RVator's Log

Newsletter of the Twin Cities RV Builder's Group

September 2014

In this issue…

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Upcoming Events

September 20: - Fall is about fall. Time for our annual family picnic and fly-in!!! Eating at noon … Sky harbor Airpark as usual. Details on last page.

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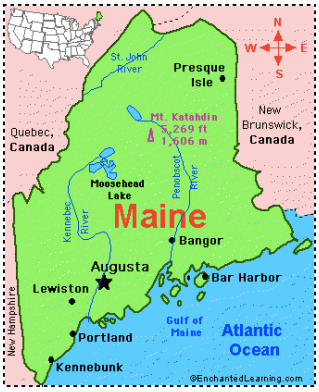
Minnesota Wing
Van's Air Force

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

Sec/Treas: Jim Lenzmeier, 651-633-8488, jimdilenzmeier@gmail.com

Shop Notes

After hours and hours of construction time and often eye-watering sums of dollars spent, each RV builder envisions just what he/she will do with that completed aircraft. Maybe the goal is simply to buzz around the local area with an occasional excursion for the $100 pancake. Or one may simply enjoy going out on a calm evening before sunset and twisting through the sky playing fighter pilot. Personally, we've done all of these things in the various airplanes we have owned. Jean and I have owned little putt-put airplanes and family-type airplanes. We owned a great RV-4, which fulfilled my Walter Mitty/fighter pilot image for time. Now that our RV-7 has been flying a little over two years, it's role as a cross-country adventure machine is playing out each time we pack up and head for a far horizon. Our recent vacation trip to Maine was a perfect case in point.



Last fall we flew the RV to California so we thought it might be cool to log a trip to the east coast. We had never been to the far northeastern U.S. before. True, I spent many a layover in Boston, but never ventured further up the Atlantic shore. This trip was to visit the resort town of Bar Harbor, Maine and explore Acadia National Park. We consulted the website Trip Advisor and found a great sounding B&B overlooking Frenchman's Bay, a few miles north of Bar Harbor. 3 days were booked and as our intended departure day approached, we began to wonder if the weather would cooperate. Our RV-7 is well equipped with all of the needed IFR goodies, but as I try to remind myself all the time…. it is a toy-plane. No bulletproof Pratt and Whitney turbines, no potty, no flight attendants to bring us coffee and peanuts.

A couple standby seats on Delta Airlines were Plan B. But Sunday morning June 29th dawned surprisingly flyable. Saturday's showers had dissipated to scattered to overcast clouds below us for the 2:30 leg to Auburn, Indiana. We don't do over water stuff (remember… it's a toy airplane) so it's around the Chicago metropolis. With a quick fuel stop at Auburn, we climb out through a 3000-foot overcast. At 9000 feet we are on top but building CU was ahead so we ask for 11,000. I had brought along the O2 tank just in case and now I'm glad I did. As it turned out, we used the oxygen on this trip around as much as last fall's trip to journey across the Rockies.

Overflying Cleveland we were confronted with more building clouds and showers were now popping up on the XM radar display. We ended up at 15,000 and motored along with a nice 200 knots ground speed. Once in a while we scooted around some higher build-ups but generally the conditions were smooth. We deviated to the left around Erie, PA to avoid more showers and then a straight shot to Ithaca, NY. We had intended to stay there overnight and explore the town but we were making such good time and the weather was clearing so we decided to fuel up and fly on to Maine (only another 2:15). I called ahead to see if our B&B had room for our early arrival and they did! Another call to the FBO and we reserved a car. Touchdown was around 5 pm, got the RV into a hangar for an amazing $25 a night and headed into town

The -7 snug in the hangar at Bar Harbor airport

The Inn At Bay Ridge…. a beautiful B&B overlooking Frenchman's Bay and the Atlantic

Every little town on Mt. Desert Island is picture perfect

Legend has it that the sea caves near our B&B were used by the Indians to punish their enemies…. tied 'em up and waited till the tide came in.

We had a great time on the island and enjoyed some real northeast hospitality. Lot's of beautiful spots on Mt. Desert Island to explore and of course lots of great seafood.

On Wednesday morning, a check of the weather showed we might have to change our plans. Although it had been clear since our arrival, the forecast the next day's departure called for fog, rain, thunderstorms, wind and other meteorological adventures. Plus a hurricane was running up the coast and would be affecting Maine shortly. Weather was nice now, so we decided to leave a day early. Another quick change of plans… a call to get the airplane ready and we were off by 1100, heading west to Fulton, County airport, just north of Syracuse, NY. The downer was the 35-40 knot headwind!!

This is when XM weather is worth every penny… dodging showers in northwest New York.

We did have to deviate around some more showers north of Albany, which put us over some VERY sparsely populated forests in the Adirondack Mountains. I think we saw more civilization over Nevada than we did in this area of upstate New York.

At Fulton County we checked the weather and of course a thunderstorm is sitting in the way over southern Ontario. Our destination was direct to Pontiac, Michigan to visit friends and relatives. We could go the long way around Lake Erie via Cleveland but it looked like the showers were dissipating so we filled IFR direct. Toronto Center was great and when we got to the weather, it was just about gone and required only a small southerly course change. Michigan Aviation at Pontiac had a hangar, car, and room at the Holiday Inn waiting for us (they are the best!!!). Almost felt like we were someone important!!

We had some spare time the following day so we decided to visit the Henry Ford Museum in Dearborn. Last time we were they was a field trip in elementary school back when all those antique cars were new!! It is a very interesting museum to visit. Lots of transportation history with cars, trains, and planes and fascinating stories of the industrial and technological growth of America.

After a nice dinner with our high school friends, we decided to head home on the 4th of July. Weather was essentially clear all the way. Around 0900, we flew north out of Pontiac the short distance to Lapeer for breakfast with my brother and his wife. By 1130 we were airborne heading NNW to the Mackinac Bridge, then following the lakeshore west to Escanaba, MI for fuel. Back up to 10,000 feet across northern Wisconsin to stay on top of the bumpy cumulus and we were home by 4 pm.

All in all, almost 2500 miles flown and just under 16 hours. The -7 ran like a fine Swiss watch and nothing broke!! There's no better way to see the U.S.!!!!

Someday…. sometime… something's gonna break

-Doug

It was a bitterly cold day in January when I received a call from an RV owner in New Richmond, WI. Renee had an RV-7, which she wanted to sell in the spring. She asked whether I would help accomplish an annual inspection and get it up to speed to put it on the market when the weather warmed up. She was the third owner and it had hardly flown during the last several years. The photos looked good but you never know until you see an airplane in the flesh. It sounded like she really needed some knowledgeable help and I told her I first had to consult our resident "RV-man-of-adventure", Tom Berge. I knew Tom is always ready for a challenge and we've been involved in several such "projects" in the past. Tom said he'd be willing to check it out so we planned a visit to RNH to see if we could come up with a plan of action.

Several days later we were shivering in an unheated hangar seeing what we were getting ourselves in to. The airplane had a nice paint job, about 500 hours total time and actually was very well equipped for when it was built in 2005. It had high quality King avionics filling the panel and "steam-gauge" instrumentation. That was all cool 10 years ago but somewhat dated today with all of the EFIS goodies and data-link doo-dads popular now. There were several areas of loose rivets on the rudder and elevator, which would be easily fixed. The annual was due in May so we proposed to tackle the repair work and complete the annual when the weather warmed and get machine prepped and ready for sale then.

Our brutal winter finally gave way to spring and in early April we were finally able to get it out of the hangar and do an engine run up. I really didn't find anything amiss so we decided to move to it to Anoka where we had space available in Bill Swanson's hangar

Like many AB aircraft, the documentation and history of the airplane was a little sketchy. Apparently the original builder was rather experienced (this was his second RV and he built two more after this one). I tried to track him down put I found he had passed away a couple years ago. Our plan was to go through the airplane and correct everything we could find that needed attention. Experienced RV builder and A&P Paul Irlbeck agreed to do the final condition inspection after we had corrected the discrepancies that we were beginning to find. Tom decided to begin running down through the list of Van's Service Bulletins to check for compliance. Immediately we found that there was no record of SB 6-02-23, which required safety wiring the fuel tank pickup tubes. Although this RV was a quick-build, that bulletin was not incorporated into construction until after 2006. There were no records in the logs or sparse paperwork that it had ever been done.

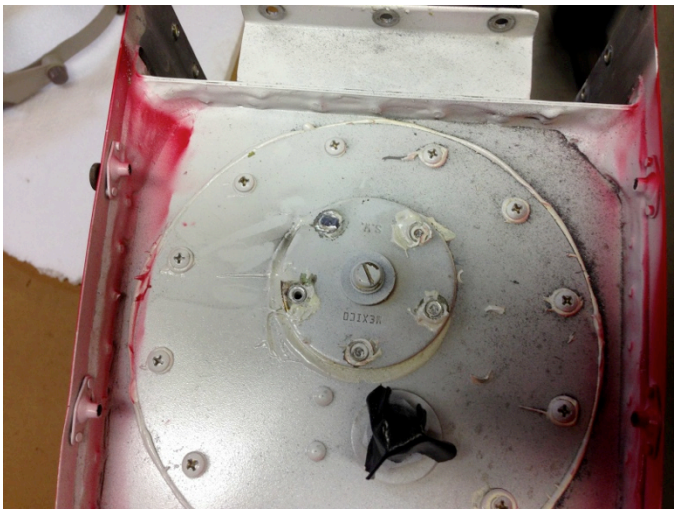
Tom had encountered this before and he said he can generally determine compliance fairly easily by draining the tanks, re-

moving the wing root fairings, and gaining access to the fuel tank access covers. That assumes the covers are easy to remove! Well it didn't take long to discover that the access cover screws weren't going to budge. Trying to turn them in the small confines of the wing root area is a challenge under the best of conditions. We'd have to remove the fuel tanks so go any further.

Tom getting comfy

Since I am good at tedious and repetitive manual labor that requires no intelligence, I set to work unscrewing a BUNCH of tank access screws. And.. obviously the original builder assumed that one would never have to remove the tanks so the screws were painted in place. (Note to you builders out there… before you paint your beautiful RV, back out the tank screws 3 or 4 turns, paint the airplane, removed the old screws and insert new one and tighten just barely…)

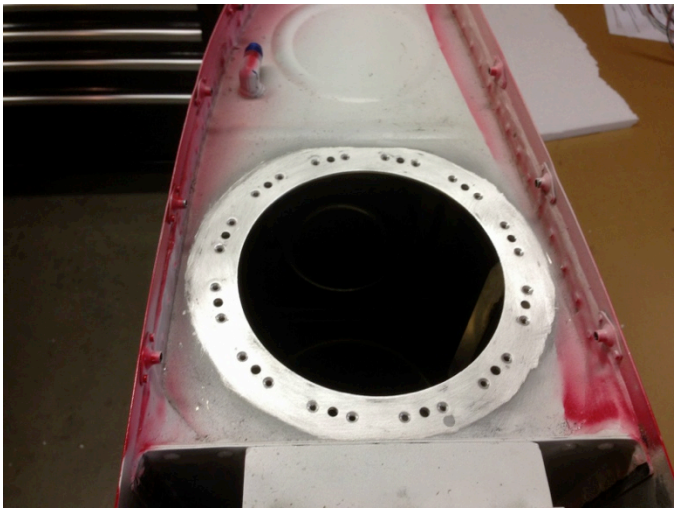
Once the tanks were off, Tom got serious. It became apparent real quick that the original builder used some strange type of tank sealant. Tom's first attempt to remove one of the screws of the fuel tank float snapped off the head! Hmm.. this could get interesting. This sealant seemed like a rock solid adhesive. Van's sells a tank sealant solvent that supposedly will melt away stuff like ProSeal. We decided take a break for a couple days and ordered some of this magic goo and give it a shot.



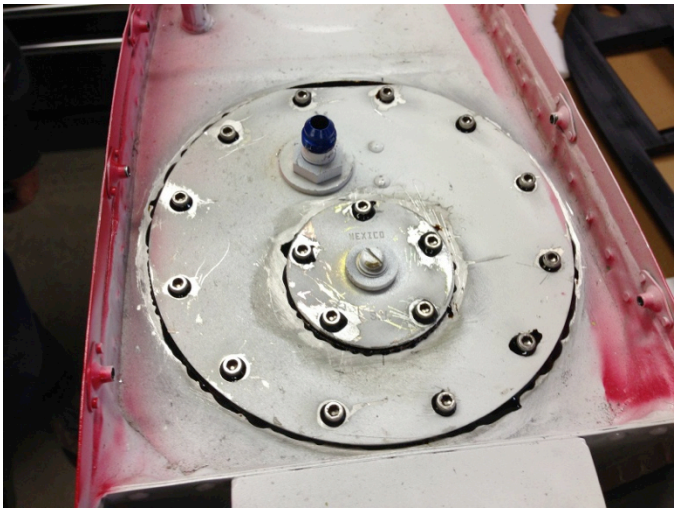
Fuel tank covers sealed with a mysterious adhesive that apparently can survive nuclear war.

Our next session began a few days later with trying out the tank solvent. Absolutely no luck. We had no idea what was used to seal these tanks. Our judicious use of wanton aggression had no effect. Tom started grinding off screw heads and we finally decided to try a heat gun. Finally after heating the tank cover to the point of nearly melting the aluminum, the adhesive began to soften and Tom managed to pry it off. Wow!! It was obvious the builder had absolutely no intention of ever gaining access to the tanks (hmmm… quantity sending units don't last forever). Tom was like an RV pit bull…. he would spend hours sanding and grinding to finally clean up the access holes. BTW, the service bulletin had not been accomplished. That was the easy part.

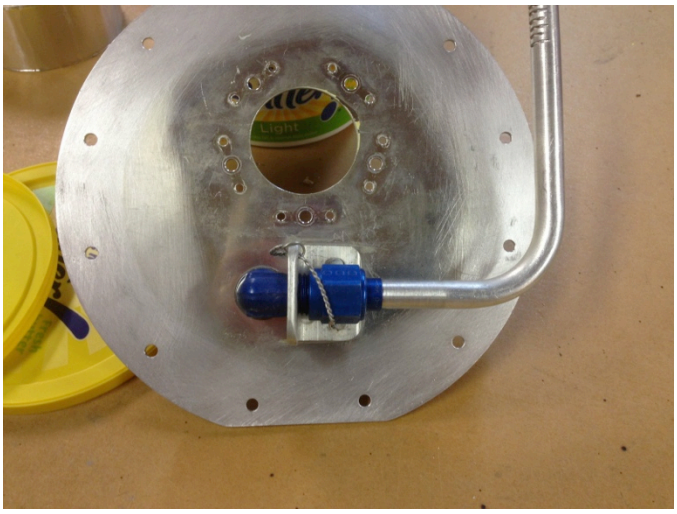
Never was a harsh word spoken as Tom set to work!



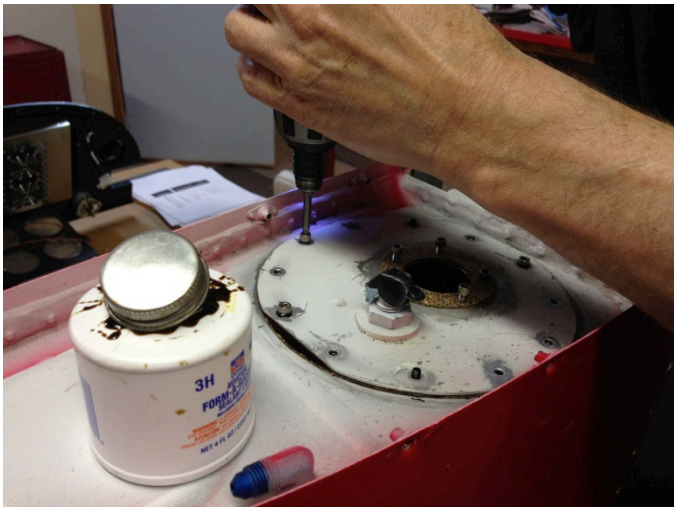
Hours and hours later, with copious amounts of heat and sanding, the access holes look good



The end product: cork gaskets sealed with Form-A-Gasket and stainless steel cap screws



Service bulletin accomplished with safety wire in place



A couple days later, the tanks were finished. All SBs were complied with and new access covers were in place, secured with cork gaskets and sealed with Permatex Aviation Form-A-Gasket and cap screws. They were works of art!

Over the next several weeks, we worked our way through the airplane and corrected all of the discrepancies. Everything else was minor compared to the fuel tank marathon. A&P Paul Irlbeck came and gave it the final condition inspection and several weeks later, the -7 found a new home with American Airlines pilot Dick Schulz at Sky Harbor Airpark.

The moral of the story is that so many RV builders never seem to plan for maintenance. As you are building your RV, plan, plan, and plan again as to how one would work on that widget or remove that doo-dad. For example, cap screws are a God-send when trying to remove a component in a hard to access location (tanks access plates are a good example). I tried to use cap screws and nutplates to install many components up under the instrument panel on my RV-7 slider. Someday I may have to lie on my back and reach up under the panel with one hand to remove a broken widget. As much as we hate to admit it, things break!!!

Beware of what's behind you!!….

-Alex Peterson

As we taxi our airplanes, we tend to focus on what is in front of us. This is entirely reasonable, since we are sitting four feet behind a very big, very sharp, rapidly spinning object. We are taught to keep our heads on a swivel while taxiing, since numerous perils might be lurking. Bad things can quickly happen if we become lax during the under-emphasized ground phases of our flights.

However, there is a space we often neglect around our airplanes – the area directly behind us. We need to remember that bad things can also happen behind us, owing to the small hurricane we create with the spinning propeller.

Some years ago, on a gorgeous afternoon at the airport, I went for a quick flight around the patch, and afterwards decided to give the plane a good cleaning and wax job. I worked on the plane just inside the hangar, but left the hangar door open since it was such a nice day. After a couple hours' work, I finished and was admiring the fruit of my labor. I was just about to shut the hangar door, when I heard the sound of a turboprop twin coming around the corner. Uh-oh, I know this guy, he's in the hangar next door, and I know what's coming next! I ran to the door controller and pushed the "down" button. Too late! Even though he had a large four-wheeler, with which he moved the Conquest in and out of the hangar, he liked to swing the nose around as he came to a stop in front of his hangar. I braced myself for the coming hurricane, and sure enough, I get a face full of sand and dirt. My formerly clean RV took a direct hit from his prop blast (as did I). Grass, sand, dirt, and bugs – all sorts of crud are now all over my plane (and the other planes in the hangar). I had a polite discussion with him about perhaps not doing that any more (which he unfortunately did several more times).

On another occasion, I was sitting at a picnic table at a pancake breakfast fly-in. There were about a dozen tables, lined up parallel to and just to the side of the grass taxiway. We were enjoying our breakfast, and admiring the parade of arriving airplanes as they taxied by us. Along comes a Cherokee Six, taxiing just as all the other planes had just done towards the parking area. For some strange reason, this pilot decided to make a U-turn, turning his nose away from the picnic tables. I quickly realized this was not going to end well! Imagine syrupy plates and full coffee cups all flying off the picnic tables. The only thing missing was a video of this, which certainly would have gone viral on YouTube.

Another common situation, in which we often don't consider what's behind us, is when we park next to a hangar, often in the grass, with our tail towards the hangar. The relatively high power needed to break free from the parking spot often sandblasts the hangar.

The point of these examples is to remind us to always be thinking of the entire 360 degrees of space around our planes. If we believe something or someone might be affected by our prop blast, let's simply move the plane by hand to a better position prior to startup. If we need a helping hand to move it, usually one is not far away. Don't be like this guy:

Or this guy:

An Alternative to Paint for the Panel

-Pete Howell

The rattle can crinkle/wrinkle paint on my panel has held up pretty well for the last 7 years, but it had some chips around the screw holes that I needed to repair. As I contemplated removing the panel, stripping the paint and repainting, I looked into some alternatives. One idea that caught my attention was using one of the high-tech wrapping vinyls from 3M. As I looked deeper, I liked what I saw…….

The new vinyls are not your father's contact paper. They are much more like a plastic fabric, complete with texture and interesting reflection of light. The vinyl I chose was a black carbon fiber in the 3M Di-Noc line of architectural vinyls. I black carbon fiber color worked well for a panel background (they have several colors) and it is interesting in that it changes appearance as you change your viewing angle. I ordered the vinyl from a vendor on Amazon and was pleased with the material and the speed of delivery – it was about $40 delivered. (cheap enough that I could explain it to "the Boss" if it was a total bust) Now that a vinyl was picked, I set out to learn how to apply this stuff.

I was doing a minor panel upgrade (adding a Trig ADS-B out transponder – highly recommended, BTW) so I thought it would be a good time for a cosmetic upgrade as well. I have a modular panel and was able to tackle things in smaller chunks. My first target was the radio stack panel – I removed my "vintage" Collins TDR-950 and Trafficscope VRX and proceeded to shift things around to handle the TRIG TT22.

The first step was cutting some aluminum sheet and making a 3 1/8 hole for the Dynon EMS-D10 and a 2 ¼ hole the TT22. Ah the joys of a flycutter – glad I got some expert help from a hangar neighbor with the right tools! Some old instruments provided screw hole locations, and with that done, it was time to try my hand at covering.

The initial panel was 7" x 6 ¼" and was of course flat, making thing pretty easy, even for a gift wrapping moron like me! I simply laid the panel on the gridded backing paper of the vinyl and used the guidelines to cut a rectangle about ¾" larger than the panel in all dimensions with scissors (a razor blade could be used, too). By using the guidelines, you know the weave of the "fabric" will be square with your panel.

Next, I cleaned the panel to be covered with soap and water and finally with isopropyl alcohol. The substrate needs to be clean and dry, but prep is actually very minimal. The vinyl easily covers minor surface flaws. Panel ready in hand, I removed the backing from my cut piece of vinyl, turned it sticky side up and carefully positioned the panel in the center of the vinyl, making sure it was square to the sides (once again thinking about the weave pattern) and "stuck it down". The vinyl is actually pretty forgiving in that if your first position is bad, just unstuck it and reposition. Once positioned, I used a soft plastic card to wipe the vinyl down.

Wrapping the edges is straightforward. First, cut notches at the corners to remove the excess material. Next we can take advantage of the thermoplastic properties of the vinyl by using a hair dryer/heat gun to heat the overhanging material. This makes it soft, pliable and really easy to wrap around the edges and stick to the back of the panel – once again if it does not lay down like you desire, pull it off, heat it up and repeat until satisfied. Even as a rank amateur, my first panel turned out great – no bubbles, the edges look great, and it seems to really be stuck on there!

The final step is to cut out the holes – a very sharp X-acto knife is your friend here. I poked thru the screw holes and then ran the knife around the perimeter of the hole and was rewarded with clean edged holes. The large openings for the instruments can be handled one of two ways:

1) Run the knife around he edge of the hole from the backside, cutting the vinyl flush with the edge of the hole
2) Cut the excess material in the center of the hole in an "X" pattern and then using the heat gun, wrap it around the edge of the hole and stick it down.

I used both methods and found they both work well, each giving a nice, finished look.

Here are a few pics of finished right half of the panel:

On the taxiway……

Shimmering in the sun:

I have only had the material on the panel for a few weeks, but I am very happy with the $40 experiment. Some thoughts:

- Is it real carbon fiber? No.
- Will many people think it is real carbon fiber? Probably not.
- Does it look good? Yes.
- Can a bumbling fool apply it on his first attempt? Yes.

My 16 yr old daughter, Kate, gave it a "cool" rating when she saw the right side of the panel and then told me to clean up the left side because it was embarrassing her (she used more colorful language…..) I guess that makes it a keeper.

As always, you can find me at fly.rv9a@gmail.com for any questions. Remember my consulting pricing scale: Dumb looks are still free!!

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

First Class

Twin Cities RV Builders Fall Family Picnic and Fly-In

Saturday, September 20, 2014, good eatin' starts at noon

Sky Harbor Air Park (1MN8)
N44 31.7, W093 19.5, FGT (115.7) 218 degree radial, 9.0 nm, CTAF: 122.9
Cass Trail, Webster, MN 55088

It must be my imagination but it seems as we get older, the summers go faster (especially after the winter of 2013-14.) So let's wrap up the season again with our annual Family Picnic and RV fly-In. No big changes from the past. Our location is the same as last year and our hosts Kim and Roy Fuhrmann and the Sky Harbor folks welcome you and your family.

Please bring a salad or dessert to share. Fly-ins welcome!! Unicom on 122. 9

Details on the website at www.mnwing.org

Directions:

Minneapolis, south on I-35. Exit at the Elko, New Market exit. East on Cty Rd 2 then south on Cty From Rd 46. Then west on Cty Rd 3. You will cross I-35. Take the second entrance to Sky Harbor (Cass Trail). Follow the driveway to the Furhmann's on the left. You can't miss it!

If lost, please call Doug at 651-398-1184