THE RVATOR

FOURTH ISSUE 2008

THE HOBBS METER

5,851

COMPLETED RVS

Bob Miller took a bronze "Lindy" at AirVenture 2007 with his RV-8 "Dakota Boy."

'UNDERSTANDING WIFE' AWARD!

I wanted to let you know that an RV-7A *will* fit in a living/dining room of a fairly typical three bedroom home with the wings installed (temporarily).

It will be moved into the garage soon! (My wife will appreciate that!)

Tom Kracmer, Fort Myers, FL.

AIRVENTURE '08

VAN'S PERSPECTIVE *VAN*

This was my 37th consecutive year of attendance at "Oshkosh", and my 43rd attendance at an EAA national convention. My first was 1958, 50 years ago. (I was only eight years old at the time. Oops, my nose is suddenly growing longer…) For me, it was another working vacation, anticipated with the usual anticipation and reservations (mostly about weather, both en-route and on site).

Obviously, not everything is as new and exciting to me as it is to some of you newbies. Even so, there is still never enough time to do and see everything I would like. That is to say: I'm still enjoying it. There are always forums to co-present, FAA/EAA meetings to attend, and more RV builder/pilots to talk to than time permits. Even if I were able to spend the entire week just walking the lines of RVs in the parking area and chatting with you, I doubt that there would be time to meet all of you. I DO enjoy this aspect of Oshkosh, and appreciate all of the nice things you have to say about your RVs, about Van's great personnel, and the enjoyment you've received from building and being part of the RV family. Keep up the good work and keep sharing and helping each other. I am humbled by the selfless efforts you have made to help create this incomparable fraternity.

I was able to speak to only a few of the hundreds of RV builders who flew in, but those exchanges were rewarding in the enthusiasm and satisfaction shown by them. One day, while walking alone in the midst of the cornucopia of RVs parked in the "North 40", I had an epiphany. There were perhaps 300 RVs in that large parking area. While I had viewed this spectacle in recent past years, just then I realized that this veritable sea of RVs represented *about half the number of RVs completed and flown in ONE year*! In 2007, over 600 new RVs flew. It was a moment in time I will long remember and cherish; looking around and realizing that you and your peers all around the world had added twice this overwhelming mass of airplanes to the GA fleet in just one year. You appear on course to repeating that stellar performance again this year. We all read the numbers, but sometimes it takes a silent moment in a field full of airplanes to bring it all into focus. Well done!

Having our shiny red (red! Can you believe it?) RV-12, in its final form, on display, and taking orders for fuselage kits over the counter was very satisfying. I spent quite a bit of time, leaning against the forward fuselage, answering questions.

One of the many questions I was asked while standing near the RV-12 was, "are you ever going to build a high-wing airplane?" My bland answer was; "we have no plans to do so now, but you never know." Then I added that we would never design and build an airplane simply because it was a high-wing, mid-wing, etc. We design airplanes to certain requirements and goals. The configuration of the airplane chosen is that which we feel best achieves these goals. Thus far, the low-wing configuration has met our goals quite well. In the initial planning

Opening day, and Ken Krueger waits, hoping somebody will be interested in the RV-12...

Similarly, all of you who flew into AirVenture participated in a form of formation or relative flying, simply by following the Fisk Arrival Procedure. In-trail is a type of formation flying, and requires skill and attention. As I have often mentioned, the Fisk Arrival is a well-conceived and executed means of funneling a wide variety and number of airplanes into an airport traffic pattern. Its functionality requires only that arriving pilots are aware of the procedure and are reasonable competent to control their aircraft.

Easy for some. Apparently, not for others. Case in point:

Scott McDaniels, Scott Risan and I were in the RV-10, just about to turn inbound at Ripon, when a Cherokee pilot called (first mistake: you're not supposed to call, just listen) to report position and get instructions. The instructions were to follow the published procedures. As we dutifully proceeded inbound, said Cherokee made a several more clueless calls. A couple of glances between us in the RV-10 said what we were all thinking: glad we are well ahead of them and out of harm's way. Well, maybe. Just as we were on short final for runway 27, a Cherokee appeared overhead at about pattern altitude, going the opposite direction. The tower controller provided a very competent but terse instruction to make an immediate right turn to a right downwind for runway 36. All was well, we thought, as the Cherokee would be landing a mile

for a "4-seat airplane", and later for a "LSA class" airplane, the high wing option was considered, internally debated, and rejected in favor of our traditional low wing configuration. Not just because it was "tradition", but because some of the same selection criteria which had proven favorable in our two seat models applied equally well to a 4 seat or Light Sport aircraft.

You might think that for the relatively "low and slow" RV-12 LSA class, the cabin entry and downward viewing benefits of a high wing configuration would have made it an obvious choice. However, there were structural considerations which favored low wing, and with the "cabin forward" seating arrangement, the view down is very good and all of the other outward viewing benefits of a low wing are retained. The best of both worlds! A high wing usually means that the occupants' heads share space with the wing root, and though the wing provides shade, it obscures the view upwards, and outwards when turning during landing approaches. Particularly in the RV-12, you just have to experience this outstanding overall visibility offered by the low wing.

IT'S ALL RELATIVE

Another outstanding feature of AirVenture 08 was the formation flights made by the RV Squadron. On several days, formations of up to 20 aircraft made numerous passes in varying intricate and beautiful formations. Hats off to all pilots who have taken the time to practice and learn the skill needed to safely conduct these precision flights.

Two formations of RV "intersect" during the AirVenture demonstration.

away from us. But, as we taxied in toward our display area, we noticed a Cherokee taxiing the opposite direction toward the "store-bought" parking. They were, we're happy to say, able to stay on their side of the taxiway. We noticed that both pilot and passenger were beaming, grinning from ear-to-ear. (We can't tell you how we knew that this was the same Cherokee, but we did.) We couldn't help but think that they might have been congratulating themselves; "We just successfully flew into the world's busiest airport". You had to wonder if they had the slightest idea how poor, and potentially dangerous, their performance had been.

Just a reminder to all of you planning to fly into AirVenture or other major fly-ins. Be prepared. Learn all published arrival procedures. Brush up your flying skills. Help educate others of the seriousness of flying into dense traffic environments.

OSHKOSH…THE CROSSROADS OF AVIATION.

Many regular attendees at Oshkosh return annually because this one week in July/Aug. is a reunion of sorts; an opportunity to visit old friends from distant places, and a chance to meet new ones. Every year I experience this.

One evening our tired RV crew was dining at the Red Robin Restaurant and one of the group noticed a decorative photo on the wall of a large formation of freefall skydivers. Someone commented that our own Joe Blank has an extensive history as a sport jumper. I had to get my two cents worth in by mentioning that I had done limited skydiving in the very distant past, and that the closest that I ever came to formation freefall was a failed baton pass attempt with another low-time jumper back in 1962. The next day, out at the booth, a stranger walks up and introduces himself. Turns out to be Al, my skydiving baton buddy from way back when we were both newly minted 2nd Lieutenants in the USAF. I hadn't seen, or been in touch with him for 22 years, and that occasion was a brief meeting at…Oshkosh. I knew that, following a full career in the Air Force, he had gone into teaching. Now I find that he had given up teaching to serve 14 years in the Pennsylvania House of Representatives. Who'd have guessed? I also learned that his son is a missionary pilot in one of the wildest and most remote parts of Mexico. Very interesting stuff.

A little later, a man who I didn't recognize, introduced himself as someone who had flown gliders with me a few years ago in Tocumwal, Australia. He's from the Netherlands, birthplace of numerous VanGrunsvens. Small world! Crossroads indeed!

RV AWARD WINNERS at AIRVENTURE 2008

Outstanding Workmanship Kit Built
Chris Cox, Delta, BC, RV-7, CFCOX

Bronze Lindy Kit Built

Lyle Hefel, Durango, IA,	RV-8 N98LH
Chuck Labarreare, Collierville, TN,	RV-8A N685RV
Scott Chastain, Merced, CA,	RV-8 N898W
Jeff Hagg, Indianapolis, IN,	RV-8 N548JH
Steven Hamer, Apple Valley, CA,	RV-6 N642PS
Mark Taylor, Dearborn, MI,	RV-7 N834ST

A selection of RV types takes off to participate in the formation demonstration.

AIRVENTURE – GETTING THERE AND BACK

KEN SCOTT

As usual at Van's, we were still changing plans the week before we left for Oshkosh. Spin tests of the new RV-12 were still pending, so we weren't sure if we were going to fly it or truck it to AirVenture. In the end, the tests were completed and no changes to the airframe were found necessary.

So the schedule was determined. On Friday the set-up crew of Gus Funnell, Ken Krueger, Joe Blank and Daryl Sahnow would fly the RV-7A and RV-9A east. On Sunday, Van, Scott Risan and Scott McDaniels would fly the RV-10. And as I sat at my desk, ominous footsteps clumped up behind me and I turned to see the "slow airplane" finger pointed squarely at my nose. Rian Johnson had decided that water skiing in California had more appeal (we suspect a water skitrix was involved…) than a sweaty week of airshow. The job of getting the RV-12 to The Show was now mine.

Neither I nor any of the "tech help" pilots had flown the new red RV-12, but with tests and paperwork complete no impediment remained. We queued up, and with a minimum of elbowing, took turns checking ourselves out. We all agreed that the kit version, with the toe brakes, curved sticks, improved legroom and the other refinements, was a nicer airplane than the original. My one complaint was that the external step was too high – but it turns out engineering already knew that and kit airplanes will come with a revised step.

So Friday morning I set off, leaving Aurora at about 7:30 a.m. and heading direct to Caldwell, Idaho – a course that takes one directly over the Cascade mountains just south of Mt. Hood. Idaho, no surprise, was hot. I fueled at Caldwell and set sail for Hailey/Sun Valley where the last remaining parent of my growing-up crowd lives. She'd just celebrated her 80th birthday and I hadn't seen her in too long. The tower told me to park "next to the Citation and the Lear." Problem was, there were THREE places on the ramp where that might be…I picked one and parked. The RV-12 held its own on a ramp, despite its inability to burn kerosene. On departure, the temperature was about 96 F. Field elevation is 5330'. With sixteen gallons, baggage and a big pilot, the RV-12 had no trouble leaving the runway and climbing to 9500'. It didn't exactly leap, you understand, but there was nothing scary about it.

By late afternoon, I'd had enough and landed at one of my favorite stops, Laurel, just outside Billings. Charter pilot Don Gibson was just finishing off his daily paperwork and gave me a ride to town. Picked me up in the morning, too!

RV-12 pilots crossing places like Montana will have to flight plan carefully. It can be a long way between airports, and as we found (particularly on the trip home) they may or may not have fuel available. I fueled up in Rexburg, Idaho, not far south of the Montana border, flew onto Laurel and gassed up there, overflew Miles City and landed for more fuel in Baker…and I was still in Montana! But Baker was the end of the line. If I hadn't been able to fuel up there, I would have to go back rather than forward. You'll need a full RV-12 tank to go east from Baker. It's big out there.

Mobridge, SD… a good place to stop.

From Baker I flew to Mobridge, SD, where friendly service and mogas are standard, and then made a long, hot leg to Redwood Falls, MN. There was enough daylight to make it to Oshkosh, but I was dead tired and just couldn't see flying into the world's busiest airport in a fog of fatigue. I wanted to sleep and study before I got there. I made a few calls and a lady in a local motel agreed to pick me up at the airport. "Hey, Honey," I could hear her yelling to someone on the other end. "Where's the airport? How do I get there?" The motel was less than a mile away...

A brilliant flash bounced off all the walls early the next morning. I'm from Oregon – so I groggily wondered what kind of headlights were those? A window-rattling bang a second later answered that question. We don't often wake up to lightening and thunder in Oregon. I had a leisurely breakfast while the squall line moved away, then fired up and two hours later was following railroad tracks from Ripon to Fisk. The voice in the headset said "RV turn right, follow the road to left base for 36 left." When I didn't move, he repeated it and as I tentatively banked he said "yeah, that's you." Surprised the heck out of me. I never expected them to

Above: Complete rows of RV-10s!

Right: Head of Van's prototype shop Scott McDaniels fielded thousands of questions about the RV-12 he helped build.

call the RV-12 an RV – somebody had done their homework.

So, to answer the oft-repeated questions: I saw 117-119 knots TAS on the Dynon for much of the trip. I cruised between 7500 and 9500' for most of the way, but went up to 11,000 at one point, searching for a tailwind. Given the temperatures, the density altitudes were considerably higher than indicated. The Rotax functioned perfectly – I've become a Rotax fan after three trips across the Rockies behind one. Sturdy little beast. Burns about 5.25 gallons per hour. Starts instantly. No mixture to adjust. What's not to like?

The Dynon/Garmin panel also worked without a hitch, although it would have been nice if someone at XM Weather had mentioned that the initialization signal they send out when you phone in a subscription only lasts three or four hours. I couldn't get weather on the 496, and since I'd never flown with it anyway, I didn't miss it much. We got this squared away at Oshkosh and Scott McDaniels, who flew the airplane home, was able to use the weather feature.

That's right. Scott flew the RV-12 home. I (snicker) got to fly the RV-10, with Van and Scott Risan. To my surprise, Van climbed into the back seat and Scott took the right front, so that didn't leave me many options, did it? We left Oshkosh about 8 a.m. Sunday. Scott handled radios and weather briefs, I flew and pumped fuel and Van offered occasional pithy comments from the back. They coaxed me through some scuzzy stuff in South Dakota, and from there on it was clear, if somewhat bumpy, sailing. We landed at Aurora just after 4 p.m. local time, having flown about 1500 nautical miles and arriving in time for a late lunch.

In the next few days, I criss-crossed Oregon several times in my RV-6, commuting between Van's and a classical music festival to see The Violinist play. On the days I was at work I flew a few rides in the RV-7A and RV-9A. I've re-learned what I really knew all along:

Flying an RV is a good thing…which ever RV you're flying.

WHILE WE WERE THERE

This year's Oshkosh was pretty benign…no nasty weather, the heat was manageable, the humidity was merely unpleasant, rather than unbearable. To the surprise of many, attendance was as good as any recent year. It had been widely surmised that a grim economy and brutal fuel prices would kill both the spirit and the substance of the event, but there was no sign of that.

The RV-12 spent two mornings on the flight line, but the days it spent at the booth, it was obviously the darling. A lot of that is just because it's new and from Van's, but there were a lot of people who seemed genuinely interested in the airplane for what it was and what it could do. (If you *really* wanted to draw a crowd, you just announced a wing removal demonstration. We were able to take one wing off, lay it on the ground,

Daryl Sahnow dreams of being JetPack man...

automotive and motorcycle worlds it's hard to imagine them stumbling in aviation. I just wish they'd concentrate on a small piston aircraft engine for the rest of us.

Given all their promotion of the LSA category, I was surprised to see that EAA had crammed many of the most popular makes in a small "LSA lot" a long way from the show center. I stumbled over it by accident and was quite taken aback by some of the price tags.

I've always liked looking at old airplanes, and my appreciation of them was increased in July when I had a chance to fly a Beech E-17 Staggerwing. You just have to love an airplane with a radial engine, mohair upholstery and crank-down side windows!

There were rows of Staggerwings at Oshkosh, and with my 0.9 hours of Staggerwing time, I struck up a conversation with a pilot of nice restored G model that had…believe it or not…less than 250 hours since new! But right across the walkway was the highlight of the show for me: Addison Pemberton's incredible Boeing 40C. This airplane was rebuilt – re-created, actually - around some twisted pieces scraped off an Oregon mountainside after the airplane crashed in 1928. You think building an RV is a big project – try creating a biplane with a 60' span from scratch. Passengers are housed in a fuselage cabin, but the pilot sits in lonely isolation in an open cockpit about 20' aft of the single radial engine. Addison, his sons and friends spent nine years and over 18,000 hours bringing this magnificent airplane back to life. With the possible exception of the Hughes Racer, it's the most impressive airplane project I've ever seen.

then re-install it and have the airplane airworthy in less than four minutes. I manned the wingtip for one of these and when I looked up, people were standing six deep. It really is a neat little system. The onboard roller, incorporated into the new airplane, lets you slide the spar out the side easily to the point where a helper could grab the spar. Then you simply walk away with the approximately 70 lb wing panel and park it wherever you like.)

Out in the RV parking area, it was just plain hard to believe. Jeff Point, an RV builder who has parked and directed airplanes at Oshkosh for years, stopped in several times with revised figures…200, 300, 400. We don't know how many were finally out there. I made one brief trip and counted twenty-three RV-10s! I kept thinking…every piece of aluminum on every one of these airplanes came in one door of our shop and went out another. Difficult to grasp, but very gratifying.

Doug Reeves, honcho of vansairforce.net, flew his RV-6 up from Texas and spent a couple of days with us. He was impressed with JetPack Man (not!) and we were impressed with anybody who considers Dr. Pepper synonymous with morning coffee. He didn't put it on his cereal. At least, I didn't *see* him do that.

I got one brief run through the display buildings, but since I was not in the market for a software weather planner or an EFIS system, I didn't stop often. The HondaJet and Eclipse tents were impressive – I wonder how their promotional budget, as a percentage of the cost of an airplane, compares to ours? If I were a betting man, I'd put my money on the Honda. Those guys have done so many things so well for so long in the

We barely looked up during the airshow, except to plug our ears for the F-22 and the wretched Harrier. (I wore my Bose headset while these airplanes flew, which helped a great deal.) One thing that did bring us to the edge of the tent was the all-electric Moni motorglider. This thing flew back and forth, completely inaudibly, for ten minutes or so. Aloft on nothing but (potentially solar or wind-generated) electrons – now, that was cool! Impractical and expensive at this point, maybe, but "of what use is a new-born babe?" as Ben Franklin said. We'll be keeping an eye on this potentially exciting technology.

THE BEAR WRITES NEW RULES

THE FAA PROPOSES A NEW CHECKLIST FOR EXPERIMENTAL AMATEUR BUILT AIRCRAFT *VAN*

Back in mid-July the FAA published their long awaited NPRM on Amateur Built Experimental aircraft licensing. There were few surprises, at least to me, as I had been involved in the ARC committee for a year and a half and had a general idea of what to expect.

With the publishing of the "rules", the FAA allowed a 30 day comment period. The EAA has successfully petitioned the FAA for an extension, which now runs through the end of September 2008. We intend to submit comments regarding several areas of concern, and recommend that everyone read the "Rules" proposal and submit comments if you feel it necessary. Below, I will outline several areas of concern that other kit manufacturers and I have, and present a couple of idea you might use for submitting comments if you agree. Comments from INDIVIDUALS are of most interest to the FAA. They DO want input from the end-users of their regulations. As always, name-calling and vague gripes serve no purpose other than to help convince the FAA that we are a bunch of idiots. Sticking to the topic with sound reasoning will get their attention.

I attended a couple of open meetings (forums) given by the FAA and the EAA on this subject. During the FAA forum, which was presented by Frank Paskewicz and Don Lausman, both of whom I had worked with on the ARC committee over a period of a year and a half. Also present was John Hickey, head of FAA certification. Following their formal presentation, which was very good, the forum was opened to questions from the audience. A number of well informed questions were fielded. However, perhaps half of those taking the floor had comments and questions which did not directly relate to the topic. A composite of these went something like: "As American citizens, we should have the right to build and sell airplanes based on their quality and safety, not whether or not the builder's intent was education and recreation". John Hickey himself answered this with something like: "I fully agree with your sincerity and passion. The rules do permit this, and they are called FAR Part 23 Type Certification for which standards must be met. We also have rules, which permit certification of airplanes that are not required to meet standards. These are known as the Amateur Built Rules, and they exclude commercial building. There are NO rules which permit licensing of commercially built airplanes that do not meet standards. If you want to create new rules, petition your congressman." This may sound harsh, but it is simply a statement of fact. We've got rules whose boundaries we must work within. The current issue is that of better defining, and perhaps altering, these boundaries. No more, no less. New rulemaking is a process lying somewhere between difficult and impossible. You can dream and pontificate about it, but that alone won't make it so.

...AS ALWAYS, NAME-CALLING AND VAGUE GRIPES SERVE NO PURPOSE...

THE PROPOSED NEW POLICY (RULES):

The primary areas of concern addressed by the proposed new rules are as follows. In addition, I have included comments on a few other details.

1. Increased emphasis on verification of "built for education and recreation" only, including new forms requiring more builder disclosure.

2. New verbiage and emphasis to prevent modified production airplanes from being licensed Experimental Amateur-Built.

3. Revised Fabrication/Assembly Operation Checklist, FAA Form 8000-38.

GRANDFATHER POLICY

Though the FAA had stated earlier that all kits which had previously been evaluated as Major Portion compliant will not be re-evaluated, this bears repeating. Unless the FAA sees a serious safety reason, they will not re-evaluate existing kits that have previously been found to meet the major portion rule. There is a reasonable number of existing kits which have never been evaluated. In these cases, the kit manufacturer will either have to evaluate under the new checklist, or the individual builders will be obligated to themselves show that they have completed the major portion. Existing RV kits, except for the RV-12 that cannot be evaluated now because of the FAA Moratorium, have been found major portion compliant. The kits that you bought in the past, along with kits of these models that you may purchase in the future, are eligible and are licensable in the Experimental Amateur Built category. That is, they are licensable IF you Fabricate and Assemble a major portion of the tasks remaining on the FAA 8000-38 Checklist form for that kit.

The FAA 8000-38 CHECKLIST

This is the form that has long been used by the FAA when evaluating a manufacturer's kit to determine whether it meets the Major Portion Rule, as the kit is manufactured and shipped. The life of the checklist

seemed to end there, as the airworthiness inspectors and DARs rarely if ever used this form in the final inspection of amateur Built airplanes. Most of you are probably not familiar with it. This, the FAA says, is about to change. Inspectors and DARs will be charged to require more proof from the builder that he did the major portion of the "Fabrication and Assembly" of the airplane. The –38 form is a convenient means of showing this. If the builder can signify that he performed the required number of tasks, as detailed on the form, the aircraft qualifies for licensing as Experimental Amateur Built. Without this form, the builder would have to supply his own proof that he had built the major portion. The –38 is a standardized convenience for all parties involved.

The revised FAA 8000-38 form has a greater number of line item building tasks than before. It also has additional columns for accounting the credit, adding a "commercial Assistance" column to the previous "Manufacturer" and "builder" columns. Of significance also is a difference in delineating task accomplishment credit. The old list used simple check marks assigning task credit to either the manufacturer, the builder, or both (equal credit). The new system proposes assigning a percentage credit for task accomplishment. This cuts both ways, and does have an element of subjectivity, but is generally viewed as a fair system. Our analysis of the "new" checklist is that its use should not pose a problem for future kits that are comparable to present kits.

From your prospective as the BUILDER, it will be necessary to become familiar with the –38 list so that you can determine the extent of builder assistance you might be able to use and still meet the major portion requirement. We will soon be posting, on our website, copies of the checklist for all of our current kits. Also, the FAA stated that they will similarly be posting checklists for all kits which have successfully been evaluated.

While the new checklist has more line item tasks and additional columns, I don't feel that it has become any more difficult to comply with. That is, a Van's kit which qualified major portion using the old checklist will still qualify if evaluated using the new checklist.

ELIGIBILITY

Below are a couple of verbatim excerpts from the FAA proposal. I believe that these few paragraphs contain much of what concerns us. Much of the remainder of the document is supportive and explanatory information. I added the underlining for emphasis.

147. ELIGIBILITY. Amateur-built aircraft are eligible for a special airworthiness certificate in the experimental category, for the purpose of operating amateur-built when; (1) the applicant (individual or group) presents satisfactory evidence that the major portion of the aircraft was fabricated and assembled solely for educational or recreational purposes and (2) the FAA find that the aircraft complies with acceptable aeronautical standards and practices.

a. Education or Recreation. Kit aircraft manufactured and assembled by a business for sale to other persons are not considered amateur-built and do not meet the education or recreation requirements of 21.191 (g). Application for such aircraft will not be accepted.

b. Major Portion. The determination of major portion is made by evaluating the amount of <u>work</u> accomplished by the amateur builder(s) against the total <u>amount of work</u> necessary to complete the aircraft, excluding standard procured items. The major portion of the aircraft is defined as more than 50 percent of the fabrication and assembly tasks (51%). Within that 51 percent, the amateur builder must fabricate at least 20 percent of the aircraft kit and assemble at least another 20 percent. The remaining 11 percent may vary between fabrication and assembly. The amateur builder (s) must be informed that the aircraft will not be eligible for certification under 21.191 (g) if the amateur builder (s) have not completed the major portion of the aircraft fabrication and assembly tasks.

c. (2) Any fabrication or assembly tasks contracted to another party (for hire) or provided by a commercial assistance center must not reduce the amateur builder's fabrication/assembly percentage below 51%. For example, if an amateur-built kit found on the FAA kit listing has 40 percent of the fabrication/assembly completed by the kit manufacturer, only 9 percent of the fabrication and assembly tasks could be contracted out (for hire) to another individual or builder/commercial assistance center in order to be eligible for an experimental amateur-built airworthiness certificate.

VAN'S VIEWPOINT ...MAJOR PORTION vs. 51%.

We feel that major portion should be strictly defined as "more than 50%", and not be referred to as 51%. The smallest delineation possible using the FAA 8000-38 checklist should constitute major portion. For the sake of practicality, since the 8000-38 checklist delineates task accomplishment in single decimal point gradations, and since there are about 200 tasks on the list, it would be fair to consider major portion as 50.05%. This is approximately the closest percentage which could be measured in the process of doing a kit evaluation, whether by the kit manufacturer or by the builder/ DAR at final inspection [Arguing over 1% may seem trite, but that represents almost two tasks on the check list. So, why give up ground simply to say "51% rather than "Major Portion?"]

In the Kitplane industry, considerable debate remains over the FAA wording requiring a minimum 20% fabrication, and a minimum 20% assembly, be accomplished by the Builder. Historically, the interpretation and application was that the combined total of "Fabrication and Assembly" must equal the major portion. Now the FAA has interpreted that the original intent was that the builder must perform "the major portion of the fabrication" and the "major portion of the assembly" or 25% +, and 25%+. Thus, they maintain that through the new wording, they are giving the Builder a break and requiring only 20% Fabrication. (of the total 100%)

PRO: The FAA feels that a kit should not be so complete and pre-fabricated that the builder need only assemble the pre-built pieces. (rivet, bolt, snap, glue,

weld, or nail together) They feel that the original intent was that the Builder also should perform a significant amount of the fabrication.

CON: The Industry/Builder position is that the FAA is understating the task of assembly. E.g: Driving 10,000 plus rivets is not quite the same as "snapping" parts together. Also, as materials and machine technology has evolved, the most efficient means of building kit airplanes with the most consistently sound structures has been for the kit manufacturer to perform the majority of "Primary Fabrication" tasks, leaving time consuming "Finish Fabrication" and "assembly" tasks for the builder. Our point is that assembly should not be viewed as less important than fabrication and therefore, assembly tasks should be permitted to count for the vast majority of the "Major Portion".

Representatives of the kitplane industry have been requesting that the FAA publish a definition of FABRICATE for the purpose of better distinguishing between Fabrication and Assembly. We will try to get such a definition in place before the present proposal is placed in practice.

WORK

How is work measured? By counting man-hours? If the kit manufacturer uses a high tech machine to FABRICATE a part, how is that measured against manual labor used by the builder in finish fabrication of that same part? These are questions that will probably never find a scientific answer. The best we can hope for is that the FAA personnel performing kit evaluations will apply reason when assigning percentages to task accomplishment. I'm optimistic that they will.

COMMENT TO FAA

As mentioned above, we have until the end of Sept. 2008 to get out comments and recommendation in to the FAA. Sorry that I took so long to get this written. Perhaps some of you have already read the FAA proposal and submitted your comments. If not, let's get going soon; before we forget. As suggested above, we feel that the most onerous detail is the requirement for 20% builder fabrication. Use some of our above thoughts if you like, compose your own, and visit the EAA website, eaa.org, for more information and suggestion. Referring to section 147 (b) above, the wording should remain as before, "the builder must complete the major portion of the Fabrication and Assembly". Keep it simple. Requiring a specific minimum percentage of Fabrication and a specific minimum percentage of Assembly adds complexity and does little if anything to remedy the FAA's primary concerns.

E-Mail: miguel.vasconcelos@faa.gov

U.S. Mail: Miguel L. Vasconcelos, Production and Airworthiness Division AIR-200, Room 815 800 Independence Ave., SW Washington, D.C. 20591

I have attached a photo of our RV for your interest - It is serial number 21496 and first flew in 2002. The builder was Kent Aston who was unable to obtain a medical after he had built it so reluctantly had to sell. We purchased it August 2003 and have spent many enjoyable hours flying around New Zealand in it.

The picture taken off coast of Tauranga where we live. I have an aerobatic rating and recently won a competition doing aerobatics in it. My husband is keen to do his rating as well. We have fitted an inverted oil system and it has a fuel injection system.

My Instructor has demonstrated aerobatics (with smoke) in it at the last two Sport Aircraft Association (USA equivalent EAA) airshows in Tauranga.

Trish Stephens

RV-12 PROGRESS

KEN SCOTT

Joe Blank and Daryl Sahnow pose the RV-12 for EAA photographer Bonnie Kratz.

MAUNA KEA

Mauna Kea is one of two huge volcanoes that form the island of Hawaii. Most people who have seen it have only seen the top 13,000' or so, even though from base to top it is over 33,000' feet high. It's just that the bottom 20,000' are under the surface of the ocean. Even though that huge underwater base is invisible to anyone who doesn't have a personal submersible, it's still there, holding everything on top of it up.

The RV-12 is a little like that.

One of the most difficult things to explain to potential builders wondering where all the time goes is the pure *depth* of effort that has gone, and is going, into the RV-12. The little red airplane you'll see at fly-ins and on magazine covers is just the tip of a huge base of research, design, paperwork, testing and production techniques that has filled several people's every working moment since 2005. After all, the RV-12, for all practical purposes, is a certified airplane – not only that, it is certified in a brand new category, using brand new rules. There's no prior experience to go on, and no "old hands" to guide us through the maze. A project this size is not something we want to get wrong, so it has taken a lot of time and tedious, grinding, meticulous work to make sure every step is done correctly.

Here's just one example of the work involved: Remember the old saw about how the weight of the paperwork had to exceed the weight of the prototype before the airplane could fly? Suddenly, it doesn't seem that far-fetched. There are at least six large documents that must be completed.

One of the forms a kit manufacturer must submit to the FAA is an affidavit swearing that the necessary testing has been done to establish that the airplane meets the ASTM standards for Light Sport Aircraft. This includes design data, flight test data and ground test data. The FAA does not necessarily review all the data, but it has to be available if they want it. There are penalties for falsifying this data. Since the FAA doesn't review it, it might tempt some people to fill in some data points with "should-do" numbers, send in the affidavit, and hope nobody ever asks. We don't do it that way. The RV-12 has been tested – in more ways than most builders will ever know – meets the standards, and we've got the data to prove it.

Along with the affidavit, manufacturers seeking LSA certification must submit several other complete documents: One is a set of Kit Assembly Instructions -- a bolt-by-bolt, fitting-by-fitting definition of how the airplane is built. In the case of the RV-12, this document also serves as the construction drawings.

Then there's a Pilot Operating Handbook, a Maintenance Manual, a Flight Training Supplement and a Flight Test Manual. We are working on all of these. Not one of them is an easy or small project.

When you know that all these documents are required of an E-LSA airplane, you will understand why one of the operative phrases for RV-12 is "configuration control." It's impossible to think of E-LSA the same way we're used to thinking of Experimental airplanes There's no point in having a factory maintenance manual if the builder can change the airplane at will. How could you write a checklist for a pilot's operating handbook without knowing the configuration of the airplane you are writing about?

WHERE IS RV-12 TODAY?

At Oshkosh, we began accepting orders for the RV-12 fuselage and are hoping to start shipping them in late September. For the RV-12 this is the cabin area between the back baggage bulkhead and the firewall – the tailcone will be part of the empennage kit, a la RV-

10. Speaking of which, I saw the punch presses spitting out hundreds of RV-12 empennage ribs the other day, so empennage kits are on the near horizon.

Ken Krueger makes a formation takeoff with a 210 hp Sportsman carrying Kitplanes photographer Kevin Wing.

RV-12 IN THE MEDIA

The new *Kitplanes* issue was sitting in my mailbox when I got back from a few days off. I snarfed it up with more than the usual interest because there on the cover, in living color, was the airplane I flew to Oshkosh. I knew Ed Kolano had flown the RV-12, and I'd had a nice evening with editor Marc Cook and photographer Kevin Wing when they were in town for the photo shoot. But this was my first glance at the resulting article.

We were pleased with the objectivity and information in the article. Ed's a Pax River graduate and is very good at quantifying the tasks required to fly a given airplane. His observations were much more precise than mine, but I found myself agreeing with him over and over…well, up to the point where he said the stall warner wasn't loud enough. The RV-12 is the first airplane I've flown in many years with a stall warning "horn" and when it went off on my first flight, I nearly jumped through the canopy. Wasn't ready for that! And then he said the open canopy and mapbox were hard to reach. They aren't – at least they aren't if you are 6' 3" tall. Ed is a bit challenged, vertically speaking, so he'll have to learn to grab the canopy before he tightens the belts. He's a lot taller than I am if he stands on his logbooks, though, so I'm not going to argue the point for long.

I also smiled when he mentioned that if you're too fast on approach, the RV-12 is difficult to get to come down and will float a long way. Too right! I found 55 KIAS on approach was too fast for me and ended up shooting for 50/51 KIAS. Anything faster and you can eat a sandwich while you wait for the wheels to touch.

Writer/pilot Lauran Paine has flown the RV-12 as well, and EAA photographer Bonnie Kratz shot pictures at Oshkosh. Look for his report and her photos – that's one of them on page 12 with Joe Blank and Daryl Sahnow grinning at you through the canopy -- in an upcoming issue of *Sport Aviation.*

RV-12 MARKETING-THINKING AHEAD

Now that we have in-flight photos and we've sold 135 kit starts, maybe we should start actually advertising the RV-12. How's this for a "hook?"

I saw fly-away Light Sport Aircraft at Oshkosh sporting price tags of $120,000.00! You should be able to build *two* RV-12s for that, but assuming you only need one, think about this: building an RV-12 should take 800 hours spread over a year. One way of looking at that is sixty thousand dollars divided by 800 hours is $75.00 per hour. Tax free!

Or, looking at it another way, that 800 hours of work saves you enough money (at current prices) to buy well over 2000 hours (not gallons…hours) of aviation fuel – more like 2500 hours if you use the recommended premium auto fuel. So, for the cost of one fly-away LSA and maybe a year of enjoyable work, the average private (or light sport) pilot can build an all-new RV-12 and fly for something like twenty years.

Well-known aircraft huckster and salesman ***Dick VanGrunsven*** put on his leisure suit with the white belt and contributed some his "marketing ideas." Here they are:

The RV-12 has several features which separate it from all other aircraft Van's has marketed over the past 35 years. These include:

1. Easily removable wings.
2. S-LSA licensing.
3. E-LSA Licensing options for kit builders.
4. Significantly easier to build because of blind rivet construction, highly refined design and manufacturing of component parts, and standardization of instrumentation, avionics, and engine.
5. Easy to Fly. This should be of great interest to non – pilots, along with the lower training requirements for Sport Pilot Licenses.

These are all features and qualities which should enhance the desirability and marketability of both the finished aircraft and the kits. This should apply to both the traditional segment of aviators with building inclinations, and to many other aviators who viewed "building" as too difficult and time consuming. It should also appeal to the vast number of other wannabe pilots perhaps not even aware of this emerging segment of aviation.

EASILY REMOVABLE WINGS

1. Trailering the aircraft home for lower cost storage and/or maintenance.
2. Trailering the aircraft while driving to winter vacation destinations, etc.
3. Storing dismantled RV-12s in the end of a hangar, or other smaller spaces, for reduced cost. Storing multiple dismantled RV-12s in a single conventional hangar, or specially built hangar.

S-LSA LICENSING: First time that Van's has had the option to manufacture and market finished, fly-away airplanes. Depending on the finished price, this could greatly expand the market within aviation and to other outdoor recreation enthusiasts.

E-LSA LICENSING: Permits marketing 51%-plus kits with no concern over major portion limits and commercial assistance. Potentially more desirable to all likely segments of the market.

EASIER TO BUILD: Of appeal to all potential builders, particularly those predisposed to thinking that Homebuilt construction is prohibitively difficult and time consuming. This could open a non-aviation market for those who now realize that there is an achievable means of acquiring a new and exciting airplane in which they can learn to fly.

EASY TO FLY: Already mentioned is the appeal of an easy-to-fly airplane to non-pilots. This should open the possibility of shared-ownership and clubs. One of the obstacles of shared ownership of traditional homebuilts is their unique or difficult flying characteristics. "You gotta be careful about who you let fly this thing". We feel that the RV-12 is no more difficult to fly than a Cessna 150, thus lowering the apprehension level over who you can safely let train and fly in it.

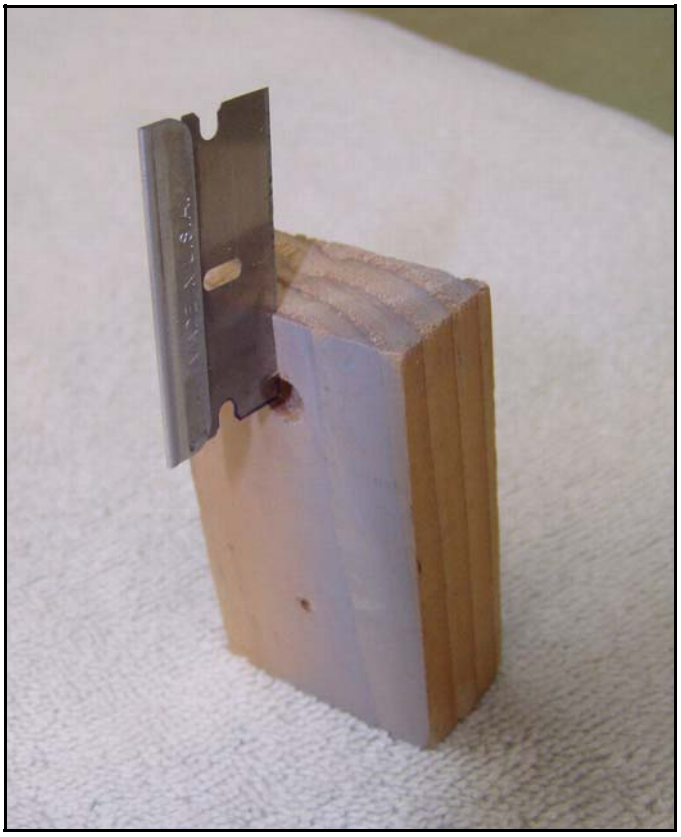
The reason I'm outlining all of this is both to let you share our excitement about the potentially great future of the RV-12, and to get you interested in sharing the opportunity to introduce people to aviation through the RV-12. It is widely known that RV builders/pilots are great boosters of Van's Airplanes and are the primary reason behind the growth of the RV fleet and the active amateur-built fleet as well. Following this thought, you are in a good position to help further grow GA using the unique features of the RV-12. Just how this can best be done will require a lot of through planning and effort. Maybe a bit of "outside of the box" thinking as well!

IN THE SHOP

Websites have pre-empted most of the builder's tips and methods that used to be the province of the RVator, so we're always glad when somebody sends us a good idea. RV-9A builder ***Joe Connell*** *of Stewartville, MN, came up with a neat little slicer/dicer:*

When I was building my RV-9A I found I needed to trim the lower empennage gap cover, F-994A. After doing this the supplied rubber molding was trimmed such that it wouldn't stay in place. I replaced the molding with a piece of rubber windshield wiper hose.

The trick was how to split the hose lengthwise. To do this I drilled a hole in a block of wood and cut a small groove to hold a single edge razor blade. The hose was then pushed through the hole and the razor was positioned half-way into the hole. The hose could then be drawn through the hole and was sliced by the razor as it passed through. Don't pull up on the hose or the blade might also slice the opposite wall.



Few things in this world have achieved the universal utility of the single-edge razor blade — even though very few people actually shave with one. In this case, combined with a simple wood block, it splits rubber tubing easily and accurately.

RVS GO ABROAD

KEN SCOTT

With the American dollar barely visible from the lofty perch of the Euro and other currencies, a lot of American airplanes have become relative bargains for overseas buyers. One of the best performance buys around is a used RV. Since few pilots are willing to ferry an unknown homebuilt across a freezing ocean, these airplanes will be shipped to their new owners.

Which is were Wally Anderson comes in. Wally, well known as the builder of multiple prize winning RVs and proprietor of the SynergyAir builder's assistance facility in Eugene, Oregon, has started a new service. He locates a selection of airplanes that meets a buyer's needs. When the buyer has chosen, he arranges ferrying, disassembles, packs and ships the airplane to its destination.

Recently he assisted two Swedish buyers in finding a pair of RV-6As. Within two weeks after purchase the airplanes were inspected, slightly modified to meet the buyer's requests, disassembled, packed into custom crates assembled in Van's crating department and loaded into a container bound for Stockholm. (Wally later flew to Sweden to assist in reassembling and testing the airplanes. Which may explain the Volvo in his garage…)

So if someone with a strange accent comes up to you at a fuel stop, admires your airplane and brandishes an bundle of Euros, Australian dollars, Rand or gold coins that you just can't refuse… give Wally a call.

Two RV-6As leave the USA for Sweden.

Disassembly and containerizing was taken accomplished at SynergyAir in Eugene, OR..

The special stamp on the wood crate shows that it was built from wood acceptable for international shipment.

Gang activity has increased at AirVenture, despite enforcement efforts. The worst offenders seem to be members of the Keil Road Dork Squad, (pictured) but thousands of members of the "VAF" from branches all over the world have been spotted on the grounds, flashing "colors", speaking gang lingo and swearing fealty to a mysterious leader known as "The Designer."

Rank or position is evidently expressed by the position of the cap bill. Engineers wear it off to the left, tech help members wear it off to the right. Ringleaders wear it straight back — see background. Those who wear it straight ahead are simply low-level drones (except for The Designer, who is thought to wear his straight ahead but can supposedly be recognized by his badge of office, reported variously as a bag of grapes or a cup of iced tea.

Meaning of the hand signals is a closely guarded secret. The message in these gestures is unknown. Especially to those making them.

OFF INTO THE SUNSET

N912VA, the proof–of–concept RV-12 taught us many valuable lessons since it flew two and a half years ago. We enjoyed flying it and appreciated what we learned from it.

However, now that N412RV is flying, the yellow bird's useful life is over. It has been retired and dis-assembled. The engine and other parts will live on in the RV-12 program.

Along with some good memories.