

PILOT'S OPERATING HANDBOOK

AND

FAA APPROVED

AIRPLANE FLIGHT MANUAL

MOONEY
M20R

THIS HANDBOOK INCLUDES THE MATERIAL REQUIRED TO BE FURNISHED
TO THE PILOT BY THE FEDERAL AVIATION REGULATIONS, AND
CONSTITUTES THE FAA APPROVED AIRPLANE FLIGHT MANUAL.

THIS DOCUMENT MUST BE CARRIED IN THE AIRCRAFT AT ALL TIMES.

MOONEY AIRCRAFT CORPORATION
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS 78028

SERIAL NUMBER _____

REGISTRATION NUMBER _____

FAA APPROVED: *Michele M. Owsley* 12-23-03

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FAA APPROVED in Normal Category based on CAR PART 3, applicable portions of FAR
PART 23, and when applicable components are installed in accordance with Mooney
Drawing 680030-505; applicable to Model M20R S/N listed above only;

ORIGINAL ISSUE- 11-99

REVISION A 10 - 03
REVISION B 4 - 05

POH/AFM NUMBER - 3800

CONGRATULATIONS

WELCOME TO MOONEY'S NEWEST DIMENSION IN SPEED, QUALITY AND ECONOMY. YOUR DECISION TO SELECT A MOONEY AIRCRAFT HAS PLACED YOU IN AN ELITE AND DISTINCTIVE CLASS OF AIRCRAFT OWNERS. WE HOPE YOU FIND YOUR MOONEY A UNIQUE FLYING EXPERIENCE, WHETHER FOR BUSINESS OR PLEASURE, THE MOST PROFITABLE EVER.

- NOTICE -

This manual is provided as an operating guide for the Mooney Model M20R. It is important that you—regardless of your previous experience—carefully read the handbook from cover to cover and review it frequently. THIS AFM MUST BE CARRIED IN THE AIRCRAFT AT ALL TIMES.

All information and illustrations in the manual are based on the latest product information available at the time of publication approval and all sections including attached supplements are mandatory for proper operation of the aircraft. The right is reserved to make changes at any time without notice. Every effort has been made to present the material in a clear and convenient manner to enable you to use the manual as a reference. Your cooperation in reporting presentation and content recommendations is solicited.

REVISING THE MANUAL

The "i" pages of this manual contain a "List of Effective Pages" containing a complete current listing of all pages i.e., Original or Revised. Also, in the lower right corner of the outlined portion, is a box which denotes the manual number and issue or revision of the manual. It will be advanced one letter, alphabetically, per revision. With each revision to the manual a new List of Effective Pages showing all applicable revisions with dates of approval and a "Log of Revisions" page(s), with only the latest Revision shown, will be provided to replace the previous ones. It is the operators responsibility to ensure that this manual is current through the latest published revision.

This handbook will be kept current by Mooney Aircraft Corporation when the yellow information card in front of this handbook has been completed and mailed to the Service Parts Department, Mooney Aircraft Corporation, Louis Schreiner Field, Kerrville, TX. 78028.

LIST OF EFFECTIVE PAGES

ORIGINAL	11 - 99
Revision A	10 - 03
Revision B	4 - 05

Always destroy superseded pages when inserting revised pages.

TITLE PAGE	B
----------------------	---

CONGRATULATIONS	ORIGINAL
---------------------------	----------

i thru iv	B
v thru vi	ORIGINAL

1-1 thru 1-3	ORIGINAL
1-4	A
1-5 thru 1-10	ORIGINAL

2-1 thru 2-5	ORIGINAL
2-6	A
2-7	ORIGINAL
2-8	A
2-9 thru 2-11	ORIGINAL
2-12	B
2-13, 2-14.	ORIGINAL
2-15	B
2-16	ORIGINAL
2-17	B
2-18	ORIGINAL

3-1 thru 3-10	ORIGINAL
3-11, 3-12	A
3-13 thru 3-16	ORIGINAL

4-1 thru 4-7	ORIGINAL
4-8, 4-9	A
4-10 thru 4-15	ORIGINAL
4-16	A

5-1 thru 5-30	ORIGINAL
-------------------------	----------

6-1 thru 6-30	ORIGINAL
-------------------------	----------

7-1, 7-2	A
7-3	ORIGINAL
7-4 thru 7-25	A
7-26 thru 7-30	B

8-1 thru 8-3	ORIGINAL
8-4	B
8-5 thru 8-10	ORIGINAL

9-1 through 9-4	ORIGINAL
(plus Applicable Supplements inserted)	

10-1 thru 10-12	ORIGINAL
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POH/AFM NUMBER 3800 (B)

This POH/AFM effective on M20R S/N 29-0183, and beginning with S/N 29-0200

LIST OF EFFECTIVE PAGES (con't.)

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LOG OF REVISIONS

REVISION NUMBER	REVISED PAGES	DESCRIPTION OF REVISIONS	FAA APPROVED	DATE
B	T.P., i -iv, 2-12, 2-15, 2-17, 7-26, 7-27, 8-4	REVISED DATA	<i>M M Owsley</i>	4-28-05
	7-28	ADDED DATA		
	7-29, 7-30	RELOCATED DATA		

The revised portions of affected pages are indicated by vertical black lines in the margin.

LOG OF REVISIONS (con't.)

REVISION NUMBER	REVISED PAGES	DESCRIPTION OF REVISIONS	FAA APPROVED	DATE

The revised portions of affected pages are indicated by vertical black lines in the margin.

TABLE OF CONTENTS

TITLE	SECTION
GENERAL	I
LIMITATIONS	II
EMERGENCY PROCEDURES	III
NORMAL PROCEDURES.	IV
PERFORMANCE	V
WEIGHT & BALANCE.	VI
AIRPLANE & SYSTEM DESCRIPTIONS	VII
HANDLING, SERVICE & MAINTENANCE.	VIII
SUPPLEMENTAL DATA	IX
SAFETY & OPERATIONAL TIPS.	X

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DECALS AND PLACARDS

CABIN INTERIOR

The following placards are relevant to proper operation of the airplane and must be installed inside the cabin at the locations specified.

<p>OPERATING LIMITATIONS</p> <p>THE MARKINGS AND PLACARDS INSTALLED IN THIS AIRPLANE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THE NORMAL CATEGORY. THIS AIRPLANE IS CERTIFIED FOR DAY AND NIGHT VFR/IFR OPERATION WHEN THE REQUIRED EQUIPMENT IS INSTALLED AND OPERATIONAL. FLIGHT INTO KNOWN ICING CONDITIONS IS PROHIBITED. NO AEROBATIC MANEUVERS, INCLUDING SPINS ARE APPROVED. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THIS CATEGORY ARE CONTAINED IN THE FLIGHT MANUAL.</p> <p>MANEUVERING SPEED (3368 LBS.), 127 KIAS; (2600 LBS.), 111 KIAS.</p>
<p>EMERGENCY MANUAL GEAR EXTENSION</p> <ol style="list-style-type: none"> 1. PULL LANDING GEAR ACTUATOR CIRCUIT BREAKER. 2. PUT GEAR SWITCH IN GEAR DOWN POSITION. 3. PUSH RELEASE TAB FORWARD AND LIFT UP RED HANDLE. 4. PULL T-HANDLE STRAIGHT UP (12 TO 20 INCHES). 5. ALLOW T-HANDLE TO RETURN TO ORIGINAL POSITION. 6. REPEAT UNTIL GEAR DOWN LIGHT COMES ON (12 TO 20 PULLS). IF TOTAL ELECTRICAL FAILURE—SEE MECHANICAL INDICATOR.
<p>CAUTION</p> <ol style="list-style-type: none"> 1. TURN OFF STROBE LITES WHEN TAXIING NEAR OTHER ACFT OR FLYING IN FOG OR IN CLOUDS. STD POSITION LITES MUST BE USED FOR ALL NIGHT OPERATIONS. 2. IN CASE OF FIRE TURN OFF CABIN HEAT. 3. DO NOT SCREW VERNIER CONTROLS CLOSER THAN 1/8" FROM NUT FACE.

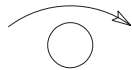
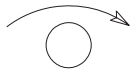
ON LEFT SIDE PANEL
IN PILOT'S VISION

150056-1032

CHECK LIST			
T A K E O F F	CONTROLS	RUN-UP	DOOR
	FUEL	PROP	WINDOW
	INSTRUMENTS	WING FLAPS	ALT AIR
	TRIM	SEAT LATCH	PARK BRAKE
		BELT/HARNESS	MIXTURE
CONDUCT RUDDER AND ELEVATOR TRIM CHECK PRIOR TO FLIGHT, SEE PILOT'S OPERATING HANDBOOK			
L D G	BELT/HARNESS	GEAR	MIXTURE
	FUEL	WING FLAPS	PROP
			PARK BRAKE

ON
CONSOLE

150056-1030

INSTRUMENT	LIGHTS
GLARE SHIELD	PANEL
	

LOWER LEFT
SIDE RADIO
PANEL

150056-1011

SECTION II
LIMITATIONS

MOONEY
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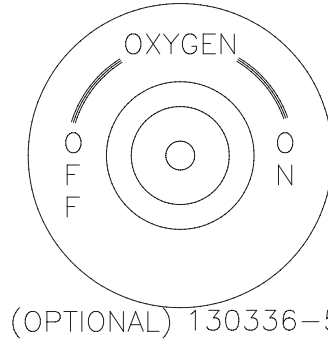
FLAP UP
150056-1027



FLAP DOWN
150056-1028

CONSOLE
ABOVE &
BELOW
SWITCH

PILOT'S L/H
PANEL, FWD
OF ARM REST



WARNING:

DO NOT EXCEED 170 LBS.
(77.1 Kg) ON THIS SEAT BACK.

SEE AIRCRAFT LOADING SCHEDULE DATA
FOR BAGGAGE COMPARTMENT ALLOWABLE.

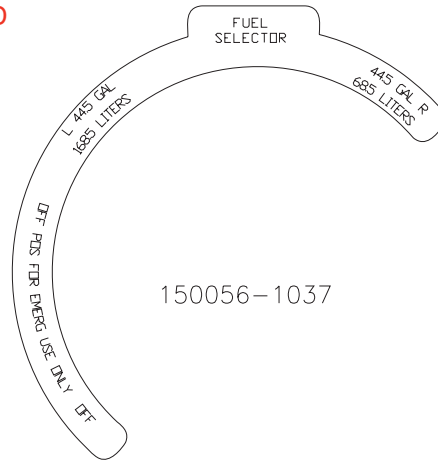
FWD END OF
REAR SEAT
BOTTOM
STRUCTURE

FLOORBOARD
BETWEEN
SEATS

ON RADIO PANEL,
ADJACENT TO ELT
SWITCH

CAUTION
ABSENCE OF ELT LIGHT DURING FIRST
3 SECONDS OF TEST INDICATES
POSSIBLE G-SWITCH FAILURE
150056-1013

WHEN APPLICABLE ELT
UNIT IS INSTALLED



150085-037 [360° DECAL]

“AVOID CONTINUOUS OPERATION BELOW 2100 RPM AT
MANIFOLD PRESSURES GREATER THAN 21 INCHES HG.”

ON INSTRUMENT PANEL, ADJACENT TO TACHOMETER
NOTE: USED ONLY WHEN McCAULEY PROPELLERS INSTALLED.

FUSELAGE INTERIOR

The following placards must be installed inside the fuselage at the locations specified.

CAUTION
THIS DOOR SHALL BE
REMOVED AND STOWED
WHEN FIELD TEMPERATURES
EXCEED 30°F (-1°C)

150056-2024
ON KIT SLIDING DOOR AT OIL
COOLER.
IF KIT INSTALLED

CAUTION
WINTERIZATION KIT INSTALLED
WHEN OPERATING AT
TEMPERATURES ABOVE 30°F, (-1°C),
REMOVE OIL COOLER DOOR.

150056-2002
ON OIL FILLER DOOR
IF KIT INSTALLED

MAINTAIN 
LEVEL HERE
150056-2016

HYDRAULIC OIL
RESERVOIR

28 VOLTS
ONLY
150056-2023

BACKSIDE OF
AUX. PWR.
RECEPTACLE
DOOR

USE AVIATORS
OXYGEN ONLY
SEE PILOT'S OPERATING
HANDBOOK FOR
FILLING PRESSURES
150056-2018

INSIDE OXYGEN
FILLER DOOR

INSIDE ENGINE OIL FILLER DOOR

ENGINE OIL
OIL INSTALLED IN THIS ENGINE IS
NEXT OIL CHANGE DUE AT _____ HRS
(USE GREASE PENCIL) TACH TIME
150056-2001

ON BATTERY
ACCESS
PANELS
L/H & R/H

BOTH
BATTERIES
MUST BE
INSTALLED
FOR FLIGHT
150056-2015

EXTERIOR

The following placards must be installed on the exterior of the aircraft at the locations specified.

NO STEP

150056-2006

ON INBOARD END OF FLAP,
WING LEADING EDGES AND
WING AHEAD OF FLAPS

UNDERSIDE OF WING (2 PLCS)
& AFT OF L/H COWL FLAP (1PLC)

HOIST POINT

150056-2012

DO NOT PUSH

150056-2019

HORIZ. STAB. L/E
RUDDER T/E (BOTH SIDES)

UNDER TAILCONE
AFT OF WING T/E

STATIC DRAIN

150056-2014

PITOT DRAIN

150056-2011

UNDER LEFT WING L/E
NEAR FUSELAGE

UNDER WING NEAR
SUMP DRAINS

FUEL DRAIN

150056-2013

GASCOLATOR
DRAIN

150056-2010

UNDER FUSELAGE RT. SIDE
AFT OF NOSE WHEEL WELL

ON MAIN LDG GEAR DOOR TIRE PRESSURE 42 PSI (2.95 Kg/cm²)

150056-2005

TIRE PRESSURE 49 PSI (3.44 Kg/cm²) **ON NOSE LANDING GEAR DOOR**

150056-2004



150056-2022

ON NOSE LANDING GEAR LEG ASSY

ON NOSE LANDING GEAR SPINDLE ASSY.



150056-2003

LWR L/H WING PANEL OUT/BD OF HOIST PT.

MAGNETIC AZIMUTH TRANSMITTER

LOCATED INSIDE THIS INSPECTION COVER. USE ONLY NON-MAGNETIC SCREWS FOR COVER INSTALLATION.

-6050

USED WITH KING FLIGHT CONTROL SYSTEMS ONLY



150056-2008

ON BOTH FUEL FILLER CAPS

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TABLE OF CONTENTS

TITLE	PAGE
INTRODUCTION	7-3
AIRFRAME	7-3
FLIGHT CONTROLS DESCRIPTION	7-3
AILERON SYSTEM	7-3
ELEVATOR SYSTEM	7-3
RUDDER SYSTEM	7-4
STABILIZER TRIM SYSTEM	7-4
RUDDER TRIM SYSTEM	7-4
WING FLAPS.	7-4
INSTRUMENT PANEL	7-4
FLIGHT PANEL & INSTRUMENTS	7-4
SWITCHES & CONTROLS.	7-8
ANNUNCIATOR & SWITCH PANEL	7-12
GROUND CONTROL	7-14
NOSE GEAR STEERING	7-14
TAXIING AND GROUND HANDLING	7-14
LANDING GEAR	7-14
CONSTRUCTION	7-14
RETRACTION SYSTEM	7-14
WHEEL BRAKES	7-15
EMERGENCY EXTENSION SYSTEM	7-15
WARNING SYSTEM	7-15
STEERING	7-15
CABIN	7-15
BAGGAGE COMPARTMENT	7-15
CARGO RESTRAINT	7-16
SEATS	7-16
SEAT BELTS/SAFETY HARNESS	7-16
DOORS, WINDOWS & EXITS.	7-16
CABIN DOOR	7-16
PILOT'S WINDOW	7-17
EMERGENCY EXITS	7-17
ENGINE.	7-17
GENERAL	7-17
ENGINE CONTROLS	7-17
ENGINE INSTRUMENTS	7-17
ENGINE OPERATION AND CARE.	7-18
OIL SYSTEM	7-18

TABLE OF CONTENTS (con't)

TITLE	PAGE
ENGINE (con't.)	
IGNITION SYSTEM	7-18
AIR INDUCTION SYSTEM	7-19
ICING PROTECTION	7-19
EXHAUST SYSTEM.	7-19
FUEL INJECTION	7-19
ENGINE COOLING AIR.	7-20
ENGINE STARTING SYSTEM	7-20
ACCESSORIES	7-20
 PROPELLER	 7-20
 FUEL SYSTEM.	 7-21
 ELECTRICAL SYSTEM	 7-22
ALTERNATOR & BATTERY	7-22
SCHEMATIC.	7-22
CIRCUIT BREAKER PANEL	7-23
ANNUNCIATOR PANEL	7-23
ELT PANEL	7-23
 LIGHTING SYSTEM	 7-24
 CABIN ENVIRONMENT	 7-24
 PITOT PRESSURE & STATIC SYSTEM	 7-25
 STALL WARNING SYSTEM	 7-25
 OXYGEN SYSTEM.	 7-26
 VACUUM SYSTEM	 7-29
 EMERGENCY LOCATOR TRANSMITTER	 7-29
ELT REMOTE SWITCH OPERATION	7-30

and Cabin Heat controls. Pulling cabin heat control supplies heat to cabin and defroster system. Hot and cold air may be mixed by adjusting both heat and vent controls. These controls may be adjusted anywhere between full open and full closed.

OVERHEAD VENTILATION - Cabin overhead ventilating system works independently of cabin heating and ventilating system. Fresh air enters a NACA duct on dorsal fin and is controlled by individual outlets above and between each seat. A master air vent control regulates flow of air through the individual overhead outlets. This control is located between the pilots & co-pilots seat on the overhead panel.

WINDSHIELD DEFROSTING SYSTEM

The windshield defrost system takes air from the cabin air distribution system and distributes this over the windshield interior surface any time the heat and/or fresh air valves are opened. Pulling the defrost control Full AFT decreases flow to the cabin, turns defroster blower ON and forces maximum air to flow through the defrost ducts.

PITOT PRESSURE & STATIC SYSTEM

A pitot tube, mounted on lower surface of the left wing, picks up ram air for airspeed indicator. A pitot heater prevents pitot tube icing when flying in moisture-laden air. A pitot system drain valve is located on the forward bottom skin of the left wing to fuselage fillet. Static ports on each side of the tailcone supply static air pressure for the altimeter, the airspeed indicator, and vertical speed indicator. A static system drain valve is located on fuselage bottom skin below the left side, tailcone access door and is used to drain moisture that might collect in static system lines. An alternate static pressure source valve handle is installed in the instrument panel below the pilot's control wheel shaft. Alternate static air is taken from within the cockpit and will affect flight instrument readings. Performance variation charts in SECTION V depict the difference between primary and alternate static indications.

STALL WARNING SYSTEM

The electrical stall warning system uses a vane-actuated switch, installed in left wing leading edge, to energize stall warning horn located in the cabin. The stall warning switch is adjusted to provide aural warning at 5 to 10 KIAS before actual stall is reached and will remain on until aircraft flight attitude is changed toward a non-stalled condition.

| NOTE |

Do not attempt to adjust prestall warning speed by bending the vane. This part has been heat treated and cannot be bent without damaging or breaking the vane.

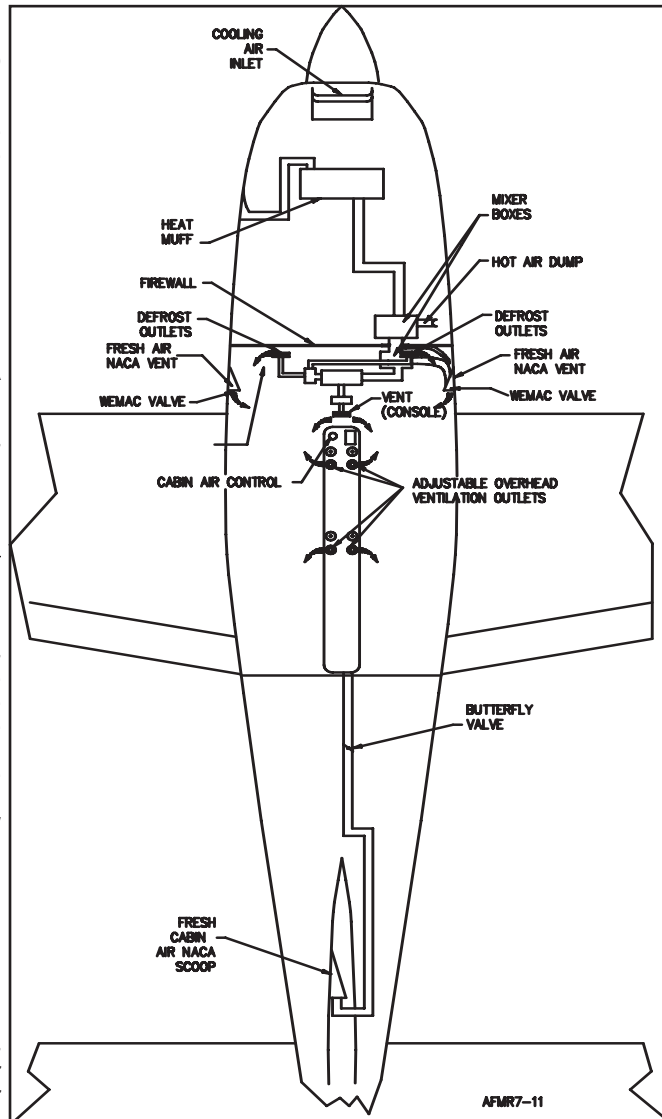


FIGURE 7 - 11 CABIN AIR FLOW

OXYGEN SYSTEM

An optional four-place oxygen system provides supplementary oxygen necessary for continuous flight at high altitude. An oxygen cylinder is located in the equipment bay, accessible through a removable panel on the aft wall of the baggage compartment, or through the standard external, right side, panel in the tailcone. A combined pressure regulator/shutoff valve, attached to the cylinder, automatically reduces cylinder pressure to the delivery pressure required for operating altitude. The oxygen cylinder filler valve is located under a spring loaded door aft of the baggage door.

A pilot's oxygen panel contains a cylinder pressure gauge, on the pilot's arm rest, effectively a quantity gauge, and a control knob, below arm rest, which is mechanically connected to the shutoff valve at the cylinder. The supply of oxygen can thus be shut off from the cockpit when not required. When the control is in the "ON" position, sufficient oxygen flow is available at the maximum airplane operating altitude (see Section II Limitations) while at lower altitudes the reducing valve automatically economizes the flow to conserve oxygen for longer duration or for future availability, without requiring any action by the pilot. (See Fig. 7-13)

Four oxygen outlets are provided in the overhead panel between the pilot's and co-pilot's seat for the convenience of all occupants. Oxygen flows from the outlets only when a mask hose is connected. Four partial re-breathing type masks are provided, each with vinyl plastic hoses and flow indicators. The three passenger masks are of the disposable type. The pilot's mask is a permanent type with a built-in microphone for ease of radio communication while using oxygen. To use the mask-microphone, connect its lead to the microphone jack located left of the instrument panel, in place of the aircraft or headset microphone lead, and key the switch on the control yoke.

The oxygen cylinder, (composite) when fully charged, contains either a 77.1 ft.³ or 115.7 ft.³ of aviator's breathing oxygen (Spec No. MIL-0-27210) under a pressure of 1850 PSI at 21° C (70° F).

Filling pressures will vary, however, due to ambient temperature in filling area, and the rise of temperature resulting from compression of the oxygen. Because of this, merely filling to 1850 PSI will not necessarily result in a properly filled cylinder. Fill to pressures indicated on Fig. 7-12 for ambient temperatures.

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

Oil, grease or other lubricants in contact with oxygen create a serious fire hazard, and such contact must be avoided when handling oxygen equipment.

Ambient Temperature ° F	Filling Pressure PSIG	Ambient Temperature ° F	Filling Pressure PSIG
0	1650	50	1875
10	1700	60	1925
20	1725	70	1975
30	1775	80	2000
40	1825	90	2050

FIGURE 7-12 OXYGEN FILLING PRESSURES

| NOTE |

The oxygen cylinder should not be run down to less than 100 PSI. Below this pressure, atmospheric contamination of the cylinder may occur, requiring valve removal and cylinder cleaning and inspection at an FAA approved repair station.

For FAA requirements concerning supplemental oxygen, refer to FAR 91.32. Supplemental oxygen should be used by all occupants when cruising above 12,500 feet. It is often advisable to use oxygen at altitudes lower than 12,500 feet under conditions of night flying, fatigue, or periods of physiological or emotional disturbances. Also the habitual and excessive use of tobacco or alcohol will usually necessitate the use of oxygen at less than 10,000 feet.

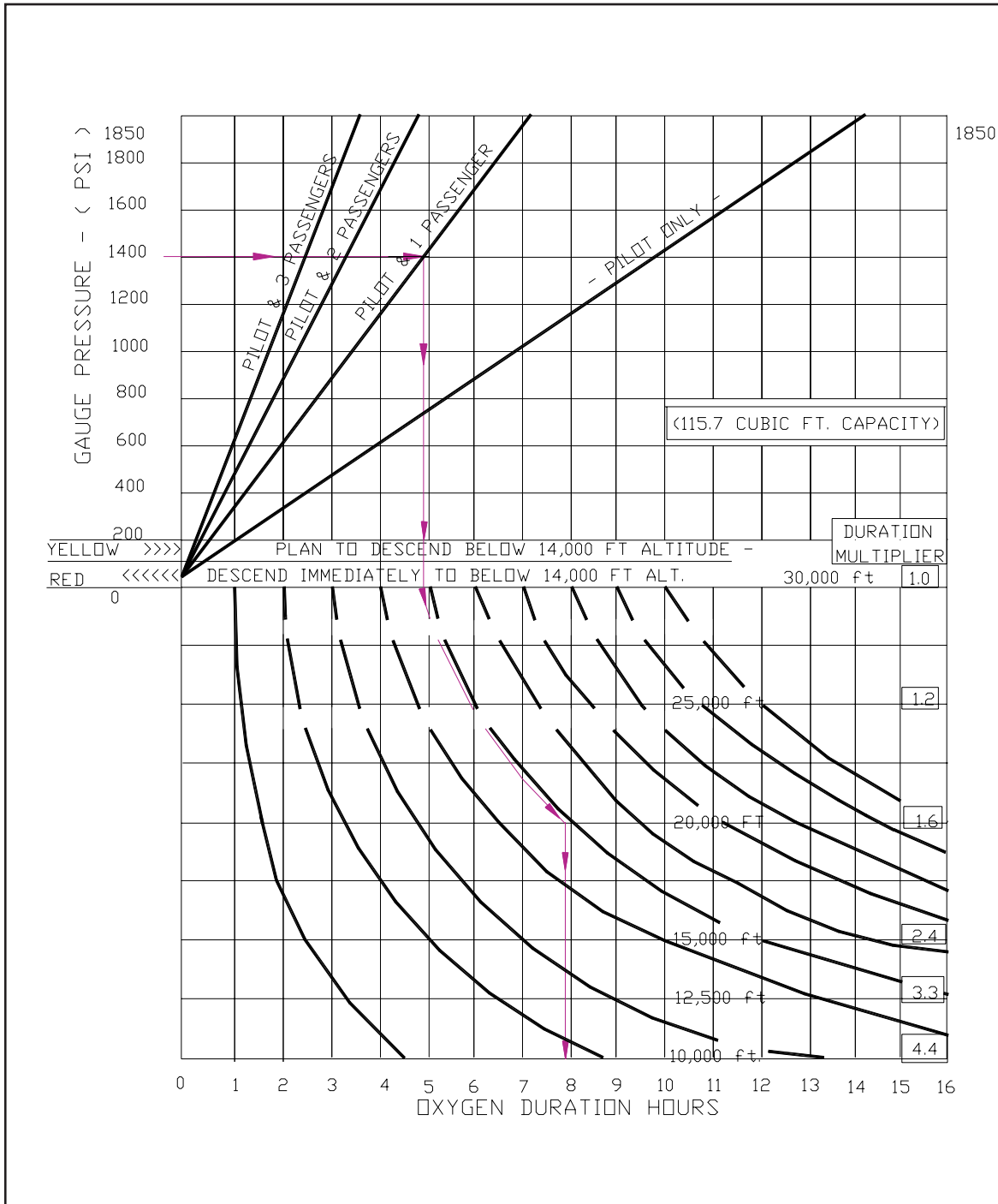


FIGURE 7 - 13 OXYGEN DURATION CHART (115.7 Cu.Ft)

The oxygen duration chart (Fig. 7-13 or Fig. 7-13A) should be used in determining the usable duration (in hours) of the oxygen supply in the airplane for the chosen cruising altitude. The following procedure outlines the method of finding the duration from the chart:

1. Note the available oxygen pressure shown on the pressure gage.
2. Locate this pressure on the scale on the left side of the chart. Then go across the chart horizontally to the right until intersecting the diagonal line which represents the number of persons on board. From that intersection drop vertically down to the heavy line, marked 30,000 ft..
3. From this point on the heavy line, follow the trend of the curved lines, down to the horizontal line representing cruise altitude. Then drop vertically down to the bottom of the chart and

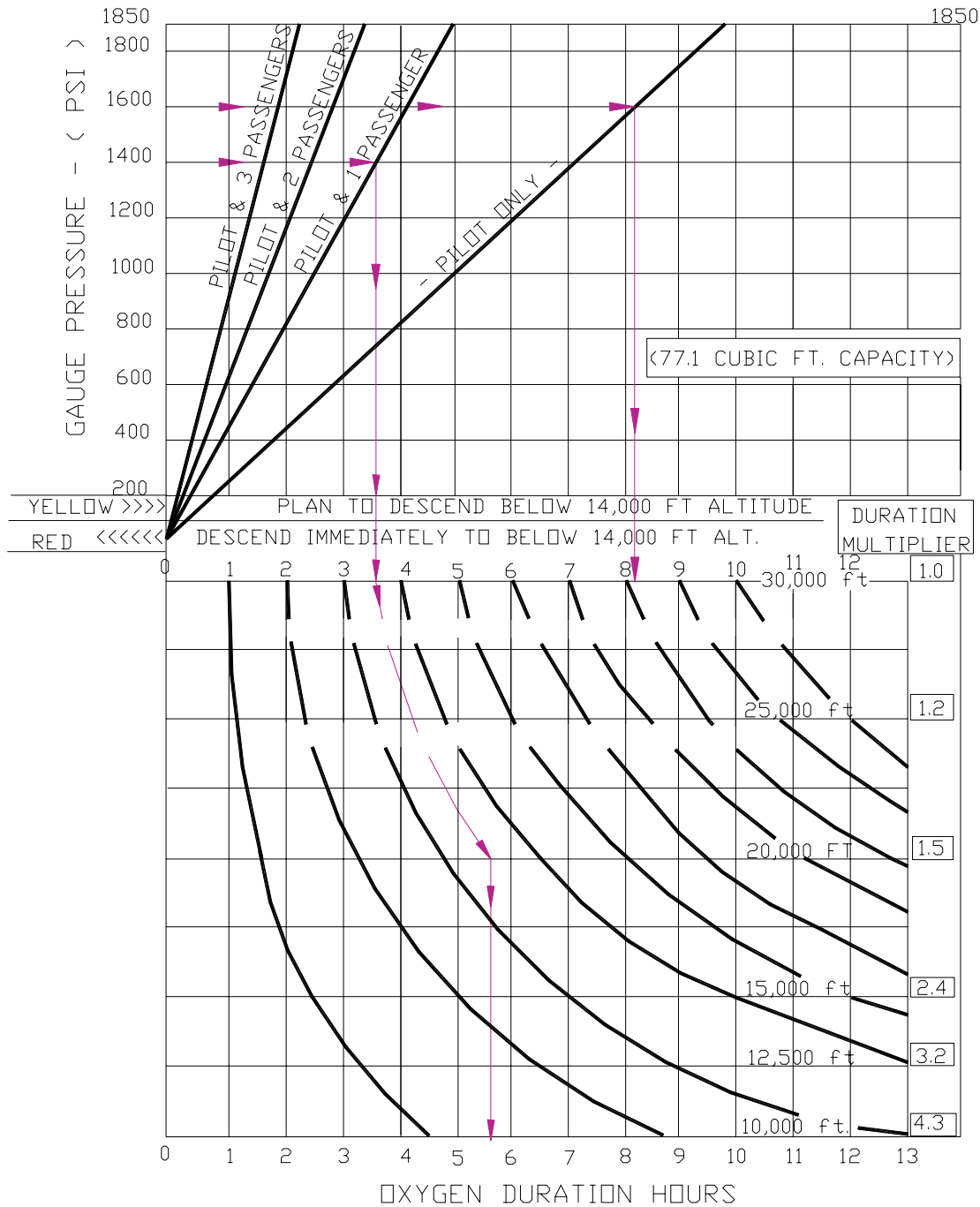


FIGURE 7-13A OXYGEN DURATION CHART 77.1 ft³ CYLINDER

read the duration in hours given on the scale.

4. As an example of the above procedure, 1400 PSI of pressure will safely sustain the pilot and one passenger for 4 hours and 55 minutes (Fig. 7-13) at 28,000 ft.; however, cruising at 20,000 ft. would permit an oxygen duration of 7 hours and 55 minutes (Fig. 7-13). Light crew loads and relatively low altitudes will permit oxygen durations off the chart. Such durations can be calculated by determining the duration at 30,000 feet (by steps 1 and 2 above) and multiplying by the "duration multiplier" shown on the right of the appropriate cruising altitude. Example, Pilot only, at 1600 PSI has 11.25 hours duration at 30,000 ft. Duration Multiplier of 2.4 for 20,000 ft., gives 26 hours and 54 minutes duration. Oxygen durations off the chart obviously exceed the airplanes duration. However, judicious choices of altitude for the number of persons on board can permit flight planning for several fuel stops, without need for recharging oxygen system at each stop.

CAUTION

Facial hair, beards & mustaches may prevent a proper seal between face and mask, causing 16 - 67% leakage. Duration chart may be invalid.

VACUUM SYSTEM

The standard vacuum system on the M20R consist of a main vacuum pump, regulator, filters and a clutch activated, engine driven, stand-by vacuum pump. The main vacuum pump operates when engine is running. The standard stand-by vacuum pump is coupled to the engine accessory drive but the electrically activated clutch must be turned ON, by pushing the STBY VAC switch, before the pump is on line. An optional Stand-by Vacuum Pump System is located in the tailcone when the optional, No. 2 alternator is installed.

A vacuum system malfunction is shown to the pilot by a RED, HI/LO VAC, annunciator light. A FLASHING annunciator light indicates LOW VACUUM and a STEADY light indicates HIGH VACUUM. In either case, vacuum operated instruments are to be considered UNRELIABLE and use of stand-by vacuum pump is recommended. The STBY VAC legend on the annunciator will be illuminated when the STBY VAC switch is ON.

EMERGENCY LOCATOR TRANSMITTER

The Emergency Locator Transmitter (ELT) is located in the tailcone and is accessible from the battery access door on the right side of the tailcone. The emergency locator transmitter meets the requirements of FAR 91.52 and is automatically activated by a longitudinal force of 5 to 7 g's. The ELT transmits a distress signal on both 121.5 MHz and 243.0 MHz for a period of from 48 hours in low temperature areas and up to 100 hours in high temperature areas. The unit operates on a self-contained battery. The battery should be checked at each annual inspection. The battery has a useful life of four years. However, to comply with FAA regulations it must be replaced after two years of shelf life. The battery should also be replaced if the transmitter has been used in an emergency situation or if accumulated test time exceeds one hour. The battery replacement date is marked on the transmitter label.

On the unit itself is a three position selector switch placarded "ARM", "OFF", "ON". The "ARM" position is provided to set the unit to the automatic position so that it will transmit only after impact and will continue to transmit until battery is drained to depletion or until the switch is manually moved to "OFF". "ARM" position is selected when the transmitter is installed at the factory and switch should remain in that position whenever unit is installed in the airplane. The "ON" position is provided so unit can be used as a portable transmitter or in the event the automatic feature was not triggered by impact or to periodically test the function of the transmitter.

Select the "OFF" position when changing battery, when rearming the unit if it has been activated for any reason, or to discontinue transmission.

| NOTE |

If the switch has been placed in the "ON" position for any reason, the "OFF" position has to be selected before selecting "ARM". If "ARM" is selected directly from the "ON" position the unit will continue to transmit in the "ARM" position.

ELT REMOTE SWITCH OPERATION

A pilot's remote ELT switch, located at the top of right hand radio panel, is provided to allow transmitter to be controlled from inside cabin. The pilot's remote switch is placarded "ON", & "ARM". The unit will start transmitting with switch in "ON" position and will stop when remote switch is returned to "ARM" position during cockpit checkout.

| NOTE |

If for any reason a test transmission is necessary, the operator must first obtain permission from a local FAA or FCC representative (or other applicable Authority) or in accordance with current regulations. Test transmission should be kept to a minimal duration. Testing of ELT should be conducted only during the first five (5) minutes after any hour and no longer than three (3) audible sweeps.

The ELT should be checked during the ground check to make certain the unit has not been accidentally activated. Check by tuning a radio receiver to 121.5 MHz. If there is an oscillating/warbling sound, the locator may have been activated and should be turned off immediately. Reset to "ARM" position and check again to insure against outside interference.

GROUND HANDLING

TOWING

For maneuvering the aircraft in close quarters, in the hangar, or on the ramp, use the manual tow bar furnished with the aircraft loose equipment. The tow bar attaches to the nose gear crossbar. One man can move the aircraft providing the ground surface is relatively smooth and the tires are properly inflated.

When no tow bar is available, or when assistance in moving the aircraft is required, push by hand:

- (1) on wing leading edges
and
- (2) on inboard portion of propeller blades adjacent to propeller hub.

Towing by tractor or other powered equipment is NOT RECOMMENDED.

~~~~~  
~ CAUTION ~  
~~~~~

Exercise care not to turn the nose wheel past its normal swivel angle of 11° Left or 13° Right of center. Exceeding the turn limits shown on the turn indicator may cause structural damage.

TIE DOWN

As a precaution against wind damage, always tie down the aircraft when parked outside. Removable wing tie down eye-bolts, supplied with the loose equipment, screw into wing receptacles marked HOIST POINT just outboard of each main gear.

Replace these eye bolts with jack point fixtures when it is necessary to lift the aircraft with jacks. The tail tie down point is part of the tail skid.

TO TIE DOWN AIRCRAFT:

- a. Park the airplane facing the wind.
- b. Fasten the co-pilot seat belt through the flight control wheel. Pull seat belt snug so flight controls are immobilized.
- c. Fasten strong ground-anchored chain or rope to the installed wing tie down eye bolt, and place wheel chocks fore and aft of each wheel.
- d. Fasten a strong ground-anchored chain or rope through the tail skid.

JACKING

When it is necessary to raise the aircraft off the ground:

- a. Install jack points in tie down mounting holes outboard of each main gear.
- b. Use standard aircraft jacks at both wing hoist points (wing tie down eyebolt receptacles) outboard of the main gears. While holding jack point in place, raise jack to firmly contact jack point.
- c. Place a jack under front jack point (Sta. – 5.51) to lift nose wheel.
- d. Raise aircraft, keeping wings as nearly level as possible.
- e. Secure safety locks on each jack.

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~ CAUTION ~  
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Do not raise the aircraft on jacks out of doors when wind velocity is over 8 KTS. When lowering aircraft on jacks, bleed off pressure on all jacks simultaneously and evenly to keep aircraft level as it is lowered.

| NOTE |

Individual wheels may be raised without raising entire aircraft. Wheels not being raised should be chocked fore and aft.

SERVICING

REFUELING

Integrally sealed tanks, in forward, inboard sections of wing (LH & RH), carry the standard fuel quantity. With aircraft positioned on level ground, service each fuel tank after flight with 100 octane or 100LL aviation grade gasoline. The fuel tank is considered full when fuel completely covers bottom of standpipe.

The optional, visual fuel quantity indicators on top of each wing tank should be used as a reference for partial refueling only. These gauges will not indicate the tank's total capacity above 30 gallons of fuel.

Before filling fuel tanks, when planning a maximum weight flight configuration, consult the Weight & Balance Record (SECTION VI) for loading data.

~~~~~  
~ CAUTION~  
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Never use aviation fuel of a lower grade than 100 octane or 100 LL avgas.

Fuel samples from the sump drain of each tank should always be taken before the first flight of the day to check for water, sediment or other contamination. It is recommended that fuel samples be taken prior to each flight. Fuel samples taken immediately after refueling may not show water or sediment due to mixing action of refueling process.

//////////
// WARNING //
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Allow five minutes after refueling for water and sediment to settle in tank and fuel drain valve before taking fuel samples or draining gascolator.

Tank sump drains are near each wing root, forward of the wheel wells. A small plastic cup is supplied as loose equipment for obtaining fuel samples. To collect a fuel sample, insert cup actuator prong into sump drain receptacle; push upward to open valve momentarily and drain fuel into cup. If water is in fuel, a distinct line separating water from gasoline will be seen through transparent cup wall. Water, being heavier, will settle to bottom of cup, while colored fuel will remain on top. Continue taking fuel samples until all water is purged from tank. Aircraft should be in a level position to prevent the possibility of any contamination not being at sump drain area.

The fuel system gascolator is on the cabin floor, forward of co-pilot's seat. To flush system and lines leading from wing tanks to selector valve, turn selector handle to the left tank position and pull fuel drain valve for about five seconds. Repeat procedure for right tank. Be sure fuel drain valve is returned to closed position and drain valve is not leaking.

| NOTE |

Use recommended engine break-in procedures as published by engine manufacturer.

ENGINE LUBRICATION

Operate and service new engine within limitations given in SECTION II and per TCM Maintenance and Operators Manual.

Before every flight, check engine oil level and replenish as necessary.

The oil filler cap access door is located in top cowling. Any lubricating oil must conform with TCM Specification MHS24 or MHS25 to be acceptable for use in engine. See TCM Maintenance and Operators Manual for specifically approved products.

New or newly overhauled engines should be operated on aviation grade mineral oil during the first 25 HOURS of operation or until oil consumption has stabilized. The aircraft is delivered from Mooney with multi-viscosity mineral oil. Single viscosity mineral oil may be added to multi-viscosity mineral oil if necessary.