



RVator's Log

Newsletter of the Twin Cities RV Builder's Group

September 2018

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Upcoming Events

September 15 - Twin Cities RV Builders Fly-In Breakfast. Anoka County Airport, MN.

See page 7.

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**Minnesota Wing
Van's Air Force**

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Shop Notes

- Doug

"No... I didn't go to Oshkosh this year" There I said it. Blasphemous words from a committed RV driver. How can it be that I didn't go this year? This is only the 4th time in the last 48 years (yes, that is 48!!) that I missed the biggest aeronautical gathering in the world. Heavens, we went to Oshkosh on our honeymoon in 1970 spending several romantic days living in the hot and stuffy dorm rooms at UW-Oshkosh. Over the years we always flew there in whatever flying machine we could beg, borrow or happened to own at the time. I recall Jean and I flying the Fisk arrival in our 65 hp Piper Vagabond throttle wide open to try to squeeze 90 knots out of it to stay ahead of a hulking Piper Aztec chewing up our tail. #1 son Craig was 10 months old when we took him for his first Oshkosh. The dorm rooms were not designed well for babies so we wadded up a bunch of blankets and made a nest for him on the floor of the closet. Hey it worked and he apparently suffered no long-term psychological damage. A couple years later with Dale added to the brood, we pushed two strollers for miles and miles relishing every beautiful flying machine on the grounds.



For the last dozen years or so we rented rooms at a private home nearby. Most of the time Jean would drive over and I would fly the RV. That was great since we would have a car to explore around the town.

But the last few years, she has been tied up with work and I've flown the RV-7 over just for the day. That kind of works if you want to skim the surface. At least you know how the weather will be for the day and since it is only about an hour and 15-minute flight, you can easily get home

after the air show. The downside is that OSH is so overwhelming that it is impossible to see everything you want to see in just one day. My problem has been I run around all over trying to gobble up every last bright and shiny aviation bauble and feel totally overwhelmed.

So this year, I questioned whether I could handle walking for miles and miles in the sun and heat. Maybe just getting old! We all complain about it getting just too big. You know the list of gripes: too many crazy pilots flying in not following the rules, it's too commer-



Dale and Craig at OSH - 1989

cial, it's too expensive, not enough trams, etc. etc. But you cannot deny it is the biggest and baddest aviation event in the world and it is practically in our back yard. Maybe I'll go next year. We'll see....

* * * * *

Clown Plane – part deux

- Doug

This summer our local avionics guru Stein Bruch, asked me if I might be interested in ferrying his “old” RV-9 from Sturgis, SD to Lakeville. The “Clown Plane” as it is called was being sold and Stein wanted to complete some avionics repairs before it was to be delivered to its new owner in Georgia. To make a long story short, I hopped a Delta CRJ to Rapid City and met up with Stein’s brother Zweit who has kept the -9 at the family ranch for the past 7 years. I flew it back to Sioux Falls that afternoon for an overnight visit with #2 son and then on to the Twin Cities the next day.

The “Clown Plane” reunion brought to mind this article I wrote back in 2011 when I delivered the then new -9 to the “wild west” of South Dakota. Hope you enjoy a rerun....

Flyin’ the “Clown Plane”

-from the December 2011 issue of the RVator’s Log

About a month ago, I got a call from our local avionics merchant Stein Bruch. He asked if I might be interested in ferrying their recently completed RV-9 out to South Dakota and deliver it to his brother Zweit. Now if you have been down to Stein Air recently you may have been aware of their RV-9 project. Now that it is finished, to say it has a rather unique paint job is an understatement. Let’s just say that when you file a flight plan for this airplane and you are to specify the color, you just say “all of them”!! You can see why...



Stein’s master technician Chris Stenstrom calls it the “Clown Plane” which I think sums it up. Actually the inspiration comes from Zweit’s two little boys who have a vast collection of Little Tike’s toys all in rather striking colors. As long as one doesn’t stare too long at it the chance of a seizure is greatly reduced (I’m just kidding!! It’s really pretty cool!)



N14ZB is a -9 with a 0-360 Barrett Lycoming. It’s got a Cato three-blade prop and an AFS 3500 VFR EFIS panel. Of course a TruTrak autopilot does most of the work. The trip sounded like a fun time. My assignment was to fly out to the Bruch ranch strip about 5 miles north of the Sturgis, SD airport. Stein said the strip is actually a road, which leads from the main highway to the Bruch family ranch. Plenty long at 3800’ but about 30 feet wide. Hmm... maybe best to avoid a screaming crosswind for my first landing there.

I waited a couple days until the weather forecast sounded good and on the morning of October 19, I launched around 0800. The weather was overcast around 2500 feet in Minnesota but the forecast was to be clear crossing the SD border.

“Clown Plane” was a nice machine. The Cato prop is very smooth and the Vetterman dual muffler system makes a BIG difference in noise level (I think I’d recommend them). I motored along across the flatlands of central and then western Minnesota around 3000’ agl. Finally the skies cleared just south of Watertown and I climbed up to 6500’. I actually had about a 10-knot tailwind westbound, which just never happens so it was only 2:05 to Pierre for a fuel stop. “Wow, did you paint that thing yourself?” asked the FBO receptionist. I pleaded totally innocent. As I started up, a Sanford Health medevac King Air pulled up next to me and the co-pilot had this odd look on his face (he just wanted one, I know!)

It was only another hour to the Bruch airstrip. It is a couple miles northeast of Bear Butte, which can be seen about a hundred miles away.



Actually the strip was easy to find with a bright red hangar roof standing out among the brown grassland of late fall. Thankfully there was no wind so I circled the strip and decided to land to the east. The -9 with a Cato prop glides like a competition sailplane. You REALLY have to plan ahead as it will not go down. With power off and full flaps, I shimmied down between a couple trees at the approach end trying to keep the speed down to about 60 knots and it still floated a little bit. But I stayed on the gravel and Zweit was there to meet me.

Stein and Zweit's dad owns the family ranch. It is 2000 acres plus, which is typical of the size of the ranches out here. Zweit needed at least five hours of dual to meet the insurance requirements so we wasted no time and got started. We went through a pre-flight briefing to familiarize him with the RV-9 and mounted up to do some air work.

Zweit has a couple hundred hours with about 50 in the family Citabria, so he has a good tail wheel background. In fact, a lot of his flying is "off-airport" with any good road or reasonably "flat" field serving as a landing strip. We spent about two hours going through various maneuvers, stalls, and so forth. I could tell he was going to be a quick study. His day job is a fireman and paramedic and spent many summers fighting wildfires all over the country. He has even climbed Devil's Tower. This RV stuff should be no problem!



That evening I stayed at his beautiful home about 10 miles west and enjoyed the company of his wife Scotty and the two boys, Quinn and Beck.

The next morning dawned absolutely perfect... clear and calm. We stopped in Sturgis for coffee and Zweit showed me the array of biker bars that cater to the big motorcycle rally held there each summer. The rest of the year, Sturgis is eerily quiet. At the ranch, we pulled the -9 out of the hangar and launched into the cool morning air. We ran through emergency procedures and then flew around Bear Butte to the Sturgis airport for landing practice. Zweit was progressing quite well and after a dozen or so takeoffs and landings, we decided to take a short cross country to Hot Springs, about 75 miles to the south and home base of uber-exhaust-man Larry Vetterman.

We programmed the Garmin Aera and pushed the appropriate buttons to take us first to Custer, SD and then to Hot Springs. We climbed to 10,500 to clear the highest of the Black Hills and motored south. We landed in Hot Springs and gave Larry a call. It was great to talk to him again and he said he would be out to the airport in an hour. We went out and did a couple more landings until Larry arrived and then taxied over to his hangar. Larry is truly one of the RV world's most enjoyable members.



We chatted for the better part of an hour and Larry brought us up to date on his exhaust business. Over the years he has sold over 10,000 units to RVs all over the world. He still sells about 50-60 a month and sells systems for all RVs except the RV-12. Larry also stays busy as the Chairman of the South Dakota Aeronautics Commission. Soon it was time to head back so we cranked up the -9, took off and set a direct course for the Bruch strip.

When we arrived back at the ranch, the wind had kicked up and our approach was a little more challenging. Just as we flared, a gust picked us back up into the air and Zweit went around for another try. #2 approach and landing was fine so we called it a day and I signed off Zweit as a brand new RV pilot.

That evening Zweit drove me back to Rapid City where I stayed overnight and caught the DAL flight back to MSP in the morning.

All in all it was a fun trip and I gained a new appreciation for the RV-9... a well mannered, easy to handle, tail dragger that will be right at home in South Dakota.

Building or Buying??

Several years ago someone brought up the fact that Van's Aircraft just might be the largest "airframe" manufacturer in the world in pure number of airframes out the door. All of those kits (or airframes) have morphed into over 10,000 completed RVs, which is a pretty formable population. There are a lot of RVs out there, which makes the prospect of buying a "ready-built" example a viable option to building. Our tech counselor Tom Berge spends a BIG part of his life conducting pre-buy inspections for potential customers who choose to scour the earth looking for the perfect RV to buy. With that in mind, Van's provides this guide to buying a ready-built RV:

SO YOU'RE CONSIDERING BUYING A FLYING RV...

With increasing frequency, prospective buyers of flying RVs are calling Van's Aircraft, Inc. for advice about finished RV aircraft they would like to buy. This puts us in a difficult position.



Our business is airframe kits and the airframe is only part of an airplane. We are not in the business of inspecting, brokering or judging finished aircraft. We cannot recommend for or against the purchase of any particular airplane, or offer any opinion about the builder. With very few exceptions, we've never seen the airplane in question and know virtually nothing about it, its equipment, construction quality, or history.

That said, here's a few suggestions derived from our experience:

PAPERWORK

If you are buying a flying RV, it must have all the pertinent paperwork: Airworthiness Certificate, Registration, Weight and Balance, and, because it is registered in the Experimental category, a set of Operating Limitations specific to this one airplane.

In addition, regulations require an Operator's Handbook. This handbook is the responsibility of the aircraft builder/owner/test pilot. Because an RV might be fitted with almost any engine, propeller, avionics and other equipment imaginable (and sometimes, equipment Van's never imagined!) the

UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION SPECIAL AIRWORTHINESS CERTIFICATE			
A	CATEGORY/DESIGNATION	PURPOSE	
B	MANUFACTURER	NAME	ADDRESS
C	FLIGHT	FROM	TO
D	BUILDER	DATE OF ISSUANCE	OPERATING LIMITATIONS DATED
E	SIGNATURE OF FAA REPRESENTATIVE	SERIAL NO.	MODEL
		EXPIRY	ISS PART OF THIS CERTIFICATE
			DESIGNATION OR OFFICE NO.

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding \$1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).
FAA Form 8130-7 (2/15) SEE REVERSE SIDE ASN: 0082-00-493-4000

data needed to compile the Operator's Handbook must be derived from flight test of the specific airplane.

Similarly, the almost infinite possibilities prevent Van's from supplying a Maintenance Manual. Van's does strongly suggest that the plans and builder's manual used during construction remain with the airplane. Also, copies of the builder's log and photo record would prove very useful for any future maintenance and repair.

Radios, instruments, engine accessories, etc., all come with installation and operation manuals. These should be included with the airplane – much of the information in them can be found nowhere else.

A prospective buyer should insist on receiving all pertinent documents.

THE AIRFRAME

RVs are built the same way the vast majority of certified airplanes are built. The airframes are largely aluminum, with some steel components. Composite materials are used in some areas like the cowl, wing tips and wheel fairings. They are powered with the same Lycoming engines found in Cessnas, Pipers, etc. The standards for acceptable construction quality of aluminum airplanes and safe Lycoming engine installations are well established, and any mechanic or inspector familiar with production light aircraft should be able to competently inspect an RV.

Over the years, Van's Aircraft has issued Service Bulletins for most RV types. Copies of these are available from Van's Aircraft, and posted on Van's website www.vansaircraft.com. These Service Bulletins have been issued for a reason, and, although Van's has no way of knowing if a particular airplane is in compliance, it would be foolish to ignore or postpone acting upon them.

A prospective buyer should schedule a complete airframe inspection with a trusted mechanic.

ENGINES

It is important to realize that in an Experimental airplane, there is no such thing as a "standard" engine installation. Builders may choose any engine, engine accessory or component they desire. For instance, some RVs have gascolators, some have inline fuel filters, some have no provision for fuel filtering at all.

RVs are designed around Lycoming engines, although kit builders are free to put in any engine they like. Lycoming engine installation is very straightforward and any mechanic or inspector familiar with production light aircraft should be able to inspect the engine and related systems.

It is possible that a flying RV may be equipped with a Lycoming engine that is not appropriate for the airframe. For instance, Van's has never recommended the 200 hp IO-360 for the RV-4 or RV-6/6A. Some builders have installed this engine anyway. Prospective buyers should familiarize themselves with the potential drawbacks of bigger, heavier, more powerful engines. These include increased stress on the airframe and landing gear, as well as the potential for loadings and speeds outside design limits.

If the engine is anything other than a Lycoming, then it is likely that the builder had to design and install many of his own systems (Van's does not supply components for anything other than Lycomings). Not only the engine, but also the engine mount, cowling, cooling system, fuel, and ignition systems, in particular, and should be inspected with great care.

A prospective buyer should schedule a complete engine/system inspection with a trusted mechanic.

FLIGHT TRAINING

RVs are not difficult to fly, but the characteristics of a small, quick airplane with a low-aspect ratio wing and a low power loading are quite different than many production aircraft. We highly recommend Transition Training specific to RVs, even for experienced pilots. Insurance companies may insist on it as well.

The FAA also has an Advisory Circular on the topic that is a must-read for new owners.

http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1018499

For more details and information on RV Transition Flight Training, click on the Van's website link below:

<http://www.vansaircraft.com/public/trainfly.htm>

A prospective buyer should do everything he can to familiarize himself with RV flying and handling qualities.

MAINTENANCE

One of the big advantages of an Experimental airplane is that the builder may receive a Repairman's Certificate. This document allows him to sign off all necessary maintenance and repair on this one airplane. This privilege does NOT go with the airplane if it is sold. It remains with the builder. The new

owner must have condition inspections signed off by an Airframe and Powerplant certificate holder, or by the holder of the Repairman's Certificate for that aircraft. The owner without these credentials can perform all other maintenance and repairs but should seek supervision if he/she is unfamiliar with any maintenance or repair task. Check the FARs for permitted maintenance.

Van's Aircraft, Inc. does not offer assistance on repair or maintenance.

A prospective buyer should study and understand the maintenance history of the aircraft, and what he is permitted to do.

SO YOU WENT AHEAD AND BOUGHT IT...

If you've bought a completed RV, there are a few things you should do shortly after: Notify Van's Aircraft in writing, with the builder's number of the airplane, a copy of the bill of sale, and all the pertinent information – your name, address, contact information, etc. This will allow us to keep accurate records – a good thing if we must issue a Service Bulletin, for example.

Do your own weight and balance, following the directions in the Builder's Manual.

Learn your airplane. Take the cowl off and learn the routing, position and operation of the various systems. Remove the seat pans and learn how the control linkages work. Remove the wheel fairings and learn how to change a tire or brake pad.

Get Transition Training & Practice!!

A prospective buyer should understand that the airplane he is considering is unique. It is up to him to acquire the skills and knowledge to operate it safely and enjoyably.

Open cockpit flying???

-Doug

A recent thread on Van's Air Force discussed the loss of an RV-4 canopy in flight. The writer had a rather harrowing experience to say the least when his canopy somehow became unlatched and ripped off leaving him with no glasses, no headset, and battling a 150 mph wind blast. He kept his wits about him and managed to make a safe landing but it probably took a couple days for his heart rate to slow down.



Of any of the RVs, the -4 is the one that you would REALLY like the top to stay in place. My -4 had an additional safety latch, a strong spring to keep the latching handle engaged and a micro-switch activated warning light staring at me on the panel. I was rather paranoid about checking and double checking that canopy. I had read of too many accidents in many varieties of aircraft coming to grief after something became unlatched and the pilot forgetting to “fly the airplane.”

The -10’s door system requires special attention since it is easy to overlook the rear-locking pin not being in the correct position. Tom Irlbeck lost a door on Paul Irlbeck’s and Elden Lampretch’s RV-10 on an early test flight due to an unengaged locking pin. It ripped off shortly after takeoff at Lake Elmo and floated down into the grass and wasn’t even scratched. Tom flew it around the pattern with lots of noise and a great view out the left side and landed non the worse for wear (Van later added a “doors-locked” annunciator light.)

Whatever airplane you are flying, be sure to do a last minute “doors/canopy latched” check rolling onto the runway before takeoff. Van discussed the issue with this service bulletin...

SERVICE LETTER 16-11-04 TIP-UP CANOPIES

While rare, in-flight canopy and door openings have been reported in all models of RVs. Field reports of aircraft flight characteristics both during and after an in-flight opening vary significantly. The most pronounced changes in flight characteristics reported have been related to canopy openings on RVs with tip-up (forward opening) type canopies, as used on the RV- 6/7/9/12/and 14 models. In most cases these incidents have been minor, but some have had serious consequences.

Field reports indicate that if the canopy does become unlatched in flight, the aircraft will most likely pitch nose down abruptly. The severity of the pitching moment can depend on speed, attitude and weight and balance. While the noise and attitude change may be very distracting, it is paramount that the pilot maintains control of the aircraft at all times. If at a

safe altitude, slowing the airplane may allow the canopy to be closed and latched. Otherwise, the aircraft should be landed as soon as possible to determine the cause and ensure the canopy is secured prior to further flight.

Keeping seat belts fastened and snug during all phases of flight is very important. Doing so will reduce the likelihood of the pilot being displaced and less able to control the aircraft during an uncommanded attitude change.

Van’s is confident that the canopy mechanism works well if it is constructed, maintained and operated per our plans. Most in-flight openings occur due to the pilot simply forgetting to latch the canopy properly prior to take-off. Latch component wear and maladjustment may also contribute to the likelihood of an in-flight opening. Given the low number of incidents and details submitted from field reports, we believe that most incidents have been operational, rather than related to maintenance and function of the latch mechanism itself.

Builders and operators of RVs with tip-up canopies should pay particular attention to the latching mechanism, and ensure that it operates as designed to secure the canopy. Pre-flight checks should be made to ensure that the latching mechanism fully engages the canopy frame and that the operating handle is securely retained when closed. A thorough inspection of the entire latching mechanism and its function should be completed during Annual Condition Inspections. Owners who did not build the airplane should consult with an experienced RV mechanic if any doubt exists about the security of the latching mechanism.

On the RV-6/7/9 design, a secondary latch is incorporated at the top rear of the canopy frame, and this should always be utilized prior to takeoff, to supplement the main latching mechanism.

On later models, the RV-12 and 14, modern EFIS type avionics are usually incorporated into a warning system that will alert the pilot if the canopy is not securely latched. Such a system is included in the RV-12 kits, and is available for retrofit to early Skyview-equipped RV-12s.

On the RV-6/7/9/14 models, avionics installations vary widely. An EFIS-type warning device may or may not be available or practical. An audio warning system to alert a pilot to an open canopy will not be effective if it is activated continuously when the canopy is open. It is most useful if interlinked with engine rpm, as incorporated in the current Skyview and G3X equipped RV-12.

Van’s encourages pilots of RVs with tip-up type canopies to report incidents when the canopy has opened in flight to improve our understanding of the issues involved. If you have flight or engine data downloaded from an EFIS system that may be useful. Photos or videos of any damage, or parts that appear to operate improperly will also help. Reports detailing how the airplane performed during the incident will also be useful. This material may be sent to support@vansaircraft.com

Twin Cities RV Builder's Fly-In Breakfast Saturday, September 15, 2018 – 0900 - 1200

EAA Chapter 237's hangar at Anoka County Airport (KANE)



Can there be any better combination than RVs and pancakes?? Of course not, so please join us as EAA Chapter 237 hosts us for our Fall get-together. Bring the family, friends, kids, neighbors, mothers-in-law, whoever for a great breakfast put on by the chefs of Chapter 237.

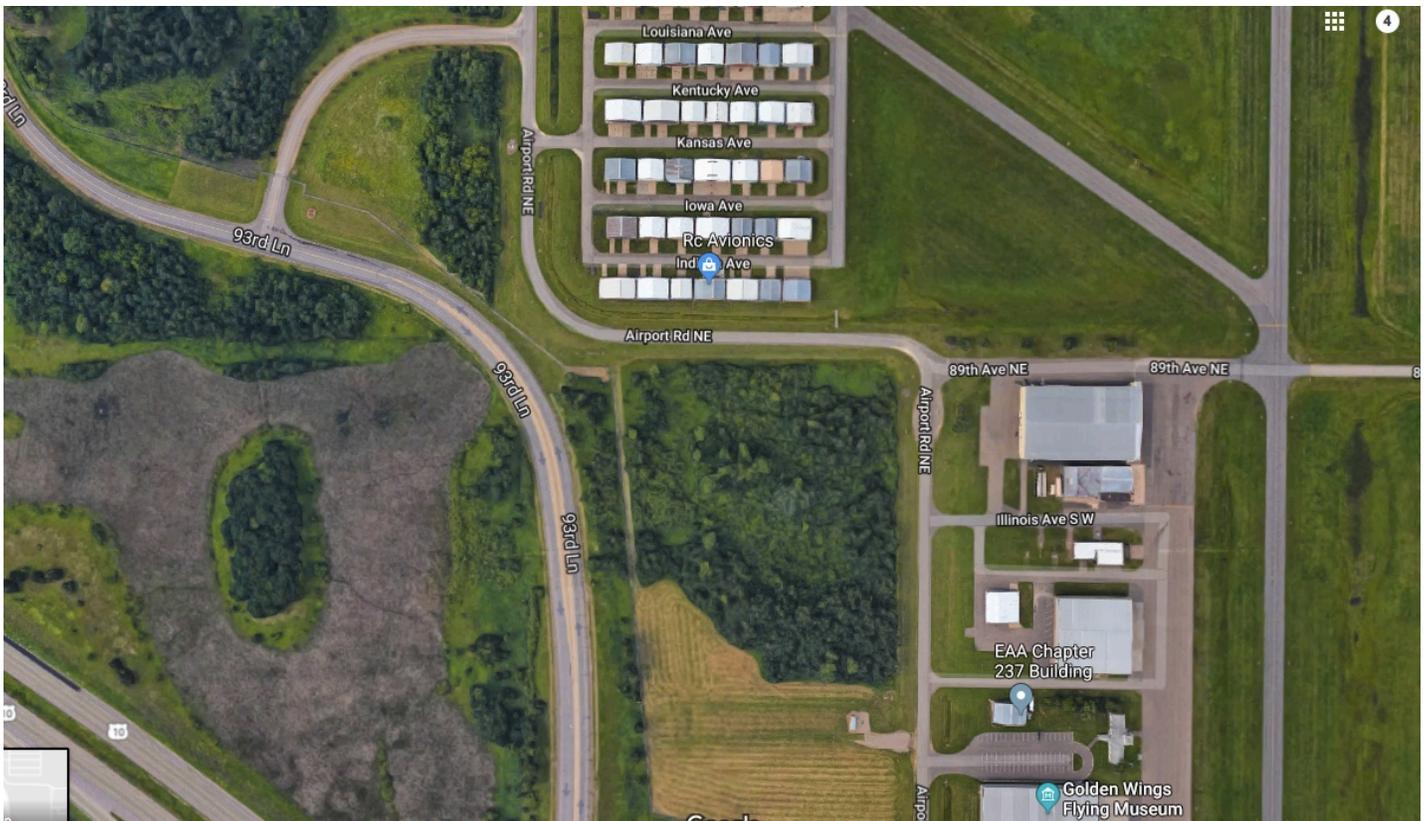
The menu looks as it should be: pancakes (regular and blueberry), scrambled eggs, sausage patties, fruit yogurt, coffee, milk, and orange juice.

And it's ALL YOU CAN EAT for \$7.00 per person (kids 12 and under are free). But wait there's more.....

PICS of all fly-in aircraft (RV or otherwise) also eat FREE.
We are looking for BIG fly-in turnout so plug in KANE on your

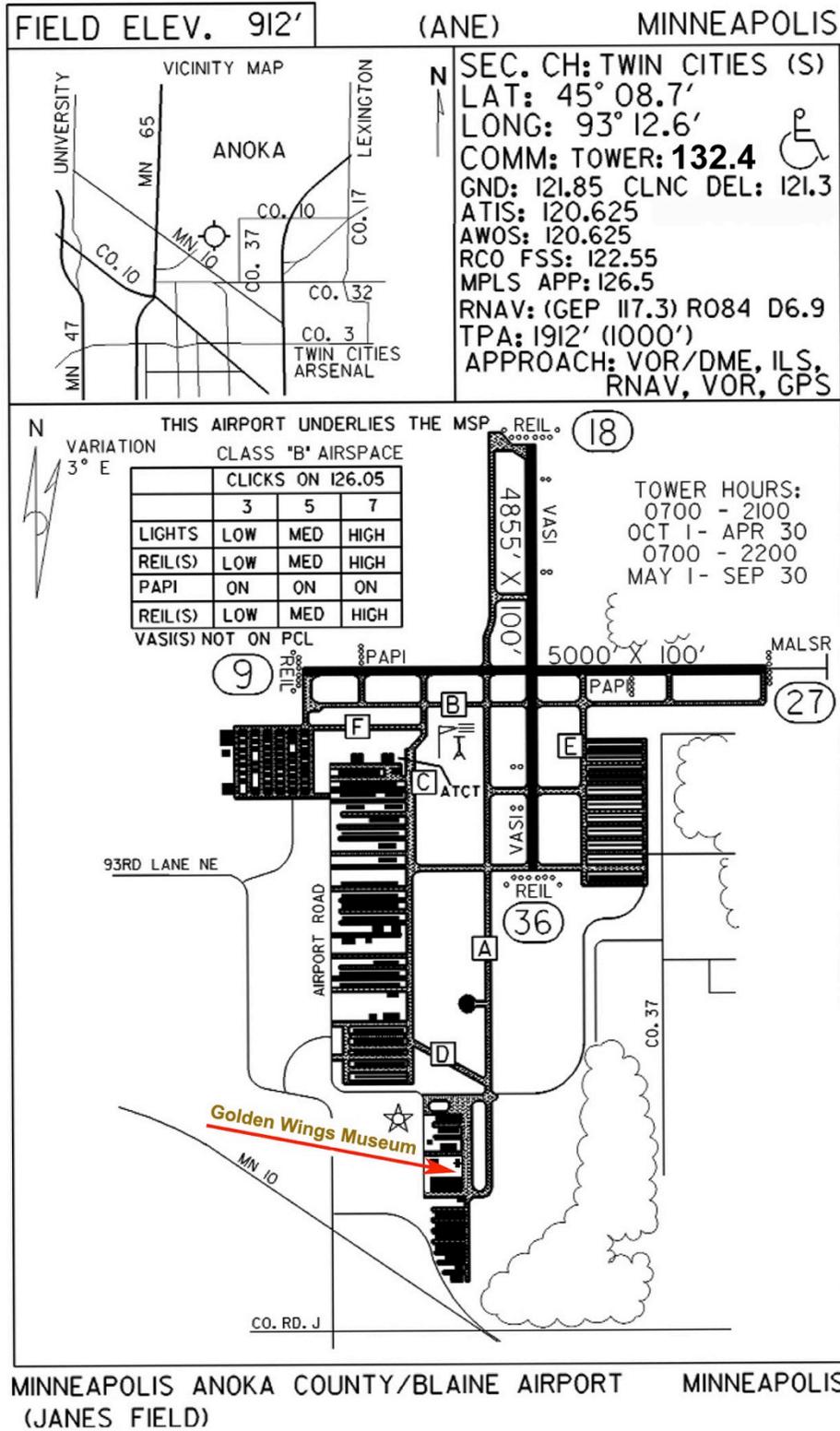
trusty GPS and join us on the 15th!!!

Drive Ins:



From the East or West on US-10: Exit at 93rd Lane. Turn north and take the first airport entrance to the right (gate code is 12185). Turn right at Airport Rd NE and follow around to the EAA Chapter 237 Building (eatin' is inside). Park in the Golden Wings Flying Museum lot.

Fly Ins:



Advise ANE ground control you want to taxi to the Golden Wings Museum ramp. That is typically south on taxiway Alpha. There will be ground personnel in yellow vests to park you, give you directions to the Chapter 237 hangar, and give the PIC a ticket for free breakfast.

Any questions call Doug at 651-398-1184