Amateur-Built Fabrication and Assembly Checklist (2011)
Fixed Wing

Name(s)	SONEX AIRCRAFT LLC
Address:	511 AVIATION RD. OSHKOSH, WI 54902
Aircraft Model:	WAIEX With Assy Spar and Matched Holes
Date:	7/9/2013
Remarks:	
	WAIEX PACKING LIST # WIX-KIT-ALL-MHP-070813

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).

Instructions For Using The Amateur-Built Fabrication and Assembly Checklist (2011):

A point (each task equals 1 point) can be divided over multiple categories (Manufacturer, Commercial Assistance, Amateur Builder Assembly and Amateur Builder Fabrication) into 1/10 fractions. A Manufacturer may be a kit manufacturer, a component manufacturer or a part(s) manufacturer. Commercial assistance (for hire or compensation) may include assistance provided by kit manufacturers, commercial assistance centers, individuals (e.g. A& P mechanics or avionics technicians).

For example, 0.5 (half point) can be assigned to the Manufacturer, 0.3 (3/10 - 3 tenths) as Commercial Assistance, 0.2 to the Amateur Builder as Fabrication, for a total of 1 point.

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 – 22 Listed Tasks**				
F1	1	Fabricate Longitudinal Members	0.5			0.5
F2		Fabricate Composite Cores or Shells, Skins	N/A			
F3	1	Fabricate Bulkheads or Cross members	0.7			0.3
F4	1	Fabricate Flt Control Push Pull Tubes/Cables	0.9			0.1
F5	1	Assemble Flt Control Push Pull Tubes/Cables	0		1.0	
F6	1	Assemble Fuselage Basic Structure	0		1.0	

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
			Component	Assistance	Assembly	Fabrication
F7	1	Fabricate Brackets and Fittings	0.6			0.4
F8	1	Assemble Brackets and Fittings	0		1.0	
F9	1	Fabricate Cables, Wire, and Lines	1			0.0
F10	1	Assemble Cables, Wire, and Lines	0		1.0	
F11		Fabricate Fuselage Fuel System Components	*			*
F12		Assemble Fuselage Fuel System Components	*		*	
F13	1	Fabricate Fuselage Covering or Skin	0.8			0.2
F14	1	Assemble Fuselage Covering or Skin	0		1.0	
F15	1	Fabricate Windshield	0.3			0.7
F16	1	Assemble Windshield to Fuselage	0		1.0	
F17		Fabricate Windows	N/A			
F18		Assemble Windows to Fuselage	N/A			
F19	1	Fabricate Doors/Canopy	0.3			0.7
F20	1	Assemble Doors/Canopy to Fuselage	0		1.0	
F21		Fabricate Mast and Strut Assembly	N/A			
F22		Assemble Mast and Strut Assembly	N/A			
F23	1	Add Fab item: Fabricate Fuel Tank	0.9			0.1
F24	1	Add Assy item: Assembly of Fuel Tank	0		1.0	
F25		Add Fab item:				
F26		Add Assy item:				
Total # of Fuselage Tasks		**Fuselage Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
17		**Fuselage Total Points** ►	6.0	0.0	8.0	3.0

Fuselage Comments: F11 and F12 Not evaluated not part of Kit but essential for flight. F2 credited on F13.

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #		**Wings – 47 Listed Tasks**				
W1	1	Fabricate Right Wing Spars	0.5			0.50
W2	1	Fabricate Right Wing Ribs	0.7			0.30
W3	1	Assemble Wing Spars and Ribs to Form Right Wing Primary Structure	0		1.00	
W4	1	Fabricate Left Wing Spars	0.5			0.50
W5	1	Fabricate Left Wing Ribs	0.7			0.30
W6	1	Assemble Wing Spars and Ribs to Form Left Wing Primary Structure	0		1.00	
W7		Fabricate Composite Cores	N/A			
W8		Assemble Composite Cores to Wing	N/A			
W9	1	Fabricate Wing Leading and Trailing Edges	0.8			0.20
W10	1	Assemble Wing Leading & Trailing Edges to Wing	0		1.00	
W11		Fabricate Drag/Anti-drag Truss Members	N/A			
W12		Assemble Drag/Anti-drag Truss Members to Wing	N/A			
W13	1	Fabricate Wing Brackets and Fittings	0.6			0.40
W14	1	Assemble Wing Brackets and Fittings to Wing	0		1.00	
W15	1	Fabricate Wing Tips	0.8			0.20
W16	1	Assemble Wing Tips to Wings	0		1.00	
W17		Fabricate Special Tools or Fixtures	N/A			
W18		Fabricate Aileron Spars	N/A			
W19	1	Fabricate Aileron Ribs or Cores	0.7			0.30
W20	1	Assemble Aileron Spars, Ribs and/or Cores to Form Aileron Primary Structure	0		1.00	
W21	1	Fabricate Aileron Brackets and Fittings	0.7			0.30
W22	1	Assemble Aileron Brackets & Fittings to Aileron	0		1.00	
W23	1	Fabricate Aileron Covering or Skin (Includes Leading and Trailing Edges)	0.7			0.30
W24	1	Assemble Aileron Covering or Skin to Aileron	0		1.00	
W25	1	Assemble Aileron to Wing	0		1.00	
W26		Fabricate Flap Spars	N/A			
W27	1	Fabricate Flap Ribs or Cores	0.7			0.30
W28	1	Assemble Flap Spars, Ribs or Cores to Form Flap Primary Structure	0		1.00	
W29	1	Fabricate Flap Bracket and Fittings	0.7			0.30
W30	1	Assemble Flap Brackets & Fittings to Flap	0		1.00	

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
W31	1	Fabricate Flap Covering or Skin (Includes Leading and Trailing Edges)	0.7			0.30
W32	1	Assemble Flap Covering or Skin to flap	0		1.00	
W33	1	Assemble Flaps to Wing	0		1.00	
W34		Fabricate Wing External Lighting Components	N/A			
W35		Assemble Wing Ext Lighting Components to Wing	N/A			
W36	1	Assemble Basic Wing Structure	0		1.00	
W37		Fabricate Wing Fuel System components	N/A			
W38		Assemble Wing Fuel System Components to Wing	N/A			
W39		Fabricate Cables Wires and Lines	*			*
W40		Assemble Cables Wires and Lines to Wing	*		*	
W41	1	Fabricate Wing Covering or Skin	0.8			0.20
W42	1	Assemble Wing Covering or Skin to Wing	0		1.00	
W43		Fabricate Wing Struts/Wires	N/A			
W44		Assemble Wing Struts/Wires	N/A			
W45		Fabricate Fuel Tanks	N/A			
W46		Assemble Fuel Tanks to Wing	N/A			
W47	1	Assemble Wings to Next Higher Structure	0		1.00	
W48		Add Fab item:				
W49		Add Assy item:				
W50		Add Fab item:				
W51		Add Assy item:				
Total # of Wing Tasks		**Wings Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
30		**Wings Total Points ►**	9.6	0	16	4.4

NOTE: Under W1-W2-W4 and W6 also encompasses the Aft wing Spar. W39 and W40 not evaluated not part of kit but essential for flight.

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #		**Empennage – 42 Listed Tasks**				
E1	1	Fabricate Stabilator Spars	0.7			0.3
E2	1	Fabricate Stabilator Ribs	0.7			0.3
E3	1	Assemble Stabilator Ribs to Form Primary Stabilator Structure	0		1.0	
E4	1	Fabricate Stabilator Brackets & Fittings	0.7			0.3
E5	1	Assemble Stabilator Brackets and Fittings	0		1.0	
E6		Fabricate Stabilator Lead/Trailing Edges	N/A			
E7		Assemble Stabilator Lead/Trailing Edges to Stabilator	N/A			
E8		Fabricate Stabilator Cables, Wires and Lines	N/A			
E9		Assemble Stabilator Cables, Wires and Lines to stabilator	N/A			
E10	1	Fabricate Stabilator Skin	0.7			0.3
E11	1	Assemble Stabilator Skin to Sabilator	0		1.0	
E12	1	Assemble Stabilator Structure to Fuselage	0		1.0	
E13		Fabricate Ruddervator Spars	N/A			
E14	1	Fabricate Ruddervator Ribs	0.7			0.3
E15	1	Assemble Ruddervator Ribs to Form Primary Ruddervator Structure	0		1.0	
E16	1	Fabricate Ruddervator Brackets and Fittings	0.9			0.1
E17	1	Assemble Ruddervator Brackets and fittings to Ruddervator	0		1.0	
E18	1	Fabricate Ruddervator Skins (Includes Leading and Trailing Edges)	0.7			0.3
E19	1	Assemble Ruddervator Skins to Ruddervator	0		1.0	
E20		Fabricate Ruddervator trim Tab	N/A			
E21		Assemble Ruddervator Trim Tab to Ruddervator	N/A			
E22	1	Assemble Ruddervator to Stabilator	0		1.0	
E23		Fabricate Vertical Stabilizer Spars	N/A			
E24		Fabricate Vertical Stabilizer Ribs Cores	N/A			
E25		Assemble Spars, Ribs and/or Cores to Form Primary Vertical Stabilizer Structure	N/A			
E26		Fabricate Vertical Stabilizer Brackets and Fittings	N/A			
E27		Assemble Brackets and Fittings to Vertical Stabilizer	N/A			
E28		Fabricate Vertical Stabilizer Cables, Wires and Lines	N/A			
E29		Assemble Cables, Wires, Lines to Vertical Stabilizer	N/A			
E30		Fabricate Vertical Stabilizer Covering or Skin (Includes Leading and Trailing Edges)	N/A			

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
E31		Assemble Vertical Stabilizer Covering or Skin to Vertical Stabilizer	N/A			
E32		Assemble Vertical Stabilizer to Next Higher Structure	N/A			
E33		Fabricate Rudder Spar	N/A			
E34	1	Fabricate Rudder Ribs	0.7			0.3
E35	1	Assemble Rudder Spars, Ribs to Form Primary Rudder Structure	0		1.0	
E36	1	Fabricate Rudder Brackets and Fittings	0.7			0.3
E37	1	Assemble Rudder Brackets and Fittings to Rudder	0		1.0	
E38	1	Fabricate Rudder Skin (Includes Leading and Trailing Edges)	0.7			0.3
E39	1	Assemble Rudder Skin to Rudder	0		1.0	
E40	1	Fabricate Rudder Trim Tab	0.7			0.3
E41	1	Assemble Rudder Trim Tab to Rudder	0		1.0	
E42	1	Assemble Rudder to Vertical Stabilizer	0		1.0	
E43	1	Fabricate Stabilator Tips	0.5			0.5
E44	1	Assemble Stabilator Tips	0		1.0	
E45		Add Fab item:				
E46		Add Assy item:				
Total # of Empennage Tasks		**Empennage Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
26		**Empennage Total Points ►**	8.4	0	14	3.6

NOTE: Stabilataor replaced the Horizontal Stabilizer. Ruddervator replaced the Elevator. There is not a Vertical Stailizer.

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #		**Landing Gear – 14 Listed Tasks**				
LG1	1	Fabricate Landing Gear Struts or Major Components	0.8			0.2
LG2	1	Assemble Landing Gear Struts or Major Components to Form Primary Landing Gear Structure	0		1.0	
LG3	1	Assemble Landing Gear System Components Next Level Structure	0		1.0	
LG4	1	Fabricate Brake System Components	0.9			0.1
LG5	1	Assemble Brake System Components to Wheels/Gear	0		1.0	
LG6	1	Assemble Wheels and Tires to Landing Gear	0		1.0	
LG7	1	Fabricate Landing Gear Bracket and Fittings	0.7		0.3	0.3
LG8	1	Assemble Landing Gear Bracket and Fittings to Landing Gear	0		1.0	
LG9		Fabricate Landing Gear Actuation System Components	N/A			
LG10		Assemble Landing Gear Actuation System Components to Next Higher Structure	N/A			
LG11		Fabricate Landing Gear System Cables, Wires and Lines	*			*
LG12		Assemble Landing Gear Cables, Wires and Lines to Next Level Structure	*		*	
LG13	1	Fabricate Landing Gear fairings and wheel pants	0.4			0.6
LG14	1	Assemble Landing Gear Fairings and Wheel Pants to Next Level Structure	0		1.0	
LG15	1	Fabricate Ventral Fin	0.1			0.9
LG16	1	Assemble Ventral Fin to next higher assembly	0		1.0	
Total # of Land Gear Tasks		**Landing Gear Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
12		**Landing Gear Total Points ►**	2.9	0	7.3	2.1

LG11 and LG12 Not evaluated not part of kit but essential for flight.

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #		**Propulsion – 26 Listed Tasks**				
P1	1	Fabricate Engine Mounts	0.9			0.1
P2	1	Assemble Engine Mounts to Next Level Structure	0		1.0	
P3		Fabricate Engine Cooling System/Baffles	*			*
P4		Assemble Engine Cooling System Baffles to Engine	*		*	
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	*			*
P8		Assemble Induction System to Engine	*		*	
P9		Fabricate Exhaust System	*			*
P10		Assemble Exhaust System to Engine	*		*	
P11		Fabricate Engine Control Installation Brackets	*			*
P12		Assemble Engine Controls to Next Level Structure	*		*	
P13		Fabricate Brackets and Fittings	*			*
P14		Assemble Brackets and Fittings to Next Level Structure	*		*	
P15		Fabricate Cables, Wires and Lines	*			*
P16		Assemble Cables, Wires and Lines to next Level Structure	*		*	
P17		Assemble Engine (Likely N/A)	*		*	
P18		Assemble Engine to Engine Mount	*		*	
P19		Fabricate Engine Propeller (Likely N/A)	*			*
P20	1	Fabricate Propeller Spinner Components	1			0.0
P21	1	Assemble Propeller and Spinner to Engine	0		1.0	
P22	1	Fabricate Engine Cowling	0.7			0.3
P23	1	Assemble Engine Cowling to Airframe	0		1.0	
P24	1	Assemble Engine Fuel System Components to Next Level Structure	0		1.0	
P25	1	Fabricate Firewall	0.6			0.4
P26	1	Assemble Firewall To Next Level Structure	0		1.0	
P27		Add Fab item:				
P28		Add Assy item:				
P29		Add Fab item:				
P30		Add Assy item:				
Total # of Propulsion Tasks		**Propulsion Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
9		**Propulsion Total Points ►**	3.2	0	5	0.8

Propulsion Comments: P3 and P4-P7,P8,P9,P10,P11,P12,P13,P14,P15,P16,P17,P18 and P19 Not evaluated not part of kit but essential for flight.

FABRICATION AND ASSEMBLY TASKS			A	B	C	D
			Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #		**Cockpit Interior – 23 Listed Tasks**				
C1	1	Fabricate Instrument Panel	0.1			0.9
C2	1	Fabricate Instrument Sub Panels, Brackets and Fittings	0.3			0.7
C3	1	Assemble Instrument Panel, Sub Panels and Brackets and Fittings to Next Higher Structure	0		1.0	
C4		Assemble Avionics to Instrument Panel	N/A			
C5	1	Fabricate Seats	0			1.0
C6	1	Fabricate Seat Brackets and Fittings	0.1			0.9
C7	1	Assemble Seats and Brackets and Fittings to Cockpit	0		1.0	
C8	1	Fabricate Seat Belts and Shoulder Harness Fittings and Brackets	0.6			0.4
C9	1	Assemble Seat Belts and Shoulder Harness Fittings and Brackets to Structure	0		1.0	
C10		Fabricate Electrical Wiring, Controls and Switches	*			*
C11		Assemble Electrical Systems Controls and Switches to Next Level Structure	*		*	
C12	1	Fabricate Control Yokes/Sticks	0.9			0.1
C13	1	Assemble Control Yokes/Sticks to Flight Control System	0		1.0	
C14		Fabricate All Flight Control Push Pull Tubes and/or Cables	N/A			
C15		Assemble Flight Control Push Pull Tubes and/or Cables to Next Higher Structure	N/A			
C16	1	Fabricate Rudder Pedals	0.9			0.1
C17	1	Assemble Rudder Pedals to Next Higher Structure	0		1.0	
C18		Fabricate Roll-Pitch and Yaw Trim Systems	N/A			
C19		Assemble Roll-Pitch and Yaw Trim Systems to Next Higher	N/A			
C20	1	Fabricate Flap/Spoiler Controls	0.8			0.2
C21	1	Assemble Flap/Spoiler Controls to Next Higher Structure	0		1.0	
C22		Fabricate Closeout Panels/Floor Panels	N/A			
C23		Assemble Closeout Panels/Floor Panels	N/A			
C24		Add Fab item:				
C25		Add Assy item:				
Total # of Cockpit Tasks		**Cockpit Interior Subtotal**	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
14		**Cockpit Interior Total Points ►**	3.7	0	6	4.3

* For C10 and C11 Not evaluated not furnished in kit but esential for flight.

Total # of Aircraft Tasks	
108	**◄ SUM #1**

▶ 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 Number of Aircraft Tasks (Note 1)	**(SUM#1)**		**108.00**	
2. Total Points for Each Category. (Note 2)	**33.8**	**0.0**	**56.3**	**18.2**
3. Total Points for Complete Aircraft Construction (SUM # 2 should equal SUM # 1 above). (Note3)	**(SUM #2) ►**		**108.3**	
4. Percentage of Each Category as Part of Total Aircraft Construction. (Note 4)	**31.21%**	**0.00%**	**51.99%**	**16.81%**
5. Total Percentages for Complete Aircraft Construction (Add all percentages in row 4) Total should equal 100% (± . 5%). (Note 5)		**100.0%**		
6. Total Builder Points – Add points in row 2, column C and D only, together. (Note 6)			**74.5**	
7. Total Builder Percentage – Add percentages in row 4, columns C and D only, together. (Note 7)			**68.79%**	

NOTES: Instructions For Completing Fabrication and Assembly Checklist Summary

1. TOTAL NUMBER OF AIRCRAFT TASKS (Sum #1): To find the total points awarded for all tasks, add together the six individual "Total # of Tasks" blocks located at the bottom left of each aircraft tasks section.

2: TOTAL POINTS FOR EACH CATEGORY: [Columns A, B, C and D]. Each columns' total points are tallied by adding the sum of the points awarded in each respective column for each of the tasks in the section (Fuselage, Wings, Empennage, Landing Gear, Propulsion and Cockpit). Include points assigned to 'Additional Items' at the end of each section. Boxes with a N/A (not applicable) or an asterisk, have zero points.

3: TOTAL POINTS FOR COMPLETE AIRCRAFT CONSTRUCTION: (SUM#2) In row 3 of the Summary section, add together the numbers in each block on row2, tallied from each of the four column category totals, (Columns A+B+C+D). Compare SUM #1 to SUM #2. SUM #1 should be equal to SUM #2, (Verify the two sums are equal within a deviation of ± 0.5). Total points will vary from aircraft to aircraft depending on number of add items and N/As (Not Applicable) applied. (e.g., 133 listed task points, plus 5 Add items, minus 22 N/As = 116 tasks)

4: PERCENTAGE OF EACH CATEGORY AS PART OF TOTAL AIRCRAFT CONSTRUCTION: To compute category percentages, divide the number in each individual block found on row 2 by Sum #2 on row 3. For example if the total points of Mfr Kit/Part/Component category (Column A) = 40 and Sum #2 = 120, then divide 40 by 120 to reach 33.3%. Do this for each invidual block on row 4 for each column. Percentages may be rounded to the nearest tenth, (22.86% is rounded to 22.9%).

5: TOTAL PERCENTAGES FOR COMPLETE AIRCRAFT CONSTRUCTION: Add up the percentages of each of the four categories (Columns A+B+C+D) found on row 4. Total must be equal to 100% with a (±) deviation limited to ½ % (0.5%). Example; a derived percentage between 99.5% and 100.5% is acceptable. If this computation falls outside the accepted deviation then an error has occurred in row 2, 3 or 4.

6: TOTAL BUILDER POINTS: Add together the two point tallies from row 2, Columns C and D blocks only. Total will vary from aircraft to aircraft depending on number of N/As applied.

7. TOTAL BUILDER PERCENTAGE: Add together the two percentage tallies from row 4 Columns C and D blocks only. Total must exceed 50% to be eligible for amateur built status and to meet major portion requirement under 14 CFR, Part 21.191(g) Operating amateur-built aircraft.

EXPLANATIONS AND EXAMPLES

► All Points are added at the end of the form in the Summary section under their respective categories. The point total is comprised of all the credits awarded for primary delineated tasks plus any credits given for 'Additional

► "Additional Items" may be assigned points the same as primary listed tasks if work or parts not reflected in the main entries need to be credited.

► The applicants completion of tasks can be documented in a number of ways and may include

(1) Builder's logs.
(2) Photographs/video/DVD.
(3) Drawings.
(4) Engineering data when necessary.
(5) Relevant documentation (e.g., plans) and references (e.g., handbooks) used.
(6) Documentation concerning any commercial assist
(7) Documentation concerning any non-commercial assistance used.
(8) Part inventories and histories.
(9) Receipts, Catalogs.
(10) Log book entries

In addition to using this checklist, the builder should document the entire fabrication and assembly process. To issue an airworthiness certificate the FAA must make a major portion determination (the major portion of an aircraft was fabricated and assembled by an amateur builder (s)). Making this finding requires sufficient, credible and adequate documentation.