



RVator's Log

Newsletter of the Twin Cities RV Builder's Group

December 2005

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Upcoming Events...

December 10: MN Wing December meeting. Take a tour of the RV-10. 10am with coffee and donuts. See the back page for details.

Sometime this winter: The next class of Tom Berge's RV University. See page 7 on how to sign up.

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**Minnesota Wing
Van's Air Force**

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Shop Notes

-Doug



The very first week we moved to Minnesota from Ohio in 1988, we flew our Cessna 180 up to Shell Lake, Wisconsin for a pancake breakfast. We didn't know anyone there but we parked near another Cessna 180 and I struck up a conversation with the pilot figuring us macho C-180 pilots always had a lot in common. The owner was Tom Irlbeck and we have been friends ever since.

That day Tom introduced me to his brother Paul who had flown his new RV-4 to the fly-in as well. For several years I had this suppressed desire to build an RV and now that I had an up close look at a real, live flying RV-4, I was hooked. Paul had just finished his -4 with his building partner Elden Lampretch and they were having a ball.

Elden is still flying that RV-4 based out of Lake Elmo. As you all know, Paul has gone on to make a living providing builder's assistance to a long line of RVs, mostly RV-8s. So last year, Paul and Elden decided to pool their resources again and thus started the first local RV-10 project. Their objective was to build a sophisticated 4-place, IFR, traveling machine with all the latest in electronic goodies.

So we were all pretty excited when brother Tom made the first flight from Lake Elmo. Several of our local RV'ers were on hand and everything went off without a hitch. Tom logged about an hour that day and reported a docile, good performer, with great low speed handling.

Tom was about to leave for Florida for the winter so Paul and Elden asked if I would begin to fly the -10 and help fly off the test hours. I really didn't need to get my arm twisted a whole lot. What a great chance to fly Van's latest design and play with all of those cool avionics (you know they are really great when they come with 3" thick instruction manuals!!)

The RV-10 is a big step up from my hot-rod RV-4. It's a monster by comparison and is best compared to any 4-place heavy single (Bonanza, C-210, etc). It sits high on the gear (like a RV-9 on steroids) and the wing seems enormous. Actually the span is less than a comparable Cessna or Beech, but it does have a lot of wing ready to crank out lots of lift. The cabin is as roomy as they say. Width is probably a little better than a Cessna 210 and much wider than a Bonanza. Rear seat room is of Checker cab dimensions. With the front seat forward, the Shaq might even be able to stretch out in the rear cabin.

N5122RV sports one of those panels to dream of. Two Chelton EFIS displays predominate the left side of the flight deck. I have yet to begin to even scratch the surface as to the capability of these boxes. Moving maps, air data computers, traffic advisories, satellite weather, terrain warning.... You name it and the Cheltons can do it. The right side sports a Dynon EFIS unit to provide the co-pilot with something to look at and serve as a backup to the Chelton boxes.

As of this writing, there are still a few bugs to be worked out of the software that drives the digital gyro system. We have been fighting intermittent glitches in the attitude display and the manufacturer is working on a fix. But the Chelton units are impressive.

Power is a 260 horsepower IO-520 overhauled by Bolduc at Anoka County airport. Paul installed an Air Flow Performance fuel injection system and a new Hartzell blended airfoil prop. With my 150 pounds, there is a big surplus of power to say the least. My impressions...

Taxiing is just like an RV-7A. Forward visibility is probably the best I have ever seen since you sit up very high and have an amazing view over the nose. At the light weights I have been flying, acceleration is very quick. You do have to rotate the airplane off the ground with a pretty good pull on the stick (I'm sure that would be changed with a more aft CG). Climb out is pretty much the same as any other RV with a C/S prop... 120-130 mph IAS gives 1500 fpm rate of climb. The first thing you notice is that it doesn't quite handle as sprightly as an RV-4. And it is really not intended to. Ailerons and elevator are certainly heavier but you want that in a 4-place cross-country IFR traveling machine. One thing to keep in mind is that you have a big 6-cylinder engine that does gobble gas unless you manage the mixture. That is true in all large fuel injected engines. You can easily see 20 gph during climb unless you tweak the mixture control.



Brothers Tom and Paul Irlbeck after the successful first flight

I have done several TAS checks (and by the way, the Chelton EFIS system has a TAS readout that is dead on).

At 7500 MSL and 22" mp and 2350 rpm, TAS settles down at 171 knots. This is nearly identical to my RV-4 at the same altitude. Fuel flow can be leaned to around 11.5 gph. I have done a lot of stalls and this is where the RV-10 really shines. It hangs on like a Piper with plenty of stall buffet and a break around 51 mph flaps down.

Coming back into the pattern you do have to slow all the way to 100 mph to extend the flaps (same speed as all the RVs). Lots of elevator trim is required as you as you put out the flaps (again, this might change when not flying right on the forward CG limit as I have been). But that big wing is a good glider. Very little power is needed on final and I have flown a couple power off approaches. 80 mph IAS is just right and you can hold it off again like a Cessna 182 or similar model. I find you can hold off the nose wheel easily as well as a RV-7A and again, with folks in the rear seat, it would no doubt be even easier to land.

Yep, the RV-10 is just an RV-9A "heavy". As I get more experience in the airplane I should get a better handle on its capabilities. But for now, I'd say that Van has accomplished his goals in designing a practical "family" RV with all the capability of comparable factory-built aircraft. And he has already sold over 500 RV-10 kits. By this time next year, you'll likely see more and more of them on a ramp near you. *And BTW, Paul and Elden's RV-10 will be for sale after the test phase is completed. Here's your change if you can't wait to have one RIGHT NOW!*

Generating a Vortex!!

- Cliff Peterson, Park Rapids, MN

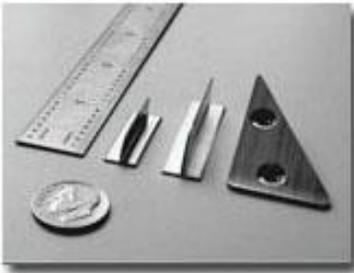
In my research for the installation of Vortex Generators on my RV-6 I reviewed several sources including an excellent article by Mike Busch on the AVweb site. Google also has several web sites for research. My objective was to reduce stall and landing speeds in the event of a forced landing or collision with one of the numerous four-legged critters that roam our private airstrip.

V.G.s are boundary layer control devices that energize the B.L. allowing the airfoil to operate at a higher angle of attack

without airflow separation moving aft the area at which laminar flow changes to turbulent flow.

True laminar flow wings provide lower drag at cruise but tend to have adverse stall characteristics. V.G.s reduce V_s speed with a minimal decrease in cruise speed providing a higher lift co-efficient. Computed V_a speed remains the same. V.G.s must be mounted at the boundary layer transition zone -- from laminar flow to turbulent flow. Too far forward they hasten this transition, to far aft and their effectiveness is compromised. They are machined from tee-shaped aluminum extrusion and applied with a two-part adhesive.

My after installation, unscientific test results:
IAS. stalls decreased by 5 knots and the RV mashes along



gradually turning left (aerodynamic or builders factor?) and losing altitude. I am unable to determine any loss in cruise airspeeds. On final for landing I now approach at a lower IAS with the same RPM to control sink rates that are

indigenous with relatively low aspect ratio wings. Runway rollouts have been reduced to some extent and as before each landing is an adventure.

Van commented on V.G.s in the first 1999 issue of the RVator-- "V.G.s are not a panacea but rather a sacrificial solution to some airflow problem". "They cause drag but enhance flow attachment". V.G.s are available for RVs from Micro Aerodynamics, Anacortes, WA., 800-677-2370 and Vetterman Exhaust, (605) 745-5932. Larry Vetterman stated that V.G.s on his RV-4 "reduced stall speeds by 10 MPH with no reduction in cruise speeds". To date, a \$400.00 expenditure that has met my expectations. For more information contact: Cliff Peterson, 218-732-8569

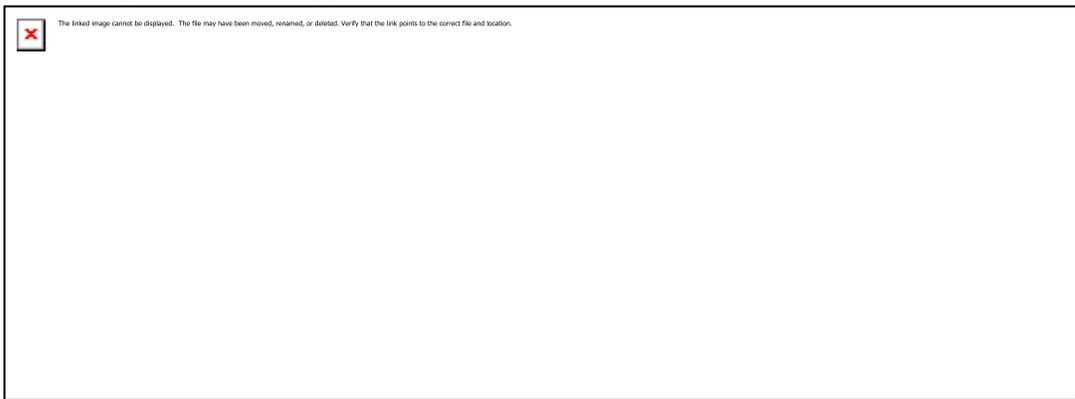
Panel Design and Fabrication

By Pete Howell

One of the greatest things about building an experimental is the ability to design the instrument panel of your dreams. You can go simple VFR, full-boat IFR, steam gauge, glass panel – limited only by your imagination (and your pocketbook!). I was finally to the point where it made sense to fabricate and install the panel for my RV-9A. I went thru a number of steps – these worked for me, and I thought I would share them.

Opinion and Idea Gathering - I talked with a number of pilots (RV and non-RV) to get ideas for my panel. I spoke to local pilots and guys over the Internet, the more, the better. I can almost guarantee no two opinions will be the same, but they will get you thinking, and before long you will have an idea of what you want. Everybody will

ask what your mission is. Mine was day/night VFR – with a possibility to upgrade



to IFR someday in the future. They will also ask what your budget is. The answer to that is not always as clear. I also attended a few fly-ins and took a picture of every RV panel I could. These were very valuable for seeing what “looked good” to me.

First Drafts - When I had an idea of what I liked, I started making some drafts. There is a great place on the Internet that makes this easy. Visit www.epanelbuilder.com and try out some designs. Just pick your panel and drag and drop instruments to get an idea of what you would like.



Mock-ups - When I had about 5 designs I liked, I started making a full-size mock-up I could try in the plane. Using my computer, I found head-on images of the instruments I was interested in and copied them into a Microsoft program called Visio. Visio will let you resize the pictures to life size and then print them out in color. I cut them out, and used 3M clear package tape to laminate them for durability. Next, I used 2-sided tape to stick them to the panel.

The next step I'll credit to Alex Peterson. It sounds a little goofy at first, but I made some major design changes based upon “mission simulation”. What this means is, sit in the cockpit, and act out how you would work each instrument in a normal flight. Tune the radio, ident the transponder, adjust the intercom volume, prime the engine and start it up. You get the picture. What do you reference the most when you fly? For me, it

is the GPS, the ASI and altimeter. Make sure they are right in front of you. When you place your mock-ups also look at the structure behind your panel... it can be cut away, but it is easier to try to work around it. OK- you have a tested mock-up that works for you – let's see if we can afford it.

Financial Planning - You have just decided that the best set up for you is the Whiz-bang Avionics 3-glass panel suite with the integrated Astro 2000 engine monitor. Before you start cutting openings for your dream panel, take a few minutes to build a spreadsheet that will add up the cost of your new toys. I was shocked to see what some of my "reasonable" designs cost. Tom Berge tells us "It's only money, when you run out, just print more!" but for some of us, the press is not the well-oiled machine it needs to be..... When you have design you like and you feel you can afford, it is time to get serious about cutting metal.

Final Design - I planned from the start to have my panel laser cut, rather than use a fly-cutter or punch to create the instrument holes. The laser cutter is driven by a CAD (computer aided design) file that I had to create. I started off by again using Visio to lay out the panel and dimension it from a 0,0 point. I have Visio templates that I would be happy to send you if you are interested. The laser cutting houses I spoke with required an AutoCAD .dxf file to interface with their machines. I was able buy a friend lunch and have him create the file for me on his laptop. The laser shops can create this file for you for an additional fee.

Getting it Done - I called several laser houses to get quotes to cut my panel. Two came back with reasonable quotes. Don Walsh at Laser One in St Paul www.laseroneinc.com was very helpful, showed the most interest in the project, and was close to home. Don charged me \$125 – not cheap, but it came out perfect the first time.



AIRCRAFT PAINTING – THE JOURNEY

by Jim Lenzmeier – RV-6A – N146JL

I am writing to let you know what your in for if you choose to paint your RV yourself. By no means is this a small undertaking. To start things off you need an area large enough to fit your aircraft parts into and still have enough room to move around it comfortably. Note, you will have the spray gun hose and a hose from the breathing system hanging on you at all times. A double car garage size area is about right. A plastic tent is then built using whatever means you can come up with. 2x4's or 2x2's will work just fine. You will need lots of lights. The 4 foot shop lights are great. Place them all around, in the ceiling and on the walls if possible. Make sure the lights are on the outside of the plastic tent. You will need a fan to vent the space. Use a blower with the motor outside of the airflow so no fumes come in contact with the motor. You will need to provide filtered openings around the enclosure to let fresh filtered air into the space. Don't forget to build a door that is big enough to get your parts in and out. You will need to build a mixing table inside to mix paint. A 2' x 4' size will do. If you don't want colorful floor designs you will need to keep it wet or cover it with say rosin paper. If you wet it down make sure you have a plan to push it out somewhere.

Now you should have all your parts made so you can just paint and paint and paint. Actually, it seems that having your paint mixed in a rather short time frame will help keep the color match as exact as possible. Each gallon is mixed one at a time. I used the Valspar paint system. I like the products and the help I am got with technical questions.

Taking my flying RV apart was really hard but I was just getting tired of the ratty aluminum look with primers of different colors everywhere. I found that the fiberglass parts are by far the hardest to do. First there are those pesky pinholes. There are about a million per square inch at least. I used a glazing compound from the auto paint store. I worked it in to the pinholes and let it dry. This is a quick process and you can start wet sanding almost right away. When I say wet sanding I mean having running water over the part as you sand. This seems to activate the sand paper. Actually it allows the paper to flush out the particles of what ever you are sanding thus keeping the paper from clogging. I started with 240 grit to get things going and worked on down to 320, and then to 400 for the finish. This 400 gives the primer something to grip. NOW, I washed off the piece with hot water, dried and tack raged the surface. Next I washed it down with prep wash and wiped it dry with a lint free cloth... The last two wipe downs are done in the spray area with fresh air mask on.

Now it is time to mix the primer. I am using the VP 50 epoxy primer that is a 4.1.2 mix ratio. When mixing and spraying an outside air source is to be used. A "Hobby Air" system is

great. You cannot breathe these fumes! I used mixing tubs from the auto supply store and one time use is all you get so as

to keep your paint free of contaminants. I also used a HVLP spray gun system and found it to be easy to use. As you pour the paint into the spray can use a filter funnel to catch junk that clogs gun tips. Now spray the part. I found that spraying the edges that are hard to get first kept me from getting over spray in the finished areas. Applying a coat thick enough to flow out and yet not too much as to run or sag is the part you have to learn. Holding the gun about 8" to 10" away from the part and following the contour is tricky. Start the gun spraying before you get to the part and stop it after you leave the part taking care not to start or stop on the part. You will know right away as you watch a run develop. All is not lost if this happens! You just leave the part dry and sand the run down with 400 wet/dry paper. Clean the part as before and spray it again. Now you have the primer on. At this point I looked a final time for those pesky pinholes. If I found any I would simply fill them in with the glazing putty I talked about earlier and sand that smooth. Now I cleaned the part once more in preparation for the color coat.

With Valspar paints comes a booklet that tells you how much time is needed before you can apply the color coat. I used the Omega 840 series color paint and I did not use a clear coat over it. The paint has a high gloss as is. If you want it flat you have to add a flattening agent and then clear coats. I am looking to make it as light as possible on the aircraft. It is time to mix paint. The color is now mixed and loaded into the gun and the part is ready. Let's do it. Apply a nice wet coat to the part and wait the appropriate amount of time, flash time, as called out in the booklet. Now back in and apply a second wet coat being careful not to start a run and there you go. Leave the booth with out creating a dust storm and let the part dry.



Jim and Diane Lenzmeier at Duluth with their extremely blue RV-6A

After spraying, you have to clean your spray gun out with solvents. Be careful to dispose of the waste at a toxic waste disposal site. You will have left over paint mix that you just have to dump in a can. The pot life is somewhat short once it is mixed. There are many more little details I have not mentioned. These are the highlights and are meant to give you an idea of just what you're getting your self into. This is NOT a step-by-step procedure at all. If you would like more details call me.

As with every part of the aircraft building process, there is a learning curve and then it becomes easier hopefully before you finish painting your aircraft. If this sounds like a lot of work that you just don't want to get into then hire it out. Painting takes a lot of time and patience, heavy on the patience. Well yea, a lot of time too! My time was 400 hours over 88 days. It is a great feeling when you're done and all that is left is flying.

A Flying Lesson

by John Daniels, Casper, WY

I am going to relate an experience a friend of mine and myself had 2 years ago. I wasn't going to repeat this to anyone but I thought it might be of interest to the RV community and could possibly save a life.

A friend of mine, Tim, from Douglas, WY had been looking to buy a 2 seat ultralight to give lessons in. He had gotten his ultralight instructors rating and had some students lined up, but needed a plane. He had been in contact with a gentleman from Dallas, TX who had a 2 seat Kolb for sale. Tim told me that the price seemed reasonable and he asked if I would fly him down so he could look it over. Now Tim knows I am always looking for an excuse to fly, so he was sure I wouldn't say no. Tim by the way is a private pilot with 4000 plus hours and has owned quite a few planes, including the Hiperbipe that he owned at the time. We would have flown his plane but if he bought the Kolb, he planned on flying it back to Douglas.

I had completed my RV-6 the previous year and had put 175 hours on her since her first flight. I hadn't had any problems with the engine or airframe, and it performed as Van said it would. I am not a high time pilot, just passing the 300 hour mark before we took off for Dallas.

The Friday we left it was clear, unlimited visibility, with about 10 knot NW wind. This weather was predicted fine all the way to Dallas and was told it would hold thru Sunday. I left Casper at 8:00 am, flew to Douglas and picked up Tim and we were back in the air by 9:30 am. Air was smooth and at 9500 ft we picked up a 30 mph tailwind. We were cruising across the ground at between 225 and 235 mph. This lasted all the way to Oklahoma. We landed at Weatherford for fuel and food at 12:30 pm MT. People there were very nice and let us have

the courtesy car to run into town and fill our stomachs. We were back in the air by 1:45 MT and again we picked up a slight tailwind.

As we approached the Dallas area, I told Tim to keep a look out for other aircraft as I had already spotted 4 or 5 that were within a couple miles of us. He was already ahead of me as he too had been watching out for other aircraft. The actual airport we were looking for was a little airstrip about 30 miles east of Dallas. In this area of Texas there are private strips everywhere. The GPS told me where the airport was but we were spotting private strips everywhere within 2 to 3 miles of our destination. We finally arrived at 3:00 pm MT.

Tim met with the gentleman that had the Kolb. He showed us the plane, pointing out the good and bad, then the 2 of them went for a flight. Tim wanted some time to think over the purchase. Later that night Tim told me that he didn't think it was the right plane for him. We got a ride into Henderson that night by a nice gentleman who was at the airport flying his powered chute. He was also nice enough to pick us up in the morning and take us back out to the airport. For his efforts we gave him a ride in my RV as he would not take any money for his time. Well we finally took off about 8:30 am and made our way back for food and fuel at Weatherford. Up to this point the plane had been performing great. At this lower altitude I was finally seeing climb rates and airspeeds I have only heard others talk about.

While departing Weatherford the engine hiccupped once. Tim and I looked at each other and he asked what that was? I said I didn't know. The engine continued to run smooth, the engine monitor didn't show anything to be concerned about, everything in the green. We both shook it off and we continued on. Tim said he was going to take a nap and proceeded to fall asleep. About 1 hour into the flight I noticed the CHT were rising, not critical, 355 F. I richened the mixture a little and the temps came down. My hottest cylinder usually runs about 315 to 320 F. I was running 2500 RPM, 20 MP, cruising at 8500 FT. I have affixed pitch wood prop that is perfectly suited for the O-360 F1A6 I have in my plane. I kept an eye on the CHT and slowly it started to climb back up. I would again richen the mixture and CHT's would come back down. Outside temp was about 85 F. This continued until the engine began to run rough when the CHT climbed to 355 to 360 F. If I richened the mixture the problem would go away. If I kept the mixture where it was at and turned on the electric fuel pump the problem would go away- for a while. Time finally woke up and I explained the situation to him. We were over north central Colorado by now and we talked about landing to see what the problem was. The problem was that by now I had the electric fuel pump running constantly, mixture was full rich and I was slowly having to reduce RPM's. We were still carrying 2400 RPM's and our cruise speed was only down to 165. I usually cruise at 180 MPH.

We were now over Wyoming and only about 50 minutes from Douglas. Tim suggested I turn to the west and get over I-25, as

the terrain starts to get rougher the farther we get to Douglas. Again we talked about landing at the nearest airport and checking things out. I told Tim that if we land we are probably not going to takeoff today, unless we get lucky and find the problem. We were still in the air, plenty of daylight, plenty of fuel (reduced throttle) and we were still making 145 mph across the ground. RPM's were now down to 2200. Of course we were constantly aware of our position and were looking for fields and roads to land on if we had an engine failure. Needless to say we made it to Douglas and landed without incident.

At Tim's hanger we removed the cowl and I removed the carburetor. Tim checked the gascalator, nothing. I removed the brass screen from the fuel intake at the carburetor and found the problem. There was a circular piece of cloth right at the fuel inlet to the carb. I knocked this out of the screen, when I touched it I found it wasn't cloth but fine grains of dust, lint, etc. not sure what it was. It had blocked the opening to the carb enough to actually distort the screen by 1/4 inch. I am sure if it hadn't been for the electric fuel pump we would have had to set down an hour or 2 earlier.

Nothing was found in the gascalator or the fuel tanks. I had purchased the engine used but had not taken the time to tear into the carb. Of course I had flown the plane more than 175 hours until this problem arose. We cleaned the carb screen, put everything back together and I made a test flight around the airport at Douglas. Everything was fine so I headed back to Casper-25minutes, and landed without further incident.

The next day I went over the fuel system but could find nothing wrong. Maybe I picked up something during the fuel stop at Weatherford, I don't know. Maybe this will encourage those that haven't looked at this screen to do so know. Those that have bought a used engine may want to also clean this screen.

Tim and I wonder if we made the right choice in continuing on. There is no doubt that it would have been ok to land and check things out. If circumstances had been different, such as low on fuel, weather deteriorating, etc. I am sure we would have found the nearest airport and landed. I know there are those of you out there that think we were insane for continuing on, and that is your choice. I am just writing this to give us all something to reflect upon.

Tailwheel or Trigear?

*By Tom Berge
RV6 - N69TB, RV7A - N369TB*

Recently I read a posting about the pros and cons of RV tailwheel versus trigear. The posting was something on the order of "what fits my type of flying?" Most all the responses were dripping with so much ego, that I'm surprised anyone

flying would not be flying a taildragger. Having flown both versions

of RV's, I thought I would present some thoughts on the subject.

I earned my private license flying a Cessna 152. After that, I did some 172 time as well as Tomahawk time. At about 95 hours total time I started the transition to tailwheel aircraft in preparation for the RV6 I was building. I continued to fly Cessna's, Piper's and Citabria's until around 170 hours at which time my transition to the RV6 started. This was way back in 1991. I continued to fly the RV6 for the next twelve years accumulating 1600 hours of RV6 tailwheel time. Not bad! Never had a landing issue in the RV. I did, however, manage to groundloop a Citabria once. Kind of a helpless feeling as the whole thing starts to go around.

Now I am not saying there weren't any scary moments during those many hours. I did land with direct 20kt winds. It was kind of stupid as I look back on it now. I should have found a better runway during those times. I found the RV6 to be a very easy tailwheel aircraft to handle on the ground. Takeoffs were a non-event due to the short time spent doing them. Feed in the power, raise the tail, pull back on the stick and your airborne. Nothing to it. Most any pilot should be able to handle that. Unfortunately, most trigear pilots have trouble with this.

During the early '90s, I helped out other RV builders with transition training in my RV6. At that time there weren't any RV trainers available and transitions were done with those of us who were willing. My experience showed that trigear pilots had a tendency to take a "wait and see" approach to the directional control of tailwheel aircraft. The thought was "let's see if the thing keeps going towards the sidelines". Yes, it will, and at a faster and faster rate. The trick was to recognize the earliest hint of movement and stop it at once. Another observation was the tendency to overcontrol once the movement was accepted as real. Landings had the same issues except that they were longer in duration which increased the exposure to groundlooping. As I mentioned earlier, I had some scary landings, but none as scary as when I was transitioning other pilots. I'm sure my life insurance agent would have fired me on the spot if he knew what I was doing.

As you can see, I have plenty of tailwheel time to base my opinions on. In 2003, I flew my new RV7A. What an outstanding ride! Having all that tailwheel time certainly smoothed out my trigear landings. No wait and see issues here. These things are so easy to land. During my tailwheel years, there was always that concern in the back of my mind about the wind. Was it too strong, too much crosswind, etc. I know there were times that I stayed on the ground because the conditions were just not worth the risk. And yes, I know there are pilots out there who claim to land in 30 or 40kt crosswinds. Just read the posts. There are always some. Even

if they did, is it worth the risk? No matter the skill of the pilot, the CG is still behind the main gear and it *wants* to be out in

front. There is a certain point at which there simply is not enough control to stop the groundloop. Period! Airliners are all trigear, as are military planes with the exception of the U2. The insurance industry penalizes tailwheel aircraft and they should know the statistics. There *is* risk. With proper training and currency, the risks can be minimized. I believe having tailwheel time makes for better ground handling skills. I still pay attention to the wind and pay the respect it is due. My threshold has increased to a higher level and as a result, stronger winds don't concern me as much. The risk of ground handling issues is less and my safety has been enhanced. Most important of all, my wife enjoys the trigear much more than the tailwheel and now wants to learn how to land it. Please don't tell my life insurance agent!

To those who believe a trigear can't be groundlooped, here is a story to make you think twice. During the early '90s, I was tying down my RV6 at the Sandpoint, Idaho airport. A Cessna 172 had landed with a less than 10kt direct crosswind and the pilot had quit flying during the rollout. The wind lifted the upwind wing which caused the plane to swerve sharply right towards the tie down area. His wing went over the top of several tails before swerving back out towards the runway. Then through the ditch and up onto the taxiway, well down stream. I wonder to this day if his knees have stopped shaking. Had his wing tip caught the ground, the result would have been either a groundloop, or a cartwheel. *And it was close!*

To those who believe if you can't fly a tailwheel, you shouldn't be flying at all, "there are those who have, and those who will....."

RV University, Winter Semester??

By Tom Berge

During the past few years I have been putting on small topic oriented classes relating to building RV's. Topics taught so far include the always fun fiberglass and electrical systems. With winter approaching, I thought another class would be in order and have come up with a couple of ideas. Here are two possible topics: First, a basic riveting class for new builders or those contemplating starting an RV project. Second, for the more advanced builders, a question and answer session on the subject of firewall forward may be helpful. For this we could use my RV-7A and maybe another representative RV. Seeing an installation up close may help some of you out there decide how to complete these systems and keep your project moving towards completion.

Any interest? Please email either me at n69tb@comcast.net or Doug Weiler at dcw@mnwing.org (or call Doug at 651-398-

1184) to let us know your interest and subject (riveting or FWF) and we will set up the classes.

Minnesota Wing – Van's Air Force
65 15th Ave. SW
New Brighton, MN 55112-3454

First Class

***MN Wing - December Meeting
RV-10 Grand Tour***

**Sat. December 10, 2005, 10:00 am
Paul Hove and Doug Weiler's Hangar
Lake Elmo Airport, MN**

Admit it... your raggedity RV-3 is a family embarrassment. You know the one... clapped-out engine, hand carved wood prop, Narco Superhomer navcom. Time for a new project! Come see Van's latest and greatest. Paul Irlbeck and Elden Lampretch will have their brand new RV-10 on display and Paul will relate his building experience of this new high-tech kit. And.... for all you youngsters, I may even explain what is a Narco Superhomer!!!

Plus, time for Q & A's and also we'll plan for our next RV University class.

Coffee, bagels, donuts, juice and free BTUs for your winter comfort.

Driving directions: Take I-94 east towards Wisconsin. Go north on Manning Avenue (County road 15). Three miles north to Lake Elmo Airport. Enter at the north entrance (before the RR tracks). Go east past Valter's Aviation to Mooney Lane. Hangar is 41C on the left.

Phones: hangar: 651-779-0747, Doug's cell: