

January 2006

Experimental Aircraft Association Chapter 33

A monthly publication of the Dr. Alexander M. Lippisch Chapter of the Experimental Aircraft Association, Cedar Rapids, Iowa.

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## N2D Rollout

By Mark Navratil

After 6.5 years and 4500 hours of work my RV-8A is finally complete.

"Complete" is defined as mechanically ready to fly.....the spinner still needs to be polished, and the wheel fairings aren't installed yet, but those items can wait until after it's flying. I finished up the last items on the "must-do-in-order-to-fly" list on New Year's Eve and did the weight and balance with Tom Meeker's help. I tried to save weight wherever possible during construction and was very pleased to see an empty weight of

1087.5 lbs. on the digital scales (that's with 180 hp O-360, Hartzell prop, day/night VFR panel, and 5-color paint job). Typically a similarly equipped RV-8/A is just over 1100 lbs so my effort to save ounces here and there added up to a measurable number of pounds. On New Year's Day I started the engine for the first time. My long-suffering wife and kids were there to witness the event.



I did not install a primer system in the airplane but I have dual Lightspeed ignition and was pleasantly surprised that it started so easily in cold weather. After a few minutes to let it warm up, I did about half a dozen run-ups to full power to set the low-pitch stop on the Hartzell.

Alan Kritzman stood by with fire extinguisher and wrenches for prop adjustments. The Hartzell manual says that one full turn of the stop equals about 200 rpm. I think we ended up turning it in at least two full turns from the factory setting before we settled on 2660 static rpm. The factory setting would have allowed way over 2700 if it hadn't been for the MT governor, which was perfectly set for 2700 from the get-go. The downside of setting the low-pitch stop is that my brand-new blended airfoil prop blades are now sandblasted :( With that 74" prop coming pretty close to the ground on my nosedragger, running it up to 2700 really kicks up the grit I guess. I was surprised and disappointed how bad it looks after just a few run-ups. I don't really know how else I could have done it though. Ideally it would be nice to tie the tail down to ground level in a nose-high attitude (like you taildragger guys have), but that engine/prop combo puts out a tremendous amount of thrust at full rpm and I'm not sure I'd trust the tail tie-down ring to hold it...if it broke loose it would be very bad news. So anyway....the prop ain't pretty anymore but it will fly just fine I guess, and if the engine fails due to loss of oil pressure--or if the governor ever quits doing its job--I'll be very glad that the stop is set correctly.

You might be wondering how anyone could take 4500 hours to build an RV (Vans claims you can do it in 1800 hrs and some people actually do). My answer is that if you are slow and meticulous (read: perfectionist), do things over whenever they aren't just right, add lots of custom touches, make extra effort to save weight wherever possible (i.e. drilling lightening holes in the aft canopy



rail spacer), do everything yourself (i.e. painting), make things that could be simple unnecessarily complex (like running flaps and trim via relays from both front and back seats instead of just toggle switches on the panel), and do lots of horse-trading and bargain-hunting and eBay-surfing because you're too cheap to pay the fair market price for all the toys you want....it all adds up to a lot more time than cranking out a basic RV the way Van intended. I also think it depends on how one figures their



time. I counted time to set up my shop, build work benches, look at the plans and scratch my head, etc. I bought the empennage and wings partially completed by another builder and can say without any doubt that I spent more time disassembling and fixing the mess he made of it than it would have taken me to just build it myself from the kit. I acquired an engine core and did a partial overhaul on the engine before sending it out to be professionally finished. I bought a fixed-pitch prop and had the engine set up for fixed-pitch operation, then sold the prop and converted to constant-speed operation. I built my panel for steam gauges and a Microair transponder, then put in a Dynon EFIS and a Garmin transponder instead. I built the paint booth and applied the 5-color paint scheme, which I spent a lot of time researching to closely match the USAF's new primary trainer, the T-6A Texan II. I designed and applied the vinyl graphics. I spent who-knows-how-much time trying to acquire a short N-number, N2D (they don't make 'em anymore, so to speak...).

There's also lots of little custom mods and touches. For example, the canopy is actually comprised of two separate aftermarket canopies resulting in a 1/4" thick windscreen and 3/16" slider section (so I had to cut everything twice). It has a custom ballast assembly in the tail that I designed and built from scratch. It's pretty whiz-bang but took quite a while to do. I used a different type of boost pump from what Vans recommends and relocated the pump and gascolator to the wing root. The airplane is all electric so I have redundant bus architecture. I also discovered that dual Lightspeed ignition is a lot more work to install than ordering the engine with two mags. I researched strobe power supplies extensively and found an automotive unit that does basically what Whelen's Comet Flash unit does for 1/3 the price (a version of which another RV builder is now marketing for Experimentals). Oil cooler installation with airflow control mechanism is custom/unique design. I have some bells and whistles like landing light wig-wags, cup holder (a lightening hole in the side console with engine baffle seal around the inside edges), etc etc etc.

Even with all these extras it seems like it shouldn't have taken so long....maybe I can't add right and made some math errors in totaling my time? My dad, an A&P mechanic, likes to say that "Things take longer than they do." He must be right.

Anyway, the bottom line is that I had fun doing it. I never viewed the project as just a means to an end--it was a dream for me to build an airplane and I would not have gone out and purchased a flying RV from somebody else even if I had the money to do so. I enjoyed the building process immensely and there's a huge feeling of satisfaction every time I look at it. Ironically, some of the parts that were the least enjoyable bring the greatest sense of achievement. For example, the painting process was very frustrating for me. I am a perfectionist but only a mediocre painter....well, ok, now that I've had lots of practice I'd say I've upgraded to an average painter. Either way it's a recipe for great frustration, and the painting process was exactly that--tedious and frustrating. I sanded out and repainted a lot of parts because I wasn't happy with them. Then I'd do them over and sometimes it looked worse the second time around, so I'd do it a third time and finally accept it as "good enough." Now that some time has passed, I don't notice the little flaws that used to irritate me so much in the paint booth. I stand back and feel good about how it looks and proud that I did it myself. But I wouldn't blame anybody for having their project professionally painted...you'll get better results and save yourself lots of time and frustration!

When will it fly? Lord only knows. I haven't got my airworthiness inspection yet but the limiting factor will really be flyable weather.

With the combination of short daylight hours and bad weather, it could easily be a month or two before I can brush the rust off my flying skills (i.e. get current enough to make both myself and the insurance company happy) and take it up for the first time. I'll let everybody know when the big event occurs.



# Read Back – Online Forums

By Jim Meade

This month I'm going to take a break from reviewing books and talk about some of the online discussion groups or forums where pilots can ask questions, exchange opinions, get answers and be abused. Yes, some forums are polite and some are no place to go if you have a thin skin.

I'm a great fan of online discussion groups for a number of reasons. They are often very frequently checked by members. A question will usually have a response within hours and often within minutes. If it is an interesting or controversial question the "thread" of messages may endure for days or even weeks as people add their perspective to the ongoing discussion. You may also get quite a range of experience and opinion. Pilot wannabe's and 40,000 hour gray beards may write with equal enthusiasm, if different perspectives.

Some forums require a real name and in some people only post with a "handle" or nickname. The real name boards tend to be a bit more considerate and civil, but on the other hand, when two people dislike each other by real name the antagonism tends to be stronger and there is less likely to be agreement or concurrence between those two people. Boards that don't require real names pose the question of who the other poster really is. Is that person an experienced CFII, a check-auler, a student or someone who doesn't fly at all? Until you have read messages from one of these persons for a while you may have a hard time knowing how credible each of them is.

The forums are typically divided into sections by topic. For example, you may find groups that discuss maintenance, ownership, IFR flying, FAA regulations and so on. Many forums have a non-aviation section where politics and similar off-topic subjects can be discussed without cluttering up the aviation threads. Several forums have sections where members can post anonymously on medical questions or where you can discuss issues that might include violations or where you otherwise don't want your own name associated.

If you are new to online discussions, it can be a good idea to read messages or "lurk" for a few days before posting. Get a feel for the tone and a sense for what is acceptable and what is not. Most forums have their own unwritten code of etiquette in addition to written rules you are supposed to follow.

Here is a list of a few online forums along with a few comments on each: There are many other forums, some of them quite popular. Ratings are on a 4 star scale.

AOPA. \*\*\* AOPA membership required. Handles permitted. Good anonymous medical section with several AME's and doctors who post regularly. Much discussion about training, with many students and CFI's posting. Sometimes contentious exchanges between people who have appointed themselves as expert on some topic. They will argue about how many angels can dance on the head of a pin. If you are an AOPA member, I recommend you check them out. On the home page, look way down on the left hand side under Members Section for Members Forum. <http://www.aopa.org/>

Cessna Pilots Association (CPA) \*\*\*\*. CPA membership required. Real names required. Most civil and decent discussions of the forums mentioned. Excellent type or model discussions in very great depth by people with lots of experience in the plane. Great place for discussion of lean of peak (LOP) techniques. A must if you are a Cessna owner or flyer. If you are a CPA member, follow the instructions on the home page to get a userid and password. <http://www.cessna.org/>

AvSIG. \*\*\* AvSIG is the oldest aviation forum in the world. Some sections are free but full ac-

cess requires \$20 year membership. Real names are required. It was on CompuServe for many years but has it's own web site now. Lots of old pilots here with wonderful stories of round engines that belch smoke and sound like real airplanes. The most general knowledge of any of the forums. Sometimes sharp disagreements, but generally civil and agreeable. Excellent knowledge of airline operations, with many airline pilots contributing regularly. <http://www.aero-farm.com/avsig.htm>

Pilots of America. \*\* POA is free. Handles permitted. It is fairly new and was founded when AOPA dropped its old forum. More heavily moderated than AOPA. Since AOPA reinstated it's forum members some choose to habituate one or the other but many members are active in both. If you are not an AOPA member but want a feel for what it is like, you can try POA. <http://www.pilotsofamerica.com/>

With any forum it is wise to take what you read with a grain of salt until you're established the bona fides of the people giving the response. Especially in cases of regulatory interpretation, you see all kinds of responses from the slipshod to the Jesuitical. With that said, going online can be a great way to stay involved in flying when the weather has you grounded.

## Last Meeting - Christmas Party

We held our annual Christmas Party at the Ced-Rel Supper Club, which is GOOD EATING any time of the year. And of course we also had our gift exchange/steal. A good time was had by all.

## Next meeting - Traveling the Hudson in a T-Craft

For our first meeting of 2006, Jim Zannger will be showing slides and talking about his trip flying down the Hudson river in his vintage Taylorcraft. Regular readers of "The Lippisch Letter" will remember Jim's recent article in the October 2005 issue, but that was only as much as he could fit into a single newsletter. Jim has much more in store for us at this meeting. Also this may be the last chance for many of us to see Jim as he will be taking a new job managing an airport in north-west Iowa and rumor has it that he has also landed a corporate jet jig also.

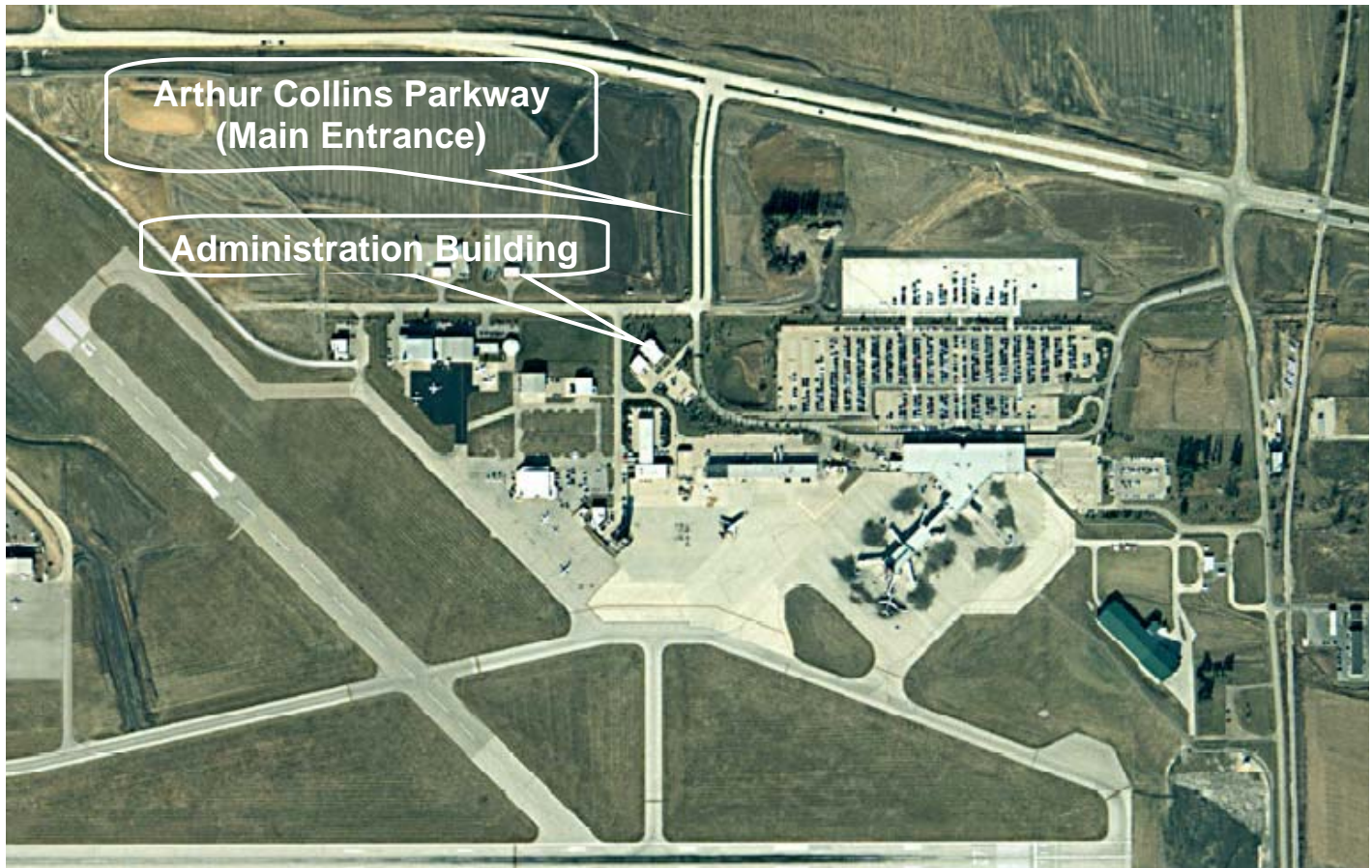
We also have a new location for this meeting. Our new President, Randy Hartman, has secured the auditorium at the Eastern Iowa Airport Administrative building for our Chapters use. The meeting will be Friday January 13th at 7:00 at the Admin building, 2515 Arthur Collins Parkway SW. Turn into the main airport entrance, drive pass Lippisch Place and the Admin Building is the next turn to the right. See the map on page 7. Or those of you who might like to fly-in to the event, you may park at the Piedmont-Hawthorne ramp and walk to the Admin building.

## February Meeting - Eastern Iowa Airport Director

Our Feb meeting will be a little later in the month than usual but we have persuaded, Dan Mann, the Eastern Iowa Airport Director to meet with us. Dan will fill us in on the construction projects and other goings on at the airport and Dan will be available for any questions we might have. This meeting will again be at the CID Administration building, Feb 17th 7:00. So you Iowa City, Monticello & Washington guys & gals can fly to the next few meetings and no longer have any excuse not to attend. See you there.

# Tentative 2006 EAA Chapter 33 Monthly Meetings

	What	Who (Speaker)	Where	When	Start Time	Organizers
<b>January</b>	Presentation	Jim Zannger	CID Admin Bldg	January 13th	7:00 PM	
<b>February</b>	Guest speaker	Dan Mann	CID Admin Bldg	February 17th	7:00 PM	Randy Hartman
<b>March</b>	Visit AOA	Randy Hartman	AOA new facility @ CID	March 11th	7:00 PM	Randy Hartman
<b>April</b>	Spring Banquet	Troy or Chris	TBD	April 15th	TBD	Jill Fishbough, Zimmerman
<b>May</b>	TBD	TBD	Iowa City - TBD	May 12th	TBD	Justin, Brian Flood, Marc Anderson
<b>June</b>	Fly in	TBD	MXO Airport	June 10th	TBD	Arnold Jacobs, Max Dirks,
<b>July</b>	TBD	TBD	Greencastle Airport	July 8th	TBD	Jim Meade, Mark Navratil, Dave Leadum
<b>August</b>	No meeting	N/A	N/A	N/A	N/A	N/A
<b>September</b>	Project Visit	TBD	TBD	September TBD	TBD	TBD
<b>October</b>	TBD	TBD	TBD	October 8 or 9	TBD	TBD
<b>November</b>	TBD	TBD	TBD	November 14th	TBD	TBD
<b>December</b>	Winter Banquet	TBD	TBD	December	TBD	TBD



## Chapter 33 Calendar

**Jan 17 7:00** Chapter Meeting, CID Admin Building, Jim Zannger, T-craft on the Hudson

**Jan 28 11:30am** Chili Fly-In, Hosted by: Aviation Museum's Board of Directors, Greenfield, Iowa Municipal Airport

**Feb 3-4** 15th Annual Midwest Aviation Maintenance Symposium and Trade Show, Sponsored by: Iowa Chapter of PAMA, Hotel at the Gateway Center Ames, Iowa

**Feb 17 7:00** Chapter meeting, Dan Mann, Eastern Iowa Airport Director, CID Admin Bldg.

**April 4-10** Sun 'n Fun Fly-In, The 32nd Annual Spring Celebration of Flight!

**May 20-21 2006** Eastern Iowa Big Kids Toy Show, Fly-In Breakfast every morning, Young Eagle Flights, Hangar Dance Saturday night, Iowa City, Iowa Municipal Airport



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**CHECK DENSITY ALTITUDE?  
WE DONT NEED NO STINKING  
DENSITY ALTITUDE CHECK!!!**

In The January 2006 Issue...

N2D Rollout, Read Back-Online Forums



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