RVator's Log

Newsletter of the Twin Cities RV Builder's Group

March 2010

In this issue…

* * * * * *

Upcoming Events

March 27: Like RVs? Like cool pictures of RVs (or anything with wings). Our guest speaker will be aviation photographer Max Haynes. Get some tips from one of the best in the business. Also we'll hear from Full Motion Flight Training and learn about the latest in high-tech Cirrus flight training. Join us at Key Air – Anoka. Coffee and goodies as always. Details on the back.

* * * * * *

Minnesota Wing
Van's Air Force

Pres: Doug Weiler, 651-398-1184, dcw@mnwing.org

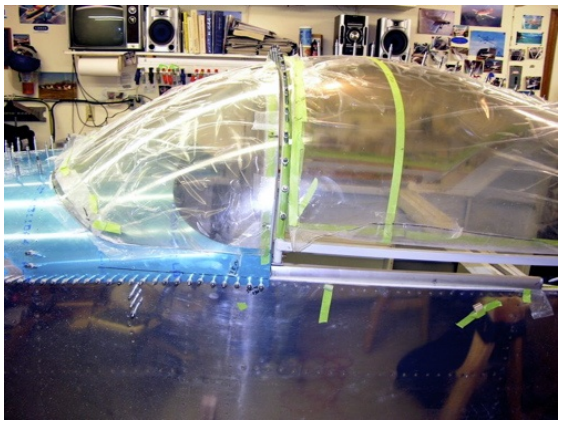
Sec/Treas: Jim Lenzmeier, 651-633-8488, jlenzmer@msn.com

Shop Notes

-Doug

If you ask any RV builder what was the most "trying" aspect of the building process, I can just about guarantee two of the most likely answers: the cowling and/or the canopy. When I built my RV-4, rasslin' with both of these challenges was not a pretty sight or a pleasant experience. My cowling started out OK, but it soon became apparent that when it came time to mating the top and bottom halves, this was not going to work. They were about ¼ out of whack at the point right behind the spinner. I naively thought I could do a lot of filling and make it look "OK" but then I had an impossible time trying to get the cowl hinges to line up (note to self: next time call Tom Berge and pay him ANYTHING to do the job). It got so bad I decided that this cowl was heading for the dumpster (and that is where it ended up). By that time Van had come out with the green epoxy cowl that actually fit so attempt #2 came out OK (I still couldn't figure this hinge thing so ended using CamLoks).

Initially the canopy went better except for one little, teeny crack emanating from one of the holes. I stopped drilled it with a small diameter bit and figured no one would notice. A year after making the first flight and just before going to the paint shop on a VERY cold winter day, that little teeny crack let loose and with a resounding "snap" and grew to about 8 inches. Three months of work later, I had a new canopy on the airplane!!



Work on the new RV-7 had been humming along pretty well up to this December when I decided it was time to do the canopy. I had decided long ago this would be a slider since I think they look cool. I had a couple examples nearby to contemplate: both Bernie Weiss and Pete Howell had glued theirs to the canopy frame (I decided to stay with tried and true rivets) and had fabricated the rear canopy skirt out of fiberglass. Alex Peterson is of the old school and used rivets and succeeded in making a great fitting rear skirt out of aluminum. I had expected my basic canopy frame to require all sorts of rompin' and stompin' to get it to fit, but it was about 90% perfect right out of the box (I think I was just lucky). My plan for the rear skirt was to try aluminum first and wimp out to fiberglass only after hitting a brick wall (which was expected).

Fortunately there is an unbelievable amount of instructions, photos, web sites, forums, and opinions on the Internet on how to build your canopy. Actually everything went along pretty well until I got to the rear canopy skirt. I had carefully, so carefully, trimmed and cut the canopy (I borrowed Peter Fruehling's Roto-Zip tool with a 3"inch cutting wheel… works super… Home Depot has 'em). The side skirts when on pretty well also (a little challenging at the aft rear sides, but doable).

When I got to the aluminum aft canopy skirts, things bogged down. I referred to a half-dozen websites I had downloaded and tried all sorts of different techniques of bending, stretching, stroking, and cajoling those stubborn pieces of aluminum. I finally found a technique off of someone's website that said to carefully work and bend them along a line parallel to the longitudinal axis of the fuselage using a 4 diameter piece of PVC pipe (I had been using my knee). Wow… it was now real close. I got it down to about a 3/16" gap at the lower aft corners, after 25 hours of fighting (I ended up with more than 150 hours into the canopy project). I decided not to rivet anything together right now. I removed all the pieces and put them aside until I have all the electrical and instrument panel work finished, the engine installed, and the top skin forward of the panel riveted in place. Then I'll track down a sheet metal expert and see if I can get that last little gap taken care of.

* * * * * * * *

N789PH – Life at 600 hours

-Pete Howell

Wow, it has been quite a journey. 600 hrs in 3 years and 4 months! Not bad. What have we done? Where have we been? Has it been fun along the way?

1) Lots of things!
2) Lots of places!
3) Oh, yeah Baby!

Before you fly, you get to build – about 3 years for me, and really 3 of the best years of my life. Being a Type "A" guy, I knew what I was going to be doing every free minute and I loved it (except maybe the canopy!). Solving problems everyday and seeing the plane come together was a huge thrill for me. I also enjoyed meeting new people and learning from them all. Doug, Alex and Tom answered all my dumb questions and still speak to me even today!

Doug took her up for the first flight and it flew pretty well (didn't crash!). We needed to chase a heavy wing, and found raising an aileron worked just swell. Some dumb guy (me) also wired the electric trim backwards, but that was easily fixed. The rings seated in about 6hrs, and it has run great ever since.

Peter Fruehling photo

We flew test cards for 40 lonely hours and found she flew just great – no bad habits at all. The stall was docile and it was even easy for a hack like me to land her. We found she can tool around on 3.2 GPH or go screaming fast and burn alarming amounts of fuel. With the help of Alex, we found a few places the carb runs lean o' peak just great and began to brag about how little fuel we can use.

Peter Fruehling photo

Soon we were out of the box and going places. We went to EAU and Superior with the guys for food, talking airplanes and politics along the way. Grandmas became very happy when we would show up in Ames, IA or South Bend, IN with a grandkid in tow.

Trips with the kids became very special – I realize that more now that the twins will be leaving for college in a year. Ryan and I took the first really long trip to Big Sky. He got to fly fish with his uncle for the very first time. On that trip, it hit me at 10,000ft over eastern Montana just how cool it was to be flying across the country in a plane I built in the garage. Ryan and I also used 9PH to go to baseball tournaments and to drop

him off with buddies in northern Wisconsin to go fishing. – 7 hrs in the car or 1.5 hrs in the RV…..not much of a choice!

Megs and I took day trips to Milwaukee to see the Art Museum and the Calatrava Bridge and to South Bend for the 4th of July. No way to do that in a car. Kate and I flew all the time, with the highlight being a day trip to St. Louis – she got to see the Arch (my favorite monument) for the first time. Kate calls the RV her personal airline. I hope she gets her PPL in this plane someday.

Trips with the wife have been great, too. Andi and I have been to KC to see the Twins play and have a BBQ dinner in less than a day – we met some great RV guys in KC along the way that treated us just like family – we plan to return this year.

We also took 9PH into the mountains of Colorado for long weekends in Steamboat, twice! Both times getting there was a fun adventure dodging weather, but it forced us to find great little places to eat in Chadron, NE and Casper, WY. Coming home from Steamboat– we got up high, leaned her out and made it nonstop – both times. We got some great pics along the way (thanks to my photo mentor Peter!)

I have flown neighbors to Omaha and Madison to visit family, because they are great people, and just because I can. It is fun to fly people for the first time and see their reactions. For the most part, we operated this contraption like a car. Just get in and go, except it goes 170mph, gets 28mpg and is way more fun to boot!

9PH has been a great traveling machine. On tap this summer: Tennessee to see cousins, North Carolina to see friends, and Oregon to see my brother. Several college visits will be thrown in as well.

In 2009, I started flying dogs for a local rescue group. This has been rewarding and a lot of fun. My dad was a pilot and vet – I hope he would have approved.

We had fun developing and testing new airplane toys, too. APRS tracking, LED lighting, and HID lighting have all proven to be nice additions and make 9PH a little unique. We made a home brew plenum for the O-320 one weekend. We never gained the hoped for 10 knots, but we had fun in the process. Hopefully sharing these ideas has made the hobby a bit safer and more enjoyable for others as well.

Have there been some speed bumps? Sure. The nose wheel SB was a pain in posterior, but Alex and I did it together, and have a music video on You Tube to show for it. We had a frustrating seeping tank cover gasket that took a while to fix for good. We had a bad connector in the transponder antenna line that proved vexing. I remember how happy the controller at Anoka was when I finally got it fixed – he knew I was chasing it for days.

One night I got some trash in the carb that led to an anxious, but not too exciting, landing in Rush City. Bernie came late that night to pick me up, as my wife was out of town. He and Alex flew up the next day and helped me fix it, too. It is great to have the RV cavalry covering your back!

There is a SB out on my ECI cylinders – I have to do compression checks at each oil change. It is a pain, but not all that bad. I consider it a small price to pay to keep this fun machine in the air.

What has been the best part about the 600 hours? Without question, the people we met along the way. My best friends in the local RV club are my best friends overall.

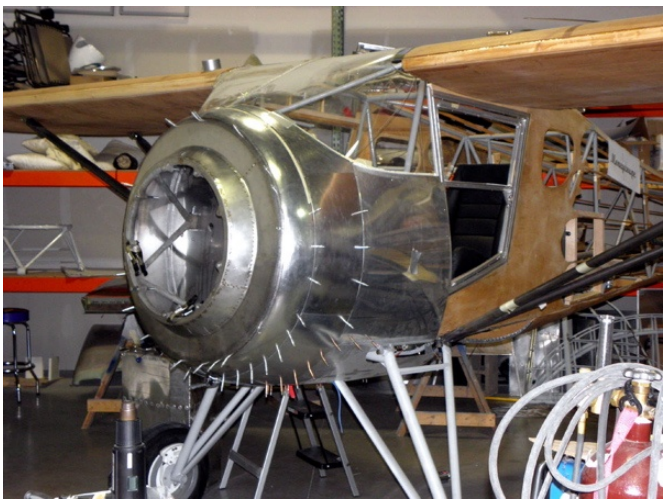
I have buddies all over the country that I have helped and that have helped me. I correspond with RV guys in Iceland and Australia and hope to visit them someday. I've been invited to Reno and plan to go one of these years.

What's not to like – it has been a great journey, with more chapters to be written! Let's see, I'd better start saving for that overhaul……..Get started….work hard…enjoy the ride!

Dynamat – Super Sound Masher

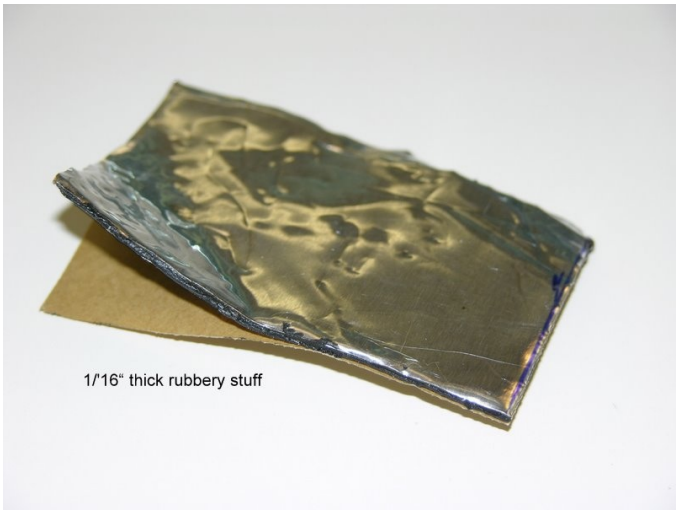
-Doug Weiler

In January I ventured down to SteinAir to check on how my avionics stack was coming along (I reminded myself to show restraint into this most- renowned of avionics super stores!) Mike Hilger was steadily working on my Garmin stuff (nice to have a pro doing all that tedious wiring… I guarantee I would mess it up). The "down" economy apparently bypassed Stein and his guys. They are busy as bees with a 5-month backlog on new instrument panels.



Wandering around the shop, Jed Gregerson escorted me out back to Stein's skunk works to show me the Mullicoupe project. This is a rather unique machine that is a cross between the famous Mr. Mulligan racer of the 30's and a hot-rod Monocoupe of the same era. It is a 100% homebuilt fabricated from a set of plans. Stein's Mullicoupe project manager is Todd Sutton and I stood in awe at the metal work he has done. Obviously a master of the English wheel, I marveled at beautifully formed fairings, panels, and a cowling that was disgustingly perfect. I think I need to consult with Todd when I reassemble my canopy skirt!

Also in the back shop was an RV-9 kit that Jed is working on before work hours. It is probably about 50% finished and will be Stein's latest RV. But what caught my eye was a unique firewall insulation material that Jed had applied to the inside of the cabin. The product is commercially known as Dynamat and is used for insulating surrounding automotive audio installations. It is only about 1/16" thick with an aluminum foil front, sticky on the back, and in between is a very dense rubbery material.



Jed said that they used it on their previous RV-7 and the results were amazing. There was a SIGNIGICANT improvement in sound and vibration levels compared to other RVs they have built (BTW, this is their 4th RV project). At first glance it appears rather heavy but when I got home, I did some research on Dynamat's website. The version Jed used is called Dynamat Extreme and weighs .44 pounds per square foot. According to their specs it suppresses almost half the sound passing through a thin steel sheet. I did a quick and dirty measurement of my firewall and figured it would add about 3 pounds to the airplane. I had intended to use 3M's 1/4 –inch aluminum/foam/sticky-back product that is lighter but I thought I'd order some Dynamat panels and give it a try.

It comes in various kits and Tom Berge, Peter Fruehling and I decided to go in together a buy their Mega-Pak which contains nine 18" x 32" panels which is way more that you need for three RVs. I did a very un-scientific burn test and it would not support a flame (unlike the 3M ¼ foam which seems to burn rather handily). It cuts easily with scissors and I tried it on some test pieces. This stuff SEROUSLY sticks. Once on there is no turning back…. I'm sure it will stick for an eternity.

Since my fuselage is all-nice and open, now was the time to install the Dynamat so I made a bunch of patterns for each panel of the firewall and careful cut out all the shapes. I first applied the Dynamat to the interior side of the firewall recess. Once it is in place, the most amazing thing is that when you thump on the firewall on the engine side, it sounds like you are thumping a block of wood. It is a totally dead sound. This stuff has to make a difference.

As I write this, I haven't permanent installed the other panels as I have some firewall holes to cut, but I think the Dynamat installation will be worth the 3 pounds. I'll let you know when I get flying!!

An RV Fairy Tale

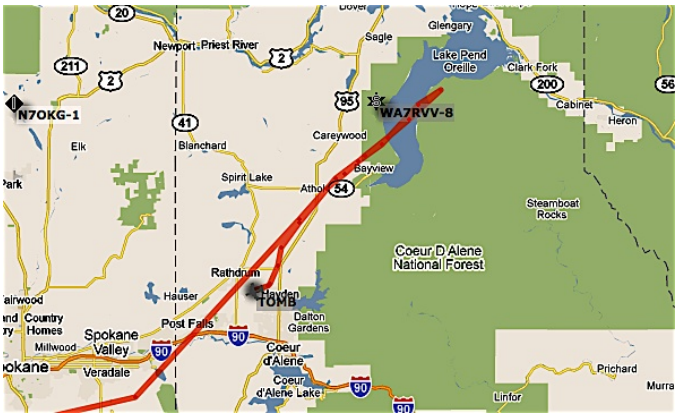
-Tom Berge

Once upon a time there was an RV7A that was in need of re-positioning. The seller was in Seattle and the buyer in South Dakota. The interested parties were looking for an experienced RV driver to deliver the plane and I thought "Hey! I fit that bill", so a call was made and before I knew what happened, I was hired. The schedule kept slipping from before Christmas through January till the chosen day of Valentines Day. Yes, my timing is, shall we say poor?

The most dreaded part of the trip was the airline portion. What with going through security and all that entails. First to Denver then onto Seattle, all went well. Even the security was a non-event. Seattle was beautiful! The seller picked me up and off we went to Renton (RNT) to have a look at his RV7A. Everything checked out just fine. We did a short flight and sure enough, it flew. Things were looking up. Flying time was scheduled to be about 7 hours or so plus a bit for the non-direct route. The forecast was good for an early morning departure. …they lied…

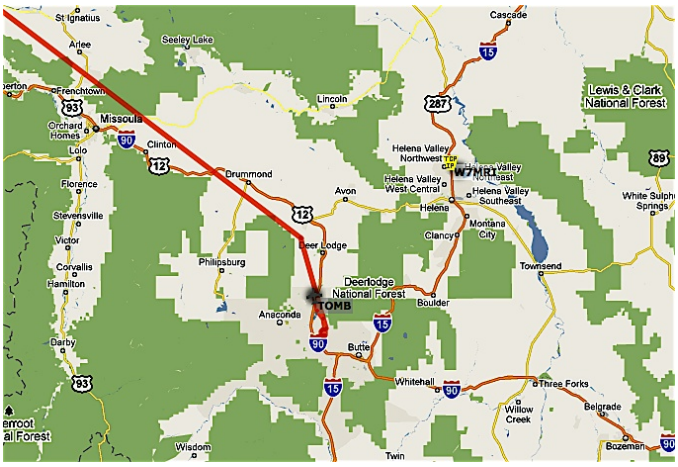
I awoke Monday morning and peeked outside and could not see the parking lot. Things were falling apart. The fog was as thick as anything I can recall as of late. Thank goodness the seller knew where we were. I had no idea. We went to the airport and loaded up all my stuff and since I was going cross-country in the mountains in winter, I decided that my survival kit was a good idea. I have one of the two man kits from Sporty's which has the essentials plus I brought heavy boots, hand held radio and (gasp) a gun. Now the wait for improving weather began. As could be expected, the fog slowly burned off well past when *they* said it would. Soon the mountains came into view and then a bit more. The issue was the Cascades to the east were still reporting overcast below the passes. So we waited some more. A side note is that RNT is where Boeing 737's are built and I got to see a brand spanking new 737 take to the skies for the very first time. Quite the sight!

Around 1:30 pm the decision was made to give it a try. My plan was to top the overcast and come back down through a hole on the other side with the backup plan to return to RNT. The plan worked fine. Out across eastern Washington State all went well with manageable ceilings and essentially unlimited visibility. Past Spokane with somewhat lower ceilings then past Coeur D'Alene, ID onto my planned route through the mountains. The route Jerry Van Grunsven showed me years ago was to pick up the Clark Fork river east of Sand Point, ID and follow that down to just north of Missoula, MT and cross the Rogers Pass to get out of the mountains.



This is a low altitude route with a river and road combination to guide you through. At the mouth of the river there were low clouds below so I tried to top the deck hoping for breaks in the overcast further down the river, but found none. Darn, I returned to Coeur D'Alene. My options to push onward were tempered by the amount of daylight left since I had departed RNT so late. With the gas remaining, I did not relish getting down the river, getting stuck on top then having to back track with dwindling gas and daylight in the mountains.

Upon landing at Coeur D'Alene I checked the weather and found that Great Falls, MT, which was my original destination, had gone from 3100 OVC to 1600 OVC in about a half an hour. Of course Coeur D'Alene was forecast to rain that night. That forecast they got right! The next three days were spent looking at rain, and then fog then some more fog until Thursday around lunchtime. Off I went.



I flew at around 7500 MSL back on my original course. About 10 miles west of the Rogers Pass it became apparent that I could not continue in that direction so I back pedaled to Missoula and went east to try Helena. No joy there so I flew south to try Bozeman and had no luck there either. Back to Missoula for more gas then another attempt at both Helena and Bozeman. Again no joy so I spent the night in Missoula. Friday morning's plan was to fly toward Helena, then south to the Coppertown VOR turn east to Butte, MT and follow the freeway to Bozeman, MT. One has to admire the weather gods. Wouldn't you know it that they placed a great big snow shower right in my path so I turned around.

While enroute back to Missoula, I called a Cessna 180 I had met there that was traveling to Billings to see if they were having any luck. Their route took them direct to the Coppertown VOR and they were managing ok. With them 30 or so miles ahead and willing to keep me informed about their progress, I pulled in behind them. I passed Butte, MT and made it up the freeway towards Bozeman, which was reporting 600 OVC and 7 miles to see if I could pick my way through. The Cessna 180 went off frequency prior to Bozeman. When I called Bozeman, they were not happy. Turns out the 180 had busted their airspace without radio contact. So now what? The visibility was great where I was and scattered above but no options ahead. I looked up and saw what appeared to be an escape route so I pulled up the nose. While climbing in a tight circle to stay out of Bozeman's airspace, I kept an eye on the freeway below to make sure if this plan didn't work out I could get back down. Around 10,000 feet or so it became obvious that I indeed had an escape route right over the top of Bozeman's class D airspace. I skipped over the top at 11,500 and about 20 miles east the clouds went to broken and I slid back down to a more comfortable altitude.

I made it through Bozeman.

Enroute to Billings, I heard from the 180 driver and learned that the Bozeman tower finally did get in touch with him and requested he call them at his earliest convenience. Fortunately I received no such request. Billings was a fuel stop, weather check and breather.

The rest of the trip was pretty mundane with the route direct to Gillette, WY then Spearfish, SD and finally to Brookings, SD. There was an overcast cloud deck with tops at 4000 and ceilings around 1100 over the eastern portions of SD and I was at 9500 feet with nothing but blue above. A check with flight watch let me know that western Minnesota was clear to high broken clouds and I decided I could find my way back down VFR. The winds were in my favor and the ground speed hovered around 190 knots. Huron SD was 2300 broken so I let down east of there and continued to an uneventful landing at Brookings. Doug Weiler and Peter Fruehling had positioned my RV at Brookings earlier in the week, so I loaded all my stuff and headed home. After spending fives days to do a 7 plus hour flight I thought "Time to spare, travel by air".

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

First Class

Minnesota Wing March Meeting

Saturday, March 27, 2010, 10 am.

KeyAir – Anoka County Airport (KANE)
Anoka, Minnesota

This month we will be guests of KeyAir, that BIG and BEAUTIFUL FBO on the north side of the airport. Our speaker will be premiere aviation photographer Max Haynes. Max's artistry behind the lens is well known especially in warbird circles. Airplanes and photography seem to go hand-in-hand and Max will discuss the techniques a pro uses to capture the beauty of aviation and the human story of aviators. Max is a select member of the International Society of Aviation Photographers and his work has been displayed not only on-line but in various print media.

We'll also get a tour of Full Motion Flight Training and learn about their advanced training systems for Cirrus aircraft. This should be a very interesting meeting, which we think you'll find fascinating.

Driving directions:

From northbound I-35W, take exit 32 (Radisson Rd/Lowell Rd). Go west on Radisson. The road will swing north and then west again. Take the entrance to Key Air on the left. OR… from route 65 go east on 105th NE, past the Sports Center to Radisson. Turn right (south) and the Key Air entrance will be on the right.

Phones: Doug's cell: 651-398-1184, Key Air: 763-780-2802

Fly-ins are welcome with room for about 500 RVs on the ramp! Coffee and goodies as usual!