



# RVator's Log

Newsletter of the Twin Cities RV Builder's Group

June 2017

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## Upcoming Events

**July 8** - Twin Cities RV Builders Summer Luncheon and Hangar Flying Competition. Anoka County Airport, MN.

See page 8.

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**Minnesota Wing  
Van's Air Force**

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## Shop Notes

- Doug

Down in the dark bowels of my basement sits a pristine 1982 Heathkit H89 computer. During a particular ungrounded time of my life, I really got into computers and programming. I had about one half of a computer science degree and had actually worked for about a year as a BASIC programmer for a small business consulting firm. That was between flying jobs, which fortunately didn't last too long. If I remember correctly I paid about \$2500 (in 1982 dollars!) for this technological marvel. Yep, I followed all the instructions, learned how to solder and amazingly it actually worked. It was a real rocket ship with its CP/M operating system and I even paid an extra \$500 for a second floppy disc drive. Even had one of those new fangled dial-up modems. Today the computing horsepower in my phone is probably a zillions time more than in the old H89.



(plus a couple others). Nothing wrong with a healthy competitive market to keep prices in check and innovations on the upward path.

After our January meeting at SteinAir, I got fired up about the Garmin G5 standby EFIS. My backup instruments were those little cute round thingies and I needed a winter project. Amazingly I sold my 2 1/4" airspeed and altimeter plus my TruTrak ADI in a week on the Van's Air-

Force website. I did have to have SteinAir cut a new RHS instrument panel piece that came out really nice. The installation of the G5 is a no brainer. Three wires: power, ground, and a GPS signal from my 430W (the G5 does have it's own GPS receiver if you desire to use it). Pitot and static lines are also connected. It works perfect, has a bright sunlight readable screen, an HSI mode and 4-hour backup battery.

My AFS machines are perfectly functional. They get me from point A to point B with minimal hassle. There was a learning curve to get the bottonology mastered but that is what you do during your 40 hours of test time. I wish their screen resolution was better and brighter. The processor speed is a little slow in redrawing the map display but I live with it. I have to limit the amount of ADS-B traffic that is displayed but do I need to know there are a couple dozen airliners sitting on the ground at MSP? And certainly the menu system of the new Garmin

So true with our RVs. My -7 has been flying now since 2012. The Advanced Flight Systems 4500 and 3500 EFIS screens were state of the art back then. Garmin's only alternative was the G-1000 that was WAY out of my price bracket at the time. Since then Garmin has jumped big time into the homebuilt market with their G3X line of really nice EFIS boxes. It seems Garmin heads the pack with innovations and upgrades that keep the competitors hopping. It is certainly not hard to get EFIS envy after each Garmin press release at Sun N Fun or Oshkosh. But it is good to see Dynon and AFS still very much in the game



boxes is quite intuitive compared to my AFS units. Touchscreen displays in our RVs are cool but I question the functionality in turbulence. I'm sure some of our members have much more experience with them than I do.

Having all of these dazzling electrons in our little airplanes is fun. Yes, they can make our RVs more functional and effective cross-country machines. But they don't make your RV fly any better. We still are privileged to motor around in the best handling airplane there is. Whatever your mission, whether it be playing fighter pilot or visiting grandma in California, RVs can't be beat!!

\* \* \* \* \*

## News.... News.... News.....

- Doug

I had the pleasure of checking out **Gary Vogt** in his newly acquired RV-10 this spring. Gary operates out of a 3000-foot grass strip on his farm just west of Preston, MN. The RV-10 replaces a Piper Arrow and provides a lot more get up and go than the 200 hp Piper. Gary is a serious farmer with about 5000 acres of corn and beans spread out over the flat land of southeastern Minnesota. When he's not out on the tractor or flying the -10, he and his wife also manage Four Daughter's Vineyard and Winery in Spring Valley, MN.



Frank and his -7A. His hangar partner is working on a RV-12

His -10 came from Canada and has been recertified as a U.S. registered aircraft. **Tom Berge** installed a new Garmin GTX 345 transponder, which is a complete ADS-B solution and communicates to Gary's Garmin 696 and an iPad.

Builder **Frank Huber** has been making steady progress on his RV-7A based at Anoka County Airport. Work has been pretty much finished on the Sam James cowling and plenum. Up front is an Aerosport IO-360, which will drive a three bladed Cato composite prop. The panel will have two Dynon Skyview screens including autopilot. A Garmin 650 will provide comm and nav. The next major part will be the trimming of the windshield. Hopefully a first flight is in the future late summer or early fall.



The panel is coming together.

## Danielle's First Solo

-Tim Olson

The hardest working man in the RV world has to be **Tom Berge**. I can never keep track of where he is or what he is working on. From ferry trips to transition training to panel upgrades, Tom's "retirement" is not so much! One project he is now working on is a complete instrument panel upgrade to a Cozy. Yep, he will work on a plastic airplane if you twist his arm.



Tom amid the chaos. He claims to know where all the pieces are.



Just one aspect of this project... installation of a Garmin aileron servo, which required lots of thought and engineering to make a bracket that works.

Lot's of congrats this spring: first to RV-10 **builder Ed Krantz and his wife Colleen** on the birth of son #2 **James Dashiell Frantz**. This will fill up all the back seats in their beautiful RV. Also Stein Air avionics manager **Christer Stenstrom** recently tied the knot with **Kimberly Kruenegel**. Welcome Kim to the RV community!!!

Despite the cloudy and low weather on Memorial Day in Wisconsin this year, it was one of the better days in life...with Danielle's birthday finally here, her student pilot certificate restriction under *XIII Limitations* saying "Not valid for solo flight in aircraft other than gliders or balloons until applicant reaches 16th birthday" was now no longer applicable. It was time to SOLO! There are many people, I am happy to say, that do their solo on their 16th birthday. It's in the blogs every couple weeks about another 16 year old soloing. It is excellent to see that there are still some kids who would rather do the REAL DEAL than just play X-Box all day long. Danielle's story has a couple of interesting twists to it that make it special, even if only special to us. For more of the story, read on beyond the pictures...



CFI/Dad Tom Olson with Danielle and the family's RV-14

Just as most solos begin, Danielle started her day with her instructor, a.k.a. "Dad". The day before we had gone out and she did 3 great landings. Today we would start with one perfect one just to verify conditions. The conditions were the real issue of the day this year in Wisconsin. Much of the northern part of the state was to get scattered showers, MVFR ceilings of 1500' or so, and after 8-10am the winds were to pick between 15-25kts. We had considered flying elsewhere, as even an hour south would have much nicer ceilings, but the winds were to be bad everywhere within a couple hour radius, so we decided to just beat the weather and head to the airport at 6am. Upon arrival, the winds were low teens, but within 20 degrees of runway heading so it would be a piece of cake. It brought back old memories of my first solo, watching my instructor depart the plane and head for the FBO. As I climbed out of the RV-10, I fired up the various GoPro and Virb cameras that we had to capture the moment. I gave Danielle a nod...and watched as my very first student taxied out for their very first solo, since I became a CFI earlier this year. I have one other student who is now ready to solo as well, but it was a fantastic turn of events that my own daughter will be my first solo student.

Whereas many instructors may be nervous when sending their

student on their first solo, I was not...not in the slightest. Knowing this girl for her whole life, I knew how she was. She's bright, meticulous, and she follows the rules. She started out on motorcycles as a kid, taking after her old man, and I knew that not only had I trained her well for the flight, but that she was very capable. Her demeanor when we flew says it all, as she is always as cool as a cucumber.

Seeing the airplane lift off was a great experience for me, hearing the whine of that IO-390 as she climbed out away from the airport. I listened for the power change I told her to do as she turns crosswind, to keep the sporty RV-14 from over-climbing the pattern altitude. It doesn't take long to get off the ground, nor hit 1000' AGL when you have a 111-pound girl in a 210hp airplane! As she entered downwind, I hear the power spool back further as she got the airplane down to flap extension speed. I had a handheld radio with me as I too video and could hear her calls. Watching on final, the bright nav lights lit up the wingtips and I watched the airplane smoothly sink towards the runway. Then softly it touched down and I was proud as I could see she was almost perfectly on center with the dashed line. I had told her full-stop landings, and if there were plenty of room, she could do stop-and-go's, being fully prepared for each takeoff, unlike the touch-n-gos we practiced together. She ended up rolling out with less than 1500' of runway used, out of 5000' available, so I watched on as the airplane powered back up and went around for 2 more.



Is there anything more thrilling than one's first solo landing?

Back on the ground we watched her taxi in, pulling the mixture and stopping the engine, coming to rest showing 114.9 hours on the Hobbs. There were the customary pictures of a smiling pilot. It's hard to tell if that's an "RV Grin" or a "Student Solo" grin, if there is a difference. She was my most loyal helper on this project that we built. She was not just flying an airplane...she was flying an airplane she helped create with her own hands.



As a matter of fact, yes, she did grow up in airplanes!!

Climbing out of the cockpit it was time for the solo ritual of the cutting off the shirt tails. This is something I didn't have happen to me when so honestly I don't know if it's still common or not. But we had just been to SteinAir talking to the avionics guru himself, and he gave her a genuine SteinAir T-shirt for this purpose, so we performed the ritual...a trophy to add to the hangar wall. :)



This says it all!!

And then it was time for me to finally get to be lucky enough to have my picture taken with her, on her day of accomplishment. It makes me to know she is turning out how she is. She's been ready for this solo for quite some time now, having 29.9 hours logged in her logbook...all of them with me in RV's. She probably has another 27 or so hours of unlogged time, since I wasn't a CFI when she first got serious in wanting to learn to land these things. 5.6 of her hours are in our RV-10, which she is also ready to fly solo.... many of her unlogged hours are in that airplane and she's got 20.5 hours in the RV-14. Being trained in both of these high performance airplanes has earned her a H.P. signoff in her logbook. This experience will open her future. They say, "Some day you will go places.", you know they mean it when you're flying an RV!"

## Van's Safety Corner

*Ed note: Several years ago, Dick Van Grunsven wrote an excellent series of articles on RV safety that now seems to reside in a little visited corner of Facebook. For a number of upcoming issues, we'd like to reprint them. Some of the statistics may be a little dated by now but the general themes are very relevant to the operation of our RV aircraft*

### **VAN'S SAFETY CORNER – part 1**

March 29, 2011

Loyal readers of the *RVator* (may it rest in peace) are well aware that of late I have been writing quite a bit about flying safety in RVs. I have been concentrating on the importance of sharpening pilot proficiency and skills as a means of improving safety/avoiding and mitigating accidents. I obviously recognize that mechanical factors also play into the homebuilt safety issue, but prefer to address one issue at a time.



A couple of months ago I (we) received an E-mail invitation to attend an FAA sponsored meeting to discuss Amateur Built Aircraft safety. In addition to FAA personnel and representatives of EAA, AOPA, and the insurance industry, invitations were sent to representatives of the five kit companies whose aircraft have the most accidents. Not the highest accident rate, but the greatest number of accidents. Because Van's has by far the largest number of flying Amateur-Built (A-B) aircraft in the country, we unfortunately rank in the top five. Though I think that we can show that the RV accident rate is less than for A-B in general, it is appropriate that we participate in a process to help eliminate accidents. I was able to attend the meeting in conjunction with a vacation, and Van's also provided Mike Seager with an airline ticket so that his valuable Transition Training experience could be added to the venue.

The meeting was held in Sebring, FL on the opening day of the LSA Expo held at the Sebring Airport. It was rather brief, just 3 hours, and was organizational in nature. Primarily, the FAA has Reviewed the history of EAB accidents which showed a fatal accident rate around 6 to 8 time higher than overall GA, and that this rate had not improved in recent years. The FAA also pointed out that they expect EAB accident to be somewhat higher than GA because of the very nature of this aviation activity. (Uncertified designs, amateur construction, no production QC, etc.) This consideration aside, their consensus is that the rate is inexcusably high and must be improved. The reason for forming the FAA/Industry committed was to bring a wide range of resources to bear on the problem. The FAA chairman rather succinctly stat-

ed, something to this effect: "We are asking you to help fix this problem. If you can't or won't, we have means of doing so, and you won't like them—they would essentially put you out of business". \*

*\*This was not meant as a threat, but rather as a simple statement of fact. Consider: The FAA has permitted us to build and fly EAB aircraft with almost none of the requirements and restriction which apply to type certificated aircraft. Over many years we have all benefited from this freedom of opportunity. As with most privileges there are corresponding responsibilities. If the Amateur built community cannot find ways to operate safely, then the FAA will step in. Just how they might do this is open to speculation. Consider how safety is achieved in the highest level of commercial aircraft; the airlines. These aircraft are built, maintained, and flown by TRAINED professionals. The obvious means that the FAA could use to improve A-B safety would be to mandate much higher levels of training and testing in the construction and piloting of A-B aircraft.*



Since then, there as been an increasing amount of press devoted to this subject:

*The May '11 issue of Kitplanes magazine includes a sidebar article by Dave Martin (former editor) who had attended the Sebring meeting. His summarization of the meeting began with the FAA stated fatal accident rate for Amateur Built aircraft being 6-8 times that of certified aircraft.*

*The same Kitplanes issue has a very good article by Doug Rozendaal about transition training, and prominently references Mike Seager's RV training throughout the text.*

*AOPA president Craig Fuller has stated his concern about the poor A-B safety record.*

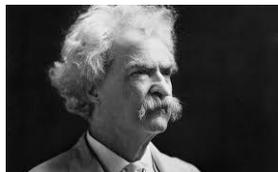
*FAA administrator Randy Babbitt announced the kick off of a five-year "Safety Stand Down" program aimed at reducing GA fatal accidents by 10%. He is initially targeting the homebuilt and experimental aircraft as "low hanging fruit"; the easiest place to make the greatest gains.*

At about the same time, the EAA had a bullet on their webpage stating: "Amateur Built hours flown up, accident rate down."

That's adds a happy tone to an otherwise sad song. But, who's right? Technically speaking, all are.

I believe that humorist Mark Twain once quipped: "There are liars, damn liars, and statistics."

After spending many hours pouring through NALL Reports and NTSB accident files, I tend to agree. Statistics can be confusing and can easily be quoted, accurately but not completely, to prove or disprove almost any point.



For example: The industry standard, used by the FAA & AOPA, to determine aircraft accident rates is that of counting the number of accidents per 100,000 hours of flight operation. Conversely, I have seen reports from other sources where the A-B accidents are rated against the number of aircraft in the fleet. The two are by no means the same. If an airplane sits in a hangar, it cannot have a flight accident. If it flies very little, it has less exposure to accidents than an airplane that flies a lot. Typical A-B aircraft almost certainly fly much less than the average GA aircraft, which includes trainers and rental aircraft. Because of this, rating A-B accidents on the total number of registered A-B aircraft will yield more favorable results than rating them against hours of operation; by a factor of 2 to 3. Rating on this basis only distorts the facts and could foster apathy.

There is a tendency to seek out inevitable discrepancies in reports, and to completely dismiss the findings as a result. We must resist this temptation. Our purposes are best served by trusting the core data and conclusions. These clearly indict homebuilt safety. Various interpretations of data show the homebuilt fatal accident rate anywhere between 5 and 8 times higher than overall GA. While this rate may have shown a downtrend over a period of time, the simple fact is that it is still unacceptably high.

Lets go back to the reference FAA administrator Babbitt made about Amateur Built accident being low hanging fruit. The 2010 NALL report, covering 2009 accidents, states that 30% of all fatal GA accidents were in amateur built aircraft, while they flew only 7% of the total hours. The 2008 figures were 26% of the fatal accident and 5% of the total time flown. On the surface we might assume that any change A-B accidents would have little overall effect because of their small percent of hours flown. Not so! If we could eliminate half of the A-B fatal accidents, this alone would reduce the overall GA fatal accident rate to 85% of what it was. FAA administrator Babbitt (above) was targeting a 10% fatal accident reduction. This is what he meant by "low hanging fruit". The accident rate in the balance of GA could remain the same; and we in the homebuilt sector could alone make more than 10% overall difference. Unfortunately, even if we eliminated half of our fatal accidents, we'd still be as much as 3 times worse than GA average. So you see, we've got a daunting task ahead of us.

Its easy for the majority of us in the RV community, or the homebuilt community, to point out that only the bottom few percentage of our pilots have the accidents; they are making the rest of us look bad. That can also said about the Homebuilt sector of GA; we are making them look bad. When our A-B community

was very small, our accident numbers then were not as noticeable; not high enough to noticeably affect the overall tally. Now that we are becoming a larger portion of GA, our numbers are becoming too noticeable. This probably explains why the FAA, AOPA, etc. are now becoming more concerned and involved.

Safety has always been a topic of concern in the homebuilt community. Over the years, I don't think that most of us knew how relatively safe or dangerous this activity was---credible statistics were usually either not available or not vividly portrayed. For reasons given above, homebuilt safety is now becoming the center of attention.



How about RV accidents in relation to overall A-B? The best conclusion I can derive shows the RV fatal accident rate to be about half that of overall A-B. This should not be viewed as a reason for complacency. Being only "half of BAD" is still nothing to be proud of.

OK, I realize that the vast majority of you reading this are good, conscientious RV pilots or wannabe RV pilots. I know that many of you are alarmed over the number of A-B, particularly RV, accidents. You probably feel powerless to do anything about it other than assuring that your airplane and your piloting are as safe as possible. (Serious reflection may detect areas of needed self-improvement) It is difficult to find ways of identifying and reaching out to others who might be at higher risk. Some of those means might include helping others to assure the mechanical perfection of their planes, sharing ideas about honing flying skills, and encouraging those new to RV flying to seek good transition training.

#### A GOOD PLACE TO START:

Earlier I had referenced the high level of training in the airline industry as a primary reason for their excellent safety record. We are all aware that no special training is required of us by the FAA to fly an A-B aircraft. FARs requires that we only have a valid license and medical. We don't even need to have flown within the preceding 90 days to solo our new A-B. Even our BFR can be almost two years old, and may be taken a vastly different airplane.

Wise builders remain proficient, or regain piloting proficiency, before first flying their A-B aircraft. Ideally, they obtain transition training from a **qualified** instructor. Fortunately for RV builders and buyers, several instructors are available offering transition training specifically for RVs. The most experienced of these is Mike Seager. We have long assumed that real safety benefits accrue from this type training. Only recently did we attempt to measure these benefits. Mike has kept good records on the approximately 4000 pilots he is trained, and has tried to track their accidents. By making some projections base on estimated flight times, it would appear that his **"graduates" have had fatal accidents somewhere in the vicinity of 10% the overall RV average.**



Super instructor Mike Seager

Just ponder that though for a moment. . . We are always looking for ways of making perhaps a 10% safety improvement. The above suggests a 1000% improvement, not a 10%. This is HUGE!

I trust that students of Alex DeDominicis, Brian Moentenich, and other RV transition instructors fare very well also. For a pilot about to begin flying an RV, there is no substitute for transition training with a good RV qualified instructor. For anyone already flying an RV, but perhaps not as proficient as they should be, refresher training with one of them is a good idea. Or, just self-practicing the same things that they teach will help.

The key concept being that just meeting FAA minimum requirements is probably not enough.

In the coming weeks and months I plan to add safety related segments to this column. Please excuse me if I sometimes repeat myself. Blame it on age, or just to my passion for sharing with everyone my understanding that some specific flying skills are essential, and how these contribute to flight safety. I hope that my sometimes-rambling diatribe will inspire others more competent and eloquent to send in their comments and suggestions. We learn from each other.

Stay Tuned!

Van

*Update: Here is a quote from the FAA's General Aviation Safety website that addresses the improvements that have been made in amateur-built aircraft safety over the past five years. This was published in December 2016:*

## Amateur-Built Aircraft

“Amateur-built and other experimental aircraft were involved in more than 25 percent of U.S. fatal general aviation accidents over the past five years and account for an estimated five percent of total general aviation fleet hours. With the help of outreach, updated safety materials developed by the FAA and GAJSC industry participants, and new policies, this segment of the GA industry is showing improvement. Loss of control remains the leading cause of fatal accidents involving amateur-built aircraft. The FAA's Airmen Transition to Unfamiliar Airplanes Advisory Circular (AC 90-109A) helps plan the transition to any unfamiliar fixed-wing airplanes, including type-certificated (TC) and/or experimental airplanes. It provides information and guidance to owners and pilots of experimental, simple, complex, high-performance, and/or unfamiliar airplanes. It also provides information to flight instructors who teach in these airplanes.



The FAA also continues to promote AC 90-116, Additional Pilot Program (APP) for Phase I Flight Test. The AC provides information and guidance for flight testing experimental aircraft. The APP was developed to improve safety by enhancing Builder/Owner Pilot (BP) skills and mitigate risks associated with Phase I flight testing of aircraft built from commercially produced kits through the use of a qualified additional pilot and powerplant testing. The APP is an optional program which provides another pathway to conducting Phase I flight testing. The traditional option for a pilot to test their aircraft solo during Phase I is not covered or affected by this AC, and remains an option for those who choose to do so in accordance with their aircraft's operating limitations.”

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First Class

## ***Twin Cities RV Builders April Meeting***

**Saturday, July 8, 2017, eatin around 1 pm**  
**Bernie Weiss' hangar at Anoka County (KANE, India Lane)**



By the time you read this we should be finally be SUMMER!! Bernie Weiss, Pete Howell, and Alex Perterson have again invited us to hang out and EAT at the "Fox Hollow" ghetto at KANE. All you need to do is come hungry with a folding chair and lot's of hangar tales to tell. Your support of the Tewin Cities RV Builders will cover the tab.

As we get a little closer to the date, we will be asking for a headcount so monitor your email inbox and we'll send out a note to get you signed up.

Fly-ins are welcome. You can park at the north end of the hangar line (ask for taxi instructions to "Fox Hollow" at the west end of the airport (taxi lane "India")) or on the grass on India Lane opposite the hangars. For drivers:

**From Rte 65:** Turn east on 93<sup>rd</sup> Lane NE. Turn left at airport entrance (gate code 12185). Turn right at T intersection then immediate left on India Lane.

**From I35W and Rte 10:** Go west on Rte 10 and exit on 93<sup>rd</sup> Lane. Turn right and take second airport entrance to the right and follow directions above.

Please park on grass or hard surface clear of hangar doors!!!!!! Questions: Call Doug at 651-398-1184

***See you then!!!!!!***