

SONEX CONDITION INSPECTION CHECKLIST

AIRCRAFT: _____ Sonex, SN _____
 REGISTRATION: N _____
 ENGINE: _____, SN _____
 PROPELLER: _____, SN _____

	(This Annual)	(Last Annual)
DATE:	_____	_____
TT AIRFRAME:	_____	_____
TT ENGINE:	_____	_____
TT PROPELLER:	_____	_____

Inspection Item	S	U	Notes
	A	N	
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General:			
Registration/Airworthiness/Operation Limitations Present			
Aircraft Identification Plates Installed			
All Cockpit Placards and Labels are Installed and Legible			
Experimental & Passenger Warning Placards Installed			
Weight and Balance/Equipment List Present			
Skyview Updated with Latest Software, Database and Maps			
Wash airplane. Remove all oil/grease from belly and inside cowling. Remove interior upholstery. Clean interior, cockpit floor, under-seat area, and baggage area.			
Propeller:			
Check Spinner for Condition and Security			
Inspect Prop for Cracks, Nicks/Stone Damage, or Delamination			
Check Prop Hub Area for Crushing, Water Damage, Delamination or Burning. Inspect Bolts, Bolt Holes and Bushings every 200 hrs.			
Re-torque Prop Bolts to 17 +/-3 ft-lbs (200 +/-20 in-lbs)			
Check Prop Tracking (Max 1/8" off at tips)			
Rebalance Prop After Making Any Repairs			
Replace Prop Flange Cap Screws every 500 hrs; Torque Cap Screws to 30 ft-lbs.			

Inspection Item	S	U	Notes
Engine:			
Perform Periodic Maintenance per Jabiru Maintenance Manual			
Warm Engine until Oil Temp is 90-100 deg F			
Perform Compression Test (engine warm) #1 _____ #2 _____ #3 _____ #4 _____ #5 _____ #6 _____			
Drain and Replace Oil (3.25-3.5 qts, + Optional 3-4 oz Cam Guard)			
Replace Oil Filter (Cut Open and Check for Metal); Torque Filter Hand Tight			
Inspect Engine for Leaks at all Seals, Sensors, and Gaskets			
Inspect Cylinders for Cracks/Broken Fins/Exhaust Stains			
Check Exhaust Pipes/Flanges/System for Security, Attachment and Condition; Torque Attachment Screws to 8 ft-lbs			
Inspect Front Crankcase Seal for Damage or Leaks			
Inspect Engine Case, Accessory, and Mounting Bolt Torque			
Inspect Engine Mount/Bushings			
Inspect Oil Recovery Bottle and Engine Breather Line			
Inspect Intake Manifold and Manifold-Intake Tube Seals for Security/Leaks			
Check Rubber Intake Tube Couplers for Heat Damage, Cracking, and Security			
Inspect Magnetrons for Mounting Security, Heat Damage (Discoloration), Frayed Spark Plug Lead and P-Lead Condition			
Inspect Ignition and Wiring Harness, Cap and Boots for Condition and Continuity			
Clean and Gap Spark Plugs (NGK D9EA) to 0.022-0.024", Apply Anti-seize Lube and Torque to 8 ft-lbs (72 in-lbs)			
Remove Rocker Chamber Covers; Inspect Rocker Arms, Pushrods, Valve Stems, Valve Springs; Note Oil Color, Quantity, and Evidence of Carbon Blow-by in Valve Guides			
Inspect Engine Baffles and Gull Wing Inter-cylinder Baffles for Cracks/Condition			
Inspect Oil Cooler, Cooler Flanges and Mounting Brackets, Oil Filter Adapter (Donut), Oil Lines, and Oil Pressure Sensor			
Inspect Carburetor, Rubber Boot, and Clamps for Condition and Security			
Inspect Throttle & Mixture Controls for Proper Travel, Cable for Cracks or Kinks, Loose Hardware, and Overall Security			
Clean and Re-oil K&N Air Filter (K&N Recharge Kit)			
Check Cowling for Cracks, Chaffing, Heat Damage and Security; Remove All Oil and Residue			
Inspect Cowling SouthCo, Receptacles and Mounting Plates			
Replace Flywheel Bolts every 500 hrs			

Inspection Item	S	U	Notes
Electrical:			
<i>--Firewall Side--</i>			
Battery (Security, Mount, Cables, Free of Corrosion)			
Battery Box (Security, Mounts and Corrosion)			
Relays (Battery Contactor, Alternator Disconnect, Starter Relay, all Diodes)			
Filter Capacitor (Wires, Screws, Mount, Condition of Capacitor)			
Alternator (Stator) AC Leads, PIDG Terminals for Burning/Corrosion, and AC Wire-Loom Covering			
Wiring Harness Loom, Sensor Wire Bundles, and Firewall Pass Thru Points			
Rectifier/Regulator (Condition, Corrosion, Heat Damage, Connector, Terminals, Wires, Mounts); Re-grease with Dow DP4 Dielectric Grease			
Fuses, Fuse Blocks, and Wiring for Condition and Security			
Grounding System (Cables, Grounding Block, Terminals, Main Engine Ground Cable) for Condition and Security			
<i>--Cabin Side--</i>			
Visually Inspect Under Panel for Loose Wires, Chaffing or Damage			
Switches for Secure Mounting, Secure Terminals, Evidence of Arcing and Proper Operation			
12v Accessory Sockets for Security and Proper Operation			
Seat Warmer Switches, Wiring, and Heating Pads for Chaffing, Overheating and Proper Operation			
Fuel System:			
<i>--Firewall Side--</i>			
Fuel Cap and Rubber Plug for Condition, Operation, Chemical Damage and Secure Fitting			
Fuel Tank Vent System (Obstructions, Damaged Rubber Coupler, Secure Clamps, Kinked Drain Tube)			
Filler Neck Drip Pan (Sealant Degradation, Leaks, Alignment)			
Fuel Placard Properly Legible and Affixed to Fuel Cover Door			
Fuel Line for Chafing/Leaks/Security/Condition			
Inspect Quick Drain Valve (Mounting Security, Leaks or Damage)			
Draw Fuel Sample to Check for Water and Contaminants (4-8 oz); Test for Ethanol Content: Ethanol = _____ %			

Inspection Item	S	U	Notes
Disassemble and Clean Fuel Filter Internal Screen			
Fuel Line Heat Shielding, Reflective Tape, and Insulation			
<i>--Cabin Side--</i>			
Leaks, Weeping Fittings, Corrosion, Contamination Under Panel			
Shutoff Valve, Bowden Cable Pull Lever, Cable Clamp and Cable Attachment Bracket			
Flow Sender for Leaks or Damaged Wiring			
Fuel Line Under Panel for Chafing/Leaks/Security/Condition			
Aux Fuel Intake Hose, Molded-in Tank Fitting, Check Valve, and Fuel Hose Pigtail for Leaks, Damage, and Security			
Low-Fuel Monitoring Camera for Mounting Security, Alignment, Tank Markings, Tank LED Lights			
Fuselage:			
<i>--Outside--</i>			
Fire Wall for Distortion, Cracks, Missing RTV Sealant at Edges, or Degraded Firewall Penetrations			
Cowl Mounting Hinges (Excessive Wear or Damage)			
Lose/Smoking Rivets, Lose Bolts, Cracked Skin			
Fuselage Splice Plate Bolts for Looseness or Evidence of Movement in Joint			
<i>--Inside--</i>			
Canopy Latching Mechanism for Damage, Cracked Plexiglas, Missing Spring, Legible Placard Installed			
Instruments, Pitot/Static/AoA Lines, Labels and Marking for Condition and Security			
Remove Seat (Cushions and Seat Pan) and Inspection Covers			
Wing Attach Bolts, Mounting Angles, and Adjacent Skin for Deformation, Cracks, Missing Hardware, Security			
Seats, Seat Belts/Shoulder Harness for Security and Attachment			
Upholstery (Condition, Velcro Security, Cleanliness, Seat Warmers and Wiring)			
Inspect and Service ELT (Clean/Replace Batteries, Antenna Cable, Mounting Tray) (Bat Exp Date: _____)			
COMM, ELT and Transponder Antennas (Security, Corrosion, Proper Grounding); Re-lube with DP4			
Rudder Pedals for Cracks, Operation and Security of Bolts/Cotter Pins, Fraying or Kinks in Cables			
Flap Control Operation and Bolts for Security			
Control Stick for Wear, Freedom of Movement, and Security of Bolts/Cotter Pins			

Inspection Item	S	U	Notes
Lube Control Triangle Bushings and Elevator Pushrod Link and Bellcrank Bushings (LPS-1)			
Baggage Compartment Sides and Floor for Cleanliness, Condition and Security			
Rear Spar Carry Thru for Condition, Wear, and Security of Bolts			
Remote Transponder, Connector, Antenna and Mounting Tray			
Elevator Pushrod Support Snap Bushings for Wear, Security and Condition; Lube Bushings with White Lithium Grease			
Landing Gear:			
Remove Wheel Pants and Gear Fairings			
Wheel Pants for Cracks, Damaged or Elongated Holes, Stripped Nutplates			
Gear Leg and Intersection Fairings for Cracks or Excessive Wear			
Gear Leg Stiffeners for Delamination, Cracked Fiberglass and Broken Wood Inserts			
Wheel Pant Mounting Plate (Cracks, Loose Bolts, Alignment)			
Inspect Wheel Alignment and Tire Wear Pattern			
Wheels/Tires for Cracks, Tread Depth and Serviceability			
Jack up Fuselage and Remove Wheels; Inspect Gear Leg Upper Bolts (AN4-33A) and Axel Socket Lower Bolts (AN4-16A); Replace every 500 hrs			
Inspect Brake System for Air Bubbles or Loss of Fluid Pressure			
Remove Brake Calipers, Wheels and Bearings			
Verify Brake Pucks are within Limits			
Brake Discs for Wear, Rust, Warping, Damaged/Missing Hardware			
Brake Lines for Chaffing or Cracking			
Axle Weldments and Mounting Tabs for Cracks, Corrosion, Elongated Holes			
Wheel Bearings, Remove Old Grease, Repack with Automotive Wheel Bearing Grease			
Replenish Fluid in Brake Master Cylinder; Bleed as Needed using Dexron VI ATF (Alternate ATF Fluid: Type A, Dexron II/III, Mercon V)			
Check Tire Pressure; Fill to 40 psi			
Re-install Wheel Pants and Fairings; Loctite (blue) All Fasteners; Use New MS24693C273 (aka AN507C1032R10) 1032 x 5/8" Flush Stainless Steel Machine Screws (12 Total) and AN525-10R11 Screws (2 Total)			

Inspection Item	S	U	Notes
Wings:			
Remove Inspection Plates/Fairings			
General Inspection of the Exterior/Interior of Wing			
Popped Rivets/Cracked/Deformed Skin			
Wingtips for Loose Rivets, Cracked Fiberglass			
Flap/Aileron Attachment (No Play or Slop)			
Aileron Bellcrank for Wear, Security			
Flight Control Hinges/Rod End Bearings/Bellcranks (Check for Binding and Excessive Wear)			
Corrosion (Internal Skins, Front and Rear Spars)			
Flight Control Bolts/Pins for Safety and Condition			
Lube Rod Ends, Hinges and Bushings (LPS-1)			
Pitot/Static Probe for Obstructions, Security, Tubing Connections; AoA Port Rivet for Obstruction, Security, and Tube Connection			
Empennage:			
Remove Inspection Plates and Tail Fairing			
Inspect Vertical Fin and Stabilizer Attach Points (Under Fairing Bolts, Tail Post Bolts, Horizontal Stab Bolts)			
Inspect Elevator Trim Tab (Cable Wire, Hinge, Attachment Hole, Free Play)			
Inspect Rudder Control Cables (Fraying, Ends, Attachment Bolts)			
Inspect and Lube Elevator Pushrod Rod End (LPS-1)			
Inspect Fiberglass Tail Tips (Cracks, Scuffs, Security)			
Inspect Fiberglass Tail Fairing (Cracks, Stripped Screw Holes)			
Inspect Tail Wheel Pushrod (Cracks, Damaged Rod Ends or Threads)			
Clean and Lube Tail Wheel Bearings and Pivot Arm			
Inspect Tail Wheel for Tire Wear, Rotate Orientation as Needed			

Inspection Item	S	U	Notes
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Operational Inspection:

Visual Inspection of the Engine/Propeller/Cowling			
All Inspection Panels and Fairings Secure			
Proper Fuel In Tanks			
Idle Rpm/Mixture Check			
Static RPM (Run-up) Check: Idle RPM _____ WOT RPM _____ Oil Temp _____ Oil Press _____			

Logbook Entry and Signoff:

<p>Record All Findings, Repairs and/or Work Performed and Sign off Inspection and Maintenance In Aircraft Log Books.</p> <p><i>"I certify that this aircraft has been inspected on _____ in accordance with the scope and detail of appendix D to part 43, and was found to be in a condition for safe operation. Signed _____, A&P/Repairman # "</i></p>			
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I hereby certify that all requirements in this annual condition inspection report have been met, and I have determined the aircraft to be airworthy.

Signature _____

Certificate # (A&P or Repairman) _____.

Notes:

Inspection Item	S	U	Notes
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Maintenance Data

Oil	20W-50 or 15W-50 Multigrade, (Phillips XC 20W-50, AeroShell 15W-50) W100 Ashless, Dispersant
Oil Capacity	3.0 – 3.5 qts
Oil Filter	Fram Extended Guard XG4967 Napa Gold 1394 Bosch 3311 Purolator L14476 (or PER4476) Royal Purple 10-2840 Baldwin B33 K&N HP-1003 Mobile 1 M1-103
Air Cleaner	K&N RU-0630
Coil Gap	0.010” - 0.012”
Spark Plugs	12mm NGK D9EA
Spark Plug Gap	0.022” - 0.024”

Torque Data

Prop Bolts	AN6 17 ft-lbs (+/- 2)
Rocker Cover Cap Screws	1/4" 6 ft-lbs
Valve Chamber 1/8 NPT Plug	5 ft-lbs
Cylinder Head	5/16" 20 ft-lbs, 24 ft-lbs (new)
Intake / Exhaust Cap Screws	1/4" 8 ft-lbs
Spark Plugs	11/16" 8-10 ft-lbs
Flywheel Bolts	5/16" 32 ft-lbs
	3/8" 36 ft-lbs
Alternator / Coil Bolts	1/4" 8 ft-lbs
Crankcase Cap Screws	1/4" 10 ft-lbs
Crankcase Main Studs	3/8" 30 ft-lbs
	7/16" 35 ft-lbs
Oil Drain Plug	1/2" 14 ft-lbs
Starter Motor Bolts	1/4" 8 ft-lbs

Operational Data

Max RPM	3300 rpm (3200 rpm static)
Idle RPM	800-1000 rpm
CHT Range	250-350° F (396° F Max)
EGT Range	1200-1375° F (1450° F Max)
Oil Pressure	33-76 psi (40-60 psi cruise)
Oil Temp	160-220° F (175-195° F Cruise)