

Piper Arrow I Checklist

INTERIOR PREFLIGHT

Required Documents On Board
 Master Switch Off
 Avionics Master Off
 Landing Gear Handle Down
 Fuel Selector Cycle
 Master Switch On
 Fuel Quantity Gauges Check
 Flaps Extend
 Aircraft Lights On/Check
 Pitot Heat On/Check
 Stall Warning Light Check
 All Electrical Switches Off

EXTERIOR PREFLIGHT

RIGHT WING:

Flap Check
 Aileron Check
 Nav/Anti-Collision Check
 Leading Edge Check
 Fuel Vent Check
 Fuel Tank Sump Drain
 Fuel Quantity Check
 Main Wheel/Strut Check (2 3/4")
 Brakes Check
 Air Inlets Clear

NOSE:

Windshield Check
 Oil 6-8 Qts.
 Cowling Check
 Cowling Scoop Check
 Alternator Belt Check
 Propeller Check
 Nose Wheel/Strut Check (2")
 Air Inlet Check
 Fuel System Sump Drain

LEFT WING:

Air Inlet Check
 Brakes Check
 Main Wheel/Strut Check
 Fuel Tank Sump Drain
 Fuel Quantity Check
 Fuel Vent Check
 Leading Edge Check
 Pitot Head Check

EXTERIOR PREFLIGHT CON'T

Nav/Anti Collision Check
 Aileron Check
 Flap Check
FUSELAGE/TAIL:
 Antennas Check
 Lights Check
 Stabilator Check
 Rudder Check
 Baggage Door Check

BEFORE START

Preflight Complete
 Belts/Harnesses/Seats Secure
 Circuit Breakers In
 Avionics Master Off
 Fuel Selector Fullest Tank

ENGINE START

Brakes Hold
 Throttle 1/2 Inch Open
 Propeller High RPM
 Mixture Idle Cut-Off
 Master Switch On
 Aircraft Lights As Required
 Fuel Pump On

If engine is warm omit (shaded area) priming procedure

Mixture (3 Seconds) Rich
 Mixture (Positive Flow) Cut-Off

Propeller Area Clear
 Starter Engage
 Mixture Rich
 Throttle 800-1,000 RPM
 Oil Pressure Check

BEFORE TAXI

Aircraft Lights As Required
 Fuel Pump Off
 Mixture Lean
 Avionics Master On
 Transponder Standby
 Avionics Set/Check
 Flight Instruments Set/Check
 Brakes Test

RUN-UP

Brakes Hold
 Flight Controls Free & Correct
 Fuel Selector Desired Tank
 Stabilator Trim Takeoff
 Mixture Rich
 Throttle 2,000 RPM
 Propeller Cycle/High RPM
 Magnetos Check
 (Max. Drop 175 RPM, Diff. 50 RPM)
 Alternate Air Check
 Vacuum 5.0" Hg.
 Oil Pressure Check
 Fuel Pressure Check
 Oil Temp Check
 Flight Instruments Set/Check
 Throttle Idle Check
 Throttle 800-1000 RPM
 Mixture Lean
 Fuel Pump On
 Radios/Nav Set
 Magnetos Both
 Door Latch

BEFORE TAKEOFF

Transponder Alt
 Flaps As Required
 Stabilator Trim Takeoff
 Propeller High RPM
 Mixture Rich
 Fuel Pump On
 Aircraft Lights As Required

NORMAL TAKEOFF

Flaps Set
 Throttle Full Open
 Rotate 65-70 MPH/56-61 KIAS

CLIMB

Gear Up
 Flaps 0°
 Climb Power 25"MP, 2500 RPM
 Fuel Pump As Required
 Aircraft Lights As Required

CRUISE

Throttle As Required
 Propeller As Required
 Mixture As Required
 Fuel Pump Off
 Aircraft Lights As Required

DESCENT

Aircraft Lights As Required
 Descent Power Set
 Fuel Pump On
 Mixture As Required
 Fuel Selector Fullest Tank

BEFORE LANDING

Fuel Pump On
 Mixture Rich
 Propeller High RPM
 Throttle As Required
 Aircraft Lights As Required
Gear Down and Locked
 Flaps As Required
 Approach Airspeed 90 MPH/78 KIAS

AFTER LANDING

Flaps Retract
 Fuel Pump Off
 Mixture Lean
 Transponder Standby
 Aircraft Lights As Required

SHUT DOWN

Avionics Master Off
 Aircraft Lights As Required
 Throttle Idle
 Magneto Check
 Mixture Idle Cut-Off
 Magnetos Off
 All Switches Off

IMPORTANT SPEEDS

	MPH	KIAS
Vso.....	64.....	56
Vs1.....	70.....	61
Vr.....	65-70.....	56-61
Vx... Gear Down 81 , Gear Up 91	70/71	
Vy... Gear Down 85 , Gear Up 95	74/83	
Vfe.....	125.....	108
Vlo.....	125.....	108
Vle.....	150.....	130
Va (2600 lbs.).....	134.....	117
Vno.....	170.....	148
Vne.....	214.....	186
Best Glide.....	105.....	91
Approach.....	90.....	78

Arrow Emergency Procedures

Engine Fire During Start

Starter Continue Cranking
 Mixture Idle Cut-Off
 Throttle Open
 Fuel Pump Off
 Fuel Selector Off

Engine Failure During Takeoff

Airspeed Maintain Safe Airspeed
 Gear Down
 Land Straight Ahead

If Sufficient altitude has been gained attempt to restart:

Airspeed Maintain Safe Airspeed
 Fuel Selector Switch Tanks
 Electric Fuel Pump On
 Mixture Rich
 Alternate Air On
 Emergency Gear Lever As Required

If power is not restored, proceed with POWER OFF LANDING.

Engine Failure In Flight

Airspeed 110 MPH/95 KIAS
 Fuel Selector Switch Tanks
 Fuel Pump On
 Mixture Rich
 Alternate Air On
 Engine Gauges Check
 Ignition Both

If power is NOT restored prepare for POWER OFF LANDING:

Airspeed 105 MPH/91 KIAS
 Ignition Switch "L" then "R" then "BOTH"
 Throttle & Mixture Different Settings
 Fuel Selector Switch Tanks

Power Off Landing

Airspeed 105 MPH/91 KIAS
 Place to Land Locate
 Propeller Low RPM
 Landing Assured 90 MPH/78 KIAS
 Flaps As Required
 Gear As Required
 Touchdown Lowest Airspeed
 Sqawk 7700
 Radios Transmit

When committed to landing:

Ignition Off
 Master Switch Off
 Fuel Selector Off
 Mixture Idle Cut-Off
 Seatbelt Secure

Engine Fire in Flight

Magneto Switch Off
 Throttle Idle
 Mixture Idle Cut-Off
 Fuel Selector Off
 Fuel Pump Off
 Master Switch Off
 Heater/Defroster Off

Proceed with POWER OFF LANDING

Electrical Fire in Flight

Master Switch Off
 Vents Open
 Cabin Heat Off
 Land As Soon as Possible

Spin Recovery

Rudder Full Opposite
 (To the direction of rotation)
 Control Wheel Neutral/Forward
 Throttle Idle
 Rudder Neutral
 (When rotation stops)
 Control Wheel As Required
 Throttle As Required

Alternator Failure

Ammeter Verify Failure
 Electrical Load Reduce
 ALT Circuit Breaker Check/Reset
 Alternator Switch Off 30 sec.
 Alternator Switch On

If Power is not restored:

Alternator Switch Off
 Land As Soon as Practical

If battery is fully discharged lower gear using EMERGENCY LANDING GEAR EXTENSION, the position lights will not be operating

Propeller Overspeed

Throttle Reduce
 Oil Pressure Check
 Propeller Control Full Decrease
 Airspeed Reduce
 Throttle As Required
 (below 2700 RPM)

Emergency Landing Gear Extension

Master Switch On
 Circuit Breakers Check
 Panel/Nav Lights Off (In Daytime)
 Gear Ind. Lights Check
 Airspeed Slow to 115 MPH/100 KIAS
 Emer. Ldg. Gear Ext Handle Down
 Gear Ind. Lights Check

Emergency Descent

Throttle Idle
 Propeller High RPM
 Mixture Rich
 Gear Down
 Bank 30° - 45°
 Fuel Pump On
 Roll Out 150 MPH/130 KIAS
 or pattern altitude

Engine Roughness

Alternate Air On
If roughness continues after one min.:
 Alternate Air Off
 Mixture Adjust for Smoothness
 Fuel Pump On
 Fuel Selector Switch Tanks
 Engine Gauges Check
 Magneto Switch "L" then "R" then "BOTH"

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

Prepare for POWER OFF LANDING

Loss of Oil Pressure

Land As Soon as Practical
Prepare for a POWER OFF LANDING

Loss of Fuel Pressure

Fuel Pump On
 Fuel Selector Fullest Tank

High Oil Temperature

Mixture Rich
 Throttle Reduce
 Land As Soon as Practical
Prepare for POWER OFF LANDING

Electrical Overload

ALT Switch On
 BATT Switch Off

If Alternator Load are reduced:

Electrical Load Reduce
 Land As Soon as Practical

If Alternator Loads are not reduced:

ALT Switch Off
 BATT Switch Off
 Land As Soon as Practical

Open Door

Airspeed Slow to 100 MPH/89 KIAS
 Cabin Vents Close
 Storm Window Open
 Door Secure Top Latch

Arrow Maneuvers

Takeoffs/Landings/Ground Ref./Steep Turns/Slow Flight

Normal Takeoff

(Before Takeoff Checklist Complete)
 Throttle Full
 Engine Instruments Verify Green
 Rotate 65-70 MPH/56-61 KIAS
 Climb out:
 Vx.....Gear Down **81/70**, Gear Up **91/79**
 Vy.....Gear Down **85/74**, Gear Up **95/83**
 500 ft AGL25" MP, 2500 RPM

Normal Landing

(Before Landing Checklist Complete)
 Entry/DownwindBCGUMPS
 Downwind -
 MP.....15-17"
 Airspeed115 MPH/100 KIAS
 Flaps10°
 Base -
 Airspeed105 MPH/91 KIAS
 Flaps25°
 Final -
 Airspeed90 MPH/78 KIAS
 Flaps40°
 GearCheck Down
 PropHigh RPM
 TouchdownJust above stall speed

Short Field Takeoff Obstacle Clearance

(Before Takeoff Checklist Complete)
 Flaps25°
 RunwayUse All Available
 Brakes.....Hold
 Throttle.....Full
 Engine Instruments..... Verify Green
 Brakes.....Release
 Rotate60-65 MPH/52-56 KIAS
 Climb Out Vx Gear Down: 81/70
 Clear of ObstacleGear Up
 ClimbVy Gear Up: 95/83
 FlapsRetract Slowly
 500 ft AGL25" MP, 2500 RPM

Short Field Takeoff No Obstacle

(Before Takeoff Checklist Complete)
 Flaps25°
 RunwayUse All Available
 BrakesHold
 ThrottleFull
 Engine InstrumentsVerify Green
 BrakesRelease
 Rotate60-65 MPH/52-56 KIAS
 Climb OutVx Gear Down: 81/70
 Landing GearUp
 ClimbVy Gear Up: 95/83
 FlapsRetract Slowly
 500 ft AGL25" MP, 2500 RPM

Short Field Landing

(Before Landing Checklist Complete)
 Entry/DownwindBCGUMPS
Approach slightly steeper than normal
 Downwind -
 MP15-17"
 Airspeed115 MPH/100 KIAS
 Flaps10°
 Base -
 Airspeed105 MPH /91 KIAS
 Flaps25°
 Final -
 Airspeed90 MPH/78 KIAS
 Flaps40°
 GearCheck Down
 PropHigh RPM
 Threshold -
 AirspeedAs per POH
 TouchdownJust above stall speed
Use max. foot and aerodynamic braking

Soft Field Takeoff

(Before Takeoff Checklist Complete)
 Flaps.....25°
 Flight Controls.....Full Back
 Engine Instruments.....Verify Green
 Throttle.....Full
 Rotate.....Min. Airspeed
Remain in ground effect until Vx Gear Down 81/70
 Landing GearUp
 ClimbVy Gear Up: 95/83
 FlapsRetract Slowly
 500 ft AGL25" MP, 2500 RPM

Soft Field Landing

(Before Landing Checklist Complete)
 Entry/Downwind.....BCGUMPS
 Downwind -
 MP15-17"
 Airspeed115 MPH/100 KIAS
 Flaps10°
 Base -
 Airspeed105 MPH/91 KIAS
 Flaps25°
 Final -
 Airspeed90 MPH/78 KIAS
 Flaps40°
 GearCheck Down
 PropHigh RPM
 Threshold -
 AirspeedAs per POH
 TouchdownJust above stall speed
Keep nosewheel off ground as long as possible, holding full backpressure. Use min. wheel braking

Go-Around

ApproachNot Stabilized by 100 ft
 Go-AroundExecute
 ThrottleFull
 Flight ControlIncrease Pitch Attitude
 FlapsRetract to 25°
 Landing GearUP after a positive rate of climb is established
 AirspeedAccelerate to Vx or Vy before final flap retraction
Maintain full power until 500 ft AGL then set climb power

Rectangular Course

Select Rectangular field for maneuver
 Clearing Turns.....Complete
 BCGUMPSComplete
 Throttle.....18" - 22" MP
 Propeller.....2400 RPM
 Airspeed.....125 MPH/108 KIAS
 Altitude.....600 - 1000 ft AGL
 Entry.....Downwind 45° ¼ -½ mi away from reference area
 Ground Track.....Adjust for wind drift to maintain ¼ -½ mi from reference

Turns Around a Point

Select a clearly defined point i.e. 4-Way Intersection
 Clearing TurnsComplete
 BCGUMPS.....Complete
 Throttle.....18" - 22" MP
 Propeller.....2400 RPM
 Airspeed.....125 MPH/108 KIAS
 Altitude.....600 - 1000 ft AGL
 Entry.....Downwind ¼ -½ mi from reference point
 Ground Track.....Adjust for wind drift to maintain ¼ -½ mi from radius

S - Turns Along a Road

Select road perpendicular to wind
 Clearing Turns.....Complete
 BCGUMPSComplete
 Throttle.....18" - 22" MP
 Propeller.....2400 RPM
 Airspeed.....125 MPH/108 KIAS
 Altitude600-1000 ft AGL
 Entry.....Downwind
 Ground Track.....Adjust for wind drift to maintain ¼ -½ mi from radius

Slow Flight

Clearing TurnsComplete
 BCGUMPS.....Complete
 Throttle.....15" MP
 Propeller.....High RPM
 Landing Gear.....Down
 Flaps.....40° (in white arc)
 Altitude.....Maintain
 Airspeed.....Stall Light ON
 Throttle.....18" - 22" MP
 Bank.....Shallow Turns
 Recovery.....Go-around procedure

Steep Turns

Clearing TurnsComplete
 BCGUMPSComplete
 Throttle.....18"-22" MP
 Propeller.....2400 RPM
 Airspeed.....125 MPH/108 KIAS
 Bank.....45°
 Turn360° either direction
 Roll OutOriginal heading
 RepeatOther direction

Arrow Maneuvers

Stalls/Commercial Maneuvers

Power Off-Stall

Clearing Turns	Complete
BCGUMPS	Complete
Throttle	15" MP
Propeller	High RPM
Landing Gear	Down
Flaps	40°
Stabilized Descent	Establish
Throttle	Idle
Stall	Pitch to Induce

Recognize and recover from stall

Stall Recovery:

Flight Control	Release back pressure
Throttle	Full
Flaps	Retract to 25°
Altitude	Minimal Loss
Landing Gear	Retract after a positive rate of climb
Airspeed	Accelerate to Vx or Vy before the final flap retraction

Power-On Stall Takeoff Configuration

Clearing Turns	Complete
BCGUMPS	Complete
Throttle	15" MP
Propeller	High RPM
Landing Gear	Down
Flaps	0° - 25°
Airspeed	80 MPH/69 KIAS
Throttle	Full
Stall	Pitch to Induce

Recognize and recover from stall.

Stall Recovery:

Flight Control	Release back pressure
Throttle	Full
Altitude	Minimal Loss
Landing Gear	Retract after a positive rate of climb
Airspeed	Accelerate to Vx or Vy before the final flap retraction

Power-On Stall Climb Configuration

Clearing Turns	Complete
BCGUMPS	Complete
Throttle	15" MP
Propeller	2500 RPM
Landing Gear	Up
Flaps	0°
Airspeed	95 MPH/83 KIAS
Throttle	25" MP
Stall	Pitch to Induce

Recognize and recover from stall.

Stall Recovery:

Flight Control	Release back pressure
Throttle	Full
Propeller	High RPM
Altitude	Minimal Loss
Airspeed	Accelerate to Vx or Vy before the final flap retraction

Cross-Controlled Stall

Clearing Turns	Complete
BCGUMPS	Complete
Throttle	15" MP
Propeller	High RPM
Landing Gear	Down
Flaps	0° - 40°
Airspeed	82 MPH/71 KIAS
Stabilized Descent	Establish
Stall	Pitch to Induce, Cross Controls

Recognize and recover from stall.

Stall Recovery:

Flight Control	Release back pressure
Throttle	Full
Altitude	Minimal Loss
Landing Gear	Retract after a positive rate of climb
Airspeed	Accelerate to Vx or Vy before the final flap retraction

Eights On Pylons

Reference Point	Select: 3-5 Sec. <i>(straight and level flight between pylons)</i>
Clearing Turns	Complete
BCGUMPS	Complete
Throttle	18" - 22" MP
Propeller	2400 RPM
Airspeed	125 MPH/108 KIAS
Entry	Downwind 45° at Pivotal Alt. PA= $(GS \times KIAS)$ 11.3
Bank	30° - 40°

Elevator Trim Stall

Clearing Turns	Complete
BCGUMPS	Complete
Throttle	15" MP
Propeller	2500 RPM
Landing Gear	As Specified
Flaps	0° - 40°
Airspeed	82 MPH/71 KIAS
Throttle	25" MP
Stall	Pitch to Induce, using Elevator Trim

Recognize and recover from stall.

Stall Recovery:

Flight Control	Release back pressure
Throttle	Full
Propeller	High RPM
Altitude	Minimal Loss
Landing Gear	Retract after a positive rate of climb (if down)
Airspeed	Accelerate to Vx or Vy before the final flap retraction

Secondary Stall

Clearing Turns	Complete
BCGUMPS	Complete
Throttle	15" MP
Propeller	High RPM
Flaps	0° - 40°
Airspeed	82 MPH
Stabilized Descent	Establish
Stall	Pitch to Induce

Recognize and recover from stall.

Stall Recovery:

Flight Control	Release back pressure
Throttle	Full
Flight Control	Increase back elevator pressure to initiate as secondary stall
Throttle	Full
Altitude	Minimal Loss
Landing Gear	Retract after a positive rate of climb
Airspeed	Accelerate to Vx or Vy before the final flap retraction

Accelerated Stall

Clearing Turns	Complete
BCGUMPS	Complete
Throttle	15" MP
Propeller	High RPM
Flaps	0°
Airspeed	82 MPH/71 KIAS
Bank	45°
Pitch	Maintain Alt. Induce Stall

Recognize and recover from stall.

Stall Recovery:

Flight Control	Release back pressure
Throttle	Full
Altitude	Minimal Loss
Airspeed	Accelerate to Vx or Vy

Steep Spiral

Altitude	Complete (3) 360° turns
Reference Point	Select
Clearing Turns	Complete
BCGUMPS	Complete
Throttle	Idle
Propeller	High RPM
Airspeed	110 MPH/95 KIAS
Spiral	Max. Bank 60°
Entry	Downwind ½ mi from reference point
Radius	Maintain constant ½ mi
Engine	Clear once each turn on the upwind
Ground Track	Adjust for wind to maintain ½ mi radius

Chandelles

Altitude	Min Alt. 1500 AGL
Clearing Turns	Complete
BCGUMPS	Complete
Throttle	18" - 22" MP
Propeller	High RPM
Airspeed	125 MPH/108 KIAS
0° - 90° Point	
Throttle	Full
Bank	30° Constant
Pitch	Gradually Increase
90° - 180° Point	
Bank	Gradual Rollout
Pitch	Constant
180° point	
Airspeed	5 kts above stall
Bank	0°

Arrow Maneuvers

Commercial Maneuvers Cont. Instrument Procedures

Lazy Eights

Altitude.....Min Alt 1500 AGL
Clearing Turns.....Complete
BCGUMPS.....Complete
Throttle.....18" - 22" MP
Propeller.....2400 RPM
Airspeed.....125 MPH/108 KIAS
(Constant change of pitch and roll rate)
45° Point.....Max. Pitch UP, Bank 15°
90° Point.....Level. Pitch, Bank 30°
135° Point..... Max. Pitch DN, Bank 15°
180° Point..... Level Pitch, Bank 0°
125 MPH/108KIAS
Entry Altitude

Power Off 180° Landing

Place to Land.....Locate
Enter Downwind.....1000 ft AGL
MP.....15-17"
Airspeed.....115 MPH/100 KIAS
ABEAM.....Throttle Idle
Propeller.....High RPM
Airspeed.....105 MPH/91 KIAS
Landing Gear.....As Required
Flaps.....As Required
Landing Assured.....90 MPH/78 KIAS
Touchdown.....+200 ft/-0 ft

Holding

*Begin slowing to holding speed 3 min.
prior to reaching fix*

Entry.....Select Type
MP.....16" - 18"
Airspeed.....125 MPH/108 KIAS
Propeller.....2400 RPM

Non-Precision Approach

Airspeed.....125 MPH/108 KIAS
MP.....16" - 18"
Propeller.....2400 RPM

Precision Approach

Airspeed.....125 MPH/108 KIAS
MP.....13" - 15"
Propeller.....2400 RPM

Missed Approach

Throttle.....Full
Propeller.....High RPM
Landing Gear.....Up (positive rate, below
125 MPH/108 KIAS)
Airspeed.....125 MPH/108 KIAS
Flaps.....Retract
500 ft AGL.....25"MP, 2500 RPM