

EMPANAGE

- 1. Baggage SECURE
- 2. Baggage Door SECURE
- 3. Static Port CLEAR
- 4. Right Stabilizer, Elevator & Hinges CHECK
- 5. Fin, Rudder & Hinges CHECK
- 6. Tie Down REMOVE
- 7. Left Elevator, Hinges & Stabilizer CHECK
- 8. Static Port CLEAR

LEFT WING

- 1. Wing Locker Door SECURE
- 2. Battery Compartment Cover SECURE
- 3. Flap CHECK
- 4. Bottom outboard wing CHECK
- 5. Aileron and Tab CHECK
- 6. Fuel sump (Main Tank) DRAIN
- 7. Fuel vent & Sniffle Valve CLEAR
- 8. Fuel Quantity (Main) CHECK cap secure
- 9. Fuel Quantity (Auxiliary) CHECK cap secure
- 10. Tie down REMOVE
- 11. Stall Warning Vane CHECK
- 12. Fuel sump (Auxiliary) DRAIN
- 13. Fuel Strainer DRAIN
- 14. Oil Level CHECK (MIN 9 QT)
- 15. Engine compartment CHECK
- 16. Propeller and Spinner EXAMINE
- 17. Main Gear Strut, Doors, Tire CHECK
- 18. Leading edge air intake CLEAR

NOSE

- 1. Baggage door SECURE
- 2. Pitot tube CLEAR
- 3. Nose gear, Strut, Doors and Tire CHECK
- 4. Lower fuselage CHECK (Fuel Stains)
- 5. Heater inlet CLEAR

RIGHT WING

- 1. Leading edge air intake CLEAR
- 2. Crossfeed Lines DRAIN
- 3. Main Gear, Strut, Doors and Tire CHECK
- 4. Oil Level CHECK (MIN 9 QT)
- 5. Propeller and Spinner CHECK
- 6. Engine compartment CHECK
- 7. Fuel Sump (Auxiliary Tank) DRAIN
- 8. Fuel Strainer DRAIN
- 9. Tie down REMOVE
- 10. Fuel Quantity (Auxiliary) CHECK cap secure
- 11. Fuel Quantity (Main) CHECK cap secure
- 12. Fuel Vent and Sniffle valve CLEAR
- 13. Fuel sump (Main) DRAIN
- 14. Aileron CHECK
- 15. Bottom outboard wing CHECK
- 16. Flap CHECK
- 17. Wing locker baggage door SECURE

BEFORE STARTING ENGINES

- 1. Left Fuel Selector LEFT MAIN
(Feel for Detent)
- 2. Right Fuel Selector RIGHT MAIN
(Feel for Detent)
- 3. Seat Belts-Shoulder Harness: ADJUSTED
- 4. Brakes SET
- 5. Landing Gear Switch DOWN
- 6. Battery and Alternators ON
- 7. Cabin Air Controls AS REQUIRED
- 8. Throttles OPEN ONE INCH
- 9. Propellers FULL FORWARD
- 10. Mixtures FULL RICH
- 11. Cowl Flaps OPEN (Handles Locked)
- 12. Anti Collision Lights ON

LEFT ENGINE START

- 13. Outside Area CLEAR
- 14. Magneto Switches ON
- 15. Starter ENGAGE
- 16. Primer Switch LEFT-ACTIVATE
- 17. Auxiliary Fuel Pump LOW
- 18. Throttle 1000 RPM
- 19. Oil Pressure CHECK
- 20. Suction CHECK

RIGHT ENGINE START

- 21. Outside Area CLEAR
- 22. Magneto Switches ON
- 23. Starter ENGAGE
- 24. Primer Switch RIGHT-ACTIVATE
- 25. Auxiliary Fuel Pump LOW
- 26. Throttle 1000 RPM
- 27. Oil Pressure CHECK
- 28. Suction CHECK

STARTING ENGINES WITH EXTERNAL POWER

NOTE:

When using an external power source, do not turn on battery or alternator switches until external power is disconnected.

- 1. Battery Switches Battery OFF
- 2. Alternator Switches OFF
- 3. External Power Source CONNECT

LEFT ENGINE START

- 4. Outside Area CLEAR
- 5. Magneto Switches ON
- 6. Starter ENGAGE
- 7. Primer Switch LEFT-ACTIVATE
- 8. Auxiliary Fuel Pump LOW
- 9. Throttle 1000 RPM
- 10. Oil Pressure CHECK
- 11. Suction..... CHECK

RIGHT ENGINE START

- 12. Outside Area CLEAR
- 13. Magneto Switches ON
- 14. Starter ENGAGE
- 15. Primer Switch RIGHT-ACTIVATE
- 16. Auxiliary Fuel Pump LOW
- 17. Throttle 1000 RPM
- 18. Suction CHECK
- 19. Oil Pressure CHECK
- 20. External Power UNPLUG
- 21. Battery Switches ON
- 22. Alternator Switches ON

CAUTION

DO NOT PRIME WITH ENGINES OFF: either on the ground or in flight, damage may be incurred to the engine and/or aircraft due to fuel accumulation in the induction system.

DO NOT SHUT DOWN ENGINES WITH AUXILIARY FUEL PUMPS

ON: damage may be incurred to the engine and/or aircraft due to fuel accumulation in the induction system.

If the engines are primed or the auxiliary fuel pump is activated for more than 60 seconds, the engine manifold must be purged by one of the following methods:

- a. With Auxiliary Fuel Pump Off, allow the manifold to drain for a minimum of 5 minutes or until fuel ceases to flow from the drain under the nacelle.
- b. With the Auxiliary Fuel Pump Off, Magnetos Off, Mixture - Idle, Throttle full open, turn the engine either by hand or starter for a minimum of 15 revolutions.

PRE-TAXI

- | | |
|---------------------------------|------------------|
| 1. Avionics Master Switch | ON |
| 2. Lights | AS REQUIRED |
| 3. Flaps | UP |
| 4. Radios | SET |
| 5. Transponder | STAND BY |
| 6. Flight Instruments | SET |
| 7. Doors & Window | SECURE |
| 8. Fuel Pumps | OFF |
| 9. Mixtures | LEAN AS REQUIRED |
| 10. ATIS | OBTAIN |
| 11. Clearances | OBTAIN |

TAXI

- | | |
|-----------------------------|--------------|
| 1. Brakes | CHECK |
| 2. Flight Controls | FREE & CLEAR |
| 3. Flight Instruments | CHECK |

BEFORE TAKEOFF

- | | |
|----------------------|----------|
| 1. Brakes | SET |
| 2. Mixtures | RICH |
| 3. Throttles | 1700 RPM |
| 4. Alternators | CHECK |
| 5. Magnetos | CHECK |

LEFT

**150 RPM DROP MAXIMUM
50 RPM MAXIMUM DIFFERENCE**

RIGHT

**150 RPM DROP MAXIMUM
50 RPM MAXIMUM DIFFERENCE**

- | | |
|---------------------------------------|-------------------------------------|
| 6. Propellers Left & Right | CYCLE TO 1200 rpm |
| 7. Engine Instruments | Check (Green Arc) |
| 8. Suction | CHECK (4.75 to 5.25 In Hg) |
| 9. Throttles | 1000 RPM |
| 10. Flight Controls | FREE & CLEAR |
| 11. Trim Tabs | SET |
| 12. Alternate Air Controls | IN |
| 13. Flaps | UP |
| 14. Fuel Selectors | CHECK ON MAINS
(Feel for Detent) |
| 15. Fuel Quantity | CHECK |
| 16. Flight Instruments | SET |
| 17. Radios/Navigation Equipment | SET |
| 18. Strobe Lights | ON |
| 19. Auxiliary Fuel Pumps | LOW |
| 20. Door and Window | CLOSED and LOCKED |
| 21. Transponder | ALT |
| 22. Take-off Brief | COMPLETE |

NORMAL TAKEOFF

- 1. Mixtures LEAN FOR FIELD ELEVATION
- 2. Throttles FULL POWER
- 3. Rotate 83 KIAS
- 4. Minimum Control Speed 81 KIAS
- 5. Liftoff 92 KIAS
- 6. Best Rate of Climb 106 KIAS
- 7. Brakes APPLY Momentarily
- 8. Landing Gear RETRACT (Check Red Light OFF)

MAXIMUM PERFORMANCE TAKEOFF

- 1. Flaps 1 5°
- 2. Mixtures LEAN FOR FIELD ELEVATION
- 3. Throttles FULL POWER
- 4. Rotate 70 KIAS
- 5. Minimum Control Speed 81 KIAS
- 6. Liftoff (Best Angle) 82 KIAS
- 7. Best Rate of Climb 106 KIAS
- 8. Brakes APPLY Momentarily
- 9. Landing Gear RETRACT (Check Red Light OFF)
- 10. Flaps UP (After Obstacles are Cleared)

NORMAL CLIMB

- 1. Throttles 24.5"
- 2. Propellers 2500 RPM
- 3. Airspeed 125 KIAS
- 4. Mixtures ADJUST to climb fuel flow
- 5. Auxiliary Fuel Pumps OFF
- 6. Auxiliary Fuel Pumps ON ABOVE 12000 FEET
- 7. Cowl Flaps AS REQUIRED

MAXIMUM PERFORMANCE CLIMB

NOTE:

During very hot weather, if there is an indication of vapor in the fuel system (fluctuating fuel flow) or anytime when climbing above 12000 feet, turn the auxiliary fuel pumps on until reaching cruise altitude and the system is purged (5-10 minutes after level off).

- 1. Throttles FULL FORWARD
- 2. Propellers 2700 RPM
- 3. Airspeed 106 KIAS @ SL
99 KIAS @ 10000 FEET
- 4. Mixtures ADJUST FOR ALTITUDE
- 5. Auxiliary Fuel Pumps OFF
- 6. Cowl Flaps AS REQUIRED
- 7. Auxiliary Fuel Pumps ON ABOVE 12000 FEET

CRUISE

- 1. Throttles 15 - 24.5 IN
- 2. Props 2100 to 2500 RPM
- 3. Mixtures LEAN AS REQUIRED
- 4. Cowl Flaps AS REQUIRED
- 5. Fuel Selectors AS DESIRED (Feel for Detent)
 - a. Main Tanks for first 90 Minutes of Flight
 - b. Usable Auxiliary Fuel is based on level flight
 - c. Crossfeed as required

NOTE:

AUXILIARY FUEL PUMPS TO LOW WHEN SWITCHING TANKS

WARNING:

"IMPROPER LEANING PROCEDURES WILL GREATLY REDUCE ENDURANCE"

DESCENT

- 1. Power AS REQUIRED
- 2. Mixtures ADJUST (For Smooth Operation)
- 3. Cowl Flaps AS REQUIRED

GO AROUND

- 1. Throttles FULL POWER @ 2700 RPM
- 2. Flaps TO 15°
- 3. Landing Gear RETRACT
- 4. Flaps UP
(when safe altitude and airspeed are obtained)
- 5. Trim ADJUST TO CLIMB
- 6. Cowl Flaps OPEN

BEFORE LANDING

- 1. Fuel Selectors MAIN TANKS (Feel for Detent)
- 2. Cowl Flaps AS REQUIRED
- 3. Alternate Air Controls IN
- 4. Auxiliary Fuel Pumps LOW
- 4. Mixtures RICH
- 5. Propellers FULL FORWARD
- 6. Flaps 15° (Below 158 KIAS)
- 7. Landing Gear DOWN (below 138 KIAS)
- 8. Flaps 35° (below 138 KIAS)
- 9. Minimum Approach Speed 95 KIAS
- 10. Minimum Single-Engine Control Speed 81 KIAS

SOFT FIELD LANDING

- 1. Fuel Selectors MAIN TANKS (Feel for Detent)
- 2. Cowl Flaps AS REQUIRED
- 3. Alternate Air Controls IN
- 4. Auxiliary Fuel Pumps LOW
- 4. Mixtures RICH
- 5. Propellers FULL FORWARD
- 6. Flaps 15° (Below 158 KIAS)
- 7. Landing Gear DOWN (below 138 KIAS)
- 8. Flaps 35° (below 138 KIAS)
- 9. Minimum Approach Speed 95 KIAS
- 10. Minimum Single-Engine Control Speed 81 KIAS
- 11. Power CARRY A LITTLE INTO THE LANDING
- 12. Yoke FULL BACK TO KEEP PRESSURE OFF THE NOSE WHEEL

SHORT FIELD LANDING

- 1. Fuel Selectors MAIN TANKS (Feel for Detent)
- 2. Cowl Flaps AS REQUIRED
- 3. Alternate Air Controls IN
- 4. Auxiliary Fuel Pumps LOW
- 4. Mixtures RICH
- 5. Propellers FULL FORWARD
- 6. Flaps 15° (Below 158 KIAS)
- 7. Landing Gear DOWN (below 138 KIAS)
- 8. Flaps 35° (below 158 KIAS)
- 9. Minimum Approach Speed 95 KIAS
- 10. Minimum Single-Engine Control Speed 81 KIAS
- 11. Power OFF WHEN LANDING IS ASSURED
- 12. Brake AS REQUIRED

AFTER CLEARING RUNWAY

- 1. Cowl Flaps OPEN
- 2. Flaps UP
- 3. Transponder OFF
- 4. Pitot Heat OFF
- 5. Lights AS REQUIRED
- 6. Mixtures LEAN AS REQUIRED

SHUTDOWN:

- 1. Auxiliary Fuel Pumps OFF
- 2. Anti Collision Lights OFF
- 3. Avionics Master Switch OFF
- 3. All Electrical Switches OFF
- 4. Throttles IDLE
- 6. Right Mixture..... IDLE CUT-OFF
(Ensure suction ball on right engine appears)
- 7. Left Mixture..... IDLE CUT-OFF
- 8. Magneto Switches OFF
- 9. Battery & Alternator Switches OFF
- 10. Fuel Selectors OFF
- 11. Wheels CHOCKED
- 12. Windscreen/Leading Edges: CLEAN

SECURING AIRCRAFT:

- 1. Hobbs/Tach Time RECORD
- 2. Interior: CLEAN
- 3. Doors CLOSED, LOCKED
- 4. Chocks & Tie Downs INSTALLED
- 5. Flight Plan: CLOSED

EMERGENCY PROCEDURES

Engine Failure During Takeoff	2
Engine Failure in Flight	3
Engine Re-Start in Flight	4
Fire on the Ground	4
Wing or Engine Fire	5
Cabin Fire	5
Single Engine Approach & Landing	6
Forced Landing with Power	6
Forced Landing Without Power	7
Emergency Go-Around Single Engine	7
Engine Driven Fuel Pump Failure	8
Alternator Failure - Single	8
Alternator Failure - Dual	9
Static Source Obstruction	10
Vacuum Pump Failure	10
Landing Gear Will Not Extend	10
Landing Gear Will Not Retract	11
Air Inlet/Filter Icing	11
Landing with Flat Main Tire	12
Landing with Flat Nose Tire	13
Landing with Defective Main Gear	14
Landing with Defective Nose Gear	15
Ditching	15

ENGINE FAILURE DURING TAKEOFF:

AIRSPEED LESS THAN 92 KIAS:

- | | |
|--------------------|-------------|
| 1. Throttles | CLOSED |
| 2. Brakes | AS REQUIRED |

ENGINE FAILURE DURING TAKEOFF:

AIRSPEED MORE THAN 92 KIAS:

- | | |
|--|---------------------------|
| 1. Mixture | RICH |
| 2. Propellers | FULL FORWARD |
| 3. Throttles | FULL FORWARD |
| 4. Landing Gear | UP |
| 5. Inoperative Engine | SECURE |
| a. Throttle | CLOSE |
| b. Mixture | IDLE CUT-OFF |
| c. Propeller | FEATHER |
| 6. Establish Bank 5 degrees towards good engine | |
| 7. Flaps | UP |
| 8. Climb | 92 KIAS (clear obstacles) |
| 9. Climb Regular | 107 KIAS |
| 10. Cowl Flaps | CLOSE |
| 11. Trim | 5° TOWARDS GOOD ENGINE |
| 12. Failed Engine | SECURE |
| a. Fuel Selector | OFF |
| b. Auxiliary Fuel Pump | OFF |
| c. Magnetos | OFF |
| d. Alternator Switch | OFF |

LAND AS SOON AS PRACTICAL

ENGINE FAILURE IN FLIGHT

- 1. Failed Engine IDENTIFY
 (Idle Engine on same side as Idle Foot)
- 2. Power INCREASE AS NECESSARY
- 3. Mixture ADJUST AS REQUIRED
- 4. Fuel Flow CHECK
If low: Auxiliary Fuel Pump ON
- 5. Fuel Quantity CHECK
- 6. Oil Pressure CHECK
- 7. Oil Temperature CHECK
- 8. Magnetos CHECK
- If Engine Does Not Start**
- 9. FAILED ENGINE SECURE
 - a. Throttle CLOSED
 - b. Mixture IDLE CUT-OFF
 - c. Propeller FEATHER
 - d. Fuel Selector OFF
 - e. Auxiliary Fuel Pump OFF
 - f. Magnetos OFF
 - g. Alternator Switch OFF
 - h. Cowl Flap CLOSE
- 10. REMAINING ENGINE SET
 - a. Power AS REQUIRED
 - b. Mixture ADJUST FOR POWER
 - c. Fuel Selector MAIN TANK
 (feel for detent)
 - d. Auxiliary Fuel Pump ON
- 11. Trim ADJUST
 (5 DEGREES BANK TOWARD GOOD ENGINE)
- 12. Electrical Load REDUCE

LAND AS SOON AS PRACTICAL

ENGINE RESTART IN FLIGHT(AFTER FEATHERING)

- 1. Magneto Switch ON
- 2. Fuel Selector MAIN TANK (feel for detent)
- 3. Throttle OPEN ONE INCH
- 4. Mixture SET PER ALTITUDE
- 5. Propeller FORWARD OF DETENT
- 6. Starter ENGAGE
- 7. Primer AS REQUIRED
- 8. Alternator Switch ON
- 9. Power INCREASE SLOWLY
- 10. Cowl Flaps AS REQUIRED

IF START IS UNSUCCESSFUL TURN MAGNETO SWITCHES OFF, RETARD MIXTURE, OPEN THROTTLE, AND ENGAGE STARTER FOR SEVERAL REVOLUTIONS THEN REPEAT RE-START PROCEDURE

ENGINE FIRE ON GROUND

during engine start, taxi, & takeoff with sufficient runway remaining to stop

- 1. Throttles CLOSED
- 2. Mixtures IDLE CUT OFF
- 3. Brakes AS REQUIRED
- 4. Battery Switches OFF (use gang bar)
- 5. Magnetos OFF (use gang bar)
- 6. Airplane EVACUATE

FIRE ON THE GROUND

- 1. Throttles CLOSED
- 2. Mixtures IDLE CUT-OFF
- 3. Brakes AS REQUIRED
- 4. Battery OFF (USE GANG BAR)
- 5. Magnetos OFF (USE GANG BAR)

EVACUATE AIRCRAFT

WING OR ENGINE FIRE

- 1. Auxiliary Fuel Pumps BOTH OFF
- 2. Affected Engine SECURE
 - a. Mixture IDLE CUT-OFF
 - b. Propeller FEATHER
 - c. Fuel Selector OFF
 - d. Alternator OFF
 - e. Magnetos OFF
- 3. Cabin Heater OFF

LAND AS SOON AS PRACTICAL

CABIN FIRE

- 1. Electrical Load REDUCE
- 2. Source of Fire IDENTIFY
- 3. WEMACS OPEN
- 4. Cabin Air Controls OPEN

CLOSE IF SMOKE INCREASES

LAND AS SOON AS PRACTICAL

SINGLE ENGINE APPROACH & LANDING

- 1. Mixture FULL RICH
- 2. Propeller FULL FORWARD
- 3. Airspeed 97 KIAS
- 4. Landing Gear DOWN
- 5. Flaps DOWN
- 6. Airspeed Final 93 KIAS

FORCED LANDING - WITH POWER

- 1. Overfly Site CHECK SUITABILITY
- 2. Area Hard and Smooth WHEELS DOWN
 - a. Flaps DOWN
 - b. Normal Landing HOLD NOSE
OFF AS LONG AS POSSIBLE
- 3. Area Rough or Soft WHEELS UP
 - a. Landing Gear UP
 - b. Airspeed 100 KIAS
 - c. Flaps DOWN 15°
 - d. All Switches OFF
 - e. Cabin Door UNLATCH

(Expect mild tail buffet with cabin door open)

- f. Mixtures IDLE CUT-OFF
- g. Magnetos OFF
- h. Fuel Selectors OFF
- i. LAND SLIGHTLY TAIL LOW

FORCED LANDING - NO POWER

- 1. Mixtures IDLE CUT-OFF
- 2. Propellers FEATHER
- 3. Fuel Selectors OFF
- 4. All Switches OFF
(EXCEPT Battery)
- 5. Airspeed 97 KIAS
- 6. **Area Hard & Smooth**
 - a. Landing Gear DOWN
 - b. Flaps DOWN
 - c. Normal Landing HOLD NOSE
OFF AS LONG AS POSSIBLE
- 7. **Area Rough or Soft**
 - a. Landing Gear UP
 - b. Airspeed 97 KIAS
 - c. Flaps DOWN 15
 - d. Battery Switch OFF
 - e. Cabin Door UNLATCH
(Expect mild tail buffet with cabin door open)
 - f. LAND SLIGHTLY TAIL LOW

EMERGENCY GO AROUND - SINGLE ENGINE

- 1. Airspeed 92 KIAS
- 2. Throttle FULL OPEN
- 3. Propellers 2700 RPM
- 4. Landing Gear UP
- 5. Flaps UP
- 6. Cowl Flaps OPEN
- 7. Airspeed 106 KIAS
- 8. Trim AS REQUIRED

ENGINE DRIVEN FUEL PUMP FAILURE

- 1. Fuel Selector MAIN TANK (feel for detent)
 - 2. Auxiliary Fuel Pump ON
 - 3. Cowl Flap OPEN
 - 4. Mixture ADJUST AS REQUIRED
- LAND AS SOON AS PRACTICAL**

IF BOTH THE ENGINE DRIVEN AND AUXILIARY FUEL PUMPS FAIL ON THE SAME SIDE, THE FAILING ENGINE CAN NOT BE SUPPLIED WITH FUEL FROM THE OPPOSITE MAIN TANK SINCE THAT AUXILIARY FUEL PUMP WILL ONLY OPERATE ON LOW PRESSURE AS LONG AS THE ENGINE DRIVEN FUEL PUMP IS OPERATIONAL.

ALTERNATOR FAILURE - SINGLE

- 1. Electrical Load REDUCE
- 2. **Circuit Breaker-Tripped**
 - a. Alternator OFF
 - b. Circuit Breaker RESET
 - c. Alternator ON
- 3. **Circuit breaker reopens**
Alternator OFF
- 4. **Circuit breaker remains set**
Volt/Ammeter SET & CHECK
- 5. Normal Indications CHECK UPON LANDING
- 6. **Insufficient Output**
Alternator OFF
- 7. **Complete loss of Output**
Fuse CHECK
- 8. **Intermittent Fluctuations**
Alternator OFF

ALTERNATOR FAILURE - DUAL

1. Electrical Load REDUCE
2. **Circuit Breakers Tripped**
 - a. Alternators OFF
 - b. Circuit Breakers RESET
 - c. Left Alternator ON-MONITOR
 Alternator charging: LEAVE ON (disregard failure light)
 Alternator is still inoperative OFF
 - d. Right Alternator ON-MONITOR
 Alternator charging: LEAVE ON (disregard failure light)
 Alternator is still inoperative OFF
3. **LAND AS SOON AS PRACTICAL**
4. **IF CIRCUIT BREAKERS HAVE NOT TRIPPED**
 - a. Alternators OFF
 - b. Field Fuses CHECK
 - c. Left Alternator ON-MONITOR
 Alternator charging leave on (disregard failure light)
 Alternator is still inoperative OFF
 - d. Right Alternator ON-MONITOR
 Alternator charging leave on (disregard failure light)
 Alternator is still inoperative OFF

If both are still inoperative
 - e. Emergency Alternator Field Switch ON
 - f. Left Alternator ON-MONITOR
 Alternator charging leave on (disregard failure light)
 Alternator is still inoperative OFF
 - g. Right Alternator ON-MONITOR
 Alternator charging leave on. (disregard failure light)
 Alternator is still inoperative OFF
 - h. Alternators OFF

LAND AS SOON AS PRACTICAL

STATIC SOURCE OBSTRUCTION

1. Alternate Static Source OPEN
2. Altitude & Airspeed ADJUST FOR ERROR

INSURE ALTERNATE STATIC SOURCE IS CLOSED FOR NORMAL OPERATIONS

VACUUM PUMP FAILURE

1. Failure is indicated by left or right failure buttons exposed on the vacuum gauge. An automatic valve will select operative source
2. Verify proper vacuum is available from operative source

LANDING GEAR WILL NOT EXTEND

LANDING GEAR WILL NOT EXTEND ELECTRICALLY UNLESS THE HANDCRANK HANDLE IS PROPERLY STOWED.

1. Circuit Breaker CHECK
 - a. Tripped COOL 3 MIN & RESET
 - b. Not Tripped PULL
2. Landing Gear Switch NEUTRAL (Center Position)
3. Pilot Seat TILT FULL AFT
4. Hand Crank EXTEND & LOCK
5. Hand Crank ROTATE CLOCKWISE
(approx. 52 turns)

DURING MANUAL EXTENSION, DO NOT ALLOW THE GEAR TO FREE FALL.

6. Gear Down Lights 3 GREEN
7. Gear Unlock Light OFF
8. Gear Warning Horn CHECK
9. Handcrank STOW
10. **LAND AS SOON AS PRACTICAL**

LANDING GEAR WILL NOT RETRACT:

DO NOT ATTEMPT TO RETRACT THE GEAR MANUALLY

- 1. Landing Gear Switch DOWN
- 2. Landing Gear Lights ON
- 3. Landing Gear Unlocked Light OFF
- 4. Gear Warning Horn TEST
- 5. **LAND AS SOON AS PRACTICAL**

AIR INLET / FILTER ICING

- 1. Alternate Air Controls FULL OUT
- 2. Power INCREASE AS REQUIRED
- 3. Mixtures LEAN AS REQUIRED

LANDING WITH A FLAT MAIN TIRE

if a blowout occurs during takeoff and the failed tire is identified

- 1. Landing Gear Switch UP
- 2. Fuel Selector MAIN TANK
ON SIDE OF FAILED TIRE

FUEL SHOULD BE USED FROM THIS TANK FIRST TO LIGHTEN THE LOAD ON THIS WING PRIOR TO LANDING, IF INFLIGHT TIME PERMITS. HOWEVER, AN ADEQUATE SUPPLY OF FUEL SHOULD BE LEFT IN THIS TANK THAT IT MAY BE USED DURING THE LANDING.

- 3. Fuel Selectors MAIN TANKS LEFT & RIGHT
(feel for detents)
- 4. Airspeed 140 KIAS
- 5. Landing Gear Switch DOWN
- 6. Landing Gear Lights CHECK 3 GREEN
- 7. Flaps DOWN
- 8. **GUIDE TO SIDE OF RUNWAY OPPOSITE FAILED GEAR**
- 9. **LAND ON GOOD TIRE FIRST, LOWER NOSE- WHEEL IMMEDIATELY POSITIVE STEERING**
- 10. **APPLY FULL AILERON TO LIGHTEN THE LOAD ON THE DEFECTIVE TIRE**
- 11. **BRAKE ON GOOD TIRE ONLY**
- 12. **STOP THE AIRCRAFT TO PREVENT FURTHER DAMAGE UNLESS THE RUNWAY NEEDS TO BE CLEARED FOR OTHER TRAFFIC**

LANDING WITH FLAT NOSE TIRE:

if a blowout occurs during takeoff

- 1. Landing Gear DOWN

DO NOT ATTEMPT TO RETRACT THE LANDING GEAR IF THE NOSE GEAR IS FLAT. IT MAY BE DISTORTED ENOUGH TO PREVENT EXTENSION LATER.

- 2. MOVE PASSENGERS AND BAGGAGE AS FAR AFT AS POSSIBLE
- 3. Flaps 15
- 4. Land WITH NOSE HIGH ATTITUDE
- 5. HOLD NOSE WHEEL OFF AS LONG AS POSSIBLE
- 6. Brakes MINIMUM BRAKING
- 7. Throttles OFF
- 8. STOP THE AIRCRAFT TO PREVENT FURTHER DAMAGE UNLESS THE RUNWAY NEEDS TO BE CLEARED FOR OTHER TRAFFIC

LANDING WITH DEFECTIVE MAIN GEAR

- 1. Fuel Selector MAIN TANK ON
SIDE OF FAILED TIRE

FUEL SHOULD BE USED FROM THIS TANK TO LIGHTEN THE LOAD ON THIS WING PRIOR TO LANDING, IF INFLIGHT TIME PERMITS. HOWEVER, AN ADEQUATE SUPPLY OF FUEL SHOULD BE LEFT IN THIS TANK THAT IT MAY BE USED DURING THE LANDING.

- 2. Fuel Selectors MAIN TANKS LEFT & RIGHT
(feel for detents)
- 3. Landing Gear DOWN
- 4. Flaps 35
- 5. GUIDE TO SIDE OF RUNWAY OPPOSITE FAILED GEAR
(Allow room for Ground Loop)
- 6. Battery Switch OFF
- 7. Land ON GOOD TIRE FIRST, LOWER NOSE-WHEEL IMMEDIATELY POSITIVE STEERING
- 8. BEGIN MODERATE GROUND LOOP INTO DEFECTIVE GEAR UNTIL AIRCRAFT STOPS
- 9. Mixtures IDLE CUT-OFF
- 10. APPLY FULL AILERON TO LIGHTEN THE LOAD ON THE DEFECTIVE TIRE
- 11. Brakes BRAKE ON GOOD TIRE ONLY
- 12. Fuel Selectors OFF
- 13. STOP AIRCRAFT TO PREVENT FURTHER DAMAGE UNLESS THE RUNWAY NEEDS TO BE CLEARED FOR OTHER TRAFFIC

LANDING WITH A DEFECTIVE NOSE GEAR

SOD RUNWAY MAINS RETRACTED

- 1. Landing Gear Switch UP
- 2. Airspeed 97 KIAS
- 3. Flaps 15°
- 4. All Electrical Switches OFF
- 5. Cabin Door UNLATCH

NOTE:

EXPECT A MILD TAIL BUFFET WITH THE DOOR OPENED.

- 6. Land TAIL LOW ATTITUDE
- 7. Mixtures IDLE CUT-OFF
- 8. Magnetos OFF
- 9. Fuel Selectors OFF

HARD RUNWAY, MAINS DOWN:

- 1. MOVE PASSENGERS AND BAGGAGE AS FAR AFT AS POSSIBLE
- 2. Landing Gear DOWN
- 3. Airspeed 97 KIAS
- 4. Flaps 15°
- 5. All Electrical Switches OFF
- 6. Land TAIL LOW ATTITUDE
- 7. Mixtures IDLE CUT-OFF
- 8. Magnetos OFF
- 9. Controls HOLD NOSE OFF AS LONG AS POSSIBLE

DITCHING

- 1. Landing Gear UP
- 2. Flaps 35°
- 3. Airspeed 93 KIAS
- 4. Descent Rate 300 FPM