



The fame of Native American leaders seems to have spread. "Crazyhorse" is an RV-7 built by Alfonso Hernandez of Spain.

RVS IN FAR AWAY PLACES

It is fourteen years two months and thirteen days since we bought A complete RV-6A kit from Van's and had it shipped to our island home in Cyprus.

The Cyprus DCA finally gave the permit to test fly it on 25th of Aug. 2009. At 08.00 hours our good friend professional pilot Andy Christou took off from Larnaca International Airport, orbiting over a salt lake for two hours. The RV-6A flew, as Andy said after landing, without requiring any trimming or control corrections. In his words it is fun to fly it.



Our RV is powered by a Superior XP-IO360 with a Sensenich 72FM8S9-1-83. The control panel is equipped with a Dynon EFIS-D100, an EMS-D120 and HS34 Expansion module, Audio panel PMA5000C, Garmin Nav Comm SL30, Icom IC-A200, Garmin Transponder GTX 320A and finally a Trutrak Digiflight IIVS Autopilot.

We would like to thank our families for their support and sacrifices they made all these years.

Many thanks go to our good friend Andreas Stefanou for his help and support during the last seven years in building the RV. Also to all the friends that from time to time showed interest and assisted in various stages of the construction. Special appreciation to the test pilot Andy Christou for taking our beautiful plane out on its virgin flight.

Emilios Kassianides, Sokratis Karamichalis, Hani Awad

FLOWER OF YOUTH

Next time you find yourself wondering whether or not it's worth the work, give a thought to **Gordon Zwirtz** of Yucca Valley, California.

Gordon bought an early RV-7 kit, 70067, and completed the 180 hp/ Catto prop airplane in May, 2009.

He made the first flight on May 23.

Almost exactly two months after his ninetieth birthday.



“SILVERWINGS” FINALLY FLIES!

VAN

Well, “finally” may not be a good choice of words for an airplane completed in under 11 months, but most home-built aircraft completions seem to have that air of delayed anticipation hanging over them.

Oct. 31, 2010 was the date for my RV-12, N912DV. This was a couple of weeks later than I had hoped because of little finishing and re-finishing (mostly my own fault) details. The E-AB licensing and inspection of this aircraft is covered elsewhere in this newsletter. Test flying is still underway, so I'll mention only a few details here. Later I promise an “ad nauseam” report.

PAINT SCHEME

Most obvious is the paint job -- or lack thereof. From the onset I had planned to leave my RV-12 unpainted for several reasons. Painting takes a lot of work and can cost a lot of money. Besides, I wanted to see how light an RV-12 could be without paint. From the money point of view, my actual cost was almost nothing as I used paint and primer left over from my RV-10 project a couple of years ago. A quart of primer and a quart of color would probably be enough, and might cost a couple hundred dollars.



Van and brother Stan roll the RV-12 “canoe.”

My objective was to have the paint scheme cover as many of the fiberglass parts as possible. The cowl and canopy coaming are the largest and most noticeable mismatch from the shiny aluminum. Also, I wanted a painted anti-glare section on the forward top fuselage. So, the remainder sort of followed those basic parameters. It did take more time to paint than I would have liked. The entire fuselage had to be covered to paint the

small area masked off for the trim stripe and I painted the cowl and canopy separate from the fuselage so I could get good coverage around the edges and joints. This required more set up time, masking, etc. Painting the entire airframe and then applying vinyl trim, as we did on our prototype and other factory airplanes, is a good way to minimize masking effort.

I am happy with the result and have had several favorable comments about it. Yes, it's always very subjective, but one hopes to please others as well as one's self.

Painting the RV-12 is more difficult than the other RVs because of the need to mask over the protruding rivet heads. It's difficult to get masking tape to contour over



EVERYBODY sits in the airplane once it's on the gear.

Taxi tests at our old home strip, Sunset Airpark.



no floor carpet or strobe.

One reason for using the single strobe was that I had one lying around in my shop. Also, the added weight of the strobe & power pack in the tail of the plane would add weight back there where wasn't. As a result, my empty C. G. was at 81.43" vs. 81" for the otherwise comparable painted factory ship. (Unpainted RV-12s will have a slightly more forward CG. This should not be a problem because normal loading options do not cause critical forward CGs.)

This low empty weight results in a useful load of 602 lbs. and offers many loading options within

the heads for a good seal, so paint tends to bleed under the tape around the rivet heads. This is only evident when viewed up close, but we builders are sensitive and the thought of self-appointed critics standing there wagging their heads and going tsk-tsk is disheartening. One solution might be to use a better grade of masking tape. My solution was to apply a vinyl pin stripe after painting. The vinyl pin-stripe not only (hopefully) enhances the overall appearance, but also hides any paint bleed, and it contours over the rivet heads very well.

EMPTY WEIGHT

N912DV, weighed on recently re-certified scales, came in at 718 lbs including the minimal paint, seat cushions, engine oil, and coolant. It also has a single strobe installed on the tip of the vertical stabilizer and light floor carpets in the forward cabin. Other than that, it is stock RV-12. This weight compares favorably with the factory N412RV, which weighed about 724 lbs with a full paint job, but

the LSA gross wt. limit of 1320 lbs. The ASTM specs require an LSA with a 100 HP engine have a sufficient useful load to be able to carry a minimum fuel load of 50 lbs. plus two occupants at 190 lbs. each. With 50 lbs. of fuel, my RV-12 could on-load two occupants at 276 lbs. each. This might require a very large shoehorn, but the math works out.

And when everything is done, you get to fly to work and give everyone the original RV Grin...



AT LAST, THE NEW RULE

VAN

In the last *RVator* I briefly mentioned that the FAA had just released the revised "51% rule." Several articles have since appeared in *Sport Aviation* on this subject, covering many of the details. I won't rehash those here, other than to repeat that the final outcome is very close to what we had expected and not dramatically different from the past.

I did have an opportunity to do a trial run through the new rules and procedures recently when, for a number of small and personal reasons, I chose to license my RV-12, N912DV, in the Experimental Amateur-Built (E-AB) category rather than the more usual Experimental Light-Sport (E-LSA) category.

I was not the first to license an RV-12 as an E-AB, and I understand that only a minority of other builders will follow the E-AB route. But there will be some, and in addition, many other countries have traditionally followed the regulations established by the FAA when licensing homebuilts. I thought it would be beneficial to process my RV-12

through the FAA kit compliance evaluation procedure and "learn the ropes" in order to help builders inside, and outside, the USA.

It just happened that my RV-12 was completed shortly after the FAA published their new procedure and guidelines regarding the "51% Rule". This provided me an opportunity to acquaint one very active local DAR with the new procedures. My vantage point is almost unique, since not only was I licensing my own airplane, but I'd served for years on the Advisory Rules Committee (ARC) which had helped the FAA develop these rules and procedures.

Below listed are a few of the licensing details that are different now than before.

CHECKLIST

The often mentioned but rarely used kit compliance checklist is now required along with other documents which must be presented at time of inspection and licensing. Since there had been a moratorium on FAA evaluation of kits to determine 51% compliance, the RV-12 had not joined our other kits on the "approved" list, so I did not have a factory supplied checklist to use.

So, I followed the same procedure that any builder of a "non-listed" homebuilt would; I filled out the checklist to the best of my ability and presented it to the DAR.

The new checklist has a couple of added columns: One is for commercial assistance, and the builder column is now divided into two components; builder fabrication and builder assembly. Granted, I had the benefit of many years experience in filling out checklists for initial kit evaluation at the factory, and had recent experience on the ARC, but it seemed very straight-forward. I had little concern about the RV-12's ability to qualify as a valid "51%+" homebuilt – after all, it's a "standard" kit, not a "quickbuild" kit.

During the ARC negotiations, several FAA committee members were very concerned that some elaborate kits were exceeding the intent of Amateur Built category by becoming "bolt together" components.

I thought it would be beneficial to process my RV-12 through the FAA kit compliance evaluation procedure and "learn the ropes"

little more than factory made kits. In response, they included the (now infamous) 20-20-11 clause in the original versions of the rule. This would have required the builder to perform at least 20% of the fabrication, although exactly what constituted "fabrication" was not clearly defined. Under even moderately strict interpretation, this clause could have made almost any kit-built airplane very difficult to license.

Fortunately, Industry members of the ARC were successful in keeping this proposal from being implemented. However, the FAA still chose to include the "fabrication" column on the new checklist, probably as a means of tracking the level of fabrication done by builders of a cross section of E-AB kits. For what it's worth, my personal RV-12 checklist resulted in well under 20% builder fabrication credit. I think that this validates the industry argument that a 20% fabrication requirement was unrealistic -- even a loose-parts kit for this simple airplane would not have qualified E-AB.

NEW E-AB ELIGIBILITY STATEMENT FORM

Another new requirement, or I should say, altered requirement, is the E-AB Eligibility Statement FAA form 8130-12 (08-2009). The new form requires that all builders of the aircraft be listed, not just the builder/applicant, and that all commercial assistance providers be listed. Listing these does not necessarily disqualify the airplane from being E-AB eligible, but could have that result if too much assistance was used. In my case, I listed four builders other than myself. I believe that I had mentioned previously that I couldn't keep my brothers Jerry and Stan away from my shop on Satur-

days---building is too much fun for them. I also had invited two others to participate as this RV-12 exposure which would help them gain experience toward participating in the Teenflight RV-12 project on which they had volunteered to be mentors. I did not need to list any commercial assistance providers, as there had been none. End result: New form---no problem.

The purpose for the provisions of this is obvious. The FAA is requiring the applicant to sign this notarized form affirming vital factors concerning the aircraft's construction. It by no means assures honesty, but is intended to discourage fraudulence and it provides the FAA legal department more basis for prosecution in extreme cases. For anyone truly building an airplane (even with some commercial assistance) it should pose no threat.

BACK TO THE CHECKLIST

The DAR who inspected my airplane reviewed my checklist and accepted it. Though he had inspected countless E-AB aircraft over the years, the checklist, particularly the new one, was something of an unknown to him. He had reviewed the checklist format prior to doing my inspection, so was generally familiar with it. This inspection was a bit of an indoctrination for him regarding the "new 51%". My DAR did not analyze many of the specifics on the checklist, meaning that he did not ask for an explanation or proof of every task credit claimed. However, that option is available to inspectors and DARs if they feel there is reason to do so.

In addition to the new columns on the checklist, the FAA now requires that for tasks co-performed by both the kit manufacturer and the builder, measured credit be given. This means that one or the other will receive percentage credit to the nearest decimal point. As an example, the builder would list 0.5 and 0.5 points for an equally shared task, and 0.1 and 0.9 for the extreme limit of a shared credit task. When commercial assistance has been used to perform all or a portion of a task, this must be checked off in the "commercial assistance" column. In the final tally, any building credit listed in the commercial assistance column is added to the "manufacturer" credits.

The above comments are presented to make builders aware that they will need to learn how to measure or estimate the percentage of any task shared between themselves and commercial assistance providers. Those not using any commercial assistance and not altering the kits should have easy sailing.

PHOTO LOG

I had also prepared a photo album showing the building sequence and dates which served as a builder log. I am not accustomed to doing this, as I like to spend all possible time building rather than documenting. The lesson I learned was that scheduling just a bit of time for record keeping during the construction would

have helped, rather than having to backtrack to determine dates from digital photos. Personally, I have never felt that a photo log offered conclusive proof of who built the airplane. We have all heard of the "bait and switch" ploys used by pro-builder shops to stage photo ops for infrequent visits by the "johns". What my photos did show was the same messy shop background in all of the photos; the same messy shop where the inspection took place. That ought to be convincing! Most builders probably keep a nice photo-builders log for their own pride and bragging rights purposes, and this will be beneficial when dealing with the inspector.

E-LSA 'REPAIRMAN CERTIFICATE EQUIVALENT'

The Experimental-Light Sport category that most RV-12s will fall in has some different maintenance rules than the Experimental Amateur-Built category that we're all familiar with. The E-AB Repairman's Certificate, issued to the builder of the aircraft (but limited to one individual), no longer applies. In the E-LSA category, anyone who takes a 16-hour course can sign off the condition inspection. In many ways this is good news. Partners can each work on the airplane, if they've taken the class, rather than rely on the one holder of the repairman's certificate. A new owner can take the class and qualify to sign the condition inspection, despite not having built the airplane.

You have one year from the date of registration to get the certificate. At least two companies have picked up on the demand for the training:

Courses are being offered by Rainbow Aviation Services in Corning, CA, and Sport Aviation Specialties in Lawrenceville, GA. Both offer a 16-hour Repairman-Inspection course which allows you to perform your own condition inspection. (I'm signed up for Dec. 3-4). There is also a more extensive 120-hr Repairman-Maintenance course which allows you to charge for your services and maintain S-LSA airplanes, as well as E-LSAs.

Better yet, if you have a group of builders who all want to get the training, they will travel to you to do it. There may be others courses available; these are just a couple that have come to our notice.

Sport Aviation Specialties
1512 Game Trail
Lawrenceville, GA 30044 904-206-0522
www.sportaviationspecialties.com

Rainbow Aviation Services
N 930 Marguerite Ave.
Corning, Ca. 96021 530-824-0644
www.rainbowaviation.com

TEEN FLIGHT UP AND RUNNING AT VAN'S

VAN

Most of you recall the articles I wrote in *RVators* over the past year about plans and efforts to have a group of 14 -17 year old kids build an RV-12. Well, that project is finally underway and progressing well. A couple of photos accompany this article which show the status of construction as of November 14, 2009. This progress was made in just eight sessions of training and construction. It's pretty impressive, especially when you realize the kids didn't work on any of the actual RV-12 parts for the first four work sessions. Those were spent on academics and sam-



Above: Scott McDaniels teaches RV 101. At right: a student and instructor Louise Lane work through the toolbox project.



ple sheet metal projects including the Van's Tool Box kit.

It's easy to assume that anyone can open an RV-12 kit shipping crate and start riveting parts together. Many experienced builders, particularly impatient ones like myself, like to see immediate progress. However, the approach taken by project manager Scott McDaniels was to start with a thorough grounding in the basics of sheet aluminum aircraft construction. His long term goal was not just a finished airplane. Rather, he wanted the kids to learn enough basics that they could actually perform all of the RV-12 construction themselves with a minimum of assistance and a maximum of quality.

Scott prepared and presented very good class plans in which he covered all of the basics of aircraft sheet metal construction; those basics which we now take for granted. Subjects have included detailed descriptions of aluminum alloys used in aircraft construction, rivet types and nomenclature, bolts and other aircraft fasteners, methods for cutting, bending and shaping aluminum, torque values and procedures, etc. At one time or another we all had to learn this same stuff, and it probably took longer, with more mistakes along the way. Scott's program has given these kids a

good basis on which to begin the construction process and continue learning as the RV-12 progresses. Much of what he is imparting to them would be similar to requirements of A&P training. So these kids stand to gain more than just the experience of popping a few rivets.

We initially had difficulty recruiting enough qualified volunteers to serve as mentors for the kids. In time, more experienced builders stepped forward so that now there are enough available that not all need be present



Top: What a difference a couple of Saturdays can make.

Middle left: With some patient oversight, the tailcone parts start to go together.

Bottom left: a few hours later the skins are going on and the tailcone starts to take shape.

Above: The rudder is almost done.



at each work session. Usually mentors are scheduled for at least two consecutive work sessions so that continuity can be maintained. Being a mentor requires knowledge of aircraft construction, a willingness to read ahead and prepare for each session, and the patience to function well as an instructor. A common trait of builders like myself is that we like to get our hands dirty, drill those holes, and set those rivets. We like to make things happen; the sooner the better. However, when working with these kids there are additional goals including that of imparting knowledge of why and how to perform a building task and then letting the kids do the building at their own speed. For some mentors, a bit of adjustment is necessary. The accompanying photos are strictly candid, and show the mentors watching, commenting, and correcting if necessary, not doing the actual work.

A blog has been created for this RV-12 building project. Its address is www.teenflight.blogspot.com. We intend to update it every week with photos and explanations of the construction status. I trust that many of you will regularly visit this site, just as you do the vansairforce site and others.



HNL — A GOOD PLACE TO VISIT

KEN SCOTT

As a result of an article I wrote for Hawaiian Airlines magazine *Hana Hou*, The Violinist and I were invited to Honolulu to participate in the re-dedication of Hawaiian's very first airplane — a Bellanca Pacemaker Hawaiian's parent company had bought new from Guiseppe Bellanca in 1929. Hawaii in October sounded good to us, so we gleefully accepted the invitation, found an affordable hotel and made a phone call.

When we arrived at the party, the Bellanca was



Directly above: when a cable and a strut come together...well, there you are. What looks like a welded tube is actually a peened brass insert that won't harm the steel cable. Bellanca was a good engineer.

Left: In 1929 Inter-Island Airways took delivery of their first airplane, a spanking new Bellanca CH-300 "Pacemaker." In 2009, eighty years later to the day, Hawaiian Airlines — the renamed version of Inter-Island — re-dedicated the newly-restored airplane on the very same airport.

Not only that, but the elegant lady at the bottom is Mrs. Scott, the daughter of the airline's founder. As a three year old girl, she flew in this airplane. Eighty years later, you can see her face framed in the oval opera window just before the engine started.

Same airplane, same airport, same lady.



posed under a sun cover with about fifty leis draped around the boot cowl. There was a band, there were traditional dancers, there was a troop of dignitaries including the governor and the CEO of Hawaiian, Mark Dunkerly. And I finally got to meet a man whom I'd spoken to on the phone,

RV-7 owner and senior Hawaiian captain Bob Justman.

Later that week, Bob met us at the back side of the Honolulu International airport, where what general aviation there is on Oahu hangs out. The island has only about six or seven airstrips, and just three or four are open to the public. There are eight or nine RVs scattered around the state, but most reside at HNL.

Bob acquired RV-6 from a builder in the Sacramento area. His hangarmate Gene Nishi built a no-holds-barred RV-7 in Hawaii. They are both shoehorned into one of the expensive GA hangars, using an Aero-

lift. While we were admiring these, Linne Holmberg taxied up in an RV-4 – I remembered that airplane. Built in the Midwest by Gary Novotny, it became one of the first, if not *the* first, RV in Hawaii when it was sold to a pilot on the Big Island. After several years, several owners and little flying, Linne bought it, refurbished it and began flying it quite a lot. Like many Island pilots, he enjoys aerobatics – after all, long distance cross-country flying isn't particularly useful in Hawaii.

After admiring the RVs and swapping surfing stories with Linne, we had a late breakfast with Bob. Here's a man with a long and varied flying career – including several hundred solo trips from Hawaii out to French Frigate Shoals and back in Beech 18s and Aztecs. Haul your world atlas off the shelf and contemplate that! I asked him about a tale I'd heard several years ago concerning an RV-8A ditching in the ocean between Oahu and Kauai.

"All true," said Bob. "That was me."

Oh...

So, how did that go?

Well, said Bob, (*and this is how I remember his story, but I didn't record it. I just sat there listening while my eggs got cold. I hope Bob will forgive me if I miss some of the details...*) I'm about half way across the channel at 5000' or so. The airplane hadn't flown in a while, but it checked out ok, and after an extensive run-up I decided to make the 35 minute trip. I put the required life vest under the seat and took off. A little more than halfway across, the power slowly fell off and the rpm dropped down and down, toward idle. Nothing I did with the throttle made any effect. I realized that I



Hawaiian captain and RV pilot Bob Justman has spent thousands of hours flying over the ocean. Then, one day, he went swimming...

was going to get wet. I've spent a lot of time in the ocean, swimming competitions in rough water, so I figured if I could get out of the airplane, staying afloat and alive would be relatively easy.

I notified ATC and they confirmed that they had me on radar. I started down. The engine ticked over smoothly at a few hundred rpm. Way back on the edge of my concentration, I heard ATC contact an Aloha 737 and advise him of my position. Into the wind and swell, flaps down, I slid the canopy all the way back. In a few seconds, I felt the main gear tick gently through the tops of waves.

Then there was a blur of motion and an incredible bang. After a couple of seconds of confusion, I realized the airplane was inverted. I was twisted around in the cockpit, slightly snarled in the harness. The canopy was now closed, and the windshield was gone, so the cockpit was full of water and I was instinctively holding my breath. I reached for the harness buckle and couldn't find it anywhere.

The seconds went ticking by as I struggled to get free. Finally, my hand felt steel and the belts were off. I reached for the canopy handle and yanked it aft.

It moved about four or five inches and stopped.

Stopped solidly. I couldn't budge it. I guessed that the rear fuselage or the canopy frame was distorted by the force of the canopy slamming shut, or the impact of the airframe on a planet-full of salt water. Upside down, holding my breath and having no idea if the airplane was floating or sinking, this structural analysis was not comforting.

As a last ditch effort, I jerked the canopy closed and used all my strength to slam it open again, hoping that it would get by whatever was stopping it. Even as I did it I knew it was risky, because it might jam so solidly that I couldn't get it either open or closed. It jammed again, but this time there were a few more inches between the canopy bow and the roll bar. It was enough – I don't remember the details, but I came to the surface between the wing and the horizontal stabilizer. The airplane was floating, wheels up. The winds and swells were relatively light, the water was Hawaii warm, and I was alive.

However, I was a long way from solid ground, and my life jacket was still under the seat. Looking at the floating airplane, I thought that if I could support myself on the cowlings, I could save a lot of energy. I knew ATC would have somebody on the way – probably had them enroute before the splash died down. But I also knew that trying to find a small airplane floating in a large ocean is a difficult thing and that it might be a while before anyone showed up. Any support I could get increased my chances, so I swam around to the



Above: At first I thought the paint was flaking, then I realized Linne had cleverly worked a map of the Hawaiian islands into the design.

Top left: An open cockpit RV-3, tied down amidst the departing 747s at Honolulu International.

Center left: Gene Nishi is using his RV-7 to experiment with airborne internet technology —hence the giant pod slung underneath.



Bottom left: While we were looking at RVs, we heard a radial engine and here came the Bellanca down the hangar row. Well, we had to go look at that... left to right, Ken Scott, Bob Justman and Linne Holmberg with Bill Fifies, who will be maintaining the Bellanca in Hawaii.



nose and slid up on to the curving cowl bottom.

My weight disturbed some delicate balance. In a few seconds, there was a gurgling sound. The nose dipped and the airplane sank out from under me, headed for its last landing on the ocean floor. I rolled onto my back, pointed my head into the swell, and went into survival mode, sculling slowly, staying afloat with minimum energy expenditure. A dot on the horizon resolved itself into a Boeing 737 – the Aloha flight had turned back and dropped down to two or three thousand feet. They circled, about a half mile away. Now that the RV-8 was gone, I had no dye, no life jacket, no raft. I knew that the chance of anyone on that airplane spotting my bobbing head amongst the waves was virtually zero.

What I didn't know was that the Coast Guard had a helicopter in the air on a training mission over the Honolulu harbor when I started down. They had plenty of fuel, so when ATC gave them vectors to my last position they were immediately on the way. You'll never appreciate the sound of rotors as much as I did, let me tell you. Forty-five minutes after "splashdown" I was airborne again – one lucky guy.

Then he was off. His racing pigeons were due in from the Big Island and he was anxious to see how they'd finished.

Our thanks to Hawaiian Airlines and the Hawaii RV guys, especially Bob and Linne, for the hospitality. We had a great time.

IN THE SHOP

FITTING BAFFLES TO THE COWL Matt Dralle 82880

While working on my RV-8, I came up with a method of matching the top of the baffles to the inside of the cowl. It's pretty simple and yielded a near perfect contour.

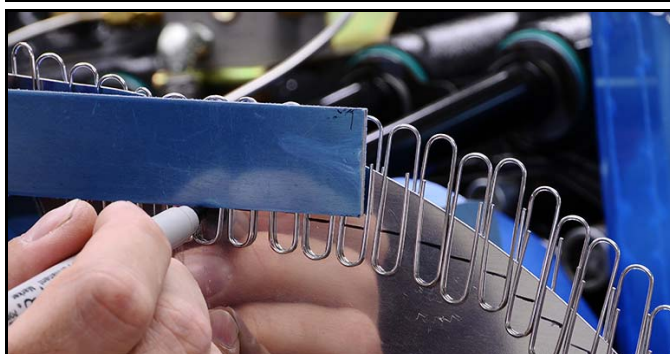
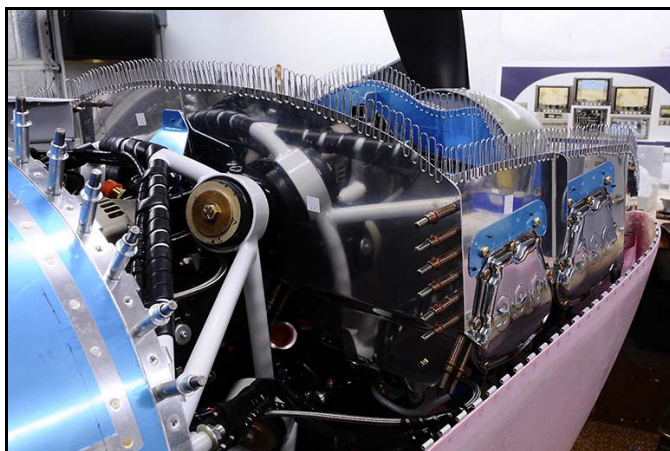
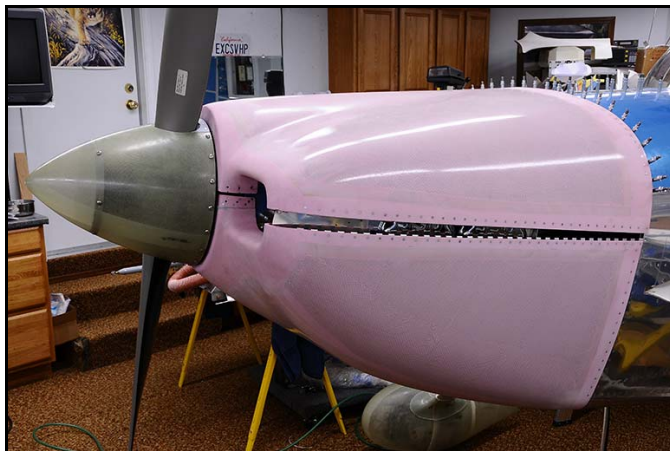
The baffles on the top are left about 1-2" too tall. This is to allow you to cut them down to a contour that will exactly match the underside of the top cowl less about 3/8" or so. When I first put the top cowl down over the freshly installed baffles, I found that I was sitting about 1.5" from being able to get the side pins between the top and bottom cowl pieces.

But where do you start when trying to make this contour? There isn't really enough room to get your hand up underneath the cowl to mark a line and even if you could that wouldn't really give you the exact contour. A while back I had seen where a guy had used paper clips to mark the contour, so off to Walmart I went to buy 5 boxes of large-sized clips. I placed them like little soldiers right next to each other all the way around the top of the metal baffling pieces.

Once that was done, I put the top cowl down on top of them and then applied equal pressure all the way around. I could feel the paper clips yielding underneath, and the cowl came down maybe 1/2" or so from its initial perch atop the clips. When I removed the cowl, much to my jubilation, I found a nearly perfect contour representation of the underside of the cowl pressed into my paper clip army!

Looking around at all of the paper clips, I noted that the largest non-gap was about 3/4". I cut a piece of sheet metal to act as a template and then proceeded to draw a mark on the baffles at the 3/4" distance at each and every one of the paper clips. The theory was that this would then represent the contour of the cowl mimicked by the top of the paper clips. I removed all of the paper clips then and was left with a nice dotted line all the way around the top of the baffling.

I used the pneumatic 3" cutoff wheel to smoothly go all the way around the baffling, cutting right at the dotted line. (A sharp set of snips would be quieter, a lot less messy and just about as quick. But then you wouldn't get the satisfaction of using a noisy power tool.) When I put the top cowl back on, I found that it had come down about 1/2 inch from its original position, leaving about a 1/2" gap still on the sides. I marked a careful 1/2" line down the top of the baffle and re-cut again using the 3" cutoff wheel. This time, the top cowl fit right down on the bottom cowl! Sweet!



I used a giant rasp/file then, to go all the way around the top of the baffling and filed it exactly down to the line. When all was said and done, I have a perfect contour on the top of the baffling, leaving about a 3/8" gap between the baffling and the bottom of the top cowling. I re-assembled the top and bottom cowling pieces just to be sure everything fit correctly.

I found that I had to shave quite a bit off the left side particularly back around the oil cooler baffle. It didn't leave too much of the left-rear flange but I think its fine. The point here is to BE SURE to do all of your baffle contouring BEFORE you start to mount your oil cooler. Had I mounted the oil cooler before I finished the contouring phase, I might have mounted it a good 1-2" too high!

FITTING THE LOWER COWLING SINGLE-HANDED

Noel Fallwell 24916

While doing the initial fitting of the lower cowling on my RV-6A, I needed a third hand, but help was not readily available. I needed a way to slowly lift the lower cowling into position, support the lower cowling in position, and then be able to lower the cowling off and away from the aircraft.

I started with a hydraulic lift table from Harbor Freight and used some scrap 1x6 wood material that was part of one of Van's shipping crates. The 1x6 was bolted to the lift table and cantilevered off of the end of the table. This "nose" end was contour cut to conform to the shape of the lower cowling. I made a "schnozzel" support with a couple of 1x4s screwed between the cantilevered arms. This support slides into the carb air intake scoop and keeps the lower cowling from rocking while on the lift table.

Two small plastic tabs attached to the far ends of the cantilevered support arms are positioned just high enough to catch the lower edge of the cowling, in the area where the lower firewall hinge segments are attached.

All of these "fixture points" securely hold the lower cowling while it is moved about the shop or positioned in front of the aircraft. As the cowling is brought to the aircraft, the hydraulic table is lifted and the cowling is raised into position...single-handedly.



COPPERSTATE - THE RV-12 WAY....

GUS

My longest flight in the RV-12 had been a two-hour jaunt to Langley BC, so a trip to the Copperstate fly-in in far-away Arizona would be a chance to see how it behaved on a longer haul. In an effort to avoid the worst of the broiling Arizona sun, the Copperstate fly-in organizers scheduled the event for late October. Unfortunately, up in Oregon, the end of October is usually the onset of winter, or autumnal wind and rain anyway, so getting to the balmy 85 degree weather in Phoenix area can be a challenge. This year was no exception and departure was delayed until after lunch when the downpour eased enough to make a run south along I-5, to Grants Pass where the clouds thinned to allow a more direct route to Alturas for gas, then on to Yerington, south of Reno, for a \$46/night motel a short walk from the airport. Next morning, it was up early and off to Casa Grande, with just one fuel stop en route at Kingman, AZ. All told, about 8.5 flying hours.

Running the Rotax at close to its continuous cruise limit of 5500 rpm burns fuel slightly more than 5 gph, so after 3 hrs or so you'll be looking for somewhere to gas up, unless you're willing to fly at a more economical rpm. The late start had diminished my interest in economy cruise performance though. The longest leg I flew was about 3.3 hrs from Yerington to Kingman. The seats proved to be very comfortable, maybe not up to the legendary RV-10 standards, but after three hours I was still feeling pretty good. The view is outstanding, so the RV-12 encourages you to fly lower than in other airplanes whose view ahead and down is not so good.

I hadn't been to the show for a couple of years, but it seemed pretty busy, with a good amount of fly-in traffic. The fly-in seems to have settled into Casa Grande for the long haul, and this year we were spared any high winds and dust storms.

There were plenty of RVs, of course, and with the RV-12 there, we had at least one of every RV type from the RV-3 on. I gave a couple of well-attended presentations on the RV-12, and four demo flights, as well as talking to a pretty steady stream of interested visitors. Thanks are due to my brother Adrian who helped out at the tent. I brought about 40 lbs of catalogs, flyers and other Van's propaganda in the baggage compartment and it was all gone by Saturday afternoon. I managed a brief look at the almost completed Savor tandem high-wing. It's always interesting to see a unique airplane among the "usual suspects" lined up on the ramp.



On the way back, I got more of a chance to experience the RV-12 ride in turbulence, and found it quite acceptable. The winds around Las Vegas were blowing a fairly gusty 35 knots or so, and bounced me around over the mountains, though luckily for me they more or less down the runway at Jean when I landed there to refuel. Perhaps because the airplane hits the bumps at a slower speed than the faster RVs, the jolts seem a little softer. The Dynon autopilot coped well with turbulence also - though as with most APs it paid to disconnect the altitude hold function to stop the airspeed and prop rpm from varying too much. I'm an unashamed autopilot advocate for anyone who flies cross-country frequently. The AP will get you there faster and more economically than hand flying because it will hold the course more accurately, plus you'll arrive less fatigued, unless you spend the flight working hard on your laptop...

The XM weather on the Garmin 496 also proved useful on this trip. Flying at lower altitudes in the wilds of Nevada it can be difficult or impossible to get hold of Flight Watch, and the XM allowed me to keep tabs on the rainy weather back home as I returned. It's also useful for that bane of today's pilots, the pop-up TFR. Wickenburg airport had been closed due to an emergency F-16 landing, and although I was aware of this already, the red ring surrounding the airport on the moving map was a handy reminder. N412RV is now "fully loaded", with all the electric options - I had two EFIS screens, radios, autopilot servos, nav, strobe and landing lights blazing away, or at least bathing the cabin in a cozy electronic glow as the sun set.

I left Casa Grande about 8.30 and landed at Aurora in the dark at 6:30 after about the same time in the air as on the way down - not bad for about 950 nm. Although the RV-12 is not designed as a long distance touring machine, it's certainly one in which trips like this are not only possible, but enjoyable.

SAFETY THOUGHTS

COMPLACENCY IN THE COCKPIT

Van

By now, everyone is all too familiar with details of the airline flight which overflew its destination, presumably because of pilot distraction or inattention. It's easy to make critical assessments of those pilots' performance, so we're not going to elaborate on those details or render judgment.

What is more important, and not as easy to do, is to use this incident as a stimulus to assess ourselves.

Most of us are now flying airplanes equipped with autopilots, or at least GPS navigation systems. Compared with flying in the "old days", these gadgets dramatically reduce the pilot workload and should enhance safety. But, how often are we also guilty of "automation complacency" or whatever term you wish to use to describe the tendency to become lazy in the cockpit. It's very easy to sit back and let the autopilot/GPS team fly and navigate the plane while we have more time to monitor navigation, engine management, and fuel management details. It's also very easy to ignore these routine details and drift along, not really aware within 50 miles of where we are at the moment, or of the fuel tank about to hit empty as the autopilot struggles to hold the fuel-heavy wing up.

You get the picture! Let's use this bad example of commercial airmanship to alert ourselves of our own shortcomings. We can all put our cockpit time to better use to improve our situation awareness and safety.

LOW PASSES

Ken Scott

You can't have much more fun than making a low pass over a friend's place, or the local airport. The ground goes ripping by, then there's the exultation of a soaring pull-up at the end, going up, up, up, rolling 90 degrees at the top and looking over your shoulder at those little pink dots of upturned faces on the ground. It's a great feeling.

It's not so great if you die doing it.

The first fatal accident I actually saw was exactly this — a fast pass, a steep pull-up, a spin off the top, an impact I actually felt in my feet even though I was more than 1/4 mile away. I've never forgotten the sound, although I wish I could.

In the following years, I've lost count of the accidents and frightening stories I've heard, all as the result of "irrational exuberance" and low passes. Ask any airplane or helicopter pilot about flying low and fast. They'll tell you all about birds, wires and power lines. And they won't be smiling when they do it.

The RV-9A below found a wire the hard way. It made it home with no rudder, half a vertical stabilizer and the vertical stab spar waving in the breeze. No information on the condition of the seat cushions. The pilot was not injured.

Think about this picture the next time you're tempted to make that low pass...



RV-12S LEAVE THE NEST



Top: Ex-Navy pilot Richard Gaines and his team.

Center left: Big guy, big grin. Marty Santic just flew his new RV-12 for the first time. Note John Bender's RV-12 in the background.

Center right: A better view of John Bender's RV-12.

Lower right: Jerry Lynch was the first to license his RV-12 as Experimental Amateur-Built..

There are thirteen RV-12s flying in mid-November. We expect that to double by the new year.