

# **Checklist for Piper Saratoga N8213X**

## **(Speeds in KTS IAS)**

### **CARE & CLEANING OF THE SARATOGA**

#### **AVIONICS SCREENS**

- The cleaning kit is in a Ziploc bag in the pilot's seat back pocket.
- Wet a small area on a soft wipe with the spray and wipe the lenses.
- Use the soft wipe to dry the lenses.
- Return the kit to the Ziploc bag to contain any leakage caused by pressure changes in the aircraft.

#### **WINDOWS**

- Spray with PRIST aerosol.
- Wipe with clean soft cotton cloth.

#### **BUG REMOVAL**

- Use the clean nylon netted sponge and clean bucket with rinse water.
- Spray sponge with the Wash / Wax All cleaner and rub to remove bugs.
- Rinse with a washcloth and water.
- Wipe dry with a towel.

#### **TOP AND SIDE WIPEDOWN**

- Spray the Wash / Wax All on the surfaces to be cleaned.
- Wipe down surfaces with a damp wash cloth.
- Alternatively, mix some Wash / Wax All with water and use to wipe the surfaces to be cleaned.
- Use Simple Green as needed on tough spots.
- Wipe dry with a towel.

#### **BELLY DEGRASING**

- Use the dirty nylon netted sponge and the dirty bucket with rinse water.
- Spray areas with Simple Green.
- Clean with nylon netted sponge.
- Rinse with clean water.
- Wipe dry with a towel.

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **GPU USE FOR GROUND AVIONICS TRAINING**

### **POWER UP**

1. Turn the GPU power switch OFF (Fig 1).
2. Connect GPU to appropriate extension cords.
3. If using the block heater extension, set control to max.
4. Connect aircraft power cable to GPU. Verify the red wire is connected to red plug and black wire to black plug on GPU (Fig 2).
5. Connect the aircraft power cable to the aircraft external power plug on the left side of the engine cowling (some persistence is required to get the plug fully engaged) (Fig 3).
6. Turn BAT master switch ON.
7. Turn GPU power switch ON.
8. Turn avionics master ON.
9. Proceed with avionics training.

### **POWER DOWN**

1. Turn avionics master OFF.
2. Turn GPU power switch OFF.
3. Turn BAT master switch OFF.
4. Disconnect aircraft power cable from the aircraft external power plug.
5. The aircraft power cable may be left connected to the GPU.
6. Stow extension cords and GPU.

# Checklist for Piper Saratoga N8213X (Speeds in KTS IAS)

## GPU USE FOR GROUND AVIONICS TRAINING

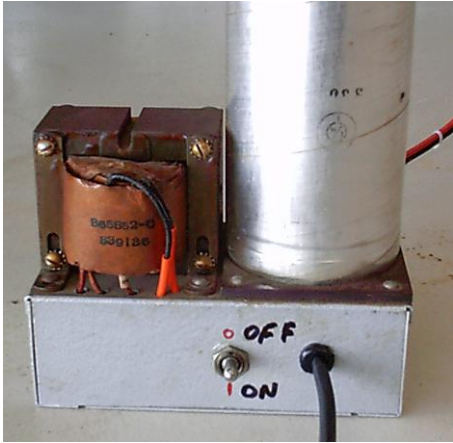


Figure 1



Figure 3

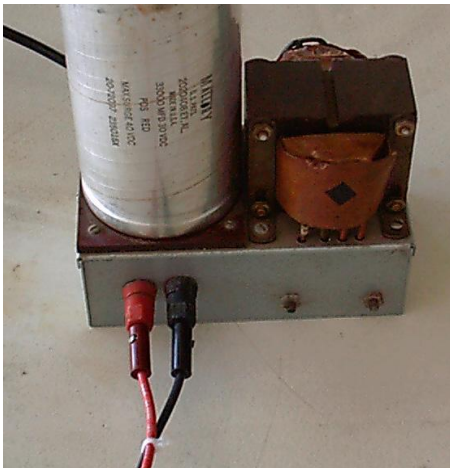


Figure 2

# Checklist for Piper Saratoga N8213X

(Speeds in KTS IAS)

## V-SPEEDS

<b>V<sub>SO</sub></b>	<b>58</b>	<b>Stall (Full Flaps)</b>
<b>V<sub>S1</sub></b>	<b>62</b>	<b>Stall (No Flaps)</b>
<b>V<sub>R</sub></b>	<b>80</b>	<b>Takeoff Rotation (3600 lbs, No Flaps)</b>
<b>V<sub>R</sub></b>	<b>66</b>	<b>Takeoff Rotation (3600 lbs, 25° Flaps)</b>
<b>V<sub>Y</sub></b>	<b>90</b>	<b>Best Rate (No Flaps, 3600 lbs)</b>
<b>V<sub>X</sub></b>		<b>Best Angle</b>
	<b>76</b>	<b>No Flaps, 3600 lbs</b>
	<b>71</b>	<b>25° Flaps, 3600 lbs</b>
	<b>100</b>	<b>Enroute Climb</b>
<b>V<sub>FE</sub></b>	<b>112</b>	<b>Maximum Flap Extension</b>
<b>V<sub>A</sub></b>		<b>Design Maneuvering</b>
	<b>134</b>	<b>At 3600 lbs Gross Weight</b>
	<b>104</b>	<b>At 2225 lbs Gross Weight</b>
<b>V<sub>NO</sub></b>	<b>154</b>	<b>Maximum Structural Cruising</b>
<b>V<sub>NE</sub></b>	<b>197</b>	<b>Never Exceed</b>
<b>V<sub>BG</sub></b>	<b>80</b>	<b>Best Glide (lower at less than 3600 lb)</b>
	<b>71<sup>1</sup></b>	<b>Minimum Sink Rate</b>

**Note 1: Estimated as mid-point between V<sub>S1</sub> and Best Glide. Results in lowest sink rate, or maximum time in the air in an engine out situation.**

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **PREFLIGHT INSPECTION**

### **1. COCKPIT & CABIN**

1. Parking Brake – SET
2. Weight and Balance – CHECKED
3. AROW Documents – IN AIRPLANE
4. VOR – CHECKED WITHIN 30 DAYS (IFR)
5. Pitot & Static Drains – DRAIN
6. ELT Switch – VERIFY IN ARMED POSITION
7. Mags – CONFIRM OFF
8. Electrical Switches – OFF
9. Flight Controls – PROPER OPERATION
10. Flight Controls – NO BINDING OR NOISES
11. Throttle – MINIMUM
12. Prop – MAX RPM
13. Mixture – IDLE CUT OFF
14. Trim – NEUTRAL
15. Flaps – PROPER OPERATION
16. Avionics Master – OFF
17. Master Switch – ON
18. Fuel Gauges – VERIFY QUANTITY IN TANKS
19. Annunciator Lights – VERIFY ON
20. Master Switch – OFF
21. Empty Seats – FASTEN SEAT BELTS

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **PREFLIGHT INSPECTION**

### **2. RIGHT WING**

1. Wing – NO DAMAGE, ICE, FROST, SNOW
2. Flap, Hinges, Linkage - SECURE
3. Aileron – SECURE, FREE, HINGES
4. Navigation & Strobe Lights – SECURE
5. Wing Tie-Down – DISCONNECT
6. Fuel Tank – LEVEL & SECURE COVER
7. Fuel Quantity Gauge – CHECK LEVEL
8. Fuel Tank Vent – CLEAR
9. Fuel Sump – DRAIN
10. Chocks – REMOVE
11. Main Wheel Tire – CONDITION & INFLATION
12. Main Gear Strut – PROPER INFLATION
13. Leading Edge Air Vent – CLEAR

### **3. NOSE SECTION**

1. Windshield – CLEAN, SECURE, NO CRACKS
2. Baggage Door – CLOSED & SECURE
3. Right Cowling – SECURE & NO DAMAGE
4. Prop & Spinner – SECURE & NO DAMAGE
5. Cooling Air Inlets – CLEAR; NO FOREIGN MATERIAL UNDER COWLING
6. Alternator Belt – SECURE
7. Landing Light – NO DAMAGE
8. Nose Gear Strut – PROPER INFLATION
9. Nose Wheel Tire – CONDITION & INFLATION
10. Chocks – REMOVE
11. Engine Oil – 9 QUARTS MINIMUM
12. Dipstick – PROPERLY SEATED
13. Oil Filler Cap – SECURE
14. Exhaust Stack – CLEAR & SECURE
15. Engine Air Inlet – CLEAR
16. Left Cowling – SECURE & NO DAMAGE

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **PREFLIGHT INSPECTION**

### **4. LEFT WING**

1. Wing – NO DAMAGE, ICE, FROST, SNOW
2. Leading Edge Air Vent – CLEAR
3. Main Gear Strut – PROPER INFLATION
4. Main Wheel Tire – CONDITION & INFLATION
5. Chocks – REMOVE
6. Fuel Sump – DRAIN
7. Fuel Tank Vent – CLEAR
8. Fuel Quantity Gauge – CHECK LEVEL
9. Fuel Tank – LEVEL & SECURE COVER
10. Stall Switches – FREE AND UNDAMAGED
11. Pitot Head – Pitot, Static & Drain Holes CLEAR
12. Wing Tie-Down – DISCONNECT
13. Navigation & Strobe Lights – SECURE
14. Aileron – SECURE, FREE, HINGES
15. Flap, Hinges, Linkage - SECURE

### **5. FUSELAGE & EMPENNAGE**

1. Surfaces – NO DAMAGE, ICE, FROST, SNOW
2. Baggage Door – SECURE
3. Com Antennas – SECURE
4. Air Vent – CLEAR
5. VOR Antenna – SECURE
6. Stabilator – NO DAMAGE, ICE, FROST, SNOW
7. Stabilator & Trim Tab – SECURE, FREE, HINGES
8. Rudder – SECURE, FREE
9. Nav Light – SECURE
10. Tail Tie Down – DISCONNECT
11. Fuel Strainer – DRAIN (6 SEC EACH WITH FUEL SELECTOR ON LEFT & RIGHT TANKS)

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **PREFLIGHT INSPECTION**

### **6. ELECTRICAL SYSTEMS**

1. Turn Coordinator – FLAG SET
2. Master Switch – ON
3. Interior Panel Lights – ON, CHECK, OFF
4. Nav Lights – ON
5. Beacon/Strobe – ON
6. Landing Light – ON
7. Pitot Heat – ON
8. Walk Around – VERIFY: LIGHTS; PITOT HEAT; STALL WARNINGS
9. All Electrical Switches – OFF
10. Turn Coordinator – GYRO RUNNING, NO FLAG
11. Master Switch – OFF

## **BEFORE STARTING ENGINE**

1. Preflight inspection – COMPLETE
2. Towbar – STOWED
3. Baggage Doors – CLOSED & SECURED
4. Passenger Briefing – COMPLETE
5. Seatbelts – FASTENED & SNUG
6. Seatbacks – UPRIGHT
7. Cabin Doors – CLOSE & SECURE
8. Clock – SET, RUNNING
9. Master Switch – OFF
10. Electrical Equipment – OFF
11. Autopilot – OFF
12. Avionics Master – OFF
13. Circuit Breakers – CHECK IN
14. Fuel Selector Valve – FULLEST TANK
15. Flaps – UP
16. Brakes – CHECK FIRM
17. Parking Brake – SET



# Checklist for Piper Saratoga N8213X

(Speeds in KTS IAS)

## STARTING ENGINE COLD & WARM

1. Mags – BOTH
2. Throttle – ¼ to ½ INCH OPEN
3. Prop – FULL RPM (FORWARD)
4. Mixture – IDLE CUT OFF
5. Master Switch – ON
6. Fuel Pump – ON (**30 SEC FOR WARM START**)
7. (**COLD**) Mixture – RICH ~4 SEC; THEN CUT OFF
8. (**WARM**) Mixture – RICH ~1-2 SEC; THEN CUT OFF
9. Prop – CLEAR
10. Starter – ENGAGE
11. Mixture – FULL RICH WHEN ENGINE FIRES
12. Throttle – 1000 to 1200 RPM
13. Oil Pressure – VERIFY RISING
14. Mixture – LEAN AS NEEDED TO PREVENT FOULING

## STARTING ENGINE WHEN FLOODED OR HOT

1. Mags – BOTH
2. Throttle – FULL OPEN
3. Prop – FULL RPM (FORWARD)
4. Mixture – IDLE CUT OFF
5. Master Switch – ON
6. Fuel Pump – OFF (**FLOODED START**)
7. Fuel Pump – ON (**30 SEC FOR HOT START**)
8. Prop – CLEAR
9. Starter – ENGAGE
10. Mixture – FULL RICH WHEN ENGINE FIRES
11. Throttle – RETARD TO 1000 to 1200 RPM
12. Oil Pressure – VERIFY RISING
13. Mixture – LEAN AS NEEDED TO PREVENT FOULING

**Hot Start** – less than 30 min cool down. **Warm Start** – more than 1 hour cool down. If in doubt, try hot start first.

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **STARTING WITH EXTERNAL POWER SOURCE**

1. Master Switch – OFF
2. Electrical Equipment – OFF
3. Power Terminals – CONNECT TO EXTERNAL SOURCE
4. External Power Plug – INSERT INTO FUSELAGE CONNECTOR
5. Start using appropriate procedure with Master Switch OFF
6. Throttle – LOWEST POSSIBLE RPM
7. External Power Plug – DISCONNECT
8. Master Switch – ON; CHECK AMMETER
9. Oil Pressure – CHECK

# **Checklist for Piper Saratoga N8213X**

## **(Speeds in KTS IAS)**

### **PRE-TAXI**

1. Fuel Pump – OFF (TO CHECK MECHANICAL PUMP)
2. Nav & Landing Lights – ON AS NEEDED
3. Avionics Master – ON
4. Transponder – STBY
5. Radios – CHECK (tune VOR, ILS), & SET
6. Radios – VERIFY ELT OFF @ 121.5
7. Marker Beacon Lights – TEST
8. Compass – VERIFY HEADING
9. Altimeter – SET & VERIFY +/- 75 FT OF FIELD ELEV
10. HSI – SELECT SL1; SET HEADING
11. Wind – SET HEADING BUG FOR TAXI
12. MX20 – SELF TEST OK; SET BARO; DATABASE
13. GX60 – SELF TEST OK; DATABASE

### **TAXIING**

1. Taxi Area – CLEAR
2. Parking Brake – RELEASE
3. Prop – FULL RPM (FORWARD)
4. Throttle – APPLY SLOWLY
5. Brakes – CHECK
6. Steering – VERIFY NOSE WHEEL TURNING
7. Instruments – VERIFY WORKING (Heading Indicator, Turn Coordinator, Attitude Indicator - 5° max indication in taxi turns)

# Checklist for Piper Saratoga N8213X

(Speeds in KTS IAS)

## GROUND CHECK (RUN-UP)

1. Parking Brake – SET
2. Fuel Selector – FULLEST MAIN TANK
3. Propeller – FULL RPM (FORWARD)
4. Mixture – ENRICHEN AS NEEDED
5. Throttle – 2000 RPM:
  - a. Mags – 175 RPM MAX DROP; 50 RPM MAX DIFFERENTIAL
  - b. Propeller – CYCLE (500 RPM MAX DROP)  
[Repeat 3 times in Cold Weather]
  - c. Alternate Air – OPEN then CLOSE
  - d. Vacuum – 4.8” Hg. To 5.2” Hg.
  - e. Oil Pressure – IN GREEN RANGE
  - f. Oil Temperature – IN GREEN RANGE
  - g. Ammeter – NORMAL LIGHT LOAD CURRENT
  - h. Ammeter – LANDING LIGHT & PITOT HEAT ON;  
NORMAL INCREASE IN LOAD CURRENT
  - i. Fuel Pump – CYCLE; CHECK FUEL FLOW &  
ENGINE OPERATION
  - j. Fuel Selector – VERIFY FLOW EACH TANK
6. Throttle – RETARD to 1000 to 1200 RPM
7. Mixture – LEAN AS NEEDED TO PREVENT  
FOULING
8. Controls – FREE & PROPER MOVEMENT
10. Flaps – CHECK
11. Electric Trim Master Switch – ON
12. Electric Trim – CHECK; VERIFY MANUAL  
OVERRIDE
13. Electric Trim Master Switch – OFF; VERIFY NO TRIM
14. Electric Trim Master Switch – ON
15. Turn Coordinator – NO FLAG
16. Airspeed and VSI – VERIFY ZERO
17. HSI – SL1; CHECK HEADING; NO HDG FLAG;  
SLAVING INDICATOR MOVING
18. Altimeter – COMPARE TO TDZE (max 75 ft error)
19. Annunciators – TEST LIGHTS (ENGINE & HSI)

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **AUTOPILOT CHECK**

1. Radio Coupler – HDG MODE
2. Autopilot – ENGAGE ROLL MODE
3. Roll Knob – VERIFY YOKE MOVES SAME DIRECTION
4. Heading Bug – SET TO CURRENT HEADING
5. Autopilot – ENGAGE HEADING MODE
6. Heading Bug – VERIFY YOKE MOVES SAME DIRECTION
7. Verify yoke movement by autopilot can be manually overridden.
8. Disengage Switch – VERIFY OPERATION
9. Autopilot – CENTER PITCH DISK
10. Autopilot – ENGAGE ROLL AND PITCH MODE
11. Pitch Disk – VERIFY YOKE MOVES SAME DIRECTION
12. Verify yoke movement by autopilot can be manually overridden.
13. Disengage Switch – VERIFY OPERATION

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **CLEARANCE**

1. Obtain clearance
2. Radios & Navigation – SET
3. Transponder – SET
4. Autopilot Source – NAV OR GPS SET
5. Heading Bug – SET
6. HSI OBS – SET

## **BEFORE TAKEOFF**

1. Nav & Landing Lights – ON AS NEEDED
2. Fuel Pump – ON
3. Autopilot – OFF
4. Engine Gauges – VERIFY NORMAL
5. Prop – FULL RPM (FORWARD)
6. Alternate Air – CLOSED
7. Fuel Selector – FULLEST TANK
8. Flaps – SET
9. Trim – SET
10. Seatbelts – FASTENED & SNUG
11. Seatbacks – UPRIGHT
12. Doors – LATCHED & SECURE
13. Pilot Vent Window – CLOSED
14. Parking Brake – RELEASE

## **READY FOR TAKEOFF**

1. Strobes – ON
2. Pitot Heat – ON AS NEEDED
3. Mixture – FULL RICH (LEAN AT HIGH DENSITY ALTITUDE)
4. Transponder – ALT
5. Time Off – RECORD

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **TAKEOFF (NORMAL)**

1. Flaps – UP
2. Trim – SLIGHTLY AFT OF NEUTRAL
3. Heading Indicator & Compass – VERIFY RUNWAY HEADING & CORRECT RUNWAY
4. Throttle – FULL OPEN (apply slowly)
5. Engine Gauges – VERIFY NORMAL
6. Airspeed – VERIFY WORKING
7. Rotate – 80 KTS (74 KTS LIGHTLY LOADED)
8. Climb – 90 KTS
9. Throttle/Prop – FULL / 2500 RPM @ SAFE ALTITUDE
10. Landing & Taxi Lights – OFF

## **TAKEOFF (SHORT FIELD WITH OBSTACLE)**

1. Flaps – 25° (2<sup>nd</sup> NOTCH)
2. Trim – SLIGHTLY AFT OF NEUTRAL
3. Heading Indicator & Compass – VERIFY RUNWAY HEADING & CORRECT RUNWAY
4. Throttle – FULL OPEN (apply slowly)
5. Engine Gauges – VERIFY NORMAL
6. Airspeed – VERIFY WORKING
7. Rotate – 66 KTS (58 KTS LIGHTLY LOADED)
8. Climb – 71 KTS (61 KTS LIGHTLY LOADED)
9. Climb when Obstacle Cleared – 90 KTS
10. Flaps – RETRACT SLOWLY
11. Throttle/Prop – FULL / 2500 RPM @ SAFE ALTITUDE
12. Landing & Taxi Lights – OFF

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **TAKEOFF (SHORT FIELD, NO OBSTACLE)**

1. Flaps – 25° (2<sup>nd</sup> NOTCH)
2. Trim – SLIGHTLY AFT OF NEUTRAL
3. Heading Indicator & Compass – VERIFY RUNWAY HEADING & CORRECT RUNWAY
4. Throttle – FULL OPEN (apply slowly)
5. Engine Gauges – VERIFY NORMAL
6. Airspeed – VERIFY WORKING
7. Rotate – 66 KTS (58 KTS LIGHTLY LOADED)
8. Climb – 90 KTS
9. Throttle/Prop – FULL / 2500 RPM @ SAFE ALTITUDE
10. Landing & Taxi Lights – OFF

## **TAKEOFF (SOFT FIELD WITH OBSTACLE)**

1. Taxi – ELEVATOR FULL AFT
2. Flaps – 25° (2<sup>nd</sup> NOTCH)
3. Trim – SLIGHTLY AFT OF NEUTRAL
4. Heading Indicator & Compass – VERIFY RUNWAY HEADING & CORRECT RUNWAY
5. Throttle – FULL OPEN (apply slowly)
6. Engine Gauges – VERIFY NORMAL
7. Airspeed – VERIFY WORKING
8. Rotate – LIFT NOSE AS SOON AS POSSIBLE
9. Liftoff – LOWEST POSSIBLE AIRSPEED
10. Climb – 71 KTS (61 KTS LIGHTLY LOADED)
11. Climb when Obstacle Cleared – 90 KTS
12. Flaps – RETRACT SLOWLY
13. Throttle/Prop – FULL / 2500 RPM @ SAFE ALTITUDE
14. Landing & Taxi Lights – OFF



**Checklist for Piper Saratoga N8213X**  
(Speeds in KTS IAS)

**TAKEOFF (SOFT FIELD, NO OBSTACLE)**

1. Taxi – ELEVATOR FULL AFT
2. Flaps – 25° (2<sup>nd</sup> NOTCH)
3. Trim – SLIGHTLY AFT OF NEUTRAL
4. Heading Indicator & Compass – VERIFY RUNWAY  
HEADING & CORRECT RUNWAY
5. Throttle – FULL OPEN (apply slowly)
6. Engine Gauges – VERIFY NORMAL
7. Airspeed – VERIFY WORKING
8. Rotate – LIFT NOSE AS SOON AS POSSIBLE
9. Liftoff – LOWEST POSSIBLE AIRSPEED
10. Climb – 90 KTS
11. Flaps – RETRACT SLOWLY
12. Throttle/Prop – FULL / 2500 RPM @ SAFE  
ALTITUDE
13. Landing & Taxi Lights – OFF

# **Checklist for Piper Saratoga N8213X**

## **(Speeds in KTS IAS)**

### **CLIMB**

1. Throttle/Prop – FULL / 2500 RPM
2. Airspeed (Best Rate) – 90 KTS
3. Airspeed (Enroute for Better Cooling) – 100 KTS
4. Engine Instruments – VERIFY IN GREEN ARC
5. Fuel Pump – OFF AT SAFE ALTITUDE

### **CRUISE**

1. Fuel Pump – OFF
2. Throttle/Prop – SET PER TABLE (75% MAX)
3. Mixture – LEAN 75° RICH OF PEAK
4. Fuel Pump – ON WHEN CHANGING TANKS
5. HSI – MONITOR SLAVING INDICATOR & FLAGS
6. Engine Instruments – VERIFY IN GREEN ARC
7. Vacuum – MONITOR

### **PRE-LANDING**

1. Fuel Pump – ON
2. Fuel Selector – FULLEST TANK
3. Mixture – RICH
4. Seatbelts – FASTENED & SNUG
5. Seatbacks – UPRIGHT
6. Landing Light – ON
7. Marker Beacon –TEST and SPKR or HEADPHONE
8. Brakes – TEST FIRMNESS
9. Approach Power & Airspeed – 16 in / 2400 RPM FOR 112 KTS LEVEL FLIGHT (top of white arc)
10. Approach Power & Airspeed – 12 in / 2400 RPM FOR 112 KTS @ -500 FPM (top of white arc)

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **LANDING (NORMAL)**

1. Autopilot – OFF
2. Downwind at Threshold
  - a. **Throttle/Prop –**
  - b. Airspeed – 105 KTS
  - c. Flaps - 10° (1<sup>st</sup> NOTCH)
3. Base
  - a. Airspeed – 100 KTS
  - b. Flaps – 25° (2<sup>nd</sup> NOTCH)
4. Final
  - a. Airspeed – 95 KTS (85 KTS LIGHTLY LOADED)
  - b. Flaps – FULL
5. Touchdown
  - a. Throttle – CLOSED
  - b. Attitude – NOSE HIGH; MAIN GEAR FIRST
  - c. Braking – MINIMUM REQUIRED

## **LANDING (SHORT FIELD)**

1. Airspeed on Final – 79 KTS
2. Flaps - FULL

## **LANDING (CROSSWIND OR GUSTY)**

1. Airspeed on Final – 95 KTS + ½ GUST FACTOR
2. Flaps - 25° (2<sup>nd</sup> NOTCH) MAXIMUM

**Checklist for Piper Saratoga N8213X**  
(Speeds in KTS IAS)

**BALKED LANDING (GO-AROUND)**

1. Mixture – FULL RICH
2. Propeller – FULL RPM
3. Throttle – FULL
4. Flaps – SLOWLY RETRACT TO HALF
5. Airspeed – 80 KTS
6. Airspeed – 76 KTS (BEST ANGLE)
7. Flaps – SLOWLY RETRACT AT SAFE ALTITUDE
8. Airspeed – 90 KTS (BEST RATE)
9. Airspeed – 76 KTS (BEST ANGLE)
10. Throttle/Prop – FULL / 2500 RPM @ SAFE ALTITUDE
11. Landing & Taxi Lights – OFF

# **Checklist for Piper Saratoga N8213X**

(Speeds in KTS IAS)

## **AFTER LANDING**

1. Flaps – UP
2. Transponder – STANDBY
3. Fuel Pump – OFF
4. Flight Plan – CLOSE
5. Landing Light – OFF (DAY TIME)

## **SHUTDOWN**

1. Brakes – SET
2. Throttle – IDLE
3. Propeller – FULL RPM
4. Avionics Master – OFF
5. Garmin 396 – OFF
6. Electrical Equipment – OFF
7. Mixture – IDLE CUT OFF
8. Mags – OFF
9. Master Switch – OFF
10. Cabin Courtesy Lights – OFF

## **SECURING AIRCRAFT**

1. Prop – POSITION TO CLEAR TOWBAR
2. Wheel Chocks – SET
3. Tie Downs – SECURE
4. Parking Brake – AS NEEDED
5. Doors – LOCKED
6. Baggage Compartment – LOCKED



# **Emergency Procedures for Saratoga N8213X**

(Speeds in KTS IAS)

## **ENGINE FIRE DURING START**

### **CONFINED TO INTAKE OR EXHAUST**

1. Continue cranking engine with starter
2. Mixture – IDLE CUT OFF
3. Throttle – FULL OPEN
4. Fuel Pump – OFF
5. Fuel Selector – OFF
6. Electrical Equipment – OFF
7. Exit aircraft if fire continues
8. Use fire extinguisher as necessary
9. Inspect for damage prior to restart

### **BEYOND INTAKE OR EXHAUST**

1. Conduct the following steps only if they can be safely completed before exiting the aircraft
2. Throttle – CLOSED
3. Mixture – IDLE CUT OFF
4. Fuel Selector – OFF
5. Master Switch – OFF
6. Mags – OFF
7. Exit Aircraft
8. Use fire extinguisher as necessary

# Emergency Procedures for Saratoga N8213X

(Speeds in KTS IAS)

## ENGINE FIRE IN FLIGHT

1. Fuel Selector – OFF
2. Throttle – CLOSED
3. Mixture – IDLE CUT OFF
4. Fuel Pump – OFF
5. Heat & Defrost – OFF (to prevent smoke induction)
6. Vents - OPEN AS NEEDED TO CLEAR SMOKE
7. Land using “POWER OFF LANDING”
8. Do not attempt air restart of the engine
9. Vents – OPEN AS NEEDED TO CLEAR SMOKE

## ELECTRICAL FIRE IN FLIGHT

1. Master Switch – OFF
2. All Electrical Equipment – OFF
3. Heat & Defrost – OFF (to prevent smoke induction)
4. Vents – OPEN AS NEEDED TO CLEAR SMOKE
5. Use fire extinguisher as necessary
6. If fire continues, land using “FORCED LANDING”  
**If fire or smoke stops:**
7. Master Switch – ON
8. Turn on desired electrical equipment one at a time to isolate faulty circuit.
9. Land as soon as practical



# **Emergency Procedures for Saratoga N8213X**

(Speeds in KTS IAS)

## **ENGINE FAILURES ON TAKEOFF**

### **ON TAKEOFF ROLL**

1. Throttle – CLOSED
2. Brakes – APPLY MAXIMUM
3. Flaps – RETRACT
4. Mixture – IDLE CUT OFF
5. Mags – OFF
6. Fuel Selector – OFF
7. Master Switch – OFF

### **AIRBORNE AND SUFFICIENT RUNWAY REMAINS**

1. Land – STRAIGHT AHEAD ON RUNWAY
  2. Throttle – CLOSED
- After touchdown:**
3. Brakes – APPLY MAXIMUM
  4. Flaps – RETRACT
  5. Mixture – IDLE CUT OFF
  6. Mags – OFF
  7. Fuel Selector – OFF
  8. Master Switch – OFF

### **AIRBORNE AND INSUFFICIENT RUNWAY REMAINS TOO LOW FOR RESTART ATTEMPT**

1. Airspeed – 80 KTS (BEST GLIDE)
2. Landing straight ahead if possible
3. Shallow turns only to avoid obstacles – a 180 back to the airport is generally not the safest option
4. Follow POWER OFF LANDING procedure

# **Emergency Procedures for Saratoga N8213X**

(Speeds in KTS IAS)

## **ENGINE FAILURE IN FLIGHT**

1. Airspeed – 80 KTS (BEST GLIDE)
2. Fuel Selector – FULLEST TANK
3. Fuel Pump – ON
4. Mixture – FULL RICH
5. Alternate Air – OPEN
6. Engine Gauges – CHECK FOR CAUSE OF FAILURE
7. If no improvement, vary mixture, throttle, and RPM settings and check mags L, R, & BOTH
8. With fuel starvation, it may take up to 10 sec to re-establish fuel flow  
**When power is restored:**
9. Alternate Air - CLOSED
10. Fuel Pump – OFF
11. Mixture – LEAN AS NEEDED
12. If power is not restored, trim for 80 KTS and prepare for power off landing

## **ENGINE POWER LOSS / ROUGH RUNNING**

1. Alternate Air – OPEN
2. Mixture – FULL RICH
3. Mags – VERIFY ON BOTH
4. Fuel Selector – TRY OTHER TANK
5. If no improvement, vary mixture, throttle, and RPM settings and check mags L, R, & BOTH
6. Land as soon as practical

# **Emergency Procedures for Saratoga N8213X**

(Speeds in KTS IAS)

## **POWER OFF LANDING**

1. Airspeed – 80 KTS (BEST GLIDE)
2. Mixture – IDLE CUT OFF
3. Fuel Selector – OFF
4. Throttle – FULL OPEN (to reduce engine drag)
5. Prop – MIN RPM (to reduce prop drag)
6. Flaps – UP (to maximize glide range)
7. Radio – MAYDAY 121.5 or ATC FACILITY

### **When landing is assured:**

8. Cabin Door – OPEN (in trail position)
9. Seat Belts – SNUG
10. Flaps – FULL DOWN

### **Just prior to touchdown:**

11. Master Switch – OFF
12. Touchdown – MINIMUM AIRSPEED (79 KTS)
13. ELT – ON
14. EXIT AIRCRAFT

# **Emergency Procedures for Saratoga N8213X**

(Speeds in KTS IAS)

## **HIGH OIL TEMPERATURE**

1. Power – REDUCE
2. Mixture – FULL RICH
3. Airspeed – NORMAL CRUISE (for best cooling)
4. Land as soon as practical
5. If oil pressure subsequently drops, engine damage or complete failure is likely imminent

## **LOW OIL PRESSURE**

1. Land as soon as practical
2. Minimize throttle and RPM changes as prop control may be lost
3. Land as soon as practical

## **LOW OR LOSS OF FUEL PRESSURE**

1. Fuel Pump – ON
2. Fuel Selector – FULLEST TANK
3. If pressure is restored – FUEL PUMP OFF
4. If pressure again drops – FUEL PUMP ON
5. Land as soon as practical
6. If Fuel Pump does not restore pressure – FUEL PUMP OFF

## **LOSS OF MANIFOLD PRESSURE DUE TO INDUCTION ICING**

1. Alternate Air – OPEN
2. Land as soon as practical

# **Emergency Procedures for Saratoga N8213X**

(Speeds in KTS IAS)

## **UNCONTROLLABLE OR RUNAWAY PROP**

1. Throttle – REDUCE to control RPM
2. Oil Pressure – CHECK
3. Prop – MIN RPM then set if any control available
4. Airspeed – REDUCE
5. Throttle – AS REQUIRED TO CONTROL RPM
6. Land as soon as practical

## **LOSS OF PITOT STATIC INSTRUMENTS**

1. Pitot Heat – ON
2. Alternate Static Source – OPEN if Pitot Heat has no effect

## **ALTERNATOR FAILURE**

1. Annunciator Light On – VERIFY WITH AMMETER  
(will show zero current)
2. ALT Switch – OFF
3. ALT Circuit Breaker – CHECK & RESET
4. ALT Switch – ON
5. Ammeter – CHECK FOR CHARGING CURRENT  
If charging current not restored:
6. ALT Switch – OFF
7. Electrical Loads – REDUCE TO MINIMUM
8. Land as soon as practical

# Emergency Procedures for Saratoga N8213X

(Speeds in KTS IAS)

## EXCESSIVE CHARGING CURRENT

1. High charge current is normal after prolonged cranking at startup but should decrease in a few minutes
2. Turn off all but essential avionics
3. ALT Switch – ON
4. BATT Switch – OFF
5. If current reduces to normal value, the battery has shorted cells - leave BATT OFF
6. Reduce electrical load to minimum
7. Land as soon as practical
8. Minimize operation of avionics in this condition because of increased system voltage and the likelihood of large voltage transients  
**If current remains high:**
9. BATT Switch – ON
10. Switch off loads individually to determine if one is drawing excessive current
11. Leave offending load(s) off  
**If current remains high:**
12. ALT Switch – OFF
13. BATT Switch – ON ONLY AS NEEDED
14. Electrical Loads – REDUCE TO MINIMUM
15. Anticipate complete electrical failure

## AUTOPILOT MALFUNCTION

1. Apply required control forces to maintain desired flight attitude
2. Autopilot – OFF
3. Master Switch – OFF IF NECESSARY

# **Emergency Procedures for Saratoga N8213X**

## **(Speeds in KTS IAS)**

### **UNLATCHED DOOR IN FLIGHT**

If the door is not properly latched, it normally will open to the trail position just after takeoff. Flight characteristics are not affected. A solo pilot should return to the field for a normal landing rather than attempting to close the door in flight.

If the door must be closed in flight, proceed as follows:

1. Airspeed – 87 KTS
2. Cabin Vents – CLOSE
3. Pilot Vent Window – OPEN
4. If upper latch is open – LATCH
5. If side latch is open – PULL ARM REST AND LATCH
6. If both latches are open – LATCH SIDE FIRST THEN TOP

### **HSI – LOSS OF SLAVING**

(Slaving indicator stops oscillating)

1. Slaving Switch – SWITCH TO SL2
2. Slaving Indicator – CHECK FOR NORMAL OSCILLATION

If slaving indicator fails to resume normal oscillation:

3. Slaving Indicator – SWITCH TO FREE GYRO MODE
4. Heading Indicator – MANUALLY SET TO COMPASS