

## Amateur-Built Fabrication and Assembly Checklist (2009) (Fixed Wing)

Name(s)	Sonex Aircraft LLC
Address:	511 Aviation Road, Oshkosh, WI 54902
Aircraft Model:	<b>Waix (Finished Spar Option)</b>
Date:	January 26, 2010
Remarks:	NKET Evaluators: Matt Tomscheck, Michael Sloat, John Kolin, Joseph Palmisano
Pack List #	WIX-KIT-ALL-021810
Evaluation based on delta between Xenos and Sonex model kits.	

NOTE: This checklist is only applicable to fixed wing aircraft. Evaluation of other types of aircraft (i.e., rotorcraft, balloons, lighter than air) will not be accomplished with this form.

NOTE: This checklist is invalid for and will not be used to evaluate an altered or modified type certificated aircraft with the intent to issue an Experimental Amateur-built Airworthiness Certificate. Such action violates FAA policy and DOES NOT meet the intent of § 21.191(g).

NOTE: Enter "N/A" in any box where a listed task is not applicable to the particular aircraft being evaluated. Use the "Add item" boxes at the end of each section to add applicable unlisted tasks and award credit.

<b>FABRICATION AND ASSEMBLY TASKS</b>		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>Task #</b>	<b>Fuselage – 24 Listed Tasks</b>				
F1	Fabricate Longitudinal Members	0.1			
F2	Fabricate Composite Cores or Shells, Skins	0.8			
F3	Fabricate Bulkheads or Cross members	0.5			
F4	Fabricate Control Yokes/Sticks	0.9			
F5	Assemble Control Yokes/Sticks	0			
F6	Fabricate Flt Control Push Pull Tubes/Cables	0.8			
F7	Assemble Flt Control Push Pull Tubes/Cables	0			
F8	Assemble Fuselage Basic Structure	0			
F9	Fabricate Brackets and Fittings	0.6			
F10	Assemble Brackets and Fittings	0			
F11	Fabricate Cables, Wire, and Lines	1			
F12	Assemble Cables, Wire, and Lines	0			
F13	Fabricate Fuselage Fuel System Components	N/A			
F14	Assemble Fuselage Fuel System Components	0			
F15	Fabricate Fuselage Covering or Skin	0.7			
F16	Assemble Fuselage Covering or Skin	0			
F17	Fabricate Windshield	0.3			
F18	Assemble Windshield to Fuselage	0			
F19	Fabricate Windows	N/A			
F20	Assemble Windows to Fuselage	N/A			
F21	Fabricate Doors/Canopy	0.3			
F22	Assemble Doors/Canopy to Fuselage	0			
F23	Fabricate Mast and Strut Assembly	N/A			
F24	Assemble Mast and Strut Assembly	N/A			

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
F25	Add item: Fabricate Fuel Tank	0.9			
F26	Add item: Assemble Fuel Tank	0			
F27	Add item: Calibrate Fuel System Components	0			
F28	Add item: Fabricate Ventral Fin	0.1			
F29	Add item: Assemble Ventral Fin	0			
Total # of Fuselage Tasks	<b><u>Fuselage Subtotal</u></b>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>24</b>	<b><u>Fuselage Total Points</u></b> ▶	7.0	0.0	0.0	0.0

Fuselage Comments:

F3 - Bulkhead fabrication decreased by .1 for Waix due to extra extra bulkhead (additional fabrication for the builder) for this aircraft as compared to the Sonex.

F6 - Flight Ctrl Push-Pull tube fabrication decreased by .1 due to extra mixer bracket (additional fabrication for the builder) for this aircraft as compared to the Sonex.

F15- Decreased by .1 for Waix due to additional access holes need to be fabricated by the builder.

F28 - Added for Waix Model

F29 - Added for Waix Model

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
Task #	Wings – 51 Listed Tasks				
W1	Fabricate Wing Spars (Finished Spar)	1		Finished Spar Option	
W2	Assemble Wing Spars to Wing (Finished Spar)	1		Finished Spar Option	
W3	Fabricate Wing Ribs or Cores	0.9			
W4	Assemble Wing Ribs or Cores to Wing	0			
W5	Fabricate Composite Cores	N/A			
W6	Assemble Composite Cores to Wing	N/A			
W7	Fabricate Wing Leading and Trailing Edges	0.8			
W8	Assemble Wing Leading & Trailing Edges to Wing	0			
W9	Fabricate Drag/Anti-drag Truss Members	N/A			
W10	Assemble Drag/Anti-drag Truss Members to Wing	N/A			
W11	Fabricate Wing Brackets and Fittings	0.6			
W12	Assemble Wing Brackets and Fittings to Wing	0			
W13	Fabricate Wing Tips	0.8			
W14	Assemble Wing Tips to Wings	0			
W15	Fabricate Special Tools or Fixtures	N/A			
W16	Fabricate Aileron Spars	N/A			
W17	Fabricate Aileron Ribs or Cores	0.8			
W18	Assemble Aileron Ribs or Cores to Aileron	0			
W19	Assemble Aileron Primary Structure	0			
W20	Fabricate Aileron Leading and Trailing Edges	N/A			
W21	Assemble Aileron Leading and Trailing Edges	N/A			
W22	Fabricate Aileron Brackets and Fittings	0.8			
W23	Assemble Aileron Brackets & Fittings to Aileron	0			
W24	Fabricate Aileron covering or Skin	0.7			
W25	Assemble Aileron Covering or Skin to Aileron	0			
W26	Fabricate Aileron Roll Trim	N/A			
W27	Assemble Aileron Trim Tab/Roll Trim to Aileron	N/A			
W28	Assemble Aileron to Wing	0			
W29	Fabricate Flap Spars	N/A			
W30	Assemble Flap Spars to Flap	N/A			
W31	Fabricate Flap Ribs or Cores	0.8			
W32	Assemble Flap Ribs or Cores to Flap	0			
W33	Assemble Flap Primary Structure	0			
W34	Fabricate Flap Leading and Trailing Edges	N/A			
W35	Assemble Flap Brackets and Fittings to Flap	0			
W36	Fabricate Flap Covering or Skin	0.7			
W37	Assemble Flap Covering or Skin to flap	0			
W38	Assemble Flaps to Wing	0			
W39	Fabricate Wing External Lighting Components	N/A			
W40	Assemble Wing Ext Lighting Components to Wing	N/A			
W41	Assemble Basic Wing Structure	0			
W42	Fabricate Wing Fuel System components	N/A			
W43	Assemble Wing Fuel System Components to Wing	N/A			
W44	Fabricate Cables Wires and Lines	N/A			

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
W45	Assemble Cables Wires and Lines to Wing	0			
W46	Fabricate Wing Covering or Skin	0.8			
W47	Assemble Wing Covering or Skin to Wing	0			
W48	Fabricate Wing Struts/Wires	N/A			
W49	Fabricate Fuel Tank	N/A			
W50	Assemble Fuel Tank to Wing	N/A			
W51	Calibrate Fuel System Components	N/A			
W52	Add item: Fabricate Flap Brackets and Fittings	0.8			
W53	Add Item:				
W54	Add Item:				
Total # of Wing Tasks	<b><u>Wings Subtotal</u></b>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>30</b>	<b><u>Wings Total Points ►</u></b>	10.5	0	0	0

Wing Comments:  
W1/W2 - Added pre-fabricated/assembled Spar option.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
		A	B	C	D
FABRICATION AND ASSEMBLY TASKS		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
		Task Empennage – 57 Listed Tasks			
		Task #			
E1	Fabricate Horizontal Stabilizer Spars	N/A	Not used due to "Y" tail.		
E2	Assemble Horizontal Stabilizer Spar(s) to Stabilizer	N/A	Not used due to "Y" tail.		
E3	Fabricate Horizontal Stabilizer Ribs or Cores	N/A	Not used due to "Y" tail.		
E4	Assemble Horizontal Stabilizer Ribs or Cores to Stabilizer	N/A	Not used due to "Y" tail.		
E5	Fabricate Horizontal Stabilizer Leading and Trailing Edge	N/A	Not used due to "Y" tail.		
E6	Assemble Horizontal Stabilizer Leading and Trailing Edges to Stabilizer	N/A	Not used due to "Y" tail.		
E7	Fabricate Horizontal Stabilizer Brackets & Fittings	N/A	Not used due to "Y" tail.		
E8	Assemble Horizontal Stabilizer Brackets and Fittings to Stabilizer	N/A	Not used due to "Y" tail.		
E9	Assemble Horizontal Stabilizer Structure	N/A	Not used due to "Y" tail.		
E10	Fabricate Horizontal Stabilizer Lead/Trailing Edges	N/A	Not used due to "Y" tail.		
E11	Assemble Horizontal Stabilizer Lead/Trailing Edges to Stabilizer	N/A	Not used due to "Y" tail.		
E12	Fabricate Horizontal Stabilizer Cables, Wires and Lines	N/A	Not used due to "Y" tail.		
E13	Assemble Horizontal Stabilizer Cables, Wires and Lines to stabilizer	N/A	Not used due to "Y" tail.		
E14	Fabricate Horizontal Stabilizer Empennage Covering or Skin	N/A	Not used due to "Y" tail.		
E15	Assemble Horizontal Stabilizer Empennage Covering or Skin to Stabilizer	N/A	Not used due to "Y" tail.		
E16	Assemble Horizontal Stabilizer Structure to Fuselage	N/A	Not used due to "Y" tail.		
E17	Fabricate Elevator Spars	N/A			
E18	Assemble Elevator Spars to Elevator	N/A			
E19	Fabricate Elevator Ribs Cores	0.8			
E20	Assemble Elevator Ribs Cores to Elevator	0			
E21	Assemble Elevator Structure	0			
E22	Fabricate Elevator Leading and Trailing Edge	N/A			
E23	Assemble Elevator Leading and Trailing Edges to Elevator	N/A			
E24	Fabricate Elevator Brackets and Fittings	0.8			
E25	Assemble Elevator Brackets and fittings to Elevator	0			
E26	Fabricate Elevator Covering or Skins	0.7			
E27	Assemble Elevator Covering or Skins to Elevator	0			
E28	Fabricate Elevator trim Tab	N/A			
E29	Assemble Elevator Trim Tab to Elevator	N/A			
E30	Fabricate Special Tools or Fixtures	N/A			
E31	Fabricate Vertical Stabilizer Spars	0.5			
E32	Assemble Vertical Stabilizer Spar to the Vertical Stabilizer	0			
E33	Fabricate Vertical Stabilizer Ribs Cores	0.1			
E34	Assemble Ribs Cores to Vertical Stabilizer	0			
E35	Fabricate Vertical Stabilizer Leading/Trailing Edges	N/A			
E36	Assemble Leading and Trailing Edges to Vertical Stabilizer	N/A			
E37	Fabricate Vertical Stabilizer Brackets and Fittings	0.4			

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
E38	Assemble brackets and Fittings to Vertical Stabilizer	0			
E39	Fabricate Vertical Stabilizer Cables, Wires, Lines	1			
E40	Assemble Cables, Wires, Lines to Vertical Stabilizer	0			
E41	Fabricate Vertical stabilizer Empennage Covering or Skin	0.8			
E42	Assemble Vertical stabilizer Empennage Covering or Skin to Vertical Stabilizer	0			
E43	Assemble Vertical Stabilizer Structure to Fuselage	0			
E44	Fabricate Rudder Spar	N/A			
E45	Assemble Rudder Spar to Rudder	N/A			
E46	Fabricate Rudder Ribs or Cores	0.8			
E47	Assemble Rudder Ribs or Cores to Rudder	0			
E48	Assemble Rudder Structure	0			
E49	Fabricate Rudder Leading and Trailing Edge	N/A			
E50	Assemble Rudder Leading and Trailing Edge to Rudder	N/A			
E51	Fabricate Rudder Brackets and Fittings	0.7			
E52	Assemble Rudder Brackets and Fittings to Rudder	0			
E53	Fabricate Rudder Covering or Skin	0.7			
E54	Assemble Rudder Covering or Skin to Rudder	0			
E55	Fabricate Rudder Trim Tab	0.8			
E56	Assemble Rudder Trim Tab to Rudder	0			
E57	Assemble Rudder to Vertical Stabilizer	0			
E58	Add Item: Fabricate Horizontal Stabilizer Tips	N/A			
E59	Add Item: Assemble Horizontal Stabilizer Tips	N/A			
E60	Add Item: Fabricate Vertical Stabilizer Tips	0.8			
E61	Add Item: Assemble Vertical Stabilizer Tips	0			
E62	Add Item:				
E63	Add item:				
E64	Add item:				
Total # of Empennage Tasks	<b><u>Empennage Subtotal</u></b>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>30</b>	<b><u>Empennage Total Points ►</u></b>	8.9	0	0	0

Empennage Comments:  
 Waix "Y" tail was totaled under the Vertical Stab. The Horizontal sections above have been given an "N/A".  
 E24 has been decreased by .1 (as compared to the Sonex) due to the additional "brackets" used in the Waix.  
 E39/E40 Changed for the Pitot Port placement.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>Task #</b>	<b>Landing Gear – 12 Listed Tasks</b>				
LG1	Fabricate Struts	0.8			
LG2	Fabricate Brake System Components	0.9			
LG3	Fabricate Landing Gear Actuation System Components	N/A			
LG4	Fabricate Landing Gear System Cables, Wires and Lines	0.9			
LG5	Assemble Wheels	0			
LG6	Assemble Brakes, Tires	0			
LG7	Assemble Landing Gear	0			
LG8	Assemble Landing Gear System Components Next Level Structure	0			
LG9	Align Landing Gear	0			
LG10	Fabricate Landing Gear Fairings/Gear Doors	0.4			
LG11	Assemble Landing Gear Fairings/Gear Doors to Next Level Structure	0			
LG12	Perform Landing Gear Operational Check (Normal, Emergency Systems)	N/A			
LG13	Add item: Fabricate landing gear Brackets and Fittings	0.7			
LG14	Add item: Assemble landing gear Brackets and Fittings	0			
LG15	Add item:				
LG16	Add item:				
Total # of Land Gear Tasks	<b><u>Landing Gear Subtotal</u></b>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>12</b>	<b><u>Landing Gear Total Points ►</u></b>	3.7	0	0	0

Landing Gear Comments: No changes made as compared to the previously evaluated Sonex model.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	Propulsion – 27 Listed Tasks				
P1	Fabricate Engine Mounts)	0.9			
P2	Assemble Engine Mounts) to Next Level Structure	0			
P3	Fabricate Engine Cooling System/Baffles	N/A			
P4	Assemble Engine Cooling System Baffles to Engine	0			
P5	Fabricate Engine Compartment Overheat/Fire Detection System	N/A			
P6	Assemble Engine Compartment Overheat/Fire Detection System to Engine Compartment	N/A			
P7	Fabricate Induction System	N/A			
P8	Assemble Induction System to Engine	0			
P9	Fabricate Exhaust System	0			
P10	Assemble Exhaust System to Engine	0			
P11	Fabricate Engine Control Installation Brackets	N/A			Rolled into P14
P12	Assemble Engine Controls to Next Level Structure	0			
P13	Rig and Adjust Engine Controls	0			
P14	Fabricate Brackets and Fittings	N/A			
P15	Assemble Brackets and Fittings to Next Level Structure	0			
P16	Fabricate Cables, Wires and Lines	N/A			
P17	Assemble Cables, Wires and Lines to next Level Structure	0			
P18	Assemble Engine (Likely N/A)	N/A			
P19	Assemble Engine to Engine Mount	0			
P20	Fabricate Engine Propeller (Likely N/A)	N/A			Non-Checklist Item
P21	Fabricate Propeller Spinner Components	1			
P22	Assemble Propeller to Engine	0			
P23	Rig and Track Propeller	0			
P24	Fabricate Engine Cowling	0.7			
P25	Assemble Engine Cowling to Airframe	0			
P26	Fabricate Engine Fuel System Components	N/A			
P27	Assemble Engine Fuel System Components to Next Level Structure	0			
P28	Add item:				
P29	Add item:				
Total # of Propulsion Tasks	<b><u>Propulsion Subtotal</u></b>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>17</b>	<b><u>Propulsion Total Points ►</u></b>	2.6	0	0	0

Population Comments: No changes made as compared to the previously evaluated Sonex model.



FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	Cockpit Interior – 11 Listed Tasks				
C1	Fabricate Instrument Panel	0.1			
C2	Fabricate Instrument Panel Bracket and Fittings	0.1			
C3	Assemble Instrument Panel with Fittings and Brackets	0			
C4	Assemble Avionics to Instrument Panel	0			
C5	Fabricate Seats	0			
C6	Fabricate Seat Brackets and Fittings	0			
C7	Assemble Seats to Cockpit	0			
C8	Fabricate Seat Belts Fittings and Shoulder Harness Fittings	0.6			
C9	Assemble Seat Belts and Shoulder Harness to Structure	0			
C10	Fabricate Electrical Wiring, Controls and Switches	0			
C11	Assemble Electrical Systems Controls and Switches to Next Level Structure	0			
C12	Add item:				
C13	Add item:				
C14	Add item:				
C15	Add item:				
Total # of Cockpit Tasks	<b><u>Cockpit Interior Subtotal</u></b>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
<b>11</b>	<b><u>Cockpit Interior Total Points ►</u></b>	0.8	0	0	0

Cockpit Comments: No changes made as compared to the previously evaluated Sonex model.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
Total # of Aircraft Tasks					
124					

▶ TOTAL TASKS AND LINE ITEMS
 ↓
↓
↓
↓

FABRICATION AND ASSEMBLY SUMMARY		A	B	C	D
		Mfr Kit/Part/Component	Commercial Assistance	Am Builder Assembly	Am Builder Fabrication
1. Total Points for Each Category.	(Note 1)	33.5			
2. Total Points for Complete Aircraft Construction (SUM # 2 should equal SUM # 1 above).	(Note 2)	(SUM #2) ▶			
3. Percentage of Each Category as Part of Total Aircraft Construction.	(Note 3)	27.02%			
4. Total Percentages for Complete Aircraft Construction (Add all percentages in row 3) Total should equal 100% (± .5%). (Note 4)					
Total Builder Points – Add points in row 1, column C and D only, together.	(Note 5)				
Total Builder Percentage – Add percentages in row 3, columns C and D only, together.	(Note 6)				