DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A2EA
Revision 10
HELIO
500

August 21, 2015

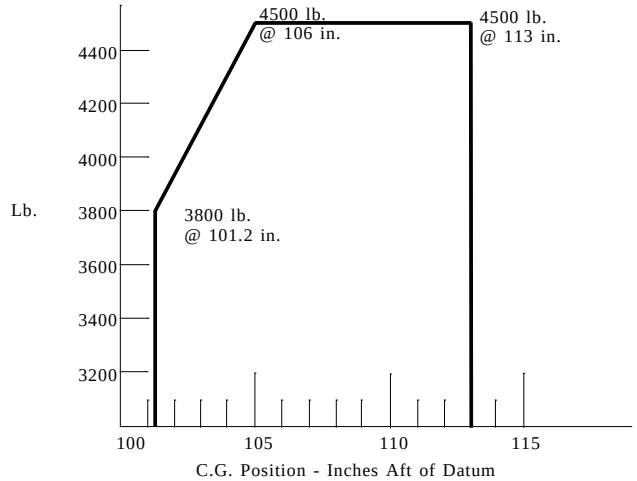
TYPE CERTIFICATE DATA SHEET NO. A2EA

This data sheet, which is a part of Type Certificate No. A2EA, prescribes conditions and limitations under which the product, for which the type certificate was issued, meets the airworthiness requirements of the Civil Air Regulations/Federal Aviation Regulations.

Type Certificate Holder (See Note 4 for Holder Record)	Helio Aircraft, LLC 38400 N. Schoolhouse Road, #17 Cave Creek, Arizona 85331

I. Model 500, 6 PCLM (Normal Category), approved June 11, 1963

Engine	2 Lycoming O-540-A2B (Carb. Setting No. 10-4404)	
Fuel	91/96 minimum grade aviation gasoline	
Engine Limits	All operations, 2575 rpm (250 hp)	
Propeller and propeller limits	Hartzell HC92ZK-2B/8447 Pitch settings at 30 in. station: Low 11.4°, high 82.7° (feathered) Diameter: not over 84 in., not under 82 in.	
Airspeed Limits	Maneuvering	Vp 116 mph (101 knots) CAS
	Maximum structural cruising	Vno 189 mph (164 knots) CAS
	Never exceed	Vne 212 mph (184 knots) CAS
	Flap extended	Vfe 92 mph (80 knots) CAS
	Minimum control	Vmc 59 mph (51 knots) CAS
C.G. range	(106.0) to (113.0) at 4500 lbs. (101.2) to (113.0) at 3800 lbs. Straight line variation between points given.	



Empty weight C.G. range	None			
Datum	Longitudinal reference Station O located 90.79 in. ahead of leading edge of wing proper (without slats). Horizontal reference is 38.75 in. below centerline of and parallel to fuselage lower longeron.			
Leveling means	Two leveling bushings threaded to receive AN-4 bolts or 1/4-28 screws. Aft bushing on inside of right rear door sill. Forward bushing 16 in. forward of aft bushing, 2 in. above floor.			
Maximum weight	4500 lbs.			
No. of seats	6 (2 at +103.5, 2 at +136.0, 2 at +164.5)			
Maximum baggage	425 lbs. (+136.0) with middle seat removed 425 lbs. (+164.5) with rear seat removed			
Fuel capacity	120 gal. (4 tanks, 2 in each wing, each tank 30 gal. at +123.0) See NOTE 1 for data on unusable fuel.			
Oil capacity	6 gal. (3 gal. each engine at +65.0) See NOTE 1 for data on system oil.			
Control surface movements	Wing flaps	Up 0° ± 1-1/2°	Down 40° ± 1-1/2°	
	Aileron	Up 20° ± 1°	Down 20° ± 1°	
	Aileron trim tab (optional - left side only)	Up 19° ± 1°	Down 19° ± 1°	(measured from aileron chordline)
	Stabilator (trailing edge)	Up 25° ± 1°	Down 8° ± 1°	from neutral. Neutral is 2.5° down from horizontal reference.
	Stabilator trim tabs	Measured from horizontal stabilator chordline Tab trailing edge up (+) Tab trailing edge down (-)		
	Stabilator neutral, flaps up	+19.1° ± 2° pilot's trim indicator full nose down -31.7° ± 2° pilot's trim indicator full nose up		
	Stabilator trailing edge full up, flaps up	+37.9° ± 2° pilot's trim indicator full nose down - 30.4° ± 2° pilot's trim indicator full nose up		
	Stabilator trailing edge full down, flaps up	+ 4.0° ± 2° pilot's trim indicator full nose down -44.3° ± 2° pilot's trim indicator full nose up		
	Stabilator anti-balance tabs	Same tabs as trim tabs - measured in same manner		
	Trim indicator neutral Stabilator neutral Stabilator T.E. full up 25° from neutral Stabilator T.E. full down 8° from neutral	0° +42.9° -20.0°		
	Flap interconnect effect on Stabilator trim tabs Flaps down 30°, pilot's trim indicator in takeoff			

	position, stabilator trailing edge down 8°				
	Trim tab trailing edge	-28° ± 2°			
	Rudder	Right	25° ± 1°	Left	25° ± 1°
	Rudder trim tab	Right	25° ± 2°	Left	25° ± 2°
		measured from rudder chordline			

Serial Nos.Eligible — 2 and up

Certification Basis — CAR 3 dated May 15, 1956, plus Amendments 3-1 through 3-5 thereto.
Type Certificate No. A2EA issued June 11, 1963.
Date of application for Type Certificate July 28, 1961.

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 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.

In addition, the following items of equipment are required:

(a) Shoulder harnesses and seat belts must be installed for all seats.
(b) FAA Approved Flight Manual, Helio Model 500, dated June 11, 1963.

NOTE 1. Current weight and balance report including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification. The certificated empty weight and corresponding center of gravity location must include unusable fuel of 17 lbs. at (+123) and undrainable oil of 11.5 lbs. at (+65).

NOTE 2. The following placards must be displayed:

(a) On the instrument panel in full view of the pilot:
  (1) "1. This airplane must be operated as a normal category airplane in compliance with the operating limitations stated in the form of placards, markings, and manuals.
    2. No acrobatic maneuvers (including spins) are approved.
    3. Do not exceed 80 knots CAS flaps down.
    4. Do not exceed 184 knots CAS flaps up.
    5. Maneuvering speed at maximum gross weight is 101 knots CAS.
    6. Maneuvering speed at minimum flying weight is 86 knots CAS.
    7. Minimum single engine control speed at sea level is 51 knots CAS."
  (2) "Fuel gauges are not accurate in the three-point position."
  (3) "Auxiliary tanks level flight only."
  (4) "No smoking."
  (5) "Cross wind gear. Pull to unlock. Unlock for all landing and takeoff."
(b) On the cargo door sill at Fuselage Station 52.5.
    "1. Total load to be carried on the floor behind the front seat - 850 lb.
    2. Cargo floor pressure not to exceed 51 p.s.f."

NOTE 3. Airworthiness Limitations for any mandatory retirement life or mandatory inspection are included in the Maintenance Manual (Instructions for Continued Airworthiness) for this model.

NOTE 4. Type Certificate Holder Record:
Reissued to Helio Aircraft Company August 1, 1969
Reissued to Helio Aircraft Limited November 8, 1976
Reissued to Helio Inc. August 10, 1984
Reissued to Helio Aircraft, Inc. August 23, 1984
Reissued to Helio Enterprises, Inc. August 11, 1994
Reissued to Alliance Aircraft Group, LLC September 18, 1997
Reissued to Alliance Aircraft Group, LLC dba Helio Aircraft Company April 10, 2001
Reissued to Helio Aircraft, LLC July 14, 2005

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