



**EAA CHAPTER 515**  
 Fort Collins/Loveland  
 Colorado  
 www.eaa515.org

# NEWS

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## Doug Dempsey On Engine Cooling

*By Larry Larkin, Jr.*

Doug Dempsey, a member of Chapter 515, spoke to us about aircraft engine cooling at the April meeting. Doug is building an RV-7, formerly worked for Ford Motor Company, and has a keen interest in automotive engines. While working at Ford, Doug became particularly interested in the dynamometer building. This is where engines were put to the test under all sorts of conditions. Needless to say, with all of Doug's interest in automotive engines, he is putting a Mazda 13B engine in his RV-7. Doug stated that he has never heard anyone say that automotive engines were a problem, only the cooling and speed reduction. Doug began his talk on liquid-cooled aircraft engines by testing the knowledge of those present with a 10 question "pop quiz". After the quiz, Doug passed out a paper he wrote on the same topic. This 16 page paper discussed some of the issues of liquid cooled engines in aircraft, such as: the capacity of the liquid-to-air components to transfer heat, the flow rate of the liquid, the acceptable

outlet temperature of the heat exchanger coolant, the maximum outlet air temperature limit, connections of the heat exchanger to the engine, inlet and exit areas, pressure drops across the heat transfer mechanism, and contours on inlets and exits. Doug did a great job of taking some very complex issues and making them easier to understand. Doug also showed a video of some test flights of Walt Fisher's "Afterthought" (a modified RV-3 with a Mazda 13B engine) after some major cooling modifications. Doug helped Walt make some modifications to the cooling system after Walt told him the plane wasn't cooling correctly and was not flying as fast as it should. After Doug's modifications, the plane's top speed was increased to around 200 mph and the engine stayed nice and cool.

Doug produced and presented a great program. Thanks for a great job Doug.

## EAA Chapter 515 Presents

**When:** Tuesday, May 4, 2004, 7:30 PM

**Where:** Hair Dynamics, 6464 S. College, Ft. Collins

**Program:** Doug Dempsey will tell us "What Every Pilot Should Know About His or Her Engine." Dan Olsen will be out of town on business and will present his program at FNL in June.



## Chapter 515 April Minutes

By Larry Larkin, Jr.

The meeting was called to order at 7:30 PM on April 6, 2004, at Hair Dynamics in Ft. Collins. President Hugh Beckham opened the meeting by asking if there were any guests in attendance. Walt Fisher was visiting from Chapter 720 in Greeley. Bill Cherry introduced himself as a guest and is interested in building an RV. Brad Peak introduced himself and is building an RV-7. A reminder was given that the EAA Rocky Mountain

Regional Fly-In will be held at Front Range Airport on June 26-27. There will be a temporary control tower in operation. For more information, visit [www.rmrfi.org](http://www.rmrfi.org). The date of the next Board of Directors meeting will be announced.

A Treasurer's report was given by Ernie Stevens.

Tom Lucas, Bob Peterson and Randy Bailey were all selected for On-The-Spot and you can read more about them in this newsletter. From now on, On-The-Spot "volunteers" will also

be asked to write up a short autobiography for the next month's newsletter.

Mt. Werner (near Steamboat Springs) has been selected as the site to replace the Corona Pass AWOS.

After a short break, member Doug Dempsey gave an excellent talk on aircraft engine cooling. See the lead article for more details.

The meeting was adjourned at 9:45 p.m.

## PREZ SEZ

By Hugh Beckham

Most of us have never given any thought to even a remote effort to make Chapter 515 be a "public service organization." Sure, we do the Young Eagles, but that is essentially all that we do for our community. The truth of the matter is that most of us consider 515 to be "our organization" for "our benefit." There is nothing wrong with that. That has been our choice and it serves us very well.

Our May program is one that we can consider to be another one which will benefit each of us who fly, but one that I feel that we should share, like a "public service" with every one we know who flies.

Last month, Doug Dempsey presented an extraordinary talk

on engine cooling, which then allowed us to consider the effects of cooling on drag and performance. Another aspect of his presentation just touched on engine life, a concern of all of us.

For May, Doug has agreed to come back and give us "the rest of the story." This will be a presentation entitled, "What Every Pilot Should Know About His Engine." This talk could save you some big bucks. It could also increase your flying pleasure, and extend the life of your engine.

This is something that we should share with our flying friends. Tell your friends about it. Invite them to the May meeting. Better yet, bring them. If it helps, you can assure them that we are not having a membership drive and that we will not be hounding them to join. But if they fly, they should be at that program.

## Put it in the Newsletter! stories • announcements • ads

Send text and/or pictures to:

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## Chapter 515

### TOOLCHEST

*Here is a list of tools and equipment either owned by the chapter or available for use by members.  
CONTACT: Walt Ellwood, 635-3436, [wellwo@aol.com](mailto:wellwo@aol.com)*

**Engine hoist**

**Flat bed trailer (call Jeff Dinius)**

**Instrument panel hole cutter**

**Nico press, with gauges**

**(bolt cutter style)**

**Scales (Bill Arnold, Dave Klink)**

**Stoves**

**Torque wrench**

*Tools that members may loan out  
Lycoming Engine Overhaul Stand  
(Mel Callen, 587-4824)--may work  
with a Continental  
Cable Fitting Swaging Tool  
(Hugh McTeague, 586-5910)*

## EAA 515 On-The-Spot

Our thanks go to Randy, Tom, and Bob for supplying the following interesting articles about themselves.

### Randy Bailey

Like most everyone else in the chapter, Randy grew up building model airplanes and riding his bicycle to the airport. A glider intro ride in high school got him more interested, but he didn't start flying lessons until he was about 30.

In 1991 he joined Chapter 515 and visited Paul McCoy's shop to see his Glasair III project. Much to Randy's surprise, after standing around for an hour or two, Paul handed him a wrench and put him to work. Randy was hooked and spent most of his spare time for the next year and a half helping Paul, Jack Lange and Bill Hale finish the complex project.

At the same time, Randy completed his instrument rating, served as 515's VP and Pres, and was the chapter's first Young Eagle coordinator.

After the Glasair project, Randy started helping Bill Hale do maintenance on Bill's Bonanza, and about 10 years ago Bill transitioned Randy into the Bonanza. Randy took advantage of the aircraft by working his way through the ratings, and now is a CFII for single and multi engine. Randy now instructs with the American Bonanza Society's Pilot Proficiency Program, which takes him to various parts of the country about one weekend a month to give recurrent instruction to Bonanza and Baron owners.

Randy's next goal? He has managed to convince his 13-year-old daughter, Sarah, to take glider lessons together this summer. She should be able to solo on her birthday this fall while Randy gets another rating and learns what rudders are for!

Randy wishes to thank all the great members in Chapter 515, not only for being such great friends, but also for giving him the insights and opportunities to advance his love of aviation.

### Tom Lucas

The human memory is a remarkable attribute. Things that are pleasant we tend to remember for a lifetime and those that aren't have nearly the same effect.

I am going to stop just short of making a claim that medical science says isn't possible, and the claim might be the byproduct of family story telling and re-telling, so it's hard to separate memory from actual gray matter retrieval.

I was born a couple of years before WWII ended and according to medical science, our memories don't quite go back that far, but my earliest memories were of things flying overhead in the sky. Television wasn't that pervasive in 1943, but there was radio and pictures in newspapers and magazines. A lot of those images were war-related and a lot of them were of those flying things.

As I had a couple of birthdays or so, gradually I learned that those flying things were airplanes and in my mind were just about the neatest things on the planet – and still are. Not surprisingly, the bulk of the toys in the toy box in those days were some form of airplane. As I had a few more birthdays and advanced in tactile skills, I helped the Revell Company become solvent by acquiring nearly every plastic kit they produced. I say nearly as this might be a good point to introduce the concept of high performance military/research hardware.....sound familiar? I don't believe that I ever constructed a Jenny or Sopwith kit, but rather X-2, X3, F-86 etc. I seemed to recognize at a

tender young age that speed is good.

In the same epoch, the socially acceptable thing to do on Sunday was go for a "Sunday drive." The chronologically challenged readers among you will remember that. This was, of course, before gas was \$2 a gallon and there were 200 cars per linear mile of highway. I always made sure to lobby (long before I knew what the word meant) to go to the Peoria airport and watch airplanes. By this time the war had been over for a few years and some of the war assets had filtered down to the Illinois Air National Guard – P-51 Mustangs in particular. Not only that, they had lots of them as well; so on any given Sunday it was possible to see some of them flying whenever you arrived at the airport.

I think that the seed had been planted at a much earlier age, but seeing and hearing the Mustangs solidified the intense desire to be a pilot. If just watching something as soul stirring as a P-51 Mustang caused goose bumps and heart pounding, flying one must be the ultimate mortal experience. I just didn't want to be a pilot, but I wanted to be a fighter pilot. Initially that meant flying a Mustang, but as I got older and the military hardware advanced into the jet age, the goal then of course was to fly an oil burner.

This dream was dashed by the family doctor. When I was in the first grade of elementary school, I had in succession every childhood disease known to man. The upside of this was that I got all of that out of the way all at once, but the downside was I missed nearly half of the school year. Years later, the family doctor stated that as a result of all those diseases, I would "never be able to be a fighter pilot". That was probably the most devastating moment of my life. It would be years before I would learn that the doctor's opinion wasn't valid and having had all those childhood

diseases would not have prevented me from passing a military physical. The problem was that I bought his diagnosis and gradually drifted away from airplanes and into cars, as most teenagers do. I built and raced a '55 Ford stock car at a ¼ mile dirt track for a couple of years and had to give that up since I didn't have the resources to adequately finance the whole effort myself and couldn't find a 'rich uncle' to further the cause.

Another lifelong passion was Colorado. The family visited Colorado for the first time in 1950 and while the whole family loved the Estes Park area (tourists you know), I was the one always bugging my parents "When are we going to move to Colorado"? They sort of made an effort in 1958 when my parents bought a lot in Drake and the following year put a small mobile home on it as a vacation retreat. From that point on, when it was vacation time we knew where we were going. In the fall of 1969 I decided that I had waited long enough and moved to Colorado and moved into the small mobile home in Drake. I had a job offer from Woodward Governor in Fort Collins for \$2.10/hour and took it figuring that I could make ends meet on that salary since a roof over my head was already taken care of.

In the spring of 1970, a friend I worked with at Woodward said "Let's go take flying lessons!" It had been a long time since the flames of passion had burned with regard to aviation thanks to the doctor in IL. I told him that I didn't know if I could afford to, but agreed to take the \$25 Cessna introduction ride. That's like offering a recovering alcoholic a drink. The next stop was the Medical Examiner which I passed with no problems whatsoever. I selected a flight instructor and told him that I could only fly when I could afford the lesson, which turned out to be \$20/hour for the 150 and \$20 for the instructor. For the first time in a long time, fate was good to me; the instructor was absolutely top

notch. He never screamed or yelled, but through subtle calm comments and demonstration caused you to feel you had failed if you hadn't given a 110% effort. Thank you Thomas Schultz wherever you may be. I soloed in 6.5 hours and never looked back. I took my check ride on July 25th, 1970, and passed on the first attempt.

I'll fast forward a bit. Over the next few years I was checked out in 4 different Cessna types; C152, C172, C177 and C182. I flew as money permitted until 1979 when I was working out of town a lot and money was tighter resulting in a ten year hiatus. In 1989 when Top Gun was released, yes you guessed it, the flames of passion burned high once again. I took some recurrent training and got the BFR and flew intermittently once again.

I am embarrassed to admit that my total time is something on the high side of 200 hours, which is probably less than most in the chapter, but I savor, and re-fly, every minute of every one of those hours almost daily. I plan on renewing the medical and the BFR this spring/summer and once again making some more deposits into the old memory bank.

#### **Bob Petersen**

Born and reared on the banks of the Mississippi River at Davenport, Iowa, Bob can't remember when he had no interest in airplanes. Like so many of you, he built all kinds of model airplanes: solid scale, 10 cent Comet kits and larger flying models, U-control. There were no radio controlled planes in those days – he couldn't have afforded them anyway.

Grass covered Cram Field near his home drew his attention when the great planes of the 30's could be watched any day. Bob soloed from that field in a J-3 Cub at the time of his high school graduation. In 1945, he enlisted in the Navy V-5 pilot program

and was sent to CU at Boulder for a semester. But the war was over and he was soon back home in Iowa where he constructed a plane of his own design, pushed by a Harley Davidson engine. Down a muddy road he went, but the "Hardly Ableson" did not get it in the air. If it had, this biography would probably have ended here.

All this airplane activity did not fill an empty void in Bob's heart. It was the good news that the God who made the birds loved him, and offered fullness of life by faith in Jesus as the Son of God, that filled that void.

After three years of aeronautical engineering, Bob felt led to transfer to a major in Bible, then on to seminary and finally to graduate school in Near Eastern studies. His wife, Jackie and their three children made his home complete. He held pastorates in Royal Oak, Michigan, DeKalb, Illinois, and Iowa City, Iowa.

It was in Iowa City that a Taylor-Cub caught his eye one day as he passed the airport on his motorcycle which he loved almost as much as flying. He traveled through all 48 states on a Harley. Bob sold the cycle and bought a half interest in a 1946 Taylorcraft with one of his parishioners. With that plane they both earned their private licenses. Bob then bought out his partner and entered upon his first rebuild project. This led to rebuilding a 1940 Luscombe and a 1941 Taylorcraft.

Bob then again tried his hand at building a plane from scratch. Still favoring the planes of the 30's, he built an open cockpit Baby Ace. This time his efforts got off the ground and he lived the dreams of childhood. However, it was an

impractical airplane, so he sold it and bought a basket case Piper Colt. That plane is now finished and is bringing Bob a lot of pleasure.

Bob is now retired from the ministry, but still does pulpit supply and teaches Bible classes. His ministry included seven trips to the Near East, five as host and teacher of Bible history and archaeology. He appreciates the camaraderie of Chapter 515 and his friends who have a heart to fly.

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## 2004 Chapter 515 Activities

**May 2:** Rescheduled - At the first Young Eagles event this year, we will primarily fly fourth and fifth grade members of an aviation club from Loveland.

**May 4:** Doug Dempsey speaks on what all pilots need to know about aircraft engines.

**June 1:** Dan Olsen talks about his Lancair 320 in his heated hangar at FNL. Dan will demonstrate composite building techniques.

**June 26-27:** Rocky Mountain Fly-In at Front Range Airport! There will be a temporary control tower in operation. Details at [www.rmfi.org](http://www.rmfi.org) **Caution:** There is a new 2000 ft. agl tower near the east side of the outer ring of the DIA Class B airspace. Avoid the tower--always make one landing for every takeoff.

**July 24:** Kelly Airpark Annual Pancake Fly-In.  
[www.kellyairpark.com](http://www.kellyairpark.com)

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## For Sale

Navaid AP-1 Autopilot, with Servo S-2 and with Porcine Smart Coupler II. These units have never been installed or used in any way except to open the packages and look at them. The going price for this combo is \$1450. I'll let them go for \$1250. A \$200 savings to the buyer. See [www.navaid-devices.com](http://www.navaid-devices.com) for details on the autopilot and [www.porcine.com](http://www.porcine.com) for the Smart Coupler II.

Nolan Frederick [nvincent@idcomm.com](mailto:nvincent@idcomm.com) 303-494-9510  
Chapter 43 member

340 Martin Dr. Boulder 80305

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## Young Eagles Update

*By Britt Crowell*

We had planned for a Young Eagles day for a Loveland aviation club on April 24th. Due to the weather forecast I canceled it before I started my phone-a-thon. I have rescheduled with the teacher for this Sunday May 2nd at 9am. There are only about 15 kids so it should be a quick and easy morning. Not sure of the location as the airport manager doesn't like to call me back. Wednesday morning I'm giving Eagle Air a call to see if we could use the front of their hanger and parking lot. If you can participate and haven't heard from me please give me a call or email me. 484-4995 / [britt@fortcollins.com](mailto:britt@fortcollins.com)

# EAA Chapter 515 Newsletter

*c/o Britt Crowell(publisher)*

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*Fort Collins, CO 80524*

**<http://www.eaa515.org>**

May 2004

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## Receive Your Newsletter Sooner

(and save Chapter 515 some money)

If you have email, please consider having your monthly newsletter emailed to you. This saves considerable labor and postage and makes more money available from dues to pay for chapter activities. If you are willing to help us all by doing so, please call Ernie Stevens, Chapter 515 Treasurer, 663-0829, or contact Britt Crowell, 484-4995, or [britt@fortcollins.com](mailto:britt@fortcollins.com).

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## REMINDERS

**PLEASE PARK IN FRONT, WEST OF BUILDING** for all future meetings at Hair Dynamics. Our gracious host, Dale Matuska, conducts business meeting nights and the parking area north of the building is needed for customers. Thank you.

As of January 1, 2004, in order to be a member of Chapter 515, you must also be a member of the national EAA: P. O. Box 3086, Oshkosh, WI 54903-3086, [www.eaa.org](http://www.eaa.org), membership services at 800/843-3612.

**Chapter 515 2004 dues (\$18) are now past due.** Our treasurer is Ernie Stevens, 3656 Catalpa Court, Loveland, 663-0829.