**After Takeoff** (Out of 1000’ AGL)

- AIRSPEED: \( V_s \) / \( V_x \) / AS REQ
  - \( V_s \) or \( V_x \) if a maximum performance climb is necessary, use speeds in rate-of-climb data charts in section 5 of the POH/AFM.

- FLAPS: UP
- THROTTLE: FULL
- MIXTURE: FULL RICH BELOW 3000’ MSL

**Cruise**

- POWER: \( \leq 75\% \) Power per POH/AFM) SET
- ENGINE INSTRUMENTS: CHECK
- LANDING LIGHT: ON (for local training) / OFF (for XC cruise)
- MIXTURE: LEAN AS REQUIRED
- MAG COMPASS / HI: COMPLETE.
- CROSSWIND COMPONENT: COMPLETE
- AIRPORT DIAGRAM (Keep available): CHECK
- SEAT BELTS: FASTENED
- MIXTURE: SLIGHTLY ENRICH

**In-Range / Descent**

- ATIS / AWOS (As early as possible): CHECK
- ALTIMETER: SET
- PRELIMINARY APPROACH BRIEF
  - Type of Approach
  - Runway length / Lighting
  - Field Elevation / Sector Altitude
  - Highest Obstacle / Terrain Review
  - NAV / Course / Minimums / Missed
  - Crosswind Component: COMPLETE
- AIRPORT DIAGRAM (Keep available): CHECK
- SEAT BELTS: FASTENED
- MIXTURE: SLIGHTLY ENRICH

**Approach** (Approx 15 NM from Airport)

- ATIS/AWOS: CHECK
- APPROACH BRIEFING: COMPLETE
- ALTIMETER: SET
- HEADING INDICATOR TO COMPASS: SET
- FUEL SELECTOR: BOTH
- PARKING BRAKE: CHECK RELEASED
- LANDING LIGHT: ON
- When Direct to IAF or Vectored
  - FLIGHT & NAV INSTRUMENTS: SET/IDENT
  - GPS (As Required for Approach): SET
  - AIRSPEED: 100 KIAS

**Before Landing Checklist**

- SEATBELT & SHOULDER HARNESS: ON
- FUEL SELECTOR: BOTH
- MIXTURE: FWD
- CARB HEAT: ON
- FLAPS: AS REQUIRED

**Go Around / Missed Approach**

- THROTTLE: FULL
- PITCH: FOR \( V_x \) CLIMB
- CARB HEAT: OFF
- FLAPS: RETRACT TO 20°
- FLAPS: RETRACT TO 10°

**At Safe Altitude & Airspeed**

- FLAPS: UP
- FLY: ASSIGNED/PUBLISHED HEADING & ALTITUDE

**After Landing** (Stopped)

- TRIM: CENTERED
- CARB HEAT: OFF
- FLAPS: UP
- TRANSPONDER: STANDBY
- LANDING & TAXI LIGHTS: AS REQ
- MIXTURE: SLIGHTLY LEAN
- TAXI CLEARANCE: OBTAIN & BRIEF

**Shutdown/Terminate**

- AVIONICS MASTER: OFF
- THROTTLE: 1000 RPM
- MIXTURE: CUTOFF
- IGNITION SWITCH: OFF
- MASTER SWITCH: OFF
- ELECTRICAL SWITCHES: OFF
- A/C FLIGHT TRACKER ENTRY: SENT
- FLIGHT CONTROLS: SECURE
- SUNSCREENS: INSTALL
- TIEDOWN / CHOCK: SECURE
- WALKAROUND: COMPLETE

**Avoid Slips with Flaps Extended**

**Preflight Inspection**

- WEATHER: CHECK
- WEIGHT AND BALANCE: COMPUTE
- FUEL: (Full, unless limited by W&B) AS REQ
- OIL: (6 Qt. Minimum) AS REQ
- PITOT HEAT: (IF IFR) CHECK
- FIRE EXTINGUISHER: CHECK
- AIRCRAFT DOCUMENTS: CHECK
- CONTROL WHEEL LOCK: REMOVE
- POH/AFM: CHECK
- IGNITION SWITCH: OFF
- MASTER SWITCH: ON
- FUEL QUANTITY: CHECK
- ALTERNATE STATIC SOURCE: OFF
- BEACON/ANTI-COLLISION LT, NAV, & LANDING LIGHTS: CHECK
- FLAPS: FULLY EXTEND
- MASTER SWITCH: OFF
- FUEL SELECTOR VALVE: BOTH
- BAGGAGE AND LOOSE ITEMS: STOWED

**Empennage**

- BAGGAGE DOOR: CHECK
- RUDDER GUST LOCK: REMOVE
- CONTROL SURFACES: (Freedom & security) CHECK
- TRIM TAB: CHECK
- ANTENNAS: CHECK

**Right Wing Trailing Edge**

- FLAP: (Security) CHECK
- AILERON: (Freedom & security) CHECK

**Right Wing & Leading Edge**

- FUEL QUANTITY: CHECK VISUALLY
- FUEL FILLER CAP: SECURE
- FUEL TANK SUMP: CHECK

Check for water and sediment.
**Preflight Inspection (Continued)**

**Nose**
- WINDSHIELD: Check for cleanliness
- FUEL STRAINER: Take sample. Check for water and sediment.
- OIL LEVEL: Check. Do not operate with less than 5 quarts.
- OIL ACCESS DOOR: Secure
- ENGINE COOLING AIR INLETS: Check
- PROPELLER & SPINNER: Check
- LANDING & TAXI LIGHT(S) (if applicable): Check
- ENGINE AIR FILTER: Check
- NOSE WHEEL STRUT (Approx. 3" Extension): Check
- NOSE WHEEL TIRE: Check
- STATIC SOURCE OPENING: Check

**Left Wing**
- FUEL QUANTITY: Check visually
- FUEL FILLER CAP: Secure
- PITOT TUBE COVER: Remove
- PITOT TUBE: Check unobstructed
- STALL HORN OPENING: Check unobstructed
- FUEL TANK VENT: Check
- FUEL TANK SUMP: Check

**Left Wing Trailing Edge**
- AILERON: Freedom & security check
- FLAP: Security check
- MAIN WHEEL TIRE, BRAKE DISC & PADS: Check

**Before Starting Engine**
- PREFLIGHT INSPECTION: Complete
- WT&BAL, DOCS, PERFORMANCE: Check
- PASSENGER BRIEF: Complete
- SEAT & SEAT BELTS: Adjust and lock
- CIRCUIT BREAKERS: Check in electrical switches
- IGNITION SWITCH: Off
- AVIONICS MASTER SWITCH: Off
- ALTERNATE STATIC SOURCE: Off
- FUEL SELECTOR VALVE: Both
- CARBURATOR HEAT: Cold
- MASTER SWITCH: On
- BEACON/ANTICOLLISION LIGHT: On
- POSITION LIGHT: (Night only) On

**Run Up**
- MIXTURE: Full fwd
- THROTTLE: 1800 RPM
- MAGNETOS: Check

**Engine Start**

**Cold Engine**
- PRIMER: 3 strokes & lock
- MIXTURE: Rich
- THROTTLE: Cycle 1 stroke & ¼" open
- BRAKES: Hold
- PROP AREA: Hold
- IGNITION: (ATP 8 second max) Start

**Warm Engine**
- MIXTURE: Rich
- THROTTLE: ¼" open
- BRAKES: Hold
- PROP AREA: Hold
- IGNITION: (ATP 8 second max) Start

**If Engine Does Not Start**
- WAIT 30 SECONDS
- THROTTLE: Cycle 2 strokes & close
- IGNITION: (ATP 8 second max) Start (Do not attempt another start by cycling throttle. Use primer only)

**When Engine Starts**
- THROTTLE: 1000 RPM
- OIL PRESSURE: Check green
- MIXTURE: Lean for rpm rise
- THROTTLE: 1000 RPM
- FLAPS: Up

**After Start**
- HEADSETS: On
- AVIONICS MASTER SWITCH: On
- COMS: ATIS/AWOS/CLEARANCE if req
- ALTIMETER: Set
- GPS: Enter WPT / FPL / APR as req
- NAVS: Set / course
- FLIGHT INSTRUMENTS: (AI/TC/COMPASS & HI/VS) Check

**Taxi**
- TAXI CLEARANCE: Obtain / brief
- TAXI AREA: Clear
- BRAKES: Check
- FLIGHT INSTRUMENTS: (AI/TC/HI/VS): Check

**Before Takeoff**
- Initial Altitude & Heading
- Brief Departure Procedure
- MIXTURE: Full fwd
- ENGINE CONTROL: On
- SEAT BELTS: Most upright position
- SEAT BELT & SHOULDER HARNESS: Fastened

**Final Items When #1 for Takeoff**
- DOORS & WINDOWS: Closed & locked
- LANDING LIGHT: On
- STROBE LIGHT: On
- TRANSPIPER: On
Cleaning Fouled Spark Plugs After Excessive RPM Drop

(CAUTION: Hold brakes securely and remain vigilant for aircraft movement.)

THROTTLE........................................................................ 2500 RPM
MIXTURE ........................................................................ LEAN FOR RPM RISE
MAINTAIN FOR 30 SECONDS
MIXTURE .......................................................................... FULL FORWARD
THROTTLE........................................................................ 1700 RPM
PERFORM MAGNETO CHECK

Spin Recovery

In the event the aircraft enters an unintentional spin, proceed as follows.

THROTTLE ........................................................................ IMMEDIATELY CLOSED
AILERONS ........................................................................ NEUTRALIZE
RUDDER ........................................................................... FULL, OPPOSITE ROTATION
ELEVATOR CONTROL ..............................................................
...................................................................................... BRISKLY FORWARD PAST CENTER
ONCE ROTATION STOPS
RUDDER ........................................................................... NEUTRALIZE
SLOWLY RECOVER FROM DIVE
WHEN STRAIGHT AND LEVEL
THROTTLE ........................................................................... FULL

Engine Failure During Flight

AIRSPEED ................................................. BEST GLIDE / 65-70 KIAS
NOTE WIND DIRECTION AND SPEED
PICK & FLY TOWARDS LANDING SITE
CARB HEAT .......................................................... ON
MIXTURE ............................................................. RICH
FUEL SELECTOR VALVE .................................................. BOTH
PRIMER .......................................................................... IN & LOCKED
MAGNETOS .................................................................. CHECK ALL
IF PROP NOT WINDMILLING
IGNITION SWITCH ...................................................... START
MAGNETOS ................................................................. CHECK ALL

Precautionary Landing with Engine Power

LANDING AREA .................................................. SELECT & INSPECT
RADIO & ELECTRICAL SWITCHES .......................... OFF
ON FINAL APPROACH
FLAPS ...........................................................(40°/60 KIAS Recommended) AS REQ
MASTER SWITCH ................................................... OFF
DOORS ........................................................................ (Prior to touchdown) UNLATCH
IGNITION SWITCH .......................................................... OFF
BRAKES ...................................................................... APPLY HEAVILY

Engine Failure During Takeoff Roll

THROTTLE ........................................................................ CLOSE
BRAKES ......................................................................... APPLY
FLAPS .............................................................................. UP
MIXTURE .......................................................................... CUT OFF
IGNITION SWITCH ........................................................... OFF
MASTER SWITCH ............................................................. OFF

Engine Failure During Takeoff

MAINTAIN AIRCRAFT CONTROL
LAND ON REMAINING RUNWAY OR
WITHIN 30° OF CENTERLINE. AVOID OBSTACLES.
DO NOT ATTEMPT 180° TURN.
AIRSPEED ................................................. BEST GLIDE / 65-70 KIAS (Flaps Up)
FLAPS .............................................................................. AS REQ.
POWER ........................................................................ AS AVAILABLE
TIME PERMITTING .................................................. DECLARE EMERGENCY
MIXTURE ...................................................................... CUTOFF
FUEL SELECTOR VALVE .................................................. OFF
IGNITION SWITCH .......................................................... OFF
FLAPS ...........................................................(40°/60 KIAS Recommended) AS REQ
MASTER SWITCH ............................................................. OFF
DOORS ........................................................................ (Prior to touchdown) UNLATCH
### Electrical Fire
- **Master Switch** ................................................. Off
- All Electrical Switches ........................................ Off
- Vents, Cabin Heat & Air ....................................... Closed
- Fire Extinguisher ............................................... Activate

#### When Fire is Out
- Cabin ................................................................ Ventilate
- If fire appears out & electrical power req’d
  - Master Switch ................................................. On
  - Circuit Breakers ................................................ (Do not reset) Check
  - Master Avionics Switch ................................. On
  - Radios ........................................................... One at a time with a delay after each
  - Land as soon as possible

### Cabin Fire
- **Master Switch** ................................................. Off
- Vents, Cabin Heat & Air ....................................... Closed
- Fire Extinguisher ............................................... Activate

#### When Fire is Out
- Cabin ................................................................ Ventilate
- Land as soon as possible

### Wing Fire
- Landing/Taxi Light Switches .......................... Off
- Nav Light Switch .................................................. Off
- Strobe Light Switch ............................................ Off
- Pitot Heat Switch ................................................ Off

Perform a sideslip to keep the flames away from the fuel tank and cabin. Land as soon as possible using flaps only as required for final approach and touchdown.

### Ammeter: Excessive Rate of Charge

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternator</td>
<td>Off</td>
</tr>
<tr>
<td>Non-Essential Elec. Equipment</td>
<td>Off</td>
</tr>
<tr>
<td>Land as soon as possible</td>
<td></td>
</tr>
</tbody>
</table>

Compass may be off as much as 25°.

### Over-Voltage Light Illuminates

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Switch</td>
<td>Off (Both sides)</td>
</tr>
<tr>
<td>Over Voltage Light</td>
<td>On</td>
</tr>
<tr>
<td>If over-voltage light illuminates again</td>
<td>Check off</td>
</tr>
<tr>
<td>Land as soon as possible</td>
<td></td>
</tr>
</tbody>
</table>

### Ammeter Shows Discharge

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternator</td>
<td>Off</td>
</tr>
<tr>
<td>Non-Essential Elec. Equipment</td>
<td>Off</td>
</tr>
<tr>
<td>Land as soon as possible</td>
<td></td>
</tr>
</tbody>
</table>

### Low Voltage Light During Flight

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radios, Avionics Power Switch</td>
<td>Off</td>
</tr>
<tr>
<td>Master Switch</td>
<td>Off</td>
</tr>
<tr>
<td>Over Voltage Light</td>
<td>Off (Both sides)</td>
</tr>
<tr>
<td>If low voltage light re-illuminates</td>
<td>On</td>
</tr>
<tr>
<td>Radios, Avionics Power Switch</td>
<td>Off (Both sides)</td>
</tr>
<tr>
<td>Alternator</td>
<td>Off</td>
</tr>
<tr>
<td>Non-Essential Elec. Equipment</td>
<td>Off</td>
</tr>
<tr>
<td>Land as soon as possible</td>
<td></td>
</tr>
</tbody>
</table>

### Static Source Blockage

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate Static Source Valve</td>
<td>Pull on Airspeed</td>
</tr>
<tr>
<td>Airspeed</td>
<td>Consult Tables in POH/AFM Section 5</td>
</tr>
</tbody>
</table>

### Engine Fire During Start

- Continue cranking in an attempt to get the engine started which would suck the flames and accumulated fuel through the carburetor and into the engine.

#### If Engine Starts
- Throttle ................................................. (For 2 minutes) 1700 RPM
- Mixture .................................................. Cutoff

#### If Engine Does Not Start
- Mixture .................................................. Cutoff
- Throttle .................................................. Full
- Continue cranking for a few seconds
- Fuel Selector ......................................... Off
- Master Switch ......................................... Off
- Ignition Switch ....................................... Off
- Evacuate aircraft, obtain fire extinguisher & extinguish fire if practical

### Engine Fire In Flight

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>Idle cut off</td>
</tr>
<tr>
<td>Fuel Selector</td>
<td>Off</td>
</tr>
<tr>
<td>Master Switch</td>
<td>Off</td>
</tr>
<tr>
<td>Cabin Heat &amp; Air (Except overhead vents)</td>
<td>Off</td>
</tr>
<tr>
<td>Airspeed</td>
<td></td>
</tr>
</tbody>
</table>

- Increase as req to extinguish fire
- Refer to “Emergency Landing No Engine Power” Checklist

### Emergency Landing No Engine Power

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landing Area</td>
<td>Select &amp; Inspect</td>
</tr>
<tr>
<td>Airspeed</td>
<td>Best Glide / 65-70 KIAS (Flaps Up)</td>
</tr>
<tr>
<td>Radio &amp; Electrical Switches</td>
<td>Off</td>
</tr>
<tr>
<td>Mixture</td>
<td>Cutoff</td>
</tr>
<tr>
<td>Fuel Selector Valve</td>
<td>Off</td>
</tr>
<tr>
<td>Ignition Switch</td>
<td>Off</td>
</tr>
<tr>
<td>Flaps (40˚/60 KIAS Recommended)</td>
<td>Off</td>
</tr>
<tr>
<td>Doorsw (Prior to touchdown)</td>
<td>Unlatch</td>
</tr>
<tr>
<td>Brakes</td>
<td>Apply Heavily</td>
</tr>
</tbody>
</table>

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172 K-P Emergency & Abnormal