



EAA602 Log Book

Adirondack Chapter Newsletter

May 2009

Page 1



HOMEBUILDERS



From The Presidents Desk

by Tim Cowper

It sure is nice to be back in the air. The Cherokee is a sweet airplane, and fun to fly. It's more complicated than the fat ultralights I'm used to flying, but after my experience in the Zodiac, I think with a little practice, and good, patient instruction, I'll be ok. I hope I can fly alot, assuming fuel prices don't go up too much!

We have so many active pilots in 602, it's going to be an interesting flying season. I hope we can organize some club fly-outs this year, and maybe try traveling as a group to other area EAA chapter events. Lets keep the communication going on the message board.

We have several people building airplanes that should be completed and flying sometime this summer. Art



is finishing up his Rose Parakeet biplane, and Kevin is completing the re- build of his Hawk. If you get a chance, stop by Arties, and check out all the projects he has going on. It's just amazing. By the way, that ratty looking Champ frame you'll see sitting in his driveway might have my name on it someday. I've gotta get my tail dragger endorsement. :)

You may already know, but Dave and Mark have acquired another airplane. If you've never heard the 12 cylinder Rolls-Royce Merlin engine... you will this summer. I don't think there is a sweeter sound in all of aviation. :)

The meeting this month is at the main hangar at FulCo @7:00 PM. After the business meeting, Larry is finishing up a previous presentation on weather, including a video "Weather to Fly."

Gratz go out to our newest Sport Pilot! Way to go Tom! And as always, special thanks to those who've submitted newsletter articles! See you at the meeting!

Tim

Notes From Your Editor

by Doug Sterling



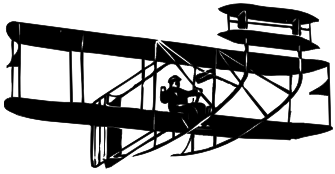
Here we are at the start of what looks to be a great summer flying season. I had the Cherokee up last weekend after doing a good lookover the week before. Tim C. gave me a hand with the service work which seemed appropriate seeing that he is going to be doing most of the flying with it this year. It seems he is so overwhelmed by the idea of getting his pilots license in a "real plane" he is at a loss for words (still haven't sent me his article).

All you summer flyers better get to it and make sure your steeds are up to par before your first flights this spring. You never know what has crawled up into some corner and might give you a lot of grief just as your starting a take off. Also those gears and pulleys can always use a clean and lube after a long cold winter. Never forget that mechanical things like to be used and need a good examination after a long winters sleep.

I'm sitting here thinking about the Albany Tower tour this Saturday. It's not the tour but the reason we are going. Our club has some of the greatest folks you can find. If anyone needs something, there is someone who has it. If you need a hand, there are a whole bunch of folks to give you one. There always seems to be someone who thinks of doing something for the others of our organization. These are the things that truly make us great.

Enough of this blubber. Lets get out there and start this summers fun.

Fly Safe, Doug



Radio Communications

by Tim Devine

The first day of spring arrived on March 20th and things have certainly changed over the last month. Much of this winter's copious snow accumulation has disappeared and the longer days and warmer temperatures are welcome sign of things to come. With the spring flying weather just around the corner all the snow bound hanger flyers are anxiously anticipating getting back in the air.

While all are active getting their aircraft ready to go, we also need to touch up our flying skills which have gotten a coating of rust on them over the winter. One of those skills that need addressing is radio communications. Clear, succinct concise radio communications are a skill that needs to be a goal of all pilots at all levels of aviation. Communicating with the ground and fellow pilots helps us all fly more safely and reduces the possibility of accidents both on the ground and in the air.

Like anything else regarding flying, good preflight planning is necessary for radio communications just as much as checking fuel, planning your route and preflighting your aircraft. How many of us perform a radio check prior to heading out flying?

First of all make a cheat sheet of the radio frequencies that you will need to access during your flight. Not just your departure and destination airports but also other airports that you may be passing over or close too. Also include any weather frequencies that may change as your flight progresses. If you're flying with other aircraft make sure everyone in your party has all the radio info they need.

Next, listen before you transmit. Many times

you can gather such information as runway in use, altimeter and local traffic just by listening to other pilots communicating.

Think before keying the transmit button. Know what you want to say, speak clearly, slowly and be concise. Make sure that your microphone is properly positioned near your mouth so that background noise is held to a minimum.

Every time that you transmit identify yourself (Champ 84218), who you are calling (Plateau Sky Ranch or another aircraft), your location (3 miles south of the field at 3500ft), intentions (in bound for landing, passing over), what you want (airport traffic advisory, weather, etc).

Then be patient and wait for a response before you immediately transmit again. You may not be the only one transmitting on that frequency. It's also possible Doug or I might be in the outhouse and not able to call you right back. Know the proper radio terminology for aircraft transmissions. Can you recite the phonetic alphabet from memory? Because of different word sounds that don't transmit well there are specific responses that should be used when communicating.

If you don't understand or didn't receive a communication the proper response is "Say again"
Yes is "affirmative".
No is "negative"

If you are busy and can't immediately respond the response is "stand by"
If you understand the communication or directive the response is "roger"

Ending a communication is "over and out"

While it is important to communicate promptly and clearly, do not get fixated on radio procedures especially when in the airport environment. Aviate, navigate, communicate. A brush up of proper radio techniques and





procedures is something that we can all be doing at home as we wait for the frost to leave and the runways dry out. It's especially important this year that we are extra vigilant in our radio communications. We have a very enthusiastic group of new pilots who are gung ho about getting lots of flying in this year. I'm looking forward to lots of club/group fly outs and good coordination and communication will help all our ventures be safe and successful.

Keep an eye on the AOPA website as they will soon be releasing their "Say IT Right" interactive aviation communications video. It's free online and the AOPA puts together some great instructional videos.

Tim

Rebirth of a Hawk Part I

by Daryl White

As most of you know last fall Kevin and I got our sport pilot tickets in my 2007 CGS Hawk that we built together with much support from the club. The deal we struck was that he would work on the project pretty much whenever I was working on it and in return he could use the plane we built to complete his license. He kept up his end of the bargain and then some! He often was out in my garage on a weekend morning before I stumbled out of the bathroom. I can't imagine building a plane without a partner. There are so many jobs made a lot easier with another pair of hands and you can motivate each other when you get in a rut.

Well now that we both have licenses I told

him that he really needed a plane of his own. My son Aaron wants to get his license and I owe my other family members a lot of rides to make up for all the time I was tied up building it. In short I think Aaron and I will be racking up a lot of hours in 516DK this summer. It would also be a lot more fun if we both had planes to go flying in!

During the late fall he started defining what he wanted in an airplane. He decided, based on input from his family, that he wanted a 2-seat airplane. Turns out that his daughters and wife do want to go flying with him. Since we both also have our LSA Repairman Inspection ratings he wanted an ELSA that he could do his own annual condition inspections on. Also he is working within a tight budget that was defined by a couple of kids in school and soon heading to college. With his basic parameters set, the search began primarily on Barnstormers with a few other websites thrown in. The start point was a project plane that would preferably be in flying condition. We both thought that a Hawk would be great since we have first hand experience with the design and construction of the Hawk and everyone who has flown it knows what a nice flier it is. However he was open to other designs and

Hawks tend to be a little more expensive than other comparable designs.

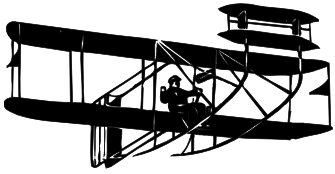
Sometime about early December he spotted a 1990 2 seat CGS Hawk for sale in Pennsylvania just north of Pittsburgh. It was black and red and it was registered E-LSA with an airworthiness of 2007. Price was right and the pictures looked good

but looks can be deceiving. He talked to the owner and everything sounded good since he stated that the airplane was in flying condition.



Continued Next Page





The only down side was the Hirth 2703 power plant. Talking to Matt at Recreational Power Engineering he found out that the 2703 tried some different ideas in cylinder head and gearbox design that were not reliable and the design was quickly dropped in favor of the more conventional and robust 2706 design. Bottom line was that Matt recommended that the engine and gearbox be sold outright or traded in.

The airplane looked good enough and the owner information seemed like it was worth a trip to Pittsburgh to check it out. Since the trip would be long we decided that we would take the trailer and if it was in good enough condition he would buy it and bring it home in the one trip. We had to move quickly, for that asking price the owner was getting calls and he was leaving for winter vacation down south from New Years day to March. The weekend after Christmas Kevin, Myself, and my son Aaron, drove to Pittsburgh dragging the big box trailer behind Kevin's Ram pickup. We left at O-dark hundred and got down there just about 2PM. What we found was a plane that was structurally sound but had many small maintenance problems that were not addressed. The boom and bulkheads and main landing gear saddle were dirty but sound and all the anodized tubing was in good condition with no signs of cracking or fatigue. There were rivets missing in places and a rear rudder pedal hinge was replaced with carbon steel and the hinge was frozen. The firewall looked like swiss cheese there had been so many changes in equipment over the years. One door was missing and there was a slight bend in the nose gear. We tallied up what parts we thought it would need and got the owner to agree to drop his price that much. He started it up and the Hirth ran great and the gages worked. We both agreed that the plane needed a teardown overhaul but that would primarily be labor and our labor is free! So on that winter day in Pittsburgh Kevin became an airplane owner. We impressed the owner by taking the wings off and having it all packed up in the trailer in about 40 minutes.

Next month I'll finish the story with the wild ride home and the rebuild to date.

**The Meeting This
Month Will Be At:**

**FulCo Main
Hanger
@ 7pm on
Mon. April 27th**

**Come see the our club pictures on
our web page in living color at:
www.eaa602.org**

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A Basic Electrical Power System

by Paul Messinger

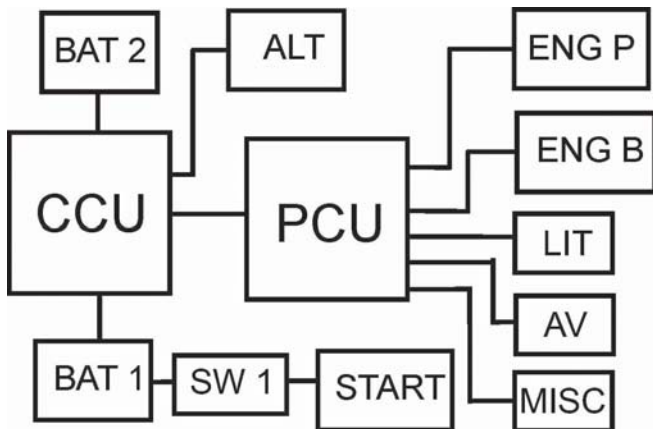
This article discusses the basic architecture suitable for a standard experimental aircraft with light IFR capability and an alternative (auto) engine installation.

Much of what I cover here has been discussed in prior articles. Here I present a specific design that provides fault tolerance along with the use of modern electrical components generally available thru electrical distributors VS (in many cases) what is available thru Aircraft Spruce etc.

The basis of the selection and justification for specific design details and parts selection has been discussed in prior articles.

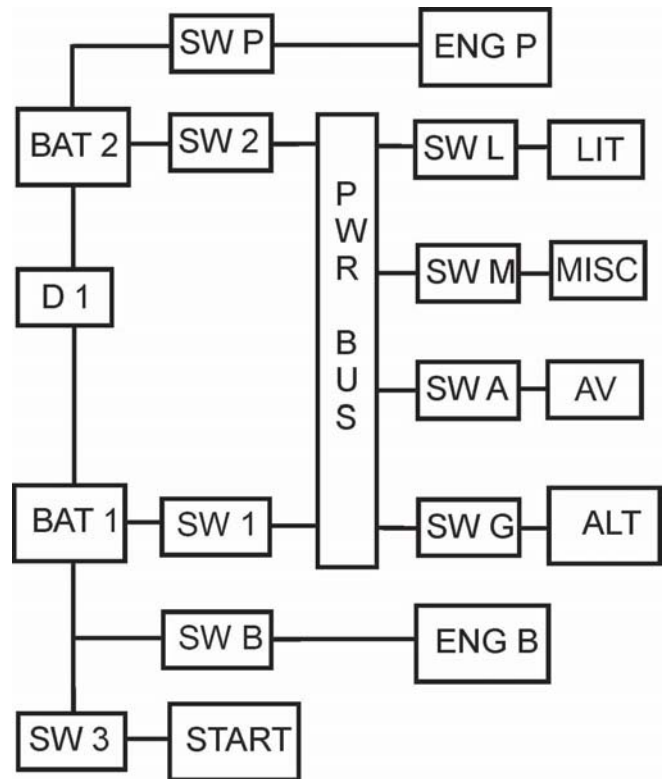
This fault tolerance design is based on no more than a single failure in a single flight. I feel this is reasonable as its rare to have a flight with a single failure. A fault tolerant design will prevent a cascade of the first failure causing additional failures etc. The use of fault detection and alerting modules not common on certificated aircraft aids the pilot in notification of the failure.

Below is the diagram from a prior article that is the basis for the subject design. There is a problem however as neither the CCU nor the PCU currently available so we must replicate most of the functions with currently available components



The CCU (as designed) contains the main power contactors shown in the opposite diagram as SW1 and SW2. The CCU also contains the Alternator connection as well as current sensors for a Electrical Fuel Gauge (EFG) that tells the pilot how long the battery power will support the current load and adjust in real time to changing loads. This device is essential to charging system failure if the engine is electrically dependent. Also included is alternator

failure detection and pilot notification circuitry. The alternator is connected to the main (Battery #1) and Battery #2 is charged thru the special diode D1 a part of the CCU.



The PCU is simply an array of control switches and circuit over-current protection components. The PCU on the left uses solid state switches with built in circuit breaker functions. As with the CCU the PCU are not currently available so circuit breakers or fuses must be used. The switches providing power to an electrically dependent engine are internally wired in the PCU in the same way as they are shown in the above diagram.

Personally I prefer to use double pole control switches with the contacts wired in parallel. Prior articles provide the pros and cons for the various switch functions and how many instruments/systems are controlled by a single switch.

Most builders have their own ideas of what is important and what to control with one switch. Its personal experience that overrides failure rate analysis in many cases. Thus there are many variations in electrical system design.

Questions are welcome paulm@olyphen.com
Paul

DUES ARE DUE BY JUNE \$20

but you can pay them anytime now for this year

Name _____ EAA Number _____ Exp Date _____

Address _____ City _____ State _____ Zip _____

Home Phone _____ Cell Phone _____ Work Phone _____

E-Mail _____ Ratings _____

Experience Years _____ Hours _____ Aircraft Owned _____

Mail To: Douglas Sterling ~ 819 North Shore Road ~ Hadley, NY 12835 ~ Phone 518-863-2409

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FOR SALE**

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If you have any aircraft related stuff that you don't need anymore or anything you need, list it here. You may help someone who might need it or may find it at a reasonable price.



EAA602

**819 North Shore Rd
Hadley, NY 12835**



GOD BLESS AMERICA
September 11, 2001
We will never forget.

May 2009

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