



RVator's Log

Newsletter of the Twin Cities RV Builder's Group

June 2010

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Upcoming Events

July 17: Yep, the June meeting is in July but we are always flexible! Enjoy a morning of REAL hangar flying with our own Tom Irlbeck. Coffee and goodies as always. Details on the back.

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**Minnesota Wing
Van's Air Force**

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Shop Notes

-Doug



While I was building my RV-4, every once in a while I would wrangle a ride in someone's RV and go for a motivation ride. Sometimes it was short hop in Mike Eesley's RV-4... just enough to rattle my brains cells with a couple rolls but what an inspiration that was! Maybe it was a cross-country in Tom Berge's RV-6 to confirm RVs were also great traveling machines. I would get so wrapped up in all the little bitty nuances of building that often I forgot about the end result: a magnificent flying machine which is arguably one of the best handling aircraft ever built. It really didn't matter what model I rode in... all were astonishingly responsive, fast, efficient... so easy to run out of adjectives! I had owned a lot of airplanes from a 65 hp Piper Vagabond, a couple Citabrias, several tail wheel Cessnas and finally a pristine Cessna 180. But none were like an RV. Not only an amazing traveling machine, but also a total blast to fly. But I had to build it!

I would tell friends that this was a major, all-consuming hobby. It was not like fishing. It was not like golf. It took nearly all of my free time and certainly nearly all of my "extra" money. After 12 years of on-again off-again work, my -4 successfully flew and I enjoyed it immensely for 6 years. Work continues on my RV-7 and hopefully it will be flying in a year or so and I hope to enjoy many years of "elbow-to-elbow" flying with my ever-faithful co-pilot/spouse.

But there is more to this "hobby" of blissful dreams of clear, calm, flying days, \$2.00 a gallon avgas, and dollar pancakes at Eau Claire (I told you it was a dream!) Before those dreams come true, there has to be a MAJOR commitment of time, money, and discipline. "Wait a minute," you say, "did he say *discipline*?" I thought building an RV this is supposed to be fun and educational. I didn't sign up for West Point!" Don't panic. Indulge me for a moment and ponder this incident:

Recently an RV-10 in Texas experienced a total engine failure in IFR conditions. Now there are few predicaments in an airplane that rivet ones attention more than this. The PIC (and builder) kept his cool (remember that bold-face type at the top of all NWA/DAL checklists: FLY THE AIRPLANE). He checked his AFS



moving map and determined he was right over a private airport. He spiraled downward (still in the clouds), broke out at 1300 feet and there was an invited strip of green. He made an exceptional deadstick landing with nary a scratch (but most likely several additional gray hairs.)

So what caused the problem? The builder had installed his fuel flow transducer between the fuel servo and the fuel distribution "spider" with a solid aluminum tube. After 58 hours of flight time, vibration and metal fatigue finally did its job and the tube fractured.

Lots of fuel all spraying in the wrong direction! Thank God no fire. The builder (who probably deserves a medal for airmanship) admitted that he didn't feel right about this installation and had a gut feeling that maybe it wasn't ideal.

I can remember back in the old days working on my RV-4 and how fixated I would get on building each component. The construction plans and manuals were no where near as explicit as they are now so I spent a LOT of time scratching my head trying to figure out just what went where. If you have been around aviation any length of time you have heard of "situation awareness". That term does not always refer to in-flight circumstances. You can lose your "situational awareness" during building also. I can remember several times groping along really not having any idea just where this part I was building fit into the "big picture" of a completed and flying RV-4.

So what is the moral of the story? Do your best to think ahead during the building process. Just as when flying, if you get "lost", calm down for a minute and ask for help to regain the big picture. Now don't panic and assume that you are building a time bomb that someday is going to bite you. Follow Van's construction manuals, refer to the various FAA mechanics manuals on construction practices and when in the slightest doubt, seek out advice either through the club, the internet (with caution!) or call Van's (I guarantee they have encountered just about every possible building problem and REALLY can help you out). And remember to listen to that "gut feeling".... it might be telling you something!

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The World According to Kate

-by Pete Howell's favorite co-pilot

Riveting, drilling, putting in screws, running wires in small spaces, whatever he needed.

Hi there, it's Kate, and I must be famous, because over the last few years I have had the pleasure of having my own private airline! The pilot just happens to be my father, Pete.



High over Minnesota - 2010



First plane parts -2003

Our story starts in September of 2003, when my dad had the crazy idea to order a make-your-own-real-life-airplane-kit! Yeah, he's wacko, tell me about it! So he ordered the kit, and a week or so later, our garage got turned into an airplane factory. My dad would get home from work, eat, and head out to the garage until around 1 or 2 in the morning. When I had time, I would be right out there, by the tiny space heater, working along with him. (I am the cute one in the picture)



RV Grin -2005

My mom, as you probably assumed, wasn't psyched about this whole losing the garage thing. But she was a super good sport, and even helped some! Megan and Ryan would come out occasionally, just to check out the progress and help, too. Neighbors would pass in the alley, and say "Hey, Pete, how's it going?" or "Wow. Is that real?" YES, it's real, folks! Once the Easter Bunny even had the mischievous idea to hide Ryan's basket in the plane. Hmmmm...



Hangar Scootin'



LED Spokes-model -2007

I was good at building, so sometimes I got to help some of my dad's friends, my specialty was static hookups in the tail. It is good to be small! Don't tell mom that Bernie pays in chocolate cake.....



Over St Cloud - 2006

Three years later, it was finally done. We had gone through long, cold nights, and fun summer days of working on our real, own airplane. The first flight was on October 21, 2006. My first flight was on Christmas, 2006 after dad had done all the "testing".

The hangar became, for me, not just a place I had to go with dad after dance or rehearsal, but a hangout. We have a loft with a microwave, minifridge, snacks, a couch, and a laptop with the Internet! I played make-believe games at the hangar, practiced my dances, and lost my first tooth at the hangar.



Late night at Bernie's - 2008

And so our story goes on. I love to go flying. My dad tries to take me whenever I have free time. We have been to both of my grandmas in Iowa and Indiana, and my cousins in Iowa. We have been to Cumberland, WI, St. Louis, MO (to see the Arch), Hayward, WI, and almost *everywhere* in Minnesota.



St Louis - 2008



RV Picnic - 2008

On any given Saturday, we'll go somewhere for a slice of pizza, or find a cute little town to walk around and picnic. One of my favorite spots is Rushford. We'll put the bikes in the back of the plane, hop in, and head down! They have a great deck, picnic tables and cheap pop in the fridge!



Rushford – 2010

I have been to numerous fun hangar parties and picnics, and this past year, we actually got to host our own at Bernie's hangar! That was super fun. I hope that we can do it again!

Oh yeah, I almost forgot the best part of flying - The Princess Treatment. This is where the whole "Kate's Private Airline" thing comes in to play. When it is really cold out, I just get in the plane while Dad does the preflight in the warm hangar. I shut the canopy and hook up the iPod. Dad then opens the door and pulls the plane out in the cold while I stay toasty. Later when Dad and I land, we taxi into the hangar on India lane, Dad puts down our hours in the log book, and then he gets out, and pushes me into the hangar-get this, WHILE I'M STILL IN THE WARM PLANE! How cool is that?!?! Then he takes my luggage to the car, of course, cuz I'm a Princess.....



Summer over St. Cloud - 2008

Every girl should have their own airline!

Luv ya,

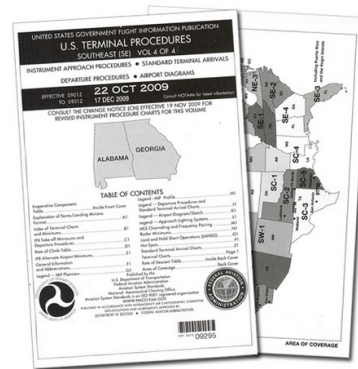
Kate

House Cleaning

-Tom Berge

Ever notice how things just keep piling up as time wears on? Take my RV for instance. I started out with a manageable empty weight that allowed me and my bride to fill up and launch into the wild blue with nary a worry. Then things started to creep into the baggage compartment, between the seats and sidewall, on top of the baggage compartment cover. The list goes on. You get the picture. Where does all this, dare I say crap, come from? And is it all really necessary?

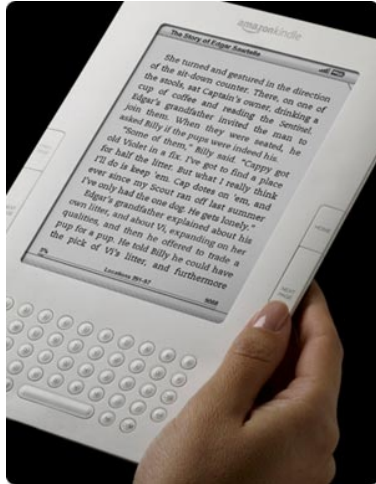
Great questions. Some of the stuff really is required. Sectionals are certainly important, as are low altitude charts and approach plates for the IFR flyer. With all the magic that graces the instrument panels today, having some level of operations manual on board seems appropriate and the AOPA Airport Directory helps with the destination information. My tool kit started out as a



small metal box with all sorts of safety wire, pliers, wrenches, screwdrivers, etc. A couple of years ago I culled most of the stuff out of the box and now have a very small pouch with just the essentials and it seems to me that I shaved 5 pounds or so off the weight. I also carry an extra nose wheel inner tube for those occasional flats (Van's sends two tubes for a reason) as well as a handheld radio, a GPS which has no clue where it is, a canopy cover and so on.

A few years ago I ran across a website which promised free downloads of approach plates onto a Kindle reader. I always thought it was a great idea and would certainly save a bunch of weight and clutter but never could quite let go of the purchase price to get one. Yes, I am cheap. Every time we would go on a cross country trip the approach plates would take up a whole bag of their own and finding all that was needed took time and expense not to mention the occasional times I could not get a needed section. As you might have already guessed, I took the plunge. \$259 worth of copper pennies later I'm the proud owner of an Amazon Kindle. I bought it with a mid-April trip to New Orleans in mind.

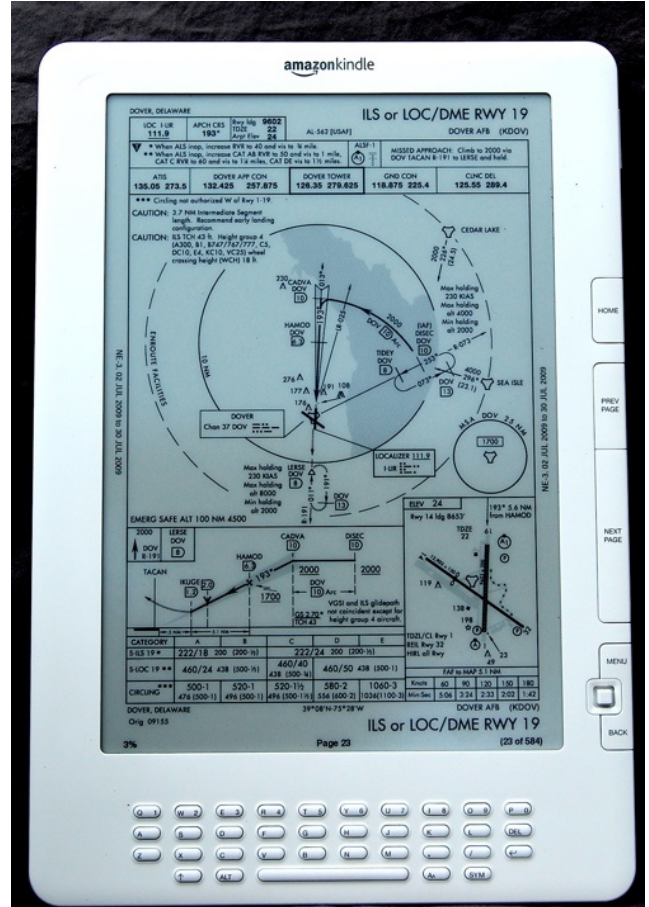
Figuring out how to get the approach plates into the Kindle took all of about 5 minutes and I'm not a geek by any stretch. Time to download and install an approach plate section takes about 2 or 3 minutes. They also have the Airport Facility Directories available.



I should mention the website www.pdfplates.com, since it is them I am referring to as "they". And

while the service is technically free, they do ask for donations to help defray the costs. Check them out! The files come in a PDF format, which the Kindle can only display. There is no way to zoom in but there is a way to rotate the image which increases the size of the type although I have heard that at the end of May, Amazon will be releasing new software which does allow panning and zooming. That answers my concern about readability. Another of my concerns using this technology was the search function. Was finding the page I wanted easy? The simple answer to that is absolutely. I was also able to download the operations manual for my TruTrak autopilot as well as all the manuals for my Garmin avionics from their respective websites. All this information in such a tiny package greatly reduced the clutter in the cockpit.

I know there are other devices out there such as the Kindle DX, which has a bigger screen at a higher cost, and the just released Apple iPad. I've learned over the years that there will always be something better, faster, bigger, more capable available and I have learned to live with that knowledge. The Kindle I bought gets the job done in a really small affordable package



and carrying less stuff in the cockpit is always better than the alternative. Check out all the paper I DON'T have to drag along:



Rod End Bearing Spacer Washers

-Tom Berge

In case you haven't gotten to the part where you attach the aileron push tube bearings to the control system, I have a bit of a secret for you. Part number 5702-75-60 is a real treat to get in. Sure, the first one goes easy and the rod end bearing follows with little effort, but the last one is a bear. In fact, I dare say it builds character to complete the task. The issue is lack of room to work. Over the years I have put in lots of them but never really thought about it too much other than to cringe at the upcoming event. I would gather up my tools, picks, magnets, curse words. You get the idea. Then I'd sit down, hunched over the controls and start counting how many times I would drop that last, nasty little washer. It's too bad I didn't take the time to study the issue way back when.

Today, I had another set to do and thought there has to be a better way and with very little thought, came up with a plan. Let me explain the process first, before I get you lost. At the bottom of the control stick on an RV7 there is an opening that allows the aileron tube and the spreader rod to attach. The spreader rod is the thing that keeps the two sticks working together. The idea is to put one of these spacer washers in front of and one in back of the rod end bearing, then insert a bolt through and tighten the nut. The spacers are tiny little things and there is no way to easily position them while inserting the bolt. So here is the idea I came up with. I cut off a small length of 3/16 inch tubing that was the same width as the inside spacing of the lower control stick. Then I inserted the tube into the rod end bearing and slid a washer on each side. Next I simply slid the assembly into the bottom of the control stick, aligned it and used the bolt to push the tube out which captures the washers as it slides through. Pretty simple idea! I tried it today and spent less than five minutes installing both rod end bearings for the right side wing.



Another area where this process would help save on the cursing would be the spacer washers between the elevator horns and the center bearing on the horizontal stabilizer. Just make sure the tube or cutoff bolt or whatever you use is straight.

Making the part is easy enough, but remembering where I keep it for future use will be a greater challenge best left for another eureka moment. Wow! Seems a bit of thinking can solve all sorts of problems if you simply apply yourself.

Ramblin's from the other Doug

- Doug Rozendaal that is... a classic from the RV-List

I keep tellin' you guys and gals, if you are flying an RV, you are flying a fighter, with a lot less headaches. Our "Brand New" P-51C is back at the "factory" getting a new radiator, cause the one we scrounged up was not exactly a "fresh overhaul" like we thought. A new radiator is \$17,500. We scrounged some more and have a \$5000 solution, we hope..... Oh jeez, was I whining??? So sorry.

Seriously, I am living proof that if you want it bad enough, if you have that passion that burns in your belly like a raging volcano, if you are willing to sacrifice weekends, money that should go for the mortgage, and marital bliss.... In this Great Country there is almost nothing you can't do if you set your mind to it and work your butt off. I learned to fly in Cessna 150 while I was in college with money I didn't have. I learned in spite of an instructor who told me I was a half-ass pilot and would be lucky to survive the Tri-pacer I bought a share of, and that I should steer clear of tailwheels cause I had dead feet and would surely roll one up in a ball. I went off to St. Thomas chasing a girl once, tried and failed to buy a ticket on a DC-3 because I thought it was the last place on earth I would ever have the chance to ride in a Gooney Bird. Six weeks later I got checked out as a co-pilot hauling FedEx in a DC-3.

I have no special skill, no gift from Wilbur and Orville, and I never got an inheritance. I still struggle to fly a steep turn to ATP standards. That is the greatest part of aviation; it inspires us to be all we can be. Whether it is building an airplane in your garage with money you don't have, or flying warbirds to airshows to further our motto, "Lest we Forget." The point is, this is America and you can live your dream! It is the ability to live that dream that these grand old airplanes and the pilots that flew them fought to preserve.

If warbirds are your dream, find the CAF Wing or another museum nearest you, most need pilots, in St Paul we do. Some members will try to run off potential pilots, some will paint a picture that you can never do it with your "limited experience." Do not get in a hurry and do not be dissuaded from your goal. Don't tell me the minimum flight time requirements are too high, get flying and get the time. Does it take some Luck? You bet! I am the luckiest guy you ever knew. I believe the harder you work and the more you dream, the luckier you get.

Minnesota Wing – Van’s Air Force
65 15th Ave. SW
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First Class

Twin Cities RV Builders - Summer Meeting

Saturday, July 17, 2010, 10 am.

Doug and Paul’s Hangar – Lake Elmo Airport (21D)



Yep, we all know our own Tom Irlbeck but maybe you didn't know he was one of the first Navy Top Gun instructor pilots. Tom Cruise was still in diapers when our Tom was smashing serious molecules in F-4s.

Join as Tom logs some serious hangar flying time and relates his adventures from the old Navy days. You will not be bored!!!!

Coffee and goodies as usual. Fly-ins welcome always.

Hangar 41C on Mooney Lane



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 just past the Civil Air Patrol hangar. Hangar is 41C on the left. (fly-ins are OK as well. Park east of the hangars along taxiway). Hangar phone: 651-779-0747