

Preflight Inspection**1 Cabin**

1 Times

Time to Plane	Record
Hobbs Time	Record
Tach Time	Record

Aircraft Book

Weight and Balance	Check
Maintenance Logs	Not overdue for Scheduled Repairs
Aircraft Discrepancy Log	No Outstanding Repairs

3 Control Wheel Lock Remove

2 AROW

Airworthiness Certificate	Available
Registration	Available
Operating Handbook	Available

4 Ignition Switch OFF

5 Avionics Master Switch OFF

6 Master Switch ON

7 Fuel Quantity Indicators Check

9 Lights

Taxi and Landing	On - Check
Taxi and Landing	OFF
Beacon, Strobe, Nav	On - Check
Beacon, Strobe, Nav	OFF

11 Avionics Master Switch ON

12 Avionics Cooling Fan Check

13 Avionics Master Switch OFF

18 Flaps Extended Full

14 Alternate Static Source Off - In

16 Fuel Selector Both

15 Annunciator Panel Test

18 Pitot Heat On 30 Seconds, check if warm

19 Master Switch Off OFF

Check Wind Sock Direction and Strength

2 Empanage-Left

Baggage Compartment Check

1 Baggage Door Check

Left Side Fuselage Check

Horizontal Stabilizer-Left Side Check Leading Edge

Elevator-Left Side Check for Free Motion and Attachment

3 Tail Tie-Down Disconnected

Vertical Stabilizer Check for Free Motion and Attachment

Elevator-Right Side Check for Free Motion and Attachment

Trim Tab Check for attachment and position

Horizontal Stabilizer-Right Side Check Leading Edge

Empanage-Right

Right Side Fuselage Check

6 Antennas Check

3 Right Wing

1 Flaps Check for Attachment

Aileron Check for Free Motion and Attachment

Wing Check Leading Edge

Wing Tie-Down Disconnected

Main Landing Gear Check

Quick Drains-Wing Drain (5)

Quick Drains-Nose Drain (2)

Fuel Quantity Check Visually

Return Test Fuel to Tank If no sediment, water, or or contaminants

Fuel Filler Cap Secure and unobstructed

4 Nose

Right Static Source Opening Check

3 Engine Cooling Air Inlets Check

4 Propeller and Spinner Check

Engine Belts Check

5 Air Filter Check

6 Nose Wheel Strut and Tire Check

Engine Oil Dipstick/Filler Cap Check oil level (Min/Max)

Left Static Source Opening Check

5 Left Wing

3 Pitot Tube Check

4 Fuel Tank Opening Check

5 Stall Warning Opening Check

Wing Check Leading Edge

Aileron Check for Free Motion and Attachment

9 Flaps Check for Attachment

6 Wing Tie Down Disconnected

7 Main Landing Gear Check

8 Quick Drains-Left Drain (5)

1 Fuel Quantity Check Visually

Return Test Fuel to Tank If no sediment, water, or or contaminants

2 Fuel Filler Cap Secure and unobstructed

10 Chocks Remove

Before Starting Engine

Chocks	Removed
1 Pre-Flight Inspection	Complete
2 Passenger Briefing	Complete
3 Seats and Seat Belts	Adjust and Lock
4 Brakes	Set
5 Circuit Breakers	Check - In
6 Electrical Equipment	OFF
7 Avionics Master Switch	OFF
Cowl Flaps	Open
8 Alternate Static Source	OFF
9 Fuel Selector	Both

Starting Engine (With Battery)

1 Beacon	ON
2 Throttle	Open 1/4 Inch
Propeller	High RPM - In
3 Mixture	Idle Cut off - Out
5 Master Switch	ON
6 Auxiliary Fuel Pump Switch	ON
7 Mixture	Advance, positive fuel flow, return to idle
8 Auxiliary Fuel Pump Switch	OFF

Note: If engine is warm, omit priming procedure, step 7

4 Propeller Area	Clear
9 Ignition Switch	Start
10 Mixture	Advance smoothly to Rich
11 Throttle	900 RPMs
12 Oil Pressure	Check
13 Ammeter	Check

If Engine Floods, place mixture in IDLE CUT OFF, open throttle to full, crank engine. When engine fires, advance mixture to full rich and retard throttle promptly.

14 Lights	As Required
15 Avionics Master Switch	ON
16 Radios	ON
ATIS/AWOS	Check
Ground Frequency	Set
Tower Frequency	Set
Other Frequency	As Needed
17 Transponder	To SBY
18 Flaps	Retract
19 Flight Instruments	
Altimeter	Set
Clock	Set
GPS	Set
Compass	Calibrated
Heading Indicator	Set to Wind Direction
Taxi Time	Record
20 Brakes	Release

Before Takeoff

1 Brakes	Set
2 Seat Backs	Most Upright Position
3 Seats and Seat Belts	Check
5 Flight Controls	Move freely and properly
6 Flight Instruments	Check
7 Fuel Quantity	Check
8 Mixture	Full Rich
9 Fuel Selector	Both
10 Elevator Trim	Set for Takeoff
11 Throttle	1800 RPMs
a. Magnetos	Check
(Max drop 150 RPMs on either magneto)	
(Max difference 50 RPMs between magnetos)	
Propeller	Cycle High to low
Check Oil Press-Drop	
Check Manifold Press-Increase	
Check RPM-Drop	
b. Suction Gage	Check
c. Engine Instruments	Check
d. Ammeter	Check
12 Annunciator Panel	Check-Clear
13 Throttle	900 RPMs
14 Throttle Friction Lock	Adjust
15 Lights	
Nav and Strobe	ON
16 Radios	Switch to Tower Frequency
17 Transponder	Set to ALN-1200
HSI	Set
18 Auto-pilot	Turn on/Check ability to override/Turn off
19 Wing Flaps	Set for Takeoff (0 to 10 degrees)
Cowl Flaps	Open
20 Brakes	Release
4 Doors/Windows	Closed and Locked
21 Takeoff Time	Record

Takeoff**Normal Takeoff**

1 Wing Flaps	0 to 20 Degrees
2 Throttle	Full Open & 2400 RPMs
3 Mixture	Full Rich
4 Elevator Control	List nose wheel at 55 Knots
Abort if reach halfway point before reaching 60 knots	
5 Climb Speed	20 Degrees Flaps - 70 KIAS
Flaps	0 Degrees Flaps - 80 KIAS
Retract	
Vx - Best Angle of Climb	63 KIAS
Vy - Best Rate of Climb	80 KIAS

Short Field Takeoff

1 Wing Flaps	20 Degrees
2 Brakes	Apply and Hold
3 Throttle	Full Open & 2400 RPMs
4 Mixture	Full Rich
5 Brakes	Release
6 Elevator Control	Slightly Tail Low
7 Liftoff	50 KIAS
Abort if reach halfway point before reaching 60 knots	
8 Climb Speed	58 KIAS (until all obstacles are cleared)
Flaps	Retract after 70 KIAS
Vx - Best Angle of Climb	63 KIAS
Vy - Best Rate of Climb	80 KIAS

Soft Field Takeoff

1 Wing Flaps	0 Degrees
2 Throttle	Full Open & 2400 RPMs
3 Mixture	Full Rich
4 Elevator Control	Slightly Tail Low
Roll onto Runway and straight into takeoff roll, don't stop	
5 Liftoff	50 KIAS
Abort if reach halfway point before reaching 50 knots	
Push nose over, fly in ground effect until reaching 60 knots	
Climb Speed	70-80 KIAS
Vx - Best Angle of Climb	63 KIAS
Vy - Best Rate of Climb	80 KIAS

Enroute Climb

1 Air Speed	85-95 KIAS
2 Throttle	23 inch or Full (which ever is less) & 2400 RPMs
3 Mixture	15 GPH or Full (which ever is less)
Fuel Selector	Both
Cowl Flaps	Open
4 Engine Instruments	Check
5 Landing/Taxi Lights	OFF
Check Instruments	All Still in Green and reasonable

Cruise

Power	15-23 Inches & 2000-24000 RPMs
Elevator Trim	Adjust
Mixture	Lean (EGT 100 degrees Rich of Peak)
Check Instruments	All Still in Green and reasonable
Cowl Flaps	Closed

Descent

Power	As Desired
Mixture	Enrich
Cowl Flaps	Closed
Flaps (As desired)	As Desired
(0 - 10 Degrees below 140 KIAS)	
(10-20 Degrees below 120 KIAS)	
(20 Degrees/Full below 100 KIAS)	
Fuel Selector	Both
Radios	Set
Lights	
Landing/Taxi	ON

Before Landing

Seat Backs	Most Upright Position
Seats and Seat Belts	Secure and unobstructed
Fuel Selector	Both
Mixture	Rich
Propeller	High RPM - In
Autopilot	OFF

Landing**Normal Landing**

Air Speed	70-80 KIAS (Flaps Up)
Wing Flaps	As Desired
(0 - 10 Degrees below 140 KIAS)	
(10-20 Degrees below 120 KIAS)	
(20 Degrees/Full below 100 KIAS)	
Air Speed	60-70 KIAS (Flaps Down)
Power	Reduce to idle after clearing obstacle
Trim	Adjust
Touch Down	Main Wheels first
Landing Roll	Lower nose wheel gently
Brakes	Minimum Required

Short Field Landing

Air Speed	70-80 KIAS (Flaps Up)
Wing Flaps	Full Down (30 Degrees)
Air Speed	60 KIAS (until Flare)
Power	Reduce to idle after clearing obstacle
Trim	Adjust
Touch Down	Main Wheels first
Brakes	Apply Heavily
Flaps	Retract

Soft Field Landing

Air Speed	65-75 KIAS (Flaps Up)
Wing Flaps	Full Down (30 Degrees)
Air Speed	62 KIAS (Until Flare)
Trim	Adjust
Touch Down	Main Wheels First/Hold nose off
Nose Wheel	Lower slowly and gently to runway
Brakes	Minimum Required
Wing Flaps	Retract

Balked Landing - Go Around

Throttle	Full Power & 2400 RPMs
Wing Flaps	Retract to 20 Degrees
Climb Speed	55 KIAS
Wing Flaps	
10 Degrees (until obstacles cleared)	
Retract (after reaching safe altitude and 70 KIAS)	
Cowl Flaps	Open

After Landing

1 Wing Flaps	Retract
Cowl Flaps	Open
2 Transponder	To SBY
3 Reduce Electrical Load	
4 Trim	Set to Take off
Time	Note
Taxi Clearance	Receive

Securing Aircraft

3 Throttle	900 RPMs
1 Avionics Master Switch	OFF
4 Mixture	Idle Cut off - Out
5 Ignition Switch	OFF
8 Fuel Selector	Left or Right
9 Times	
Landing Time	Record
Shutdown Time	Record
Tach Time	Record
Hobbs Time	Record
2 Electrical Equipment	OFF
6 Master Switch	OFF
Ignition Key	Removed
7 Control Wheel Lock	Installed
10 Chock Aircraft	
Tie Down Aircraft	If necessary

Air Speeds for Normal Operations

V _{so}	Stall Speed - with Flaps	36 KTS
V _s	Stall Speed	43 KTS
V _x	Best Angle of Climb Speed	63 KTS
	Best Glide Speed	65 KTS
V _y	Best Rate of Climb Speed	80 KTS
V _{fe}	Max Flap Extended Speed	140 KTS
V _a	Maneuvering Speed	110 KTS
V _{no}	Max Structural Speed	140 KTS
V _{ne}	Never Exceed Speed	175 KTS

Air Speeds for Emergency Operations**Engine Failure After Takeoff**

Flaps Up	65 KIAS
Flaps Down	60 KIAS

Maneuvering Speed

2450 Lbs	99 KIAS
2000 Lbs	92 KIAS
1600 Lbs	82 KIAS

Maximum Glide

65 KIAS

Precautionary Landing with Engine

60 KIAS

Landing without Power

Flaps Up	65 KIAS
Flaps Down	60 KIAS