

# Pilot's Checklist



***PIPER***  
***SENECA***  
***PA-34-200***

Original Issue – 10/31/2012

## REVISIONS

Changes and/or additions in this checklist will be covered by Owner Advisories published by the Piper Aircraft Corporation. It is the responsibility of DSU to maintain this checklist in a current status when it is used for operational purposes. Additional checklist procedures may be inserted within the manufacture's procedures by DSU Flight Operations

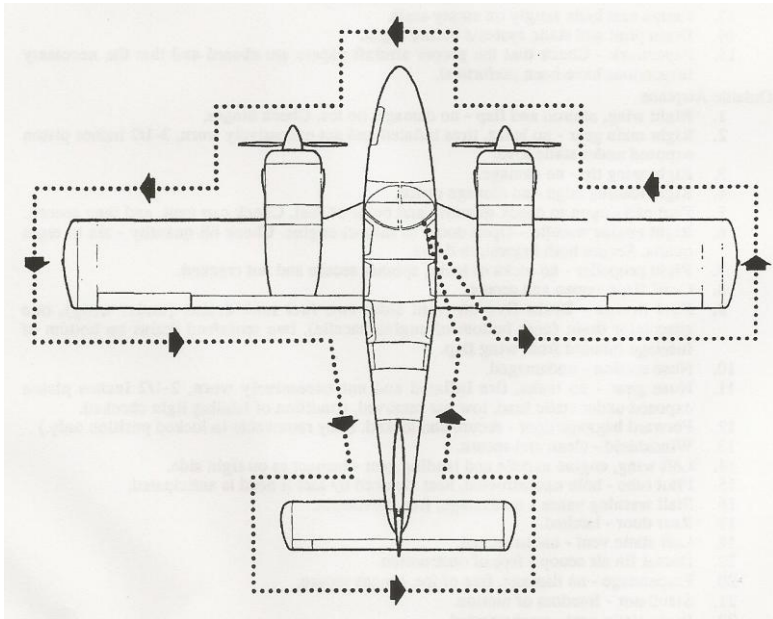
A revision bar will extend the full length of new or revised text and/or illustrations added on new or existing pages. This Bar will be located adjacent to the applicable revised area on the outer margin of the page. All revised pages will carry the date of the revision on the applicable page.

## LOG OF REVISIONS

<u>Revision</u>	<u>Date</u>
Original Issue	October 31,2012

ALL REFERENCES TO SECTIONS THROUGHOUT THIS CHECKLIST PERTAIN TO THE APPROPRIATE SECTION OF THE PILOT'S OPERATING MANUAL, OPERATING INSTRUCTIONS SECTION.

## NORMAL PROCEDURES



Visually check airplane for general condition during walk-around inspection. In cold weather, remove even the smallest of accumulations of frost, ice or snow from wing, tail and control surfaces. If a night flight is planned, check operation of all lights and ensure a flashlight is available. For detailed information and explanation of these procedures, refer to the Airplane Flight Manual, Operating Instructions

Procedures in the following Normal checklist shown in **bold-faced** should be committed to memory.

**PREPARATION**

Flight Log.....CHECK FOR OPEN SQUAWKS  
Hobbs/Tach Meters ..... RECORD  
100 Hour/Annual Insp/VOR. .... CHECK  
Required Papers.....ON BOARD  
Weather..... SUITABLE  
Baggage ..... WEIGHED, STOWED, TIED  
Weight and C.G. .... WITHIN LIMITS  
Navigation ..... PLANNED  
Charts and navigation equipment .....ON BOARD  
Performance and range .....COMPUTED AND SAFE

**PREFLIGHT CHECK****COCKPIT**

Control Wheel..... RELEASE BELT  
Landing Gear Handle ..... DOWN  
Parking Brake ..... SET  
Avionics ..... OFF  
All Switches ..... OFF  
Magneto Switches ..... OFF  
Master Switch ..... ON  
Landing Gear Lights ..... 3 GREEN NO RED  
Fuel Quantity Gauges ..... CHECK  
Cowl Flaps..... OPEN  
Internal Lights..... CHECK  
External Lights..... CHECK  
Stall Warning Horns..... TEST  
Pitot Heat..... CHECK  
Master Switch ..... OFF  
Mixture ..... IDLE CUT-OFF  
Trim ..... SET TO NEUTRAL  
Flaps ..... EXTEND FULL DOWN



## **Nose Section**

General Condition..... CHECK  
 Windshield..... CLEAN  
 Nose Gear Components..... CHECK  
 Landing/Taxi Lights ..... CHECK  
 Nose Gear Doors..... SECURE  
 Nose Gear Strut..... EXTENDED 2 ½ INCHES  
 Chock ..... REMOVE  
 Tire ..... CHECK  
 Forward Baggage Door ..... CHECK/SECURE/LOCK  
 External Receptacle ..... CLOSED

## **Left Wing**

Chock ..... REMOVE  
 Tire Condition ..... CHECK  
 Shock Strut..... EXTENDED 3 ½ INCHES  
 Brake Block/Disc/Pad ..... CHECK  
 Hydraulic Lines ..... CHECK  
 Main Gear Components..... CHECK  
 Main Gear Doors ..... SECURE  
 Engine Compartment..... OPEN AND INSPECT  
 Engine Oil..... CHECK 6-8 QUARTS  
 Engine Nacelle ..... SECURE  
 Propeller and Spinner..... CHECK  
 Wing Tie-Down ..... REMOVE  
 Air Intakes ..... UNOBSTRUCTED  
 Cowl Flaps..... OPEN AND SECURE  
 Gascolator ..... DRAIN AND CHECK  
 Fuel Tank ..... VISUALLY CHECK SUPPLY  
 Fuel Vents ..... CHECK OPEN  
 Tank Sumps ..... DRAIN CHECK FOR WATER  
    SEDIMENT AND PROPER FUEL  
 Pitot Mast ..... CHECK OPEN  
 Stall Warning Vanes ..... CHECK

Wing Tip and Lights ..... CHECK  
Aileron, Hinges and Actuator ..... CHECK  
Flap, Hinges and Actuator ..... CHECK  
Static Wicks ..... CHECK  
Surface Condition ..... FREE OF ICE, SNOW, FROST

### **Fuselage, Left Side**

Condition ..... FREE OF ICE, SNOW, FROST  
Antennas ..... SECURE  
Side Windows ..... CLEAN  
Left Static Vent ..... CLEAR  
Side Door ..... SECURE

### **Empennage**

Condition ..... FREE OF ICE, SNOW, FROST  
Fresh Air Inlet ..... UNOBSTRUCTED  
Stabilator Trim and Push Rod ..... CHECK  
Rudder and Stabilator Hinges ..... CHECK  
Tie Down ..... REMOVE

### **Fuselage, Right Side**

Condition ..... FREE OF ICE, SNOW, FROST  
Antennas ..... SECURE  
Right Static Vent ..... CLEAR  
Side Windows ..... CLEAN

## Before Starting Engines

Passengers .....	BRIEFED
Seats .....	ADJUSTED
Cabin Door .....	CLOSE and SECURE AS REQUIRED
Belts and Harnesses .....	FASTENED - CHECK INERTIA REEL
Parking Brake .....	SET
Cabin Fan .....	OFF
Fuel Selectors .....	BOTH ON
Circuit Breakers .....	IN
Avionics Switch .....	OFF
Cowl Flaps .....	OPEN
Alternate Air .....	OFF
Anti-Collision Light .....	ON
Alternators .....	ON

## Starting Engines when COLD

## NOTE

To prevent starter damage, limit starter cranking to 30-second periods. If the engine does not start within that time, allow a cooling period of several minutes before engaging starter again. Do not engage the starter immediately after releasing it.

Mixture Controls .....	IDLE CUT-OFF
Throttle Controls .....	OPEN ½ INCH
Propeller Controls.....	FULL FORWARD
Master/Battery Switch.....	ON
Magneto Switches .....	ON
Electric Fuel Pumps.....	ON
Mixture Controls .....	RICH POSITION UNTIL
	FUEL FLOW then IDLE CUT-OFF
Electric Fuel Pump .....	OFF
Propeller Area .....	CLEAR



Starter ..... ENGAGE  
Mixture ..... ADVANCE AS ENGINE STARTS  
Throttle ..... SET TO 1,000 RPM  
Oil Pressure..... CHECK

*REPEAT SEQUENCE FOR #2 ENGINE*

Electric Fuel Pumps.....OFF, CHECK PRESSURE

### **Starting Engine when HOT**

Mixture Controls ..... IDLE CUT-OFF  
Throttle Controls ..... OPEN ½ INCH  
Propeller Controls.....FULL FORWARD  
Master/Battery Switch..... ON  
Magneto Switches ..... ON  
Electric Fuel Pumps..... OFF

Propeller Area .....CLEAR  
Starter ..... ENGAGE  
Mixture ..... ADVANCE AS ENGINE STARTS  
Throttle ..... SET TO 1,000 RPM  
Oil Pressure..... CHECKED

*REPEAT SEQUENCE FOR #2 ENGINE*

### **NOTE**

If an engine does not start with the above method, which omits the priming, use the normal Starting Engine when COLD procedure, which includes priming

### **Starting Engine when FLOODED**

Mixture Control ..... IDLE CUT-OFF  
Throttle .....FULL FORWARD  
Propeller Control.....FULL FORWARD  
Master/Battery Switch..... ON  
Magneto Switches ..... ON  
Electric Fuel Pump ..... OFF

Propeller Area ..... CLEAR  
 Starter ..... ENGAGE  
 Throttle ..... RETARD WHEN ENGINE STARTS  
 Mixture ..... ADVANCE SLOWLY  
 Throttle ..... SET TO 1,000 RPM  
 Oil Pressure ..... CHECKED

### **Starting Engine with EXTERNAL POWER**

Master/Battery Switch ..... OFF  
 Terminals ..... CONNECT  
    RED LEAD to POS (+)  
    BLACK LEAD to NEG (-)  
 Master/Battery Switch ..... ON  
 Magneto Switches ..... ON  
 Engine ..... START  
 Master/Battery Switch ..... OFF  
 External Power ..... DISCONNECT  
 Master/Battery Switch ..... ON

#### **NOTE**

Do not attempt flight if there is no indication of alternator output

### **Warm-UP Checklist**

Throttle ..... 1000 RPM  
 Oil Pressure ..... CHECK

**Pre-Taxi Checklist**

Fuel Pump .....OFF, CHECK PRESSURE  
Avionics Switch..... ON  
Mixture ..... LEAN FOR TAXI  
Transponder .....ALT  
ATIS/Airport Info ..... RECEIVED  
Altimeter ..... SET  
Heading Indicator ..... CHECK TO COMPASS  
Departure Clearance ..... RECEIVED  
Transponder ..... SET  
Nav Radios ..... SET  
Comm Radios..... SET  
Taxi Light..... AS REQUIRED

**Taxi Checklist**

Taxi Area .....CLEAR  
Parking Brake ..... RELEASE  
Throttle ..... APPLY SLOWLY  
Brakes ..... CHECK  
Steering ..... CHECK  
Mag Compass ..... SWINGS FREELY  
Attitude Indicator ..... ERECT  
Turn Coordinator ..... SHOWS TURN DIRECTION  
Ball & Inclinometer..... MOVES TO OUTSIDE OF TURN  
Left Fuel Selector ..... CROSSFEED (1 min) then ON  
Right Fuel Selector ..... CROSSFEED (1 min) then ON

**NOTE**

Do not attempt takeoff with fuel selectors on crossfeed

**Ground Runup Checklist**

Parking Brake ..... SET  
Fuel Selectors ..... ON  
Mixture ..... FORWARD  
Propeller ..... FULL FORWARD  
Throttle ..... 1500 RPM  
Propellers ..... FEATHER then FULL FORWARD  
Throttle ..... 2000 RPM  
Propellers ..... RETARD 200-300 RPM  
Throttle ..... INCREASE SLIGHTLY  
Propellers ..... FULL FORWARD  
Alternate Air ..... CHECK  
Magnetos ..... MAX DROP 175; MAX DIFF. 50 RPM  
Alternator ..... CHECK  
Vacuum ..... NO LIGHTS, 4.5 to 5.2 in HG  
Throttle ..... 800 to 1000 RPM  
Parking Brake ..... RELEASE

**Pre-Takeoff Checklist**

Fuel Selectors ..... ON  
Alternator Switches ..... ON  
Engine Gauges ..... CHECK  
Flight Instruments ..... SET  
Mixture ..... SET  
Propeller ..... FULL FORWARD  
Quadrant Friction ..... ADJUST  
Alternate Air ..... OFF  
Cowl Flaps ..... SET  
Seat Backs ..... ERECT  
Belts/Harness ..... FASTENED/CHECK  
Flaps ..... SET  
Trim ..... SET  
Controls ..... FREE  
Electric Fuel Pumps ..... ON  
Pitot Heat ..... AS REQUIRED

**Takeoff Briefing**

Takeoff Procedure ..... BRIEF  
Takeoff Emergencies ..... BRIEF  
Eng Failure Considerations ..... BRIEF

*When Cleared for Takeoff*

Strobe ..... ON  
Landing/Taxi ..... ON  
Door and Window ..... LATCHED

**Takeoff****NORMAL TAKEOFF**

Nose Wheel ..... STRAIGHT  
Directional Gyro ..... CHECKED TO RWY HDG  
Brakes ..... APPLY AND HOLD  
Throttle ..... 2,000 RPM  
Engine Gauges ..... CHECKED AND SYMMETRICAL  
Power ..... FULL ADVANCE  
Brakes ..... RELEASED  
Airspeed ..... ALIVE  
Rotate ..... 85 MPH  
Gear ..... POSITIVE RATE – GEAR UP  
Climb ..... 105 MPH

**SHORT FIELD TAKEOFF (FLAPS UP)**

Flaps ..... UP  
Trim ..... SET  
Nose Wheel ..... STRAIGHT  
Directional Gyro ..... CHECKED TO RWY HDG  
Brakes ..... APPLY AND HOLD

**Throttle** ..... **2,000 RPM**  
**Engine Gauges** ..... **CHECKED ALL GREEN**  
**Power** ..... **FULL ADVANCE**  
**Brakes** ..... **RELEASED**  
**Airspeed** ..... **ALIVE**  
**Rotate** ..... **80 MPH**  
**Initial Climb** ..... **85 MPH**  
**Gear** ..... **POSITIVE RATE – GEAR UP**  
**Climb** ..... **90 MPH**

### **SHORT FIELD TAKEOFF (25° FLAPS)**

**Flaps** ..... **25°**  
**Trim** ..... **SLIGHTLY NOSE UP**  
**Nose Wheel** ..... **STRAIGHT**  
**Directional Gyro** ..... **CHECKED TO RWY HDG**  
**Brakes** ..... **APPLY AND HOLD**  
**Throttle** ..... **2,000 RPM**  
**Engine Gauges** ..... **CHECKED ALL GREEN**  
**Power** ..... **FULL ADVANCE**  
**Brakes** ..... **RELEASED**  
**Airspeed** ..... **ALIVE**  
**Rotate** ..... **70 MPH**  
**Initial Climb** ..... **80 MPH**  
**Gear** ..... **POSITIVE RATE – GEAR UP**  
**Flaps** ..... **RETRACT SLOWLY**  
**Climb** ..... **90 MPH**

**Climb**

Throttles ..... 25 INCH  
Propellers ..... SYNC @ 2,500 RPM  
Mixture ..... 10 GPH  
Flaps ..... UP  
Electric Fuel Pumps..... OFF @ 1,000 AGL  
Lights..... OFF  
Cruise Climb ..... 120 MPH

**Cruise Checklist**

Throttles ..... ADJUST  
Propeller ..... SYNC @ 2,400 RPM  
Mixture ..... ADJUST  
Cross feed ..... AS REQUIRED  
Cowl Flaps..... AS REQUIRED

**Maneuvers Checklist**

Practice Area ..... CLEAR OF TRAFFIC  
Airspeed ..... AT OR BELOW  $V_A$   
Mixture ..... FORWARD  
Propellers ..... FULL FORWARD  
Electric Fuel Pumps..... ON  
Landing Light..... ON  
Cowl Flaps..... AS REQUIRED

**Descent Checklist**

ATIS/Airport Info ..... RECEIVED  
Approach/Landing Brief ..... COMPLETED  
Seat Backs ..... ERECT  
Belts/Harnesses ..... FASTENED  
Mixture ..... AS REQUIRED  
Power ..... AS REQUIRED  
Landing Light ..... ON

**Approach and Landing Checklist**

TO BE COMPLETED BY FAF OR 1,000 FT AGL

Fuel Selectors ..... ON  
Electric Fuel Pumps ..... ON  
Mixture ..... RICH  
Propeller ..... FULL INCREASE  
Landing Gear ..... DOWN –THREE GREEN  
Flaps ..... SET – 160 MPH MAX  
Flaps ..... AS REQUIRED  
Final Approach Speed ..... 105 MPH (FULL FLAPS)

**Go Around Checklist**

Power ..... FULL FORWARD  
Pitch ..... UP TO 10°  
Flaps ..... RETRACT INCREMENTALLY  
Landing Gear ..... POSITIVE RATE – GEAR UP  
Climb ..... 105 MPH  
Cowl Flaps ..... AS REQUIRED



**After Landing Checklist**

When Off Runway ..... STOP AIRCRAFT  
Flaps ..... UP  
Cowl Flaps..... Open  
Electric Fuel Pumps..... OFF  
Exterior Lights ..... AS REQUIRED  
Strobe Light ..... OFF  
Mixture ..... LEANED FOR TAXI

**Parking Checklist****STOPPING ENGINES**

Parking Brake ..... SET  
Propeller ..... FULL FORWARD  
Avionics Switch..... OFF  
Throttles ..... 1000 RPM  
Mixtures..... IDLE CUT-OFF  
Nav and Cockpit Lights..... OFF  
Anti-Collision Light..... ON  
Magnetos Switches ..... OFF  
Master Switches ..... OFF  
Alternator Switches..... OFF  
Parking Brake ..... RELEASE  
Hobbs and Tach Meters ..... RECORD  
Squawk Sheet ..... RECORD AND REPORT  
Controls..... RESTRAIN  
Aircraft..... TIED DOWN AND SECURE

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## EMERGENCY PROCEDURES

### ENGINE FAILURES

ENGINE FAILURE DURING TAKEOFF  
ENGINE FAILURE DURING CLIMB  
ENGINE FAILURE DURING FLIGHT  
SINGLE ENGINE LANDING  
SINGLE ENGINE GO AROUND

### PROPELLER

PROPELLER FEATHERING  
PROPELLER UNFEATHERING  
PROPELLER OVERSPEED

### FIRES

ENGINE FIRE DURING START  
ENGINE FIRE IN FLIGHT

### ELECTRICAL

ELECTRICAL FAILURES  
ELECTRICAL OVERLOAD

### ENGINE

ENGINE RESTART DURING FLIGHT  
ENGINE SHUT-DOWN DURING FLIGHT  
VACUUM SYSTEM FAILURE

### LANDING GEAR

UNSAFE GEAR WARNING  
MANUAL LANDING GEAR EXTENSION  
GEAR-UP LANDING

### ICING CONDITIONS

ENGINE FAILURE IN ICING  
ALTERNATOR FAILURE IN ICING

Procedures in the following Emergency checklists shown in **bold-faced** type are immediate-action items which should be committed to memory.

## **ENGINE FAILURES**

### **ENGINE FAILURE DURING TAKEOFF**

**If During Takeoff Roll and <100 MPH**

**Throttles ..... CLOSE BOTH THROTTLES  
IMMEDIATELY  
Stop ..... STRAIGHT AHEAD**

**If Inadequate Runway Remains to Stop**

**Throttles ..... CLOSED  
Brakes ..... APPLY MAX BRAKING  
Master Switch ..... OFF  
Fuel Selectors ..... OFF  
Stop ..... STRAIGHT AHEAD AVOID OBSTACLES**

**If Adequate Runway Remains and >100 MPH**

**Throttles ..... CLOSE BOTH THROTTLES  
IMMEDIATELY  
Land (If Airborne) ..... STOP STRAIGHT AHEAD**

**If Inadequate Runway Remains and >100 MPH  
(Takeoff Continued)**

**Maintain ..... HEADING AND AIRSPEED  
Gear ..... RETRACT WHEN CLIMB  
ESTABLISHED  
Inoperative Engine (Confirm) ..... FEATHER**

**Go To PROPELLER FEATHERING**

**ENGINE FAILURES (Continued)****ENGINE FAILURE DURING CLIMB****IF < 80 MPH**

**Power ..... REDUCE**  
**Accelerate ..... 105 MPH**  
**Mixtures..... FULL FORWARD**  
**Propellers..... FULL FORWARD**  
**Throttles..... FULL FORWARD**  
**Bank .....5° INTO OPERATING ENGINE**  
**Flaps..... UP**  
**Inoperative Engine (Confirm).....FEATHER**

**Go to PROPELLER FEATHERING****IF > 80 MPH**

**Maintain..... DIRECTIONAL CONTROL**  
**Airspeed ..... 105 MPH**  
**Mixtures..... FULL FORWARD**  
**Propellers..... FULL FORWARD**  
**Throttles..... FULL FORWARD**  
**Bank .....5° INTO OPERATING ENGINE**  
**Flaps..... UP**  
**Inoperative Engine (Confirm).....FEATHER**

**Go to PROPELLER FEATHERING****ENGINE FAILURE DURING FLIGHT**

**Airspeed ..... 105 MPH**  
**Mixtures..... FULL FORWARD**  
**Propellers..... FULL FORWARD**  
**Throttles..... FULL FORWARD**  
**Bank .....5° INTO OPERATING ENGINE**

**Go to PROPELLER FEATHERING**

**ENGINE FAILURES** (Continued)**NOTE**

The single engine minimum control speed with Rear Cabin and Cargo Doors removed is 81 MPH. If engine failure occurs in this configuration and below 81 MPH, reduce power as necessary on the operating engine to maintain directional control.

**SINGLE ENGINE LANDING**

Inoperative Engine..... FEATHERED  
Landing Gear..... DOWN (when LANDING ASSURED)  
Flaps .....25° (when LANDING ASSURED)  
Final Approach Speed ..... 105 MPH

**SINGLE ENGINE GO-AROUND**

Throttle..... **FULL FORWARD**  
Flaps..... **RETRACT**  
Landing Gear ..... **RETRACT**  
Airspeed ..... **105 MPH**  
Trim ..... **SET**  
Cowl Flap ..... **AS REQUIRED**

**CAUTION**

This procedure must be initiated at or above 400 feet AGL or it may not be successfully completed.

## PROPELLER

### PROPELLER FEATHERING

Minimum Control Speed .....80 MPH  
Airspeed (V<sub>YSE</sub>)..... 105 MPH  
Maintain..... DIRECTIONAL CONTROL (90 MPH MIN)  
Flaps .....RETRACT  
Gear .....RETRACT  
Electric Fuel Pump .....OPERATING ENGINE – ON  
Inoperative Engine..... IDENTIFY  
Throttle Inoperative Engine..... RETARD TO VERIFY  
Propeller Inoperative Engine..... FEATHER  
Mixture Inoperative Engine ..... IDLE CUT-OFF  
Trim ..... AS REQUIRED  
Bank ..... 5° TOWARD OPERATING ENGINE  
Electric Fuel Pump Inoperative Engine ..... OFF  
Magnetos Inoperative Engine ..... OFF  
Cowl Flaps Inoperative Engine ..... CLOSE  
Cowl Flaps Operative Engine ..... OPEN  
Alternator Inoperative Engine ..... OFF  
Fuel Selector Inoperative Engine ..... OFF  
Crossfeed ..... AS REQUIRED  
Electric Fuel Pump Operative Engine ..... OFF  
Electrical Load ..... REDUCE < 50 AMPERES

### Go To **SINGLE ENGINE LANDING**

### PROPELLER UNFEATHERING

Fuel Selector ..... INOPERATIVE ENGINE – ON  
Electric Fuel Pump ..... INOPERATIVE ENGINE – OFF  
Throttle ..... OPEN ¼ INCH  
Propeller ..... FORWARD, CRUISE RPM

(Continued on next page)

## **PROPELLER (Continued)**

Mixture ..... RICH  
Magneto Switch ..... ON  
Starter ..... ENGAGE UNTIL PROP WINDMILLS  
Throttle ..... REDUCE UNTIL ENG WARMS

### **If Engine Starts**

Alternator ..... ON

### **If Engine Does Not Start**

Electric Fuel Pump ..... INOPERATIVE ENGINE – ON  
3 SECONDS then OFF  
Starter ..... ENGAGE UNTIL PROP WINDMILLS  
Throttle ..... REDUCE UNTIL ENG WARMS  
Alternator ..... ON

### **If Unable To Start Engine**

Go To **PROPELLER FEATHERING**

(Continued on next page)



## PROPELLER (Continued)

### PROPELLER OVERSPEED

Throttle ..... CLOSE  
 Airspeed ..... 105 MPH  
 Propeller ..... LOW RPM  
 Throttle ..... SLOWLY INCREASE  
 Propeller ..... SLOWLY INCREASE

*CONTINUE FLIGHT AT REDUCED SPEED AND POWER.  
 LAND AS SOON AS PRACTICAL*

#### NOTE

Loss of air charge in the propeller dome may result in overspeed if throttle is advanced rapidly or airspeed is abruptly increased. If this happens, the propeller will not feather.

If the throttle is retarded below 15-20 inch manifold pressure at speeds above 105 MPH, the propeller may overspeed again upon reapplying power.

## FIRES

### ENGINE FIRE DURING START

Starter ..... CRANK ENGINE  
 Mixture ..... IDLE CUT-OFF  
 Throttle ..... OPEN  
 Electric Fuel Pump ..... OFF  
 Fuel Selector ..... OFF

*ABANDON IF FIRE CONTINUES*

**ENGINE FIRE ON THE GROUND****If Engine has not Started**

Mixture ..... IDLE CUT OFF  
Throttle ..... OPEN  
Engine Starter ..... ENGAGE

If engine has started and is running, continue operating. If fire continues longer than a few seconds, the fire should be extinguished by the best available external means.

**If External Fire Extinguishing is to be Applied**

Fuel Selector Valves..... OFF  
Mixture ..... IDLE CUT OFF

**ENGINE FIRE IN FLIGHT****AFFECTED ENGINE**

Fuel Selector ..... OFF  
Throttle ..... CLOSE  
Propeller ..... FEATHER  
Mixture ..... IDLE CUT OFF  
Heater ..... OFF  
Defroster..... OFF

*LAND IMMEDIATELY AS TERRAIN PERMITS*

**Go To PROPELLER FEATHERING**

## ELECTRICAL

### **ELECTRICAL FAILURE**

*(If in Icing Conditions, Go To Alternator Failure in Icing)*

#### **LOSS OF OUTPUT FROM ONE ALTERNATOR**

Electrical Load ..... REDUCE < 50 AMPERES  
 Circuit Breakers ..... CHECK  
 Alternator Switch ..... CYCLE  
 OFF then ON

#### **If power not restored**

Alternator Switch ..... OFF  
 Electrical Load ..... REDUCE < 50 AMPERES

*LAND AS SOON AS PRACTICAL*

#### **LOSS OF OUTPUT FROM BOTH ALTERNATORS**

Electrical Load ..... REDUCE < 50 AMPERES  
 Circuit Breakers ..... CHECK  
 Alternator Switches ..... CYCLE

#### **If power not restored**

Alternator Switches ..... OFF  
 Electrical Load ..... REDUCE TO MINIMUM

#### **WARNING**

Compass error may exceed 10° with both alternators inoperative

#### **CAUTION**

If the battery is depleted, the landing gear must be lowered using the emergency extension procedure. The gear position lights will be inoperative

*LAND AS SOON AS POSSIBLE*

**ELECTRICAL** (Continued)

**ELECTRICAL OVERLOAD**

**ONE OVERVOLTAGE LIGHT ILLUMINATED**

Electrical Loads ..... OFF  
EXCEPT MASTER SWITCH  
Alternator Switch ..... OFF  
Overvoltage ..... VERIFY  
AFFECTED ALTERNATOR ON then OFF  
Electrical Load ..... REDUCE < 50 AMPERES

**BOTH OVERVOLTAGE LIGHT ILLUMINATED**

Electrical Loads ..... OFF  
EXCEPT MASTER SWITCH  
Alternator Switches ..... OFF  
Overvoltage ..... CHECK  
EACH ALTERNATOR ON then OFF  
Least Overvoltage Alternator ..... ON  
Electrical Load ..... REDUCE < 50 AMPERES

**If Both Alternators Indicate < 50 Amperes Each**

Alternator Switches ..... ON  
Electrical Load ..... AS REQUIRED

## ENGINE

## ENGINE RESTART DURING FLIGHT

Go to **PROPELLER UNFEATHERING**

## ENGINE SHUT-DOWN DURING FLIGHT

Throttle..... CLOSE  
Propeller ..... FEATHER  
Mixture .....VERIFY DESIRED ENGINE  
IDLE CUT-OFF  
Magneto.....VERIFY DESIRED ENGINE  
OFF  
Electric Fuel Pump..... OFF  
Alternator ..... OFF  
Cowl Flaps ..... CLOSE  
Fuel Selector..... VERIFY DESIRED ENGINE - OFF  
CROSSFEED ..... AS REQUIRED

## VACUUM SYSTEM FAILURE

Engine RPM ..... 2700  
Altitude ..... DECREASE

## NOTE

## Use the Turn Indicator to monitor the Directional Gyro and Attitude Indicator performance

## LANDING GEAR

### **UNSAFE GEAR WARNING**

Landing Gear.....RECYCLE  
Landing ..... PLAN FOR NORMAL LANDING

#### NOTE

The landing gear lights will illuminate when the gear warning horn sounds and the gear warning horn will sound at low throttle settings with the gear in the up and locked position

### **MANUAL LANDING GEAR EXTENSION**

Circuit Breakers.....CHECK  
Master Switch..... ON  
Alternators.....CHECK  
Navigation Lights..... OFF  
Airspeed .....100 MPH  
Landing Gear Handle .....GEAR DOWN LOCKED  
Emergency Extension Knob.....PULL  
Landing Gear.....CHECK – THREE GREEN LIGHTS

#### WARNING

If the emergency gear extension knob has been pulled out to lower the gear due to a gear system malfunction, leave the control in its extended position until the airplane has been put on jacks to check the proper function of the landing gears hydraulic and electrical systems.

## LANDING GEAR (Continued)

### **GEAR-UP LANDING**

Approach Speed..... NORMAL  
Flaps ..... UP

#### **When Landing Assured**

Throttles..... CLOSE  
Master Switch ..... OFF  
Ignition Switch ..... OFF  
Fuel Selector ..... OFF  
Airspeed ..... MINIMUM

## ICING CONDITIONS

### ENGINE FAILURE IN ICING

Alternate Air..... ON

*ATTEMPT ENGINE RESTART*

Go to **PROPELLER UNFEATHERING**

#### **If Unable to Restart Engine**

Propeller..... FEATHER

Airspeed..... 105 MPH

Electrical Load..... REDUCE < 50 AMPERES

*AVOID ICING CONDITIONS, LAND AS SOON AS PRACTICAL*

Go to **PROPELLER FEATHERING**

### ALTERNATOR FAILURE IN ICING

Alternator Overvoltage Relay..... RESET

Circuit Breakers..... CHECK

#### **If Unable to Restore Alternator**

Avionics..... OFF

EXCEPT ONE NAVCOM AND XPONDER

*AVOID ICING CONDITIONS, LAND AS SOON AS PRACTICAL*



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## PERFORMANCE

### Speeds are for Aircraft at Max Gross Weight

#### Takeoff

Rotation Speed ( $V_R$ )	85 MPH
Lift-Off ( $V_{LOF}$ )	90 MPH
Minimum Controllable ( $V_{MC}$ )	80 MPH

#### Climb

Best Angle ( $V_X$ )	90 MPH
Best Rate ( $V_Y$ )	105 MPH
Cruise Climb	120 MPH
Best Rate Single Engine ( $V_{YSE}$ )	105 MPH
Best Glide Speed ( $V_G$ )	105 MPH

#### Landing Approach

Flaps 10 ( $V_{FE10}$ ).....	160 MPH
Flaps 25 ( $V_{FE25}$ ).....	140 MPH
Flaps 40 ( $V_{FE40}$ ).....	125 MPH

#### Maneuvering Speed ( $V_A$ ) Turbulent Air Penetration Speed

4200 Lbs.....	146 MPH
2743 Lbs.....	133 MPH

#### Stall Speeds

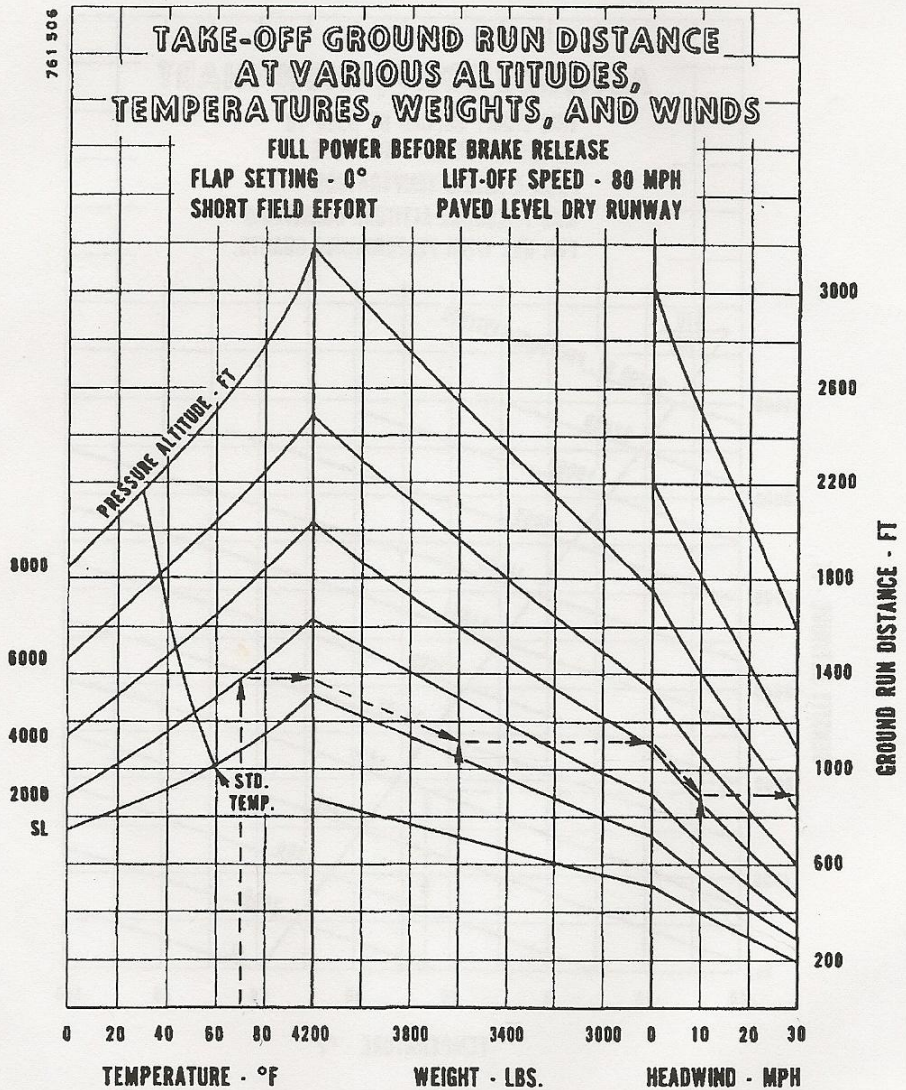
Stall Speed Flaps ( $V_{SO}$ ).....	69 MPH
Stall Speed Clean ( $V_{S1}$ ).....	76 MPH

#### Maximum Speed

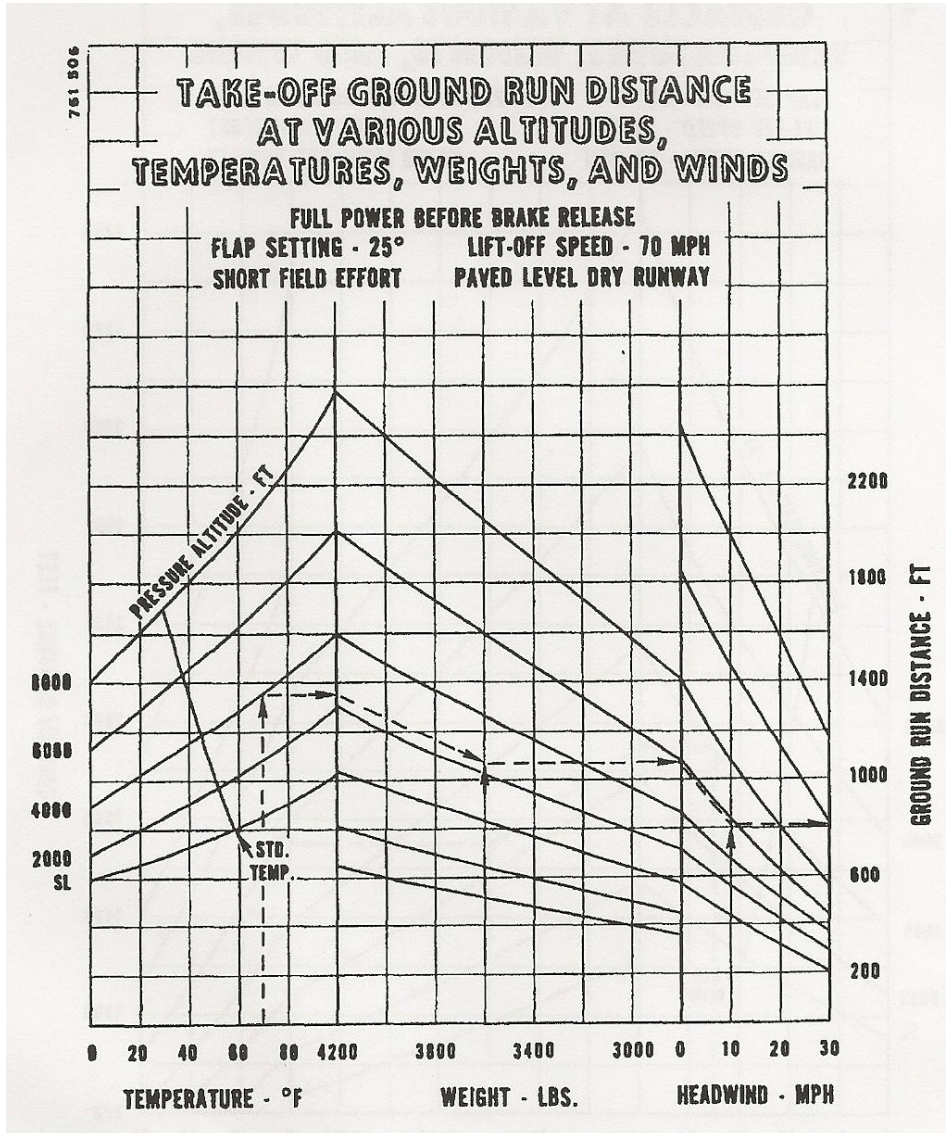
Normal Operation ( $V_{NO}$ )	190 MPH
Landing Gear Extended ( $V_{LE}$ )	150 MPH
Landing Gear Retraction Speed	125 MPH
Never Exceed Speed ( $V_{NE}$ )	217 MPH

Max Demonstrated X-Wind Component 15 Kts

## NORMAL TAKEOFF, 0° FLAPS

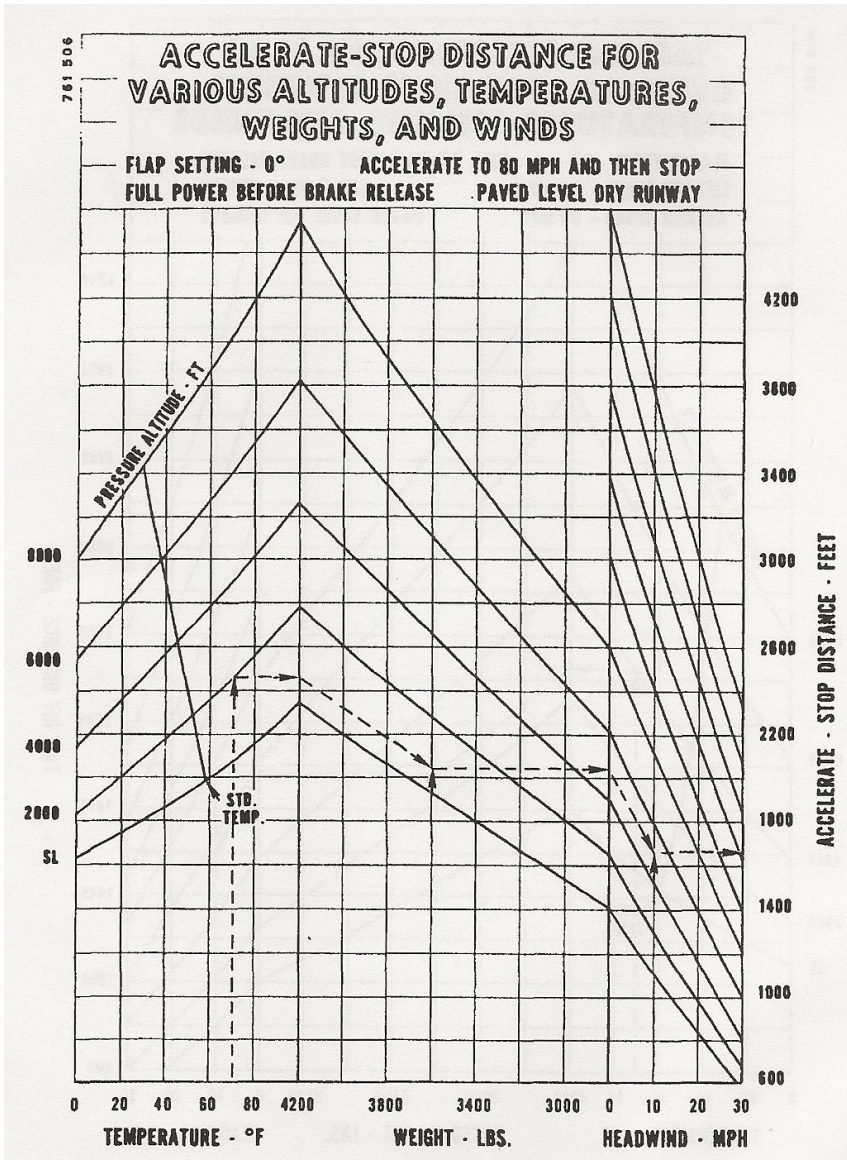


## SHORT FIELD TAKEOFF 25° FLAPS

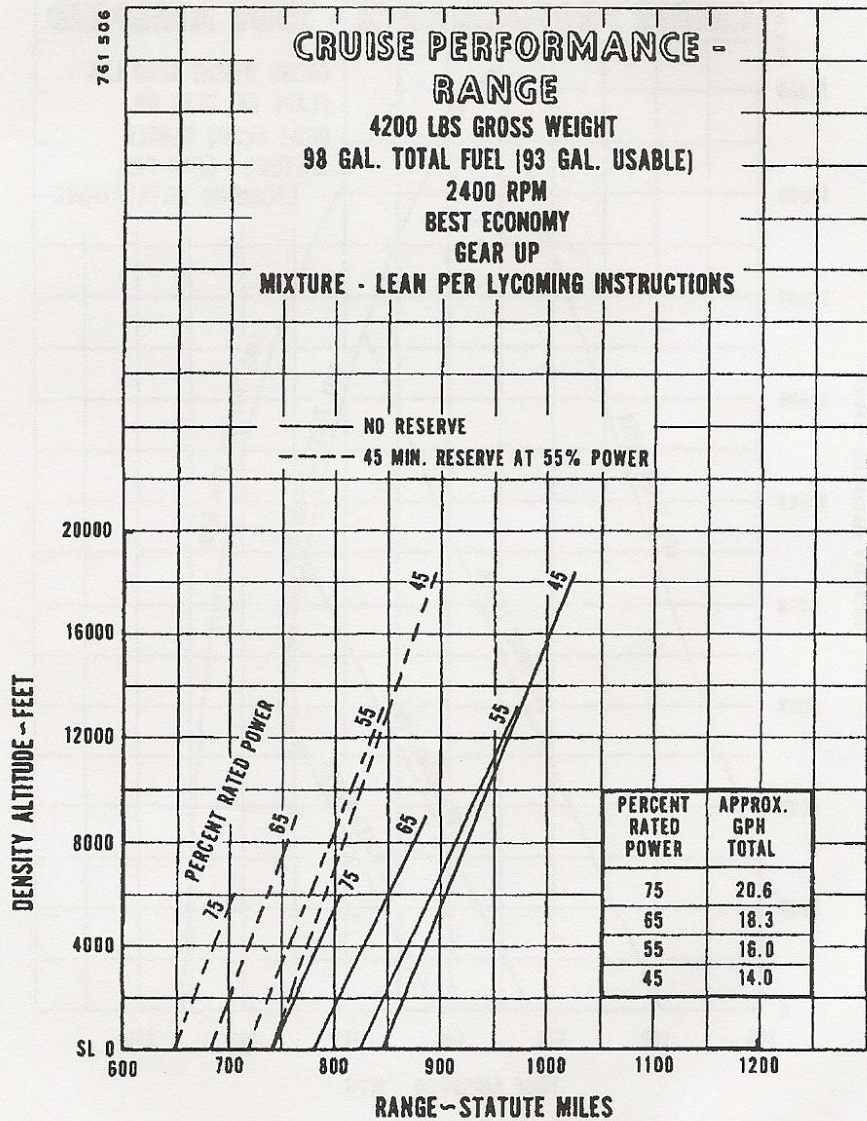




## ACCELERATE-STOP DISTANCE



## CRUISE PERFORMANCE



# LANDING PERFORMANCE

