

Amateur-Built Fabrication and Assembly Checklist (2011) (Weight Shift Control)

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

NOTE: This checklist is only applicable to Weight Shift Control aircraft. Evaluation of other types of aircraft (i.e., Fixed Wing, 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 AIRCRAFT 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/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
Task	Carriage/Airframe – 13 Listed Tasks				
#					
A1	Fabricate Basic Airframe Structural Components (Front Tube, Carriage Mast and Keel, etc.,)				
A2	Assemble Basic Airframe Structure				
A3	Fabricate Covering/Skin or Fairing				
A4	Assemble Covering/Skin or Fairing to Carriage				
A5	Fabricate All Carriage/Airframe Brackets and Fittings				

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
		A6	Assemble Brackets and Fittings to Carriage/Airframe		
A7	Fabricate Cables, Wires, and Lines				
A8	Assemble Cables, Wires, and Lines to Carriage Structure				
A9	Fabricate Fuel Tank				
A10	Assemble Fuel Tank to Carriage				
A11	Assemble Fuel System Components to Carriage				
A12	Fabricate Windshield / Windows				
A13	Assemble Windshield / Windows to Carriage				
A14	Add Fab item:				
A15	Add Assy item:				
A16	Add Fab item:				
A17	Add Assy item:				
Total # of Carriage Tasks	<u>Carriage Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	Carriage Total Points ▶				

Carriage Comments:

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	Wing – 18 Listed Tasks				
W1	Fabricate Wing Cross-Bar Components				
W2	Assemble Cross-Bar Components to Wing Structure				
W3	Fabricate Wing Ribs				
W4	Assemble Wing Ribs to Wing Structure				
W5	Fabricate Wing Keel Components				
W6	Assemble Wing Keel Components to Wing Structure				
W7	Fabricate Wing Leading Edge				
W8	Assemble Leading Edge to Wing Structure				
W9	Fabricate All Wing Brackets and Fittings				
W10	Assemble All Brackets and Fittings to Wing Structure				
W11	Fabricate Cables, Wires and Lines				
W12	Assemble Cables Wires and Lines to Wing Structure				
W13	Fabricate Control Bar and Down Tube Components				
W14	Assemble Control Bar and Down Tube Components to Wing Structure				
W15	Fabricate Wing Covering or Skin				
W16	Assemble Covering or Skin to Wing Structure				
W17	Fabricate Wing Struts / Flying Wires				
W18	Assemble Wing Struts / Flying Wires to Next Higher Structure				
W19	Add Fab item:				
W20	Add Assy item:				
W21	Add Fab item:				
W22	Add Assy item:				
Total # of Wing Tasks	<u>Wing Subtotal</u>	Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
	<u>Wing Total Points ►</u>				0

Wing Comments:

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	Landing Gear – 10 Listed Tasks				
LG1	Fabricate Landing Gear Struts (Shock, Main, Drag, etc.)				
LG2	Assemble Landing Gear Struts to Next Higher Structure				
LG3	Fabricate Landing Gear System Cables, Wires and Lines				
LG4	Assemble Landing Gear System Cables Wires and Lines to Next Higher Structure				
LG5	Assemble Wheels/Tires				
LG6	Assemble Brake System to Next Higher Structure				
LG7	Fabricate Landing Gear Fairings/Wheel Pants				
LG8	Assemble Landing Gear Fairings/Wheel Pants to Next Higher Structure				
LG9	Fabricate Landing Gear Bracket and Fittings				
LG10	Assemble Landing Gear Bracket and Fittings to Landing Gear				
LG11	Add Fab item:				
LG12	Add Assy item:				
LG13	Add Fab item:				
LG14	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
0	<u>Landing Gear Total Points ►</u>				

Landing Gear Comments:

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	Propulsion – 21 Listed Tasks				
P1	Fabricate Engine Mounts				
P2	Assemble Engine Mounts to Next Higher Structure				
P3	Fabricate Engine Cooling System/Baffles				
P4	Assemble Engine Cooling System/Baffles to Engine				
P5	Fabricate Induction System (Likely N/A)				
P6	Assemble Induction System to Engine (Likely N/A)				
P7	Fabricate Exhaust System				
P8	Assemble Exhaust System to Engine				
P11	Fabricate Engine Compartment Brackets and Fittings				
P12	Assemble Engine Compartment Brackets and Fittings to Next Higher Structure				
P13	Fabricate Engine Control Cables, Wires and Lines				
P14	Assemble Engine Control Cables, Wires and Lines to next Higher Structure				
P15	Assemble Engine (Likely N/A)				
P16	Assemble Engine to Engine Mount				
P17	Fabricate Propeller Spinner Components				
P18	Assemble Propeller and Spinner to Engine				
P19	Fabricate Engine Cowling (Likely N/A)				
P20	Assemble Engine Cowling to Airframe (Likely N/A)				
P21	Assemble Engine Fuel System Components to Next Higher Structure				
P22	Fabricate Firewall				
P23	Assemble Firewall to Next Higher Structure				
P24	Add Fab item:				
P25	Add Assy item:				
P26	Add Fab item:				
P27	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 – 8 Listed Tasks				
C1	Fabricate Instrument Panel, Sub Panels, Brackets and Fittings				
C2	Assemble Instrument Panels, Brackets, and Fittings to Next Higher Structure				
C3	Fabricate Electrical Wiring, Controls and Switches				
C4	Assemble Electrical Wiring Controls and Switches to Next Level Structure				
C5	Fabricate Seats				
C6	Assemble Seats to Carriage				
C7	Fabricate Seat Belts/Harnesses, Brackets and Fittings				
C8	Assemble Seat Belts/Harnesses, Brackets and Fittings to Next Higher Structure				
C9	Add Fab item:				
C10	Add Assy item:				
C11	Add Fab item:				
C12	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	< See Note 2
	◀ 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). (Note 3)	(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/Airframe, Wings, Empennage, Landing Gear, Propulsion, Main and Tail Rotor and/or 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 row 2, 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 items'.

► "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.