

N176PA Express S-90 Checklist		
<u>Pre-Flight Inspection</u>	<u>Before Start</u> 1. Preflight complete 2. Baggage secured 3. Rear hatch locked 4. Seatbelts check 5. Parking brake set 6. Circuit breakers Check and In 7. Avionics master Off 8. Maps and Docs in reach	<u>Start (cont'd)</u> 10. Oil pressure check 25psi 11. Fuel flow and pressure CHECK 12. Voltage 13.5vdc or higher 13. Avionics master ON 14. Avionics Fan On 15. Flaps set 20 deg for T/O
	<u>Starting Engine</u> 1. Master Switch ON 2. Fuel Quantity checked 3. Fuel Selector on Fullest tank 4. Ram air closed 5. Mixture lean 6. Throttle OPEN 1/4" 7. Propeller IN FULL 8. Avionics switch OFF 9. Nav lights ON 10. Strokes ON	<u>Pre takeoff Check</u> 1. Nosewheel straight 2. Brakes Set -parking brake and held 3. Doors and Windows Locked and double checked 4. CHT - Oil temp CHECK 5. Trim set for T/O (confirm operation) 6. Flight controls free and correct 7. Fuel quantity check 8. Fuel Selector - Fullest tank 9. Fuel Pump -OFF check pressure 10. Mixture Rich as required 11. Throttle 1700 RPM 12. Engine instruments - Check 13. Suction gauge - Check 14. Ammeter/voltage - Check 15. Magnetos (150RPM drop, max 50RPM difference) 16. Propeller - Cycle 3x 17. Throttle idle <1000 rpm 18. Circuit breakers check 19. Tach selector - switch 20. Flaps set 10 -20deg for T/O
	<u>Start Procedure</u> <u>Cold Start</u> 1. Boost pump on. 2. Check fuel pressure 3. Mixture rich for 5 sec then boost pump off 4. Starter engage <u>Hot Start</u> 1. Mixture lean 2. Boost pump on 3. Throttle open 1/4" 4. Starter engage 5. Upon start mixture rich slowly	<u>Takeoff Check</u> 1. Doors and windows locked and secured 2. Landing lights on with clearance 3. Strokes on 4. Transponder ON/ALT 5. Flaps Set 20 deg 6. Boost pump on 7. Mixture full rich 8. Trim set neutral
	<u>Flooded Start(HOT)</u> 1. Mixture lean 2. Throttle full open 3. Boost pump on 4. Starter engage 5. Upon engine start, throttle to idle and mixture rich	

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<u>Cruise</u> Cruise Climb – 140kts Prop – 2450 rpm	<u>Cruise Performance & Power Settings</u>	<u>Airspeed and Engine Limits</u> Vne ----- 220 KIAS Va ----- 130 Vfe ----- 123 Vs ----- 85 Vso----- 70 Vg ----- 90 Vref ----- 85 Vx -----110 Vy-----120 Vrot ----- 80 Oil Pressure Normal 30-60psi Min - 10 psi Max - 100psi Vacuum - 4.3 -5.9 In. Hg. Oil Temp Max 240f Normal - 160 -210f CHT Max 475 Normal 325 -400f Rec. 150 - 435f Fuel Pressure Min - -2.0psi Max - 35psi Max TO weight 3300 lbs Max Landing weight 3200 lbs

Approach
Gas – Fullest Tank
Landing Lights – On
Mixture – Rich
Prop – Full Forward

Approach
110kts clean
90 Kts dirty
85 kts short field

Shut-down & Park
Avionics – Off
All switches - Off
Mixture – Lean
Mags – OFF
Master - Off