

**PA-28-161 NORMAL PROCEDURES**

**PREFLIGHT**

1.  $W_x$  & DENSITY ALT. . . . . DETERMINE
2. WEIGHT AND BALANCE . . . . . CALC
3. PERFORMANCE REQUIREMENTS. . . . . CALC
4. FLIGHT PLAN / NOTAMs . . . . . FILE AS REQ / REVIEW

*FRONT COCKPIT*

1. AROW / FLIPS . . . . . CHECK / STOW
2. KEYS . . . . . ON DASH
3. COCKPIT FOD . . . . . REMOVE
4. BOOST PUMP . . . . . OFF
5. FUEL SHUTOFF VALVE HANDLE . . . . . OFF
6. TRIM TABS . . . . . CORRECT
7. FLAPS . . . . . 40°
8. THROTTLE . . . . . CLOSED
9. MIXTURE . . . . . IDLE CUTOFF
10. MAGS . . . . . OFF
11. MASTER . . . . . OFF
12. CONTROLS . . . . . UNLOCKED
13. AVIONICS . . . . . OFF
14. ELT . . . . . ARMED
15. RADIO MASTER . . . . . OFF
16. CIRCUIT BREAKERS . . . . . IN
17. PROP. . . . . CLEAR
18. BATTERY . . . . . ON
19. FUEL GAUGES. . . . . TRUE
20. LIGHTS . . . . . INTERIOR / EXTERIOR
21. PITOT HEAT . . . . . TEST
22. STALL WARNING . . . . . CHECK
23. BATTERY . . . . . OFF
24. PARKING BRAKE . . . . . OFF
25. WINDSHIELD. . . . . CHECK
26. PITOT STATIC DRAINS . . . . . DRAIN / CLOSE

**PA-28-161**  
**WARRIOR**

**PA-28-161 NORMAL PROCEDURES**

*FUEL SAMPLES & ENGINE COMPARTMENT*

1. RIGHT WING QUICK DRAIN . . . . . SAMPLE
2. LEFT WING QUICK DRAIN . . . . . SAMPLE
3. FUEL SELECTOR . . . . . RT TANK
4. FUEL STRAINER . . . . . SAMPLE
5. FUEL SELECTOR . . . . . LT TANK
6. FUEL STRAINER . . . . . SAMPLE
7. RIGHT ENGINE COMPARTMENT COWL . . . . . OPEN
8. ENGINE & ACCESSORIES . . . . . CHECK
9. OIL LEVEL . . . . . (MIN / MAX). . . . . 6-8 QTS
10. RIGHT ENGINE COMPARTMENT COWL . . . . . LATCHED
11. PORT ENGINE COMPARTMENT COWL . . . . . OPEN
12. ENGINE & ACCESSORIES. . . . . CHECK
13. BATTERY . . . . . CHECK
14. LEFT ENGINE COMPARTMENT COWL. . . . . LATCHED

*LEFT WING*

1. AIR INLET . . . . . CLEAR
2. LANDING GEAR / TIRE . . . . . CHECK (24 PSI)
3. STRUT EXPOSURE. . . . . 4. 5"
4. FUEL VENT . . . . . CLEAR
5. FUEL QUANTITY . . . . . CHECK VISUALLY
6. FUEL FILLER CAP . . . . . SECURE
7. LEADING EDGE. . . . . CLEAN
8. NAVIGATION LIGHT . . . . . CHECK
9. AILERON. . . . . CHECK
10. PITOT STATIC MAST. . . . . CHECK
11. AILERON. . . . . CHECK
12. FLAP . . . . . CHECK
13. TIEDOWN . . . . . DISCONNECT
14. CHOCK . . . . . REMOVE

*FUSELAGE & EMPENNAGE*

1. ANTENNAS . . . . . CHECK
2. STABILATOR / TRIM . . . . . CHECK
3. TIEDOWN . . . . . DISCONNECT
4. RUDDER. . . . . CHECK
5. NAVIGATION LIGHT . . . . . SECURE
6. AIR INLET . . . . . CHECK
7. BAGGAGE DOOR. . . . . LATCHED

**PA-28-161 OPS LIMITS**

<b>AIRSPEEDS</b>	<b>KIAS</b>
V <sub>S0</sub> . . . . .	<b>44</b>
V <sub>R</sub> . . . . .	<b>55</b>
V <sub>S1</sub> . . . . .	<b>50</b>
V <sub>X</sub> . . . . .	<b>63</b>
V <sub>MAX</sub> GLIDE . . . . .	<b>73</b>
V <sub>Y</sub> @ S/L. . . . .	<b>79</b>
V <sub>FE</sub> . . . . .	<b>103</b>
V <sub>A</sub> ( <b>MAX GROSS WT 2325</b> ).. . . .	<b>111</b>
V <sub>NO</sub> . . . . .	<b>126</b>
V <sub>NE</sub> . . . . .	<b>160</b>

<b>X WIND</b>	<b>KTS</b>
MAX DEMONSTRATED . . . . .	<b>17</b>

<b>ENGINE LIMITS</b>	
MAXIMUM CONTINUOUS. . . . .	<b>2700 RPM</b>
MAX OIL TEMP. . . . .	<b>245° F</b>
OIL PRESSURE MIN / MAX. . . . .	<b>25 / 90 PSI</b>
FUEL PRESSURE MIN / MAX . . . . .	<b>0.5 / 8 PSI</b>

<b>MAX GROSS T/O &amp; LDG</b>	<b>LBS</b>
MAXIMUM ( <b>Normal</b> ). . . . .	<b>2325</b>
( <b>Utility</b> ) . . . . .	<b>2020</b>
MAXIMUM BAGGAGE . . . . .	<b>200</b>

<b>MAX ACCELERATION</b>	<b>Gs</b>
LOAD LIMITS ( <b>NORMAL / UTILITY</b> ). . . . .	<b>+3.8 / +4.4</b>

**PA-28-161 NORMAL PROCEDURES**

*NOSE*

- 1. CHOCK . . . . . REMOVE
- 2. NOSE TIRE. . . . . CHECK (30 PSI)
- 3. STRUT EXPOSURE . . . . . 3.25"
- 4. ENGINE AIR INLETS. . . . . CLEAR
- 5. PROP/SPINNER. . . . . CHECK
- 6. ALTERNATOR BELT . . . . . CHECK
- 7. LANDING / TAXI LIGHT . . . . . CHECK

*RIGHT WING*

- 1. AIR INLET . . . . . CLEAR
- 2. LANDING GEAR / TIRE . . . . . CHECK (24 PSI)
- 3. STRUT EXPOSURE . . . . . 4. 5"
- 4. FUEL VENT . . . . . CLEAR
- 5. FUEL QUANTITY . . . . . CHECK VISUALLY
- 6. FUEL FILLER CAP . . . . . SECURE
- 7. LEADING EDGE. . . . . CLEAN
- 8. NAVIGATION LIGHT . . . . . CHECK
- 9. AILERON . . . . . CHECK
- 10. PITOT STATIC MAST . . . . . CHECK
- 11. AILERON . . . . . CHECK
- 12. FLAP. . . . . CHECK
- 13. TIEDOWN . . . . . DISCONNECT
- 14. CHOCK . . . . . REMOVE

**PA-28-161 NORMAL PROCEDURES**

**PRE-TAXI**

- 1. FLAPS. . . . . UP
- 2. TRIM TABS. . . . . SET
- 3. FUEL QUANTITY . . . . . NOTED
- 4. FUEL SELECTOR. . . . . SWITCH OPPOSITE
- 5. COMM / NAV / XPNDR . . . . . ON / ON / STBY
- 6. ATIS / AWOS . . . . . COPY
- 7. FUEL BOOST PUMP . . . . . OFF
- 8. CLOCK . . . . . SET
- 9. GYROS . . . . . UNCAGED / SET
- 10. AIRSPEED INDICATOR . . . . . CHECK
- 11. VSI. . . . . CHECK
- 12. ALTIMETER . . . . . SET / CHECK
- 13. TAXI CLNC. . . . . CNTC GND
- 14. PARKING BRAKE. . . . . CHECK OFF
- 15. PNL / NAV / TAXI LIGHT. . . . . AS REQUIRED

**TAXI**

- 1. BRAKES . . . . . TEST
- 2. ATTITUDE INDICATOR . . . . . CHECK
- 3. TURN-AND-SLIP INDICATOR . . . . . CHECK
- 4. HEADING INDICATOR. . . . . CHECK
- 5. MAGNETIC COMPASS . . . . . CHECK

**PA-28-161 NORMAL PROCEDURES**

**PA-28-161 NORMAL PROCEDURES**

**RUN-UP**

- 1. BRAKES . . . . . HOLD
- 2. OIL TEMP. . . . . CHECK
- 3. MIXTURE . . . . . RICH

*IGNITION SYSTEM CHECK:*

- 4. THROTTLE . . . . . 2000 RPM
- 5. ENGINE INSTRUMENTS . . . . . CHECK
- 6. MAGS (R & L) . . . . . CHECK  
(175 RPM MAX DROP, 50 RPM MAX DIFFERENTIAL)

*CAUTION: IF MAGS ARE INADVERTENTLY TURNED OFF:*

- THROTTLE . . . . . CLOSE*
- MIXTURE . . . . . IDLE / CUTOFF*
- NORMAL START . . . . . PERFORM*

- 7. ANNUNCIATORS . . . . . CHECK (APPROX 1/2" MP DROP)
- 8. VACUUM SYSTEM . . . . . 5.0" ± 0.1
- 9. ALTERNATOR . . . . . CHECK

*IDLE MIXTURE:*

- 10. OIL PRESSURE . . . . . CHECK
- 11. OIL TEMPERATURE . . . . . CHECK
- 12. CARBURETOR HEAT . . . . . ON, CHECK FOR RPM DROP
- 13. THROTTLE . . . . . CLOSED (600-750 RPM)
- 14. CARBURETOR HEAT . . . . . OFF
- 15. THROTTLE . . . . . 1000 RPM

**PRESTART**

- 1. HOBBS/TACH TIME . . . . . RECORDED
- 2. PASSENGER BRIEF . . . . . COMPLETE
- 3. SEATS . . . . . ADJUST
- 4. HARNESS . . . . . FASTEN
- 5. WING FLAP LEVER . . . . . RAISE
- 6. LANDING LIGHTS . . . . . OFF
- 7. CARBURETOR HEAT . . . . . OFF
- 8. ANTI-COLLISION LIGHTS . . . . . CHECK ON
- 9. CIRCUIT BREAKERS . . . . . IN
- 10. FUEL SELECTOR . . . . . LOWEST TANK

**START**

*IF ENGINE COLD:*

- a. THROTTLE . . . . . SET 1/4" OPEN
- b. PERFORM STEPS 2-9
- c. IF NO START, PRIME ENGINE
- d. REPEAT START STEP 9-11

*ENGINE WARM:*

- 1. THROTTLE . . . . . SET 1/2" OPEN
- 2. FUEL BOOST PUMP . . . . . ON
- 3. MIXTURE . . . . . RICH
- 4. BRAKES . . . . . HOLD
- 5. MASTER . . . . . ON (OFF if external  
power is used)
- 6. FUEL PRESSURE . . . . . CHECK
- 7. PROP AREA . . . . . CLEAR
- 8. MAGS . . . . . BOTH
- 9. STARTER . . . . . ENGAGE (10 SEC MAX)
- 10. STARTER . . . . . RELEASE (WHEN ENG FIRES)
- 11. THROTTLE . . . . . 1000 RPM
- 12. OIL PRESSURE . . . . . CHECK (if no pressure w/in  
30 seconds, shutdown)
- 13. EXTERNAL POWER (if used) . . . . . DISCONNECT  
BATTERY - - ON
- 14. RADIO MASTER . . . . . ON
- 15. MIXTURE . . . . . LEAN

**PA-28-161 NORMAL PROCEDURES**

**PA-28-161 NORMAL PROCEDURES**

**PRE TAKEOFF**

- 1. MASTER . . . . . ON
- 2. CARBURETOR HEAT . . . . . OFF
- 3. SEAT BACKS . . . . . ERECT
- 4. ANTI-COLLISION LIGHTS. . . . . ON
- 5. FUEL SHUTOFF VALVE HANDLE. . . . . FULLEST TANK
- 6. FUEL PRESSURE . . . . . NORMAL
- 7. FUEL QUANTITY . . . . . CHECK
- 8. PRIMER. . . . . LOCKED
- 9. FLIGHT CONTROLS . . . . . FREE & CORRECT
- 10. TRIM TABS. . . . . SET
- 11. INSTRUMENTS . . . . . CHECKED & SET
- 12. MIXTURE. . . . . BEST POWER ABOVE S/L
- 13. MAGS . . . . . BOTH
- 14. FLAPS. . . . . SET (0-25°)
- 15. HARNESS . . . . . LOCKED
- 16. CABIN DOOR . . . . . SECURE
- 17. COMM / NAV / XPNDR. . . . . ON / ON / SET
- 18. AUTO PILOT. . . . . OFF

**TAKE OFF BRIEF**

- 1. PIC. . . . . IDENTIFY
- 2. XFR OF CONTROLS. . . . . POSITIVE 3 WAY
- 3. EMERGENCY OPS. . . . . **BRIEF**
  - a. This will be a [Normal, Short or Soft Field] takeoff.  
The wind is \_\_\_\_\_, computed T/O distance is \_\_\_\_\_ FT,  
T/O PWR is 2350-2450 RPM and  $V_R$  is **55 KIAS**.
  - b. Any problem before rotation, takeoff will be aborted.
  - c. Engine Failure prior to \_\_\_\_\_ FT MSL, we will maintain  
**73/63 KIAS** (flaps up/down), then land straight ahead.
  - d. Engine Failure above \_\_\_\_\_ FT MSL, we will  
[discuss options] and maintain **73 KIAS**.
- 4. T/O CLNC . . . . . CNTC TWR

**CRUISE**

- 1. THROTTLE . . . . . <= 75% RPM
- 2. MIXTURE . . . . . LEAN
- 3. ENGINE INSTS / ELEC SYS / SUCTION . . . . . CHECK
- 4. HEADING INDICATOR . . . . . SET
- 5. FUEL QUANTITY . . . . . CHECK
- 6. FUEL TANKS . **(USE BOOST PUMP)** . . . . . SWITCH (1 HR)
- 7. AUTO PILOT. . . . . AS REQ
- 8. LOCATION. . . . . DETERMINE
- 9.  $W_x$  . . . . . (WHEN EN ROUTE) . . . . . CHECK

**AEROBATICS / STALLS**

- 1. LOOSE GEAR . . . . . STOWED
- 2. FUEL BOOST PUMP . . . . . ON
- 3. HARNESS . . . . . LOCKED
- 4. THROTTLE . . . . . AS REQ
- 5. CANOPY. . . . . LOCKED
- 6. AREA. . . . . CLEAR

**POST AERO / STALL**

- 1. HEADING INDICATOR . . . . . RESET
- 2. FUEL SELECTOR . . . . . FULLEST TANK

**DESCENT**

- 1. MIXTURE . . . . . RICH
- 2. HEADING INDICATOR . . . . . SET
- 3. AUTO PILOT. . . . . AS REQ
- 4. A/S . . . . . 126 KIAS
- 5. POWER . . . . . 2500 RPM
- 6. ATIS / AWOS . . . . . COPY
- 7. ALTIMETER . . . . . SET
- 8. NAVAIDS. . . . . TUNED / IDENT
- 9. ENGINE INSTS / ELEC SYS / SUCTION . . . . . CHECK
- 10. FUEL QTY . . . . . CHECK
- 11. FUEL SELECTOR. **(USE BOOST PUMP)**. . . . . FULLEST TANK
- 12. LANDING LIGHTS. . . . . ON

**PA-28-161 NORMAL PROCEDURES**

**PA-28-161 NORMAL PROCEDURES**

AIRSPEEDS	KIAS
DOWNWIND . . . . .	80
PAST ABEAM (10° FLAPS) . . . . .	75
BASE (25° FLAPS) . . . . .	70
FINAL (0° FLAPS) . . . . .	70
NORMAL/SOFT/SHORT FINAL (40° FLAPS) .	63

AIRSPEEDS	KIAS
V <sub>R</sub> . . . . .	55
V <sub>X</sub> . . . . .	63
V <sub>Y</sub> . . . . .	79
CRUISE CLIMB. . . . .	87

**LANDING**

1. FUEL BOOST PUMP / FUEL QTY . . . . . ON / CHECK
2. MIXTURE . . . . . BEST POWER
3. CARBURETOR HEAT . . . . . AS REQ
4. HARNESS . . . . . LOCKED
5. FLAPS . . . . . AS REQUIRED
6. BRAKES . . . . . PKG OFF / PUMP
7. A/S . . . . . CALC
8. LDG LTS . . . . . ON

*CLEARED FOR TAKEOFF:*

1. LANDING LIGHTS . . . . . ON
2. FUEL BOOST PUMP . . . . . ON
3. TRANSPONDER . . . . . ON / ALT
4. HEADING INDICATOR. . . . . SET
5. NOSE WHEEL . . . . . CTRD
6. TAKE OFF TIME. . . . . NOTE

**AFTER LANDING**

1. MIXTURE . . . . . LEAN
2. FLAPS . . . . . UP
3. FUEL BOOST PUMP . . . . . OFF
4. LANDING LIGHTS . . . . . OFF
5. TAXI LIGHT . . . . . AS REQ
6. TRANSPONDER . . . . . STBY
7. TRIM TABS. . . . . SET FOR T/O

**SHORT FIELD TAKEOFF**

1. FLAPS . . . . . 25° (2<sup>nd</sup> notch)
2. BRAKES . . . . . HOLD
3. THROTTLE . . . . . FULL PWR
4. A/S . . . . . 52 KIAS (ROTATE)
5. A/S . . (Until Obstacle Clear) . . . . . 52 KIAS
6. OBSTACLE . . . . . CLEAR
7. ACCELERATE . . . . . 79 KIAS
8. FLAPS . . . . . RETRACT SLOWLY
9. CLIMB . . . . . 87 KIAS

**AFTER TAKEOFF**

1. FLAPS . . . . . UP
2. FUEL BOOST PUMP . . . . . OFF
3. FUEL CAPS . . . . . SECURE
4. ENG INSTS / ELEC SYS / SUCTION . . CHECK
5. LANDING LIGHTS . . . . . AS DESIRED
6. FLIGHT PLAN . . . . . OPEN

**PA-28-161 NORMAL PROCEDURES**

**PA-28-161 ABNORMAL PROCEDURES**

**SHUTDOWN**

- 1. THROTTLE . . . . . 1000 RPM
- 2. NAV / PNL / TAXI LTS . . . . . OFF
- 3. ELT . . . . . CHECK (121.5 MHZ)
- 4. RADIO MASTER SWITCH. . . . . OFF
- 5. THROTTLE . . . . . **(for 1 min)** . . . . . 1200 RPM
- 6. ENG INSTS. . . . . STABLE
- 7. THROTTLE . . . . . CLOSE
- 8. MAGS . . . . . GND CHECK
- 9. MIXTURE . . . . . IDLE CUTOFF

NOTE: IF ENG SHOULD FAIL TO STOP  
 THROTTLE . . . . . OPEN SLIGHTLY  
 FUEL SHUTOFF VALUE . . . . . OFF

- 10. MAGS . . . . . OFF
- 11. MASTER . . . . . OFF
- 12. KEY . . . . . ON DASH

**SECURING**

- 1. HOBBS/TACH TIME . . . . . RECORDED
- 2. FLIGHT CONTROLS . . . . . LOCKED
- 3. BAGGAGE DOOR. . . . . CLOSED
- 4. CABIN DOOR . . . . . SECURE / LOCKED

**POST FLIGHT**

- 1. FUEL. . . . . RECORD
- 2. WHEELS. . . . . CHOCKED
- 3. TIE DOWNS. . . . . SECURE
- 4. COVER. . . . . INSTALL
- 5. DISCREPANCIES. . . . . WRITE UP

**CLOSE FLIGHT PLAN**

*VFR LANDING AT A CONTROLLED FIELD:*

- 1. REMAIN OUTSIDE OR ABOVE CLASS D AIRSPACE UNTIL TRAFFIC FLOW DETERMINED.
- 2. TRANSMIT INTENTIONS "IN THE BLIND" ADVISING TOWER OF AIRCRAFT TYPE, POSITION, ALTITUDE, AND INTENTION TO LAND.
- 3. ENTER PATTERN, REPORT POSITION "IN THE BLIND", AND WATCH FOR LIGHT SIGNALS FROM TOWER.

*IF FAILURE OCCURS IN IFR CONDITIONS, CONTINUE FLIGHT ACCORDING TO THE FOLLOWING:*

ROUTE TO FLY (IN ORDER): (AVE F)

- A . . . . . ASSIGNED
- V . . . . . VECTORED
- E . . . . . EXPECTED
- F . . . . . FILED

ALTITUDE (HIGHEST OF FOR THE ROUTE SEGMENT BEING FLOWN): (MEA)

- M . . . . . MINIMUM IFR ALTITUDE
- E . . . . . EXPECTED AS ADVISED BY ATC
- A . . . . . ASSIGNED BY ATC

DESCENT FOR APPROACH:

FROM EN ROUTE ALTITUDE UPON REACHING THE IAF BUT NOT BEFORE:

- 1. EXPECT-FURTHER-CLEARANCE TIME (IF GIVEN)
- 2. ETA AS CALCULATED FROM FILED ETE

**PA-28-161 ABNORMAL PROCEDURES**

**FLOODED ENGINE (NO START AFTER 10 SEC)**

- 1. MIXTURE . . . . . IDLE / CUTOFF
- 2. THROTTLE . . . . . FULL OPEN
- 3. FUEL BOOST PUMP . . . . . OFF
- 4. STARTER . . . . . ENGAGE (10 SEC)
- 5. MIXTURE . . . . . RICH  
(WHEN ENGINE FIRES)

**NO START AFTER 2<sup>ND</sup> 10 SEC ATTEMPT**

- 1. MIXTURE . . . . . IDLE / CUTOFF
- 2. FUEL BOOST PUMP . . . . . OFF
- 3. BATTERY . . . . . OFF
- 4. MAGS . . . . . OFF
- 5. FUEL SHUTOFF HANDLE . . . . . OFF

*ALLOW STARTER TO COOL FOR 2 MINUTES, THEN REPEAT NORMAL START FROM STEP 2. IF THIS FAILS, SECURE ENGINE.*

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**GROUND BURNOUT**

- 1. MIXTURE . . . . . RICH
- 2. THROTTLE . . . . . 2200 RPM
- 3. MIXTURE . . . . . LEAN TO 50 RPM DROP  
BELOW BEST POWER

*AFTER 1 MINUTE:*

- 4. MIXTURE . . . . . RICH
- 5. MAGS . . . . . RECHECK

**RADIO FAILURE**

- 1. VOLUME . . . . . CHECK
- 2. HEADSET CONNECTION . . . . . CHECK
- 3. AUDIO CONTROLS . . . . . CHECK
- 4. CIRCUIT BREAKERS . . . . . CHECK
- 5. FREQUENCY . . . . . SWITCH
- 6. SQUAWK . . . . . 7600

*IF FAILURE OCCURS IN VFR CONDITIONS, OR VFR CONDITIONS ARE ENCOUNTERED AFTER FAILURE, CONTINUE FLIGHT UNDER VFR AND LAND AS SOON AS PRACTICABLE.*



## EMERGENCY PROCEDURES

Items marked with an asterisk (\*) are memory items.

### ENGINE FIRE DURING START

- \* 1. Mixture . . . . . IDLE CUTOFF
- \* 2. Fuel shutoff valve handle . . . . . OFF
- \* 3. Throttle . . . . . FULL FWD
- \* 4. Fuel Boost Pump . . . . . OFF
- \* 5. Continue cranking to clear engine, attempting a start.

#### *If no start:*

- \* 6. Ignition . . . . . OFF
- \* 7. Master . . . . . OFF
- \* 8. ABANDON AIRCRAFT

### ENGINE FIRE AFTER START ON GROUND

- \* 1. Mixture . . . . . IDLE CUTOFF
- \* 2. Fuel shutoff valve handle . . . . . OFF
- \* 3. Throttle . . . . . FULL FWD
- \* 4. Ignition . . . . . OFF
- \* 5. Master . . . . . OFF
- \* 6. ABANDON AIRCRAFT

### ABORTED TAKEOFF

- \* 1. Throttle . . . . . CLOSED
- \* 2. Brakes . . . . . APPLY

#### *If unable to stop on runway:*

- \* 3. Canopy . . . . . OPEN
- \* 4. Mixture . . . . . IDLE CUTOFF
- \* 5. Fuel shutoff valve handle . . . . . OFF
- \* 6. Ignition . . . . . OFF
- \* 7. Master . . . . . OFF
- \* 8. ABANDON AIRCRAFT after it stops



## LOW ALTITUDE ENGINE FAILURE

### *If engine fails at or below 1000 feet AGL:*

- \* 1. Assume safe gliding attitude. 63 KIAS FLAPS DOWN  
73 KIAS FLAPS UP
- \* 2. Select best available landing area and turn to intercept the emergency landing pattern at the maximum altitude practicable.
- \* 3. Flaps . . . . . AS DESIRED
- \* 4. Fuel shutoff valve handle . . . . . OFF
- \* 5. Master . . . . . OFF
- \* 6. Canopy . . . . . OPEN
- \* 7. Harness . . . . . LOCKED

### LOSS OF OIL PRESSURE / HIGH OIL TEMPERATURE

- \* 1. Precautionary Emer. Landing (PEL). . . . PERFORM  
TURN . . . . . TOWARD LDG SITE  
CLIMB . . . . . TO HIGH KEY  
CONFIGURATION . . . CLEAN  
ENG INTS . . . . . CHECK  
THROTTLE . . . . . MIN  
HIGH / LOW KEY . . . . ENTER  
AVIONICS MASTER. . . OFF  
FLAPS . . . . . (ON FINAL APPR) 40°  
A/S . . . . . **63 KIAS**  
MASTER . . . . . OFF  
CABIN DOOR . . . . . UNLATCH  
TOUCHDOWN . . . . . SLIGHTLY TAIL LOW  
MAGS . . . . . OFF  
BRAKES . . . . . APPLY HEAVILY

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## HIGH ALTITUDE / PARTIAL ENGINE FAILURE

- \* 1. Assume safe gliding attitude. Best glide is 73 KIAS
- \* 2. Select best available landing area and turn to intercept the emergency landing pattern at the maximum altitude practicable. If power is available, climb to an altitude from which the aircraft can glide to a high key position.
- \* 3. Flaps . . . . . AS DESIRED  
(aircraft clean will extend glide)
- \* 4. Fuel boost pump . . . . . ON
- \* 5. Fuel shutoff valve handle . . . . . FULLEST TANK
- \* 6. Mixture . . . . . FULL RICH
- \* 7. Carburetor Heat. . . . . ON
- \* 8. Primer . . . . . LOCKED
- \* 9. Ignition . . . . . ON, BOTH

**If engine still not running:**

- \*10. Mixture . . . . . IDLE CUTOFF
- \*11. Fuel shutoff valve handle . . . . . OFF
- \*12. Ignition . . . . . OFF
- \*13. Flaps . . . . . AS DESIRED
- \*14. Transmit appropriate radio call.
- \*15. Master . . . . . OFF
- \*16. Canopy . . . . . OPEN
- \*17. Harness . . . . . LOCKED

## LOSS OF FUEL PRESSURE

- \* 1. Fuel Boost Pump . . . . . ON
- \* 2. Fuel selector . . . . . FULLEST TANK

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## EMERGENCY LANDING PATTERN

TO BE USED FOR:

- ENGINE FAILURE OR MALFUNCTION
- PRECAUTIONARY EMERGENCY LANDING
- SIMULATED ENGINE FAILURE

### 1 DESCENT

- A/S - 73 KIAS
- Flaps - UP
- Canopy - CLOSED  
(open prior to high key)

### 2 HIGH KEY (1,500 FEET AGL)

- 73 KIAS over intended point of landing

### 3 LOW KEY (1,000 FEET AGL)

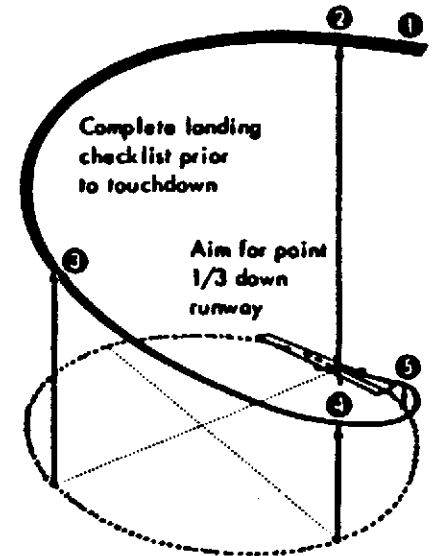
- Wingtip distance abeam intended point of landing.

### 4 90-DEGREE (500-600 FEET AGL)

- Complete Landing Checklist.
- Flaps – AS DESIRED. Adjust to 63 KIAS with flaps down.

### 5 FINAL

- 800 feet straightaway.
- 200 feet AGL
- Canopy – OPEN



  
**ENGINE ROUGHNESS**

- \* 1. Carburetor heat . . . . . ON

**If roughness continues after 1 min:**

- \* 2. Carburetor heat . . . . . OFF
- \* 3. Mixture . . . . . ADJ FOR MAX SMOOTHNESS
- \* 4. Fuel Boost Pump . . . . . ON
- \* 5. Fuel Selector . . . . . SWITCH
- \* 6. Engine Instruments . . . . . CHECK
- \* 7. Magnetos . . . . . SWITCH L/R BOTH

If operation is satisfactory on either one, continue on that magneto at reduced power and full "RICH" mixture to nearest airport. Perform PEL

**CARBURETOR ICING**

- \* 1. Carburetor heat . . . . . ON
- \* 2. Mixture . . . . . ADJ FOR MAX SMOOTHNESS

**ENGINE FIRE IN FLIGHT**

- \* 1. Mixture . . . . . IDLE CUTOFF
- \* 2. Fuel shutoff valve handle . . . . . OFF
- \* 3. Throttle . . . . . CLOSED
- \* 4. Ignition . . . . . OFF
- \* 5. Master . . . . . OFF
- \* 6. Heater/Defroster . . . . . OFF
- 7. Do not attempt restart
- 8. Execute emergency landing

  
**ELIMINATION OF SMOKE**

- \* 1. Vents . . . . . OPEN

**CARBON MONOXIDE FUMES*****If carbon monoxide contamination is suspected:***

- \* 1. Vents . . . . . OPEN

**ALTERNATOR FAILURE**

- 1. Electrical Load . . . . . REDUCE
- 2. Nonessential electrical equipment . . . OFF (to conserve battery)
- 3. Alternator . . . . . OFF
- 4. Alternator . . . . . (after 1 sec). ON

**If no output:**

- 5. Alternator . . . . . OFF



**DAMAGED AIRCRAFT AIRBORNE**

- 1. If aircraft is controllable, climb to at least 5000 feet.
- 2. Communicate – state difficulty, request visual inspection.
- 3. Check flight characteristics:
  - a. Flaps down . . . . . 63 KIAS
  - b. Flaps up . . . . . 73 KIAS
- 4. Fly wide approach, maintaining 10 knots above minimums obtained during flight tests.

**LOST PLANE**

- 1. Confess
- 2. Communicate
- 3. Climb
- 4. Conserve
- 5. Comply with enroute procedures
- 6. Know any peculiar local area procedures



**ELECTRICAL FIRE IN FLIGHT**

- \* 1. Source of fire . . . . . DETERMINE
- \* 2. Master . . . . . OFF
- 3. All circuit breakers . . . . . PULL
- 4. All radio / electrical equipment . . . . . OFF
- 5. Vents . . . . . OPEN
- 6. Cabin Heat/Defroster . . . . . OFF

***If fire persists:***

- 7. Make emergency landing

***To isolate faulty circuit:***

- 8. Master . . . . . ON
- 9. Check each necessary circuit one at a time by pushing IN circuit breaker and turning ON radio / electrical equipment it services.
- 10. Secure unnecessary radio / electrical equipment to conserve battery.

**WING FIRE IN FLIGHT**

A fire in the wing could be caused by fuel leakage and / or defective electrical wiring. Perform the following procedure:

- \* 1. Master . . . . . OFF
- \* 2. Attempt to extinguish the fire by slipping aircraft away from fire.
- \* 3. If fire does not extinguish or is obviously fed by fuel . . . . . LAND ASAP



## FLAT TIRE

1. Touch down well over opposite side of runway to allow room for a swerve and hold directional control with opposite brake.
2. Avoid hard applications of brake.
3. After landing with a flat tire, perform the Secure Checklist when the aircraft comes to a complete stop and have the aircraft towed clear of the landing area.
4. Do not taxi in with a flat tire.

## BRAKE FAILURE

If no brake pressure was evident during landing pattern brake check, land aircraft as short as possible using full flaps to shorten landing roll. After touchdown, secure the engine. When the aircraft comes to a complete stop, complete the remaining items on the Secure Checklist and have the aircraft towed clear of the landing area.

## HARD LANDINGS

### *If on the runway:*

1. Runway permitting, execute a full stop.
2. Do not attempt to taxi the aircraft.

### *If airborne:*

3. Have landing gear checked visually by another pilot or by tower on a flyby, if possible.
4. If the check reveals no visible damage, execute a normal full flap landing and proceed as in steps 1 and 2.
5. If visual damage is confirmed, execute appropriate emergency procedure.



## DITCHING

1. Plan to touch down before all fuel is exhausted to have power for controlled approach.
2. Make radio distress call.
3. Squawk . . . . . 7700
4. Radio cords . . . . . DISCONNECT
5. Harness . . . . . LOCK
6. Canopy . . . . . OPEN
7. Flaps . . . . . DOWN
8. Master . . . . . OFF
9. Make normal approach with power, if possible.  
Approach stall attitude at a speed under which full control of aircraft can be maintained. Plan landing direction as follows:  
Calm sea – Into wind  
Moderate swells – Parallel to swells  
High swells (25 knots of wind or more) – Into wind, attempting to land on upwind side of swell.
10. Release safety belt ONLY after aircraft has come to a full stop.
11. ABANDON AIRCRAFT



## SPIN RECOVERY

1. Ailerons . . . . . NEUTRAL
2. Throttle . . . . . IDLE
3. Rudder . . . . . FULL OPPOSITE  
DIRECTION OF SPIN (OPPOSITE TURN NEEDLE)
4. Control Stick . . . . . FULL FWD
5. Rudder . . . . . NEUTRAL WHEN  
ROTATION STOPS
6. Control Stick . . . . . RECOVER



## OPEN DOOR

If both upper and side latches are open, the door will trail slightly open and airspeeds will be reduced slightly.

### To close in flight:

1. Airspeed . . . . . 80 KIAS
2. Cabin Vents . . . . . CLOSE
3. Storm Window . . . . . OPEN
4. Harness . . . . . LOCK
5. If upper latch is open . . . . . LATCH
6. If side latch is open . . . . . LATCH  
Pull on armrest while moving latch to latched position.
7. If both latches are open. . . . . SECURE SIDE,  
THEN TOP