

Amateur-Built Fabrication and Assembly Checklist (2011)

Fixed Wing

Name(s)	
Address:	
Aircraft Model:	
Date:	
Remarks:	

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	Fabricate Longitudinal Members				
F2	Fabricate Composite Cores or Shells, Skins				
F3	Fabricate Bulkheads or Cross members				
F4	Fabricate Flt Control Push Pull Tubes/Cables				
F5	Assemble Flt Control Push Pull Tubes/Cables				
F6	Assemble Fuselage Basic Structure				

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
		F7	Fabricate Brackets and Fittings		
F8	Assemble Brackets and Fittings				
F9	Fabricate Cables, Wire, and Lines				
F10	Assemble Cables, Wire, and Lines				
F11	Fabricate Fuselage Fuel System Components				
F12	Assemble Fuselage Fuel System Components				
F13	Fabricate Fuselage Covering or Skin				
F14	Assemble Fuselage Covering or Skin				
F15	Fabricate Windshield				
F16	Assemble Windshield to Fuselage				
F17	Fabricate Windows				
F18	Assemble Windows to Fuselage				
F19	Fabricate Doors/Canopy				
F20	Assemble Doors/Canopy to Fuselage				
F21	Fabricate Mast and Strut Assembly				
F22	Assemble Mast and Strut Assembly				
F23	Add Fab item:				
F24	Add Assy item:				
F25	Add Fab item:				
F26	Add Assy item:				
Total # of Fuselage Tasks	<u>Fuselage Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	<u>Fuselage Total Points</u> ►				

Fuselage Comments:

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	Fabricate Right Wing Spars				
W2	Fabricate Right Wing Ribs				
W3	Assemble Wing Spars and Ribs to Form Right Wing Primary Structure				
W4	Fabricate Left Wing Spars				
W5	Fabricate Left Wing Ribs				
W6	Assemble Wing Spars and Ribs to Form Left Wing Primary Structure				
W7	Fabricate Composite Cores				
W8	Assemble Composite Cores to Wing				
W9	Fabricate Wing Leading and Trailing Edges				
W10	Assemble Wing Leading & Trailing Edges to Wing				
W11	Fabricate Drag/Anti-drag Truss Members				
W12	Assemble Drag/Anti-drag Truss Members to Wing				
W13	Fabricate Wing Brackets and Fittings				
W14	Assemble Wing Brackets and Fittings to Wing				
W15	Fabricate Wing Tips				
W16	Assemble Wing Tips to Wings				
W17	Fabricate Special Tools or Fixtures				
W18	Fabricate Aileron Spars				
W19	Fabricate Aileron Ribs or Cores				
W20	Assemble Aileron Spars, Ribs and/or Cores to Form Aileron Primary Structure				
W21	Fabricate Aileron Brackets and Fittings				
W22	Assemble Aileron Brackets & Fittings to Aileron				
W23	Fabricate Aileron Covering or Skin (Includes Leading and Trailing Edges)				
W24	Assemble Aileron Covering or Skin to Aileron				
W25	Assemble Aileron to Wing				
W26	Fabricate Flap Spars				
W27	Fabricate Flap Ribs or Cores				
W28	Assemble Flap Spars, Ribs or Cores to Form Flap Primary Structure				
W29	Fabricate Flap Bracket and Fittings				
W30	Assemble Flap Brackets & Fittings to Flap				

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

Wing Comments:

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

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		
E32	Assemble Vertical Stabilizer to Next Higher Structure				
E33	Fabricate Rudder Spar				
E34	Fabricate Rudder Ribs or Cores				
E35	Assemble Rudder Spars, Ribs and/or Cores to Form Primary Rudder Structure				
E36	Fabricate Rudder Brackets and Fittings				
E37	Assemble Rudder Brackets and Fittings to Rudder				
E38	Fabricate Rudder Covering or Skin (Includes Leading and Trailing Edges)				
E39	Assemble Rudder Covering or Skin to Rudder				
E40	Fabricate Rudder Trim Tab				
E41	Assemble Rudder Trim Tab to Rudder				
E42	Assemble Rudder to Vertical Stabilizer				
E43	Add Fab item:				
E44	Add Assy item:				
E45	Add Fab item:				
E46	Add Assy item:				
Total # of Empennage Tasks	<u>Empennage Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	<u>Empennage Total Points ►</u>				

Empennage Comments:.

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	Fabricate Landing Gear Struts or Major Components				
LG2	Assemble Landing Gear Struts or Major Components to Form Primary Landing Gear Structure				
LG3	Assemble Landing Gear System Components Next Level Structure				
LG4	Fabricate Brake System Components				
LG5	Assemble Brake System Components to Wheels/Gear				
LG6	Assemble Wheels and Tires to Landing Gear				
LG7	Fabricate Landing Gear Bracket and Fittings				
LG8	Assemble Landing Gear Bracket and Fittings to Landing Gear				
LG9	Fabricate Landing Gear Actuation System Components				
LG10	Assemble Landing Gear Actuation System Components to Next Higher Structure				
LG11	Fabricate Landing Gear System Cables, Wires and Lines				
LG12	Assemble Landing Gear Cables, Wires and Lines to Next Level Structure				
LG13	Fabricate Landing Gear Fairings/Gear Doors				
LG14	Assemble Landing Gear Fairings/Gear Doors to Next Level Structure				
LG15	Add Fab item:				
LG16	Add Assy item:				
Total # of Land Gear Tasks	<u>Landing Gear Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	<u>Landing Gear Total Points ▶</u>				

Landing Gear Comments:

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
Task #	Propulsion – 26 Listed Tasks				
P1	Fabricate Engine Mounts				
P2	Assemble Engine Mounts to Next Level Structure				
P3	Fabricate Engine Cooling System/Baffles				
P4	Assemble Engine Cooling System Baffles to Engine				
P5	Fabricate Engine Compartment Overheat/Fire Detection System				
P6	Assemble Engine Compartment Overheat/Fire Detection System to Engine Compartment				
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	Fabricate Propeller Spinner Components				
P21	Assemble Propeller and Spinner to Engine				
P22	Fabricate Engine Cowling				
P23	Assemble Engine Cowling to Airframe				
P24	Assemble Engine Fuel System Components to Next Level Structure				
P25	Fabricate Firewall				
P26	Assemble Firewall To Next Level Structure				
P27	Add Fab item:				
P28	Add Assy item:				
P29	Add Fab item:				
P30	Add Assy item:				
Total # of Propulsion Tasks	<u>Propulsion Subtotal</u>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	<u>Propulsion Total Points ▶</u>				

Propulsion Comments:

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	Fabricate Instrument Panel				
C2	Fabricate Instrument Sub Panels, Brackets and Fittings				
C3	Assemble Instrument Panel, Sub Panels and Brackets and Fittings to Next Higher Structure				
C4	Assemble Avionics to Instrument Panel				
C5	Fabricate Seats				
C6	Fabricate Seat Brackets and Fittings				
C7	Assemble Seats and Brackets and Fittings to Cockpit				
C8	Fabricate Seat Belts and Shoulder Harness Fittings and Brackets				
C9	Assemble Seat Belts and Shoulder Harness Gittings and Brackets to Structure				
C10	Fabricate Electrical Wiring, Controls and Switches				
C11	Assemble Electrical Systems Controls and Switches to Next Level Structure				
C12	Fabricate Control Yokes/Sticks				
C13	Assemble Control Yokes/Sticks to Flight Control System				
C14	Fabricate All Flight Control Push Pull Tubes and/or Cables				
C15	Assemble Flight Control Push Pull Tubes and/or Cables to Next Higher Structure				
C16	Fabricate Rudder Pedals				
C17	Assemble Rudder Pedals to Next Higher Structure				
C18	Fabricate Roll-Pitch and Yaw Trim Systems				
C19	Assemble Roll-Pitch and Yaw Trim Systems to Next Higher				
C20	Fabricate Flap/Spoiler Controls				
C21	Assemble Flap/Spoiler Controls to Next Higher Structure				
C22	Fabricate Closeout Panels/Floor Panels				
C23	Assemble Closeout Panels/Floor Panels				
C24	Add Fab item:				
C25	Add Assy item:				
Total # of Cockpit Tasks	<u>Cockpit Interior Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	<u>Cockpit Interior Total Points ►</u>				

Cockpit Comments:

Total # of Aircraft Tasks	◀ 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) ▶			
2. Total Points for Each Category.	(Note 2)				
3. Total Points for Complete Aircraft Construction (SUM # 2 should equal SUM # 1 above).	(Note3)	(SUM #2) ▶			
4. Percentage of Each Category as Part of Total Aircraft Construction.	(Note 4)				
5. Total Percentages for Complete Aircraft Construction (Add all percentages in row 4) Total should equal 100% (± . 5%). (Note 5)					
6. Total Builder Points – Add points in row 2, column C and D only, together.	(Note 6)				
7. Total Builder Percentage – Add percentages in row 4, columns C and D only, together.	(Note 7)				

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 individual 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 (\pm) deviation limited to $\frac{1}{2}$ % (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.