

THE RVATOR

FIRST ISSUE 2008

THE HOBBS METER

5,598

COMPLETED RVs



Aloft in England's famous blue skies, Mark Tingle commands the only RV-3 currently flying in Britain.

VAN'S ADDS A WING

No, nothing aerodynamic.

We are adding a new “north wing” to our building, adding significantly to our available floor space. We will use the area to house our woodshop, where Jim Daggett and his crew build the crates that take RV kits all over the world.

When we moved into this building almost eight years ago, we just couldn't get over all the extra room...now we're adding on.



MEMORY LANE

We were pleased to get a note recently from Dick Murphy.

Dick, of Corvallis, MT, built this RV-3 from the first (partial) kit Van shipped back in 1974. He finished the airplane in 1976. He flew it to Oshkosh that year, where he posed for this picture. “I feel honored to have been a small part of such a great story,” he says.

Kind of a large part, we think.

JULIAN AVERY

May 12, 2003 — January 19, 2008



The RV world is often described as an extended family, and whenever you lose a family member, it hurts. When that member is only four years old, it really hurts. Julian Avery, son of Ken and Mimi Avery and grandson of Bob and Judy Avery (all of Avery Tools), died January 19 after a brave fight against a brain tumor. The family requested those attending the memorial service wear yellow — Julian's favorite color. Hundreds of yellow balloons were launched from the church. At the same time, we sent our thoughts skyward from Aurora.

For more about Julian and appropriate donations, see www.juliansworld.org

A CALL TO ARMS!

VAN

I have written about the FAA ARC meetings over the past year or so, most recently in my articles "*Pokin the Bear*" and "*Look Back-Look Around-Move Forward*". These articles explain the FAA's concerns over excessive commercial abuses of the Experimental Amateur Built (E-AB) licensing category. The ARC committee was created as an FAA/EAA/Industry process to address the FAA concerns and to recommend corrective actions. In the last report the meeting process had concluded and the FAA was soon to publish the report of those meetings, to be followed by their publishing new procedures for implementing the licensing of E-AB aircraft.



Hi, I'm from the FAA and I'm here to evaluate your kit...

On Feb. 15th, the FAA published, in the Federal Register, their report of the ARC meeting process. Included in this report were indications that their procedural changes would probably include changes to the criteria for determining eligibility for airworthiness in the E-AB category. In other words, re-defining the level of pre-fabrication and assembly permissible for kits. Also published at that time was a moratorium on new kit compliance evaluations.

Quote: "*The FAA Production and Airworthiness Division (AIR-200) is suspending evaluations of all manufactured or compiled aircraft kits intended to be fabricated and assembled by amateur builders under 14 CFR part 21, section 21.191 (g), Operating Amateur-Built Aircraft. Effective immediately, all FAA personnel will immediately cease amateur-built aircraft kit evaluations.*"

The way this final sentence is written, it can be, and apparently has been, misinterpreted by some. It pertains to new kit compliance evaluations, not to the kit models you are now building or which we are now marketing. For more on this issue, see "RV-12 Notes" at the end of this article.

Otherwise, the REPORT is generally what I had expected, from what I had remembered from the meetings themselves. A number of statements made emphasized the FAA position and sometimes minimized or omitted the industry position. This is not too unusual as they edited and published the report. I'm not going to nit-pick those details here. I'll just concentrate on the most important point, which is the strong indication that they plan to make changes to the policies determining what constitutes an "Amateur Built" aircraft.

THE "RULE"--- AS DEFINED BY THE CHECKLIST.

What constitutes an "Experimental Amateur-Built"? We commonly know it as the "51% Rule". The tool for making the determination is usually the FAA form 8000-38 "FABRICATION/ASSEMBLY OPERATION CHECK-

LIST." This form consists of a line item list of TASKS required to build the various major components of the aircraft. The list has two columns in which check marks indicate whether the kit MANUFACTURER, or the BUILDER, or both, had accomplished that specific task. Since the vast majority of current E-AB are constructed from kits, the -38 form was created to determine whether or not a kit, as supplied by the manufacturer, comprised less than 50% of the Fabrication and Assembly. If so, when the BUILDER performs the remaining 50% plus of the Fabrication and Assembly, the aircraft qualified for E-AB licensing.

RULES CHANGE?

The FAA feels that by changing the -38 checklist, they can make it a more effective tool to use in their effort to solve the problem of excessive levels of Commercial Assistance. Industry worries that such changes may have serious impact on mainstream E-AB aircraft.

FAA TO TEST NEW RULES/PROCEDURES ON EXISTING KITS!

Though the FAA has not yet published their new procedures for licensing E-AB aircraft, they have stated plans to review examples of existing 51% compliant kits as one means of creating, or field testing, new compliance policy.

Indications are that these existing kits will not be in jeopardy of losing their "Major Portion Compliant" status because of this voluntary review visit. Our goal is that the FAA will agree that future kits of similar nature will still be compliant.

FAA TO REVIEW/STUDY RV-7 QUICKBUILD KIT. LETTERS OF SUPPORT SOUGHT

The RV-7 QuickBuild kit is one of the representative kits scheduled to be reviewed, some time near the end

of March 08. Our understanding is that this is to be a review only, and should not have any effect on the future of this kit. Obviously, it is our intent to show the FAA that this existing, widely built, successful E-AB aircraft meets the intent of the 51% rule and that future kits of similar composition (parts and assembly detail) should continue to be found to be major-portion compliant. Primarily we expect that we will need to explain and justify some of the shared task processes of our existing kits. We also feel that it would be of great benefit for the FAA to receive favorable comments from builders supporting this point of view.

MORE BACKGROUND DETAIL

Over the years, as kits became more detailed and complete, the FAA developed a procedure for determining whether E-AB aircraft complied with the letter and intent of the regulation. The primary tool for making this determination is the FAA 8000-38 form, Fabrication and Assembly Checklist. This checklist is a systematic method of listing who, the kit manufacturer or the builder, accomplished each of a long list of generalized TASKS required to construct a typical sport airplane. For each line item (task) listed, there have been two columns in which to place check marks asserting who, the manufacturer, the builder, or both, accomplished that specific task. While the original intent of the -38 authors is open to debate, it has become accepted practice for the manufacturer and the builder to share credit for some tasks where there is significant fabrication and/or assembly input from both parties.

This has worked well in most instances, but has met increasing disfavor by the FAA in instances where one party, typically the builder, contributes only token effort but yet receives 50% shared credit. As a result, there is strong feeling within the FAA that a SINGLE CHECK system should be used, and that tasks should be credited to only the party performing the major portion of each task. Many of the kit manufacturers and builders disagree because their experience has been that sharing tasks is a more reasonable method. In many instances it has evolved as BEST PRACTICE for the manufacturer to contribute machine technology and manufacturing equipment, and for the builder to contribute his skilled labor and hand tools to the complete fabrication process. This combination of shared resources has resulted in the most consistent airframes and the best and safest finished aircraft. Many in industry feel that the Single Credit check system would result in policy driven manufacturing and construction decisions which would not enhance safety, and would result in kits less attractive to builders. Fewer kits would be sold and fewer airplanes built — we'd all lose.

SOME EXAMPLES

Some members of the FAA on the ARC committee liked to use the example of a "FABRICATE RIB" as a typical task for determining the MAJOR PORTION. Their simplistic example states that if there are 30 ribs in the aircraft's wings, then the builder must fabricate at

least 16 of the ribs in order to receive credit for that task. The manufacturer could supply the other 14 ribs, but would receive no credit. Under their suggested SINGLE CHECK system, the builder would then receive full credit for this task. Back in the days of wood and fabric homebuilts, this approach might have made sense. The stick and gusset ribs fabricated by the manufacturer would be of the same technology as those fabricated by the builder.

For current day aluminum homebuilts, wing ribs fabricated by the manufacturer are far superior to those that could be fabricated by the average builder because of the manufacturer's tooling, manufacturing machinery, and manufacturing volume. Thus, current practice is that the kit manufacturer, in a very time and cost effective manner, performs the initial fabrication of all of the ribs. The builder then performs the finish fabrication functions such as edge finishing, flange straightening, cleaning and primer painting, etc. of all of the ribs. This shared fabrication process also applies to most other parts of aluminum kit aircraft. At first glance, the kit part received by the builder may have the outward appearance of a finished part. In fact, the time required to finish process them to make them assembly-ready is often greater than that expended by the manufacturer during initial fabrication process. Shared fabrication has been found to be the BEST PRACTICE for achieving the highest quality and most affordable kits!

For another example, we can refer to the EMPENAGE section of form 8000-38. One line item is: FABRICATE Vertical Stabilizer Spar. Historically, we have shared this task because the manufacturer machine shears and bends the spar components, and the BUILDER then performs finishing functions, primer paints and rivets the pieces together to form the SPAR. We feel that this is a very reasonable concept. The BUILDER does not have the machinery to properly pre-fabricate the component parts, and the MANUFACTURER does not want to perform the finish and assembly tasks because of the time and labor cost required. It is the BEST PRACTICE. Do we want a check list policy which effectively forces 100% completion by one party or the other?

At first glance, it may seem that the dual check system is futile because the equal credit given to the Manufacturer and the Builder has a canceling effect. For a specific single task line this may be true, but in the final bottom line tally process, there is often a cumulative benefit to the interest of the manufacturer and builder.

Over the past 15 or so years, the FAA has been evaluating aircraft kits at each manufacturer's facilities to determine compliance with the "51% Rule", and have maintained and provided the public with this list of demonstrated eligible kits. However, the FAA personnel and DAR inspectors performing the E-AB airworthiness inspections have rarely required the builder/applicant to present the completed -38 form at the time of final airworthiness inspection. I would imagine that few past

and current builders have even seen the -38 list for their kit aircraft. For this reason, here's a link to the 8000-38 forms which Van's supplied to the FAA during the compliance evaluation of the RV-7 Standard and QuickBuild kits: <http://www.vansaircraft.com/public/8000-38.htm>. The -38 forms for other RV models are very similar. You should become familiar with these forms to help you make specific comments and recommendations to the FAA. You need to be on the same page.

SOME THINGS HAVE CHANGED----THIS IS 2008

The interpretation and application of the -38 form has evolved over the thirty or so years since it was first created. This is only logical because typical amateur built aircraft designs have changed, as has the kit aircraft manufacturing infrastructure. During the early years, most kit manufacturers didn't even request kit evaluations by the FAA because their kits were so basic that they unquestionably met the 51% RULE requirement. In the early 1990's the first FAST BUILD kits appeared. The developers of these kits had rationalized that for the purpose of EDUCATION, the builder need not accomplish over 50% of each task. They felt that he should be credited for shared accomplishment of a task through performing a "Significant Amount" of the work, more than enough to receive the desired EDUCATIONAL benefit. As composite kits with their large pre-molded components entered the picture, the interpretation of task credits evolved further. The important point here is the fact that the FAA, at headquarters level, accepted these interpretations and evaluation procedures and issued kit compliance approvals on this basis over a period of at least 15 years. Now, in an effort to curb what they see as egregious abuse of "Pro-Building" and "Excess Factory Builder Assistance", the FAA has stated a desire to apply a much more strict interpretation of the 51% rule.

LETTER and/or INTENT OF 51% RULE

From the way the application of the 51% Rule has evolved, it is obvious that the INTENT of the rule has perhaps been applied more than the LETTER of the rule. The intent is that the amateur builder constructs the aircraft for the purpose of education and recreation. Applying the LETTER of the rule might mean counting the number of ribs, rivets, or rib stitches accomplished by one party or the other. Most current Fast Build kits would probably not qualify under a strict LETTER of the rule examination. If the builder were required to perform the major portion of all fabrication tasks as well as assembly tasks, even a present day standard kit might not qualify as "Major Portion". Despite this, we definitely feel that our kits all meet the INTENT of the rule, and that this is the more important factor.

Industry's position in this review process will be to attempt to justify and retain what we feel is good about the current (old)-38 checklist. Primarily we expect that we will need to explain and justify some of the shared task processes of our existing kits. Indications are that

these existing kits will not be in jeopardy of losing their "Major Portion Compliant" status. We want to be sure that future kits of similar nature will still be found to be in compliance.

SPEAKING OF SAFETY

When preparing comments to the FAA, it is important to address any reference to "Safety" in light of the following:

Safety is, or is not, an issue depending upon the context in which it is being used. When the FAA created the Experimental Amateur Built category, they exempted amateur Built Aircraft from the requirement of complying with the (safety) Standards of Type Certification. Therefore, safety was essentially relegated to a secondary status, at least within the wording of the rule.

In the real world, E-AB safety is important to the FAA because of the increasing numbers of E-AB aircraft, and because safety is the ONLY reason for the FAA's existence. This creates a paradox: safety is not paramount in the E-AB rules, but is very important in the real world.

For Instance: You've probably heard pilots say: "The FAA should permit professionally-built kits because they are SAFER." Whether they are or not, this statement will not likely influence the FAA because those aircraft did not meet the primary reason for the existence of the E-AB category: Education and Recreation. The stock FAA retort is: "If you want to build an airplane commercially because it will be safer, we have rules for that. It's called a Type Certificate".

On the other hand: The FAA should more favorably receive comments advocating that the new policies should permit a reasonable amount of factory fabrication and/or assembly of kits, on the basis of the consistency and quality provided by factory technology and equipment can enhance SAFETY. The FAA is interested in promoting safety of E-AB aircraft, but they also insist that the aircraft they license as "Amateur Built" meet the primary requirement of that category: that the major portion be fabricated and assembled by the builder for education and recreation.

IT'S TIME TO ACT—WRITE NOW!

To help convince the FAA of the "Major Portion" legitimacy of current kit practices, we feel that public comment to the FAA would be very beneficial. We feel that builder experience and opinion is credible to the FAA, perhaps even more so than that of the kit manufacturers. Thus, we are asking that you contact the FAA and share your experience, comments, and requests with them.

While it would be unfair to say the FAA's experience is strictly "Inside the beltway", it certainly does not equal your collective "Real World" experience!

Really, this is where the rubber hits the road. You guys (and gals) are the primary players in this game. You are the builders of these airplanes and are the

ones licensing, maintaining, and flying them. These are not E-AB airplanes until you take the materials and components supplied in a kit, add engines, instruments, etc., etc., etc., and request an airworthiness certificate from the FAA. We feel that the FAA needs to hear from you, based on your experience, why you feel that the aircraft you build from these kits truly qualify as Amateur Built. If you have built one airplane or many; write. If you are still in the building process; write! If you have not started building, even if you may never, write if you agree that most kits as we now know them are beneficial to general aviation.

There is a lot of print on the EAA website encouraging members to petition the FAA to "Preserve the 51% Rule". That's fine, as a generality. The problem is the definition of the 51% rule. Does it mean counting rivets? What I think we need to petition for is "Preservation of the 51% Rule as now applied to mainstream kit aircraft."

Rather than provide a form letter or a sample letter to send to the FAA, I'm going to make a few suggestions of points I feel should be made to the FAA. Use your own words. Form letters do not impress as much.

Below are some thoughts and questions. Answers can be a basis for what you need to tell the FAA.

Current RV kits, and similar kits for similar medium performance airplanes, are not a problem and have not been identified as such by the FAA. Any policy changes which would cause these kits to be more difficult to build would negatively impact safety, have an adverse economic impact on the kitplane industry, and impair the growth of the GA fleet. These kits are not a problem, so why should their manufacturers and builders suffer negative impacts?

1. Specifically; What kit have you built, or are currently building. Standard or QuickBuild. What has been your experience in building your RV kit? How much time did the construction take? Construction Hours, months, years.
2. Particularly if your kit was/is a QuickBuild, detail the work which you had to do to complete it.
3. What did you learn; how did you grow as a result of this building experience?
4. Did you feel that you contributed the Major Portion of the construction process? Why? As much detail as you wish to present about the work you did and the processes and techniques you learned.
5. Do you feel that "Shared Tasks" are a sound and reasonable concept as opposed to tasks being relegated specifically to either the manufacturer or the builder?
6. Do you feel that the effort required of you has prepared you to maintain and operate the aircraft safely?
7. Why do you feel that it would be unwise for the FAA to roll back the rules and require builders to do more of the basic parts fabrication tasks?

8. Do you feel that if you were required to perform some of the more complex tasks now supplied by the manufacturer, the aircraft might be less safe?

OK, that should be enough to get you started. In some circumstances it may be possible and desirable to meet and help each other. Let's get as many letters as we can to the FAA in the next couple of weeks.

SEND LETTERS AND E-MAIL TO:

Frank Paskiewicz
Manager, Production and Airworthiness Division
Federal Aviation Administration, AIR-200
800 Independence Ave., SW
Washington, DC 20591
E-Mail: frank.paskiewicz@faa.gov

AN EXAMPLE

The EAA has more information on the changes the FAA is proposing. They have also posted a sample letter, which may be viewed at: http://www.eaa.org/news/2008/public_comment_letter.pdf

RV-12 NOTES

But how about the still-to-be-released RV-12 kit?

Van's Aircraft, Inc.'s best option at this time is to license the new RV-12 as a Special LSA. This will allow our customers to build an Experimental LSA from our kit with no doubts about gaining an airworthiness certificate. There are some good things about licensing in this category. First, in the E-LSA category, there is no 51% rule. Second, there is no limit to commercial assistance. If a builder wants to hire professional help or participate in a Nine-Minutes-To-Taxi program, that's ok. Third, it opens the possibility of QuickBuild Kits — something that would be a difficult fit under the 51% umbrella given the highly pre-punched/pre-fabricated RV-12 standard kit.

There are some limitations, too: no deviation from the prototype configuration is permitted. The intention is that each E-LSA-licensed airplane is an exact copy of the certified, tested prototype S-LSA airplane. Essentially, they are production airplanes produced by many different "factories." The traditional tennis-with-no-net, do-whatever-you-like latitude of the E-AB (Experimental Amateur Built) category is not available. The E-LSA airplane builder is not eligible for a Repairman's Certificate without taking a special course. If the builder doesn't choose to pursue the education, the annual inspections will have to be signed off by an A&P or LSA Repairman.

Builders who wish to modify our S-LSA kit in any way will have to submit their finished aircraft to the FAA for certification under the E-AB rules — including the 51% rule. In the past this "proof" of kit completion level was demonstrated by Van's Aircraft but for at least the duration of the moratorium it will become solely the responsibility of the builder.

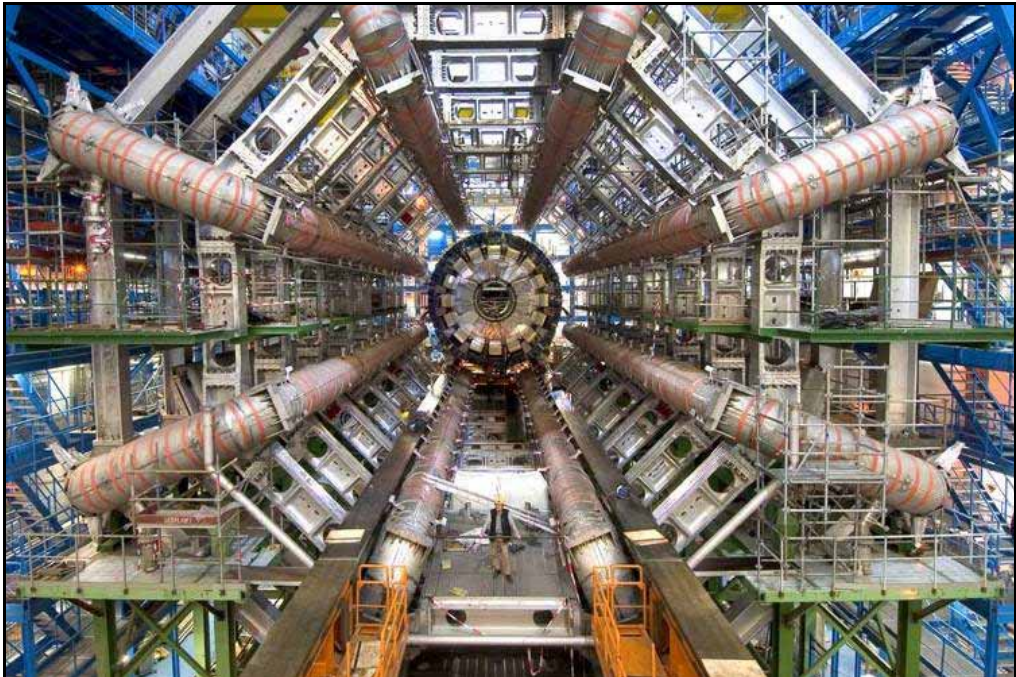
RV-12 PROGRESS

KEN S.

Well, my expressed hope of flying by Valentine's Day is dust in the wind. We're working hard every day, but there's so much to do if you're going to do it right. Several people seemed to take that last guess as some sort of promise, so I'm not guessing any more.

So where do we stand today? The engine's installed, the canopy's been fitted and as this is written Scott McDaniels is working his fiberglass magic around the base of the wind-screen.

The instrument panel is out on the bench, undergoing tests.



One of the reasons the RV-12 has taken as long as it has...since it must be in compliance with ASTM standards, we had to develop our own test facility to assure compliance. It wasn't easy, but here's Van, in the yellow hard hat, inspecting our new Spectrographic Nuclear Aircraft Analyzing Facility and Uniformity Detector. When this baby's on the job, all the lights in the neighborhood go dim, but when it's done we KNOW what's going on in the test airplane, right down to the hadron level.



The production prototype RV-12 N412RV nears completion. The Rotax 912 ULS is installed. The muffler is very effective, muting the four busy cylinders to a steady hum.

Above you can see the free-castoring nosewheel and nosegear leg that replaces the steerable nosewheel on N912VA, the POC prototype.

At right, the canopy is being finished up and rests on sawhorses in the background. The interior of the cabin is painted the familiar gray. The instrument panel is not installed.



The wings have been painted and no, the airplane won't be yellow. (I'm not telling, so you'll have to wait and see.)

Because this is an RV-12, the big pieces will go together very quickly.

We are not too far from putting air under the tires.

ALOFT IN AFRICA



How many of us saw Out of Africa and came away thinking our lives would never be complete until we flew an airplane over the Rift Valley of Kenya (preferably a Tiger Moth with Meryl Streep aboard)?

*Van's engineer **Rian Johnson** fulfilled at least part of the dream when he spent a month in Africa, starting in Kenya. There he met up with RV-7A builder Chris Hardisty. He wrote up this report when he returned home*

Remember when your parents claimed you had better eat your cauliflower goulash because there were poor starving kids in Africa? You felt sorry for those kids, even though, at the moment, starvation seemed a preferable alternative. The part Mom and Dad forgot to mention was being a kid in Africa meant you got to fly to school!

At least, that's how Kenyan Chris Hardisty was introduced to aviation: "It wasn't a daily occurrence, but three times a year, at the beginning of each term, we flew about 2 hours to school. My parents were Colonial Police and we traveled in a Police Air Wing Cessna

C180 flown by a pilot with only a left hand! He would strap the stump on the right to the stick and fly from the right hand side!"

Chris' unique "school bus" started an addiction to flying that captured both his imagination and his pocketbook. After graduation, he became a software engineer working on all sorts of data communication systems, eventually ending up writing bits of code for satellite operating systems. Then, at 45, he made a complete change of direction and now flies professionally, piloting C182, C206 and C210 charters into the game parks for numerous companies and augmenting this with some instructing.

Naturally, a full-time pilot wanted his own airplane, and one with a bit more...alacrity, thank you... than, the garden-variety Cessna. Unfortunately, there wasn't much to pick from. There are only 327 aircraft registered in Kenya, even including all the airliners flown by the national carrier. What to do?

At this point, Chris met RV-8 builder Chris Harrison, who was in-country to train Kenya Airways pilots on the Boeing 767. Over a brew or two, Chris2 explained the virtues of a completely conventional all-metal home-

Mt. Kilimanjaro



the National Airshow.

When I arrived in Kenya, Chris was kind enough to take a day out of his busy entrepreneurial schedule and give me a little RV time in East Africa. The morning sky was clear. Chris arrives in a modest commuter car and as we head through perpetual rush hour traffic I understood why. The traffic – which includes every imaginable mode of transport -- soon filled the road in every direction. When the road is full, the ditch is next and when that route becomes impassable...well, pedestrians in the adjacent parking lots beware. (Later in the trip I would board one of two buses headed to Tanzania. The other didn't make it and two were killed in the collision.)

For active pilots, a close knit society exists and has a rich history at the Aero Club of East Africa

built, powered by an engine that could be found anywhere in the world. Together they explored Van's website and Chris found what he was looking for in the RV-7A. Roomy, fast, conventional, and you could "flip" it. The order was placed and the kit duly arrived. Since shipping the kit from the US cost well over \$10K and next-day UPS to the other side of the planet from Van's is not an option, Chris took great care with each part (gaining more grey hairs than usual while anticipating cutting the canopy). His son Dean helped with a steady hand throughout the project. Chris' daughters Paige and Shannon pointedly mentioned that the gleaming, polished, finish of the airplane might have something to do with family participation in the project.

Some parts required by the Kenyan Civil Aviation Authority like a fire extinguisher charged with halon is not available at the local Uchumi's (Kenyan equivalent of Wal-Mart). No problem: order it off the internet. Problem: it's illegal to ship halon by sea or air into Kenya. The only alternative left was shipment by donkey cart from South Africa via Zimbabwe so Chris asked a fellow RVer and airline pilot Robbie Herd of South African Airways to bring along an extra fire extinguisher in his Airbus A310 on his next flight. Such is life in a fourth world country.

An older SuperCub engine was acquired and given a higher mission in life. After the usual hours in the shop, the airplane flew and behaved just as well in Central African skies as it did everywhere else in the world. Indeed the airplane was a shining standout. Standout enough to be the opening act in

(www.aeroclubea.net).

We stopped for lunch before our flight. History is attached to every wall, dating back to the first prop to turn above Kenyan soil. A beautiful brunette swims laps in the pool. I later learned she was one of a number of accomplished women pilots in the club (a long tradition; Beryl Markham grew up and learned to fly in Kenya). There is no search and rescue service in East Africa. When someone doesn't report in, everyone drops what they're doing and joins the hunt. Even if you don't go down, you can suffer -- a bad landing (any one not gently placed on the numbers and the centerline) will never go unnoticed. Flak will be lobbed across the bar that evening so everyone concentrates

Kenya's only RV poses with Kay Hardisty.



on improving their stick and rudder skills, or at least committing their sins somewhere out of view. As we sit down for lunch Chris points to the newspaper front page, then nods his head to the right. At the next table sits the leading presidential candidate, Rilia Odinga.

In the office I make a fair trade -- one Van's Aircraft Calendar for a cup of tea -- and meet Fred Opot, the one and only DER/DAR in the country. Along with Fred was Ken Taylor, Chief Engineer at CMC Aviation, whose mastery of aircraft knowledge is eclipsed only by his unparalleled skill in profanity. This is probably connected to the skills of the low-time pilots who rent his airplanes. When he started the RV-7A, Chris knew nothing about building airplanes. He would take his latest assembly to Ken and his team at the maintenance shop for inspection. This resulted in a beautiful airplane and a shop crew who now refer to 5Y-BTE as "our" aircraft. From the fit of the cowl and spinner back to the tail, the airplane is quality workmanship. This no doubt made it easier to "sell" to the authorities. None of them had ever seen a homebuilt airplane before because Chris' "experimental" airplane was the first of its kind to fly in Kenya. There was a lot of regulation creation and creative interpretation.

Fed and watered, it's time to fly. Before wheels can leave the tarmac a flight plan first must be filed (pass the offering plate) that states exactly where we will travel. Landing fees of \$10 must be paid for each landing unless doing touch and goes at your home airport, where you pay only once. If you have an American aboard and are landing at a game park, tack on another \$40.

At the airfield gate a guard nods "jambo" (hello) and checks that the mzungu (white man) with Chris has a valid pilot's license as permission to enter. The RV-7A

is kept in a large maintenance hangar. After filling the tanks with Avgas at \$1.18 a liter (*less than it is at Aurora! ed.*) we get a clearance to taxi to the security check area. A young man in a uniform (Africans respect uniforms. At some airports, if you do not wear pilot bars on your shoulders, even to fly a Cessna or an RV, there is a good chance of being detained until you can prove you are not an impostor) walks to the wingtip and yells in Swahili above the propeller noise, Chris yells back our flight plan and we move off towards the runway. After clearance, an RV takeoff, which is impressive at a light 1055 lb empty weight, even though most of the country is at roughly 5000 feet.

The O-360 Lyc purrs behind the fixed pitch Sensenich prop that pulls us along towards Mt Kilimanjaro, the tallest free standing mountain in the world at 19,340'. I am supposed to climb that in a few weeks, and as the peak, shrouded in afternoon cumulus, is over 11,000' above our altitude, that's a sobering thought. Eventually, we descend and make a low pass over our checkpoint, a small strip near a game lodge in Amboseli National Park. Turning back we follow the river, the nucleus of the wildlife population, passing over elephant, giraffe, buffalo and many, many DLC (deer-like creatures). Wow -- how many ever get this view! Our next turning point is Lake Magadi in the Rift Valley -- a gash in the Earth's surface that extends from the Dead Sea in Israel down through much of Africa. The lake is famous for its pink hue caused by soda dissolved in the water. The color is so strong it actually transforms the color of the white flamingos that live here. Even at 8000 feet flocks of various large birds more than make up for the lack of manned air traffic. Coming back over the Ngong Hills we report into Wilson approach at an opulent castle-like monastery, a check-in point. Irony presents itself, as the building is near to Kibera, second largest slum in Africa, home of a million living in one square mile.

With a reputation on the line, Chris flares into a perfect landing, right on the numbers and down the center-line. At the club the day's flying adventures, especially to and from the many game parks that fuel the Kenyan tourist industry, are retold with more honesty after each beer. "Have a beer on me," one pilot who has flown in the RV offers after learning I work for Van. I politely decline the beer, but I'd sure like to meet that brunette.

That evening we had a wonderful dinner with Chris's spouse Kay and daughters Paige and Shannon; two young bucking bar veterans and a supportive wife, all who enjoy trips in the RV.

From one RVer to another -- a big thanks!



That Grin is same, anywhere in the world. Chris turns base over the Kenyan coast.

UPCOMING SHOWS



SUN 'n FUN

Prices to participate in the Sun 'n Fun airshow have risen steeply in the last few years, while attendance seems to have dropped significantly. We really had to ask ourselves if it was worth it, driving five or six airplanes and at least ten people all the way across the country in April.

The answer, after considerable discussion, was yes, so we decided to participate. We will send five airplanes: our 260 hp RV-10, the RV-7A, the RV-9A and both RV-12 prototypes (the latter via Tony Partain.) In addition, Mike and Georgeanna Seager will bring their RV-7 "transition trainer." We plan to fly some rides from the Plant City airport, but exactly which airplanes will be flying on what day is not yet determined. Ride sign-ups will not be taken in advance...those wishing a demo ride should sign up at Van's booth as early in the show as possible.

While we are on the subject of demo rides: Rides are one of our most powerful sales tools, and, especially at large shows a long way from home, we would like to reserve them for prospective customers; pilots trying to decide if one of our designs works for them. (We've noticed that there seems to be a belief that buying a kit entitles the purchaser to a ride, and some builders attend the large shows with the idea of "collecting" their ride. This is probably rooted in history -- twenty-five or thirty years ago, when there were maybe three hundred RV projects worldwide, Van *did* offer rides to anyone currently building an RV. But now there are something like fifteen thousand projects. We just can't offer rides to every builder any more. The good news is that, with 5700 RVs built and flown, rides are much easier to come by.) So we've had to impose a few requirements for prospective riders:

- Must have a pilot's license, or be actively pursuing one (student pilot.)
- Must be at least eighteen years old
- Must not have ridden in an RV before (we'll make an exception for prospective RV-10 customers who've ridden in two-seat RVs.)

After the success of our "on-the-field" barbeque at Oshkosh, we've dispensed with the traditional banquet at the Lakeland Center in favor of a similar event at SunNFun. The festivities will be held in Tent 2, near the museum, on Friday, April 11 starting with a no-host bar opening at 6:00 p.m.

KIDVENTURE

For the last couple of years, Van's has donated materials to KidVenture, the venue where future airplane builders and pilots can come to try out basic aircraft construction techniques, determine their future careers, and ...oh, just have fun and



make something cool.

One of the hot items last year was the custom riveted name tag. Kids loved them because you couldn't buy one, you had to make it yourself. According to KidVenture Dan Majka: "We at Kid-

experienced riveters and A+Ps to help show the kids skills they might not ever get to experience elsewhere. Anyone wishing to volunteer during AirVenture 2008 can email me or walk up to KidVenture's volunteer center which is located in the hangar at EAA's Pioneer Airpark — by the museum."

NEW INSTRUCTOR TAKES WING



Several no doubt well-qualified instructors have been offering RV Transition Training for the past several years, but only two have participated in and graduated from the “official” Van’s program run by Mike Seager. One of those is no longer active (as far as we can determine) so Mike and Alex deDominicis, of Ft. Worth, TX, are the only instructors in the program still working.

That changed this January when CFI **Brian Moentenich** put himself through the Seager meat grinder and came out a fully fledged RV Transition Training pilot. Brian flies out of Troutdale, Oregon, a few miles east of Portland International airport, near the mouth of the famous Columbia Gorge. According to Brian:

I spent four years building RV-6A N38155 and flew it in September of 1997. At the time, I had 150 hours in my logbook – almost all of it in a C-150. I hired Mike Seager to teach me how to fly my RV safely and always thought about teaching others how to fly RVs after I retired. I got my commercial rating about four months before I retired (a little

over a year ago) and my flight instructor’s certificate last September. All my training and check rides were done in my RV except for the portions which required a complex airplane. Steve Wolf (Cottage Grove, OR) provided my spin training in a Czech Zlin aerobatic trainer. I now have over 1,500 hours in my logbook – most of them in my RV. That includes trips to the Bahamas and Alaska.

The EAA used to issue letters of deviation to allow compensation when flying an experimental aircraft. Last fall, the EAA quit doing that and the local FSDOs now issue these letters (called LODAs – letters of deviation of authority). It took me several months to get one from the FAA, but it finally arrived. Then I needed to get trained by Mike Seager to learn how Van’s Aircraft wants transition training done. I accomplished that last week.

I can provide transition training in my RV-6A for all of the “A” (nosewheel) models except for the RV-10.

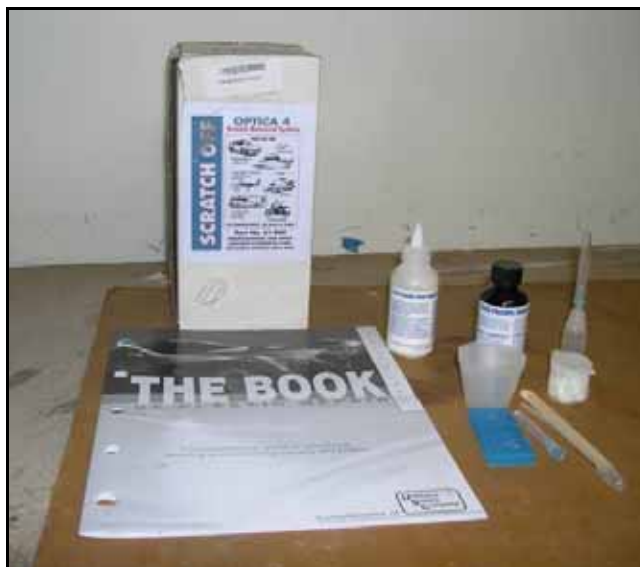
IN THE SHOP

Ken S.

Every so often we get calls from builders who want to know the secret of repairing cracks in plexiglass. The problem is that we don’t know the secret, either. So when an article appeared in EAA’s *Sport Aviation* magazine, detailing the repair of a badly damaged B-25 turret using a couple of “magic” products, I called the author and requested details. It turns out the author works for the company that makes the magic products (Urethane Supply Company, www.urethanesupply.com) and he kindly sent me a kit of materials and instructions.

So equipped, I headed out to my shop.

Not willing to crack my own canopy to prove a point, I dug around and came up with a couple of old replacement landing light lenses. Perfect. I drilled a couple of holes a few inches from one edge and flexed the lens to crack it into the hole. Nothing. Twisted it more aggressively. Nothing. Finally, I hit it with a hammer two or three times. That did it. Fourteen or fifteen years ago, I drilled my canopy with a regular twist drill (didn’t know any better) and riveted it to the steel frame with CS4-4 steel mandrel pop rivets (didn’t know any better) and yanked the skirts into some semblance of matching the fuselage with padded vice grips and a hole finder (didn’t know any better.) So far, it’s lasted through hot and cold weather, plenty of slamming and one runaway Chevrolet. At least in my experience, plexiglas is tougher than rumor would have it...certainly, I don’t regard that canopy as a hand grenade with a pulled pin.



Scratch-off kit from Van’s catalog and a Plastifix kit from the Urethane Supply Company.



First, crack your plexiglass. It isn't as easy as you think.



Then fix your crack with Plastifix and aluminum tape.

Once I had finally achieved “crack”, I set about repairing same. The first step in the instructions was to grind the plexiglass out to “V” groove a long the crack. (Forgive the photos...taking pictures of something transparent turns out to be quite difficult!) This was an acquired skill, but I finally accomplished it, using a Dremel tool with a cutting burr and a fingernail-dressing sandpaper stick. Next time I'll use the router collar that came with the Dremel.

The kit includes a bottle of powder, a bottle of liquid and a couple of syringes with tiny applicator needles. The liquid is the activator that turns the powder into a semi-transparent, permanent filler. The directions call for putting some aluminum tape over the back of the crack, filling the syringe with activator and “dipping” little balls of powder out of small cup and putting it into the crack, filling the “V” groove. That didn't work at all. What did work was filling the groove with powder and using the syringe to spread activator across the surface. In just a few seconds, the powder turned into a milky but plexiglass-like substance. After a few minutes it had hardened and bonded the crack back together.

At this point, it was time for the canopy restoration package. I used the Scratch-off kit in our catalog. Starting with a sanding block of about 320 wet-and-dry, I brought the surface of the repair material down even with the outside of the canopy. There were a couple of low spots, but a bit more powder/activator filled those.

When the outer surface was smooth, I worked my way through the polishing grits to get back to a transparent, shining surface.

The result was a repaired, but not invisible, crack. It certainly seems as strong as the original plexi, but you can still see the cloudy ribbon where the crack was. I can see some small problems using this fix on a finished airplane. The surface must be horizontal, for instance, because the powder is very fine and light and won't stay in the groove any other way.

It's not perfect (if anybody out there does have a perfect plexiglass repair technique...run, quickly, to the nearest email sending device and give me the details!) but I would be glad to use this kit to keep me flying, or as an alternative to replacing the canopy.

SERVICE LETTER

- February 13, 2008
- **Subject:** Incorrect Switches in RV-10 Door Warning Light Kit
- **Affected Parts:** Van's Part numbers ES RS 49-496 shipped after August 2006. The switches supplied with the above kit may be Normally Closed and not Normally Open. Check switches with an ohmmeter to ensure that without contact with the magnet the switch is open circuit (infinite resistance). If the resistance is closed circuit (zero resistance), the switch is incorrect and must be changed.
- Incorrect switches will be labeled with a Cherry Part number MP201702.
- The correct switch label should read MP201701.
- Switches without a Cherry part number should be correct, if shipped prior to August 2006.
- The Door Warning Light Kit is usually shipped as part of the RV-10 Finish kit. Builders without a Finish kit, or with a Finish kit shipped prior to August 2006, are not affected.
- Affected builders should contact Van's to obtain new switches at no cost.

TIRE FIRE

John Bard

In September I was returning from New Brunswick, Canada in my RV-8A, heading for home in Mount Vernon, Washington. The flight eastbound to New Brunswick had been swift. The prevailing low level winds were consistently high for that time of the year, and I had the heady experience of seeing ground speeds up to 235 knots at times. Now it was payback time, as the return winds were similarly penalizing. I had been watching a line of severe weather moving across the Plains States, and decided the best strategy was to end the day somewhere in Northern Michigan and let the system pass.



I picked up a friend at a fuel stop in Ontario and by the time we cleared Customs at Sault St. Marie, I had already logged 5.5 hours hand flying the RV that day. My friend agreed to fly this final leg which we hoped would end in the vicinity of Duluth, where we would bat-ten the hatches for the oncoming weather. The winds on the ground at all the stations we visited had been relatively high, and when our GPS 496 showed the

weather to be between our position and Duluth as we flew west over Northern Michigan, we opted to land at the former Sawyer Air Force Base. Sawyer was close to our position, and the wind on the ground was reporting 20 to 30 degrees off the runway, gusting as high as 25 to 30 knots. My friend made an efficient approach to Runway 19, landing on the first 500 feet of the 12,300 by 150 foot runway, mumbling something unintelligible about runway left behind.

The tower gave us directions to the FBO, suggesting that it was still 2.5 miles to taxi, which seemed to us a bit of an exaggeration at the time. About 2.5 miles later we were about to turn off the taxiway when my friend exclaimed the right brake had gone completely flat, and he would gently ground-loop on the taxiway to bring us to a stop. The tower asked if we required the fire truck and we asked therefore if he saw any smoke. He replied negative, so we replied no truck required. My friend cracked the canopy and noticed a wisp of smoke under the right wing root. We both smelled smoke. He called the tower and re-requested the fire truck. I bailed over the side with my 14 ounce Halon Fire Extinguisher and found the right wheel fairing fully involved in flame with very little smoke. I discharged the small bottle at the base of the flame and it extinguished the fire immediately, leaving only smoke and residual heat which I monitored for any re-ignition. The fire truck arrived and stood by until the fire was cold.

I have concluded that not only should every RV have a fire extinguisher on board, but that the Halon Fire Extinguisher should be the agent of choice. The 14 ounce size was just right for the rapid, hot burning resin of a wheel fairing. I believe those who own fiberglass airplanes should have a Halon fire extinguisher as large as gross weight permits. (I've since heard a tale about a fiberglass P-51 replica that went off a runway during an aborted take-off, and a hot brake ignited tumble-weeds when it stopped. The resultant fire rapidly reduced the airplane to carbon slush.)

My friend assured me he did not ride the brakes, and I believe him. We believe that the wheel fairing support bracket had broken and was rubbing against the brake disk for the 2.5 mile taxi, producing enough heat to ignite the fiberglass resin and melt the O-ring in the brake. That said, it is worthwhile to consider the combined effects of high wind and lengthy taxi time on the brakes, whether there is fire or not. Take a good look also at the gap between the wheel fairing bracket and the brake disk the next time the fairings are removed. The required gap isn't huge, and numerous factors might conspire to reduce it over time.

Finally, I would like to say that should you decide to have a mishap such as ours, you couldn't find a better place to have it than Sawyer. Friend Bill Landry, Director of Maintenance at Boreal Aviation, had us on our way the next afternoon at an amazingly low cost. I cannot heap enough praise upon Bill and his associates at Boreal. You might, however, consider a long landing when using Runway 19 at Sawyer.

" FLY THE @\$%^& * AIRPLANE!"

Rob "Smokey" Ray

As anyone who has read an NTSB accident report or seen any TV news footage of an aircraft crash knows, *pilot error* is a recurring theme.

In the military, we are privy to the exploits of our less than fortunate comrades who have "screwed the pooch, packed it in, bought the farm" or suffer other, less printable, fates. We spend hours during pilot meetings listening to post-accident investigative hoopla on how our poor buddy had committed an act of buffoonery of royal proportions.

The MP or *mis-hap pilot*, as he or she is always referred to, gets hammered mercilessly by the examining board almost every time. Having been the brunt of a USAF post Class A mishap investigation (Class A denotes over 1 million dollars damage) myself, I can assure you no stone is left unturned. Most MPs get tagged with the pilot error label, and why not? In most cases the board is right: the cause of most aircraft crashes is the nut behind the stick.

First, realize that it doesn't matter what type aircraft you are in, when an emergency raises its ugly head, your posterior is on the line, period. For us RV types we have emergencies just like everybody else, it's the nature of operating mechanical flying devices. Highly efficient, cool looking, fun machines, but flying devices nonetheless. So how do we in the RV world apply the techniques, lessons and hand to stick applications of in-flight emergencies (IFE) to our little world?

The same way the big boys handle emergencies in multi-million dollar fighter aircraft with such aplomb. Practice, my brothers, practice. The General who quoted that "The more you sweat in peacetime, the less



Now you know why they call him Smokey...his airplane caught fire! In this case the board concluded: "The failure of a magnesium alloy restraining band surrounding the afterburner section of the GE F110 engine in Capt Ray's F-16C contributed to the failure and subsequent in-flight fire and ensuing forced flameout landing".

you bleed in war" was correct, practice makes perfect. In the military and professional civilian world, simulators are used to "dial a disaster" for hapless pilots in a controlled environment. The simulator instructors can simulate emergencies with such accuracy that in cases of real emergencies the successful pilots claimed that what they did was exactly like what they trained in the simulator. (The exception is combat. When that first large caliber round or missile flies by your canopy, all that training goes right out the window. Been there, done that.)

When the proverbial feces hits the fan an old instructor of mine once told me "wind the clock" until you can't stand it anymore, then think about doing something. In simulated IFEs the first step is FTFA or Fly the @\$%^ Airplane!

Following these you can either pull out a checklist, have your wingman or somebody on the ground pull one out, follow steps therein and get home safely.

The actual steps are:

- Maintain Aircraft Control
- Analyze the situation
- Take the appropriate action
- Maintain situational awareness

The one item above left out is "don't panic". There is nothing short of an engine failure on takeoff or in-flight fire that requires you to go into "auto flail" to handle the problem. Even then, more people than not stall/spin trying to turn around or land too fast. Bob Hoover once said "fly the airplane as far into the crash as possible". In a fighter, you do all the important stuff without looking and later your wingman backs you up to make sure appropriate items were acted upon

In RVs you can practice all kinds of IFE in your own cockpit. You may not have a wingman, but you probably have friends who fly RVs. Use them. In the safety of your own living room, hangar or RV cockpit (or in my case, Rocket...traitor!) you can go through the steps of any given emergency situation. Know your aircraft systems well, do a blind-fold cockpit check once in awhile and know where all the switches are without looking.

When you are totally familiar, have your friends be the IFE instructor and yell out simulated emergencies. While they make sound effects, wry comments and swipe beverages from your fridge, you can flail away at solving the problem. It's all good -- every second spent thinking about disaster helps when a real one emerges. This "game" makes everyone present a better pilot, improves safety and gives the NTSB one less opportunity for to conclude RV pilot error after a mishap.

Practice, my brothers, practice!

IN FOREIGN LANDS

We don't have a lot of details, but Wood Huang, right, has finished and flown his RV-7... the first RV to fly in Taiwan.



At left: On February 28, 2008 Yaron Nemet's RV-8A 4X-OYN (82106) took off and landed safely—the first RV to fly in the country of Israel.

4X-OYN is equipped with Superior XP-10-360 Engine, Hartzell Blended airfoil CS prop, Glass cockpit includes Advanced AF-2500 Engine monitor, Dynon D-10A EFIS, King KMD-150 GPS and a TRUTRAK Digiflight IIVS Autopilot.

"The plane flies beautifully. Thanks to Van's for great airplane and support, Thanks to Dewey Conroy from Pacific Coast Avionics, Rob Hickman from Advanced and the Tru Track team for great support."

THE RV GRIN

"Thanks for the best plane I've ever flown! N204C, 90878, flew with me on the 18th of February, after 2400 hours and four years of build time. What a great feeling of accomplishment!"

Charles Chinberg, Dewey, AZ.

