

**RAM Aviation** Piper Arrow

**SPEEDS (MPH)**

|                           |         |
|---------------------------|---------|
| Vso.....                  | 63      |
| Vs1.....                  | 69      |
| Vr.....                   | 60-70   |
| Vx (gear up).....         | 90      |
| Vx (gear down).....       | 85      |
| Vy (gear up).....         | 100     |
| Vy (gear down).....       | 95      |
| Vfe.....                  | 125     |
| Vno.....                  | 170     |
| Vne.....                  | 214     |
| Va (max gross).....       | 134     |
| Vlo (gear up).....        | 125     |
| Vle.....                  | 150     |
| Best Glide.....           | 105     |
| Max. Demon. X-Wind.....   | 20      |
| Approach (Flaps DN).....  | 90      |
| Short Field Approach..... | 85      |
| Enroute Climb.....        | 110     |
| Max Gross Weight.....     | 2500.00 |
| Basic Empty Weight.....   | 1512.00 |
| Useful Load.....          | 988.00  |

**PREFLIGHT**

|                                    |          |
|------------------------------------|----------|
| Weather.....                       | CHECK    |
| Weight & Balance.....              | COMPLETE |
| Documents (AROW).....              | CHECK    |
| Inspection/AD status.....          | CHECK    |
| Hobbs.....                         | RECORD   |
| Electrical/Radios.....             | OFF      |
| Gear Selector.....                 | DOWN     |
| Ignition.....                      | OFF      |
| Master.....                        | ON       |
| Fuel Pump/Quantity.....            | CHECK    |
| Turn Coordinator.....              | AUDIBLE  |
| Flaps.....                         | EXTEND   |
| Lights/Pitot/Stall Light...INSPECT |          |
| Lights.....                        | OFF      |
| Master.....                        | OFF      |

**EXTERIOR INSPECTION**

|                             |        |
|-----------------------------|--------|
| Right Wing                  |        |
| Flaps & Aileron.....        | CHECK  |
| Leading Edge.....           | CHECK  |
| Tie Down.....               | REMOVE |
| Fuel Quantity.....          | CHECK  |
| Fuel Tank Vent.....         | CHECK  |
| Fuel Sump.....              | CHECK  |
| Strut/Tire/Brake.....       | CHECK  |
| Nose                        |        |
| Windshield/Cowling.....     | CHECK  |
| Oil Quantity (6-8 qts)..... | CHECK  |
| Prop/Spinner.....           | CHECK  |
| Air Inlet.....              | CHECK  |
| Alternator Belt.....        | CHECK  |
| Nose Strut/Tire.....        | CHECK  |
| Cowling.....                | CHECK  |
| Fuel Sump.....              | CHECK  |
| Gear Extension Ports.....   | CHECK  |
| Left Wing                   |        |
| Strut/Tire/Brake.....       | CHECK  |
| Fuel Sump.....              | CHECK  |
| Fuel Quantity.....          | CHECK  |
| Tie Down.....               | REMOVE |
| Pitot Tube.....             | CHECK  |
| Static Source.....          | CHECK  |
| Fuel Tank Vent.....         | CHECK  |
| Flap & Aileron.....         | CHECK  |
| Aft Fuselage & Empennage    |        |
| Fuselage.....               | CHECK  |
| Antennas.....               | CHECK  |
| Horizontal Stabilizer.....  | CHECK  |
| Vertical Stabilizer.....    | CHECK  |
| Tie Down.....               | REMOVE |
| Baggage Door.....           | SECURE |

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**BEFORE ENGINE START**

|                        |          |
|------------------------|----------|
| Preflight Inspection.. | COMPLETE |
| Passenger Briefing..   | COMPLETE |
| Seats and Belts.....   | SECURE   |

**ENGINE START**

|                              |          |
|------------------------------|----------|
| Parking Brake.....           | SET      |
| Circuit Breakers.....        | CHECK IN |
| Electrical Equipment.....    | OFF      |
| Avionics Master.....         | OFF      |
| Fuel Selector...FULLEST TANK |          |
| Gear Selector.....           | DOWN     |

**COLD START**

|                |           |
|----------------|-----------|
| Throttle.....  | FULL OPEN |
| Propeller..... | FULL FWD  |
| Mixture.....   | RICH      |

|             |    |
|-------------|----|
| Master..... | ON |
| Beacon..... | ON |

|                     |               |
|---------------------|---------------|
| Fuel Pump.....      | ON/PRIME/OFF  |
| Throttle.....       | 1/4 INCH      |
| Propeller Area..... | CLEAR         |
| Ignition.....       | ENGAGE        |
| Throttle.....       | 1000 RPM      |
| Oil Pressure.....   | CHECK         |
| Mixture.....        | LEAN for taxi |
| Ammeter.....        | CHECK         |

**HOT START**

|                   |                  |
|-------------------|------------------|
| Throttle.....     | FULL OPEN        |
| Mixture.....      | IDLE CUTOFF      |
| Ignition.....     | ENGAGE           |
| Mixture/Rich..... | Throttle/ ¼ Inch |

**BEFORE TAXI CHECK**

|                      |         |
|----------------------|---------|
| Avionics Master..... | ON      |
| Radios/Avionics..... | ON      |
| Transponder.....     | ALT     |
| Flaps.....           | RETRACT |
| Parking Brake.....   | RELEASE |
| Brakes.....          | TEST    |
| Instrument Taxi..... | CHECK   |

**RUNUP CHECK**

|                          |  |
|--------------------------|--|
| Parking Brake.....       | SET  |
| Seats/Belts.....         | SECURE   |
| Doors/Windows.....       | CLOSED AND LOCKED  |
| Monitor.....             | TOWER  |
| Controls.....            | FREE & CORRECT   |
| Trim.....                | TEST/SET   |
| Fuel Quantity.....       | CHECK  |
| Mixture.....             | RICH   |
| Throttle.....            | 1800 RPM   |
| Oil Pressure/Temp.....   | CHECK  |
| Mixture.....             | SET for Altitude   |
| Propeller.....           | CYCLE (MAP, RPM, Oil Pressure)                               |
| Magnetos.....            | L/R.....CHECK<br>Max drop 175 RPM<br>Max differential 50 RPM |
| Alternate Air.....       | CHECK  |
| Suction.....             | 5" hg +/- 1" hg  |
| Ammeter.....             | CHECK  |
| Instruments.....         | CHECK and SET  |
| Throttle.....            | IDLE/1000  |
| Radios and Avionics..... | SET  |
| Brakes.....              | RELEASE  |

**BEFORE TAKEOFF CHECK**

|                          |              |
|--------------------------|--------------|
| Fuel Pump.....           | ON           |
| Landing Light.....       | ON           |
| Mixture.....             | RICH/AS REQ. |
| Fuel Selector....        | FULLEST TANK |
| Alternate Air.....       | CLOSED       |
| Flaps (as required)..... | SET          |
| Transponder.....         | ALT          |
| Emerg. Procedures.....   | REVIEW       |

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**NORMAL TAKEOFF**

Throttle.....Full OPEN  
 Engine Instruments.....CHECK  
 Rotate.....60-70 MPH  
 Climb.....90 MPH  
 Gear.....POSITIVE RATE/UP  
 Climb.....100 MPH

**SHORT-FIELD TAKEOFF**

Flaps.....25°  
 Brakes.....APPLY  
 Throttle.....Full OPEN  
 Engine Instruments.....CHECK  
 Brakes.....RELEASE  
 Rotate.....60-70 MPH  
 Accelerate.....85 MPH  
 Flaps.....25 to 10  
 Gear.....POSITIVE RATE/UP  
 (until clear of obstacle)  
 Accelerate/Climb.....100 MPH  
 Flaps.....RETRACT

**SOFT FIELD TAKEOFF**

Flaps.....25°  
 Elevator.....Full AFT  
 Throttle.....Full OPEN  
 Ltoff.....Slowest Poss. Airspeed  
 Accelerate while in ground effect  
 Accelerate.....90 MPH  
 Flaps.....25 to 10  
 Gear.....UP  
 Accelerate/Climb.....100 MPH  
 Flaps.....RETRACT

**CLIMB CHECK (1000AGL)**

Pitch.....110 MPH  
 Throttle.....25" MP  
 Propeller.....2500 RPM  
 Mixture.....12G  
 Fuel Pump.....OFF  
 Fuel Pressure.....VERIFY  
 Landing Light.....OFF

**CRUISE CHECK (23/2350)**

Throttle.....SET  
 Propeller.....SET  
 Mixture.....SET  
 Engine Gauges.....CHECK  
 Trim.....SET  
 Heading Indicator.....SET

**DESCENT CHECK (18"MP)**

Power.....AS DESIRED  
 Fuel Pump.....ON  
 Landing Light.....ON  
 Mixture.....ADJUST  
 Fuel Selector....FULLEST TANK  
 Seats/Belts.....SECURE

**FINAL LANDING CHECK**

Mixture.....RICH  
 Propeller.....HIGH  
 Gear.....(3) IN THE GREEN

**PRE-MANEUVER CHECK**

Clearing Turns.....DO  
 Fuel Pump/Press....ON/CHECK  
 Landing Light.....ON  
 Mixture.....RICH  
 Fuel Selector....FULLEST TANK  
 MP/Prop.....AS REQUIRED

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**NORMAL LANDING**

Gear.....VERIFY DOWN  
 Flaps.....AS DESIRED  
 Airspeed.....85-90 (Flaps DN)

**SOFT FIELD LANDING**

Fuel Pump.....ON  
 Gear.....VERIFY DOWN  
 Airspeed.....85-90 MPH FINAL  
 Flaps.....Down (40°)  
 Touchdown.....MAINS first  
 Add power to keep nose-wheel  
 off the ground, hold elevator aft  
 Brakes.....MINIMAL

**SHORT- FIELD LANDING**

Fuel Pump.....ON  
 Gear.....VERIFY DOWN  
 Airspeed.....80-85 MPH FINAL  
 Flaps.....Down (40°)  
 Power.....IDLE  
 Touchdown.....MAINS first  
 Flaps.....RETRACT  
 Brakes.....APPLY  
 Elevator.....FULL AFT

**GO-AROUND**

Throttle.....FULL OPEN  
 Climb.....100 MPH  
 Flaps.....RETRACT to 25° to 10  
 Gear.....POSITIVE RATE/UP  
 Flaps.....RETRACT

**AFTER LANDING CHECK**

Flaps.....RETRACT  
 Trim.....ADJUST  
 Transponder.....ALT  
 Fuel Pump.....OFF  
 Landing Light.....OFF  
 Mixture.....LEAN for taxi

**SHUTDOWN**

Throttle.....1000 RPM  
 Electrical Switches(Gray).....OFF  
 Transponder.....OFF  
 Avionics Master.....OFF  
 Propeller.....FULL FWD  
 Mixture.....IDLE cutoff  
 Ignition.....OFF  
 Master Switch (Red).....OFF  
 Hobbs.....RECORD  
 Trash.....REMOVE  
 Control Lock.....INSTALL  
 Doors/Windows.....LOCKED  
 Tie-Downs.....SECURE  
 Flight Plan.....CLOSE

**NORMAL / SOFT LANDING**

Downwind.....GUMPS

**POWER / FLAPS / AIRSPEED:**

Downwind.23"MP / 10° / 120 MPH  
 Abeam 16"MP / 10° / 100 MPH  
 Base 16"MP / 25° / 95 MPH  
 Final 12"MP / 40° / 85 MPH

**SHORT FIELD LANDING**

**POWER / FLAPS / AIRSPEED:**

Downwind.23"MP / 10° / 120 MPH  
 Abeam 16"MP / 10° / 100 MPH  
 Base 16"MP / 25° / 95 MPH  
 Final 12"MP / 40° / 80 MPH  
 Power.....IDLE  
 Touchdown.....ON MAINS  
 Flaps.....RETRACT  
 Brakes.....AS NEC.  
 Elevator.....FULL AFT

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**EMERGENCY PROCEDURES  
ENGINE FAILURE DURING  
TAKEOFF**

Throttle.....IDLE  
Brakes.....APPLY  
Flaps.....RETRACT  
Mixture.....IDLE CUTOFF  
Ignition.....OFF  
Master.....OFF

**ENGINE FAILURE AFTER  
TAKEOFF**

Airspeed.....100 MPH  
Mixture.....IDLE CUTOFF  
Ignition.....OFF  
Gear.....AS REQUIRED  
Master.....OFF  
Cabin Door.....UNLATCH  
Land.....STRAIGHT AHEAD

**ENGINE FAILURE DURING  
FLIGHT (RESTART)**

Airspeed/Trim.....100 MPH  
Landing Site.....LOCATE  
Fuel Selector.....FULLEST TANK  
Fuel Pump.....ON  
Mixture.....RICH  
Alternate Air.....ON  
Ignition.....L,R, BOTH  
Engine Gauges.....CHECK

**\*IF POWER IS RESTORED\***

Alternate Air.....OFF  
Fuel Pump.....OFF

**\*IF POWER IS NOT RESTORED  
PREPARE FOR FORCED  
LANDING\***

**EMERGENCY PROCEDURES  
EMERGENCY LANDING  
WITHOUT POWER**

Gear Override.....ENGAGE  
Seat Backs.....UPRIGHT  
Seats/Belts.....SECURE  
Airspeed.....100 MPH  
Propeller.....FULL FWD  
Mixture.....IDLE CUTOFF  
Ignition.....OFF  
Fuel Selector.....OFF  
Master.....OFF  
Flaps.....AS REQUIRED  
Doors.....UNLATCH  
Touchdown.....TAIL LOW

**PROPELLER OVERSPEED**

Throttle.....RETARD  
Oil Pressure.....CHECK  
Propeller.....FULL AFT  
Set if any control available

Airspeed.....REDUCE  
Throttle.....AS REQUIRED  
TO REMAIN BELOW 2700 RPM  
Flaps.....AS REQUIRED  
\*\*loss of oil pressure will increase  
RPM\*\*

**EMERGENCY LANDING GEAR  
EXTENSION**

Master Switch.....ON  
Circuit Breakers.....CHECK  
Panel Lights (Day).....OFF  
Indicator Bulbs.....CHECK

**\*IF GEAR IS NOT DOWN AND  
LOCKED CONT. PROCEDURES\***

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**EMERGENCY PROCEDURES  
EMERGENCY LANDING GEAR  
EXTENSION (CONT.)**

Airspeed.....below 100 MPH  
Gear Selector.....DOWN  
Gear Override.....ENGAGE  
Emergency Ext.....ENGAGE  
Yaw.....AS NECESSARY

**EXCESSIVE LOAD ON  
ALTERNATOR GAUGE**

Alternator.....ON  
Battery Switch.....OFF  
Non-Essential Equipment....OFF  
**\*IF LOADS ARE NOT REDUCED\***  
Alternator.....OFF  
Battery Switch....AS REQUIRED  
Terminate flight as soon as  
Practical.

**FIRE DURING ENGINE START**

Cranking.....CONTINUE  
Mixture.....IDLE CUTOFF  
Throttle.....FULL OPEN  
Fuel Pump.....OFF  
Fuel Selector.....OFF  
**\*IF ENGINE FAILS TO START\***  
Cranking.....CONTINUE  
Fire Extinguisher.....OBTAIN  
Master.....OFF  
Ignition.....OFF

**ABANDON IF FIRE CONTINUES**

**EMERGENCY PROCEDURES  
ENGINE FIRE IN FLIGHT**

Fuel Selector.....OFF  
Throttle.....CLOSED  
Mixture.....IDLE CUTOFF  
Fuel Pump.....OFF  
Heater/Defroster.....OFF  
Gear.....AS NECESSARY  
Airspeed.....BEST GLIDE  
Power OFF landing....EXECUTE

**ELECTRICAL FIRE**

Master.....OFF  
Vents.....OPEN  
Heat.....OFF  
Fire Extinguisher.....ACTIVATE  
*If fire is out and electrical is  
necessary for flight*  
Master.....ON  
Circuit Breakers.....CHECK  
*do not reset!*

Radios.....OFF  
Avionics Master.....ON  
Radios/Electrical....ON, one at a  
time

**ALTERNATOR FAILURE**

Electrical Equipment.....OFF  
Alt. Switch.....OFF for 30 secs.  
Circuit Breaker...CHECK/RESET  
Alternator Switch.....ON  
Alternator Gauge.....CHECK  
Electrical Equipment.....ON

**\*IF AMMETER RETURNS TO  
ZERO\***

Alternator.....OFF  
Non-Essential Equipment....OFF  
Flight.....TERMINATE