EAA Chapter 675
MARSHALLTOWN, IOWA

The Leader In Recreational Aviation

March 2017

	WHEN:	WHERE:	PROGRAM:
MARCH MEETING	Thurs. the 2nd 7:00 pm	Grimes Conservation Center	EAA's own CHARLIE BECKER

WHAT'S FLYIN' THIS WAY !!!

Guest Speaker: Charlie Becker

We have a special program in store for us at our meeting on Thursday and ALL EAA'ers and friends are invited! Spread the word to all your fellow members and flying groups.

Charlie Becker is the Director for Chapters & Communities at EAA. In this role he oversees the EAA chapter network and homebuilt programs. He has worked for EAA since 1999. During that time, he created EAA's Hints for Homebuilders weekly how to video series, webinar program and oversaw the acquisition of the EAA SportAir Workshops.

Charlie is a lifetime member of EAA. He serves as the current President of Chapter 252 in Oshkosh, WI and has served as an officer in two chapters for more than 10 years. He has been a member of 5 chapters since joining Chapter 32 in St. Louis in 1995.

Charlie is private pilot and avid homebuilder. He built a Sonex and led the EAA staff Zenith CH750 STOL build to completion as well as the One Week Wonder Zenith CH 750 Cruzer built during AirVenture Oshkosh 2014. He currently has two aircraft actively under construction. The first is a "Pirate Cub which is a plans built knock off of a Piper Super Cub. The second is a new homebuilt design by Adventure Aircraft, the EMG-6. The aircraft is a primary glider with the ultimate design goal of self-launching on electric power. Charlie is also a volunteer Technical Counselor. For more information on these projects, visit www.facebook.com/PirateCub and www.facebook.com/EMG6project Charlie lives in Oshkosh WI with his wife Theresa.

In addition to the meeting, we are planning on taking Charlie out to dinner before the meeting at approximately 5:30 pm to the Plaza de Mexico restaurant. It is located at 903 W Lincoln Way Marshalltown, IA 50158. The old JAX restaurant for those of you familiar with that part of town.

All are invited to dinner as well, but we definitely need a rough head count for this. If you know, or think, you can make it, please let me (Paul) know by calling 641-753-6222 or email me at dlpradams@gmail.com

Maps to the Grimes Conservation center and the restaurant are in this newsletter or call Paul, Lorin or Corey at the numbers to the right with questions.

Now on FACEBOOK
www.facebook.com/EaaChapter675

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WHAT FLEW BY !!!

Our February meeting started out with project reports. Your newsletter editor recorded it so he wouldn't have to take notes, but the recording didn't come out very well. We did hear about the progress **Paul Adams** was making on his ADS-B project. He has a short report elsewhere in this newsletter.
Les Risius has his cowling done on the Cavalier.
Don Feld is working on the doors and fuel tank installation on his Rans 6.
Charles Kuhlman says the Q2 is running good, but there is a persistent oil leak that needs attention.
Robert Richtsmeier is beginning wing covering on his Nieuport 17. The report of our visit to his project in January is in this newsletter.
Corey Butcher has his shop ready to go for the Voisin rebuild. He hopes to have it done before the end of flying season this year.

After a short break, **Bruce Gapstur** kept everyone captivated with his experience flying the Chinook helicopter. It is a fascinating aircraft; even more so after his presentation. We found out that if the pilot isn't paying attention at all times, the ends can switch places and keep on flying! It's a real workhorse and can lift 26,000 lbs at speeds over 140 kts.

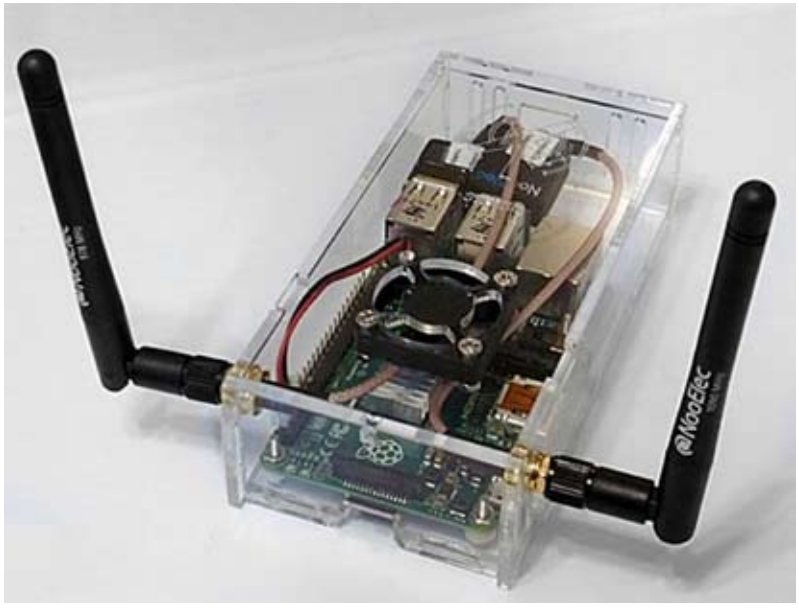
Paul's Support Caddy for his Double Eagle

Paul sent the photo above thinking of Corey when he rebuilds his Voisin, and others, as a reminder to the fact that when you build, or rebuild, your airplane, you need to make an auxiliary/support cart. He made this one for the Double Eagle. It holds and organizes the wing folding stuff along with cleaning supplies, oil etc. As you can see it is in authentic military grey complete with white fuzzy edged stenciled letters. Just to remember its roots he added some EAA logo's. Now we all hope the plane flys and the wing folding really works. Ha!

Dan & Paul Adams ADS-B Box

This is a picture of the ADS-B box Dan designed being printed on the 3D printer. He downloaded some previous designs from a web site that is out there full of ADS-B boxes that other people have designed. We took it and changed it to meet our needs. Originally we thought it was to be made out of ABS plastic. But the printing people were getting headaches and found these headaches were from the off gas from printing with ABS. So they switched to PLA plastic which is corn based. No more headaches. Only in Iowa right! Dan told me when he went in it smelled like driving past the Cedar Rapids corn sweetener plant. Fixed the headaches however. The PLA comes on a reel and looks like fishing line. A head like a glue gun melts it and while doing it the plate is indexed to the correct spot based on the design that was down loaded. Each deposit is really thin and it took about 5 hours to print the box.
It's accuracy is good enough to print screw threads. This machine was big enough to print all three parts at once. I ordered the fasteners and some plastic tubing for standoffs from McMaster Carr. We plan to put the box together this week end. We will then down load the new operating software on a mini SD card, update the tablet and it should be ready to go. I have to design a holder for the dash. Since we have AHRS and synthetic vision the box has to be mounted horizontally. If you didn't have the AHRS and synthetic functionality the box could be mounted anywhere with any orientation. By the way below is a screen shot off of Dan's computer. They have a miniature video cam that watches the machine and can send it to someone over the Internet, so Dan got to watch it print some. What was neat about this, the 3D stuff is rather new at Fisher thus they were OK with printing stuff while designers were learning the process. So Dan just picked an ADS-B box. There is a lot that goes on to print the parts, like grain direction, accuracy (the accuracy is different in the Z axes as opposed to the X and Y), the need for support structure to be printed and later removed, finish, strength (a sub structure is determined by the printing program and it is something like a honeycomb, this saves material and weight but also helps strength) and how to mount parts on the plate to name some I heard of while we talked. Pretty cool stuff. I am meeting Dan for lunch today and will see the actual box. I thought it was funny he called me yesterday wanting some dimensions. When he looked in the 3D printer he thought the box was too small. It was fine, I think what it was when we did the layout on his computer it was large looking because he has such a large set, 2, of screens. Also today we will layout the next phase.
By the way, in the picture the bottom of the box is at the top of the picture, the end cap in the middle and the top at the bottom of the picture. You can see where the fan mounts in the top. The black thing is the printer head with the spool of PLA in the center. The box has lots of holes for cooling purposes. To avoid the need for support structure they mounted all three pieces to the plate in this format. We got to pick the color. Picked white for cooling purposes.

March meeting, Chapter 135, ADS-B In Build Project



This open source ADS-B kit is taking the EAA and aviation world by storm right now. You have heard about our chapter members building these units and now, for further input, Dave Kalwishky of chapter 135 in Ankeny has invited everyone to their meeting on the 11th of March for some onsite assembly of these units. This group build will be led by Stuart Rauh and Greg Long who will be following up on Greg's homebuilt Raspberry Pi ADS-B In presentation of last fall and are making it easy for the rest of us make one of our own. Greg has put together a kit so we won't have to. If you have a kit, show up to the meeting, and leave with a working ADS-B receiver. This opportunity isn't limited to members only - anyone on our newsletter list that would like to join in is welcome. If you do not have a kit, they can tell you how to get one and hopefully this group build will get you excited to build your own.
They meet at Exec 1 at the Ankeny Airport.

CALENDAR

Feb 9	7pm	Fisher Community Center	EAA 675 - Chinook Helicopter Flying
Mar 2	7pm	Grimes Conservation Ctr.	EAA 675 - Charlie Becker, Headquarters
Apr 1	11am-2pm	Greenfield Municipal	IA Aviation Museum Chili Fly-in
Apr 8	7am-11am	Ames Municipal	Fly-in Breakfast (See Flyer)
Sept 16	**7am-11am**	**Marshalltown Municipal**	**Fly-in Breakfast and Open House**

Note that the date has been set for the Marshalltown Fly-in! EAA 675 will have a hand in helping Steve Valbrecht put on another great Open House. Reserve the date now.

A Personal Invitation

Hello Mr. Adams,

I am with the Iowa State Flying Cyclones Club, and I would like invite you and your organization to the annual Ames Fly-In. Our fly-in is a great community event attracting dozens of aircraft and hundreds of Iowa State students and general public alike. In addition to various booths and activities, we have a pancake breakfast available as a fundraiser for the club, but the pilot-in-command always eats free! Not only can you come out for a great time, but fill up on a delicious breakfast served up by Chris Cakes.
The fly-in will be held on April 8th from 7:00am to 11:00am at the Ames Airport. Please spread the word about this event to your organization. I have attached the event flyers to this email for distribution.
In the case of poor weather, updates and/or cancellation information can be found at www.flying.stuorg.iastate.edu. If you have any questions please contact us at flying@iastate.edu.
I look forward to seeing you there,

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Aviation Video of the Month...

Notice the winds in this STOL competion
https://www.youtube.com/watch?v=z5CZ4LAtjh4&sns

The WOW Factor!!

I love to read and really love to read about aviation. It doesn't mater what kind of aviation, old or new, fiction or nonfiction, but pictures do help, ha! Sometimes when I read some aviation stuff it is enlightening, interesting, some cause me to dig further. But every now and then I get one and it has the WOW factor. This story is about one of those.

I will have to first set the scene and then I plan to just retype the story as I read it.

I couldn't word smith it in anyway and do it justice. What is going on as the story unfolds is aircraft have been around for just a few years. World War I has just begun and mankind is struggling with the concept of flight and the airplane. The military is not sure what aircraft are good for so they are developing uses at a slow pace. The aircraft being so new is barely what you would call an airplane, but that is changing very fast. And as changes occurred one side or the other may be at a significant disadvantage. At first the military saw it only as an observation platform, but the men flying them quickly learned they could use it to fight with. Starting with pistols, then rifles, then machine guns, man began to shoot at each other. To do this might sound easy, but as I read it wasn't. No parachute, a plane that was so unstable it had to be flown all the time along with the fact they were usually fragile, machine guns that jammed, required reloading, and had ammunition that was sometimes of low quality. This all melded into an average life expectancy at the front for the pilot of two weeks, and that's if they made it to the front, over 30% were killed in training, thus not a lot of experience.

And speaking of experience some pilots were fighting with less then ten hours of total flight time! On the job training in a job that was extremely lethal. Got the picture. So here is a tale of a young pilot that's "on the job", at 8500 feet, in an early biplane, with a Lewis machine gun mounted on top of the wing. A German plane is shooting at him, thus he is in a dog fight, and our pilot has just emptied a drum of ammunition and has missed. His Lewis gun has just jammed. Yep, the German is still after him. Also, the mechanics of the spin weren't completely understood at this time. So here's his report.

After one or two fruitless efforts I raised myself out of my seat in order to get a better grip, and I suppose my safety belt must have slipped down at the critical moment. Anyhow, my knees loosened their grip on the stick just as the Martinsyde, which was already climbing at its maximum angle, stalled and flicked over into a spin.

As I was more than half out of the cockpit at the time, the spin threw me out of the machine, but I still kept both my hands on the drum of the Lewis gun, Only a few seconds previously I had been cursing because I could not get that drum off, but now I prayed fervently that it would stay on for ever. I knew it might come off at any moment, however, and its edge was cutting my fingers badly. I had to get a firmer hold of something more reliable. The first thing I thought of

was the top of the center section strut, which at the time was behind and below the Lewis gun, but as the machine was now flying upside down I had sufficient wits left to realize that it was behind and above me, though where exactly I could not tell.

Dare I let go the drum with one hand and make a grab for it? There was nothing else for it but to take the risk. Having achieved this firmer handhold I found my chin rammed against the top plane (wing) beside the gun while my legs were about in the empty air. The Martinsyde was upside down in a flat spin, and from my precarious position the only thing I could see was the propeller which seemed unpleasantly close to my face, the town of Menin, and the adjacent country side revolving apparently above me and getting larger with every turn.

I kept on kicking behind me until at last I got first one foot and then the other hooked inside the cockpit. Somehow I got the stick between my legs again and jammed on full aileron and elevator. The machine came over the right way up and I fell off the top plane into my seat with a bump. I grappled at the stick with both hands but to my surprise found myself unable to move it. I suddenly realized that I was sitting much lower then usual inside the cockpit, in fact, I was so low down I could not see over the edge at all. The bump of my fall had sent me right through my seat, with the result I was sitting on the floor of the machine as well as on the control cables, which I was jamming.

Something had to be done quickly as the engine was running away merrily and taking me down in a dive which looked likely to end in the wood to the north of Menin. So I throttled back and braced my shoulders against the top of the fuselage and my feet against the rudder bar, pulled out the broken bits of seat and freed the controls. I was then able to put the machine nose up and open the throttle again. I rose and cleared the trees on the Menin road with very little to spare. I felt happy to be alive and thought it simply marvelous that I was still able to control the machine.

I went to bed early that night and slept for a good solid twelve hours, but Lord! How stiff I was the next day! It took a long time to move about with any comfort.

Here's a picture of what our very lucky and on the ball pilot was flying. Note the Lewis gun mounted on the top plane (wing). Yes, the Lewis gun had to be rearmed with a new drum by the pilot while flying in a combat situation. Ugh!

Our British pilot, Louis Strange, was being pursued by a German from Bruno Loerzer's squadron flying an Aviatik which was a very early German observation plane turned fighter. Hers a picture, looks frail doesn't it.

Robert Richtsmeier Nieuport 17

Bob, Garry and Doug are thinking real serious thoughts as they finish up breakfast.

January 14th between 10 and 15 members showed up at the Red Rooster in Iowa Falls at the invitation of Bob Richtsmeier. After breakfast, everyone caravaned following Bob to his place to see the progress he is making on his Airdrome Aeroplanes Nieuport 17.
He is just at the beginning of the covering stage and is also putting together the Corvair engine he will be installing on the aircraft.
His work is looking very good and we are sharing a few of the photos taken.

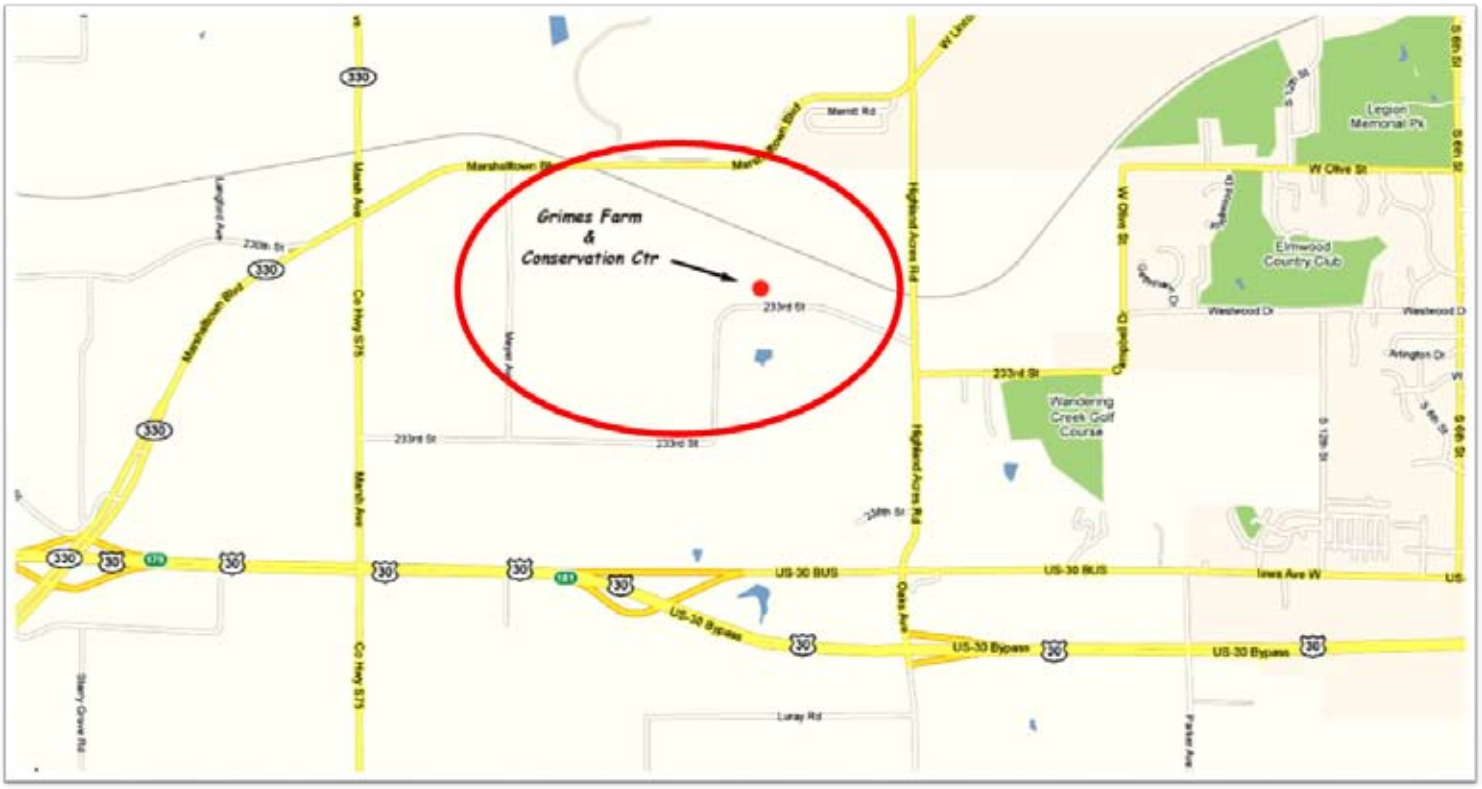
Above, Robert demonstrates how the aileron control horn connected to the torque tube works, while to the left, his quality work is carefully inspected by fellow chapter members.

Robert's panel will be as simple as the original

Wicker bar stool seats were modified to make a somewhat authentic looking aircraft seat.

A more recent photo shows the covering coming along nicely with unique characteristics such as this application of an inspection cover.

Robert also has a pretty elaborate flight simulator set up in his basement and a few took a shot at landing a J3 Cub. Quite a hoot!



The map above shows the location of the Grimes Farm and Conservation Ctr. relative to main highways.
The map below shows the location of the restaurant from Menards and the Grimes Center. Call if questions.