

Amateur-Built Fabrication and Assembly Checklist (2009)

(Fixed Wing)

Name:	Rans Designs Inc.
Address:	4600 Hwy 183 Alt, Hays, KS
Aircraft:	S-19 Venterra
Date:	8/17/2011
Remarks:	National Kit Evaluation Team: Mike Sloat (Lead), Henry Cooper, Joe Palmisano
This evaluation pertains to and is defined by: RANS S-19 Venterra Builders Manual, dated 4/1/2011, and all Packing Lists, dated 4/1/2011.	

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	0.5			
F2	Fabricate Composite Cores or Shells, Skins	N/A			
F3	Fabricate Bulkheads or Cross members	0.7			
F4	Fabricate Control Yokes/Sticks	0.8			
F5	Assemble Control Yokes/Sticks	0			
F6	Fabricate Flt Control Push Pull Tubes/Cables	0.6			
F7	Assemble Flt Control Push Pull Tubes/Cables	0			
F8	Assemble Fuselage Basic Structure	0.2			
F9	Fabricate Brackets and Fittings	0.7			
F10	Assemble Brackets and Fittings	0			
F11	Fabricate Cables, Wire, and Lines	0.3			
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	0.6			
F16	Assemble Fuselage Covering or Skin	0			
F17	Fabricate Windshield	0.7			
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			
F25	Add item: Fabricate Rudder Pedals	0.7			
F26	Add item: Assemble Rudder Pedals	0			

F31	Add item:					
Total # of Fuselage Tasks	<u>Fuselage Subtotal</u>		Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
20	<u>Fuselage Total Points</u> ▶		6.1			

Fuselage Comments:
 F25 and F26 added items were inadvertently omitted from this checklist revision.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
		Task # Wings – 51 Listed Tasks			
W1	Fabricate Wing Spars	0.7			
W2	Assemble Wing Spars to Wing	0			
W3	Fabricate Wing Ribs or Cores	0.7			
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	0.7			
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	0.7			
W12	Assemble Wing Brackets and Fittings to Wing	0			
W13	Fabricate Wing Tips	0.7			
W14	Assemble Wing Tips to Wings	0			
W15	Fabricate Special Tools or Fixtures	N/A			
W16	Fabricate Aileron Spars	0.8			
W17	Fabricate Aileron Ribs or Cores	0.7			
W18	Assemble Aileron Ribs or Cores to Aileron	N/A			
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	0.6			
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	0.8			
W30	Assemble Flap Spars to Flap	N/A			
W31	Fabricate Flap Ribs or Cores	0.7			
W32	Assemble Flap Ribs or Cores to Flap	N/A			
W33	Assemble Flap Primary Structure	0			
W34	Fabricate Flap Leading and Trailing Edges	N/A			
W35	Assemble Flap Brackets and Fittings to Flap	N/A			
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 (optional)	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	1			
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	0.8			
W50	Assemble Fuel Tank to Wing	0			
W51	Calibrate Fuel System Components	N/A			

W52	Add item: Fabricate Flap Bracket and Fittings	0.8			
W53	Add item: Assemble Flap Leading and Trailing Edges	N/A			
W54	Add item: Assemble Wing Struts/Wires	N/A			
W55	Add item: Assemble Wing to Next Level Structure	0			
Total # of Wing Tasks	<u>Wings Subtotal</u>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
33	<u>Wings Total Points ▶</u>	11.9			

Wing Comments:

W52, W53 and W54 and W55 added items were inadvertently omitted from this checklist revision.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
		Empennage – 57 Listed Tasks			
Task #					
E1	Fabricate Horizontal Stabilizer Spars	0.6			
E2	Assemble Horizontal Stabilizer Spar(s) to Stabilizer	N/A			
E3	Fabricate Horizontal Stabilizer Ribs or Cores	0.7			
E4	Assemble Horizontal Stabilizer Ribs or Cores to Stabilizer	N/A			
E5	Fabricate Horizontal Stabilizer Leading and Trailing Edge	N/A			
E6	Assemble Horizontal Stabilizer Leading and Trailing Edges to Stabilizer	N/A			
E7	Fabricate Horizontal Stabilizer Brackets & Fittings	0.7			
E8	Assemble Horizontal Stabilizer Brackets and Fittings to Stabilizer	0			
E9	Assemble Horizontal Stabilizer Structure	0			
E10	Fabricate Horizontal Stab Lead/ Trailing Edges	0.8			
E11	Assemble Horizontal Stabilizer Lead/ Trailing Edges to Stabilizer	0			
E12	Fabricate Horizontal Stabilizer Cables, Wires and Lines	N/A			
E13	Assemble Horizontal Stabilizer Cables, Wires and Lines to Stabilizer	N/A			
E14	Fabricate Horizontal Stabilizer Empennage Covering or Skin	0.7			
E15	Assemble Horizontal Stabilizer Empennage Covering or Skin to Stabilizer	0			
E16	Assemble Horizontal Stabilizer Structure to Fuselage	0			
E17	Fabricate Elevator Spars	N/A			
E18	Assemble Elevator Spars to Elevator	N/A			
E19	Fabricate Elevator Ribs Cores	N/A			
E20	Assemble Elevator Ribs Cores to Elevator	N/A			
E21	Assemble Elevator Structure	N/A			
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	N/A			
E25	Assemble Elevator Brackets and Fittings to Elevator	N/A			
E26	Fabricate Elevator Covering or Skins	N/A			
E27	Assemble Elevator Covering or Skins to Elevator	N/A			
E28	Fabricate Elevator Stabilator Trim Tab	0.7			
E29	Assemble Elevator Stabilator Trim Tab to Stabilator	0			
E30	Fabricate Special Tools or Fixtures	N/A			
E31	Fabricate Vertical Stabilizer Spars	0.6			
E32	Assemble Vertical Stabilizer Spar to the Vertical Stabilizer	N/A			
E33	Fabricate Vertical Stabilizer Ribs Cores	0.7			
E34	Assemble Ribs Cores to Vertical Stabilizer	N/A			
E35	Fabricate Vertical Stabilizer Leading/Trailing Edges	0.8			
E36	Assemble Leading and Trailing Edges to Vertical Stabilizer	0			
E37	Fabricate Vertical Stabilizer Brackets and Fittings	0.7			
E38	Assemble Brackets and Fittings to Vertical Stabilizer	0			
E39	Fabricate Vertical Stabilizer Cables, Wires, Lines	N/A			

E40	Assemble Cables, Wires, Lines to Vertical Stabilizer	N/A				
E41	Fabricate Vertical Stabilizer Empennage Covering or Skin	0.6				
E42	Assemble Vertical Stabilizer Empennage Covering or Skin to Vertical Stabilizer	0				
E43	Assemble Vertical Stabilizer Structure to Fuselage	0				
E44	Fabricate Rudder Spar	0.7				
E45	Assemble Rudder Spar to Rudder	N/A				
E46	Fabricate Rudder Ribs or Cores	0.7				
E47	Assemble Rudder Ribs or Cores to Rudder	N/A				
E48	Assemble Rudder Structure	0				
E49	Fabricate Rudder Leading and Trailing Edge	0.8				
E50	Assemble Rudder Leading and Trailing Edge to Rudder	0				
E51	Fabricate Rudder Brackets and Fittings	0.7				
E52	Assemble Rudder Brackets & 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	N/A				
E56	Assemble Rudder Trim Tab to Rudder	N/A				
E57	Assemble Rudder to Vertical Stabilizer	0				
E58	Add item: Assemble Elevator to Horizontal Stabilizer	N/A				
E59	Add item: Assemble Vertical Stabilizer Structure	0				
E60	Add item:					
Total # of Empennage Tasks		<u>Empennage Subtotal</u>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
32		<u>Empennage Total Points</u> ►	11.2			

Empennage Comments:

E7/E8 Includes the Hinge bracket

E10/E11 Stabilator incorporates a Leading edge but has no trailing edge

E28/E29 Aircraft has no elevator. For pitch control the aircraft empennage is equipped with a articulated stabilator and trim tab.

E32/E34 Credit for these tasks captured in task E59

E58 and E59 added items were inadvertently omitted from this checklist revision.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/ Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
Task #	Landing Gear – 12 Listed Tasks				
LG1	Fabricate Struts	0.7			
LG2	Fabricate Brake System Components	N/A			
LG3	Fabricate Landing Gear Actuation System Components	N/A			
LG4	Fabricate Landing Gear System Cables, Wires and Lines	0.8			
LG5	Assemble Wheels	0			
LG6	Assemble Brakes, Tires	0			
LG7	Assemble Landing Gear to Next Level Structure	0			
LG8	Assemble Landing Gear System Components Next Level Structure	0			
LG9	Align Landing Gear	N/A			
LG10	Fabricate Landing Gear Fairings/Gear Doors	N/A			
LG11	Assemble Landing Gear Fairings/Gear Doors to Next Level Structure	N/A			
LG12	Perform Landing Gear Operational Check (Normal, Emergency Systems)	N/A			
LG13	Add item: Fabricate Landing Gear Bracket and Fittings	1			
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
8	<u>Landing Gear Total Points ►</u>	2.5			

Landing Gear Comments:

Wheel Pants Option (if purchased) to be assessed at time of Airworthiness Inspection

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
Task #	Propulsion – 27 Listed Tasks				
P1	Fabricate Engine Mounts	1			
P2	Assemble Engine Mounts to Next Level Structure	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	N/A			
P8	Assemble Induction System to Engine	N/A			
P9	Fabricate Exhaust System	1			
P10	Assemble Exhaust System to Engine	0			
P11	Fabricate Engine Control Installation Brackets	1			
P12	Assemble Engine Controls to Next Level Structure	0			
P13	Rig and Adjust Engine Controls	N/A			
P14	Fabricate Brackets and Fittings	N/A			
P15	Assemble Brackets and Fittings to Next Level Structure	N/A			
P16	Fabricate Cables, Wires and Lines	0.7			
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			
P21	Fabricate Propeller Spinner Components	0.7			
P22	Assemble Propeller to Engine	0			
P23	Rig and Track Propeller	N/A			
P24	Fabricate Engine Cowling	0.5			
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: Fabricate Firewall	0.6			
P29	Add item: Assemble Firewall	0			
P30	Add item:				
P31	Add item:				
Total # of Propulsion Tasks	<u>Propulsion Subtotal</u>	Mfr Kit/Part/Component	Commercial Assistance	Am-Builder Assembly	Am-Builder Fabrication
16	<u>Propulsion Total Points ▶</u>	5.5			

Propulsion Comments: P28 and P29 added items were inadvertently omitted from this checklist revision.

Aircraft Kit was evaluated with the optional Firewall forward package option which includes a Rotax 912 ULS engine.

Asterisk {*} This kit does not include an engine or engine components. These tasks therefore can not be scored in the NKET evaluation. However, since an engine is required for flight, the FAA Inspector (or DAR) will assign values to the proper column for these tasks upon Airworthiness inspection. The use of commercial assistance must be considered during that inspection.

FABRICATION AND ASSEMBLY TASKS		A	B	C	D
		Mfr Kit/Part/	Commercial	Am-Builder	Am-Builder
		Component	Assistance	Assembly	Fabrication
Task #	Cockpit Interior – 11 Listed Tasks				
C1	Fabricate Instrument Panel	0.2			
C2	Fabricate Instrument Panel Bracket and Fittings	0.7			
C3	Assemble Instrument Panel with Fittings and Brackets	0			
C4	Assemble Avionics to Instrument Panel	N/A			
C5	Fabricate Seats	0.7			
C6	Fabricate Seat Brackets and Fittings	0.8			
C7	Assemble Seats to Cockpit	0			
C8	Fabricate Seat Belts Fittings and Shoulder Harness Fittings	1			
C9	Assemble Seat Belts and Shoulder Harness to Structure	0			
C10	Fabricate Electrical Wiring, Controls and Switches	N/A			
C11	Assemble Electrical Systems Controls and Switches to Next Level Structure	0			
C12	Add item: Fabricate Closeout Panels/Floor Panels	0.8			
C13	Add item: Assemble Closeout Panels/Floor Panels	0			
C14	Add item:				
C15	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>	4.2			

Cockpit Comments:

C12 and C13 added items were inadvertently omitted from this checklist revision. C12 Closeout panel includes the Deck-skin panel located under the front windshield.

Total # of Aircraft Tasks	◀ SUM #1
120	

▶ 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)	41.4			
2. Total Points for Complete Aircraft Construction (SUM # 2 should equal SUM # 1 above). (Note 2)	(SUM #2) ▶ 120.0			
3. Percentage of Each Category as Part of Total Aircraft Construction. (Note 3)	34.50%			
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)				