Newsletter

EAA™ 569

Lincoln, NE May, 2007

Meeting Announcement

Date: Tuesday, May 1
Time: 1930 hrs
Place: Duncan Aviation Engine Shop
Shop Classroom
Program: SHOW AND TELL NIGHT
Bring a piece of your airplane.
(Or photos or plans if you don't have a piece small enough to get up the stairs)
Share with us your experiences in building, restoring, maintaining and flying your aircraft.

More Ford Tri-Motor Tour Planning

President's Message
Dennis Crispin

The big news this month is that Roger Aspegren's RV-9A has flown! See all the details elsewhere in this issue.

We had a fine meeting in March. Eric's selection of the movie *Runway 16R* was a great idea! We did some great discussion on the coming Ford Trimotor Tour and even had some members volunteer to do some of the key functions to prepare for the event!

Our next major function is our Chapter 569 family picnic coming up in August. Now is a good time to start planning for it. We will need volunteers for all the usual functions; hanger cleaners, burger cookers, someone to purchase supplies, etc.

Most of this column will be devoted to the Ford Tour for the next few months. We will have a lot of work to do in getting ready for it. We will try to keep everyone informed as well as possible through the newsletter and at meetings.

Silverhawk Aviation has graciously offered to host the Ford Trimotor event and we will make the daily flights from their ramp.

The next big step is to find some sponsorship from local businesses. Dean Hoy and Roger Aspegren are already at work to find a major sponsor. Involvement with the tour could be a very effective promotional tool for many types of businesses. At other tour stops the sponsors have been highly satisfied with the exposure the airplane affords and usually are anxious to do it again. If you know of some business or individual that might be interested, let us know.

I have made some very interesting contacts with a chapter that hosted the Trimotor on last year's tour. A point that keeps coming up is that the success of the event depends on the local chapter's ability to promote it to the general public. Any ideas or suggestions that you might have will be highly appreciated.

Headquarters at Oshkosh will provide press releases, posters, and other advertising support material. Wally Peterson has volunteered to write the material for local use. An advertising agency out of Appleton, WI will contact TV

stations and place the advertising. Is there anyone in the club with recent contact experience with the local press, radio or TV stations?

It is suggested that we find two chairmen to help organize the event. Dean, Roger and Wally have a good start on the Marketing Chairman's job.

We will need a Volunteer and Equipment Chairman. This very important function will take care of scheduling the items and personnel that we will need to manage the event. Here is your chance to step up and share in the satisfaction of accomplishing a great job.

The Ford will fly passengers from 0900 to 1800 each day on September 20, 21, 22 & 23. We will divide the day into two or three shifts and we will need a minimum of four volunteers to handle flight operations each shift. In addition we will need more help to preflight the plane in the morning, clean it up at the end of the day, work at the club booth, help with reservations and man the souvenir stand. Start thinking about what you would like to do.

Norm Sell has promised to bring a bunch of antique cars. Who do you know (person, group, or organization) who would like to set up some historic displays about life in the 1920s/1930s or about early aviation in Nebraska?

Our hosting this rare bit of living history will be the highlight of our club year. We are off to a great start in preparing for it.

Dennis Crispin
President EAA Chapter 569

Roger test flies his RV-9A

(Roger flew his RV-9A for the first time on April 14. Here is his first flight report. – Ed.)

The airplane was ready to fly. All I needed to do was a dynamic prop balance, change oil in the reduction drive and some high speed taxi tests. But, what about the pilot? I have been so focused on getting the airplane ready I neglected to keep myself current. I probably had not logged more than 6 hours in the last year and that was in Norm Sell's Cessna 172. I definitely was not ready to do a first flight.

It was February and the weather was not cooperating. My plan was to fly Crete Aviation's Piper 180 for at least 6 hours then try to beg my friend Larry Geiger for some time in his RV-9A. It was cold and windy for a week and nothing was done. Now I was a week away from leaving for a 5 week trip to California so decided I should wait until I get back.

We returned from California on March 26th and I tried to get back up to speed. Prop was balanced and I started flying the 180. Then on Saturday, April 14th I was driving into the Crete airport when I ran into Larry Geiger. He had just returned from flying and was leaving. I asked him if I could get a ride in his RV sometime soon and he said "Let's go!" He actually let me fly from the left seat (what a trusty fellow) and we went flying. After some maneuvering to get the feel of the plane we returned to the airport for a few touch and goes. These went pretty well so I now felt I was ready also.

The plan was to get my crew back on Sunday for the first flight, however while having lunch we were discussing the plan when Larry said "the airplane is ready, you are ready, the weather is great….Let's do it today." We returned to the airport, prepared the flight plan, prepared the crew (Larry Gieger, Kevin Rock, Rod Eigsti and Roger Tracy) and headed to the runway. The plan was to do two fast taxi trips down the runway, then if everything looked good, take off. First taxi was about 55 mph and airplane was stable and wanted to go. The second taxi was little faster and the RV just lifted a few inches off the runway and I set it back down. "OK guys, this is it!" I pushed the throttle in slowly to the stop and it lifted into the air. I climbed to 4000 feet, keeping myself over the airport, reporting to my crew the water and oil temperatures every 1000 foot. My first flight plan was to monitor the temps, slow flight with turns and cruise speeds with turns. Also I wanted to check the rigging so set up for a straight ahead trimmed flight and let go of the stick. It flew straight and true with no hint of a heavy wing. Sometimes you get lucky.

Lift off!.

Ok, now time to land. I set up 2300 rpm on the prop and pulled the throttle to descend. The pattern was easy to maintain. Pulled back more power on left base, dropped about 20 degrees of flaps, started final and dropped the rest of the flaps. The landing was not perfect but sure close and I just could not contain myself. I keyed the mike and let out a big YAHOO! Next on the flight plan….The RV grin!

The RV grin.

Van's Light Sport Aircraft Update

(source www.vansaircraft.com)

Our RV-12 Proof-of-Concept prototype N912VA has flown about sixty hours now. That may not seem like a lot, but when you consider almost all it has been in real-world flight test, you can see that it's had the opportunity to teach us quite a bit.

Here's some updates on our progress so far, with notes on various aspects of the airplane:

ROTAX 912S ENGINE-CARE AND FEEDING THEREOF

The RV-12 is our first experience installing, operating, and servicing the 100 hp Rotax 912 engine. Being a liquid cooled, high RPM, geared engine, it is quite different than the Continental and Lycoming engines.

Installation was more challenging than a Lycoming because the engine has two carburetors, a separate oil tank, and two heat exchangers; the coolant radiator and the oil cooler. On the plus side, with liquid cooled cylinder heads, no baffles other than a shroud for the inner fins of the cylinders are needed.

We mounted the heat exchangers vertically in the lower forward cowl, under the spinner, and fed them air through a single horizontal oval inlet. Mounting them to the cowl isolates them from engine vibration and provides an excellent seal, so no air is lost through duct connections or relative motion between the cowl opening and the coolers. There are also two small round inlets near the spinner which provide air to the carburetors and cool the inboard portion of the cylinders. They have worked very well in keeping the cylinder head temperatures cool.

The oil cooler has worked too well in the cool ambient temperatures we've experienced testing in autumn and winter. Rotax specifies that engine RPM should not exceed 2500 (the Rotax idles at 1200 rpm and red line is 5800 RPM, so 2500 rpm is still low power) until oil temps reach 120 deg. F. This has caused long run-up times before take-off.

Operating the Rotax is a very pleasant experience. The Bing carbs are equipped with

chokes for starting rather than primers (older drivers will remember chokes; they were common way back when cars had carburetors.) They also feature automatic mixture compensation for altitude changes, so there is no mixture control in the cockpit. The engine starts easier than either a carbureted or fuel injected Lycoming. It is smooth and quiet, both on ground and in flight.

Fuel consumption is obviously lower than other RVs because of the low power of the engine. However, despite magazine writers like to rhapsodize about how the Rotax "sips" fuel, its consumption (in our experience and from Rotax charts), is consistent with other aircraft engines of similar power. Its Specific Fuel Consumption (bsfc) is similar to Lycoming and Continental engines, so at rated 75% power, it burns about 5.8 GPH. Figures like "3.5 to 4.5 gph" are often quoted in flight reports, but these can only be achieved by using less than 75% power and should be noted as "economy cruise consumption" figures.

HANDLING QUALITIES

The full span flaperons provide brisk roll control, similar in roll rate to an RV-9. Initially, stick forces required were very light, so we tailored the flaperon trailing edges to provide a pleasant stick force level. During the design phase, we worried about possible adverse yaw when the flaperons were lowered into the flap positions. Testing revealed that adverse yaw is minimal and easily coordinated with light rudder pressure.

The new (to us) stabilator has proven to provide good pitch control, pitch stick force, and damping. The RV-12 has an electric pitch trim which repositions the large anti-servo tab on the stabilator trailing edge. The trim rate is moderately slow, with no tendency for over-control.

Stall characteristics are good. Tail surface buffeting several mph above stall speed provides ample warning. The nose pitches down when the full stall is reached, and flight control is regained almost instantly when stick backforce is released. In an aggravated stall when the stick is held back through out the actual stall, one wing or the other will drop as much as 30 degrees.

We contracted with a professional test pilot to explore the spin characteristics of the RV-12. The results were very encouraging. Spin entry and recovery was found to be normal and predictable. Good rudder control authority was found both during spin entry and recovery. The RV-12 tail configuration, with the vertical surfaces positioned forward of the horizontal surfaces, provides minimal blanking of the rudder in all conceivable pitch attitudes. Recovery from 1-turn spins was achieved in less than ¼ turn following anti-spin control application.

PERFORMANCE

Strange as it may seem, we have not expended a lot of effort on measuring the RV-12 performance. We measured enough to realize that the performance was "good", and then concentrated on stall speed, stability, controllability, weight and balance, and other such issues. Here are some basic numbers:

Cruise Speed: (75% power @8,000') 118 kts.
Climb rate: 1320 lbs. gross wt. 750 fpm
Climb rate: (solo, 1000 lbs) 1100 fpm
Stall speed: @ 1320 lbs. 50 kts

STALL SPEED

Stall speed has been one of the tougher nuts to crack, and the focus of much of our test flying. Initial testing showed that the RV-12 no-flap stall speed was higher than 45 knots required by the rules of the Light Sport category.

We experimented fairly extensively with corrective measures. We tried vortex generators in many configurations and placements. We even made full-span leading edge cuffs that increased the camber of the wing. Neither improved the stall speed -- and just to make things more frustrating, the cuffs actually reduced the cruise speed.

Airflow tuft testing of the airframe showed undesirable flow under some conditions at the wing root/fuselage intersection -- not unusual for low wing airplanes. We devoted considerable time and effort installing and testing various wing root filets in an attempt to improve lift in this region and thus lower stall speed. The airflow was

improved somewhat, but there was no measurable improvement in stall speed.

IN THE (NEAR) FUTURE

Work is underway to design and build a new KIT PROTOTYPE airframe (as opposed to the PROOF OF CONCEPT PROTOTYPE described above).

It will have an improved wing with a different airfoil and more area.

We found we could improve the CG by moving the engine forward. At least two good things came out of this: improved access to the back of the engine and about 2 more inches of legroom in the cabin.

The canopy on N912VA has never been a beauty point. It was built with some plexiglass canopy halves left over from an earlier project. The kit prototype will feature a much more attractive 1-piece blown canopy with additional headroom, designed specifically for the RV-12.

WHEN

Our best projection is that the new Kit Prototype RV-12 should be ready to fly late in the third quarter of 2007. Kit availability will depend upon the test flight findings of that aircraft and on our ability to initiate component production both in-house and from our suppliers. We hope to have at least partial kits available in the fourth quarter of 2007 or the first quarter of 2008.

Van's RV-12 on a test flight.

Minutes of the Club Meeting
April 3, 2007

1. Website - Steve Kline will do the website for us.
2. Young Eagles will have events including Evelyn Sharp Days & April 27th at Duncan.
3. Proposed flying activities include a poker run after the May breakfast.
4. Proposed FAA regulations (gas taxes and landing fees) were discussed.
5. It is 3.5 months until Oshkosh 5 weeks until Sun & Fun.
6. Chapter Directory - we need more directories printed.
7. If you have not had your picture taken for the directory please do so.
8. The Trimotor tour was discussed.
9. We should have the information from the EAA within the next week.
10. Volunteers will be needed for work associated with the Trimotor.
11. Wallace Peterson will take care of articles for papers.
12. Tom Henry will follow up with Duncan on a hangar.
13. We need to talk to the State Department of Aeronautics.
14. Dennis will talk to the Airport Authority.
15. We need to raise $2500 in services and supplies so we will receive $5 per ride.
16. Dean Hoy & Roger will contact local Ford Dealers.
17. We need to contact antique car clubs to see if they will display cars.
18. We need to contact the State Historical Society to see if they want to participate.
19. Cost will be $50 per ride.
20. The program was the video ONE SIX RIGHT.

Rich Boelts, Secretary

Minutes of the Executive Meeting
April 18, 2007

1. Program for the May meeting is a ground school refresher.
2. We are planning on the picnic being held August 4th, the same location as last year.
3. Rides will be given on the Trimotor Sept 20, 21, 22, 23.
4. Duncan will provide a hanger for the Trimotor.
5. Dean & Roger will contact local Ford Dealers.
6. Silverhawk Aviation will provide the site loading the Trimotor.
7. Advertising and promotion, we will need to contact TV and radio stations.
8. We need volunteer and equipment chairman.
9. Crews – we will need 4 people at Silverhawk Thursday and Friday.
10. Norm will contact the car clubs.
11. We need to find some other aircraft from 1925 to 1935 to display.

Rich Boelts, Secretary

For Sale

OXYGEN SYSTEM FOR SALE: Sky Ox 24 cu ft aluminum cylinder with 2-place regulator, mask, 2 cannulas, and case. Filled with oxygen but never actually used. Sporties 7498A, list $530 (without oxygen). Asking $350. Wayne Martin 488-6849 cwmart@windstream.net.

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Things to Do

May 5	Chapter 1055 Breakfast 8:00-10:00 - York, NE
May 5-6	Offutt Air Force Base Open House 9am-5pm More info: www.offuttairshow.com
May 11	Flying Conestogas Annual Airport and Awards Banquet at the Beatrice Eagles Club More info: Call Beatrice Airport at 402.223.5349
May 19	Chapter 569 Breakfast 7:30-10:30 - Crete, NE
May 27	Fly-in breakfast 7-10am Evelyn Sharp Field Ord, NE Also, fly-overs, static displays, Young Eagle rides, RC airplanes, adult airplane rides.
June 17	Annual Father's Day Fly-in Breakfast 7:00-11:00 Creighton, NE More info: 402.358.5541
June 21-24	National Ercoupe Convention Wayne, NE More info: Scott Morgan 58423 867 Rd Allen, NE 68710 or ercoupen2503h@yahoo.com
July 23-29	EAA Airventure Oshkosh

Need a place to stay at Oshkosh ?

Doug Prange has a cabin available for a few days during Airventure. The cabin is approximately 25 miles from Oshkosh. Contact Doug if you are interested.

Email: dprange@neb.rr.com
Home: 402-421-3310
Work: 402-432-0774

Accident Report

Accident occurred Friday, May 27, 2005 in Palm City, FL
Probable Cause Approval Date: 3/28/2006
Aircraft: Hamilton Stoddard Glassair II S, registration: N401KY
Injuries: 1 Minor.

According to the pilot, the takeoff was normal until just after rotation, when he felt a loss of power during the takeoff/initial climb. At an altitude of about 30 feet AGL, he said he saw that the engine rpm had dropped from 2270 rpm to about 1800 rpm, and he immediately concentrated on maintaining airspeed, which had dropped to about 60 to 65 mph. According to the pilot, all he could do was to maintain a wings-level attitude just above stall speed and fly the airplane into the trees. Postcrash examination of the accident airplane was performed by an FAA licensed airframe and powerplant mechanic, under the supervision of an FAA Inspector. According the mechanic, the throttle cable was found to have pulled free of the hole/nut that secured the throttle cable to the throttle arm on the carburetor. No another anomalies were noted to exist any other airplane systems.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows:

Improper maintenance by other maintenance personnel, which resulted in the throttle cable being loose and detaching from the throttle arm during takeoff, resulting in a loss of engine power.

569

John Cox
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