OPERATION AND MAINTENANCE MANUAL

HELIO COURIER MODEL H-395

Serial #_____ Reg. #_____

CAA Approved
Rev. Nov. 17, 1958

(THIS DOCUMENT MUST BE KEPT IN AIRPLANE AT ALL TIMES)

HELIO AIRCRAFT CORPORATION
Norwood, Mass.

CAA Identification No. _____ Helio Model H-395
Normal Category

AIRPLANE FLIGHT MANUAL

1. Limitations: The following limitations must be observed in the operation of this airplane:

Engine: Lycoming GO-480-G1D6

Engine Limits:		
	Take-off	3400 rpm (295 hp)
	All other operations	3000 rpm (285 hp)

Fuel: 100/130 minimum grade aviation gasoline

Propeller: Hartzell controllable propeller, hub HC93Z20-1B
Blades 10151C-5 (Opt. Prop HC-B3Z20-1/10151C-5
Diameter: not over 96"; not under 95"
Pitch settings at 30 in.sta; Low 11.8°; High 30.8°

Power instruments:

Oil Temperature: Green Arc (Normal Operating Range) 100° to 225°F; Yellow Line (Caution) 100°F; Red Line (Max) 225°F

Oil Pressure: Green Arc (Normal Operating Range) 65 to 85 psi; Red Line (Min) 25 psi; Red Line (Max) 85 psi; Yellow Arc (precautionary range) 25 to 65 psi.

Fuel Pressure: Green Arc (Normal Operating Range) 13 to 15 psi; Red Line (Min) 11 psi; Red Line (Max) 15 psi.

Cylinder Head Temperature: Green Arc (Normal Operating Range) 350° to 475°F; Red Line (Max) 475°F.

Tachometer: Green Arc (Normal Operating Range) 2200 to 3000 rpm; Yellow Arc (Caution Range, take-off only) 3000-3400 rpm; Red Line (Max) 3400 rpm.

Airspeed Limits:		
	Never exceed	189 mph True ind.
	Max. Structural Cruising	150 mph True ind.
	Maneuvering	98 mph True ind.
	Flaps extended	80 mph True ind.

Flight Load Factors: Meets Normal Category Limit Load Factors of 3.8g flaps up, 2.0g flaps extended.

Note: 1. Use controls with caution above 150 mph.

2. In gusty air, it is advisable to reduce cruising speed below normal, and in servere turbulence reduce speed below 98 mph (flaps up) or below 65 mph (flaps down).

3. Up to 300' loss of altitude may be experienced in recovering and flaring to zero rate of descent with no application of power, after reaching stall speed.

Maximum Weight:	3000 lbs.
C.G. Range (101.3 to 106.4)	3000 lbs.
(96.5 to 106.4)	2200 lbs.

Straight line variation between points given.

Datum is 100.25" fwd of center-line wing spar (center-line wing spar is mid-way between 2 rows of bolts in wing root fitting on bottom side of wing).

NOTE: It is the responsibility of the pilot to insure that the airplane is properly loaded. (See attached loading instruction.)

Maneuvers: All intentional acrobatic manauvers, including spins, are prohibited.

Airspeed Instrument Markings and their Significance:

(a) Radial red line marks the never-exceed speed which is the maximum safe airspeed (189 mph).

(b) Yellow Arc on indicator denotes range of speeds in which operations should be conducted with caution and only in smooth air (150 to 189 mph).

(c) Green Arc denotes normal operating speed range (63 to 150 mph).

(d) White Arc denotes speed range in which flaps may safely be lowered. (50 to 80 mph).

Placards: In view of the pilot, "One minute limit for take-off power; full throttle and 3400 rpm".

2. PROCEDURES

A. Fuel System: Fuel valve position is simply "on" or "off", no tank selector being required.

B. Wing Flap: Full flaps should be used for peak performance on both take-off and landing.

APPROVED:

/s/ HAROLD H. HERMES FOR CHIEF
Aircraft Engineering Division
Civil Aeronautics Administration Region 3

1. This airplane is certificated for gross weight of 3000 lbs.

2. The owner-pilot should be familiar with the latest empty weight and C.G. position for this particular aircraft. For aircraft as delivered from the Helio plant, the weight and balance report is included at the rear of this manual. For aircraft whose empty weight or C.G. position is modified by later addition of equipment, the latest information is required by CAA to be entered on a re air and alteration form No. 337 which must be kept in the aircraft log.

3. Permissible center of gravity locations in inches are given in the CAA approved pages included at the front of this manual. A more convenient method for determing proper loading is given in paragraph 4 below.

4. Determination of Permissible Loading: Weight and C.G. Position

   A. From the factory weight and balance report, or from the latest Form 337, find empty weight and moment.

      Then, empty weight index units equals $\frac{\text{MOMENT}}{1000}$

   B. From Fig. 7.1 find the index units for each item of useful load.

   C. With total weight and total index units, enter Fig. 7.2. Any point within the envelope meets the weight and balance requirements.

   D. EXAMPLE:

      Empty wt. equals 2087 moment equals 204,000.

      Then index units equals $\frac{204,000}{1000}$ equals 204

Item	Weight	Index From Fig. 7.1
Empty weight	2087	204
Oil (10 qts)	18	1
Fuel (Full 58.2 Gals usable)	349	39
Pilot plus passenger (front)	340	35
1 passenger (rear)	170	23
Baggage (to make gross weight)	36	6
	3000	308

Entering Fig. 7.2 it is seen that this point (3000 lbs and 308 index units) falls within the required envelope and therefore is satisfactory.

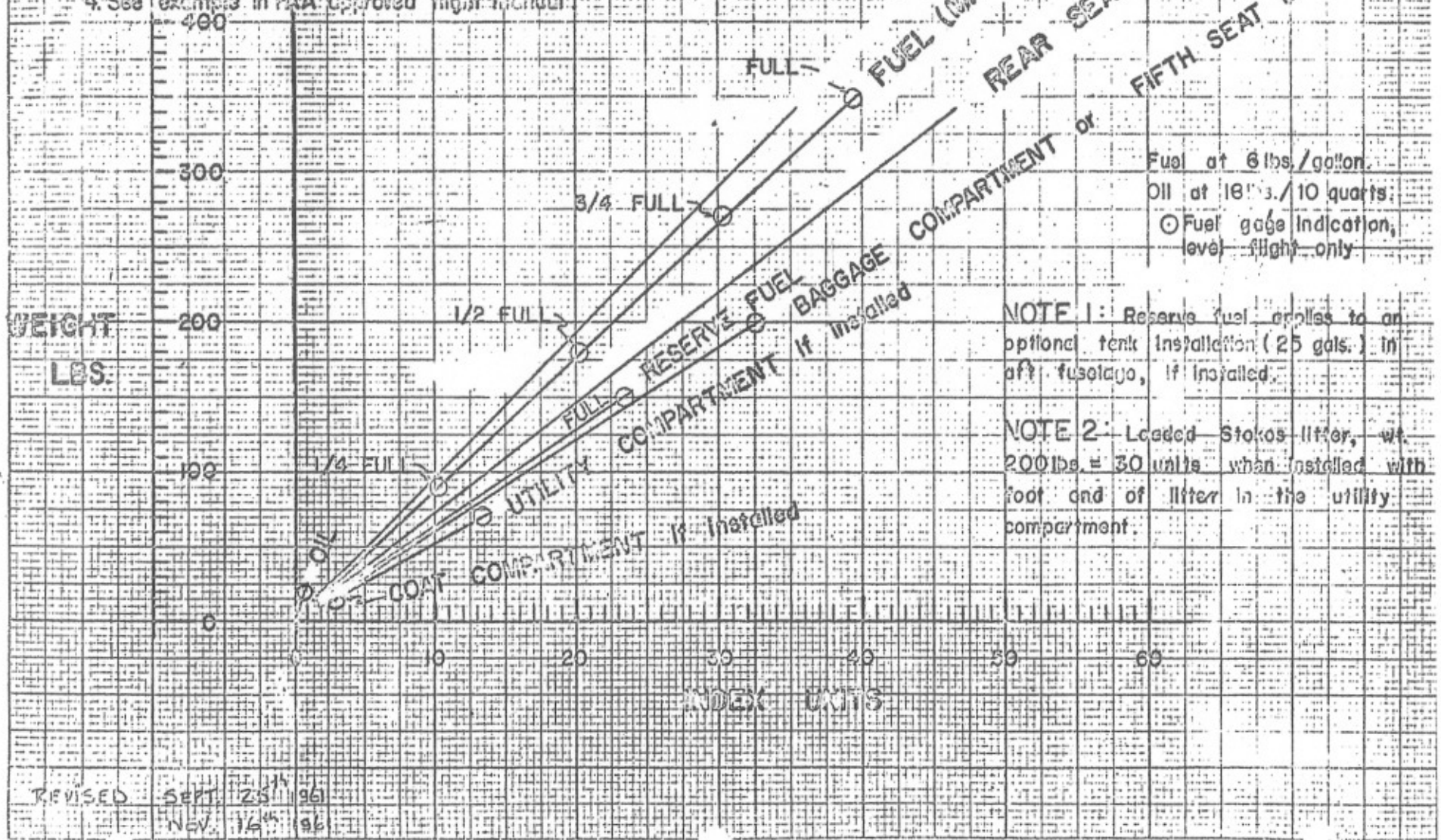
KELLETT "COMMANDER" MODELS 391B, 395, 395A

LOADING GRAPH

FIG. 7.1

PROCEDURE

1. Find total index units for all useful load items.
2. Add index units for empty wt.
3. Enter Fig 7.2 to determine allowable limit of wt. & c.g.
4. See example in FAA approved flight manual.



Fuel at 6 lbs./gallon.
Oil at 18 lbs./10 quarts.
⊙ Fuel gage indication, level flight only.

NOTE 1: Reserve fuel applies to an optional tank installation (25 gals.) in aft fuselage, if installed.

NOTE 2: Loaded Stokes litter, wt. 200 lbs. = 30 units when installed with foot end of litter in the utility compartment.

REVISED SEPT. 25th 1961
NOV. 16th 1961