



R.U.F.F. Times

The Official Newsletter of the
Rochester Ultralight Fun Flyers
EAA UL Chapter 95



April 2009

RUFF Members Meeting

SATURDAY, 25 April, 10:00 a.m.

Where: Spencerport Airpark, D91. N43° 10.28', W77° 49.00'



Program: "Pilot Decision Making", by Dr. Dan Burrell, Ph.D.

Dan is Licensed Mental health Counselor, airplane maker, pilot in training, and Secretary of EAA Chapter 95UL. He knows why we decide what we decide in a cockpit. You MUST decide to come to this meeting and get psyched up!!

Before Meeting Breakfast: 9:00 a.m.: There is a nice Diner in Spencerport called Slayton's. All who are interested in a pre-meeting breakfast are invited to meet there.

After Meeting Project: The club house at Spencerport needs some fixing up. So, bring tools, paint brushes, etc. and we'll do some work together!

RUFF Events

Summer Members Meetings: Starting April 25, we will meet the last Saturday of each month at 10:00 am for our monthly meeting. We will meet at Spencerport Airpark (D91. N43° 10.17', W77° 49.10') instead of Honeoye Falls.

RUFF at Long Acres: 14, 15, 16 August. This year we are not planning to advertise a formal EAA Fly-In. Instead, it will be an extended picnic and camp out for RUFF, family, and friends.

Flying Events We Like to Go To as a Group

Date	Airport	Event	Comments
May 17	Williamson-Sodus (Pancake Breakfast	With Apple Blossom Festival
May 27	Redun	Fly-in Breakfast	sponsored by Redun Flying Club

Getting My ROTAX 447 In Shape for Spring Flying

Jon Arney

One of the joys of owning and flying an Experimental Light Sport Aircraft is being able to do my own maintenance and modifications. As a renting GA flyer, I never got to DO anything to the airplane except fly it. Now I can tinker with my Kolb (N10121) and enjoy learning aircraft maintenance. However, I am a serious new-comer to this aspect of aviation and have little more than wood working experience. So, when my Kolb's 447 engine reached 275 hours, I began to get nervous about it. What if, in my inexperience, I was overlooking something?! The more I thought about it, the more nervous I became about flying my Kolb, and that took away a lot of the joy! So, just to be safe, I decided to see if I could find a ROTAX repair person to inspect my 447 for it's 275 hour check-up. I searched the web for ROTAX repair places in New York State and came up with the following list.

Cayuga Performance 1067 Trumbull Crs. Rd. Newfield NY 14867 Telephone: 607-564-9522 Services: 2 stroke	North Country Aviation Services Inc. 2514 Airport Road Johnson City NY 13790 Phone: 607-481-0995
Northeast Light Sport Aircraft Hampton Airfield 9A Lafayette Road #4 North Hampton NH 03862 Phone: 603-397-0367	<u>A&P Mechanix</u> GA, LSA, Experimental, & UL Aircraft Rotax Engine Specialists Buffalo-Lancaster Airport (KBQR) apmechanix@gmail.com

I particularly noted **A&P Mechanix** at KBQR. That's the Buffalo-Lancaster GA airport and is only 46 NM from Spencerport Air Park where the Kolb is hangared. So, I e-mailed A&P Mechanics, and they said they would be happy to take a look at my 447 and invited me to bring it over to them. So, I strapped my beloved 447 into the right seat of the Aeronca Chief and flew it over to them.

Thom Riddle (PP Mech.) and John Chapman (A&P I/A) run A&P Mechanix out of their hangar at Lancaster. They met me with smiles as I taxied the Chief up to their hangar, and we unloaded the 447, with it's Bing carb, and mounted it on their bench in the hangar. I explained that I enjoyed doing my own work but was nervous about my lack of experience inspecting a high time 447. Thom & John said they would be happy to work with me. Thom suggested they take a look at it over the next 24 hours and develop a plan of action for my approval before spending any money on it. Seemed like a good idea to me.

I hated to think what the cost estimate would be. I anticipated several hundred bucks for the whole job. I explained all this to Laura, and to my surprise she was extremely supportive of the plan. Seems she have less faith in my maintenance skills than I had!

A couple of days later, Thom e-mailed me with a plan for the 275 hour inspection of the 447, Bing carb, and gear box, replacing anything that needed replacing and cleaning whatever needed cleaning. Much to my surprise and relief, he said I had been doing well with my maintenance and that things appeared to be good to excellent condition. He estimated the total cost would come to something between \$150 - \$200, depending on what needed work/replacement. Wow! Go for it! Then, another day went by, and Thom e-mailed me the following interim report.

"John and I got to work on your 447 today and I wanted to give you a brief report of what we've found so far.

Carburetor:

- *Disassembled cleaned and inspected.*
- *Found everything in excellent condition, including the float bowl gasket, which we did not need to replace.*
- *Float levels were correct and Viton float valve looks new.*
- *Some of the jet numbers are different from stock Bing numbers but since you said that the engine has been running well and within normal temperature ranges, I see no need to change any of these. If my understanding about its last running condition is in error, please correct me ASAP so I can include proper jet numbers in the parts order I'll place tomorrow (Tuesday 24th).*
- *The jet needle clip was located in the upper most annular groove, which is the leanest of the three positions. Bing manual calls for it to be in 2nd groove. Again, if it has been running with proper EGTs, then I won't change the position.*
- *The cable boots are cracked and should be replaced. I'll include two for you in our parts order.*
- *Carb socket in very good shape, no need to replace.*
- *I did not adjust either the idle speed screw nor idle air screw, so they should be where you left them when you get it back.*
- *Cleaned and oiled the air cleaner.*
- *We've not yet taken apart the enricher but will on our next work day.*
- *Found gearbox overfilled by a large margin. Oil level should be kept at the lower of the two screw holes on the side of the gearbox.*
- *Inside of gearbox visually inspected and found virtually no wear on gears nor cracks or other problems.*
- *Still need to remove large gear and spring stack for measurement. We need to fabricate a new press fixture to do this and it should be completed in a few days. We are ordering a few shims that may or may not be needed, along with a gearbox gasket that will be needed.*

As soon as we get the parts we'll resume and finish the work."

Wow! That was fast work, and I really appreciated Thom's sending such a detailed and informative interim report. A few days later he e-mailed me that he was finished, and I flew the Chief over to pick it up. Thom gave me a copy of his final inspection report, detailing all he had checked and all he had done. Then he spent time with me going over every detail of the inspection and what he recommended that I do in re-mounting the 447 on the Kolb. The total came to only \$180, and I learned a huge amount about my 447.



So, if you have a ROTAX 2-stroke, a 4 stroke ROTAX-912, or a regular GA 4-stroke, or a light sport eligible airplane (ELSA, LSA, EAB, or Std. Category) they would be happy to work with you! A&P Mechanix, GA, LSA, Experimental, & UL Aircraft, Rotax Engine Specialists Buffalo-Lancaster Airport (KBQR) <http://riddletr.googlepages.com/a%26pmechanix>

Experimental Standard Category Aircraft -- NOT

So, you passed the 16 hour FAA approved course offered by EAA to get your repairman certification. Great! Now you are allowed to do the maintenance and modifications to any aircraft you own. Right? **WRONG!!** You can only do it to an Experimental-Light-Sport aircraft you own.

So, how about turning your Standard Category certification into an Experimental certification of some kind? I argued about this with Steve Zigelstein last Saturday, and it turns out he is right!! You CAN do it. You CAN'T turn a standard category airplane into the familiar Experimental-Amateur-Built (EAB) of the 51% rule, but you CAN turn it into other types of Experimental aircraft that we are less familiar with. **The problem is, you really wouldn't want to do this.** Here is a note I received from Timm Bogenhagen (EAA #379292, Senior Aviation Specialist) that explains why.

"Jonathan,

Thank you for the e-mail. The FAA requires standard category aircraft like your Chief to be maintained in accordance with the FAA approved Type Certificate or approved STC's. The FAA does not encourage standard aircraft to be converted to the experimental category unless a specific search and development, or exhibition purpose will be pursued.

FAR 21.191 set forth 9 purposes for which experimental airworthiness certificates are issued. They are:

21.191 Experimental certificates.

Experimental certificates are issued for the following purposes:

(a) Research and development. Testing new aircraft design concepts, new aircraft equipment, new aircraft installations, new aircraft operating techniques, or new uses for aircraft.

(b) Showing compliance with regulations. Conducting flight tests and other operations to show compliance with the airworthiness regulations including flights to show compliance for issuance of type and supplemental type certificates, flights to substantiate major design changes, and flights to show compliance with the function and reliability requirements of the regulations.

(c) Crew training. Training of the applicant's flight crews.

(d) Exhibition. Exhibiting the aircraft's flight capabilities, performance, or unusual characteristics at air shows, motion picture, television, and similar productions, and the maintenance of exhibition flight proficiency, including (for persons exhibiting aircraft) flying to and from such air shows and productions.

(e) Air racing. Participating in air races, including (for such participants) practicing for such air races and flying to and from racing events.

(f) Market surveys. Use of aircraft for purposes of conducting market surveys, sales demonstrations, and customer crew training only as provided in §21.195.

(g) Operating amateur-built aircraft. Operating an aircraft the major portion of which has been fabricated and assembled by persons who undertook the construction project solely for their own education or recreation.

(h) Operating primary kit-built aircraft. Operating a primary category aircraft that meets the criteria of §21.24(a)(1) that was assembled by a person from a kit manufactured by the holder of a production certificate for that kit, without the supervision and quality control of the production certificate holder under §21.184(a).

(i) Operating light-sport aircraft. Operating a light-sport aircraft that-

- (1) Has not been issued a U.S. or foreign airworthiness certificate and does not meet the provisions of §103.1 of this chapter. An experimental certificate will not be issued under this paragraph for these aircraft after January 31, 2008;
- (2) Has been assembled-
 - (i) From an aircraft kit for which the applicant can provide the information required by §21.193(e); and
 - (ii) In accordance with manufacturer's assembly instructions that meet an applicable consensus standard; or
- (3) Has been previously issued a special airworthiness certificate in the light-sport category under §21.190.

The purpose most people know about is **(g) experimental amateur-built**, this is the homebuilt rule that requires the majority portion of the aircraft's fabrication and assembly to be completed by amateur's for their own education or recreation. Your Chief will not qualify in this category.

If you put an un approved engine on your Chief the two purposes you could qualify for are research and development and exhibition.

The research and development purpose is to test new aircraft design concepts, new aircraft equipment, new aircraft installations, new aircraft operating techniques, or new uses for aircraft. No reason why you could not get this certificate to test this unapproved engine. However, this category carries limitations. The most significant is the FAA only issues these airworthiness certificates for a 12 month period. Each year you are required to re-apply to the FAA for a new airworthiness certificate. Part of the required documentation is to show the FAA the results of your tests over the previous year and set forth the program of tests you wish to conduct for the next year. The FAA may restrict flight operations in any way they feel necessary to protect the public from the research and development tests. In my opinion an aircraft that has this type of airworthiness certificate is not a useful recreational aircraft capable of being flown just for fun.

The exhibition category is to exhibit the aircraft's flight capabilities, performance, or unusual characteristics at air shows, motion picture, television, and similar productions, and the maintenance of exhibition flight proficiency, including (for persons exhibiting aircraft) flying to and from such air shows and productions. This type of certificate is probably the most appropriate for the engine change you mentioned. The good news about this certificate is that it is issued with an unlimited duration. However, the bad news about this certificate is at the beginning of each year you must submit a program letter to your local FAA flight standards district office identifying each event you will fly to and exhibit the aircraft. Additionally, the FAA does allow you to fly at other times to maintain your

proficiency in the aircraft. They assign you a based airport and allow proficiency flights from this airport, limiting all takeoffs and landing to the based airport.

Bottom line is the FAA has no process to make a standard category aircraft experimental and then just fly the experimental for fun, as you did when it was a standard aircraft.

Timm"

Thanks, Timm, for filling us in!



• *Trade Winds* •

The "Engine Information System"

If any of you aircraft builders are considering using the EIS system from Grand Rapids Technologies in your plane, contact me as I can get a better price since I am a dealer. This way you can save a few bucks. The EIS is a valuable instrument to have because it measures the battery voltage, engine rpm, exhaust gas temp., cylinder head temp., water temp, outside air temp., engine hours (Hobbs meter), flight time, and also has extra inputs that you can use to your liking. All of these measurements have upper and lower limits that you set and if any of these limits are exceeded, a warning light flashes and the screen indicates the problem area. This is probably the most valuable function of the unit. Basic units for most aircraft run about \$500. George Charnitski.



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coated. • Contact [Robert M. Erb](#), Owner - located Honeoye Falls, NY USA • Telephone: 585-746-5535 . 585-624-2789 • Posted March 24, 2009

TIGER CUB • \$14,000 • **FOR SALE** • Tiger Cub. Rotax 503. Polyfiber covering. Polyurethane paint. Always hangared. • Contact [Mark Russell](#), Owner - located Lima, NY USA • Telephone: 585 624-4798 • Posted March 25, 2009

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