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INTRODUCTION

This section provides the recommended procedures to follow during adverse flight conditions. The information is presented to enable you to form, in advance, a definite plan of action for coping with the most probable emergency situations which could occur in the operation of your airplane.

As it is not possible to have a procedure for all types of emergencies that may occur, it is the pilot's responsibility to use sound judgement based on experience and knowledge of the aircraft to determine the best course of action. Therefore, it is considered mandatory that the pilot read the entire manual, especially this section before flight.

When applicable, emergency procedures associated with optional equipment such as autopilots are included in SECTION IX.

| NOTE |

All airspeeds in this section are indicated (IAS) and assume zero instrument error unless stated otherwise.

AIRSPEDS FOR EMERGENCY OPERATIONS

CONDITION RECOMMENDED SPEED

ENGINE FAILURE AFTER TAKEOFF

Wing Flaps UP	85 KIAS
Wing Flaps DOWN	75 KIAS

MAXIMUM GLIDE SPEED

3130 lb/1420 Kg	90 KIAS
2900 lb/1315 kg	87 KIAS
2700 lb/1225 kg	83 KIAS
2500 lb/1134 kg	81 KIAS
2300 lb/1043 kg	76 KIAS

MANEUVERING SPEED

3130 lb/1420 Kg	122 KIAS
2900 lb/1315 kg	118 KIAS
2250 lb/1021 kg	104 KIAS
2092 lb/949 kg	101 KIAS

**PRECAUTIONARY LANDING WITH ENGINE POWER,
Flaps DOWN**

75 KIAS

EMERGENCY DESCENT (GEAR UP)

Smooth Air	196 KIAS
----------------------	----------

Turbulent Air

3130 lb/1420 Kg	122 KIAS
2900 lb/1315 kg	118 KIAS
2250 lb/1021 kg	104 KIAS
2092 lb/949 kg	101 KIAS

EMERGENCY DESCENT (GEAR DOWN)

Smooth Air	165 KIAS
----------------------	----------

Turbulent Air

3130 lb/1420 Kg	122 KIAS
2900 lb/1315 kg	118 KIAS
2250 lb/1021 kg	104 KIAS
2092 lb/949 kg	101 KIAS

ANNUNCIATOR PANEL WARNING LIGHTS**WARNING LIGHT****FAULT & REMEDY**

GEAR UNSAFE	RED light indicates landing gear is not in fully extended/or retracted position. Refer to "FAILURE OF LANDING GEAR TO EXTEND ELECTRICALLY" procedure or "FAILURE OF LANDING GEAR TO RETRACT" procedure.
LEFT or RIGHT FUEL	RED light indicates 2 1/2 to 3 gallons (9.5 to 11.4 liters) of usable fuel remain in the respective tanks. Switch to fuller tank.
SPEED BRAKE	AMBER light indicates Speed Brakes are activated.
ALT AIR	AMBER light indicates Alternate Air door is OPEN.
PROP DE-ICE	BLUE light indicates Propeller De-Ice is ON
PITOT HEAT	BLUE light indicates Pitot Heat switch is ON. (Some Foreign A/C - AMBER light indicates power is not applied to heater)
HI/LO VAC (Flashing)	RED light indicates suction is below 4.25 inches of mercury.
HI/LO VAC (Steady)	RED light indicates suction is above 5.5 inches of mercury.
<div> NOTE When either a steady or flashing VAC light is illuminated, the information obtained from the attitude and directional gyros is unreliable. Vacuum system should be checked and/or adjusted as soon as practicable.</div>	
<div>~~~~~ ~ CAUTION ~ HI/LO VAC lights inoperable when STBY VAC System is ON.</div>	
L or R ALT VOLTS (Flashing)	RED light indicates alternator output low. Refer to "ALTERNATOR OUTPUT LOW".
L or R ALT VOLTS (Steady)	RED light indicates overvoltage & alternator field C/B tripped. Refer to "ALTERNATOR OVERVOLTAGE".
START POWER	RED light indicates starter switch or relay is engaged and starter is energized. Flight should be terminated as soon as practicable. Engine damage may result. This is normal indication during engine start.

STBY VAC

AMBER light indicates Stand-by Vacuum system is ON.

REMOTE RNAV

AMBER light indicates DME not slaved to RNAV.

ENGINE

POWER LOSS - DURING TAKEOFF ROLL

Throttle	CLOSED
Brakes	AS REQUIRED
Fuel Selector	OFF
Magneto/Starter Switch	OFF
Master	OFF

POWER LOSS - AFTER LIFTOFF

Airspeed	85 KIAS (Flaps UP)
Fuel selector	75 KIAS (Flaps TAKEOFF/DOWN)
Throttle	SELECT OTHER TANK
Propeller	FULL FORWARD
Mixture	FULL FORWARD
Magneto/Starter Switch	FULL FORWARD
High Fuel Boost Pump	Verify on BOTH
		ON

If engine does not restart, proceed to **FORCED LANDING EMERGENCY**.

High Fuel Boost Pump	OFF
----------------------	-------	-----

POWER LOSS - IN FLIGHT (RESTART PROCEDURES)

Airspeed	85 KIAS minimum
Fuel Selector	SELECT OTHER TANK

| NOTE |

At altitudes above 12,000 feet engine restart will take 13 seconds or longer when switching from an empty fuel tank to a full tank.

Magneto/Starter Switch	Verify on BOTH
------------------------	-------	----------------

If the engine shows no indication of restarting after above items are accomplished, proceed as follows:

Throttle	FULL FORWARD
Propeller	FULL FORWARD
Mixture	FULL FORWARD

| NOTE |

At altitudes above 18,000 ft., it may be necessary to slowly lean mixture from full rich position to facilitate engine restart.

If engine still shows no indication of restarting:

High Fuel Boost Pump	ON
----------------------	-------	----

~ CAUTION ~

With a normally operating engine, operation of the HIGH or LOW BOOST PUMP with low power settings may result in loss of engine power due to an overrich condition. The High Fuel Boost Pump Switch is guarded to prevent inadvertent operation but can be held on for momentary operation without removing the guard. Rotate guard clockwise to enable switch to be placed in the ON position.

After engine restarts:

[illegible]

[NOTE]
If engine fails when the high boost pump is turned OFF, suspect engine driven fuel pump failure. Proceed to **ENGINE DRIVEN FUEL PUMP FAILURE**.

Should the engine excessively cool during engine out, care should be exercised during restart to avoid excessive oil pressure. Allow the engine to warm up at minimum governing RPM and 16-18 inches MP.

OPERATING THE ENGINE AT TOO HIGH AN RPM BEFORE REACHING MINIMUM OIL TEMPERATURES MAY CAUSE LOSS OF OIL PRESSURE.

POWER LOSS - PRIMARY ENGINE INDUCTION AIR SYSTEM BLOCKAGE

Blockage of the primary engine induction air system may be experienced as a result of flying in cloud or heavy snow with cold outside air temperatures (0°C or below). At these temperatures, very small water droplets or solid ice crystals in the air may enter the primary engine induction inlet in the cowl opening and travel inside the inlet duct to the induction air filter. The ice particles or water droplets may collect and freeze on the air filter causing partial or total blockage of the primary engine induction system.

Indications of primary induction system blockage are either a loss of manifold pressure with a fixed throttle position or the need to gradually advance the throttle to maintain a given manifold pressure setting. In extreme conditions, the loss of indicated manifold pressure and engine power may be quite rapid. A loss of as much as 10 inches HG manifold pressure within one minute can be experienced.

If primary induction air system blockage occurs, the alternate engine induction air system will automatically open, supplying engine with an alternate air source drawn from inside cowl rather than through the air filter. The alternate air system can also be manually opened at any time by pulling control labeled ALTERNATE AIR. Automatic or manual activation of alternate induction system is displayed in cockpit by illumination of the ALT AIR light in main annunciator panel. When operating on alternate air system, available engine power will be less for a given propeller RPM compared to the primary induction air system. This is due to loss of ram effect and induction of warmer inlet air. Due to this loss of available power when using alternate air at altitudes above 15000 ft., it may be necessary to increase propeller RPM and relean mixture for optimum engine power.

**SECTION III
EMERGENCY PROCEDURES**

**MOONEY
M20K**

Based upon the previous discussion, the following list should be used if a partial power loss due to primary induction air system blockage is experienced:

Engine Power	Verify progressive MANIFOLD PRESSURE LOSS.
Alternate Air	Verify OPEN (annunciator ON)

| NOTE |

The alternate air door should open automatically if there is a restriction in the primary induction system. If the alternate air door has not opened (Annunciator light - OFF) it can be opened manually by pulling the alternate air control.

Throttle	INCREASE to maintain desired manifold pressure.
Propeller	INCREASE if necessary to maintain desired cruise power setting (Ref. SECTION V)
Mixture	RELEASE to peak TIT

| NOTE |

Approximately 75% power can be maintained at 20,000 ft. with the primary induction system totally blocked, alternate air door open, full throttle, 2600 RPM and leaned to peak TIT.

Flight	CONTINUE
--------	----------

In the unlikely event that a total power loss due to primary engine induction air blockage is experienced, the following checklist should be used:

Airspeed	85 KIAS
Alternate Air	Manually OPEN
Throttle	FULL FORWARD
Propeller	FULL FORWARD
Mixture	IDLE CUTOFF (initially)
Magneto/Starter Switch	Verify on BOTH
High Fuel Boost Pump	OFF
Mixture	ADVANCE slowly toward RICH until engine starts.

After engine restarts:

Throttle	ADJUST as required
Propeller	ADJUST as required
Mixture	RELEASE as power is restored (Refer to power charts-SECTION V)

If engine does not restart after several attempts, proceed to **FORCED LANDING EMERGENCY.**

TURBOCHARGER FAILURE

**//////
/// WARNING ///**

If a turbocharger failure is a result of a loose, disconnected or burned through exhaust, then a serious fire hazard exists. If a failure in the exhaust system is suspected in flight, LAND AS SOON AS POSSIBLE. If a suspected exhaust system failure occurs before takeoff, DO NOT FLY THE AIRCRAFT.

| NOTE |

At altitudes above 12,000 ft., if the turbocharger fails, an overrich mixture may result and the engine may quit operating.

COMPLETE LOSS OF ENGINE POWER

If a suspected turbocharger or turbocharger waste gate control system failure results in a complete loss of engine power, the following procedure is recommended:

Mixture	IDLE CUTOFF
Throttle	CRUISE position
Propeller	FULL FORWARD
Mixture	ADVANCE slowly until engine starts;
Continue Flight	LAND AS SOON AS POSSIBLE.

PARTIAL LOSS OF ENGINE POWER

If the turbocharger wastegate control fails in the OPEN position, a partial loss of engine power may result. The following procedure is recommended if a suspected turbocharger/wastegate control failure results in a partial loss of engine power:

Throttle	AS REQUIRED
Propeller	AS REQUIRED
Mixture	AS REQUIRED
Continue Flight	LAND AS SOON AS POSSIBLE

ENGINE POWER OVERBOOST

If the turbocharger wastegate control fails in the CLOSED position, an engine power overboost condition may be experienced. The following procedure is recommended for an overboost condition:

Throttle	REDUCE as necessary to keep manifold pressure within limits.
----------	-------	--

| NOTE |

Expect manifold pressure response to throttle movements to be sensitive.

Propeller	AS REQUIRED
Mixture	AS REQUIRED
Continue Flight	LAND AS SOON AS POSSIBLE

ENGINE ROUGHNESS

Engine instruments	CHECK
Fuel Selector	OTHER TANK
Mixture	READJUST for smooth operation
Magneto/Starter Switch	Select R or L or BOTH

If roughness disappears on single Magneto, monitor power and continue on selected magneto.

**//////
/// WARNING ///**

The engine may quit completely when one magneto is switched off if the other magneto is faulty. If this happens, close throttle to idle and mixture to idle cutoff before turning magnetos ON to prevent a severe backfire. When magnetos have been turned back on, go back to POWER LOSS - IN FLIGHT. Severe roughness may be sufficient to cause propeller separation. Do not continue to operate a rough engine unless there is no other alternative.

Throttle	REDUCE
	check if a lesser throttle setting causes roughness to decrease.

If severe engine roughness cannot be eliminated LAND AS SOON AS PRACTICABLE.

REDUCTION IN POWER - (Interruption of fuel flow, engine surging)

Mixture Control	IDLE CUTOFF
Fuel Selector	OTHER TANK
Low Fuel Boost Pump	On 3-5 sec
Throttle	CRUISE POSITION
Propeller	2600 RPM

REDUCTION IN POWER - (continued)

Mixture ADVANCE SLOWLY until engine starts or runs smoothly
Low Fuel Boost Pump OFF (if engine continues to run leave OFF)
Mixture ADJUST to obtain fuel flow appropriate to MP and RPM

If engine does not restart:

- High Fuel Boost Pump ON

If engine still does not restart:

REPEAT procedures after descending below 12,000 feet

COWL FLAP FAILURE - FULL CLOSED POSITION

Acceptable engine operating temperatures can always be maintained in flight if the cowl flap fails in the full closed position using the following procedure:

Power AS REQUIRED
Mixture RICH
Airspeed 130 KIAS
Cylinder Head & Oil Temperature MONITOR - in normal operating range.

HIGH CYLINDER HEAD TEMPERATURE

Mixture ENRICH As Required
Cowl Flap OPEN As Required
Airspeed INCREASE As Required
Power REDUCE—if temperature cannot be maintained within limits

HIGH OIL TEMPERATURE

NOTE

Prolonged high oil temperature indications will usually be accompanied by a drop in oil pressure. If oil pressure remains normal, then a high temperature indication may be caused by a faulty gauge or temperature probe.

Cowl Flap OPEN as required
Airspeed INCREASE
Power REDUCE

PREPARE FOR POSSIBLE ENGINE FAILURE IF TEMPERATURE CONTINUES HIGH.

LOW OIL PRESSURE

Oil temperature and pressure gauges MONITOR
Pressure below 10 PSI EXPECT ENGINE FAILURE
proceed to FORCED LANDING EMERGENCY.

ENGINE DRIVEN FUEL PUMP FAILURE

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

When operating the engine at moderate power with the HI BOOST pump ON and a failed engine driven fuel pump, the engine may quit when the manifold pressure is reduced below 20 in. Hg. unless manually leaned.

NOTE

The maximum fuel flow capacity of the HIGH-BOOST pump decreases as density altitude is increased, therefore, the maximum available horsepower will also decrease as altitude is increased. At sea level the available fuel flow is approximately 14.1 U.S. GPH and by leaning, 64% to 76% horsepower will be available. At 24,000 feet the fuel flow is approximately 6.1 U.S. GPH and 29% to 41% horsepower will be available.

An engine driven fuel pump failure is probable when engine will only operate with boost pump ON. Operation of engine with a failed engine driven fuel pump and FUEL BOOST PUMP on HIGH, will require smooth operation of engine controls and corresponding mixture change when throttle is repositioned or engine speed is changed. When retarding throttle or reducing engine speed lean mixture to prevent engine from quitting from an overrich condition. Enrich mixture when opening throttle or increasing engine speed to prevent engine stoppage from a lean condition. Always lean to obtain a smooth running engine. The following procedure should be followed when a failed engine driven fuel pump is suspected:

Mixture	IDLE CUTOFF
Throttle	CRUISE Position
High Fuel Boost Pump	ON
Mixture	INCREASE

until engine starts and adjust for smooth engine operation.

LAND AS SOON AS PRACTICABLE.

ENGINE PRIMER FAILURE (IN "ON" POSITION)

Engine primer failure in "ON" position will cause extremely rough running engine or loss of power. The following procedure will turn OFF the primer:

Aux. Bus Circuit Breaker	Pull "OFF"
--------------------------	-------	------------

~ CAUTION ~

When the Aux. Bus Circuit Breaker is "OFF" all external lights, heated pitot, electric elevator trim (with some Avionics), high and low fuel boost, will be lost.

FUEL VAPOR SUPPRESSION (Fluctuating Fuel Flow)

Low Fuel Boost Pump	ON
Fuel Flow	MONITOR
Low Fuel Boost	OFF- If condition still exists, repeat procedure).

FIRES

ENGINE FIRE - DURING START ON GROUND

Starter Switch	CONTINUE cranking or until fire is extinguished
----------------	-------	--

If engine starts:

Power	1500 RPM for several minutes
Engine	SHUTDOWN; inspect for damage

If engine does NOT start:

Magneto/Starter Switch	CONTINUE CRANKING
Mixture	IDLE CUTOFF
Throttle	FULL FORWARD
Fuel Selector Valve	OFF
Magneto/Starter Switch	OFF
Master Switch	OFF
Fire	EXTINGUISH with Fire Extinguisher

ENGINE FIRE - IN FLIGHT

Fuel Selector Valve	OFF
Throttle	CLOSED
Mixture	IDLE CUTOFF
Magneto/Starter Switch	OFF
Cabin Ventilation & Heating Controls	CLOSED
Cowl Flap	CLOSED

SECTION III
EMERGENCY PROCEDURES

MOONEY
M20K

Landing Gear DOWN or UP, depending on terrain
Wing Flaps EXTEND as necessary

NOTE

If fire is not extinguished, attempt to increase airflow over the engine by increasing glide speed and open cowl flap. Proceed with FORCED LANDING EMERGENCY. DO NOT attempt an engine restart.

ELECTRICAL FIRE IN FLIGHT (Smoke in Cabin)

Master Switch OFF

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

Stall warning is not available with Master Switch OFF. Gear warning is not available with Master Switch OFF.

Alternator Field Switch(es) OFF
Cabin Ventilation OPEN
Heating Controls CLOSED (Control Forward)
Circuit Breakers CHECK to identify faulty circuit if possible

LAND AS SOON AS POSSIBLE

If electrical power is essential for the flight, attempt to identify and isolate the faulty circuit as follows:

Master Switch ON
Alternator Field Switch(es) ON

Select ESSENTIAL switches ON one at a time, and permit a short time to elapse before activating an additional circuit.

EMERGENCY DESCENT PROCEDURE

In the event an emergency descent from high altitude is required, rates of descent of at least 3,000 feet per minute can be obtained in two different configurations: (1) With landing gear and flaps retracted and cowl flap closed an airspeed of 196 KIAS will be required for maximum rate of descent. (2) With the landing gear extended, flaps retracted and cowl flap closed an airspeed of 165 KIAS will also give approximately the same rate of descent. At 165 KIAS and the gear extended, the angle of descent will be greater, thus resulting in less horizontal distance traveled than a descent at 196 KIAS. Additionally, a descent at 165 KIAS will provide a smoother ride and less pilot work load.

THEREFORE, the following procedure is recommended for an emergency descent:

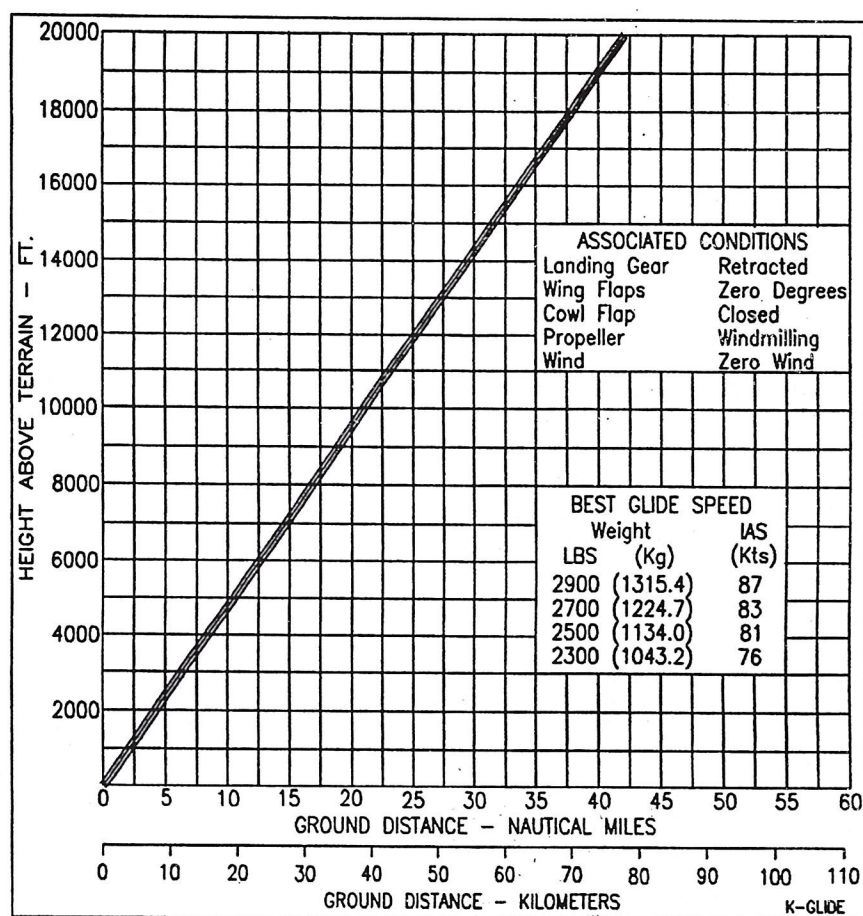
Power RETARD INITIALLY
Airspeed 140 KIAS
Landing Gear EXTEND
Airspeed INCREASE TO 165 KIAS
after landing gear is extended.
Wing Flaps UP
Cowl Flap CLOSED
Power During Descent MP not less than 20 In. Hg.
Airspeed MAINTAIN 165 KIAS during descent.
Speedbrakes (If installed) EXTEND
Altitude AS DESIRED

~~~~~  
~ CAUTION ~

Do not exceed 20" Hg. Manifold Pressure before cylinder head temperature is above 250° F (121° C)

GLIDE

**MAXIMUM GLIDE DISTANCE  
MODEL M20K**



**FORCED LANDING EMERGENCY**

**POWER OFF - GEAR RETRACTED OR EXTENDED**

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Emergency Locator Transmitter     | ARMED                           |
| Seat Belts and Shoulder Harnesses | SECURE                          |
| Cabin Door                        | UNLATCHED                       |
| Fuel Selector                     | OFF                             |
| Mixture                           | IDLE CUTOFF                     |
| Magneto/Starter                   | OFF                             |
| Wing Flaps                        | FULL DOWN (33 Degrees)          |
| Landing Gear                      | DOWN or UP Depending on Terrain |
| Approach Speed                    | 75 KIAS                         |
| Master Switch                     | OFF, prior to landing           |

**SYSTEMS EMERGENCIES**

**PROPELLER**

**PROPELLER OVERSPEED**

|              |                                            |
|--------------|--------------------------------------------|
| Throttle     | RETARD                                     |
| Oil Pressure | CHECK                                      |
| Propeller    | DECREASE set if any control available      |
| Airspeed     | REDUCE                                     |
| Throttle     | AS REQUIRED to maintain RPM below 2700 RPM |

**FUEL**

**LOW FUEL FLOW**

|               |              |
|---------------|--------------|
| Check mixture | ENRICH       |
| Fuel Selector | Fullest TANK |

If condition persists, use Fuel Boost Pump if necessary and LANDING SHOULD BE MADE AS SOON AS PRACTICABLE.

**ELECTRICAL**

**ALTERNATOR OVERVOLTAGE**

(L. or R. Alt. Volts warning light illuminated steady and Alternator Field circuit breaker tripped on affected alternator.)

|                                                                           |       |
|---------------------------------------------------------------------------|-------|
| Alternator Field Circuit Breaker                                          | RESET |
| If circuit breaker will not reset, the following procedures are required: |       |

1. Monitor ammeter for discharge.
2. Reduce electrical load, as required, to maintain positive ammeter indication and operate within load capacity of remaining alternator.
3. Continue flight on remaining alternator and LAND, WHEN PRACTICAL, to correct malfunction.

**ALTERNATOR OUTPUT LOW**

(Alternator warning light flashing)

|                                  |                   |
|----------------------------------|-------------------|
| Affected Alternator Field Switch | CYCLE OFF then ON |
|----------------------------------|-------------------|

**If annunciator light still flashes:**

|                                  |     |
|----------------------------------|-----|
| Affected Alternator Field Switch | OFF |
|----------------------------------|-----|

1. Monitor ammeter for discharge.
2. Reduce Electrical Load, as required, to maintain positive ammeter indication.
3. Continue flight on the remaining alternator and LAND, WHEN PRACTICAL, to correct malfunction.

**DUAL ALTERNATOR FAILURE**

(Ammeter indicates discharge)

**If alternators will not reset:**

|                                    |                           |
|------------------------------------|---------------------------|
| Non-essential electrical equipment | OFF                       |
|                                    | to conserve battery power |

**LAND AS SOON AS PRACTICABLE**

Battery endurance will depend upon battery condition and the electrical load on the battery.



LANDING GEAR

**FAILURE OF LANDING GEAR TO EXTEND ELECTRICALLY**

|                                       |                                                                  |
|---------------------------------------|------------------------------------------------------------------|
| Airspeed                              | 140 KIAS or less                                                 |
| Landing Gear Actuator Circuit Breaker | PULL                                                             |
| Gear Switch                           | DOWN                                                             |
| Manual Gear Extension Mechanism       | LATCH FORWARD/LEVER BACK<br>to engage manual extension mechanism |

**[ NOTE ]**

Slowly pull "T" handle 1 to 2 inches (2.5 to 5.1 cm) to rotate clutch mechanism and allow it to engage drive shaft.

|                                                                                                         |                                                                 |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| T-Handle                                                                                                | PULL (12 to 20 times)                                           |
| and RETURN until gear is down and locked, GEAR DOWN light ILLUMINATED;<br>STOP when resistance is felt. |                                                                 |
| Visual Gear Down Indicator                                                                              | CHECK ALIGNMENT<br>by viewing from directly above the indicator |

**~ CAUTION ~**

Continuing to pull on T-Handle after GEAR DOWN light ON may bind actuator; electrical retraction MAY NOT be possible until binding is eliminated by ground maintenance.

Return lever to normal position and secure with latch. Reset landing gear actuator circuit breaker.

**////// WARNING ///**

Do not operate landing gear electrically with manual extension system engaged.

**POWER ON - GEAR FAILS TO EXTEND**

|                                             |                     |
|---------------------------------------------|---------------------|
| Emergency Locator Transmitter               | ARMED               |
| Seat Belts and Shoulder Harnesses           | SECURE              |
| Cabin Door                                  | UNLATCHED           |
| <b>- WHEN SURE OF MAKING LANDING AREA -</b> |                     |
| Fuel Selector                               | OFF                 |
| Throttle                                    | CLOSED              |
| Mixture                                     | IDLE CUTOFF         |
| Magneto/Starter Switch                      | OFF                 |
| Wing Flaps                                  | FULL DOWN (33°)     |
| Master Switch                               | OFF                 |
| Approach Speed                              | As SLOW As Possible |
| Wings                                       | LEVEL ATTITUDE      |

**FAILURE OF LANDING GEAR TO RETRACT**

|             |                |
|-------------|----------------|
| AIRSPEED    | Below 107 KIAS |
| GEAR Switch | UP POSITION    |

If gear fails to retract, GEAR HORN-SOUNDING, GEAR ANNUNCIATOR LIGHTS and GEAR SAFETY BY-PASS LIGHT — ILLUMINATED:

|                          |                                                        |
|--------------------------|--------------------------------------------------------|
| GR SAFETY BY PASS SWITCH | DEPRESS and HOLD<br>until landing gear fully retracted |
|--------------------------|--------------------------------------------------------|

|                                                   |              |
|---------------------------------------------------|--------------|
| GEAR DOWN and GEAR UNSAFE Lights                  | EXTINGUISHED |
| GEAR RELAYS Circuit Breaker                       | PULL         |
| (Warning horn and Gear By-Pass light will go OFF) |              |

**FAILURE OF LANDING GEAR TO RETRACT (con't.)**

If gear fails to retract, GEAR HORN does not sound, GEAR ANNUNCIATOR LIGHTS and GEAR BY-PASS LIGHT — **NOT ILLUMINATED**:

EMERGENCY GEAR EXTENSION LEVER . . . . . Verify LATCHED in proper position.  
GEAR RELAYS Circuit Breaker . . . . . RESET

CONTINUE FLIGHT if desired.

**| NOTE |**

If above procedures do not initiate retraction process, check emergency manual extension lever on floor for proper position.

When ready to extend landing gear:

AIRSPPEED . . . . . Below 140 KIAS  
GEAR RELAYS Circuit Breaker . . . . . RESET  
GEAR SWITCH . . . . . DOWN Position

If gear will not extend electrically, refer to FAILURE OF LANDING GEAR TO EXTEND ELECTRICALLY.

**OXYGEN**

Refer to SECTION IX for operational procedures, if aircraft is equipped with oxygen. Refer to SECTION X for physiological characteristics of high altitude flight.

**ALTERNATE STATIC SOURCE**

The alternate static air source should be used whenever it is suspected that the normal static air sources are blocked. Selecting the alternate static source changes the source of static air for the altimeter, airspeed indicator and rate-of-climb from the outside of the aircraft to the cabin interior.

When alternate static source is in use adjust indicated airspeed and altimeter readings according to the appropriate alternate static source airspeed and altimeter calibration tables in SECTION V.

The static air source valve is located on the lower portion of the pilot's flight panel near his left knee.

**| NOTE |**

When using the Alternate Static Source the pilot's window and air vents **MUST BE KEPT CLOSED.**

Alternate Static Source . . . . . PULL ON  
Airspeed and Altimeter Readings . . . . . CHECK Calibrations Tables-SECTION V

**UNLATCHED DOORS IN FLIGHT**

**CABIN DOOR**

If cabin door is not properly closed it may come unlatched in flight. This may occur during or just after take-off. The door will trail in a position approximately 3 inches (7.6 cm) open, but flight characteristics of the airplane will not be affected. Return to the field in a normal manner. If possible, secure door in some manner to prevent it from swinging open during landing.

If it is deemed impractical to return and land, the door can be closed in flight, after reaching a safe altitude, by the following procedures :

Airspeed . . . . . 95 KIAS  
Pilot's Storm Window . . . . . OPEN  
Aircraft . . . . . RIGHT SIDESLIP (Right bank with left rudder)  
Door . . . . . PULL SHUT & LATCH

**BAGGAGE DOOR**

If baggage door is not properly closed, it may come unlatched in flight. This may occur during or after takeoff. The door may open to its full open position and then take an intermediate position depending upon speed of aircraft. There will be considerable wind noise; loose, light objects may exit aircraft if in vicinity of open door. There is no way to shut and latch door from inside; fly aircraft in normal manner; LAND AS SOON AS POSSIBLE and secure baggage door.

Baggage Door latching mechanism . . . . . **VERIFY PROPERLY ENGAGED**  
(inside latching mechanism) then shut from outside.

**ICING**

////////////////////  
/// **WARNING** ///

**DO NOT OPERATE IN KNOWN ICING CONDITIONS.**

The Model M20K is **NOT APPROVED** for flight into known icing conditions and operation in that environment is prohibited. However, if those conditions are inadvertently encountered or flight into heavy snow is unavoidable, the following procedures are recommended until further icing conditions can be avoided:

|                          |           |                   |
|--------------------------|-----------|-------------------|
| Pitot Heat               | . . . . . | ON                |
| Propeller Deice          | . . . . . | ON (if installed) |
| Alternate Static Source  | . . . . . | ON (if required)  |
| Cabin Heat and Defroster | . . . . . | ON                |

Turn back or change altitude to obtain an outside air temperature less conducive to icing.

Move Propeller control to maximum RPM to minimize ice build-up on propeller blades. If ice builds up or sheds unevenly on propeller, vibration will occur. If excessive vibration is noted, momentarily reduce engine speed with propeller control, to bottom of GREEN ARC, then rapidly move control FULL FORWARD.

**| NOTE |**

**Cycling RPM flexes propeller blades and high RPM increases centrifugal force which improves propeller's capability to shed ice.**

As ice builds on the airframe, move elevator control fore and aft slightly to break any ice build-up that may have bridged gap between elevator horn and horizontal stabilizer.

Watch for signs of induction air filter blockage due to ice build-up, increase throttle setting to maintain manifold pressure.

**| NOTE |**

**A loss of manifold pressure while operating in icing conditions may be an indication of primary engine induction system blockage. Refer back to POWER LOSS - PRIMARY ENGINE INDUCTION AIR SYSTEM BLOCKAGE.**

**| NOTE |**

**If ice blocks induction air filter, alternate air system will open automatically. If alternate air does not open automatically, PULL alternate air control OUT.**

With ice accumulation of 1/4 inch or more on the airframe, be prepared for a significant increase in aircraft weight and drag. This will result in significantly reduced cruise and climb performance and higher stall speeds. Plan for higher approach speeds requiring higher power settings and longer landing rolls.



**ICING (con't.)**

////////////////////  
/// **WARNING** ///

**Stall warning system may be inoperative.**

The defroster may not clear ice from windshield. If necessary open pilot's storm window for visibility in landing approach and touchdown.

With ice accumulations of 1 inch or less, use no more than 10° flaps for approach and landing. For ice accumulations of 1 inch or more, fly approaches and landing with flaps retracted to maintain better pitch control. Fly approach speeds at least 15 knots higher than normal, expect a higher stall speed resulting in higher touchdown speed with longer landing roll. Use normal flare and touchdown technique.

Missed approaches **SHOULD BE AVOIDED** whenever possible because of severely reduced climb performance. If a go-around is mandatory, apply **FULL POWER**, retract landing gear when obstacles are cleared, maintain 90 KIAS and retract wing flaps.

**EMERGENCY EXIT OF AIRCRAFT**

**CABIN DOOR**

PULL latch handle AFT.  
OPEN door and exit aircraft.

**BAGGAGE COMPARTMENT DOOR (AUXILIARY EXIT)**

Release (Pull UP) rear seat back latches on spar  
Fold rear seat backs forward, CLIMB OVER.  
PULL off plastic cover.  
PULL latch pin.  
Lift red handle "UP".  
OPEN door and exit aircraft.

To **VERIFY RE-ENGAGEMENT** of baggage door outside latch mechanism:  
Open outside handle fully.  
Close inside red handle to engage pin into cam slide of latch mechanism.  
Place latch pin in hole to hold RED handle DOWN.  
Replace cover.  
CHECK & operate outside handle in normal manner.

**SPINS**

////////////////////  
/// **WARNING** ///

**Up to 2,000 ft. altitude may be lost in a one turn spin and recovery;  
STALLS AT LOW ALTITUDE ARE EXTREMELY CRITICAL.**

**| NOTE |**

The best spin recovery technique is to avoid flight conditions conducive to spin entry. Low speed flight near stall should be approached with caution and excessive flight control movements in this flight regime should be avoided. Should an unintentional stall occur, the aircraft should not be allowed to progress into a deep stall. Fast, but smooth stall recovery will minimize the risk of progressing into a spin. If an unusual post stall attitude develops and results in a spin, quick application of antispin procedures should shorten the recovery.

— INTENTIONAL SPINS ARE PROHIBITED —

Throttle . . . . . RETARD to IDLE  
Ailerons . . . . . NEUTRAL  
Rudder . . . . . Apply FULL RUDDER opposite the direction of spin  
Control Wheel . . . . . PUSH FORWARD of neutral in a brisk motion.  
Additional FORWARD elevator control may be required if rotation does not stop.

|                          |                                                                   |
|--------------------------|-------------------------------------------------------------------|
| Wing Flaps (If extended) | RETRACT as soon as possible                                       |
| Rudder                   | NEUTRALIZE when spin stops                                        |
| Control Wheel            | SMOOTHLY move AFT<br>to bring nose up to a level flight attitude. |

Refer to SECTION IX for Emergency Procedures of installed Optional Equipment.



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