual: Flight Manual for the Sailplane Discus CS Issued June 1990
Translation of the manual approved by the Civil Aviation

Inspectorate

of the Czech Republic - CAA Accepted as AIR 2700

(5) Illustrated Parts Catalogue: N/A - None issued

(6) Maintenance manual and service data for aircraft:

Maintenance Manual for the Sailplane Discus CS – Issue June 1990 at Revision 4
2/97

Summary of Schempp-Hirth Technical Notes and LBA-ADs for TC No. 360

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

Agreement to Supply statement from the Design Holder dated July 27, 2000.

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, except 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	<i>To be determined on an individual aircraft basis</i>
B.2	Crew Protection Requirements - CAM 8 Appdx. B # .35	Agricultural Aircraft – <i>Not Applicable</i>

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 - Fitted as Std – See Maintenance Manual §7.A
91.507	Pax Information Signs - Smoking, safety belts fastened	<i>N/A – Less than 10 passenger seats</i>
91.509	(1) ASI (2) Machmeter (3) Altimeter (4) Magnetic Compass (5) Fuel Contents (6) Engine RPM (7) Oil Pressure	JAR 22.1303(a)(1) - See MM §7.B N/A JAR 22.1303(a)(2) - See MM §7.B JAR 22.1303(b)(4) N/A N/A N/A
		(8) Coolant Temp N/A (9) Oil Temperature N/A (10) Manifold Pressure N/A (11) Cylinder Head Temp. N/A (12) Flap Position N/A – No flaps fitted (13) U/C Position By selection lever – See FM §1.(6) (14) Ammeter/Voltmeter N/A – Battery supply only
91.511	Night VFR Instruments and Equipment	N/A – Certificated for Day VFR flight only
91.517	IFR Instruments and Equipment Requirements	N/A – Certificated for VFR flight only
91.519	IFR Communication and Navigation Equipment	N/A – Certificated for VFR flight only
91.523	Emergency equipment	N/A – Superseded by §104.101(5)
91.529	ELT - TSO C91a after 1/4/97 (or replacement)	<i>To be determined on an individual aircraft basis</i>
91.531	Oxygen Indicators - Volume/Pressure/Delivery	<i>To be fitted as required</i>
91.533	Oxygen >30 min above FL100 - Supplemental for crew	<i>To be fitted as required</i>
91.541	SSR Transponder and Altitude Reporting Equipment	<i>To be fitted as required</i>
91.543	Altitude Alerting Device - Turbojet or Turbofan	N/A
91.545	Assigned Altitude Indicator	N/A – Certificated for VFR flight only
A.15	ELT Installation Requirements	<i>To be determined on an individual aircraft basis</i>

Civil Aviation Rules Part 104

Subpart C - Equipment and Maintenance Requirements

PARA:	REQUIREMENT:	MEANS OF COMPLIANCE:
104.101	(1) Airspeed Indicator (2) Altimeter (Adjustable for barometric pressure) (3) Magnetic Compass (4) Safety Harness for each seat (5) A First Aid Kit (6) For powered gliders (7) For IMC – (i) A variometer (ii) Turn & Slip/Artificial Horizon (iii) Radio transceiver	Fitted as Standard – See Maintenance Manual Section 7.B(a) Fitted as Standard – See Maintenance Manual Section 7.B(a) Fitted as Standard – See Maintenance Manual Section 7.B(b) Fitted as Standard – See Maintenance Manual Section 7.A <i>To be determined on an individual aircraft basis</i> N/A } } Required for IMC Flight * } * All available as Additional Equipment per the MM §7.B(b)

Summary

Type Acceptance Certificate No. 1/21B/4 has been granted to the Discus CS and all serial numbers are now eligible for the issue of a New Zealand Airworthiness Certificate in the Standard Category in accordance with CAR §21.177, subject to any outstanding operational requirements noted above being met.

Attachments

The following documents form attachments to this report:

Photographs First-of-Type example Discus CS s/n 266 CS ZK-GNM

Three-view drawing/specifications Schempp-Hirth Model Discus CS

Copies of SLI Type Certificate 90-01/ Type Certificate Data Sheet 90-01

Sign off

David Gill
Team Leader Airworthiness

Date: 20 October 2000