DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A9WE
Revision 2
EMERALD
(Wing Aircraft)
Model D-1

June 3, 1998

TYPE CERTIFICATE DATA SHEET NO. A9WE

This data sheet, which is a part of type certificate No. A9WE prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Civil Air Regulations.

Type Certificate Holder	Emerald Enterprises LTD. c/o Hillyer & Irwin 550 West C St., 16th Floor San Diego, CA 92101-3540

I. Wing Aircraft Model D-1 (Normal Category) approved December 20, 1966

Engines	2 Lycoming Model IO-320-B1C or 2 Lycoming Model IO-320-C1A		
Fuel	100/130 Minimum grade aviation gasoline		
Engine limits	For all operations, 2700 rpm (160 hp)		
Propeller and propeller limits	2 Hartzell Model HC-C2YL-2RB/8459-18 Diameter: Not over 66 in., not under 64 in. Pitch setting at 30 in. station: Low: 13.5° High: 20.0° Feathered: 77° to 79°		
Airspeed limits (CAS)		MPH	KNOTS
	Vne (Never exceed)	252	219
	Vno (Maximum structural cruising)	200	174
	Vp (Design maneuvering)	170	148
	Vfe (Max. Flap extended)	135	117
	Vle (Max. landing gear extended)	170	148
	Vlo (Max. landing gear operating)	170	148
C.G. range (Landing gear extended)	Sta. +89.5 to Sta. +93.0 up to 2,400 lbs. Sta. +90.5 to Sta. +93.0 at 3,050 lbs. Straight line variation between points given. Landing gear retraction moment (-165 in.-lbs.) and moves C.G. forward.		
Empty weight (C.G. range)	None		
Datum	Fuselage Station 0 (fuselage nose).		
Leveling means	Partially withdraw two machine screws located at Fus. Sta. 104.75 and Sta. 117.80 at WL 44.680 on the left hand side of the fuselage. These screws are the leveling points.		
Maximum weight	3,050 lbs.		
Max. landing weight	2,900 lbs.		

Minimum crew	One
Number of seats	Two at Sta. 87.0
Maximum baggage	250 lbs. at Sta. 118.0
Fuel capacity	2 tanks, 265 lbs. each at Sta. 92.0
Oil capacity	2 tanks, 15 lbs. each at Sta. 61.2

Control surface movements

Elevator	Up	21° ± 1°	Down	10° ± 1°
Rudder	Right	26 1/2° ± 1°	Left	26 1/2° ± 1°
Ailerons	Up	30° ± 2°	Down	10° ± 1°
Flaps	Up	0° ± 2°	Down	40° ± 1 1/2°

Stabilizer: (Measured at Leading Edge from Fus. Ref. Line)

	Leading Edge	Angle
Electric Sys.	Down	3 1/2° ± 1/4°
	Up	1/2° ± 1/4°
Manual Sys.	Down	3 1/2°
	Up	2°

Serial Nos. eligible	Serial Numbers 2 and up.
Certification basis	Civil Air Regulation Part 3 dated May 15, 1956, together with Amendments 3-1 through 3-8, and FAR 23.201, 23.203, 23.205 and 23.207 in lieu of the stall requirement of Amendment 3-7.
Production basis	None. Prior to original certification of each aircraft an FAA representative must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data, and a check of the flight characteristics.
Equipment	The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. Wing Aircraft Report No. RD1-16, Part II, "Equipment List", contains a list of all required equipment that must be installed.

NOTE 1. (a) Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter.

(b) The airplane must be loaded so that the C.G. is within the specified limits at all times, including the effect of fuel usage.

(c) Unusable fuel and undrainable oil must be included in the certificated empty weight and corresponding center of gravity location.

NOTE 2. The following placard must be displayed in front of and in clear view of the pilot:
"This airplane must be operated as a normal category airplane in compliance with the FAA Approved Airplane Flight Manual."

Additional required placards are specified in the Limitations section of FAA Approved Airplane Flight Manual.

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