

MAULE AEROSPACE TECHNOLOGY, INC.

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FAA APPROVED
AIRPLANE FLIGHT MANUAL
FOR

MAULE MX-7-235

Airplane Serial No. 10095C

Registration No. NB-KIQ

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

FAA APPROVED:

Thomas E. Stitt
Acting Manager, Atlanta Aircraft Certification
Office, FAA, Central Region

DATE: OCT 18 1984

IT'S PERFORMANCE THAT COUNTS!

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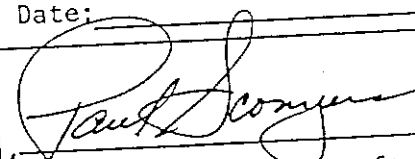
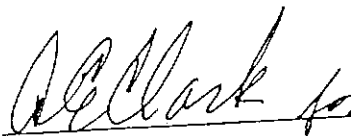
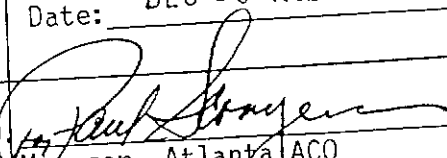
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LOG OF REVISIONS

REV.	TO PAGES	DESCRIPTION	APPROVAL AND DATE
A	5	Added Flap Control Placard and Fuel Tank Selector Valve Placard.	 Manager, Atlanta Aircraft Cert. Office, FAA, Central Region Date: <u>APR 25 1985</u>
	17	Revised DETAILED CALCULATIONS 5.1.4. to include 10-540 and 0-540 Engines.	
	24	Corrected Battery arm and Battery Solenoid arm in Equipment Lists.	
	ALL	Changed company headings to read: 'MAULE AEROSPACE TECHNOLOGY, INC.'	
B	24	Added Tex Tron -Avco (item 14.D.1.) and Champ (item 14.E.1.) Oil Filters and Teledyne Battery (item 15.E.1.)	 Manager, Atlanta Aircraft Certification Office FAA, Central Region Date: <u>DEC 29 1986</u>
	27	Added AM-Safe Shoulder Harness Assemblies (items 32.A.3. and 33.B. 2.) to Required Equipment List. Added NOTE re:Rear Seat occupants Shoulder Harness requirement.	
C	iii, 23 - 28 10	Required Equipment List pages 23 thru 28, removed and replaced with all recip. models combined Required Equipment List. Noise level corrected to 72.0 dBA..	 Manager, Atlant Aircraft Certification Office FAA, Central Region Date: <u>OCT 31 1989</u>
D	ALL	Updated entire AFM to latest format.	 Manager, Aircraft Certification Office, Federal Aviation Administration, Atlanta, GA Date: <u>DEC 18 1992</u>
	4	Added Lycoming O-540-J3A5, IO-540-W1A5, and O-540-B4B5 engines.	
	20	Corrected Center Seat and Rear Seat Passenger stations.	
E	4	Added McCauley Propellers B3D32C414-C/G-82NDA-4, -2 and B2D37C224-B/G-90RA-9.	 Manager, Atlanta ACO Federal Aviation Administration Date: <u>6-10-94</u>
	10	Added "Parking Brake...OFF" to 3.2.0 BEFORE TAKEOFF & E. BEFORE LANDING.	

(Rev. F on page ia)

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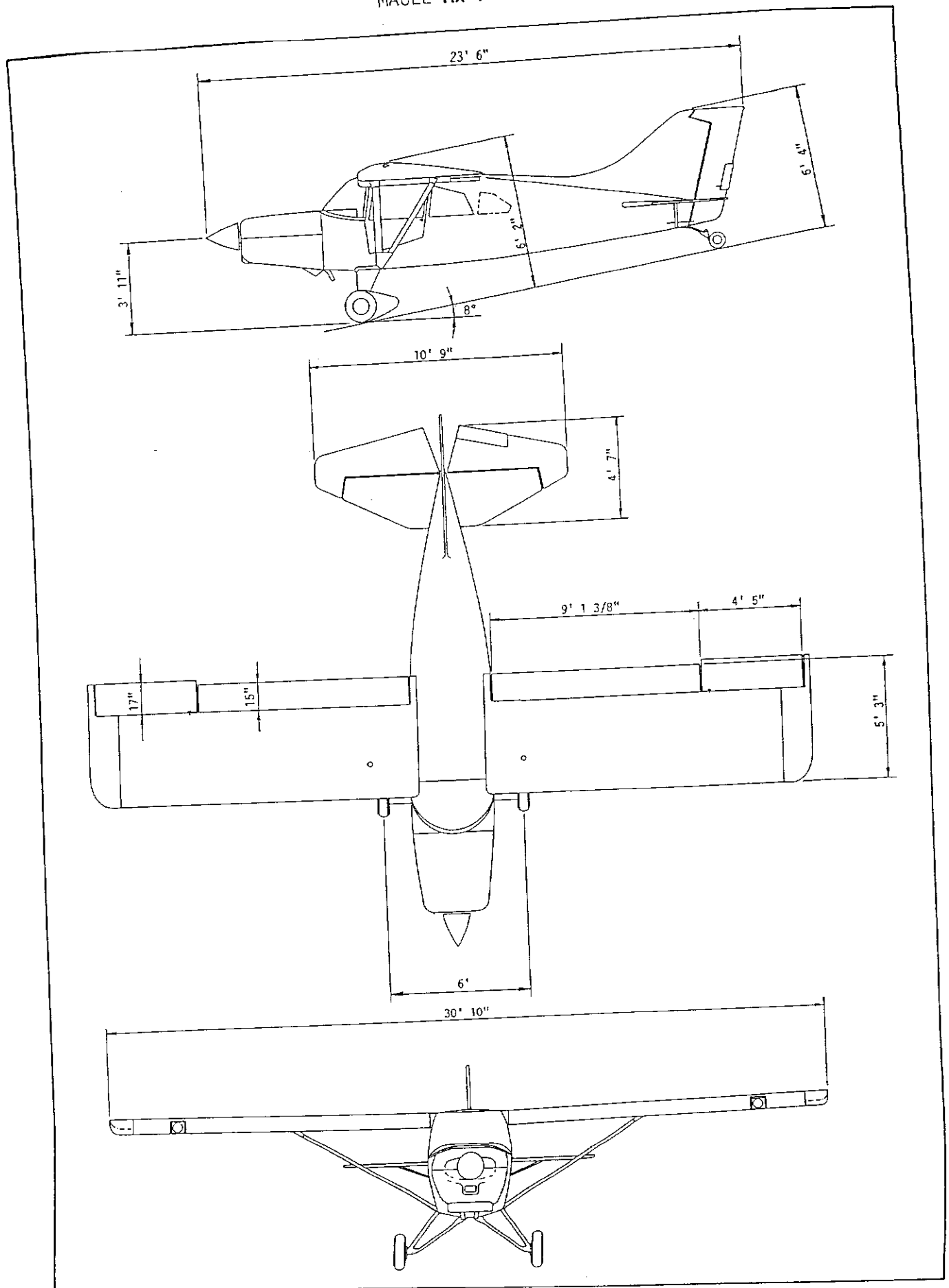
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SECTION I

GENERAL: NORMAL CATEGORY OPERATION

- 1.1 MAXIMUM WEIGHT: 2500 Pounds
- 1.2 CENTER OF GRAVITY LIMITS: +15.0 to +20.5 @ 2500 lbs.
+12.0 to +20.5 @ 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 properly 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, IF INSTALLED, 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.

- 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: See Table Below
Unusable Fuel: See Table Below

Fuel Capacity - See Instrument Panel Placard for Tank configuration installed in this Aircraft

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

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

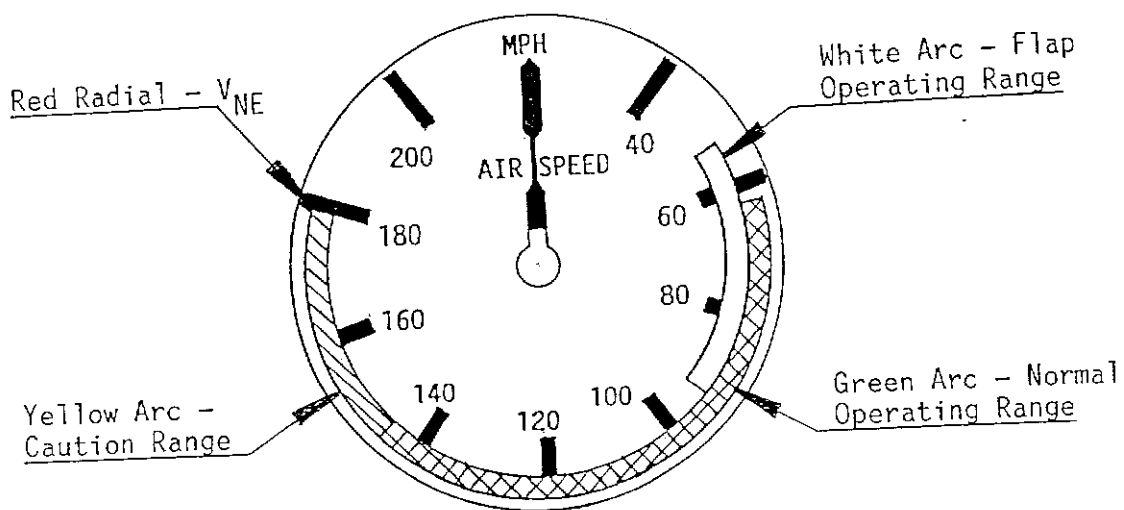
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SECTION II

LIMITATIONS

2.1 AIRPEED 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, 65-145 mph (57-126K): Extends from flaps up, power off stall speed at 2500 lbs. (V_{SI}) to design cruise speed (V_C).

White Arc - Flap Operating Range, 53-94 mph (46-82K): Extends from full flap, power off minimum stall speed at 2500 lbs. (V_{SO}) to the Maximum flaps extended speed (V_{FE}).

2.2 POWER PLANT LIMITS:

Engine: Lycoming O-540-J1A5D, IO-540-W1A5D, O-540-B4B5
O-540-J3A5 or IO-540-W1A5

Engine Limits: 235 hp @ 2400 rpm, Full Throttle Continuous
2575 rpm for B4B5

Propeller: Hartzell: Constant Speed HC-C2YR-1BF/F8468A-6R (78")
or -3R (81") (B4B5 engine requires -3R) (Use
-3R with 7:00 tires or larger/26 psi mini-
mum air pressure)

McCaughey: Constant Speed B3D32C414-C/G-82NDA-4 (78")
or -2 (80") or B2D37C224-B/G-90RA-9 (81")
(These propellers can only be used with
O-540-J and IO-540-W engines) (Use -9 with
7:00 tires or larger/26 psi minimum air
pressure; use -2 with 7:00 or larger tires)

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 psi 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.
of Mercury

Fuel Pressure
(0-540 only)

Green Arc - Normal Operating Range,
0.5 to 8 psi

Red Radial - Minimum Pressure, 0.5 psi

Red Radial - Maximum Pressure, 8.0 psi

Fuel Flow:
(10-540 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

Tachometer:
0-540-B4B5

Green Arc - Normal Operating Range,
2200 to 2575 RPM

Red Radial - Maximum RPM, 2575 RPM

////////////////// DO NOT EXCEED 23 INCHES M.P. BELOW 2050 RPM. THIS IS A
////CAUTION//// VIBRATORY STRESS LIMITATION. (Applicable only to aircraft
////////////////// with Hartzell -6R (78") propeller.

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."

"ROUGH AIR OR MANEUVERING SPEED: 125 MPH 109K)."

"SEE LOADING INSTRUCTIONS IN WEIGHT AND BALANCE SECTION OF AIRPLANE
FLIGHT MANUAL." or "SEE LOADING INSTRUCTIONS IN WEIGHT AND BALANCE
SECTION OF PILOT'S OPERATING HANDBOOK."

"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."

LUFTFAHRZEUG - FLUGHANDBUCH (AFM)
MANUEL DE VOL DE L'AERONEF

für das Luftfahrzeug HB - KIQ
pour l'aéronef

Die den Betrieb des Luftfahrzeuges betreffenden Unterlagen sind vom Bundesamt für Zivilluftfahrt als Luftfahrzeug-Flughandbuch genehmigt oder anerkannt. Sie bilden eine Grundlage des Lufttüchtigkeitszeugnisses und dürfen nur durch das Bundesamt für Zivilluftfahrt oder in dessen Auftrag geändert werden.

Bei Änderungen in der Ausrüstung ist dem Bundesamt für Zivilluftfahrt unverzüglich ein Arbeitsbericht im Doppel unter Angabe von Masse und Hebelarm der ein- und ausgebauten Teile zusammen mit dem vorliegenden Flughandbuch zuzustellen.

Das Luftfahrzeug darf nur nach diesem Flughandbuch, das an Bord mitzuführen ist, betrieben werden.

Der Zulassungsbereich des Luftfahrzeuges ist im Anhang zum Lufttüchtigkeitszeugnis festgelegt.

Les documents relatifs à l'exploitation de l'aéronef sont approuvés ou reconnus par l'Office fédéral de l'aviation civile en tant que manuel de vol de l'aéronef.

Ils forment une base du certificat de navigabilité et ne peuvent être modifiés que par l'Office fédéral de l'aviation civile ou sur son ordre.

Lors de changements dans l'équipement, il y a lieu d'envoyer immédiatement à l'Office fédéral de l'aviation civile, avec le présent manuel de vol, un rapport de travail en deux exemplaires, et d'indiquer la masse ainsi que le bras de levier des parties installées ou déposées.

L'aéronef ne peut être exploité que d'après le présent manuel de vol, qui doit se trouver à bord.

Le champ d'utilisation de l'aéronef est fixé dans l'annexe du certificat de navigabilité.

3003 Bern, den 10.06.1991
3003 Berne, le

BUNDESAMT FUER ZIVILLUFTFAHRT, Sektion Leichtluftfahrt
OFFICE FEDERAL DE L'AVIATION CIVILE, Section des aéronefs légers
i.A. / p.o.


Rüegg

Bemerkungen / Observations

2. Anzahl Personen an Bord
Nombre de personnes à bord

2.1 Mindestflugbesatzung *
Equipage minimal de conduite

1			
3			

2.2 Höchstzulässige Anzahl
Passagiere
Nombre maximal de passagers

* Allfällige besondere Betriebsvorschriften bleiben vorbehalten.
D'éventuelles prescriptions d'exploitation particulières restent réservées.

Hauptsächliche Daten des Luftfahrzeuges HB - KIQ
Données principales de l'aéronef

1. Masse und Schwerpunktlage
Masse et position du centre de gravité

1.1 Höchstzulässige Abflugmasse Kat. * 1134 kg 2500 lbs
Masse maximale autorisée au décollage Cat. **N**

* Andere Kategorien siehe Flughandbuch
Autres catégories voir manuel de vol

1.2 Höchstzulässige Landemasse 1134 kg 2500 lbs
Masse maximale autorisée à l'atterrissage

1.3 Leermasse
Masse à vide

In der Leermasse sind inbegriffen:
Dans la masse à vide sont compris:

☒ Ausrüstung gemäss Ausrüstungsliste
L'équipement selon la liste d'équipement

☒ Nicht verwendbarer Treibstoff
Le carburant non utilisable

☒ Nicht verwendbarer Schmierstoff
Le lubrifiant non utilisable

☒ Verwendbarer Schmierstoff
Le lubrifiant utilisable

☒ Hydraulikflüssigkeit
Le liquide hydraulique

☒ Ballast (sofern eingebaut)
Lest (si installé)

☐ Getriebeöl
Le lubrifiant de boîtes de transmission

☐

Datum Date	Leermasse Masse à vide	Schwerpunktlage Position du centre de gravité	Leermasse-Moment Moment de la masse à vide	Zuladung Charge utile
	kg / lbs	m / in	mkg / in. lbs.	kg / lbs
10.06.91	1505,3	10,8	16196,4	994,7 FOCA FL/Rue
04-07-91	1544,7	11,305	17463,35	AEROTEC GmbH CH-2640 Grenchen - Flugplatz 955,3 rc Handwritten: 955,3
30.06.92	1534,08	11,83	18150,93	965,92 BZL FM
8.9.93	1527,98	12,14	18556,43	972,02
26.10.93	1528,78	12,135	18551,689	972,22 Handwritten: 972,22
30.03.2000	1524,82	12,250	18679,508	975,17 Handwritten: 975,17

[illegible]

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") 2 blade 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.

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

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

Located on flap control handle:

"FLAPS/PULL ON/2ND NOTCH/TAKEOFF/4TH NOTCH/LANDING"

In Rear Cabin Area:

"CARGO OR BAGGAGE LIMITATIONS
MAX. LOAD AREA "A" 170 LBS.
MAX. LOAD AREA "B" 350 LBS.
MAX. LOAD AREA "C" 250 LBS."

Also in Rear Cabin Area when 5th Seat is installed:

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

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REV. F dated: OCT 28 1994

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)

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 Drains..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
18. Right Landing Gear.....CHECK TIRE INFLATION & BRAKE LINE SECURITY, INSPECT SAME AS LEFT WING
19. Right Wing & Controls.....
20. Wing Main & Aux Fuel Tank Drains.....DRAIN (2)

3.1 PREFLIGHT INSPECTION: (Cont't)

- | | |
|---|---|
| 21. Right Fuselage, Side, Top & 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 ATTACHMENT
& NAV. LIGHT |
| 26. Tailwheel..... | CHECK INFLATION, ATTACH-
MENTS. REMOVE TIEDOWN |
| 27. Left Elevator..... | CHECK TAB CONTROLS
& ALL HINGE POINTS |
| 28. Left Stabilizer..... | CHECK ATTACHMENT POINTS
& STRUT |
| 29. Left Fuselage, Side, Top & 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 |
| 11. Mixture Control (IO-540 only)..... | FULL RICH WHEN ENGINE
STARTS TO FIRE |

3.2 OPERATING CHECK LISTS: (Cont'd)

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: 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

////////////////// IF OIL PRESSURE DOES NOT EXCEED 25 PSI WITHIN 30 SECONDS,
 //CAUTION// 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
 6. Carburetor Air Control (0-540).....PULL HOT, NORMAL DROP
 WITH CARBURETOR AIR HOT
 IS 150 ±50 RPM

3.2 OPERATING CHECK LISTS: (Cont'd)

- | | |
|--|---|
| 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 |

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 & HARNESSSES
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 |
| 7. Parking Brake..... | OFF |

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REV. E dated: JUN 10 1994

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

3.3 NORMAL FLIGHT OPERATIONS: (Con't)

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.

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.

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

THE STALL WARNING LIGHT IN INOPERATIVE WHEN
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°.

3.3 NORMAL FLIGHT OPERATIONS: (Cont'd)

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:
67.6 dBA for aircraft with Hartzell -6R (78") 2 blade propeller
72.0 dBA for aircraft with Hartzell -3R (81") 2 blade propeller*
69.2 dBA for aircraft with McCauley -4 (78") 3 blade propeller
74.1 dBA for aircraft with McCauley -2 (80") 3 blade propeller
73.8 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.

FAA APPROVED
DATE: 10/18/84
REV. A dated: 4/25/85
REV. C dated: 10/31/89
REV. D dated: DEC 18 1992
REV. F dated: OCT 28 1994

*75.1 dBA for "B" engine

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 80 mph CAS 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 80 mph CAS 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 80 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

FAA APPROVED

DATE: 10/18/84

REV. A dated: 4/25/85

REV. D dated: DEC 18 1992

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:

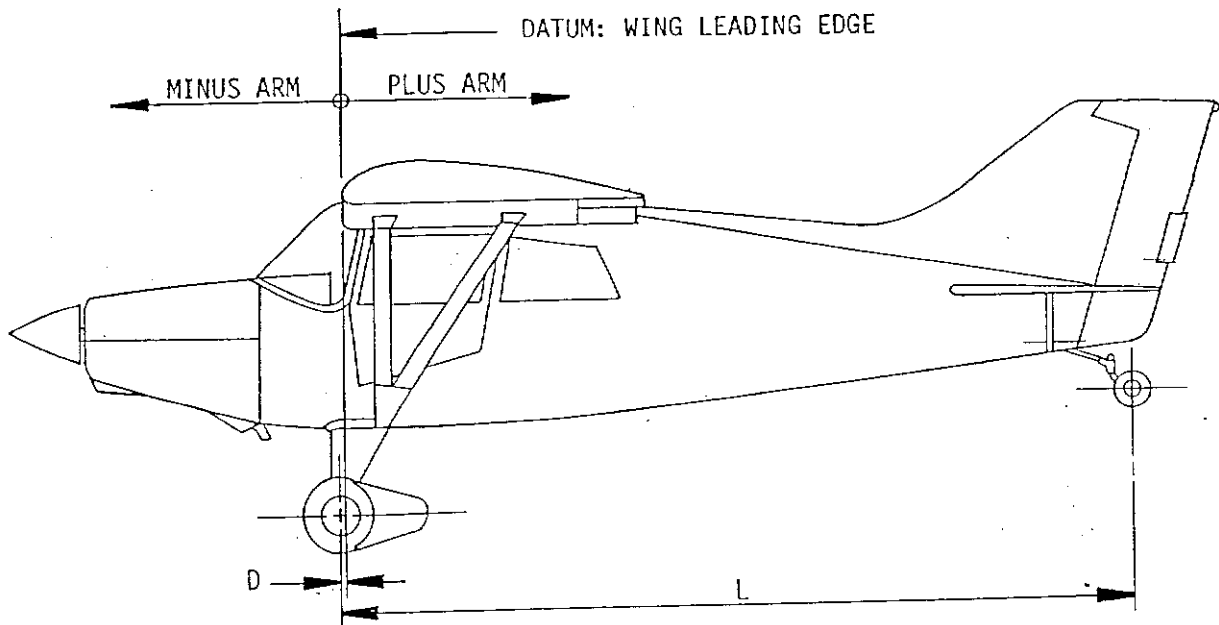
<u>At Weight of</u>	<u>Center of Gravity Range</u>
2500 lbs.	+15.0 to +20.5 inches
1700 lbs. or less	+12.0 to +20.5 inches

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)
 $L = \underline{\hspace{2cm}}$ inches
 - b. Main Wheel Station (D) - the horizontal distance from the main wheel weight point (center of axle) to the datum line.
 $D = \underline{\hspace{2cm}}$ inches
4. Measure the weights at the following points:
 - a. Right Main Wheel..... = $\underline{\hspace{2cm}}$ Lbs.
 - b. Left Main Wheel..... = $\underline{\hspace{2cm}}$ Lbs.
 - c. Tailwheel, with tare = $\underline{\hspace{2cm}}$ Lbs., minus tare of $\underline{\hspace{2cm}}$ Lbs.
 = net Tailwheel wt. (T) of $\underline{\hspace{2cm}}$ Lbs.
 Total Weight as Weighted (W) = $\underline{\hspace{2cm}}$ Lbs.

5.1 WEIGHT AND BALANCE: (Cont'd)

The above empty weight includes unusable fuel of ** lbs. at 24 inches and 12 qts. of oil at minus 34 inches for the O-540 engine and 8 qts. 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 _____ lbs. The corresponding empty weight center of gravity is _____ inches.

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

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

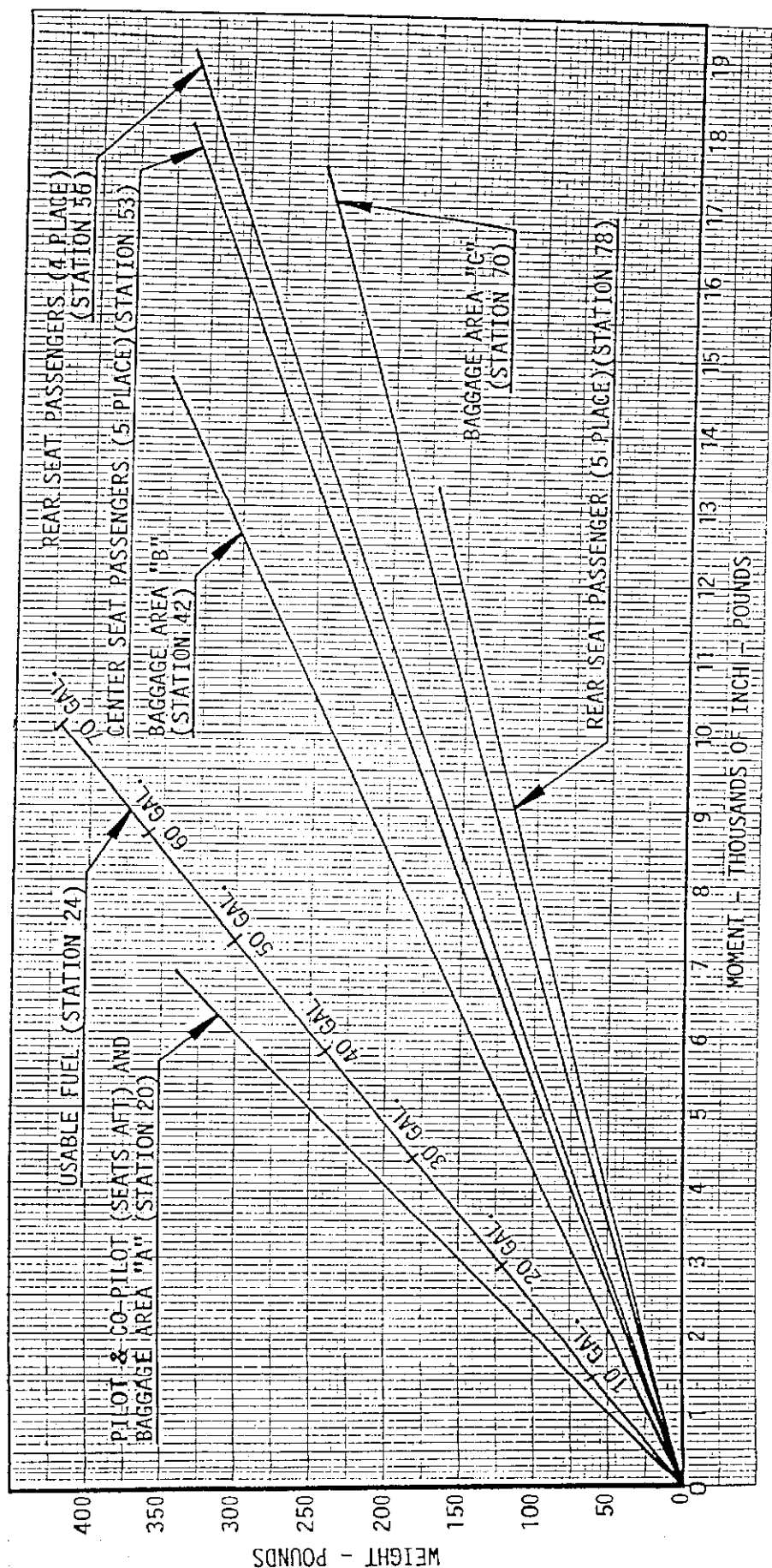
An airplane with an empty weight of 1549 lbs. and an empty weight moment of 19,870 inch lbs. is loaded with a pilot and front seat passenger, fuel and 150 lbs. for baggage.

Item	Weight, lbs.	Arm, Ins.	Moment, In.lbs.
Empty Weight (including engine oil)	1549	12.8	19,870
Pilot and Front Passenger	340	*	6,800
Fuel - 40 gal. in Mains plus			
30 gal. in Auxiliary Tanks	420	*	10,080
Baggage (Area "C")	150	*	10,500
	<u>2459</u>		<u>47,250</u>

By locating the point corresponding to 2459 lb. aircraft weight and 47,250 inch lbs. total moment 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.

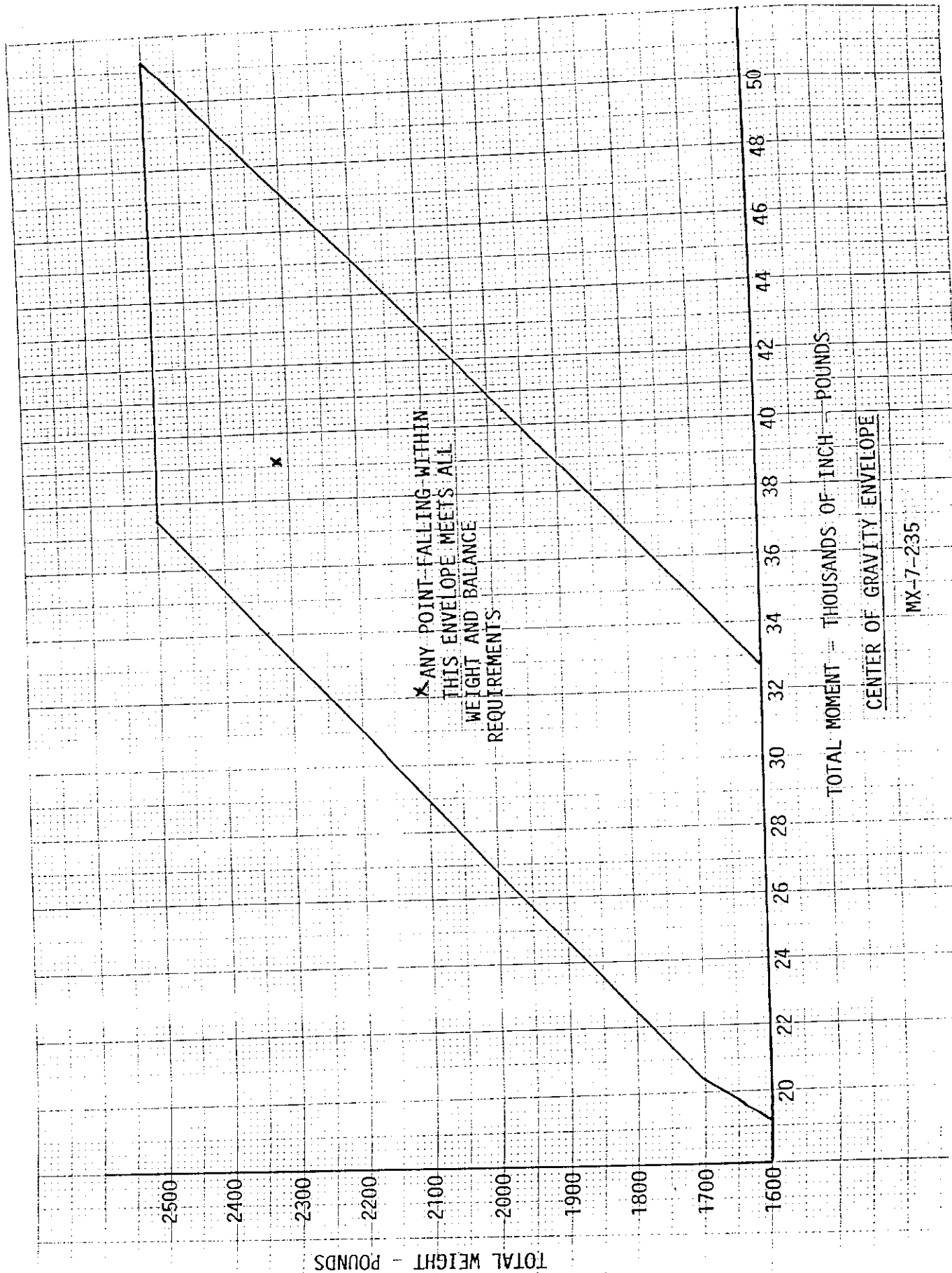
** Use 18 lbs. for "A" Main Tank Configuration and 27.6 lbs. for "C".

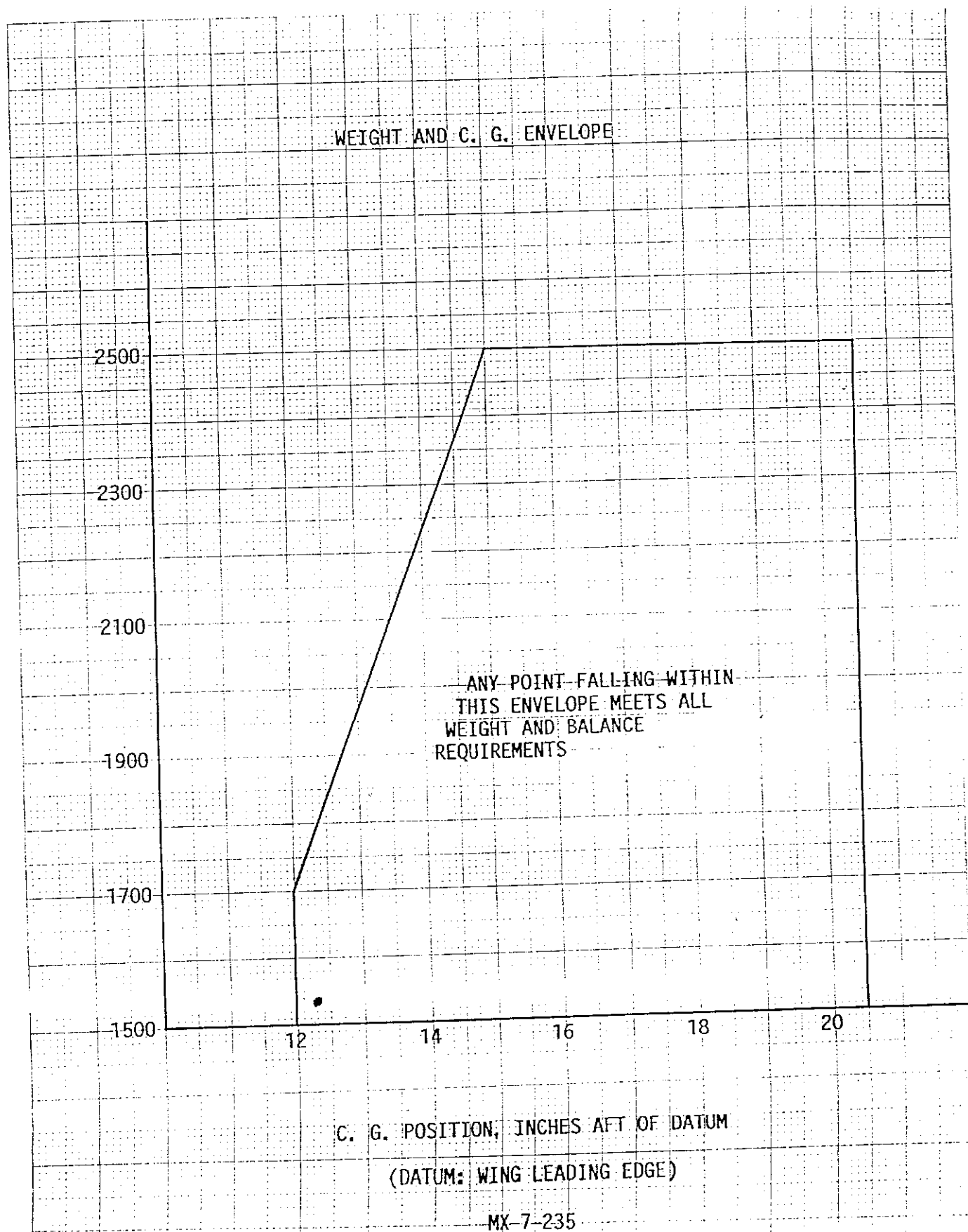


PROCEDURE FOR DETERMINING WEIGHT & CENTER OF GRAVITY:

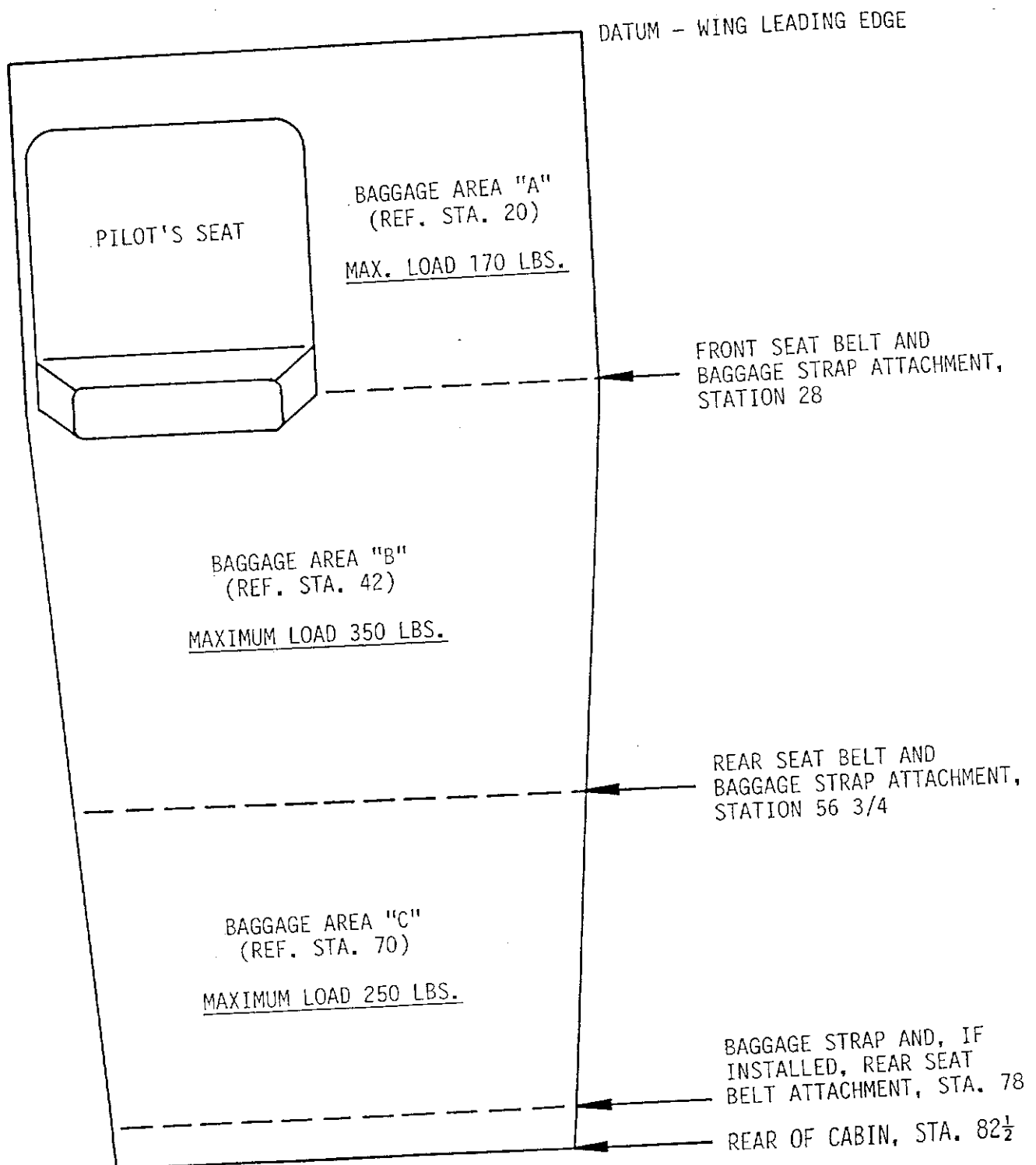
1. Add weight of items to be carried to the basic weight of the aircraft.
2. Find moments of items to be carried by using the above loading graph and add these moments to the basic weight moment of the aircraft.
3. Using the total weight and moment from Step 2, find the point on the center of gravity envelope which corresponds to this total weight and total moment.

LOADING CHART





STRUCTURAL CAPACITY CHART



MAULE AEROSPACE TECHNOLOGY, INC.
AIRPLANE FLIGHT MANUAL
MAULE MX-7-235

SECTION V
WEIGHT AND BALANCE

SERIAL NO. _____ REG. NO. _____ MODEL _____

EQUIPMENT CHANGE - WEIGHT AND BALANCE

ITEM'S (MAKE & MODEL) WEIGHT ARM MOMENT'S

Previous Aircraft Empty			

- A. New Empty Weight _____ lbs.
B. New Empty Center of Gravity _____ in. lbs.
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 in earlier airplanes, on the door post on the pilot's side toward the bottom. 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.

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180
MXT-7-180

REV. F

DATED: 11/8/90

REQUIRED EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PROD. NO. 1683

NOTE: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.

WEIGHT (LBS)

ARM (INS)

PROPELLER AND ACCESSORIES

1. PROPELLER see also OPTIONAL EQUIPMENT LIST

A. Hartzell

1. HC-C2YR-1BF/F7666A (0-360 only) 56.0 -61.3
2. HC-C2YR-1BF/F8468A-6R (0-540/10-540 only) 50.0 -61.5
3. HC-C2YR-1BF/F8468A-3R (0-540/10-540 only) 51.0 -61.5

NOTE: Use -3R with 7:00 min. tires/26 psi min.

B. McCauley

1. B3D32C414-C/G-82NDA-4 (M6/M7/MX7-235 only) 56.0 -61.3
- (**M-6 s/n's 7474C and up only)

NOTE: Use with 0-540-J & 10-540-W only)

C. Hoffmann HO-V334K/190FL

57.3

-62.0

REMOVED
29.6.92

30.6.92

2. SPINNER AND BULKHEAD ASSEMBLY

A. Hartzell

1. A2298-2 (Use with Propeller A only) 4.0 -62.2

B. McCauley

1. D-6240 (Use with Propeller B only) 5.5 -62.3

REMOVED
29.6.92

C. Hoffmann

1. VP30 3.8 -62.5

30.6.92

3. GOVERNOR

A. Woodward

1. H210681 (0-360 only) 4.5 -52.5
2. B210761 (0-540-J/10-540-W only) 4.5 -52.5
3. F210681* (0-540-J/10-540-W only) 4.5 -52.5
4. E210761 (0-540-B only) 4.5 -52.5

B. McCauley

1. C290D3X/T30 (0-540-J/10-540-W only) 2.8 -52.5
2. C290D3X/T31 (0-540-B only) 2.8 -52.5
3. C290D3X/T29 (0-360 only) 2.8 -52.5

ENGINE AND ACCESSORIES

4. ENGINE

A. Avco Lycoming

1. 0-360-C1F (0-360 only) 292.2 -42.2
2. 0-540-J1A5D (0-540-J only) 387.0 -39.6
3. 10-540-W1A5D (10-540-W only) 389.6 -39.6
4. 0-540-B4B5 (0-540-B only) 395.0 -39.5

* Refer to AD #81-25-01 for eligible serial numbers.

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180

REV. B

MXT-7-180

REQUIRED EQUIPMENT LIST

DATED: 11/8/90

SERIAL NO. 10095C REG. NO. AB-K10 PROD. NO. 1683

NOTE: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
5. CARBURETOR (0-360/0-540 only)		
A. Marvel-Schebler/Facet		
1. HA-6 p/n 10-5255 (0-360 only)	Included in Basic Engine	
2. MA-4-5 p/n 10-4404 (0-540-J only)	Included in Basic Engine	
3. MA-4-5 p/n 10-5054 (0-540-B only)	Included in Basic Engine	
6. FUEL INJECTOR (10-540 only)		
A. Bendix		
1. RSA-5AD1	Included in Basic Engine	
7. MAGNETO & IGNITION HARNESS (0-360 only)		
A. Slick		
1. 4150 (Right) & 4151 (Left)	Included in Basic Engine	
2. 4250 (Right) & 4251 (Left)	Included in Basic Engine	
8. MAGNETO (0-540/10-540 only)		
A. Bendix		
1. D6LN-2031 (0-540-J/10-540-W only)	Included in Basic Engine	
2. D6LN-3031 (0-540-J/10-540-W only)	Included in Basic Engine	
3. S6LN-20 (Right) (0-540-B only)	Included in Basic Engine	
4. S6LN-21 (Left) (0-540-B only)	Included in Basic Engine	
A. Slick		
1. 6250 (Right) & 6251 (Left) (0-540-B only)	Included in Basic Engine	
9. IGNITION HARNESS (0-540-J/10-540-W/0-540-B only)		
A. Bendix		
1. 10-684602-303 (0-540-J/10-540-W only)	Included in Basic Engine	
B. Avco Lycoming		
1. 78535 (0-540-B only)	Included in Basic Engine	
10. SPARK PLUGS		
A. Champion		
1. REM40E (0-360 only)	Included in Basic Engine	
2. RHM38E (0-540-J/10-540-W only)	Included in Basic Engine	
3. EM-42E (0-540-B only)	Included in Basic Engine	
2. AC		
1. AC 588 (0-540-B only)	Included in Basic Engine	

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180
MXT-7-180

REV. A

DATED: 11/8/90

REQUIRED EQUIPMENT LIST

SERIAL NO. 10095CREG. NO. HB-K10PROD. NO. 1683

NOTE: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.

WEIGHT (LBS)

ARM (INS)

11. STARTER

- (A.) Prestolite
 ①. MZ-4222

Included in Basic Engine

12. ALTERNATOR

- (A.) Prestolite
 ①. ALY8420
 2. ALY8403

Included in Basic Engine

Included in Basic Engine

13. OIL COOLER

A. Harrison

1. 8529245 (0-360/10-540 only)
 2. 8534108 (0-540-J only)

3.5

-26.0/-25.0

3.5

-45.0

(B.) Niagara

- ①. 20003A

(0-360 only)

3.5

-26.0

(0-540 only)

3.5

-45.0

(10-540 only)

3.5

-25.0

14. FUEL PUMP - ENGINE

(A.) AC

1. 6441452 (0-360 only)
 ②. 6440295 (0-540 only)
 3. 6441234 (10-540 only)

Included in Basic Engine

1.7

-22.6

1.7

-22.6

B. Avco Lycoming

1. LW-16335 (0-360 only)

Included in Basic Engine

15. OIL FILTER

(A.) Champion

1. CH 48110 (0-360/0-540-B only)
 ②. CH 48103 (0-540-J/10-540-W only)

Included in Basic Engine

Included in Basic Engine

B. Airborne

1. 875

Included in Basic Engine

C. TexTron-Avco

1. 54D19625 (0-360/0-540-B only)
 2. 54D19627 (0-540-J/10-540-W only)

Included in Basic Engine

Included in Basic Engine

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180
 MXT-7-180

REV. B

DATED: 11/8/90

REQUIRED EQUIPMENT LIST

SERIAL NO. 10095C

REG. NO. 4B-K10

PROD. NO. 1683

NOTE: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.

WEIGHT (LBS)

ARM (INS)

15. OIL FILTER (Cont'd)

D. AC

1. 25010539 Type OF-51A (O-540-J/10-540-W)

Included in Basic Engine

E. Electrosystems, Inc./Champ

1. ES48103 (O-540-J/10-540-W only)

Included in Basic Engine

2. ES48110 (O-360/O-540-B only)

Included in Basic Engine

ELECTRICAL

16. BATTERY

A. Exide

1. AC78M

27.0

*

B. Rebat

1. R-35M

26.4

*

C. Willard

1. W-78M

27.0

*

D. Concorde

1. CB 35M

26.5

*

(E) Teledyne/Gil

- (1) G-35M

27.0

*

17. BATTERY SOLENOID

(A) RBM Controls/Essex

- (1) 71-111221-5

(O-360 only)

.9

12.5

(M-7-235 only)

.9

88.5

(M5/6/MX7-235 only)

.9

92.0

18. STARTER SOLENOID

A. Prestolite

1. SAZ-4201E

.7

-18.0

(B) RBM Controls/Essex

- (1) 70-112225-5

.7

-18

* Battery Arm = 13" for M-5/M-6/MX-7-180; 95" for M-7-235; 96" (Lt. Side) or 109" (Rt. Side) for M-5/M-6/MX-7-235; 110" for MXT-7-180 (Rt. Side).
 Note: M-7-235, s/n 4001C-4016C, 4019C & 4020C, battery installed at 13" arm.

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180

REV. A

MXT-7-180

DATED: 11/8/90

REQUIRED EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PROD. NO. 1683
 NOTE: Equipment items installed below are designated by circle.
 CATEGORY, MANUFACTURER AND PART OR MODEL NO.

19. ELECTRIC FUEL PUMP

(A) Dukes Astronautics

1. 1184-00-1 (0-540/0-360 only)

(2) 1184-00-3 (0-540/0-360 only)

3. 1471-00-1 (10-540 only)

4. 1471-00-3 (10-540 only)

WEIGHT (LBS)	ARM (INS)
2.1	-20.0
2.1	-20.0
2.1	-20.0
2.1	-20.0

20. ALTERNATOR CONTROL*

(A) Lamar, Inc.

(1) B-00371-8

.3 -16.0

* For Alternator Control System previous to Lamar Alt. Control System:
 Voltage Regulator, Prestolite p/n's VSF-7203(S); Over-Voltage Relay,
 Prestolite p/n FOC-4002A.

INSTRUMENTS

NOTE: Required Instrument markings to be per AFM/AFMS.

21. STALL WARNING

(A) MAULE

(1) 6016F

.1 1.5

22. COMPASS

A. Hamilton Instruments

1. HI-400

.6 -2.0

(B) Airpath

1. C-2300

2. C-2300-DL

3. C-2400-LP

(4) C-2400-L4P

.8 -2.0

.8 -2.0

.8 -2.0

.8 -2.0

23. ALTIMETER

A. Kollsman

1. C-12

2. C-13

3. B-11

1.0 -2.0

1.0 -2.0

1.0 -2.0

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180
MXT-7-180

REV. D

DATED: 4/3/91

REQUIRED EQUIPMENT LIST

SERIAL NO. 100950 REG. NO. HB-K10 PROD. NO. 1683
 NOTE: Equipment items installed below are designated by circle.
 CATEGORY, MANUFACTURER AND PART OR MODEL NO.

23. ALTIMETER (Cont'd)

B. Aerosonic

1. 101720-01545	1.0	-2.0
2. 101720-01546 (Mb)	1.0	-2.0
3. 12003	1.0	-2.0
4. 101720-01694	1.0	-2.0

C. Aeritalia

1. 16030SK

1.2 -2.0

D. United Instrument/Mitchell

1. 5934-1 code A68 (inHg)	1.0	-2.0
2. 5934P-1 code A83 (inHg w/Barber pole)	1.0	-2.0
3. 5934PM/1. code A84 (Mb w/Barber pole)	1.0	-2.0
4. 5934D-1 code A129 (Dual-Mb/inHg)	1.0	-2.0
5. 5934PD-1 code A130 (Dual-Mb/inHg w/Barber pole)	1.0	-2.0
6. 5934M-1 code A73 (Mb)	1.0	-2.0

E. Reporting Altimeters per Section 5.C of Optional Equipment List.

24. AIRSPEED

A. Aerosonic

1. 230-217-56-1210	.8	-2.0
2. 230-220-56-1210	.8	-2.0
3. 230-40-201-2	.8	-2.0
4. 230-217-56-1410	.8	-2.0
5. S15KAW	1.0	-2.0
6. 20025-01200	.8	-2.0
7. 20025-01208	.8	-2.0
8. S18KAW-1	.8	-2.0

B. Edo-Aire/Sigma Tek, Inc.

1. EA5171-01	.7	-1.0
2. EA5174-01	.7	-1.0
3. EA5174-02 PT-MAL	.7	-1.0
4. EA5171-02 MAL	.6	-1.0
5. EA5174-03 PT-MAL (TAS)	.7	-1.0
6. EA5171-03 MAL	.6	-1.0
7. EA5171-05 MAL	.6	-1.0
8. EA5171-04 MAL	.6	-1.0
9. EA5171-06 MAL (MX-7-180)	.6	-1.0
10. EA5171-07 MAL (M-6/MX-7-235)	.6	-1.0
11. EA5171-08 MAL (M-7-235)	.6	-1.0
12. EA5171-09 MAL (MXT-7-180) (MPH/K)	.6	-1.0
13. EA5171-010 MAL (MXT-7-180) (K)	.6	-1.0

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180
 MXT-7-180

REV. A

DATED: 11/8/90

REQUIRED EQUIPMENT LIST

SERIAL NO. 100950REG. NO. HB-K10PROD. NO. 1683

NOTE: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.

	WEIGHT (LBS)	ARM (INS)
25. INSTRUMENT CLUSTER		
(A) MAULE		
(1) 7040B	1.0	-0.6
26. MANIFOLD AND FUEL PRESSURE		
A. Aerosonic		
1. 735-102 (0-360/0-540 only)	1.0	-1.5
(B) Edo-Aire		
(1) 1U028-005-38 (0-360/0-540 only)	1.0	-1.0
C. Castleberry Instr's & Avionics, Inc.		
1. 6331 H 14 (0-360/0-540 only)	1.0	-1.0
27. MANIFOLD PRESSURE/FUEL FLOW		
A. A.I.D.		
1. 21-1003-1 (10-540 only)	1.0	-1.5
28. TACHOMETER		
A. Stewart-Warner		
1. 551-AWB (0-360 only)	.8	-1.1
2. 551-ACR	.8	-1.1
3. 551-ASJ	.8	-1.1
B. AC		
1. RT-7	.8	-1.1
2. AC6412611	.8	-1.1
C. Aerosonic		
1. 70-108	.8	-1.1
(D) Mitchell		
(1) 98480-23 (0-540/10-540 only)	.8	-1.1
2. 98480-24 (0-360 only)	.8	-1.1

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180
MXT-7-180

REV. D

DATED: 4/3/91

REQUIRED EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PROD. NO. 1683

NOTE: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.

WEIGHT (LBS)

ARM (INS)

LANDING GEAR

29. TIRES w/TUBES (2 ea.) TYPE III 4/6 PLY to TSO C62b

A. 6:00 x 6 (Nosewheel - 1 ea.)	8.3	-41.0
B. 7:00 x 6 (For Trigear Mains)	16.6	30.4
C. 7:00 x 6 (For Tailwheel Models)	16.6	-2.5
D. 8:00 x 6 (For Tailwheel Models only)	25.2	-2.5
E. 8:50 x 6 (For Tailwheel Models only)	38.2	-2.5

30. MAIN WHEEL (2 ea.)

A. Cleveland		
1. 40-97D	12.4	-2.5
2. 40-75D (Dual) (For Tailwheel Models Only)	12.8	-2.5
3. 40-28	10.2	-2.5
4. C38500HA	10.2	-2.5

31. BRAKE - MAIN WHEEL (2 ea.)

A. Cleveland		
1. 30-63E	1.9	-2.5
2. 30-52N (Dual) (For Tailwheel Models Only)	2.9	-2.5
3. 30-18	1.5	-2.5
4. C2000	1.8	-2.5

32. TAILWHEEL (Tailwheel Models Only)

A. MAULE SCOTT-3200		
1. SFSA-1-2	6.2	185.5
2. SFS-P8A-1-2	7.0	185.5
3. SFS-P8B-1-2	8.0	185.5

SAFETY BELTS

33. FRONT SEAT BELT & SHOULDER HARNESS ASSEMBLY (2 ea.)

A. AM-Safe, Inc.		
1. 500661-401	2.6	36.0
2. 500661-405	2.6	36.0
3. 502338-413 (R)/-417 (L)	2.5	37.0
4. 502338-423 (R)/-425 (L)	2.5	37.0
B. Pacific Scientific		
1. 1101020-7 (L)/-9 (R) (Lap Belts)	1.6	36.0
2. 2B25A()X-15 (Shoulder Harness)	.9	38.0

M-5-235C/-180C/M-6-235/-180/M-7-235/MX-7-235/-180
MXT-7-180

REV. A

DATED: 11/8/90

REQUIRED EQUIPMENT LIST

SERIAL NO. 10095CREG. NO. AB-K1QPROD. NO. 1683

NOTE: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.

WEIGHT (LBS)

ARM (INS)

34. REAR SEAT BELT (1 ea.) & SHOULDER HARNESS/LAP BELT ASSEMBLY (2 ea.)

A. Rupert

1. Series MM 65-80 AC (Lap Belt-double occupant) .6 52.0

2. AM-Safe, Inc.

1. 500915-3 (Lap Belt-double occupant) .6 52.0

2. 500661-409 (Shoulder Harness & Lap Belt) 2.5 55.0/80.0

NOTE: Aircraft licensed after 12/11/86 must be equipped with Shoulder Harness and Lap Belt Assemblies for each rear seat occupant.

35. CARGO & LUGGAGE STRAPS

A. Aeroquip

1. 3101003G072-022 (Front) .8 43.5

2. 3101003G072-022 (Rear) .8 71.0

LIGHTS

36. NAVIGATION LIGHTS - WINGS

A. Grimes

1. Type 1285, Red (Left) .3 16.0

2. Type 1285, Green (Right) .3 16.0

B. See Optional Equipment List, Section 1.A, items 1, 2 and 5.

37. NAVIGATION LIGHTS - TAIL

A. Grimes

1. A2064-12 .2 199.0

B. Glar-Ban

1. 5107 C14B .2 199.0

38. EMERGENCY LOCATION TRANSMITTER

A. Leigh

1. 7H-2-190 Mod. # Type AF/AP/P 2.3 18.8

B. Narco

1. ELT-10 3.5 18.8

C. Emergency Beacon Corp.

1. EBC-102A 3.5 36.7

D. Merl, Inc.

1. Model #79007-P 2.5 20.0



M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 100950 REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

1. Anti-Collision Lights

A. Strobes

1. Grimes

a. (Dual Red) 30-0550-2-14	4.1	11.8
b. (Dual White) 30-0550-16-14	4.1	11.8
c. (Nav/Strobes) 30-0550-19-14	2.6	16.5

2. SDI Hoskins

a. 701750-215	1.3	9.0
b. 701144-2	1.5	10.0
c. 701144	1.3	9.0

3. Scientifico

a. (Top) Model 1400	.4	37.9
b. (Bottom) Model 1400	.4	-24.0

4. Aeroflash

a. (Top) X2FS	.5	37.9
b. (Bottom X2FS	.5	-24.0

Note: Flasher Unit Mode 902-12 to be installed with 4.a. & 4.b.

5. Whelen Engineering Co.

a. (Red) A650 PR (Power Supply A490-T-DF-14)	1.8	17.5
b. (Green) A650 PG (Power Supply A490-T-DF-14)	1.8	17.5
c. 62-A470-W (Power Supply A490-T-DF-14)	.5	37.9

B. Landing Light Pulser

1. Precise Flight, Inc.

a. 1210/2405-2	.8	-9.0
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2. Communication and Navigation Equipment

A. COMM/NAV Transceivers

1. EDO-Aire

a. RT-553	5.5	-5.5
b. RT-553A	5.5	-5.5
c. RT-563	7.9	-5.5
d. RT-563A	7.9	-5.5

2. King

a. KX 145	3.8	-3.9
b. KX 170B	7.1	-5.5
c. KX 175B	7.1	-5.5
d. KX 155-38	5.0	-5.0
e. KX 165	5.0	-5.0

3. Genave

a. Alpha/200B
b. Alpha/360
c. Alpha/500
d. Alpha/600

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661S0
M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095CREG. NO. HB-K10PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
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4. Narco

a. Escort 110	4.1	-6.0
b. MK-12D w/GS	5.2	-5.0
c. MK-12D w/o GS	4.8	-5.0

5. Terra

a. TXN 920	3.0	-5.2
b. TXN 960	4.6	-5.2

B. Communication Transceiver

1. Bendix

a. RT-241B

2. Collins

a. VHF-251

3.8	-6.0
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3. EDO-Aire

a. RT-551	3.3	
b. RT-551A		
c. RT-661		
d. RT-661A		
e. RT-771		
f. RT-773		

4. Genave

a. Alpha/10		
b. Alpha/100		
c. Alpha/100-360		

5. King

a. KT-96		
b. KY-195B		
c. KY-197		
d. KY-92		

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661S0
 MXT-7-180

OPTIONAL EQUIPMENT LISTSERIAL NO. 100950REG. NO. HB-K10PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
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6. Narco

a. Com 10		
b. Com 10A		
c. Com 11A	4.3	-5.5
d. Com 11B	3.3	-5.5
e. Com 111		
f. Com 111B		
g. Com 120		

7. Terra

a. TX 720	1.3	-5.3
-----------	-----	------

C. High Frequency Transceiver

1. Pantronics

a. Pan Com DX10-DA		
b. Pan Com DX10-RA		
c. Pan Com PT10-A		
d. Pan Com SB-10		
e. Pan Com TSB-10		

D. Radio Power Supply

1. Narco

a. T-12-MP-12A1	4.0	16.5
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2. King

a.	3.3	16.5
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3. Collins

a. PWC-150	1.5	
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E. Navigation (VOR) Receivers

1. Bendix

a. RN-242A		
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2. Collins

a. VIR-351	3.1	-5.5
b. VIR-350		



M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661SO
MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683
Note: Equipment items installed below are designated by circle.
CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

3. EDO-Aire

- a. R-552
- b. R-662
- c. R-554
- d. R-664

4. Narco

- | | | |
|------------------------------|-----|------|
| a. NAV 11 | | |
| b. NAV 12 | 2.5 | -5.5 |
| c. NAV 14 | 2.5 | -5.5 |
| d. NAV 111 | 7.2 | -5.3 |
| e. NAV 112 | | |
| f. NAV 114 | | |
| g. NAV 121 | | |
| h. NAV 122 | | |
| i. NAV 122A | | |
| j. NAV 824 (VOR/LOC Rec.) | 3.1 | -5.5 |
| k. NAV 825 (VOR/LOC/GS Rec.) | 3.3 | -5.5 |

5. Terra

- | | | |
|-----------|-----|------|
| a. TN 200 | 1.6 | -5.3 |
|-----------|-----|------|

F. VOR Indicators

1. EDO-Aire

- a. CID-552A
- b. CID-554A
- c. CID-662
- d. CID-664
- e. R-772
- f. CID-774

(2.) King

- a. KI-203
- b. KI-204
- c. KI-205
- d. KI-206
- e. KI-207
- (f) KI-208
- g. KI-209
- h. KI-201C
- i. KI-214
- j. KI-226

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150
M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
MXT-7-180

OPTIONAL EQUIPMENT LISTSERIAL NO. 100950REG. NO. HB-K10PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
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- k. KNI-520-01
- l. KI-521
- m. KI-211
- n. KI-212

3. Bendix

- a. IN-244A
- b. IN-245A
- c. RN-242
- d. GM-247

4. Collins

- a. IND-350
- b. IND-351
- c. IND-351C

5. Genave

- a. Theta/300
- b. Theta/400

6. Narco

- | | | |
|------------|-----|------|
| a. NAV 10 | | |
| b. DGO 9 | 1.7 | -5.5 |
| c. DGO 9A | | |
| d. DGO 10 | | |
| e. VOA-40 | 1.8 | -3.8 |
| f. VOA-40M | 2.8 | -3.8 |
| g. VOA-50 | 1.8 | -3.8 |
| h. VOA-50M | 2.9 | -3.8 |
| i. VOA-8 | 2.8 | -4.0 |
| j. VOA-9 | 2.9 | -4.0 |
| k. NAV/111 | | -3.3 |
| l. NAV/11 | 2.5 | -5.5 |
| m. NAV/12 | 2.5 | -5.5 |
| n. NAV/14 | 7.2 | -5.3 |
| o. CLC-60 | | |
| p. NAV/112 | | |
| q. NAV/114 | | |
| r. NAV 124 | | |
| s. ID 824 | .9 | -2.0 |
| t. ID 825 | 1.0 | -2.0 |

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661SO

MXT-7-180

OPTIONAL EQUIPMENT LISTSERIAL NO. 100950 REG. NO. AB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
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G. VOR/LOC Converter

1. King

a. KN 72

2. Narco

a. OC 110

H. Automatic Direction Finders

1. King

a. KR 85

5.1

-3.2

b. KR 86

3.9

-4.0

c. KR 87

2. Narco

a. ADF 141

6.3

36.7

b. PDF-35

4.3

-4.7

c. ADF 140

d. RMI 35

e. RMI 140

3. EDO-Aire

a. R-556D

8.5

b. R-556E

4. Bendix

a. ADF-T-12 C/D

b. 201C

c. 201D

d. 201F

5. Collins

a. RCR-650

2.3

-4.2

b. ADA-650

6. Genave

a. Sigma/1500

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150
 M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 100950 REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

I. ADF Indicators

1. Bendix

- a. 551A
- b. 551RL

2. Collins

- a. IND-650

.6

-1.7

3. King

- a. KI 225
- b. KI 227

4. Narco

- a. ADF 101

J. Glide Slope and Marker Receivers

1. King

- a. KR 21
- b. KN 73
- c. KN 75
- d. KA 40
- e. KR 22

2. Bendix

- a. GM-247A

3. Narco

- a. UGR2 & 2A
- b. UGR 3
- c. MBT

4. Genave

- a. Delta/300
- b. Delta/303
- c. Delta/303R
- d. PHI/20

5. EDO-Aire

- a. R-775
- b. R-775R

6. Collins

- a. MKR-350
- b. GLS-350

.7
.3-2.0
-5.3

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150
 M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683
 Note: Equipment items installed below are designated by circle.
 CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

7. Terra

a. TGS 40

.3

-5.3

K. Transponders

1. King

a. KT 76

3.0

-5.0

☒ b. KT 76A

c. KT 78

3.0

-5.0

d. KT 78A

E. German GTX 328

4.2

-5.0

2. Narco

a. AT-50A

b. At-150

3. EDO-Aire

a. RT-667

3.9

-5.0

b. RT-667A

c. RT-777

3.3

-5.0

d. RT 887

-5.0

e. RT 787

4. Genave

a. Beta/4096

b. Beta/500

c. Beta/5000

5. Bendix

a. TPR-660

b. TR-661A

6. Collins

a. TDR-950

2.0

7. Terra

a. TRT 250

1.7

-5.2

L. Distance Measuring Equipment

1. King

a. KN 61

2.6

-5.3

b. KN 62/62A/64

c. KN 65

d. KN 65A

e. KN 63

20.04.00
 C. 10.14.00

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MX--7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

2. Narco

- a. DME 190
- b. DME 195
- c. DME 890
- d. IDME 891

3.9 -5.0
 2.6 -4.6

M. Marker Lights

1. King

- a. KA 40

2. Collins

- a. MKL-350

.3 -0.2

N. Audio Control Panels

1. King

- a. KMA 20-03
- b. KMA 20-04
- c. KMA 24
- d. KA 134

2.3
 2.3
 1.7 -2.6

2. Narco

- a. CP 125
- b. CP 126
- c. CP 127
- d. CP 135
- e. CP 135M
- f. CP 136
- g. CP 136M

3. Bendix

- a. AS-248A

4. Collins

- a. AUD-250
- b. AUD-250D
- c. AMR-350
- d. AMR-350H

1.5 -2.8
 1.5 -2.8
 1.8 -2.9
 1.8 -2.9

5. EDO-Aire

- a. A-550
- b. AM-550
- c. AM-660
- d. A-770

2.0

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150

MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095CREG. NO. HB-K10PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.

WEIGHT (LBS)

ARM (INS)

6. Genave

a. TAU/200

7. Terra

a. TMA 230

1.05

-2.8

O. Isolation Audio Amplifier

1. King

a. KA 25A

1.3

P. Antenna

1. Narco

a. Loop ADF 01073-101

b. UDA-3 DME (for IDME 891)

.5

2. Bendix

a. 2321E

b. AT-662A

3. Collins

a. ANT-251

b. ANT-650

.8

2.3

4. EDO-Aire

a. AT-551A

b. AT-556A

c. AT-774A

d. AT-775A

(5) Meridian Electronics

a. MB-5

.9

95.0

b. MB-7

.9

95.0

c. BB-9

.4

7.0

(d) BB-16

.3

7.0

e. 354

.6

.0

f. M809

.4

160.0

g. VHF-1

.2

7.0

6. Maule

a. Sense Antenna 7030B

.2

7.0

7. Genave

a. Broad Band Lambda/100

.3

7.0

b. Marker Beacon Lambda/75

.8

95.0

c. Lambda/1000

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661S0

MXT-7-180

OPTIONAL EQUIPMENT LISTSERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
--	--------------	-----------

8. King

- | | | |
|----------|-----------|----------|
| a. KA 22 | d. KA 42 | g. KA 48 |
| b. KA 23 | e. KA 42B | h. KA 60 |
| c. KA 32 | f. KA 44B | |

9. Pantronics Deluxe Ant. Loading Unit SB10-RL

10. Pantronics Deluxe Ant. Loading Unit DX10-RL

11. Pantronics Manual Load Unit DX10-ML

12. Pantronics Manual Reel Ant. Kit DX10-MR

13. Pantronics Electric Reel Ant. Kit DX-EA-12

14. Comant

- | | | |
|----------------------------------|----|------|
| a. CI 121 SP (For Apollo 1 Rec.) | .9 | 43.0 |
|----------------------------------|----|------|

15. SRD Labs

- | | | |
|-------------------------------|----|------|
| a. LW-209 (For L-NAV 25 Rec.) | .7 | 43.0 |
|-------------------------------|----|------|

16. Texas Instrument

- | | | |
|------------------------------------|----|------|
| a. 2480191-0001 (For TI 9100 Rec.) | .9 | 43.0 |
|------------------------------------|----|------|

17. ARNAV Systems, Inc.

- | | | |
|---------------------------------|----|------|
| a. 455-6054 (For ARNAV 20 Rec.) | .8 | 43.0 |
|---------------------------------|----|------|

18. Foster Airdata Systems, Inc.

- | | | |
|-------------------------------|----|------|
| a. NY154 (For LRN500/F4 Rec.) | .5 | 43.0 |
|-------------------------------|----|------|

Q. Microphones

- | | | |
|-------------|----|------|
| 1. EDO-Aire | | |
| a. M-551 | .6 | 13.5 |

2. Electro Voice

- | | | |
|------------|--|--|
| a. 205-STC | | |
|------------|--|--|

3. Telex

- | | | |
|-----------------------------|--|--|
| a. 66C | | |
| b. 66T | | |
| c. 5 by 5 MARK II (Headset) | | |

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661S0
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 100950 REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

R. Speakers

1. Jensen

a. P5VA

b. C7788-4

2. Utah Electronics

a. A5C115

b. A46FC

3. Quam-Nichols
 a. 46C5FR

1.0

28.5

S. Area NAVigation Systems

1. King

a. KN 74

2. Collins

a. ANS 351

3. SRD Labs

a. L-NAV 25 Loran C Navigation System

3.2

-5.0

4. Texas Instrument

a. TI 9100 Loran C Nav System

8.2

-5.0

5. II Morrow, Inc.

a. Apollo I Nav System

3.7

-5.6

b. Apollo II Nav System

3.7

-5.6

6. Northstar Avionics

a. Northstar M1 Loran C Navigation System

4.2

-5.3

7. Foster Airdata Systems, Inc.

a. F4 Phoenix

4.5

-6.0

b. LRN500

3.7

-6.0

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661SO
 M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

T. Headsets

1. Telex

a. DBM-1000

b. EBM-1400

(2.) David Clark

a. H10-30

U. Push to Talk Switches

(1.) Telex

(a.) PT-200

V. Transcom Systems

(1.) David Clark

a. ISOCOM Voice Activated

0.7

1.7
~~-3.0~~

2. Sigtronics'

a. Transcom SPA-400

0.6

-2.0

W. Stereocom Systems

1. Sigtronics'

a. Stereocom-400

0.5

-9.0

X. Course Deviation Indicator (ECDI)

1. Terra

a. TRI NAV

2.3

-2.3

b. TRI NAV C

1.3

-2.3

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2261SO
M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 100950 REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

3. Vacuum System

A. Dry Air Pump (Gas Turbine Engines only)

1. Airborne

a. 212 cw

1.8

-39.5

Aa. Dry Air Pump (Reciprocal Engines only)

① Airborne Mechanisms

a. 200 cc

3.5

b. 205cc

2.3

c. 211cc

1.8

2. EDO-Aire

a. 1U128-002

b. 1U128-003

B. Vacuum Regulator

① Airborne Mechanisms

a. 133A4

.6

-15.5

b. 2H3-12

.4

-16.3

C. Air Filter

1. RC Allen

a. J4161-01

② Airborne Mechanisms

a. 1J7-1

.5

-14.2

D. Vacuum Gauge

1. Airborne Mechanisms

a. 1G3-1

.7

-0.8

b. 1G3-4

.7

-0.8



M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661SO
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. AB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
2. Aerosonic		
a. 09007-0117	.7	-0.8
③ 3. UMA, Inc.		
a. 3-200-1	1.0	-0.8
⑥ b. 3-200-12	1.0	-0.8
4. Vacuum Instruments		
A. Directional Gyro		
1. Aeritalia		
a. 31100C	1.8	-2.8
2. Aerosonic		
a. ANS-20	2.5	-2.8
3. RC Allen		
a. RCA 11A	3.3	-2.8
b. RCA 11A-10	3.3	-2.8
④ 4. EDO-Aire/Sigma, Tek		
⑥ a. IU262-001-9/4000B-8	2.6	-3.0
5. Sperry		
a. A5737-1	3.3	-2.8
6. Jack & Heintz		
a. JH5500		
B. Artificial Horizon		
1. Aerosonic		
a. ANS-30	2.5	-2.0
2. RC Allen		
a. RCA-20	3.3	-2.3
b. RCA-21	2.2	-2.3
c. RCA-21-23	2.2	-2.3
3. Jack & Heintz		
a. JH6500		

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150

MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 100950 REG. NO. HB-K10 PRODUCTION NO. 1683
Note: Equipment items installed below are designated by circle.
CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

B. Turn and Bank		
1. Aeritalia	1.4	-3.0
a. 26220CA	1.4	-3.0
b. 27221		
2. Aerosonic	2.0	-3.0
a. ANS-50		
3. Brittain	2.3	-3.0
a. 1677A	2.3	-3.0
b. 600-009-900		
4. RC Allen	2.4	-3.0
a. A2475	2.4	-3.0
b. A2670		
c. RCA80A		
d. 21500	1.3	-3.0
e. RCA82A-1		
f. RCA14W2D2A		
5. Garwin		
a. 23-324-01A		
6. Whittaker		
a. D-24		
7. Astronautics		
a. 303770-113MSN		
8. Mid-Continent Instrument Co.	1.2	-2.0
a. 1394T100-7Z		

C. Reporting Altimeter		
1. Aerosonic	1.9	
a. 101420-(01249)	1.4	
b. 101627-01340	1.4	
c. 101627-01344		
d. 101627-01696		
e. 102200-01812		
2. Smiths Industries	1.8	
a. 01-200-104		

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661SO

MXT-7-180

OPTIONAL EQUIPMENT LISTSERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
--	--------------	-----------

4. Sperry a. A5736-1	4.4	-2.5
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5. Southwestern Industries, Inc. a. A0-10-2	2.5	-4.0
--	-----	------

(A) 6. EDO-Aire/Sigma, Tek (a.) 23-501-06-9/5000B-20	2.0	-3.0
---	-----	------

5. Flight Instruments

A. Rate of Climb (For all models with reciprocal engines only)		
1. Aeritalia a. 21030S	1.3	-2.0

2. Aerosonic a. 340-50 b. 340(340)-56-1210 c. RC30V10 d. 30840-0169	1.0	-2.0
---	-----	------

(3.) United Instruments (a.) 7030M b. 7040M	1.0 1.0	-2.0 -2.0
---	------------	--------------

4. EDO-Aire a. EA-1409-3Z	.8	-1.5
------------------------------	----	------

5. Eclipse Pioneer a. 1636-B-1		
-----------------------------------	--	--

6. Garwin a. 22-204-01-A		
-----------------------------	--	--

7. Aircraft Instrument & Dev., Inc. a. 32-1007-1		
---	--	--

Aa. Rate of Climb (For all models with gas turbine engines only)		
1. Aircraft Spruce & Specialty 1. 10-05400	1.0	-2.0

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661S0

MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683
 Note: Equipment items installed below are designated by circle.
 CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

3. King

a. KEA 125-13	1.9	
b. KEA 125-14	1.9	
c. KEA 126-17	1.9	
d. KEA 126-18	1.9	
e. KEA 127	1.0	
f. KEA 128	1.8	-2.5
g. KEA 129	1.8	-2.5

4. United Instruments

a. 5035P2-P39	1.8	-2.5
---------------	-----	------

5. Terra

a. AT 3000	.5	-3.6
------------	----	------

6. Narco

a. AR 850	.8	-12.9
<i>ACK-30 model 8</i>		-3.1

D. Alternate Static System

1. Maule

a. 6075B

6. Accessory Instruments

A. Exhaust Gas Temperature Kit (EGT) (For Reciprocal Engines only)

1. Alcor Aviation

a. 394-37-935	(EA 35 4PB) (-180)
b. 394-37-937	(EA 35 6PB) (-235)
c. 394-37-946	(EGT-225)
d. 46150	
e. 211-140-0	(-180)
f. 211-160-0	(-235)
g. 211-110-0	

2. KS Avionics

a. EGT-1	.3	-0.5
b. EGT-1LW		

3. Insight Instrument Corp.

a. GEM-602	Instrument	.8	-3.3
	Probes & Wiring Harness	1.3	-40.0

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150
 M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
--	--------------	-----------

B. Clock

- | | | |
|--|----|------|
| 1. Borg | | |
| a. CA 7212 | .3 | -0.5 |
| b. CA 7286 | .3 | -0.5 |
| 2. Elgin | | |
| a. A-11 | .3 | -0.5 |
| 3. Review | | |
| a. Type B4.0 | .3 | -0.5 |
| 4. Shins American | | |
| a. 46G | .3 | -0.5 |
| b. 53G | .3 | -0.5 |
| 5. Wakmann | | |
| a. A-11 | .3 | -0.5 |
| b. W33 7510-101 | .3 | -0.5 |
| 6. Waltham | | |
| a. 22840 | .3 | -0.5 |
| 7. Aerosonic | | |
| a. 86200-0129 | .3 | -0.5 |
| b. 86200-0126 | .3 | -0.5 |
| c. 86200-0114 | .3 | -0.5 |
| d. 86200-0115 | .3 | -0.5 |
| e. Type C-13A-1' | .3 | -0.5 |
| 8. Longines-Whittnauer | | |
| a. A-11-90 | .3 | -0.5 |
| 9. Mitchell Aircraft Instruments, Inc. | | |
| a. 98470 | | |
| b. 035-370-021 (for 12 to 28 volt a/c) | .3 | -1.0 |
| c. 99500-ELT (for 12 to 28 volt a/c) | .5 | -1.0 |
| 11. Mid-Continent Instrument | | |
| a. MD-88 | .4 | -1.0 |

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661SO
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. AB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO.	WEIGHT (LBS)	ARM (INS)
--	--------------	-----------

C. Outside Air Temperature Gauge

- | | | |
|---|-----------|-------------|
| 1. Scott
a. 2716 | .1 | 12.0 |
| 2. Ashcroft
a. NHM70 | .1 | 12.0 |
| <u>3.</u> Rochester
<u>a.</u> 1592-27 | <u>.1</u> | <u>12.0</u> |
| 4. Piper
a. 550-541 | | |
| 5. Vanmark
a. 1592-30 | | |
| 6. Dresser
a. 20 B160 R 000
VDO OAT | 0.2 | - 1.1 |

D. Carburetor Air Temperature Gauge (For Carbureted Engines only)

- | | | |
|---|-----|------|
| <u>1.</u> Aircraft Instrument & Development
<u>a.</u> 29-208 | 1.0 | -1.5 |
| 2. Aerosonic
a. 651250 (w/kit B-5 Probe) | | |

E. Hour Meter

- | | | |
|----------------------|--|--|
| 1. Maule
a. 6072B | | |
|----------------------|--|--|

F. Angle of Attack (For M-6-235, s/n's 7249C-7465C only)

- | | | |
|-----------------------------|-----|------|
| 1. Safe Flight
a. SC-150 | 1.0 | -1.0 |
|-----------------------------|-----|------|

G. Fuel Computer (For Gas Turbine Engines only)

- | | | |
|----------------------|-----|------|
| 1. ARNAV
a. FC-10 | 1.0 | -1.3 |
|----------------------|-----|------|

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661SO
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

7. Accessories

A. Heated Pitot

① Aero Instruments

a. PH-502-12

1.0

43.0

b. PST-305-12

1.0

43.0

B. Fire Extinguisher

① Balkamp

a. 4-2740

4.5

8.1

b. 770-7007

2. General

a. CP-234

4.5

8.1

b. CP-2 12J

4.5

8.1

c. TCP-2 1/2J

4.5

8.1

d. GH-2 1/2J

5.4

8.1

3. Kidde

a. Type BC Size 1

4.5

8.1

4. C. O. Two Fyre Fighter

4.5

8.1

5. Amerex

a. 403423

5.0

8.1

6. Pemall

a. PA27ABC

4.5

8.1

C. Landing Light

1. Maule

a. 9030E

1.0

5.0

D. Float Plane Reinforcement

① Maule

a. 9001F, Sht:1

13.3

30.0

E. Auto Flight Systems

1. Century Flight Systems (M6/7/MX7-235, MX7-

a. Century 11B/AK 513 180 & all M5s only) 10.6

7.8

b. Century 21/AK 932 (MX-7-235, MX-7-180 & M-7-235 only) 13.4

7.8

A

B

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA266150
 M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180
 MXT-7-180

OPTIONAL EQUIPMENT LIST

SERIAL NO. 10095C REG. NO. AB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

F. Radio Couple (See E.1.a.& b.)

1. EDO-Aire
 - a. IC 388M

G. Glider Tow Hitch

Tost E 85

- ① Maule
 - a. 3196F

Mirror on lh wing strut

4.5

123.5 removed 7.91

H. Wheel Fairing

1. Maule
 - a. 4034B

I. Siren/PA System

1. Federal
 - a. PA 100 Amplifier
 - b. PA 200 Amplifier
 - c. TS-100 Speaker

7.5	5.0
5.0	-3.0
8.0	95.0

J. Receivers

1. King
 - a. KRA-10 Radar Alt
 - b. KNS-80 INS

2.0	
6.0	6.0

K. Portable Oxygen System

1. Rajay Industries
 - a. SK-9
 - b. SK-10
2. Scott Aviation Products
 - a. Executive Mark I
 - b. Executive Mark II
3. Puritan-Bennett Aero System
 - a. ZP 202
 - b. ZP 204

10.0	38.0
12.0	38.0

9.0	38.0
14.0	38.0

38.0
38.0

L. Long Range Portable Oxygen System

1. Rajay Industries
 - a. SK-9-30
 - b. SK-9-40
 - c. SK-9-48
 - d. SK-10-30
 - e. SK-10-40
 - f. SK-10-48
2. Puritan Bennett Aero System
 - a. ZP 400
 - b. ZP 401

17.0	60.0
19.0	60.0
25.0	60.0
17.0	60.0
19.0	60.0
25.0	60.0

17.5	60.0
17.5	60.0

M-5-235C/-180C/-200/-210TC/-210C/M-6-235/-180

MX-7-235/-180/-420/M-7-235/M-7-235 Modified per STC SA2661S0

MXT-7-180

OPTIONAL EQUIPMENT LISTSERIAL NO. 10095C REG. NO. HB-K10 PRODUCTION NO. 1683

Note: Equipment items installed below are designated by circle.

CATEGORY, MANUFACTURER AND PART OR MODEL NO. WEIGHT (LBS) ARM (INS)

M. Auxiliary Heater (M5/6/MX7-235/-180/
1. Maule M7-235 only)
a. 5310E 2.1 18.1

N. Optional Aft Cargo Seat B
1. Maule
a. 1216B (MX-7-235/-180/-420/MXT-7-180/
M-6-235 only) 8.8 70.0

GPS PRONAV 100_AVD 1.77 -2.5
Aviation Rack PRONAV 100 0.74 -2.5
GPS Antenna PRONAV 0.53 23.79

FTC Hösli 273-3 1.24 -1.7

Volt-Meter VDO 0-16V 0.16 2.0

Para Altimeter THOMEN 0.22 10.0

Wing-Let modification Aerotec 1.35 57.1

~~Silencer Mecanair 6.6 -17.0~~

Steuergerät Seileinzugsvorrichtung 0.78 -2.3
Seileinzugsvorrichtung, System MAAG 26.45 94.9
Schleppklinkenträger Heck, Klinke = 5.80 123.5
Aerazur mit 850 Kg Schleppgewicht

Shadin Digiflo/Miniflo Fuel Management 1.08 - 3.81

Propeller Hoffmann HO-V123K/K193DY 51.20 - 61.5

Spinner and Bulkhead Assy VP30-158 3.80 - 62.0

PULSE-LIGHT System complete STC SA4005NM 0.80 - 3.8

Schalldämpferanlage MAULE Orr. RH-Seite - 8.379 -36.614

Schalldämpferanlage MAULE Orr. LH-Seite - 7.497 -30.709

Auspuffanlage / Schalldämpferanlage
AEROTEC laut STC Z 78-20-31 +18.522 -28.150

AEROTEC GmbH
CH-6540 Grenchen - Flughafen04.01.91
S-305RC

30.3.2000

AEROTEC LTD
C/M452
H. Klarenbeek

30.6.92

AEROTEC GmbH BAZL Nr. 84
CH-2640 Grenchen - Flughafen

30.3.2000

S-305RC

Ausgebaut

30.3.2000

H.

30.3.2000

AEROTEC LTD

C/M452

H. Klarenbeek

H.

Telex: 934136, (Aerotec)

Telegramme: Aerotec

Bank-Konto

Schweiz Bankgesellschaft

4500 Solothurn

Cessna Service-Station

OPTIONAL EQUIPMENT LIST

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MAULE MX-7-235 HB-KIQ

Datum 4. JULI 1991

A R B E I T S B E R I C H T NR. KIQ / 04071991

Blatt Nr. 2

Rüstgewicht und Schwerpunktlage des Flugzeuges HB-KIQ

Bezugsebene: Flügelvorderkante

Datum	Gegenstand	Gewicht lbs	Arm in	Moment lbs/in
10-06-91	Altes Rüstgewicht	1505.3	10.8	16196.4
E	GPS Antenne PRONAV	0.53	44.9	23.79
E	GPS Aviation Rack	0.74	-2.5	-1.85
E	GPS PRONAV 100 Navigator	1.77	-2.5	-4.42
E	Indicator ARC MS3102A-20-29	0.45	-1.0	-0.45
E	Flugstundenzähler Hösli	1.24	-1.7	-2.10
E	V-Meter VDO 0-16V	0.16	2.0	0.32
E	OAT-VDO	0.20	-1.1	-0.22
E	Transponder KING KT76A	3.00	-5.0	-15.00
E	Encoder NARCO AR850	0.80	-12.9	-10.32
E	Intercom DAVID-CLARK	0.70	1.7	1.19
E	Thomen Para-Altimeter	0.22	10.0	2.20
E	Wing-Let Mod. Aerotec	1.35	57.1	77.08
E	Spiegel	0.45	11.8	5.31
E	Silencer MECANAIR	6.60	-17.0	-112.20
E	Schleppklinkenträger Heck	5.80	123.5	716.30
E	Seileinzugsvorrichtung	26.45	94.9	2510.10
E	Steuergerät Winde "Landis"	0.78	-2.3	-1.79
A	Glider Tow Hitch	-4.50	123.5	-555.75
A	Balance weight 3 blade pr.	-7.34	186.0	-1365.24
04-07-91	Neues Rüstgewicht	1544.70	11.305	17463.35

Eintrag AFM : **AEROTEC GmbH**
 Flughafen
 2540 Grenchen

MAULE AEROSPACE TECHNOLOGY, INC.
PILOT'S OPERATING HANDBOOK
AND
FAA APPROVED AIRPLANE FLIGHT MANUAL
MAULE MX-7-235

SECTION VI
AIRCRAFT SERVICING,
HANDLING & MAINTENANCE

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 this 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 door post on the Pilot's side toward the bottom. 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 Department 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 manufacturers recommended inspections.

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.

FAA APPROVED

DATE:

Rev. A dated: 25 APR 1985

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AEROTEC

AFM-SUPPLEMENT



AEROTEC GmbH, Flughafen Grenchen

Maule all types 235

Aircraft Make : Maule Air Inc., Georgia, USA
Aircraft Model : M7-, MX-7-235
Serial Number : 10095C
Registration : HB-KIQ
Basic AFM : October 18. 1984

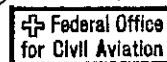
This document must be kept in the aircraft at all time. It describes the operating procedures for the referenced system, which has been installed in this aircraft.

Approval basis: STC Z61-10-04

The information contained herein complements or supersedes the Basic Airplane Flight Manual only in those areas listed herein. For limitations, procedures and performance information not contained in this document, consult the Basic Airplane Flight Manual.

Swiss FOCA approved

Signature:

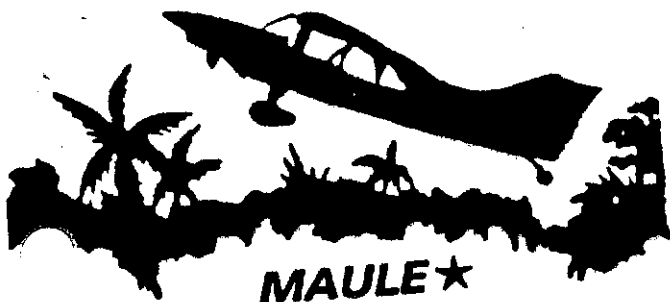


Date:

04. Nov. 1997

Log of eff. pages: Page 1 Revision status: original
Page 2 original

Date: 5. 9. 1997
5. 9. 1997



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AIRPLANE FLIGHT MANUAL

SUPPLEMENT No. AE001

AEROTEC - WINGTIP-KITS (STC Z 27-10-01)

Luftfahrzeug-Hersteller : Maule Air Inc. , Georgia/USA
Luftfahrzeugmuster : Maule M X-7-235, HB - KIQ
Seriennummer : 10095C

Section 1 / General

Dieses Supplement muss beim AFM eingeordnet werden, wenn Aerotec-Wingtip-Kits (BAZL STC Z 27-10-01) installiert sind.
Die im Supplement enthaltenen Informationen ergänzen jene des Basis-AFM des Flugzeuges.

Für Grenzwerte, Verfahren und Leistungsangaben, die nicht in diesem Supplement aufgeführt sind, gelten die Angaben des Basis-AFM.

Section 2 / Limitations

Keine Aenderung gegenüber den Basisdaten des AFM.

Section 3 / Emergency Procedures

Keine Aenderung gegenüber den Basisdaten des AFM.

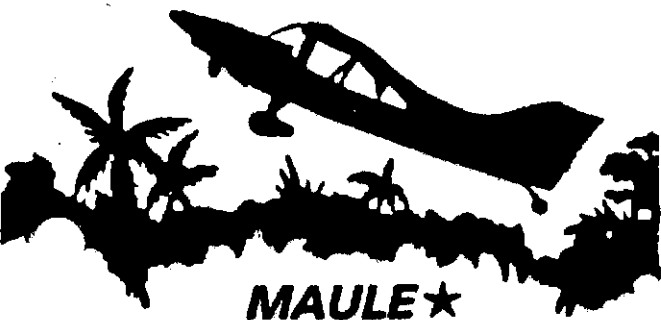
Section 4 / Normal Procedures

Keine Aenderung gegenüber den Basisdaten des AFM.

Section 5 / Performance

Die Rollrate (Querruderwirkung) des Flugzeuges erhöht sich gegenüber den Original-Randbogen um ca. 30 % und liegt bei ca. 32°/sec.

24.10.91 rw Issue 1	A F M - S U P P L E M E N T BAZL STC Z 27-10-01	MAULE MX 7 - 235 MAULE M 7 - 235 MAULE M 6 - 235
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Section 6 / Weight and Balance

Gewichtsänderung +1.35 lbs
Hebelarm 57.1 inch
Moment 77.08 lbs in

siehe auch Weight and Balance Section des AFM

Keine Änderung der CG Limiten

Section 7 / Description and Operation

Die Aerotec-Wingtip-Kits, hergestellt aus glasfaserverstärktem und mit Hartschaum gefülltem Kunststoff haben folgende Aufgabe :
-Verbesserung der Rollrate durch bessere Anströmung der Querruder

Section 8 / Maintenance

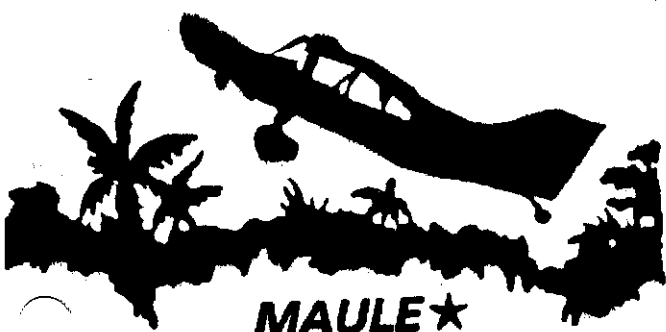
Siehe separate Unterhalts- und Reparaturanweisung

Genehmigt durch das

SCHWEIZERISCHE BUNDESAMT FUER ZIVILLUFTFAHRT (BAZL)

Datum :

24.10.91 rw Issue 1	A F M - S U P P L E M E N T BAZL STC Z 27-10-01	MAULE MX 7 - 235 MAULE M 7 - 235 MAULE M 6 - 235
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AEROTEC CH - 2640 Grenchen-Flughafen

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MAULE MAINTENANCE MANUAL - SUPPLEMENT

WARTUNGSANWEISUNG für AEROTEC - WINGTIP-KITS (BAZL STC Z 27-10-01)

Preflight

Sichtkontrolle auf Beschädigungen durch den Piloten während des normalen Preflight-Checks gemäss AFM
Es sind keine Beschädigungen oder Verformungen zulässig.

Wartung

Die Aerotec-Wingtips sind grundsätzlich wartungsfrei.
Sichtkontrolle auf Beschädigungen und Verformungen bei jeder 50 h - Kontrolle.

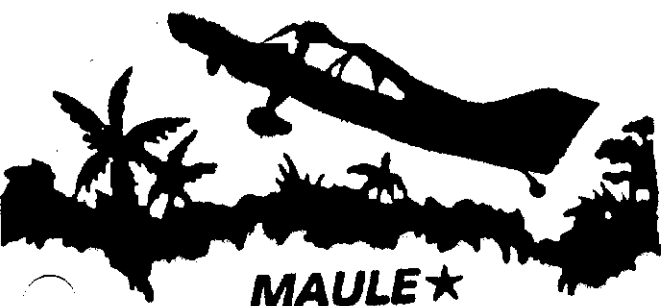
Reparatur

Grundsätzlich soll eine Reparatur nur von einem Kunststoff-Fachmann durchgeführt werden.
Die Reparatur hat nach den AC 43 Section 4 - Richtlinien zu erfolgen. Es sollen nur Materialien gem. Aerotec-Spezifikation verwendet werden.

Lebensdauer

Keine Aenderung gegenüber den Originalrandbogen

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AEROTEC - WINGTIP-KITS (BAZL STC Z 27-10-01)

HERSTELLPROZESS-SPEZIFIKATION

A Wägung des bestehenden Originalrandbogens zwecks Gewichtskontrolle bei der Herstellung der neuen Wingtips.

B HERSTELLUNG UNTERER FIN (Werkzeug AEF 002)

1. In beide Formwerkzeughälften je 2 Lagen Glasgewebe bidirektionell einlaminieren. Die Raumtemperatur sollte bei der Herstellung 20°C (+4°/-2°) betragen.
2. Nach dem Gelieren (Aushärtezeit 24h bei 20°C +4°/-2°) überstehendes Gewebe an den Trennhälften abschneiden.
3. Beide Formhälften zusammenfügen und 2 Bänder (3cm breit) auf die Trennfuge einlaminieren.
4. Nach dem Gelieren (20°C, 24h) mit Urethanschaum aufschäumen.
5. Auflagefläche zu Randbogen verschleifen.
6. Baumwollflocken auftragen und Fin auf Randbogenunterseite kleben (gem. Zeichnung AE03.01.001 / AE03.02.001)

C HERSTELLUNG OBERER FIN (Werkzeug AEF 001)

1. In Formwerkzeug 2 Lagen Glasgewebe bidirektionell gleichzeitig einlaminieren. Die Raumtemperatur sollte bei der Herstellung 20°C (+4°/-2°) betragen.

Restliche Herstellung wie bei Pt. 4 bis 6 bei unterem Fin

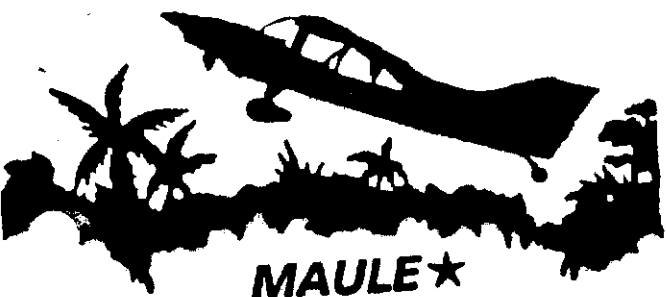
D LACKIERUNG DES RANDBOGENS

1. Randbogen schleifen
2. Zweikomponenten-Füll-/Haftgrund "Maxidriver MS" (Fa. Meyer, Glattbrugg) auftragen
3. Randbogen schleifen; wo nötig abisolieren mit Zweikomponenten-Haftgrund "Maxiblitze" (Fa. Meyer, Glattbrugg)
4. Mit Zweikomponentenfarbe "Duralit Car" (Fa. Meyer, Glattbrugg; Acrylbasis) spritzen.

E Wägung des fertigen Randbogens. Die Gewichtszunahme gegenüber dem Originalrandbogen sollte 1.35 lbs betragen.

F Qualitäts-Endkontrolle durch Ausführen folgender Punkte:
- Masshaltigkeit gemäss Zeichnungen AE03.01.001 und AE03.02.001 kontrollieren

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- Abklopfen der Klebestellen zur Kontrolle der Verbindung
- Ueberprüfen der Lackierung (Sichtkontrolle)

24.10.91
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Issue 1

A F M - S U P P L E M E N T
BAZL STC Z 27-10-01

MAULE MX 7 - 235
MAULE M 7 - 235
MAULE M 6 - 235



AFM-SUPPLEMENT



AEROTEC GmbH, Flughafen Grenchen

Maule all types 235

Definition of aircraft configuration changes

Installation of the Propeller HOFFMANN HO-V 123K...

1. General

The following Propeller has been installed to reach increased performance datas during flight.

Manufactured by:	HOFFMANN GmbH & Co. KG, Rosenheim (Germany)
Model:	HO-V 123K()-()-() 193DY()
Type:	3-Blade, variable Pitch
Diameter:	193 cm (76 in)

2. Limitations

No change to basic AFM.

3. Normal Procedures

No change to basic AFM.

4. Emergency Procedures

No change to basic AFM.

5. Performance

No change to basic AFM except:	Take-Off ground roll:	179 m
	Take-Off over 50 ft:	335 m
	max. climb rate:	5,0 m/sec = 985 ft/min

6. Weight & Balance

Arm:	Propeller = -61.5 in	Spinner & Bulkhead Assy = -62.0 in
Weight:	Propeller = 51.2 lbs	Spinner & Bulkhead Assy = 3.8 lbs

7. Aircraft Servicing, Handling and Maintenance

No change to basic AFM.

Maintenance in accordance with Maintenance Instruction ho_pr_mt.doc dated 5. 9. 1997.

8. Manufacturer's Data

No change to basic AFM.

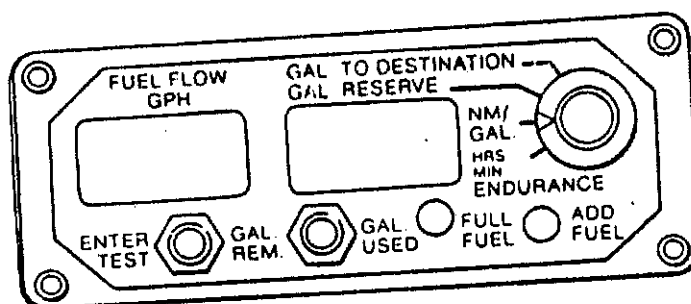
HB-KIQ

AEROTEC INC. LTD
CH-2540 GRENCIEN-Airport
TEL. 065/522-149
FAX. 065/530-420

MNFL2041.MNL

TM
MINIFLO-L

DIGITAL FUEL MANAGEMENT SYSTEM
WITH INTERFACE TO THE LORAN-C NAVIGATION RECEIVER



OPERATING MANUAL

Single
P/N
912041
912043
912045
912047

Version.

Gallons
LBs/Aviation Gas @ 5.8 Lb./Gal.
LBs/Jet Fuel @ 6.7 Lb./Gal.
Liters

SHADIN Co., Inc.

- 1 -

MNFL-L-ADD.A

TM
MINIFLO-L

Although the FAA does not require it, it is recommended that this manual be always kept onboard for handy reference.

1. GENERAL DESCRIPTION

MINIFLO-L is a Digital Fuel Management System designed to provide complete Fuel Management information under real flight conditions without any manual entry of data (except for the initial fuel on board information). It is connected to the engine Fuel Flow Transducer for Fuel Flow information and to the Loran-C receiver serial port for navigation data (ground speed, distance and estimated time enroute).

The system is available with either gallons, pounds or liters readouts, and it can be installed virtually on any reciprocating or turbine engine by selecting the proper size Fuel Flow Transducer.

1.1 The SYSTEM PROVIDES:

1.1.1 Specific Range: in NM/Gal. or NM/lb. of Fuel Burned. This is an indication of how efficient is the cruise and the optimum cruise speed could be obtained by selecting the power setting which yields the highest NM/Gal. $\text{Specific Range} = (\text{G/S Kt.}) / \text{Fuel Flow}$

1.1.2 Fuel to Destination: It calculates (under the real wind conditions) the Fuel necessary to reach the destination as selected on the Loran-C receiver by multiplying the Fuel Flow by the ETE to the destination. (If an intermediate waypoint is selected for navigation purposes the displayed "Fuel to Destination" represents the fuel needed to reach the intermediate waypoint.

1.1.3 Fuel reserve: The system calculates the amount of Fuel which will be available onboard when the aircraft reaches its destination as indicated on the Loran-C receiver waypoint. This feature provides the pilot with the necessary information to evaluate the reserve fuel situation based on accurate information early enough to take the necessary action. The Reserve Fuel = Fuel on Board - Fuel to Destination (See above note for intermediate waypoints).

1.1.4 Endurance: The system calculates the time left to fly in hours and minutes based on the fuel on board and fuel consumption. $\text{Endurance} = (\text{Fuel available in gallons}) / (\text{Fuel Flow in GPH})$.

1.1.5 Fuel Remaining: The system keeps track of the fuel remaining on board. Fuel Remaining = Initial starting fuel minus used fuel.

1.1.6 Fuel used: The system keeps track of the fuel used since the last fuel entry.

1.1.7 Not Enough Fuel: The system will flash the right window display digits (when the rotary switch is in the Fuel to Destination position). If the calculated Fuel needed to reach the Destination is more than the Fuel Remaining on board and will show a negative sign followed by the amount of Fuel Short to reach the destination.

1.1.8 Fuel reserve will be Used: The system will flash the right window display digits (when the rotary switch is in either Fuel to Destination or Reserve Fuel position) if the endurance is less than the time to reach the destination plus 45 minutes. This warning is intended to alert the pilot that the prevailing condition will require the use of some of the 45 minutes Fuel Reserve to reach destination.

1.1.9 Fuel Flow: The system provides a digital readout of the engine fuel flow per hour to a tenth of a gallon up to 100 gallons and to the nearest gallon above 100 gallons. For LB/HR versions the readout is to the nearest LB up to 999 LB/HR and to the nearest 10 LB above 999 lb/hr. (The times 10 mode is indicated by illuminating the three decimal points).

1.2 SYSTEM COMPONENTS: The system consists of 3 basic units.

1.2.1 FUEL FLOW TRANSDUCER:

The fuel flow transducer(s) mounted in the fuel line(s) measure the flow of fuel and generates electrical pulses directly proportional to the amount of fuel flow. The transducers are fail-safe designed; rotor blockage will not interrupt fuel flow to the engine.

1.2.2 LORAN-C RECEIVER:

The Loran-C receiver provides ground speed, distance and estimated time enroute through the serial port.

1.2.3 INDICATOR:

All system electronics, function controls and digital displays are contained in a single instrument that mounts in a standard 1/2 ATI hole and requires no periodic maintenance, adjustment or calibration once properly installed.

The Fuel Flow is always displayed at the left window. The right window displays all other functions with the priority for the rotary switch functions.

The system includes a non-volatile memory for retaining the basic settings, the Fuel remaining and Fuel Used during the power shut down which require no electrical power for retaining the information.

1.3 TEST FUNCTION:

A diagnostic software is built into the system and is initiated by pressing the "TEST" button; the program checks the hardware and the display. If the test is successful a "Good" is displayed, if not a "bAd" is displayed. The system is considered unserviceable until a corrective action is taken.

At the end of the test routine the system will display the following:

1. Software basic # and revision level.
2. The K-factor setting for the flow transducer in the flow window (pulse count/gallon). This number must match the pulse count stamped on the Flow Transducer otherwise all the readout will be inaccurate.
3. The display units (Gal., LB 5.8, LB 6.7 etc.) as part of checking the internal settings.
4. The Loran-C distance as shown on the Loran-C receiver to check the Data Interface Integrity. If the system is not capable of reading the Loran-C data the word "LbAd" will be displayed on the right window.
5. If the Loran-C receiver is turned off the display shows "LoF"
6. Maximum useable fuel setting in the right window.

The use of the test functions while the engines are running, will cause the system to lose 18 seconds of the fuel count.

2.0 INITIAL PROGRAMMING:

Initial programming is intended to enter the total useable fuel figure into the memory (as defined in the flight manual. Extra attention must be paid to aircraft with reduced fuel load devices). It can then be recalled whenever you fill the fuel tanks up to the maximum usable fuel.

PROCEDURE:

1. Power the unit by switching the aircraft master switch on.
2. Move the toggle switch to the "Full Fuel" and hold for the entire procedure.
3. Move the toggle to the "Fuel Rem" and press "Enter/Test" button simultaneously for 30 seconds.
4. The code message "FUL" will be displayed in the left flow window and the current full fuel value in the same units of display (gallons, lb's etc.) will be displayed in the right window. Release the "Fuel Rem" toggle switch and "Enter" button. Continue to hold the toggle to "Full Fuel".
5. Move the toggle to "Fuel Rem" position to increment the full fuel number or to "Fuel Used" position to decrement (the longer you hold the faster the updating).
6. After reaching the correct total useable fuel figure, press the enter button and the computer will store that number as full fuel. The word "FUL" disappears and the computer will return to the operate mode. Release the Full Fuel toggle switch.
7. To verify that the data is stored properly, press the "TEST" button. The computer will run the diagnostic check and then display "Good". If the test is successful then it will display the maximum usable fuel value in the right window.

3.0 PREFLIGHT PROCEDURES;

MINIFLO is a fuel flow measuring system and NOT a quantity sensing device. Therefore it can NOT determine the amount of the usable fuel in the fuel tanks. Therefore, it is imperative that an accurate figure of the useable fuel on board be entered into the system to ensure accurate readings.

3.1 NO FUEL ADDED

As data is already stored, no action is needed.

3.2 MAXIMUM USABLE FUEL (FULL TANK):

1. Move the toggle switch to the "Full Fuel" position and hold. The maximum useable fuel figure will be displayed in the right window.
2. Press the "ENTER" button
3. Return the toggle switch to the center position.
4. To verify, move the toggle to "Fuel Rem". Total useable fuel will be displayed in the right window.

3.3 PARTIAL FUEL ADDED

1. Move the toggle switch to the "Add Fuel" position.
2. Move the toggle switch to "Fuel Rem" to increment fuel added figure. When the amount of fuel added figure is reached, release the "Fuel Rem" toggle. If the correct figure has been exceeded move the toggle switch to the "Fuel Used" position to decrement the added fuel figure.
3. Press "Enter" button.
4. Return the "Add Fuel" toggle switch to the center position. The computer will arithmetically add the added fuel to the fuel remaining and use the total as the current fuel remaining.
5. To verify move the toggle to "Fuel Rem"; current useable fuel remaining will be displayed in the right window.

3.4 CORRECTING INPUT ERROR

In case an error has been made by exceeding the correct amount in entering the number of total usable fuel, select and hold "Fuel Used" toggle and simultaneously press "Enter/Test" button. Fuel used will be reset and the fuel remaining will appear and pause on display for 4 seconds. Then the figure will decrement when the correct figure is reached (the longer you press, the faster the decrementing), release both "Enter" button and "Fuel Used" toggle. To avoid repeating the 4 second pause during the decrementing, do not release the "Fuel Used" toggle but use the "ENTER" button to control the decrementing.

3.5 TEST FUNCTION

Press the "Test" button. All digit will display "8" sequentially for ten seconds. If the computer checks out the word "Good" will show. (If the test is not successful, the word "bAd" will be displayed. In such case the unit must be considered unserviceable until a correcting action is done.) Followed by:

1. Software basic # and revision level
2. The K-factor setting for the flow transducer in the flow window.
3. Distance to the waypoint as shown on the Loran-C receiver. If the system is not capable of reading the Loran-C data the word "LbAd" will be displayed on the right window. If the Loran-C receiver is off the display will show "LoF".
4. Maximum useable fuel setting in the right window.

NOTE: Using the test function while engines are running will cause the computer to lose 18 seconds of fuel count.

4.0 INFLIGHT OPERATION;

4.1 INSTRUMENT OPERATION:

4.1.1 THE FUEL FLOW will be displayed continuously on the left window.

4.1.2 ENDURANCE could be selected by rotating the knob to the endurance position. The endurance is displayed in hours and minutes. The display is inhibited whenever it is more than 9 hours and 59 minutes.

4.1.3 FUEL USED is displayed by moving the toggle to the "Fuel Used" position. Information shown in the right window (as long as the button is pressed) and shows the fuel used since last reset

4.1.4 FUEL REMAINING is displayed by moving the toggle to the "Fuel Rem" position. Information shown in the right window (as long as the button is pressed). The display represents the fuel remaining onboard at the time of reading.

4.1.5 NAUTICAL MILES per GALLON is selected by rotating the knob to the NM/Gal position. Information shown on the right window.

4.1.6 FUEL TO DESTINATION is selected by positioning the knob to the "Gal to Destination" position. Information shown on the right window and it represents the fuel needed to the active waypoint selected on the LORAN-C receiver provided that the aircraft ground speed and fuel flow remain constant and moving in a straight line. (Readings obtained during climb and decent are invalid).

4.1.7 FUEL RESERVE is selected by positioning the knob to the "Gal Reserve" position. Information shown on the right window and it represents the fuel that is going to be available when the aircraft reaches its destination as indicated on the selected waypoint provided that the aircraft ground speed fuel flow and direction remain constant and at the same altitude. Readings obtained during climb and decent are invalid.

4.2 WARNINGS:

4.2.1 FUEL NOT ENOUGH: When the knob is on the Fuel to Destination position, the right window display flashes if the fuel on board is not enough to reach the destination as selected on the active waypoint. The display shows the amount of fuel short to reach the destination preceded by a negative sign.

A search for a more suitable destination could be done by selecting different destinations and monitoring the "Fuel to Destination" and "Fuel Reserve" until a reachable destination could be found.

4.2.2 RESERVE FUEL WILL BE USED: When the knob is on the reserve fuel position, the right window display flashes if the aircraft will arrive to the destination with less than 45 minutes fuel, calculated at the same present cruise power setting.

4.2.3 NOT ENOUGH ENDURANCE: When the knob is on the endurance position, the right window display flashes if the time remaining to fly at the present power setting is less than 30 minutes.

4.3 EMERGENCY: In case of an electrical power failure inflight, the instrument will cease to function. After restoring power the left window will resume accurate fuel flow reading, but the time remaining, fuel used, fuel remaining, gallons reserve, gallons to destination and all the warnings will not be accurate unless the duration of the power failure is known and the fuel consumption during the electric power failure is calculated and subtracted from the fuel remaining.

5. SPECIFICATIONS

Digital Fuel Flow Meter Part Number 91204X

Maximum usable fuel:
Maximum altitude:
Operating Temperature:
Humidity:
Accuracy:
Ground Speed Range
Functions

900 gallons
40,000 ft.
-30 to 50 C
up to 95% @ 32 C
better than 2%
27 - 600 Kt.
Fuel Flow
Fuel Used
Fuel Remaining
Endurance
NM/Gal.
Fuel to Destination
Fuel Reserve
Add Fuel
Full Fuel
'Not Enough Fuel'
'Reserve Fuel'
Marginal'
'30 Minute Endurance'

Warnings:

ELECTRICAL RATING:

Input voltage:
Input current:

14-28 volt D.C.
500 ma @ 14V. or
28V. Avg.

RS-232-C

ELECTRICAL INTERFACE:

MECHANICAL RATING:

Vibration:
Weight:

5g
Panel Unit: 1.3 lb.

SHADIN MINIFLO AND DIGIFLO SYSTEMS HAVE VERY FEW CUSTOMER SERVICEABLE PARTS
HERE ARE SOME COMMON PROBLEMS AND WHAT TO DO IF YOU EXPERIENCE ANY OF THEM.

1. FLOW IS HALF OF WHAT IT SHOULD BE.

TRANSDUCERS IS INSTALLED BACKWARDS, FLOW IS IN WRONG DIRECTION.

2. MINIFLO ALWAYS READS 6.5.4

TRANSDUCER SIGNAL IS CONNECTED TO THE RETURN TRANSDUCER. SIGNAL LINE.

3. DIGIFLO TWIN - NO RIGHT. FUEL FLOW (NEW INSTALL OR UPDATED UNIT)

RIGHT TRANSDUCER POWER AND/OR GROUND ARE NOT WIRE CORRECTLY
BOTH RIGHT AND LEFT TRANSDUCER POWERS ARE CONNECTED TO
PIN C OF THE DIGIFLO. BOTH RIGHT AND LEFT GROUNDS ARE
CONNECTED TO PIN D OF THE DIGIFLO.

4. FUEL FLOW IS READING TOO HIGH AT LOW FLOWS (20,30,50GPH)

MOST LIKELY THERE IS NOISE BEING PICKED UP BY THE TRANSDUCER COMING FROM
FROM AN ALTERNATOR, A MAG., PUMPS, ETC.. TO FIND THE PROBLEM RUN THE
ENGINE(S) AND TURN OFF THE ALT., MAGS., ETC. ONE AT A TIME UNTIL YOU
FIND THE DEFECTIVE UNIT.

5. NO FUEL FLOW

REMOVE TRANSDUCER AND CHECK VOLTAGES AND WIRE HARNESS
TRANSDUCER POWER (A - RED WIRE) 8 - 10 VOLTS
TRANSDUCER SIGNAL (B - WHITE WIRE) 3.5 - 4.5 VOLTS
TRANSDUCER GROUND (C - BLACK WIRE)

IF YOU HAVE THESE CORRECT READINGS, FLASH THE TRANSDUCER SIGNAL WIRE
TO GROUND WHILE WATCHING THE FUEL FLOW METER. YOU SHOULD HAVE SOME
FUEL FLOW, IF NOT CHECK THE TRANSDUCER.

IF YOU HAVE A SHADIN TRANSDUCER (PART NUMBER 6605XX) THEN REMOVE THE
PICK UP COIL ASSEMBLY. WITH THE PICK UP ASSEMBLY ATTACHED TO THE
HARNESS WAVE A SCREWDRIVER WITH A MAGNETIC BLADE ACROSS THE FACE
OF THE COIL. YOU SHOULD SEE FUEL FLOW. IF YOU DO NOT THEN REPLACE
THE COIL ASSEMBLY. IF YOU HAVE OTHER THEN A SHADIN TRANSDUCER REPLACE
IT.

6. SHADIN UNIT HAS NO DISPLAY

CHECK FOR CORRECT FUEL FLOW POWER. 14 - 24 VOLT ON PIN K OF DIGIFLO,
PIN 1 OF MINIFLO.

CHECK FOR PROPER GROUND PIN D OF DIGIFLO, PIN 2 OF MINIFLO.
IF YOU HAVE PROPER POWER AND GROUND SEND THE UNIT IN FOR SERVICE.

7. L BAD ON DISPLAY

SIGNAL FROM THE LORAN IS BAD. THE SHADIN SYSTEM CAN NOT READ THIS
INFORMATION. CHECK FOR PROPER RS 232 SETUP AND OUTPUT FROM LORAN.

8. L OFF ON DISPLAY

THE LORAN IS OFF. THE SHADIN UNIT IS NOT RECEIVING ANY SIGNAL FOR
LORAN. CHECK FOR PROPER WIRING TO THE SHADIN UNIT. IF WIRING CHECKS
OUT GOOD, YOUR LORAN MAY NOT BE OPERATING (NO RS 232 OUTPUT). CHECK
YOUR LORAN.

9. L S - 1, 2, 3, 4, 5, 6.

THE SHADIN UNIT IS SEARCHING FOR THE CORRECT SIGNAL TO LOCK ONTO.
YOU MAY HAVE THE LORAN SIGNAL WIRES CONNECTED TO THE WRONG PINS.
IF YOU ARE CONNECTING A MTA, REVERSE THE SDA+ AND THE SDB-.

10. THE AIRCRAFT IS 24 VOLTS AND THE TRANSDUCER IS LABELED 12 VOLTS.

THE SHADIN UNIT IS SUPPLYING THE CORRECT TRANSDUCER VOLTAGE.