

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

Name(s)	Sonex Aircraft LLC
Address:	511 Aviation Road, Oshkosh, WI 54902
Aircraft Model:	Xenos Motorglider (Finished Spar Option)
Date:	January 26, 2010
Remarks:	NKET Evaluators: Matt Tomscheck, Michael Sloat, John Kolin, Joseph Palmisano
Pack List #	XNS-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.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
		Task # Fuselage – 24 Listed Tasks			
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:				
Total # of Fuselage Tasks	<u>Fuselage Subtotal</u>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
22	<u>Fuselage Total Points</u> ►	6.9	0.0	0.0	0.0

Fuselage Comments:

F3 - Bulkhead fabrication decreased by .1 for Xenos 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 Xenos due to additional access holes need to be fabricated by the builder.

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			
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W1	Fabricate Wing Spars	1	Finished Spar Option	
W2	Assemble Wing Spars to Wing	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 Spoiler Spars	N/A	Xenos uses Spoilers, no Flaps	
W30	Assemble Flap Spoiler Spars to Flap	N/A	Xenos uses Spoilers, no Flaps	
W31	Fabricate Flap Spoiler Ribs or Cores	0.8	Xenos uses Spoilers, no Flaps	
W32	Assemble Flap Spoiler Ribs or Cores to Spoiler	0	Xenos uses Spoilers, no Flaps	
W33	Assemble Flap Spoiler Primary Structure	0	Xenos uses Spoilers, no Flaps	
W34	Fabricate Flap Spoiler Leading and Trailing Edges	N/A	Xenos uses Spoilers, no Flaps	
W35	Assemble Flap Spoiler Brackets and Fittings to Spoiler	0	Xenos uses Spoilers, no Flaps	
W36	Fabricate Flap Spoiler Covering or Skin	0.7	Xenos uses Spoilers, no Flaps	
W37	Assemble Flap Spoiler Covering or Skin to flap	0	Xenos uses Spoilers, no Flaps	
W38	Assemble Flap Spoiler to Wing	0	Xenos uses Spoilers, no Flaps	
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 Spoiler Brackets and Fittings	0.8	Xenos uses Spoilers, no Flaps		
W53	Add Item:				
Total # of Wing Tasks	<u>Wings Subtotal</u>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
30	<u>Wings Total Points ▶</u>	10.5	0	0	0

Wing Comments:
W1/W2 - Added pre-fabricated/assembled Spar option.
W29-W38 & W52 have been modified to reflect the use of Spoilers in lieu of flaps on the Xenos

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
		A	B	C	D
		Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	Empennage – 57 Listed Tasks				
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 Covering or Skin	N/A	Not used due to "Y" tail		
E15	Assemble Horizontal Stabilizer 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			
E38	Assemble Brackets and Fittings to Vertical Stabilizer	0			

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
E39	Fabricate Vertical Stabilizer Cables, Wires, Lines	1			
E40	Assemble Cables, Wires, Lines to Vertical Stabilizer	0			
E41	Fabricate Vertical Stabilizer Covering or Skin	0.8			
E42	Assemble Vertical Stabilizer 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 Vertical Stabilizer Tips	0.8			
E59	Add Item: Assemble Vertical Stabilizer Tips	0			
E60	Add item:				
Total # of Empennage Tasks	<u>Empennage Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
30	<u>Empennage Total Points ►</u>	8.9	0	0	0

Empennage Comments:
Xenos "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 Xenos
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
		A	B	C	D
FABRICATION AND ASSEMBLY TASKS		Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task # Landing Gear – 12 Listed Tasks					
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 Bracket and Fittings	0.7			
LG14	Add item: Assemble Landing Gear Bracket and Fittings	0			
LG15	Add item:				
LG16	Add item:				
Total # of Land Gear Tasks	<u>Landing Gear Subtotal</u>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
12	<u>Landing Gear Total Points ►</u>	3.7	0	0	0

Landing Gear Comments:

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	0			
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	<u>Propulsion Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
18	<u>Propulsion Total Points ▶</u>	2.6	0	0	0

Propulation Comments:

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:				
Total # of Cockpit Tasks	<u>Cockpit Interior Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
11	<u>Cockpit Interior Total Points ►</u>	0.8	0	0	0

Cockpit Comments:

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Total # of Aircraft Tasks					
123					◀ <u>SUM #1</u>



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)	33.4			
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)	27.15%			
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)				