

INITIAL	START	RUN-UP	TAKEOFF	DESCENT	AFTER LANDING
<p>Weather &amp; Den. Alt. Weight &amp; Balance Performance Req. Flight Plan - File Papers - A.R.O.W Mags - Off Mixtures - Full Lean Crossfeed - Drain Pitot / Static - Drain Gear Lever - Down Master - On Gear Lights - 3 Green Flaps - Ext/Ck/Retract Pitot Heat - Test Stall Vanes - Test Lights - Int. / Ext. Fuel Gauges - True Master - Off</p> <p><b>EXTERIOR SUMMARY</b> <i>After Geographical Check</i></p> <p>Fuel Quantity Fuel Quality Caps / Drains / Vents Crossfeed Drain-Closed Engines / Oil / Belt Props / Air Intakes Exhaust Systems Cowl Flaps Surfaces &amp; Controls Pitot &amp; Static Ports Deice Equipment Gear / Tires / Brakes Antennas Baggage Doors Ties/Chocks/Towbar Final Walk Around</p> <p><b>INTERIOR</b></p> <p>Passenger Brief Hobbs Tach Time Circuit Breakers Oxygen ELT - Armed</p>	<p>Seat Track/Back-Lock Avionics - Off Autopilot/AC - Off Prop Sync - Off Alternate Air - Off Cowl Flaps - Open Fuel Selector - On Brakes - Set</p> <p><b>#1 Engine Start</b></p> <p>Mixture - Full Rich Prop - High RPM (7) Throttle - Half Prop - Clear Alternator - On Master - On Beacon - On Fuel Pump - Off Mags - On Starter - Engage Primer - As Req. Oil Pressure</p> <p><b>#2 Repeat Engine Start</b></p> <p>Lights - As Req. Mixture - As Req.</p> <p><b>PRE-TAXI / TAXI</b></p> <p>Seat Belts / Harness Heat/Vent/Defrost Deice - Electric Test Avionics - On / Set ATIS / AWOS Altimeter - Set XPDR - Alt + Sqwk ADS-B - On Radio - Test Taxi Light - As Req. Brakes-Release/Test XFeed-Test / FUEL-ON Attitude Indic.-Test Turn Coord. - Test HSI / Compass - Test</p>	<p>Brakes - Set Elec. Trim/Autopilot Trim-Takeoff Flight Controls Instruments Manifold Lines-Drain Mixture - Full Rich 1000 RPM Feather - Test</p> <p>1900 RPM Props - Cycle / Gov. Alt. Air - Test / Off Mags (R&amp;L) - Test Gyro Pressure Amps / Volts Alternators Oil Pressure Oil Temperature Annunciator Lights Idle - Check Closed Friction Lock</p> <p><b>PRE-TAKEOFF</b></p> <p>Flaps - 0°-25° Props - High RPM Mixture - Best Power Fuel Pumps - Off Fuel Selectors - On AC - Off XPDR - Alt + Sqwk Doors / Windows Pitot Heat / Deice Landing Light - On Strobes-On Time - Note Brakes - Release</p> <p><i>Abort Plan - Ready!</i></p>	<p>2575 RPM (Max) 39" MP (40" Max) Oil Pressure Rotate * <b>66</b> (76) Climb * <b>89</b> (102) Gear - Up Flaps - Up</p> <p><b>CLIMB</b></p> <p><b>102</b> (117) Throttles - 31.5" MP Props - 2450 RPM Mixture - As Req. Fuel Pumps - As Req. Prop Sync - On Yaw Damper-On Cowl Flaps - As Req Instruments Taxi / Land Light - Off Flight Plan - Open</p> <p><b>CRUISE</b></p> <p>Throttles Props Mixture Fuel Pumps - Off Cowl Flaps Instruments HSI To Compass Oxygen Fuel - Proper Tanks</p>	<p>Power - As Req. Mixture - Richen Fuel Selectors - On Cowl Flaps - Close ATIS / AWOS Altimeter - Set Defroster Instruments HSI To Compass</p> <p><b>PRE-LANDING</b></p> <p>Landing Light - On Autopilot - Off AC - Off Yaw Damper - Off Prop Sync - Off Gas... On / Pumps- Off Undercarriage... Down Mixture..... Full Rich Props..... 2250 RPM Flaps..... As Req. Seatbelts... &amp; Harness</p> <p><b>LANDING</b></p> <p>Gear - Down Flaps - 40° Or As Req. Props - High RPM Speed * <b>82</b> (94)</p> <p><b>GO AROUND</b> Power - Full Positive Rate Climb Flaps - Approach Gear - Up Flaps - Retract Cowl Flaps - Open</p>	<p>Flaps - Up Cowl Flaps - Open Strobes - Off Landing Light - Off Taxi Light - As Req. Deice Equip. - Off Pitot Heat - Off Mixture - As Req. Trim - Takeoff XPDR - Alt + Sqwk</p> <p><b>SECURING</b></p> <p>ELT - Verify Silent Heater - 2 Min / Off Avionics - Off AC - Off Mixture - Full Lean Mags - Off Master / Altntrs - Off Lights - Off Cowl Flaps - Closed Hobbs / Tach Time Secure Yoke Chocks / Tie Downs Pitot Cover Baggage Doors Cabin Doors</p> <p><b>Close Flight Plan</b></p> <p>* <i>Adjust Speed As Needed For Conditions</i></p>

Vr • Rotation Speed - <b>66</b> (76)	Vs0 • Stall with flaps - <b>61</b> (70)	Va • Max Abrupt (3500 lbs) - <b>119</b> (137)	Vle / Vlo Gear Speeds - <b>129</b> (148)
Vx • Best Angle Climb - <b>76</b> (87)	Vs • Stall w/o flaps - <b>63</b> (72)	Va • Max Abrupt (Full Gross) - <b>136</b> (156)	Vlr • Max Gear Retract - <b>107</b> (123)
Vxse • Best Angle 1 Eng - <b>76</b> (87)	Vmca • Min. Ctrl. 1 Eng. - <b>66</b> (76)	Vno • Max Structural Cruise - <b>163</b> (187)	Vfe • 10° Flaps - <b>138</b> (159)
Vy • Best Rate Climb - <b>89</b> (102)	Vsse • 1 Eng. Intentional - <b>76</b> (87)	Vne • Never Exceed - <b>195</b> (224)	Vfe • 25° Flaps - <b>121</b> (139)
Vyse • Best Rate 1 Eng. - <b>89</b> (102)		X Wind • Max Demo'd - <b>17</b> (20)	Vfe • Full Flaps - <b>107</b> (123)

	KNOTS (MPH)	FLAPS °	- NOTES -
<b>DEPARTURE</b>			(1) W/Optional Primer System Use Full Throttle To Prime, Close Throttle, Engage Starter
Rotation *	<b>66</b> (76)	0	Short Field w/Obstacle: 25° - <b>69 KIAS</b> (79) Thru 50'
Best Angle Climb	<b>76</b> (87)	0	Short Field w/o Obstacle: 0°
Best Rate Climb	<b>89</b> (102)	0	Avoid Continuous Operation Between 2000 & 2200 RPM Above 32" MP
<b>CRUISE</b> (TAS - 10,000')			
Economy	<b>157</b> (181)	0	25.0" Hg - 2200 RPM - 18.0 GPH - 55%
Normal	<b>170</b> (196)	0	28.0" Hg - 2300 RPM - 20.5 GPH - 65%
Maximum	<b>180</b> (207)	0	30.4" Hg - 2400 RPM - 23.6 GPH - 75%
<b>ARRIVAL</b>			
Approach	<b>98</b> (113)	10-25	17" MP - (Initially)
Short Final *	<b>82</b> (94)	40	Props - High RPM

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Specs Are Approximate Because Of Environment & Plane Model / Year Variables. Specs Are In: LBS, KIAS, Sea Level, Standard Day, Normal Category, Max. Gross Wt., No Wind, "Best Power", New Engine. ( ) = MPH.

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(IF UNABLE TO ABORT TAKEOFF)

### POWER LOSS DURING TAKEOFF

- THROTTLES – CLOSE BOTH IMMEDIATELY
- BRAKES – AS REQUIRED / STOP STRAIGHT AHEAD
- \* IF INSUFFICIENT RUNWAY REMAINS FOR STOPPING
  - \* FUEL SELECTORS – OFF
  - \* MASTER & MAGS – OFF

### ONE ENGINE IMMEDIATELY AFTER TAKEOFF >85 KIAS (Also One Engine Go-Around – Avoid If Possible)

- MAINTAIN SAFE AIRSPEED (Quality Landing Area Ahead?)
- GEAR / FLAPS – UP
- DIRECTIONAL CONTROL – MAINTAIN IDENTIFY
- VERIFY – CLOSE THROTTLE (Inop. Engine)
- PROP – FEATHER (Inop. Engine) (Above 800 RPM)
- ACCELERATE TO 89 KIAS (102 MPH) (5° Bank & 1/2 Ball to Good Engine)

### ONE ENGINE IN FLIGHT

- CONTROL AIRPLANE – MAINTAIN SAFE AIRSPEED >76 KIAS (87 MPH)
- INOPERATIVE ENGINE – IDENTIFY
- OPERATIVE ENGINE – ADJUST
- THROTTLE – AS NEEDED TO MAINTAIN CONTROL

- TROUBLE-SHOOT (Fuel On/Crossfeed, Fuel Pump-Hi, Mixture, Prop, Throttle, Master / Alt., Mags, Alternate Air)
- IF NO RESTART – SECURE DEAD ENGINE (Above 800 RPM) (Retard Throttle, Feather Prop, Mixture-Idle Cutoff, Fuel Pump Off, Fuel Off, Mag/Alt Off, Close Cowl Flap)

- COWL FLAP (OPERATIVE ENGINE) – AS REQUIRED
- FUEL PUMP (OPERATIVE ENGINE) – AS REQUIRED (Consider Xfeed)

### ONE ENGINE LANDING

- SECURE INOP. ENGINE – MAINTAIN SAFE AIRSPEED
- LOWER GEAR – WHEN FIELD ASSURED
- FLAPS – 25°
- FINAL APPROACH – 92 KIAS (106 MPH) (Minimum)
- FULL FLAPS – WHEN COMMITTED TO LAND

### BOTH ENGINES OUT / LANDING

- MAINTAIN SAFE AIRSPEED (Best Glide Not Given By Manufacturer)
- PROPS – FEATHER
- MIXTURE – FULL LEAN / IDLE CUTOFF
- FUEL SELECTORS – OFF
- SQUAWK 7700
- DECLARE EMERGENCY (TWR, APP, Unicom, 121.5)
- SEATBELTS / HARNESS
- FLAPS – AS NEEDED (Full Flaps When Field Assured)
- GEAR – DOWN (Up If Very Rough or Soft Terrain)
- MASTER / MAGS – OFF
- UNLATCH DOOR / PROTECT BODY

### ELECTRICAL FIRE IN FLIGHT

- ALL ELECTRICAL DEVICES + MASTER OFF (Mags On)
- CABIN HEAT & AIR – OFF
- IF FIRE OUT – MASTER ON ONLY IF CRITICAL (Vents – Open)
- THEN ONE ESSENTIAL ELECTRICAL DEVICE AT A TIME
- RESET CIRCUIT BREAKER ONLY IF CRITICAL

### ENGINE FIRE IN FLIGHT

- FUEL SELECTOR – OFF TO AFFECTED ENGINE
- CLOSE THROTTLE / FEATHER PROP
- MIXTURE – FULL LEAN / IDLE CUTOFF
- HEATER / DEFROSTER – OFF (Gear Down)
- INCREASE AIRSPEED AS NEEDED TO EXTINGUISH – 129 (148)

### ENGINE FIRE DURING START

- MIXTURE – FULL LEAN / IDLE CUTOFF
- CONTINUE CRANKING ENGINE / THROTTLE – FULL OPEN
- FUEL SELECTOR – OFF / MASTER – OFF
- SHUTDOWN OTHER ENGINE
- EVACUATE / FIRE EXTINGUISHER

### ICING

- PITOT HEAT/ DEICING EQUIPMENT – ON
- ALTERNATE INDUCTION AIR / STATIC SOURCE – AS NEEDED
- CABIN HEAT & DEFROST – MAXIMUM
- STRONGLY CONSIDER 180° TURN
- ATTAIN HIGHER OR LOWER ALTITUDE / INCREASE ENGINE & PROP SPEED
- FLAPS NOT RECOMMENDED FOR LANDING
- LAND FASTER AS NEEDED

### MANUAL GEAR EXTENSION

- REDUCE AIRSPEED BELOW 85 KIAS (98MPH)
- MOVE EMERGENCY CONTROL CLIP DOWNWARD CLEAR OF KNOB
- LOWER LANDING GEAR LEVER
- PULL EMERGENCY GEAR EXTENSION KNOB
- IF ELECTRICAL SYSTEM OK – VERIFY GEAR LIGHTS

### OTHER

- ELECTRICAL FAILURES: Alt. Light Illuminated. Observe Ammeters To Determine Inop. Alt. If Both Ammeters Show Zero Output, Reduce Load To A Minimum. Turn Off Both Switches; Then Turn On Momentarily One @ a Time While Observing Ammeters. Determine Which Shows Least (Not Zero) and Turn On. Reestablish Loads Up To 60A.
- If One Ammeter Shows Zero Output, Cycle Off & Then On. If Power Not Restored, Check CB's & Reset Once If Required. If Alternator Remains Inop, Reduce Loads & Continue Flight,

**RADIO OUT:** Check C.B.s & VOLUME / Recycle Alt. Switch If IFR & Still Out, Set XPDR To 7600. (Suggested For VFR If In B, C, D Airspace.)

TOWER SIGNALS	ON GROUND	IN FLIGHT
Steady Green	Cleared For Takeoff	Cleared To Land
Flashing Green	Cleared To Taxi	Return For Landing
Steady Red	Stop	Yield & Continue Circling
Flashing Red	Taxi Clear of Landing Area	Airport Unsafe - Do Not Land
Flashing White	Return To Starting Point	N/A
Alternating Red & Green	Use Extreme Caution	Use Extreme Caution

\* Every Plane Has A Different Empty Weight And Useful Load  
Piper Seneca II, PA-34-200T, (Continental:TSIO-360E or EB / LTSIO-360E or EB)

- \* Empty Weight: 3211.6 BS (Specific Plane Weight)
- \* Max. Useful Load: 1358.4 BS (Including Fuel @ 6 lbs/gal)
- Max. Bag Area: 200 LBS (Included in Useful Load)
- Max. T.O. Weight: 4570 LBS
- Max. Ldg. Weight: 4342 LBS
- Zero Fuel Weight: 4000 LBS

- Fuel Type: 100 LL (Blue) / 100 (Green)
- Usable Fuel: 93 Gallons (123 w/ Optional Tanks)
- Oil Capacity: 8 Quarts Per Engine (Minimum 6)
- Electrical: 12-14 VOLT / 65 AMP
- Tire Pressure: Nose - 31 psi / Mains - 55 psi