MAULE AEROSPACE TECHNOLOGY, INC.

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F A A A P P R O V E D

A I R P L A N E F L I G H T M A N U A L

FOR

MAULE M-7-235

Airplane Serial No._____

Registration No._____

THIS DOCUMENT MUST BE KEPT IN THE AIRPLANE AT ALL TIMES.

FAA APPROVED: John R. James

Manager, Atlanta Aircraft Certification Office

FAA, Central Region

DATE: Nov. 9, 1983

LOG OF REVISIONS

REV.	TO PAGES	DESCRIPTION	APPROVAL AND DATE
A	9	Revised 2.3.D to read 300 feet.	Thomas E Stuckey Acting Manager, Atlanta Aircraft Certification Office FAA, Central Region Date: JAN 30 1984
B	9	Added 2.3.E. RUDDER TRIM.	Robert J Semple Acting Manager, Atlanta Aircraft Certification Office FAA, Central Region Date: 2 APR 1984
C	3,4, & 5	Added Ballast requirements to be effective for serial numbers 4001C thru 4061C only.	Paul Sconyers Manager, Atlanta Aircraft Certification Office FAA, Central Region DATE: NOV 6 1989
D	All 4 21, 24	Updated entire AFM to latest format. Added McCauley B3D32C414-C/G-82NDA-4 (78"), -2 (80") and B2D37C224-B/G-90RA-9 (81") propellers. Corrected Center Seat and Rear Seat Passenger stations and Baggage Area "C" station in Loading Chart.	Paul Sconyers Manager, Aircraft Certification Office Federal Aviation Administration Central Region, Atlanta Date: JUN 25 1992
E	4	Propeller mod. no. B2D37C224-C/G-90RA-9 corrected to B2D37C224-B/G-90RA-9. Added Lycoming O-540-J3A5 and IO-540-W1A5 engines with dual magnetos.	Paul Sconyers Manager, Aircraft Certification Office Federal Aviation Administration Central Region, Atlanta, GA Date: DEC 18 1992

See page ia for rev. F.

LOG OF REVISIONS

REV.	TO PAGES	DESCRIPTION	APPROVAL AND DATE
F	2	Deleted Fuel Quantity in Paragraph 1.4 and referred to Fuel Supply Table. Added Fuel Supply Table.	Manager, Aircraft Certification Office Federal Aviation Administration Atlanta, Georgia Date: OCT 17 1994
	4	Added McCauley B2D37C224-B/G-90RA-10 (80") to -12 (78") Propellers.	
	6	Deleted Fuel Capacity numbers from Fuel Transfer Pump Switch Placard and added note for Tank Configuration.	
	10	Added "Parking Brake...OFF" to 3.2.D BEFORE TAKEOFF. Corrected +50 RPM to ±50 RPM in 3.2.6.	
	20	Added unusable Fuel weight for new Tank Configurations.	
G	6	Added JPI EDM-900/930 and corrected cargo or baggage limitations.	Manager, Southeast Flight Test Section AIR-712, FAA Atlanta, GA Date: APR 23 2018

LOG OF SUPPLEMENTS

SUPP. NO.	NO. OF PAGES	DESCRIPTION	APPROVAL DATE
1	11	Installation of **EDO 797-2500 Amphibious Floats** - Maule Drawing **9139A.** (07/19/84) ***Rev. B***	11/13/06
2	2	Installation of **Century IIB Autopilot.**	02/09/84
3	3	Installation of **EDO 248B2440 Floats.**	07/03/84
4	2	Installation of **Century 21 Autopilot.**	06/18/86
5	2	Installation of Lycoming O-540-**B4B5** Engine. (07/22/88) ***Rev. A***	11/29/90
6	2	Installation of **McCauley B3D32414-C/G-82NDA-4** (78") 3 Blade Propeller**.**	11/21/88
7	40	Installation of **EDO** Model 797-2500 **Amphibious Floats, Allison Engine** Model **250-BI7C** and **Hartzell** Model **HC-B3TF-7A/TIOI73F -11R** Full-Feathering Beta Propeller per STC No. **SA2661SO.**	02/13/90
8	2	Installation of **McCauley B2D37C224-B/G-90RA-9** (81") 2 Blade Propeller with IO-540-W or O-540-J/B Engine**.** (For use with IO-540-W or O-540-J engine, AFMS is not required with AFM rev. D or later.) (03/05/92) ***Rev. A***	03/20/14
9	2	Installation of **McCauley B3D32C414-C/G-82NDA-2** (80") 3 Blade Propeller**.** (Not required with Rev. D AFM.)	03/05/92
10	2	Operation of aircraft with **11# Ballast Slug removed** per **Service Kit #15** (s/n 4001C - 4061C).	12/23/92
11	5	Installation of **Rear Sling Seat** moved aft 3".	12/17/92
12	2	Operation of aircraft when **modified to an M-7-235A** with Battery located under right seat and use of 11# Ballast still in effect. (S/n 4001C-4016C,4019C,4020C only)	3/10/94
13	2	Inst. of **McCauley B3D32C414-C/G-82NDA-2** (80") or **-4** (78") 3 Blade Propeller with Lyc. O-540-**B4B5** Engine.	11/25/96
14	6	Installation of **FluiDyne C3000H** Wheel**-Skis.**	01/05/98
15	5	Installation of **FluiDyne C3000** (Manually Operated) **Skis.**	01/05/98
16	5	Installation of **Fli-Lite 3000 MK IIIA Skis** - Maule Drawing **9081A,** rev. E (or later revision).	10/26/98
17	21	Installation of **Wipline 3000 Amphibious Floats** - Maule Drawing **9188A**, Rev. **A** or later revision.	07/16/99
18	2	Installation of **Hartzell HC-C2YR-1BF/8477D-6** or **HC-C3YR-1RF/F-7693(F)-( )** Propeller–(Dwg **5279F)**. ***Rev. B***	01/28/04
19	9	Installation of **S-TEC System 55 Two Axis Autopilot** Model **ST-620** (14v) - Maule Drawing **9196A**. (Land)	04/04/00
20	9	Installation of **S-TEC System 55 Two Axis Autopilot** Model **ST-620** (14v) - Maule Drawing **9196A**. (Sea)	04/04/00
21	9	Installation of **S-TEC System 50 Two Axis Autopilot** Model **ST-418-50** (14v) - Maule Drawing **9193A**.	01/05/00
22	9	Installation of **S-TEC System 30 Two Axis Autopilot** Model **ST-810-30** (14v) - Maule Drawing **9197A**.	01/21/00
23	9	Installation of **S-TEC System 30 Two Axis Autopilot** Model **ST-810-30** (14v) - Maule Dwg **9197A**. (Sea)	01/21/00
24	9	Installation of **S-TEC System 50 Two Axis Autopilot** Model **ST-609-50** (**28v**) - Maule Drawing **9200A**.	02/14/00
25	9	Installation of **S-TEC System 20 Single Axis Autopilot** Model **ST-810-20** (14v) - Maule Dwg **9197A**. (Land)	03/20/00
26	9	Installation of **S-TEC System 20 Single Axis Autopilot** Model **ST-810-20** (14v) - Maule Dwg **9197A**. (Sea)	03/20/00
27	9	Installation of **S-TEC System 20 Single Axis Autopilot** Model **ST-820-20** (**28v**) - Maule Drawing **9201A**.	03/20/00
28	7	Inst. of **S-TEC System 40 Single Axis Autopilot** Model **ST-418-40** (14v)-Maule Dwg **9193A**, Rev. **C** or later.	10/29/01
29	7	Inst. of **S-TEC System 40 Single Axis Autopilot** Model **ST-609-40** (**28v**)-Maule Dwg **9200A**, Rev. **B** or later.	10/29/01
30	8	Installation of **AQUA 2400 Floats** per Maule Drawing **9135A**, rev. **F** or later revision.	06/07/00
-	4	Installation of **S-TEC System 20 Single Axis Autopilot** Model **ST-872-20** (**28v**) - Maule Dwg **9211A**. (Land)	06/25/01
-	5	Installation of **S-TEC System 30 Two Axis Autopilot** Model **ST-872-30** (**28v**) - Maule Dwg **9211A**. (Land)	06/25/01
-	5	Installation of **S-TEC System 20 Single Axis Autopilot** Model **ST-872-20** (**28v**) - Maule Dwg **9211A**. (Sea)	06/25/01
-	5	Installation of **S-TEC System 30 Two Axis Autopilot** Model **ST-872-30** (**28v**) - Maule Dwg **9211A**. (Sea)	06/25/01
-	3	Installation of **GARMIN GNS-430** (GPS/NAV/COMM) **System** - Maule Dwg **7205A**.	01/03/01
-	3	Installation of **GARMIN GNC-300XL** (GPS/COMM) **System** - Maule Drawing **7207A**.	01/03/01
-	3	Installation of **GARMIN GNC-250XL** (GPS/COMM) **System** - Maule Drawing **7209A**.	01/03/01
-	3	Installation of **Bendix-King KLX-135A** (GPS/COMM) **System** - Maule Drawing **7219A**.	01/03/01
-	5	Inst. of **S-TEC System 20 Single Axis Autopilot** Model **ST-873-20** (**14/28v**) - Maule Dwg **9212A**. (Land)	10/15/01
-	5	Inst. of **S-TEC System 30 Two Axis Autopilot** Model **ST-873-30** (**14/28v**) - Maule Dwg **9212A**. (Land)	10/15/01
-	5	Installation of **Apollo MX20 Multi-Function Display** - Maule Drawing 7265A.	08/15/02
-	8	Installation of **GARMIN GNC-420** (GPS/COMM) **System** - Maule Drawing **7251A**.	06/30/03
-	9	Installation of **GARMIN GNS-530** (GPS/NAV/COMM) **System** - Maule Drawing **7253A**.	06/30/03
-	4	Installation of **GARMIN GTX-330 Mode S Transponder Traffic Information System** (TIS) - Maule Dwg **7255A**.	06/30/03
-	3	Operation of aircraft when Micro AeroDynamics **Vortex Generator System** is installed - Maule Drawing **9177A**.	12/16/05
-	2	Installation of **McCauley B2D37C224/90RA-4 (86")** Prop with Lyc. O-540-J/IO-540-W Engine.	04/03/12

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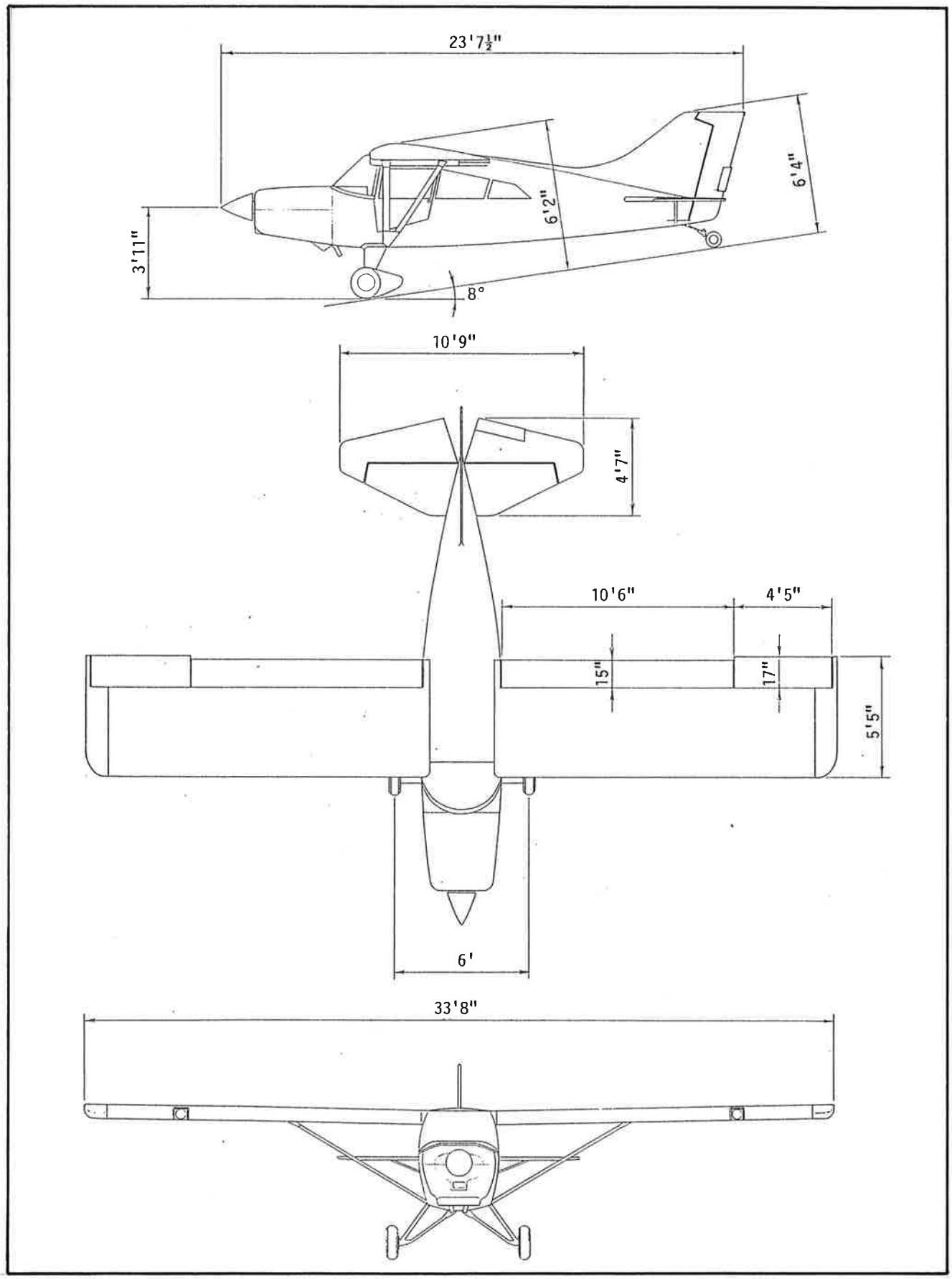
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5'5"
6'
33'8"

SECTION I

GENERAL: NORMAL CATEGORY OPERATION

1.1 MAXIMUM WEIGHT: 2500 Pounds

1.2 CENTER OF GRAVITY LIMITS: +15.0 to +20.0 @ 2500 lbs.
+12.5 to +20.0 @ 1700 lbs. or less
Straight line variation between points given
Datum: Wing Leading Edge
NOTE: It is the responsibility of the pilot to assure that the airplane is property loaded. Refer to the Weight and Balance Data for baggage/cargo loading recommendations and loading graphs.

////////////// CHECK WEIGHT AND BALANCE CAREFULLY, ESPECIALLY WHEN USING
///CAUTION/// THE 5TH SEAT OR WHEN CARGO OR BAGGAGE IS CARRIED IN THE
////////////// REAR CABIN AREA. ALSO, FLIGHT PLANNING SHOULD INCLUDE ALLOWANCE FOR FORWARD C.G. SHIFT WITH FUEL BURN.

Ballast requirements applicable to s/n's 4001C-4061C ONLY:
////////////// REMOVABLE 11 LB. BALLAST SLUG SHOULD BE REMOVED FROM ITS
///CAUTION/// AFT FUSELAGE STORAGE AREA TO IMPROVE REAR CABIN LOADING
////////////// CAPACITY. THIS BALLAST SHOULD BE INSTALLED IN ITS AFT STORAGE AREA FOR LIGHT WEIGHT/FORWARD C.G. LOADINGS (1 PERSON, LIGHT FUEL LOAD) TO IMPROVE LANDING AND GROUND HANDLING. WHEN NOT REQUIRED FOR THIS LOADING CONDITION, THE SLUG SHOULD BE STORED IN FORWARD CABIN STORAGE AREA.

1.3 MANEUVERS: Only Normal Category Maneuvers including Stalls, Lazy Eights, Chandelles and steep turns involving bank angles not greater than 60° are approved in this airplane.

////////////// AEROBATICS AND INTENTIONAL SPINS PROHIBITED.
///CAUTION///
//////////////

1.4 FUEL CAPACITY: Usable Fuel/Unusable Fuel: See Table Below

Tank Config.	Tank Location	Usable Fuel (Gal.)	Unusable Fuel (Gal.)
A	Main	20.0	1.5
	Aux.	15.0	0.0
B	Main	20.0	1.5
	Aux.	21.0	0.0
C	Main	21.5	2.3
	Aux.	15.0	0.0
D	Main	21.5	2.3
	Aux.	21.0	0.0

Fuel Capacity - See Instrument Panel Placard for tank Configuration installed in this Aircraft

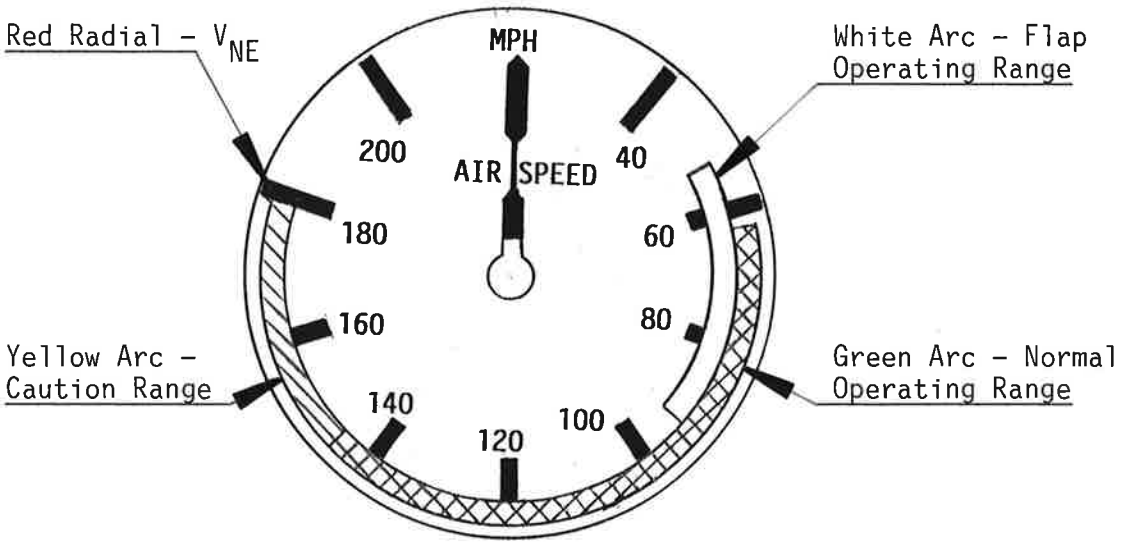
////////////// FUEL REMAINING IN TANK WHEN INDICATOR READS EMPTY
///CAUTION/// CANNOT BE USED SAFELY IN FLIGHT.
//////////////

SECTION II

LIMITATIONS

2.1 AIRSPEED LIMITS: All airspeeds are calibrated airspeeds (CAS).

A. AIRSPEED INDICATOR MARKINGS:



B. EXPLANATION OF AIRSPEED INDICATOR MARKINGS:

Red Radial Line – Never Exceed Speed (V_{NE}) 180 mph (156K): Maximum safe airspeed in smooth air.

Yellow Arc – Caution Range, 145–180 mph (126–156K): Operation in this speed range should be conducted only in smooth air and control movements should not be large or abrupt.

Green Arc – Normal Operating Range, 61–145 mph (53–126K): Extends from flaps up, power off stall speed at 2500 lbs. (V_{S1}) to design cruise speed (V_C).

White Arc – Flap Operating Range, 52–94 mph (45–82K): Extends from full flap, power off minimum stall speed at 2500 lbs. (V_{SO}) to the Maximum flaps extended speed (V_{FE}).

FAA APPROVED
DATE: Nov. 9, 1983
REV. D dated: JUN 25 1992

2.2 POWER PLANT LIMITS:

Engine: Lycoming O-540-J1A5D, IO-540-W1A5D, O-540-J3A5 or IO-540-W1A5

Engine Limits: 235 hp @ 2400 rpm, Full Throttle Continuous

Propeller: Hartzell: Constant Speed HC-C2YR-1BF/F8468A-6R (78") or -3R (81") (-3R applicable only to aircraft equipped with 7:00 tires or larger/26 psi minimum air pressure)

McCauley: Constant Speed B3D32C414-C/G82NDA-4 (78") or -2 (80") (-2 applicable only to aircraft equipped with 7:00 tires or larger) or B2D37C224-B/G-90RA-9 (81") to -12 (78") (81" applicable to aircraft with 7:00 tires or larger/26 psi minimum air pressure) (80" applicable only to aircraft equipped with 7:00 tires or larger)

Fuel: 100/100LL Minimum Grade Aviation Gasoline

Engine Instrument Markings:

Cylinder Head Temperature:	Green Arc - Normal Operating Range, 200°F - 435°F
	Red Radial - Operating Limit, 500°F
Oil Temperature:	Green Arc - Normal Operating Range, 140°F - 245°F
	Red Radial - Operating Limit, 245°F
Oil Pressure:	Green Arc - Normal Operating Range, 55 to 95 psi
	Yellow Arc - Caution Range, 25 to 55 and 95 to 115 psi
	Red Radial - Minimum Operating Pressure, 25 psi
	Red Radial - Maximum Operating Pressure, 115 psi
Manifold Pressure:	Green Arc - Normal Operating Range, 14.5 to 29 ins. Hg

2.2 POWER PLANT LIMITS: (Cont'd)

Fuel Pressure: (O-540 only)	Green Arc - Normal Operating Range, 0.5 to 8 psi
	Red Radial - Minimum Pressure, 0.5 psi
	Red Radial - Maximum Pressure, 8 psi
Fuel Flow: (IO-540 only)	Red Radial - Maximum, 8.9 psi or 26.9 gph
Tachometer	Green Arc - Normal Operating Range, 2050 to 2400 RPM
	Red Radial - Maximum RPM, 2400 RPM

////////////// WHEN EQUIPPED WITH THE HARTZELL -6R (78") PROP DO NOT
////CAUTION//// EXCEED 23 IN. M.P. BELOW 2050 RPM. THIS IS A VIBRATORY
////////////// STRESS LIMITATION WHICH APPLIES ONLY TO THIS MODEL PROP.

2.3 FLIGHT LOAD FACTORS: Flaps Fully Retracted 3.8g Positive to 1.5 Negative
Flaps Extended: 1.9 Positive to 0g Negative

NOTE: DESIGN MANEUVERING SPEED: The maximum safe airspeed at which full aerodynamic controls can be applied (V_A) is 125 mph (109K). This airspeed is not marked on the airspeed indicator.

2.4 PLACARDS:

The following placards are in the cockpit in clear view of the pilot:

"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE AIRPLANE FLIGHT MANUAL AND IN THE FORM OF PLACARDS AND MARKINGS."

"NO AEROBATIC MANEUVERS INCLUDING SPINS, APPROVED."

"MANEUVERING SPEED: 125 MPH IAS (109K)."

"SEE LOADING INSTRUCTIONS IN WEIGHT AND BALANCE SECTION OF AIRPLANE FLIGHT MANUAL."

"THIS AIRPLANE APPROVED FOR DAY OR NIGHT IFR NON-ICING FLIGHT WHEN EQUIPPED IN ACCORDANCE WITH FAR 91 OR FAR 135."

"DO NOT TURN OFF ALTERNATOR IN FLIGHT EXCEPT IN CASE OF EMERGENCY."

2.4 PLACARDS: (Cont'd)

"FUEL REMAINING IN TANK WHEN INDICATOR READS ZERO CANNOT BE USED SAFELY IN FLIGHT.

When equipped with Hartzell -6R (78") Propeller:

"DO NOT EXCEED 23 INCHES M.P. BELOW 2050 RPM."

Located at the main Fuel Tank Selector Valve on the left Kick Panel:

FUEL SELECTOR VALVE
LEFT: * GAL.
OFF BOTH
RIGHT: * GAL.

Located on the Instrument Panel at the Auxiliary Tank Transfer Switches:

FUEL TRANSFER PUMPS

PUSH FOR AUX. QUANT.		PUSH FOR AUX. QUANT.
	LEFT RIGHT	

NOTE: If JPI EDM-900/930 units are installed, the PUSH FOR AUX. QUANT. buttons and placards are not installed. However, FUEL TRANSFER PUMPS and LEFT and RIGHT placards are used as below:

FUEL TRANSFER PUMPS

LEFT RIGHT

FUEL CAPACITY: MAIN TANKS * GAL. USABLE EACH, AUX. TANKS * GAL. USABLE EACH. (TANK CONFIGURATION ___)

* Instrument Panel Placard will show capacity of the tanks installed in this aircraft. See Table on Page 2 for capacity of available tank configurations.

On the Flap Handle:

"FLAPS/PULL ON/2ND NOTCH/TAKEOFF/4RD NOTCH/LANDING."

In Rear Cabin Area:

"CARGO OR BAGGAGE LIMITATIONS
MAX. LOAD AREA "A" 100 LBS.
MAX. LOAD AREA "B" 175 LBS.
MAX. LOAD AREA "C" 125 LBS.

"CHECK WEIGHT AND BALANCE CAREFULLY WHEN USING 5TH SEAT OR LOADING REAR/CARGO/BAGGAGE. MAXIMUM REAR SEAT LOADING IS 170 LBS.

Ballast requirement Placard for s/n's 4001C-4061C ONLY:

"BALLAST IN AFT FUSELAGE SHOULD BE REMOVED FOR LARGE AFT CABIN LOADS. THIS BALLAST SHOULD BE IN PLACE IN THE AFT FUSELAGE STORAGE FOR LIGHT/FORWARD LOADING."

SECTION III

NORMAL PROCEDURES:

3.1 PREFLIGHT INSPECTION:

A. INTERIOR:

1. BAT Switch.....ON
2. Fuel Gauges.....CHECK INDICATIONS
3. Aux. Fuel Pumps.....ON, THEN OFF (LISTEN TO VERIFY OPERATION)
4. All Electrical Switches.....OFF
5. BAT Switch.....OFF
6. Flaps.....FULL DOWN (4TH NOTCH)

Ballast requirement applicable to s/n's 4001C-4061C ONLY:

6. 11 lb. Removable Ballast....SECURED OR REMOVED (CHECK WT/C.G.)

B. EXTERIOR: Begin at the left front door, proceed around the left wing to the nose area, then around the right wing and back to the fuselage, then around the tail section.

1. Fuel drains behind step.....DRAIN (2)
2. Left Flap.....CHECK HINGES & CONTROL ATTACHMENTS
3. Aileron.....CHECK HINGES & CONTROL ATTACHMENTS
4. Left Wing Top.....CHECK FOR WRINKLES AS INDICATION OF INTERNAL DAMAGE
5. Left Wing Main & Aux Fuel Tank Drain...DRAIN (2)
6. Left Wing Tip & Nav Light.....CHECK FOR DAMAGE
7. Auxiliary Fuel Tank.....VISUALLY CHECK QUANTITY
8. Landing Light.....CHECK FOR DAMAGE
9. Left Wing Tiedown.....REMOVE
10. Pitot Tube.....REMOVE COVER
11. Stall Warning Switch.....CHECK FOR FREEDOM OF MOVEMENT
12. Main Fuel Tank.....VISUALLY CHECK QUANTITY
13. Left Landing Gear.....CHECK TIRE INFLATION & BRAKE LINE SECURITY
14. Bottom left side of Cowl.....DRAIN GASCOLATOR (1)
15. Top Cowl, Oil Access Door.....CHECK OIL QUANTITY
16. Propeller.....CHECK LEADING EDGE FOR DAMAGE
17. Air Inlets.....CHECK FOR FOREIGN OBJECTS, INSPECT VISIBLE CONNECTIONS AND COMPONENTS

3.1 PREFLIGHT INSPECTION: (Cont'd)

18. Right Landing Gear.....CHECK TIRE INFLATION & BRAKE LINE SECURITY
19. Right Wing & Controls.....INSPECT SAME AS LEFT WING
20. Wing Main & Aux Fuel Tank Drain.....DRAIN (2)
21. Right Fuselage, Top, Side & Bottom.....INSPECT FOR WRINKLES AS INDICATION OF INTERNAL DAMAGE
22. Right Side Static Port.....CLEAR
23. Right Stabilizer.....CHECK ATTACHMENT POINTS & STRUT
24. Right Elevator.....CHECK HINGE POINTS
25. Rudder.....CHECK HINGE POINTS, CONTROL ATTACHMENTS & NAV. LIGHT
26. Tailwheel.....CHECK INFLATION, ATTACHMENTS, REMOVE TIEDOWN
27. Left Elevator.....CHECK TAB CONTROLS & ALL HINGE POINTS
28. Left Stabilizer.....CHECK ATTACHMENT & STRUT
29. Left Fuselage, Top, Side & Bottom.....CHECK FOR WRINKLES AS INDICATION OF INTERNAL DAMAGE
30. Left Side Static Port.....CLEAR

3.2 OPERATING CHECK LISTS:

A. BEFORE STARTING:

1. Seat Belts & Shoulder Harnesses.....FASTENED
2. Flaps.....RETRACTED
3. Circuit Breakers.....CHECK

B. STARTING:

1. Parking or Toe Brakes.....ON
2. Fuel Selector Valve.....ON FULLEST TANK, OR BOTH IF SAME QUANTITY
3. Throttle.....OPEN 1/4 INCH
4. Propeller Control.....FULL INCREASE RPM
5. Mixture Control.....RICH (SEE NOTE NEXT PAGE FOR HOT START)
6. Anti-Collision Light.....ON
7. BAT and ALT Switch.....ON
8. Primer (O-540).....AS REQUIRED
   Prime (IO-540).....AS REQUIRED USING BOOST PUMP (SEE NOTE NEXT PAGE)
9. Mixture Control (IO-540 only).....FULL LEAN
10. Starter Switch.....TWIST FULL RIGHT TO ENGAGE

3.2 OPERATING CHECK LISTS: (Cont'd)

11. Mixture Control (IO-540 only).....FULL RICH WHEN ENGINE STARTS TO FIRE

NOTE: FOR A HOT START, DO NOT PRIME. A HOT ENGINE MAY FLOOD ON A START ATTEMPT. TO CLEAR A FLOODED ENGINE, PULL MIXTURE FULL LEAN AND OPEN THROTTLE, CRANK WITH STARTER. WHEN ENGINE STARTS, PULL THROTTLE TO IDLE AND EASE MIXTURE TO FULL RICH.

NOTE: (IO-540) FOR A COLD ENGINE (FIRST START OF THE DAY), PLACE MIXTURE TO FULL RICH, THROTTLE 1/4" OPEN. PRIME WITH BOOST PUMP FOR 3 to 5 SECONDS. IF ENGINE DOES NOT START, PRIME FOR ANOTHER 3 to 5 SECONDS. OVERPRIME CAN BE NOTED BY FUEL COMING FROM DRAIN IN CENTER OF BOTTOM COWL.

////////////// IN EVENT OF ENGINE FIRE, CONTINUE CRANKING. PULL MIXTURE
///CAUTION/// TO FULL LEAN. IF ENGINE FAILS TO START AFTER SEVERAL
////////////// REVOLUTIONS, AND FIRE CONTINUES, SECURE IGNITION, BAT. AND ALT. SWITCHES, TURN FUEL VALVE OFF AND EXIT AIRCRAFT.

12. After Starting.....CHECK OIL PRESSURE

//////////////
///CAUTION/// IF OIL PRESSURE DOES NOT EXCEED 25 PSI WITHIN 30 SECONDS
////////////// SHUT DOWN ENGINE.

13. Alternator.....CHECK CHARGING
14. Radios & other electrical switches.....AS REQUIRED
15. Parking Brake.....OFF

C. ENGINE CHECK:

1. Parking Brake.....ON, IF DESIRED
2. Engine Instruments.....CHECK, IN GREEN ARCS
3. Throttle.....INCREASE TO 2000 RPM
4. Magnetos.....SWITCH TO RIGHT, LEFT, BOTH, CHECKING RPM DROPS

////////////// A RPM DROP OF MORE THAN 175 RPM OR A DIFFERENCE BETWEEN
///CAUTION/// LEFT AND RIGHT OF MORE THAN 50 RPM IS UNACCEPTABLE.
//////////////

5. Propeller Control.....RETARD SLOWLY UNTIL MAXIMUM OF 500 RPM DROP IS NOTED. RETURN TO FULL INCREASE RPM. REPEAT. SET FULL INCREASE RPM

3.2 OPERATING CHECK LISTS: (Cont'd)

6.	Carburetor Air Control (O-540).....	PULL HOT. NORMAL DROP WITH CARBURETOR AIR HOT IS 150 ±50 RPM
	Alternate Air Control (IO-540).....	TURN LEFT TO UNLOCK AND PULL. NORMAL RPM DROP WITH ALTERNATE AIR IS APPROXIMATELY 50 RPM.
7.	Carburetor Air Control (O-540).....	PUSH COLD
	Alternate Air Control (IO-540).....	PUSH IN AND TURN RIGHT TO LOCK
8.	Vacuum Gauge.....	CHECK IN GREEN
9.	Alternator.....	CHARGING: LIGHT OUT ABOVE 900 RPM
10.	Throttle.....	RETARD TO IDLE
11.	Parking Brake.....	OFF

D. BEFORE TAKEOFF:

1.	Fuel Selector.....	ON FULLEST TANK OR BOTH
2.	Flaps.....	AS DESIRED FOR T.O. (MAX. 24°)
3.	Trim Controls.....	SET FOR TAKEOFF
4.	Flight Controls.....	CHECK FOR FREEDOM AND PROPER TRAVEL
5.	Mixture Control.....	FULL RICH
6.	Propeller Control.....	FULL INCREASE RPM
7.	Carburetor Air Control (O-540).....	PUSH COLD
	Alternate Air Control (IO-540).....	PUSH IN AND LOCK
8.	Engine Instruments.....	RECHECK IN NORMAL RANGE
9.	Radios.....	AS DESIRED
10.	Altimeter.....	SET
11.	Attitude Indicator.....	CHECK ERECT
12.	Directional Indicator.....	SET
13.	Seat Belts & Shoulder Harnesses.....	RECHECK FASTENED
14.	Doors.....	CLOSED & LATCHED
15.	Passengers.....	BELTS/HARNESSES SECURED. BRIEFED ON OPENING DOORS
16.	Parking Brake.....	OFF

E. BEFORE LANDING:

1.	Seat Belts & Shoulder Harnesses.....	FASTENED
2.	Fuel Selector Valve.....	ON FULLEST TANK OR BOTH
3.	Mixture Control.....	FULL RICH
4.	Propeller Control.....	FULL INCREASE RPM
5.	Flaps.....	AS REQUIRED
6.	Carburetor Air Control (O-540).....	PULL HOT (AS REQUIRED)
	Alternate Air Control (IO-540).....	IN AND LOCKED

3.2 OPERATING CHECK LISTS: (Cont'd)

F. ENGINE SHUT-DOWN:

1. Parking Brakes.....ON, IF DESIRED
2. Radios.....OFF
3. All other electrical switches.....AS DESIRED
4. Flaps.....AS DESIRED
5. Magneto Grounding Check.....PERFORM BELOW 1000 RPM
6. Mixture Control.....FULL LEAN
7. Magneto Switch.....OFF
8. Anti-Collision Light.....OFF
9. BAT & ALT Switch.....OFF

3.3 NORMAL FLIGHT OPERATIONS:

A. NOTE: FLAP SETTINGS:

The following Flap Settings are available:

Flap Configuration	Flap Handle Position	Flap Position
Cruise	Handle Full Down	-7°
Flaps Up	First Notch	0°
Takeoff	Second Notch	24°
Landing	Third Notch	40°
Landing	Fourth Notch	48°

B. RECOMMENDED FLAP SETTINGS:

Flap settings are given in number of notches above the fully retracted position which is handle full down (Normal -7°).

NOTE: The airplane meets CAR 3 takeoff climb requirements at 90 mph CAS with the flaps selected in any of the following three positions: (a) Fully Retracted, handle full down (-7°), (b) First Notch (0°), and (c) Second Notch (24°).

Normal Takeoff - Second Notch (24°)

Normal Climb - First Notch (0°)

Best Angle of Climb - Second Notch (24°)

Cruise - Fully retracted (-7°/no notches or 0°/1st notch)

Landing - Normally Fourth notch (48°/full flaps) - other positions permissible

C. CLIMBING:

Best Rate of Climb - 90 mph CAS, flaps @ First Notch (0°)

Best Angle of Climb - 75 mph CAS with flaps set @ Second Notch (24°)

////////////// ////CAUTION//// //////////////

FOR TAKEOFF OR LANDING UNDER GUSTY CROSSWIND CONDITIONS, FLAP SETTING OF 0° (one notch) IS RECOMMENDED. -7° PERMISSIBLE.

////////////// ////CAUTION//// //////////////

USE CLIMB AIRSPEED BELOW 90 MPH ONLY AS NECESSARY AND CHECK CYLINDER HEAD TEMPERATURE FREQUENTLY WHEN DOING SO.

3.3 NORMAL FLIGHT OPERATIONS: (Cont'd)

D. RUDDER TRIM:

NOTE: To assure full effectiveness of the Right Rudder Trim:

Unlock "T" handle (1/2 turn left), depress right rudder as you pull "T" handle full out. Lock "T" handle 1/2 turn right before releasing right rudder pressure. If too much trim, move handle in until trim is correct and then lock.

E. STALLS:

Stalls are preceded by mild buffet which can be felt through the rudder pedals. The red stall warning light on the instrument panel will illuminate at 5 to 10 mph above the stall speed. Loss of altitude prior to recovery from a stall may be as much as 300 feet.

////////////// THE STALL WARNING LIGHT IN INOPERATIVE WHEN
////CAUTION//// THE BATTERY SWITCH IS OFF.
//////////////

F. CROSSWIND LANDINGS & TAKEOFFS:

Maximum demonstrated crosswind component is 14 mph and flap extension should be limited to 0° (one notch) or -7° with such crosswind or higher. 14 mph is the maximum demonstrated for certification of the airplane and is not considered limiting with flaps at 0°.

G. FUEL SYSTEM MANAGEMENT:

Fuel is fed to the engine from the main (inboard) tanks and is controlled by the selector valve on the left kick panel. Auxiliary (outboard) tanks feed their respective main tanks via transfer pumps which are controlled by switches on the instrument panel. These transfer pumps transfer fuel at a rate of 0.4 gallons per minute or approximately 45 minutes for a full auxiliary tank. Since over-filling a main tank from an auxiliary tank will force excess fuel overboard, it is recommended that the transfer pumps not be activated until their respective main tanks are slightly more than one quarter full. If the tank being transferred to is feeding the engine, however, transfer can be initiated when the main tank is down to approximately one half. Confirm fuel transfer by illumination of the transfer pump switch, an increase in the respective main tank fuel gauge indicator, and a decrease on the respective auxiliary tank indicator.

3.4 DOOR-OFF OPERATION:

This aircraft may be operated with either one (not both) of the front doors removed, or when both front doors are installed, with the rear passenger door or rear passenger and baggage doors off. When doing so, observe the following additional limitations:

1. Maximum airspeed - 125 mph
2. Maximum bank angle - 30°
3. Maximum yaw angle - 10°
4. No Smoking permitted
5. Limit flight to VFR conditions

3.5 NOISE LEVEL:

The noise levels obtained during certification per FAR 36, were:

72.3 dBA for aircraft with Hartzell -6R (78") 2 blade propeller
72.2 dBA for aircraft with Hartzell -3R (81") 2 blade propeller
68.0 dBA for aircraft with McCauley -4 (78") 3 blade propeller
73.5 dBA for aircraft with McCauley -2 (80") 3 blade propeller
73.2 dBA for aircraft with McCauley -9 (81") 2 blade propeller

No determination has been made by the Federal Aviation Administration that the noise level of this airplane is or should be acceptable for operation at, into, or out of any airport.

3.6 ANTI-COLLISION LIGHT:

////////////// ////WARNING//// //////////////

ANTI-COLLISION LIGHT MAY CAUSE ADVERSE EFFECT ON PILOT WHEN FLYING IN VISIBLE MOISTURE OVERCAST OR HAZE. IT IS RECOMMENDED THAT IT BE TURNED OFF UNDER THESE CONDITIONS.

SECTION IV

EMERGENCY PROCEDURES

4.1 EMERGENCY BASIC RULES:

To assist the pilot when an emergency occurs, three basic rules are established which apply to most emergencies occurring while airborne. They should be remembered by each aircrew member.

1. Maintain aircraft control
2. Analyze the situation and take proper action
3. Land as soon as conditions permit

4.2 ENGINE EMERGENCY SHUTDOWN:

1. Mixture - Full lean
2. Fuel Selector - Off
3. Ignition Switch - Off

4.3 ENGINE FIRE DURING STARTING:

1. Mixture - Full lean
2. Throttle - Open
3. Continue cranking for several revolutions. Attempt to draw fire inside engine.
4. Accomplish ENGINE EMERGENCY SHUTDOWN if fire continues.

4.4 ENGINE FIRE AFTER STARTING:

1. Accomplish ENGINE EMERGENCY SHUTDOWN
2. Master Switch - Off

4.5 EMERGENCY EXIT ON THE GROUND:

1. Accomplish ENGINE EMERGENCY SHUTDOWN
2. Master Switch - Off
3. Leave aircraft by either door or kick out side window panels or baggage door.

4.6 TAKEOFF ABORT: (BEFORE LIFT-OFF)

1. Throttle - Closed
2. Brakes - As Required

4.7 ENGINE FAILURE AFTER TAKEOFF OR FORCED LANDING:

1. Glide - Establish 83 mph IAS with flaps at 0°
2. Switch Fuel Selector to fullest tank
3. Electric Fuel Pump - On
4. Mixture Rich, Ignition On
5. Carburetor Air Control (O-540) - Pull Hot
   Alternate Air Control (IO-540) - Pull On
6. If engine does not restart, accomplish EMERGENCY SHUT-DOWN
7. Wing Flaps - As Required
8. Master Switch - Off

4.8 PARTIAL POWER FAILURE DURING FLIGHT OR AFTER TAKEOFF:

1. Mixture - Rich
2. Carburetor Air Control (O-540) - Pull Hot
   Alternate Air Control (IO-540) - Pull On
3. Airspeed - Glide at 83 mph IAS if unable to maintain level flight
4. Fuel Selector - Both
5. Electric Fuel Pump - On
6. Ignition Switch - Both
7. Master Switch - On

4.9 COMPLETE POWER FAILURE DURING FLIGHT:

1. Glide - Establish 83 mph
2. Attempt engine airstart if warranted

4.10 ENGINE AIRSTART:

1. Fuel Selector - Both
2. Electric Fuel Pump - On
3. Mixture - Rich
4. Ignition Switch - Both (start if propeller is not turning)
5. Auxiliary Fuel Tank pump switch - On for tank feeding engine if Auxiliary tank has fuel.
6. If engine does not start, try flooded engine clearing procedure with throttle wide open and mixture full lean.
7. If no start, make forced landing

NOTE: PROPELLER WILL NOT WINDMILL BELOW 70 MPH.

NOTE: AT ALTITUDES OVER 8000 FEET, A LEANER MIXTURE MAY BE REQUIRED.

4.11 ELECTRICAL FIRE:

1. Master Switch - Off

4.12 ENGINE FIRE DURING FLIGHT:

1. Accomplish ENGINE EMERGENCY SHUTDOWN
2. Make forced landing

4.13 SMOKE AND FUME ELIMINATION:

1. Cabin Heat Knob - In
2. Cabin Air Knob - In
3. Upper Air Vents - Open
4. Pilot's Window - Open (below 120 mph)

4.14 STRUCTURAL DAMAGE:

1. On Takeoff - Abort
2. In flight, maintain controllable airspeed
3. Climb to safe stall recovery altitude
4. Notify appropriate controlling agency, if appropriate.
5. Determine control difficulty airspeed by slowing down while flying straight ahead. Do not allow the aircraft to stall.
6. Make full stop landing using 5-10 mph above difficulty airspeed or above normal approach speed, whichever is higher.

4.15 RECOVERY FROM INADVERTENT SPINS:

Intentional spins are prohibited. If the aircraft inadvertently enters a spin, simultaneously apply full rudder opposite to the direction of rotation, and full nose down elevator with ailerons neutral and reduce power to idle. When the rotation stops, neutralize the rudder and elevator, and ease back on the control wheel as required to smoothly regain level flight. Wing flaps should be retracted to avoid exceeding the maximum flap speeds during recovery.

4.16 ALTERNATOR FAILURE:

Alternator output should be monitored by reference to the ammeter located on the right side of the engine instrument cluster. Should the ammeter indicate a minus deflection when engine RPM is above 900 and/or red "ALTERNATOR OFF WARNING" light is illuminated, push ALT switch OFF then ON. Repeat two times as necessary to reset. If system will not reset, reduce the electrical load as much as possible, land as soon as practical and investigate the electrical system malfunction before further flight.

SECTION V

5.1 ***WEIGHT AND BALANCE***

Serial Number_____ Registration Number_____

It is the responsibility of the airplane owner and the pilot to insure that the airplane is loaded properly. The empty weight, empty weight center of gravity and useful load are listed below for this airplane as delivered from the factory. If the airplane has been altered, refer to the aircraft log and/or aircraft records for this information.

WEIGHT AND BALANCE DATA SUMMARY AS DELIVERED FROM THE FACTORY:

Basic Empty Weight (including engine oil)..... _____ Lbs.

Gross Weight..... 2500 Lbs.

Useful Load..... _____ Lbs.

Empty Center of Gravity..... _____ Inches

Empty Weight Moment..... _____ Inch Lbs.

CENTER OF GRAVITY RANGE:

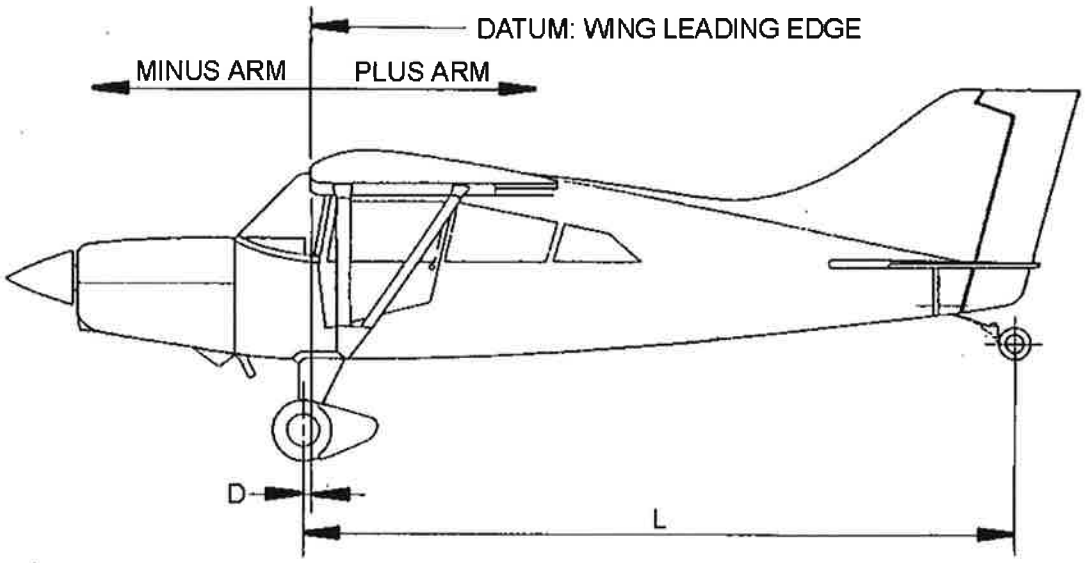
Center of Gravity Range	At Weight of
+15.0 to +20.0 inches	*2500 lbs.*
+12.5 to +20.0 inches	*1700 lbs.*

NOTE: Straight line variation between given points
DATUM: Wing leading edge

CERTIFIED BY_____ DATE_____

5.1 WEIGHT AND BALANCE: (Cont'd)

DETAILED CALCULATIONS OF EMPTY WEIGHT AND EMPTY WEIGHT CENTER OF GRAVITY AS DELIVERED FROM FACTORY:



PROCEDURE:

1. Place each of the wheels on a scale with the tailwheel elevated to place the airplane in approximately the flight attitude.

2. Place a level on the leveling mark and leveling lug on the bottom of the right wing near the root. Adjust the height of the tailwheel until the aircraft is level.

3. Measure the following distances:

   a. Wheel base (**L**) - the horizontal distance from the tailwheel weight point (center of axle) to the main wheel weight point (center of axle).
   L = _____ Inches

   b. Main Wheel Station (**D**) - the horizontal distance from the main wheel weight point (center of axle) to the datum line.
   D = _____ Inches

4. Measure the weights at the following points:

   a. **Right** Main Wheel.....= _____ Lbs.

   b. **Left** Main Wheel.....= _____ Lbs.

   c. **Tailwheel,** with tare =_____Lbs., minus tare of _____ Lbs.
   = net Tailwheel wt. **(T)** of _____ Lbs.

Total Weight as Weighted **(W) =** _____ Lbs.

5.1 WEIGHT AND BALANCE: (Cont'd)

The above empty weight includes unusable fuel of ** lbs. at 24 inches and 12 quarts of oil at minus 34 inches for the O-540 engine and 8 quarts of oil at minus 34 inches for the IO-540 engine, plus all items of equipment as marked on the accompanying Equipment Lists. The Certificated empty weight is the above weight less 24 lbs. drainable oil for the O-540 engine or above weight less 16 lbs. drainable oil for the IO-540 engine at a minus arm of 34 inches and for this airplane is _____(no ballast)_ lbs.

The corresponding empty weight center of gravity is _____(no ballast)_ inches.

The following ballast requirements for s/n 4001C-4061C only:
Ballast when used: 11 lbs. @ sta. 117.3 inches __1290.3_ in.lbs.
Ballast stored: 11 lbs. @ sta. 12.7 inches __139.7__ in.lbs.
Note: For improved landing and ground handling when lightweight or C.G. @13 inches or less (min. fuel and 1 pilot), ballast of 11 lbs. @117.3 inch station should be stored in place provided in aft fuselage and accessible by folding the rear seat forward. All other loadings, ballast may be stored in place provided in front of pilot's seat or left out of airplane. (An 11 lb. removable ballast slug is provided for convenience.)

5. Calculations for determining weight, C.G. and moment:

a. Center of Gravity (inches) = $\frac{\mathbf{L \times T}}{\mathbf{W}}$ **- D**

i.e., C.G. = _____ - _____ = _____inches.

b. Moment (inch pounds) = **W** x C.G.

i.e., Moment = _____ x _____ = _____inch lbs.

EXAMPLE OF WEIGHT AND BALANCE CALCULATION FOR LOADED AIRCRAFT:

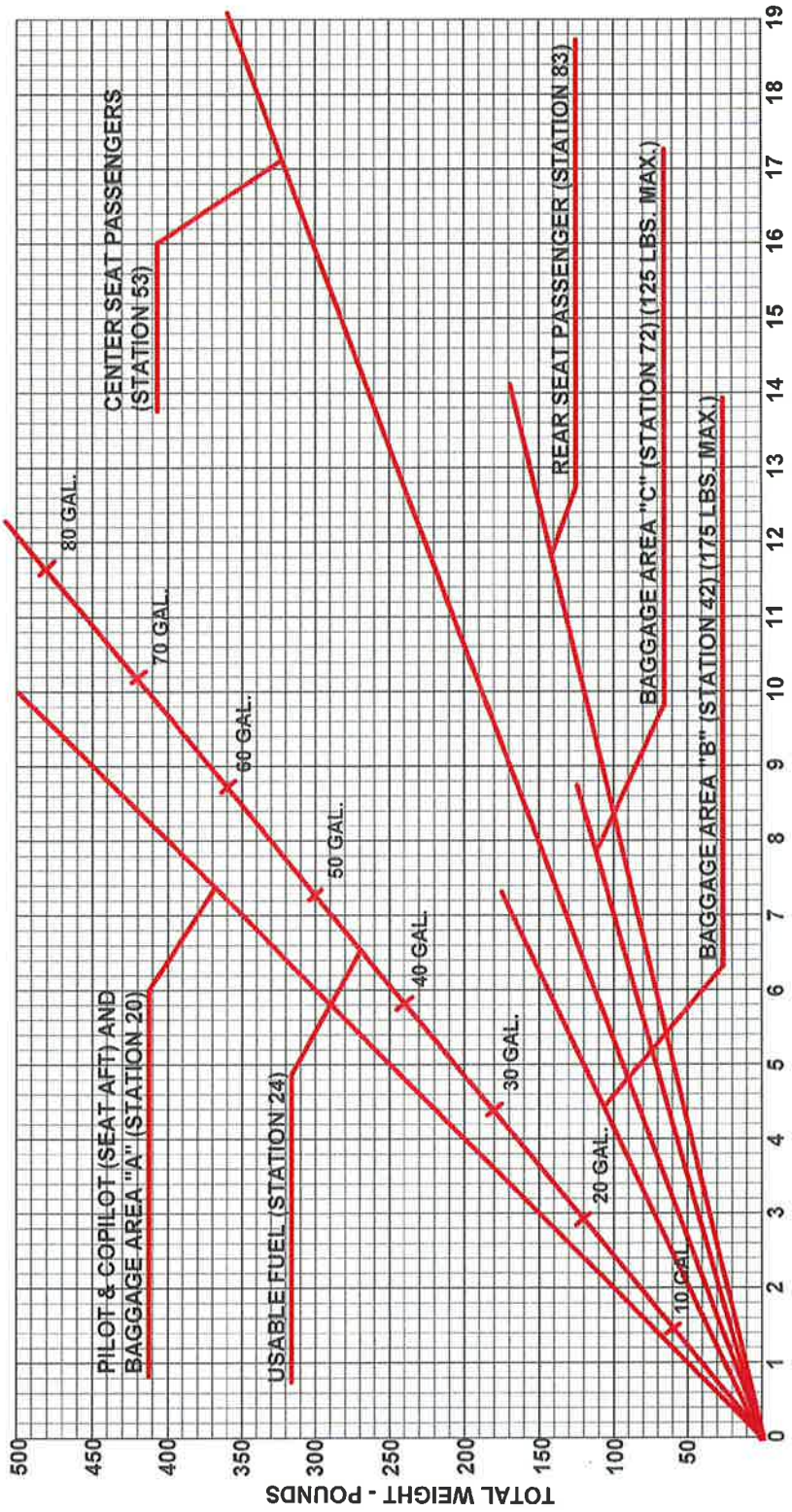
An airplane with an empty weight of 1549 lbs. and empty weight C.G. location of 11.2 inches is loaded with a pilot and front seat passenger, fuel and baggage.

Item	Weight, lbs.	C.G. Location	Moment, In.lbs.
Empty Weight (including engine oil)	1549	11.2	17,349
Pilot and Front Passenger	340	*	6,800
Fuel - 43 gal. in Mains plus 30 gal. In Auxiliary Tanks	438	*	10,512
Baggage (Area "C")	50	*	3,600
	2377	16.1	38,261

By locating the point corresponding to 2377 lb. aircraft weight and a C.G. Location of 16.1 inches on the Center of Gravity envelope graph, you can see that this point falls within the envelope, signifying the loading is acceptable.

*Moments can be read directly from the loading graph.

**Use 18 lbs. for "A" or "B" configurations and 27.6 lbs. for "C" or "D".

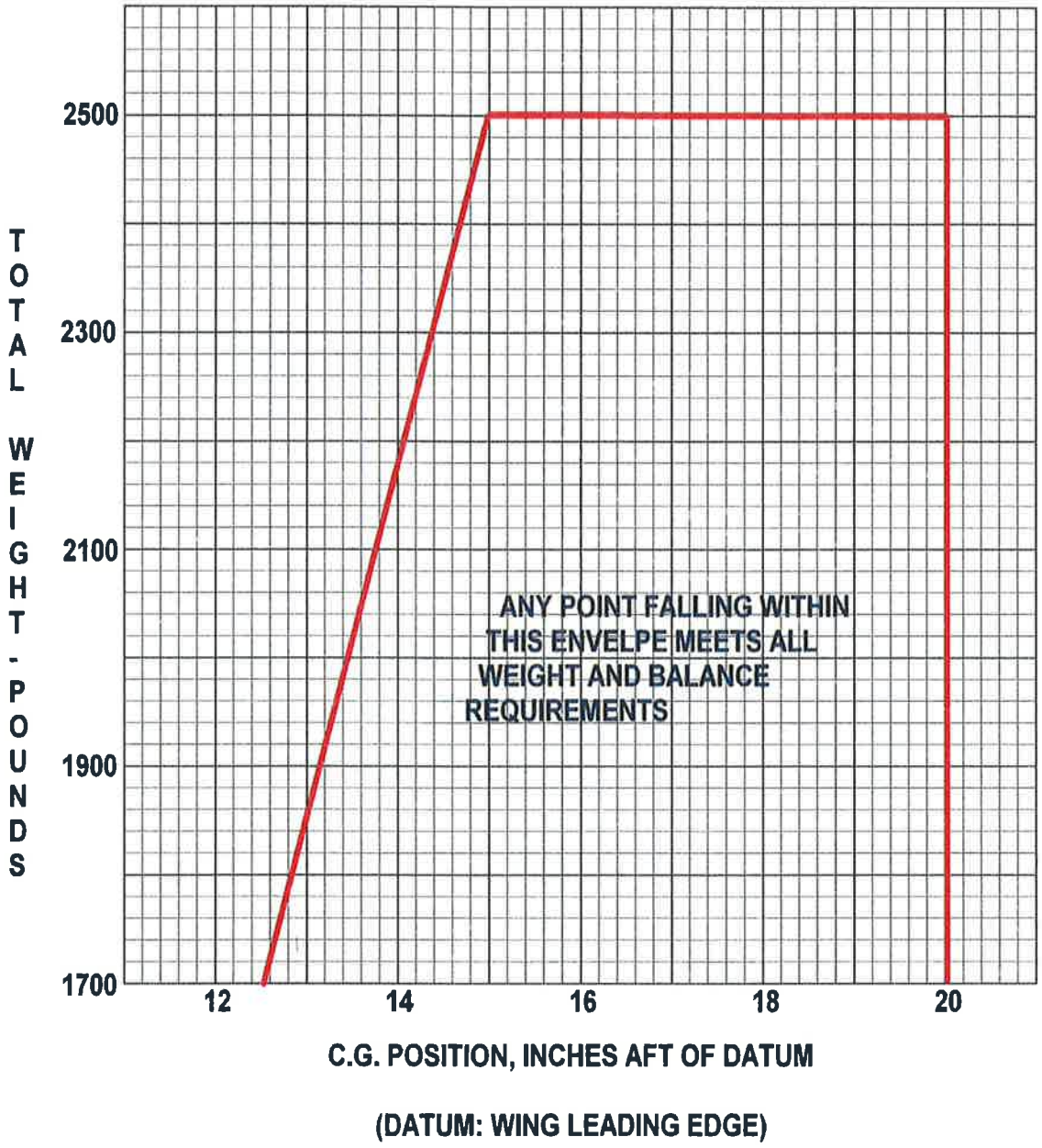


LOADING CHART

PROCEDURE FOR DETERMINING WEIGHT & CENTER OF GRAVITY:

1. **Add weight to be carried to the basic empty weight of the aircraft.**
2. **Find moments of item to be carried by using the above loading graph and add these moments to the empty moment of the aircraft. Divide total moment by total weight for aircraft C.G. location.**
3. **Using the C.G. location for Step 2, find the point on the Weight and Balance Envelope.**

WEIGHT AND BALANCE ENVELOPE



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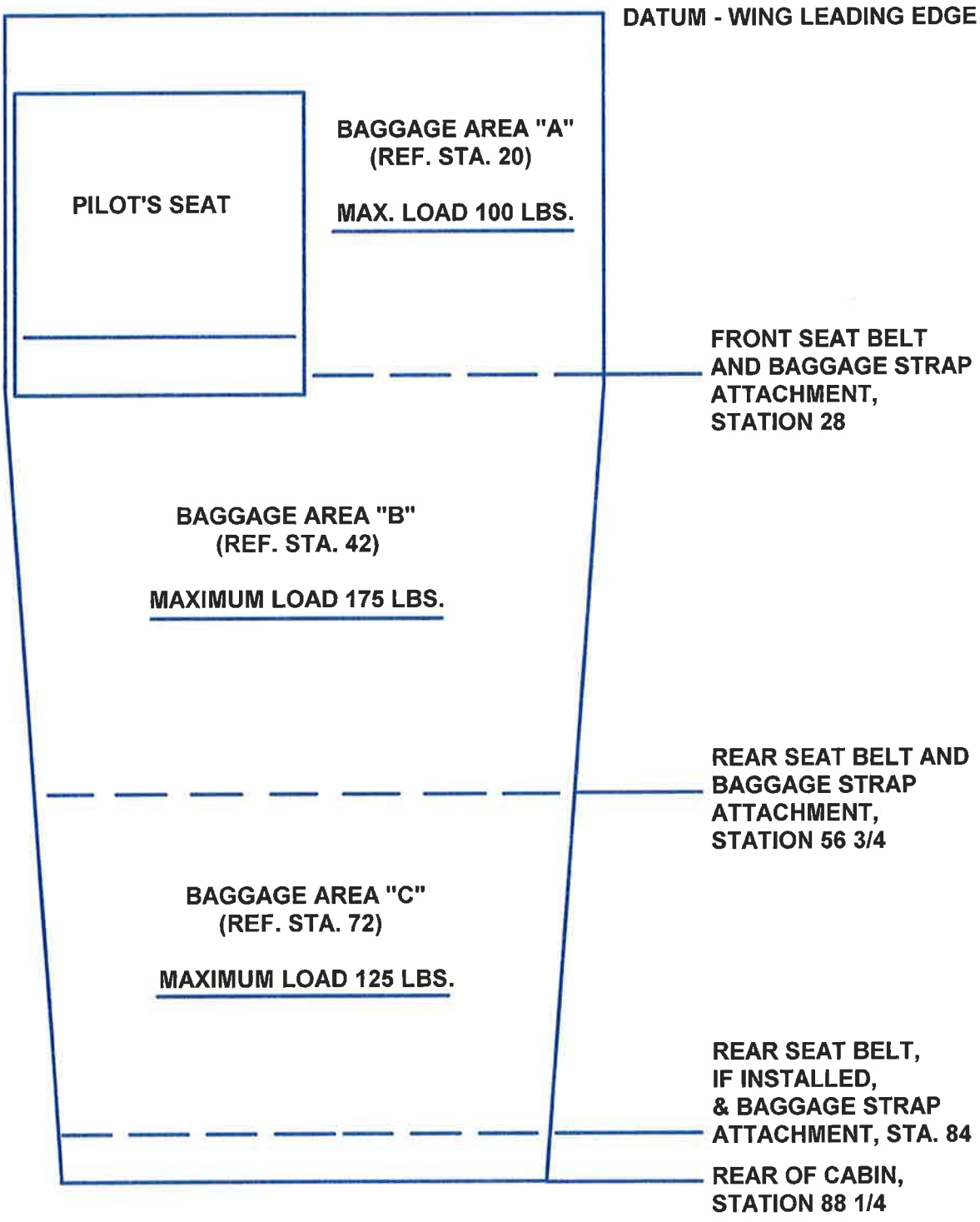
STRUCTURAL CAPACITY CHART



SERIAL NO._____REG.NO._____MODEL_____

EQUIPMENT CHANGE - WEIGHT AND BALANCE

ITEM'S (MAKE & MODEL)	WEIGHT	ARM	MOMENTS
Previous Aircraft Empty			

A. New Empty Weight _____lbs.

B. New Empty Center of Gravity _____ins.

C. New Empty Weight C.G. Moment _____in. lbs.

D. New Useful Load _____lbs.

Supersedes all previous weight and balance data. For aircraft loading see instructions in original weight and balance forms.

BY_____DATE_____

SECTION VI

AIRCRAFT SERVICING, HANDLING AND MAINTENANCE

6.1 INTRODUCTION:

Our dealers and distributors are anxious to serve you and will gladly furnish advice as to proper servicing methods. You may also address request for information on any items not covered in the manual to the Service Department of Maule Air, Inc. In correspondence, please be certain to give complete information on Serial Number, engine make and model, etc.

The aircraft Type Data Plate can be found on the left side of the vertical fin just above the horizontal stabilizer or on the door post on pilot's side. Also, pertinent engine and propeller data is in the aircraft Log Book.

A Service Manual is furnished with each aircraft. Extra copies and a Parts Manual can be obtained by contacting the Service Dept. of Maule Air, Inc.

6.2 AIRPLANE INSPECTION PERIOD:

The airplane must be maintained as outlined in FAR 43. Recommended inspections are outlined in the airplane Maintenance Manual. The owner/operator is responsible for Airworthiness Directives (AD's) that may be issued from time to time. Reference should be made to FAR 91 and FAR 43 requirements for properly certified agency or personnel to accomplish the required FAA inspection and most of the manufacturer's recommended inspections. It is recommended that owner's name and address along with aircraft serial number be registered with Maule Air for any Maule Service Letters or Service Bulletins released affecting their aircraft.

6.3 PREVENTIVE MAINTENANCE THAT MAY BE ACCOMPLISHED BY A CERTIFIED PILOT:

A. A certified pilot who owns or operates an airplane not used as an air carrier is authorized by FAR Part 43 to perform limited preventive maintenance on his airplane. Refer to FAR Part 43 for list of things the pilot may do. Pilots operating aircraft of other than U.S. registry should refer to the regulations of the country of certification for information on preventive maintenance that may be performed by pilots. All other maintenance required on airplane is to be accomplished by appropriately licensed personnel and that airplane dealer or service station should be contacted for further information.

B. Preventive maintenance should be accomplished in accordance with the appropriate airplane Maintenance Manual. Manual should be obtained prior to performing preventive maintenance to be sure that proper procedures are followed.

6.4 ALTERATIONS OR REPAIRS TO AIRPLANE:

Alterations or repairs to airplane must be accomplished by licensed personnel. The FAA should be contacted prior to any alterations on airplane to insure that airworthiness of the airplane is not violated.