

Building Your Homebuilt Using the New FAA Major Portion Checklist

Why should you care about this bureaucratic subject?

By Joe Gauthier

Why should you care about the FAA's newest (in 2009) major portion rule checklist? The answer is both simple and complex. (How about that for polar opposites?) An amateur aircraft builder is required to build 51 percent, or the major portion, of an aircraft for recreation or education. The rules that allow amateurs to build their own plane require that it be solely for educational or recreational purposes. Only a carefully measured amount of commercial assistance is allowed.

Fortunately we have kit companies that make it possible for many to build their own aircraft by providing kits that meet the FAA rules, so you don't have to worry about it. Or do you? By the way, it's okay to use prefab wheels, brakes, nuts and bolts engines, avionics, paint, upholstery, etc. No one, not even the FAA, requires the builder to mine for ore, cast metal parts, or build such things as engines, instruments, wheels, tires, brakes, cosmetics, and interior goodies. However, if you wish, you have the freedom to do it all.

About the Checklist

We've used checklists to determine compliance with major portion assessments by the amateur and the FAA since early in the 1970s. The checklist came into existence in the mid-1970s right after the Christen Eagle showed up as a "very" complete kit. People came to believe that the Eagle kit was far too complete to be certificated as an amateur-built aircraft. An FAA/industry working group was formed, and it developed the checklist; associated techniques were added to the homebuilders list of required knowledge. Also, new terms were added to our vocabulary, such as "tasks" and "compensation," which we'll explain shortly. In 1996 the FAA produced an advisory circular

(AC) on the subject of commercial assistance; it became AC 20-139. Since that time, that AC has been incorporated into the AC on homebuilt aircraft, AC 20-27. You should get to know them as part of your education into the world of homebuilt aircraft.

The early checklist could be found on FAA Form 8000.38. It was used successfully for years, right through the Van's, Lancair, Kitfox, and Glasair, etc. era with little fuss and fanfare. It worked, and life was good. The checklist was used by the FAA for evaluating kits to be added to the FAA's List of Eligible Kits and further used by field personnel, when needed, to establish major portion questions when (not if) those issues arose.

So why did we get a new checklist in 2009? Connect those dots directly to the FAA's concern about and attention to commercial assistance shops (sometimes known as professional builders) that had been going on for a couple years, and you would be very close to understanding the reason why the FAA became pressured into doing something. Yes, the checklist resulted from blatant abuse by professional shops and individual builders who recognized there was money to be made building aircraft for those who had the money, but neither the time nor skills to build. This nefarious activity was moving forward very quickly until homebuilt aircraft performance and design sophistication was noticed by the general aviation manufacturers. They realized there was performance available in homebuilt aircraft that standard-category airplanes couldn't deliver. The perception of safety in homebuilt aircraft reached levels that were also attractive. This dramatic upturn in commercial activity, and the pressure manufacturers felt by competing interests, worried the FAA, and it took intense

Kit Manufacturer	Aircraft Model (Checklist)	Added to FAA Kit List	Configuration as sold Documentation	Letter of Eligibility
Backcountry Super Cubs P.O Box 1799 Douglas WY, 82633	Super Cub (PDF)	Dec 2010	Super Cub Kit Packing List Bill of Materials Rev #2 dated 10/13/2010	Super Cub Letter (PDF)
Backcountry Super Cubs P.O Box 1799 Douglas WY, 82633	Super Cruiser (PDF)	Dec 2010	Super Cruiser Kit Packing List Bill of Materials Rev #2 dated 10/13/2010	Super Cruiser Letter (PDF)
Backcountry Super Cubs P.O Box 1799 Douglas WY, 82633	Mackey SQ2 (PDF)	Dec 2010	Mackey SQ2 Kit Packing List Bill of Materials Rev #2 dated 10/13/2010	Mackey SQ2 Letter (PDF)
Backcountry Super Cubs P.O Box 1799 Douglas WY, 82633	Mackey SQ4 (PDF)	Dec 2010	Mackey SQ4 Kit Packing List Bill of Materials Rev #2 dated 10/13/2010	Mackey SQ4 Letter (PDF)
Cub Crafters 1918 South 16th Ave. Yakima WA, 98903	Carbon Cub EX (PDF)	April 2011	Carbon Cub EX Kit, Master Document List, Rev 1.0 Model CCK-1865 dated 03/30/2011	Carbon Cub EX Letter (PDF)
Dakota Cub 48473 262 St. Valley Springs, SD 57068	S18-180 (PDF)	April 2010	S18 Kit Master Data List. Rev. Org. dated 4/23/2010 and Supplied Parts List for the Super 18 S18-180 Kit. Rev. Org, dated 4/23/2010.	S18-180 Letter (PDF)
Dakota Cub 48473 262 St. Valley Springs, SD 57068	S18-LT (PDF)	Nov 2010	S18-LT Kit Master Data List. Rev. Org. dated 5/20/2010 and Supplied Parts List for the Super 18 S18-LT Kit. Rev. Org, dated 8/20/2010.	S18-LT Letter (PDF)
Dakota Cub 48473 262 St. Valley Springs, SD 57068	S18-160 (PDF)	Nov 2010	S18-160 Kit Master Data List. Rev. Org. dated 5/20/2010 and Supplied Parts List for the Super 18 S18-160 Kit. Rev. Org, dated 8/20/2010.	S18-160 Letter (PDF)
ICP Aviation North America 410 E. Chestnut Archer City, TX 76351	Savannah-S (PDF)	June 2012	Savannah VG Builder's Manual Version I/R, 10/11/2011 and Parts List, Version I/R, 10/11/2011	Savannah Letter (PDF)
Just Aircraft 170 Duck Pond Rd Wahalla SC, 29691	Highlander (PDF)	Oct 2010	Highlander Kit Pack BOM of 9/20/2010 (Includes Tricycle and Conventional LG)	Highlander Letter (PDF)
Just Aircraft 170 Duck Pond Rd Wahalla SC, 29691	Highlander QB (PDF)	Oct 2010	Highlander QB Kit Pack BOM of 9/20/2010 (Includes Tricycle and Conventional LG)	Highlander QB Letter (PDF)
Progressive Aerodyne 3801 State Rte 19 Tavares FL 32778	SeaRey (PDF)	Nov 30, 2011	SeaRey LSX Assembly Manual Rev 1, dated 11/16/2011	SeaRey Letter (PDF)
Progressive Aerodyne 3801 State Rte 19 Tavares FL 32778	SeaRey-Fast-Build Wing-Opt (PDF)	July 30, 2012	SeaRey LSX Assembly Manual Rev 1, dated 11/16/2011	SeaRey-Fast-Build Wing-Opt Letter (PDF)

FAA Major Portion Checklist

Quicksilver Aeronautics LLC 42214 Sarah Way Temecula, CA 92590	MX Sport (PDF)	Sept. 2012	Quicksilver MX Sport Packing Lists: 99120-01, Rev "-" Airframe Kit 99120-02, Rev "-", Engine Kit 99120-03, Rev "-", Spar Kit 99120-04, Rev "-", Sail Kit	MX Sport Letter (PDF)
Quicksilver Aeronautics LLC 42214 Sarah Way Temecula, CA 92590	MXL II Sport (PDF)	Sept. 2012	Quicksilver MXL II Sport Packing Lists: 98325, Rev "F", Airframe Kit 98025, Rev "C", Engine Kit	MXLII Sport Letter (PDF)
Quicksilver Aeronautics LLC 42214 Sarah Way Temecula, CA 92590	MX Sprint (PDF)	Sept. 2012	Quicksilver MX Sprint Packing Lists: 99110-01, Rev "-" Airframe Kit 99110-02, Rev "-", Engine Kit 99110-03, Rev "-", Spar Kit 99110-04, Rev "-", Sail Kit	MX Sprint Letter (PDF)
Quicksilver Aeronautics LLC 42214 Sarah Way Temecula, CA 92590	MX II Sprint (PDF)	Sept. 2012	Quicksilver MX II Sprint Packing Lists: 99315, Rev "C" Airframe Kit 98025, Rev "C", Engine Kit	MXII Sprint Letter (PDF)
Quicksilver Aeronautics LLC 42214 Sarah Way Temecula, CA 92590	Sport 2S (PDF)	Sept. 2012	Quicksilver Sport 2S Packing Lists: 99350, Rev "-", Airframe Kit 98025, Rev "C", Engine Kit	Sport 2S Letter (PDF)
Rans Designs 4600 Highway 183 Alt Hays, KS 67601	Venterra S19 (PDF)	Sept 2011	Buiders Manual, dated 4/1/2011, and all Packing Lists, dated 4/1/2011	Venterra S19 Letter (PDF)
Scion 3693 E. County Rd 30 Fort Collins, CO 80528	Furio (PDF)	Sept 2011	Consturction Manual LN27-RG, Rev 1014, date 3/31/11, and Flight Manual Version 1.14, date 5/5/11 and Sub Kits Breakdown Ver 1.14, date 5/5/11	Furio Letter (PDF)
Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Sonex (PDF)	Feb 2010	Sonex Packing List, SNX-KIT- 021810, 02/18/10	Sonex Letter (PDF)
Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Sonex Finish Spar Option (PDF)	Feb 2010	Sonex (Finished Spar Option) Packing List, SNX-KIT- ALL-021810, 02/18/10	Sonex Spar Letter (PDF)
Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Waiex (PDF)	Feb 2010	Waiex Packing List, WIX-KIT- 021810, 02/18/10	Waiex Letter (PDF)
Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Waiex Finished Spar Option (PDF)	Feb 2010	Waiex (Finished Spar Option) Packing List, WIX-KIT- ALL-021810, 02/18/10	Waiex Spar Letter (PDF)
Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Xenos (PDF)	Feb 2010	Xenos Motorglider Packing List, XNS-KIT-021810 Dated 02/18/10	Xenos Letter (PDF)

Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Xenos Finished Spar Option (PDF)	Feb 2010	Xenos Motorglider (Finished Spar Option Packing List, XNS-KIT-ALL-021810, 02/18/10	Xenos Spar Letter (PDF)
Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Onex – No Options (PDF)	Feb 2012	Onex Pack List, ONX-KIT-112911, 11/29/11	Onex Letter (PDF)
Sonex Aircraft PO Box 2521 Oshkosh WI, 54903	Onex Finish Spar; and Machined Angle Option (PDF)	Feb 2012	Onex (Finished Spar and Machined Angle Option) Pack List, ONX-KIT-ALL-112911, 11/29/11	Onex Letter (PDF)
Supermarine Aircraft LLC 365 FM 2807 Hgr 7 Cisco, TX 76437	Spitfire MK26B (PDF)	Jan 2012	Supermarine Spitfire Builder's Manual, Version A, dated 1/11/2012 and Parts List, Version A, dated 1/11/2012	Supermarine Spitfire MK26B Letter (PDF)
Team Tango 1990 SW 19th Ave Williston FL, 32696	Tango 2 (PDF)	Aug 2010	Covers two variants, Tango 2 and Tango 2 Er (Ext Range) Tango 2 Builder's Manual, Ver 1.1, 4/20/10 and Tango 2 Parts List Ver 1.1, 5/25/10	Tango 2 Letter (PDF)
Team Tango 1990 SW 19th Ave Williston FL, 32696	Foxtrot (PDF)	Aug 2010	Covers two variants, Foxtrot and Foxtrot ER (Ext Range) Foxtrot 4 Builder's Manual, Ver 1.1, 5/20/10 and Foxtrot Parts List Ver 1.1, 5/25/10	Foxtrot Letter (PDF)
Van's Aircraft 14401 NE Keil Rd. Aurora OR, 97002	RV-12 (PDF)	Aug 2010	RV-12 Builder's Manual, Set 4, RV-12 Parts Index, 7/24/2009	RV-12 Letter (PDF)
Zenith Aircraft PO Box 650 Mexico MO, 65265	STOL 750 (PDF)	May 2010	Drawings: Edition 1 Rev 1, 1/29/10, Parts List, Airframe Pack List 2/1/10, Finishing Pack List 2/1/10	STOL 750 Letter (PDF)
Zenith Aircraft PO Box 650 Mexico MO, 65265	CH650B (PDF)	May 2011	Drawings: CH650 Drawings: Edition 2, 8/9/2010, Airframe Pack List 8/9/2010, Finishing Pack List 8/9/2010	CH650B Letter (PDF)

interest in the work that some of these pros were doing that appeared to compromise the major portion rule in FAR 21.191(g), the 51-percent rule, as it has become to be known.

Because of the relationship that the FAA, EAA, and industry have, they all got together to resolve the growing concern. We're pleased that they decided to enlist industry and associations, as well as other individuals, to search for a suitable solution. An Aviation Rulemaking Committee (ARC) was formed in 2006, and it completed its work in 2008. The results of the ARC activities were reported to EAA members, and yet more new terms entered our vocabulary.

The ARC members proposed a revised checklist. While some members wanted to stay with the old checklist, others believed that adding tasks to the process would provide benefits in that it would allow additional detail and finer division of task assignment. The new checklist also promised to get rid of the dual checks that some FAA representatives were using. We welcomed the committee's proposal for an expanded checklist. The FAA accepted the new checklist with the added tasks, elimination of dual checks, more detail, and the expansion to four columns of items. This was believed by many to be a big improvement.

The FAA and some members of the group believed this detail could help manage the abuses of professional builders by making it easier and more reliable to measure the amount of work that a builder could contract with a professional and remain compliant with the 51-percent rule.

The ARC soon realized that a grandfathering, or a prior policy plan, needed to be brought into the activities, and it set about devising methods so that folks who had spent years constructing their aircraft would not be regulated out of existence by the imposition of the new rules being put into place. We believe the provisions that were made to accommodate those concerns have been resolved.

The new checklist is now in use by the FAA, and the FAA website has numerous listings of popular kit airplanes, along with the evaluations performed by the FAA's National Kit Evaluation Team (NKET). Many of the previously encountered problems became much clearer when viewing a completed evaluation.

Before we go any further, it would be good if you take a look at the [new checklist here](#).

The New Terms

What are tasks? For this use, "task" is the term used on both the old and new checklists to characterize the work operations and components involved. It was recognized early on that using parts count or time spent would result in larger issues than the term task. The ARC discussed it and recommended its continuation.

What is compensation? Paying someone for services, goods, or cash for completing tasks on the list is commercial assistance.

What is not commercial assistance? Paying someone to help arrange the shop, set up workstations, or provide tools and training (as long as the training doesn't result in a finished part for the airplane) is not commercial assistance.

How does the homebuilder work through this maze? As we said previously, when the FAA interacts with the general public it produces an AC (20-27G in this case), which has plain language and easy to follow flowcharts. The AC also has examples of many concepts involved and is also available on the FAA.gov website [here](#).

The [2009 Checklist Job Aid](#) is also available on the FAA website. It's there to guide individuals through the steps and procedures involved with amateurs building aircraft for education or recreational purposes.

Who Uses the Checklist?

Who uses the Amateur-Built Fabrication and Assembly Checklist (2009) Job Aid? When does the FAA use it? The NKET, a team of FAA specialists from around the country who travel to kit producers' facilities, uses the checklist to perform initial kit evaluations.

What other uses are there for the checklist? When either commercial assistance or significant changes have occurred in the fabrication and assembly of approved kits, the checklist becomes invaluable. Also, any kit that has never been evaluated by the FAA will be evaluated in the field at the time of certification, using the 2009 checklist. The checklist is also used when someone is building a kit that has never been evaluated or is making significant changes to a kit that has previously been approved by either the old checklist or the new one.

When does an amateur builder need to use the new checklist? An amateur builder should use it when he is planning to work on a nonevaluated kit or when contemplating using commercial assistance on either an evaluated or a nonevaluated kit. The amateur builder also should think about using the checklist when considering changes to an approved kit. It could very

well be that more work will be done by the amateur, but it also could be that the changes will simplify and reduce work. In any event, your designated airworthiness representative or other FAA representative may want to see the checklist as proof you are in compliance with the major portion rule before they issue the certificate of airworthiness, without which you may only have a nice piece of artwork and not a legal-to-fly aircraft.

Thankfully, the FAA.gov website has an abundance of information on this and other subjects of concern to all amateur builders. We're fortunate to have ready access to this information, and all are encouraged to seek out this information and start to understand what it means to all of us who build our own aircraft.

EAA presented a webinar on the subject of using the checklist, and you can view it [here](#). I'm certain you will be much better educated and informed after seeing it. *EAA*

Joe Gauthier is a member of the EAA Homebuilt Aircraft Council and an FAA designated airworthiness representative.

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