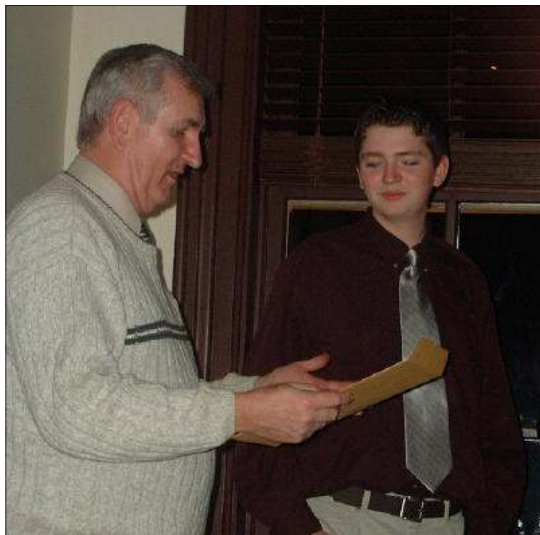


Winds Aloft



P.O. Box 1206 Barrington, IL 60011



Our banquet on the 6th at Emmetts was well attended and enjoyed by all. Above, Jay and Abbie Fridell share dinner with friends before receiving their award for their outstanding work on Winds Aloft. Left, Ron Liebmann presents Bryant Gruenwald with the Chapter's sponsorship of his session at the EAA Air Academy this coming July (story on page 5) (Photos courtesy Ron Liebmann)

Mike Rodina, owner and restorer of at least six Taylorcraft at Casa de Aero, gave us an excellent presentation on Taylorcraft aircraft and his restoration efforts at our February meeting. Pictured is a very rare Taylorcraft, a four-place model made of molded fiberglass. (Photos courtesy Mike Rodina)



MARCH
2004

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The Safety Corner

Aircraft Security

by Mike Perkins

Reaching any airspace or no-fly zone attracts very negative attention, but so can leaving your keys in your airplane. This recently made for some bad news as one unwitting aircraft owner recently learned. He'd had his Cessna stolen from his hanger by a non-pilot who was celebrating his 21st birthday by going on a four-day drinking binge, throwing two six-packs in the right seat, and crashing into power lines off the edge of the airport. He staggered away and was later arrested.

Now sober and all lawyered-up, the young fellow claims that if there had been a chain-link fence around the airport, he would have been prevented from doing what he did. Still, the keys were in the airplane and the doors weren't locked.

This makes good reading, but it's not good news – such events make the public more nervous than they already are through such publications as *The Washington Post*, scrubbing and scraping against us as it scrutinizes all aspects of aviation. The rule is double-lock. Our state laws require this now, and it's sensible. That means the ignition key goes in your pocket, plus the locking the aircraft doors or installing a prop chain lock.

Mike

Editorial

Red Flags

The Honorable Markey (R. – Mass.) has introduced a bill, H.R.3798, referred to as The SEAL Act, which is meant to “close loopholes” in existing airport security measures. However, it also goes on to specify restrictions that include General Aviation. Here are the salient points as presented to Congress by Markey in a speech February 11:

- TSA is currently taking some steps, such as developing a risk-based self-assessment tool for general aviation airports to use to identify security concerns, but these steps fall short of what is required.
- Whenever the threat level reaches Orange, The SEAL Act directs the Secretary to establish a no-fly zone around sensitive nuclear facilities such as nuclear power plants and nuclear weapons materials production facilities, and chemical facilities identified by the EPA at which a release of the facility's hazardous materials could threaten the health of over 1 million people, and any other facilities the Secretary shall so designate.
- The SEAL Act requires the operators of general aviation airports and landing facilities within

(Continued on page 5)

A Brief History of Aerodynamics Part I

by James Cooper



The Kitty Hawk Centennial Flight highlighted a milestone in the history of aviation. Like many early pioneers of flight, the Wright Brothers were amateur engineers and empiricists, practical men who were not formally schooled in the theoretical sciences. Nonetheless, they did rely heavily on established aeronautical knowledge to design their aircraft. In a series of articles, we will explore the history of aerodynamics; the advances in theoretical knowledge that contributed to the success of manned flight at the dawn of the 20th century.

The Beginnings of Aerodynamics

Observations of the flight of birds and projectiles stirred speculation among the ancients as to the forces involved and the manner of their interaction. They, however, had no concrete knowledge of the properties of air, nor any systematic method for the study of those properties. Science as it was known then was still largely a matter of pure intellectual speculation and the concept of experiment as the test of scientific validity was centuries away from being adopted. Yet the first noteworthy contributions to the science of aerodynamics were made by Aristotle and Archimedes during the 4th and 3rd centuries B.C. and by Leonardo da Vinci during the

(Continued on page 4)

(Aerodynamics continued from page 3)

Renaissance in the late 15th and early 16th centuries.

The most important scientist during the golden age of Greek culture was Aristotle (384-322 B.C.). He was a man of prodigious intellect who developed a corpus of philosophy, science, ethics and law that has influenced the world to this day. In direct contrast to the philosophy of Plato (Aristotle's own tutor), Aristotelian science was empirical in nature, based on observation and not so concerned with the 'whys' of the physical world but rather on results and consequences of various phenomena. Of all Aristotle's scientific ideas, two are particularly important in the history of aerodynamics. The first is the concept of a *continuum*. He wrote that "the continuous may be defined as that which is divisible into parts which are themselves divisible into infinity, as a body which is divisible in all ways. Magnitude divisible in one direction is a line, in three directions a body. And magnitudes which are divisible in this fashion are continuous." (Aristotle, *Treatise on the Heavens*, Book I). The importance of this concept is such that the continuum flow model is used to represent airflow in 99% of all aerodynamic applications today.

Aristotle's second contribution to aerodynamics was his idea that an object moving through air or another fluid encountered some form of "resistance". While he incorrectly reasoned that a body in motion required a constant application of force to keep it moving, his thoughts were heading in the right direction regarding motion in a vacuum. He wrote that "it is impossible to say why a body that has been set in motion in a vacuum should ever come to rest. Why, indeed, should it come to rest at one place over another? As a consequence, it will either necessarily stay at rest, or if in motion, will move indefinitely unless some obstacle comes in collision with it" (*Treatise on the Heavens*, Book I). A conclusion that follows from this reasoning is that because a moving object will eventually come to rest in a fluid, there must be a resistance acting on it. In aerodynamics today, this force is known as the aerodynamic *drag*.

Approximately one century later, advances were made in the study of fluids by the prominent mathe-



Workshop Visits

Workshop Visit March 27! - Come see Steve Marquette's nearly-finished Kolb Firestar Saturday, March 27 from 1 to 4 PM in his home garage in Mount Prospect. We understand that Steve has done a great job on his Firestar, a high-wing ultralight. Seldom do we get to see an ultralight under construction, and this is a great opportunity. Steve is at 1324 W. Central Road, Mount Prospect, which is less than ¼ mile east of where Busse Road T's into the east-west Central Road from the south, or about a mile west of Elmhurst Road. Steve's house is on the north side of Central, right next door to the Field House. Overflow parking will be at the Field House. Steve's phone is 847-253-8252.

Workshop Visit April 17! - Wally Draxler has started a Bearhawk which is a four-place, 140 mph taildragger with a cockpit larger than a 172. Wally has the 33-foot wings ready for cover, as are the flaps and ailerons. Being a 2400-lb. gross aircraft, these are no ordinary wings. Come see this before all this gorgeous work is covered up. Wally's home is at 1545 N. Kaspar, Arlington Heights. Exit Rt. 53 eastbound on Palatine. East on Palatine one block to Kennicott. South on Kennicott one block to Maude. East on Maude one block to Kaspar. Wally's house and garage are on the southeast corner of Kaspar and Maude. Wally's phone is 847-253-0459.

matician and engineer Archimedes (287-212 B.C.). In the employ of Heiron II, the king of Syracuse, Archimedes devised numerous engineering inventions, including the Archimedean screw which lifts water to higher elevations and the development of the mechanical lever. However, it is Archimedes' development of the mechanical principles of fluids at rest, or fluid statics, that ensure his place in the history of aerodynamics.

First, he clearly stated that a fluid (gas or liquid) is a continuous substance and can be treated mathematically as a continuum and he went on to apply the continuum concept first stated by Aristotle a century earlier. Second, Archimedes had some understanding of pressure. He realized that a surface immersed in a fluid was subjected to a force due to the fluid,

(Continued on page 6)



EAA 790 Sponsors Bryant Gruenwald at Air Academy

by Ron Liebmann

In the past, EAA Chapter 790 has been fortunate to sponsor some wonderful teenagers in different areas of aviation. Now it is time for our own Bryant Gruenwald to receive a trip that he will remember for a long time. For those of you who do not know Bryant, he grew up living next door to me. My memories of him go back to the day he was born. Some say that Bry had no choice but to learn to love planes and the rewards they give to us. He began hanging around my garage when I was just finishing up the Kitfox and it would be parked out on my driveway. In the years that followed, Bryant and I have become very close.

Four years ago, Bryant went with me to AirVenture and

stayed for several days working with the 790 Ambassadors wherever he could. He now stays with me for the whole 12 days that I'm up there. Bry also works at the restoration shop on Saturdays where he helps with the T-Craft project. He has also categorized the Sport Aviation and Experimenter magazines and he built shelving to create our own library in the shop.

As he grew up, I took him flying in my Kitfox where he learned the basics of flying. Now, through the generosity of 790, Bry will go to the Air Academy Class this July. He is enrolled in the Academy with other 14 and 15 year-old kids who no doubt have the same love of aviation that he has. If good weather prevails, we are hoping to fly him to Oshkosh the morning his session begins and fly him home to Schaumburg the day it ends.

I can think of no one that deserves this more than Bryant and I want to thank everyone in our fine EAA Chapter 790 family for giving this wonderful gift to Bryant.

Ron

(Red Flags continued from page 3)

one year to complete vulnerability assessments developed by TSA, which evaluate the facilities' physical security, procedures, infrastructure and resources.

- We can do better, and we must do more to improve our aviation security. I urge my colleagues to support the SEAL Act, which will close *dangerous loopholes* in our airline security system.

Dangerous loopholes? That phrase should make all of us nervous. Instead, there are some *dangerous*, freedom-killing aspects of this proposed bill. The EPA director can name chemical facilities that could be dangerous if damage were done? There is no specification for what is meant by "threaten the health," which could be interpreted as anything from death to a single sneeze into a handkerchief. Also, no-fly zones around sensitive facilities could be made so large that navigating around them would be a major challenge and swipe millions of square miles of airspace. The only mitigating factor is that Orange Level is mentioned. However, we saw what happened last month when a British Airways pilot was simply suspected of having terrorist ties – Level Orange.

Finally, as stated in the bill, General Aviation air-

ports lacking razor-wire fences, cameras, and 24-hour security guards could be deemed to be unsafe to operate. At Poplar Grove, how much would that impact your keeping an airplane there, or Casa-de-Aero, Olson, Galt, or even Lake-in-the-Hills? I can't imagine the cost impact. For those airports lacking the funds to meet requirements, perhaps they'd simply close.

Not only must we oppose such a law, but we must also do our best to prevent future leaders from taking an overkill stance on anything, aviation-related or otherwise. Unfortunately, we may not just click on a hyperlink to cast our vote. Our system of comment and feedback still requires an email or a 37-cent stamp, and our elected officials still value a postal letter 100-to-one over an email.

If you are like me, you'll find this to be a cause worth writing a letter. Lots of us don't know who to write or how to reach them, so you can find your congressional representative by using this hyperlink: <http://www.elections.state.il.us/dls/pages/SelectOfficialSearch.asp>. In your letter, just simply tell him or her which way you'd like them to vote on H.R.3798 and perhaps a brief reason why. Please get out your 37-cent stamp and write a letter like I did. I urge you not to let this pass without comment.

--Mike Perkins--

March Chapter Meeting

General Meeting on March 23 - Our chapter member Lee Hilbert will present his experiences and knowledge on ski plane flying, complete with video footage and photos. Lee enjoys flying his Aeronca 7AC Champ on skies in the winter, and flew it to the EAA ski plane fly in on January 24th.

(Aerodynamics continued from page 4)

and wrote that "each part is always pressed by the whole weight of the column perpendicularly above it." This was the first statement of a fluid statics principle which states that the pressure at a point in a stationary fluid is due to the weight of the fluid above it and hence is linearly proportional to the depth of the fluid. Pilots, of course, will be familiar with this concept as it relates to density altitude. Third, Archimedes also understood that stagnant fluid was set into motion by a change in pressure. He wrote that "if fluid parts are continuous and uniformly distributed, then that of them which is least compressed is driven along by that which is more compressed". We now call this a pressure gradient, which is the measure of pressure difference over a unit length.

From the time of Aristotle's death in 212 B.C., more than seventeen centuries elapsed before the next significant contribution was made to the science of aerodynamics. The state of aerodynamics inherited by Renaissance genius Leonardo da Vinci was fragmented and totally immature, yet he developed aerodynamic concepts that were amazingly advanced for his time. And as the first person who also gave serious thought to the design of flying machines, it is Leonardo da Vinci whom we will discuss in our next article.

(James Cooper is a former arts and entertainment marketer from Australia who is planning a new career in aerospace engineering. He will start an engineering transfer program at Oakton Community College in the Fall to resume aerospace studies that he began in 1989 at RMIT University (Melbourne). He is a new member of EAA Chapter 790 and is participating in the restoration of the BC-12 Taylorcraft at the Elgin Workshop. We look forward to his monthly installments in this series.)

Minutes

EAA Chapter 790 Board Meeting March 2, 2004

Old Business:

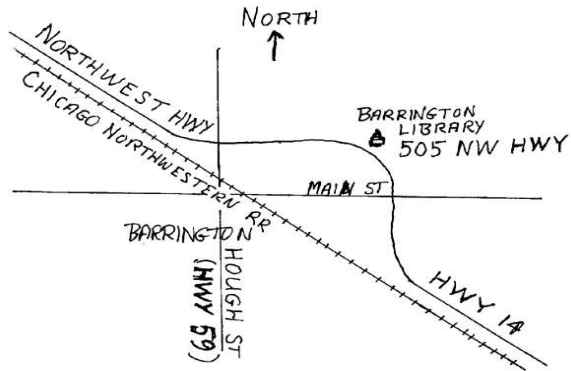
- 59 People signed up for the banquet, so far.
- Lee Hilbert will give the presentation at the next general meeting on the ski-plane fly-in.
- Chapter rosters will be given out at the next general meeting.
- Young Eagles dates:
May 1
June 26
August 28 at Poplar Grove
October 2 and 30

New Business:

- A motion was made and passed to have a portion of the annual dues go to a scholarship fund used as needed to be determined by the board.
- There was a motion made to offer the Young Eagles points and 790 scholarship to Bryant so he can attend the EAA Air Academy at Oshkosh this summer.
- Dwight Zeller will have a 790 banner made to use at the Young Eagles Rally's.
- March meeting will be held at the Barrington Public Library
- April 27th meeting will be held at the Elgin restoration shop. Pizza will be served and a can for donations will be available. Bring a folding chair and side-dish, too!
- We are accepting logo ideas for our chapter. It may be used on shirts and hats, etc.
- There was a motion made to purchase two Seminar-In-a-Box programs from AOPA for chapter use. They are: Trigger Tapes and Collision Avoidance.
- There was a motion made to make out-of-state dues be \$10 for e-mail distribution of the newsletter effective with the 2005 year.

--Nancy Blazyk, Secretary EAA Chapter 790--

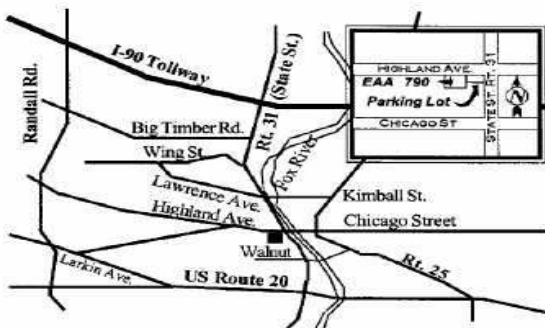
Regular Chapter meetings are held on the fourth Tuesday evening of each month (except July) at the Barrington Public Library. Meetings begin at 7:30, with a social “hour” preceding. The Library is located on Highway 14 between Main St./Lake Cook Rd, and Highway 59 (Hough St.) in Barrington, Illinois.



Although we usually meet downstairs in Meeting Room A, This month we will be in the Zimmerman room, which is upstairs to your right as you enter the building

The Taylorcraft restoration is well under way. BUT..... there's still plenty for YOU to do. If you'd like to get in on the action, call Ron Liebmann at home at 847-352-8282 or at the workshop at 847-608-0001. The workshop will be open on Tuesdays, Thursdays, and Saturdays.

EAA Chapter 790 Workshop
219 W Highland Ave



Calendar of Events

March 27 (Sat)	Home Workshop - Steve Marquette
April 17 (Sat)	Home Workshop - Wally Draxler
May 1 (Sat)	Young Eagles - Lake In the Hills
May (TBA)	Home Workshop - Jeff Wilson
June 4-6	Chapter Work Weekend - Oshkosh
June 26 (Sat)	Young Eagles - Lake In the Hills
July 27-Aug 2	EAA Airventure - Oshkosh
Aug 28 (Sat)	Young Eagles - Poplar Grove
Oct 2 (Sat)	Young Eagles - Lake In the Hills
Oct 30 (Sat)	Young Eagles - Lake In the Hills

Plan To Attend One Of These Home Workshop Visits!

March 27, 1 PM - Steve Marquette's Kolb Firestar is in painting and final assembly, see page 4 for details.

April 17, 1 PM - Wally Draxler's Bearhawk, building wings, ailerons, and flaps, see page 4 for details.

Sometime in May - Jeff Wilson's Cozy, more information to follow.

If you've never been to a home workshop visit or haven't in a while, surprise yourself and come!

Contact John Vlasic for information, or to make suggestions for activities, i.e.: picnics, fly-outs, museum visits, etc. Phone:(847)524-1857, Email: jvlasic@lunt.com

Contact Dwight Zeller for information or suggestions regarding Young Eagle Rallies. Phone: (847) 524-3973 Email: zellerd@worldnet.att.net

Recognizing Our Members

The following individual recently joined our Chapter ---

Robert Porter

Welcome Aboard!

(Our apologies if any were missed. Please let the editors know of any errors/omissions, for correction next month. We would also appreciate hearing of member accomplishments, for inclusion in this section. Eds)

WINDS ALOFT, the four time EAA international Newsletter award winner, is published monthly by EAA Chapter 790 for the use and enjoyment of its membership and others to whom it is provided. No claim is made to the accuracy or validity of the content presented in this publication. Editorial content is the opinion of the contributor and does not necessarily reflect the position of Chapter 790 or of the Experimental Aircraft Association (EAA). Permission is granted to others to use any non-copyrighted material appearing in this publication so long as credit is acknowledged. Any copyrighted material appears with the permission of the copyright holder and may not be reproduced without his/her permission.

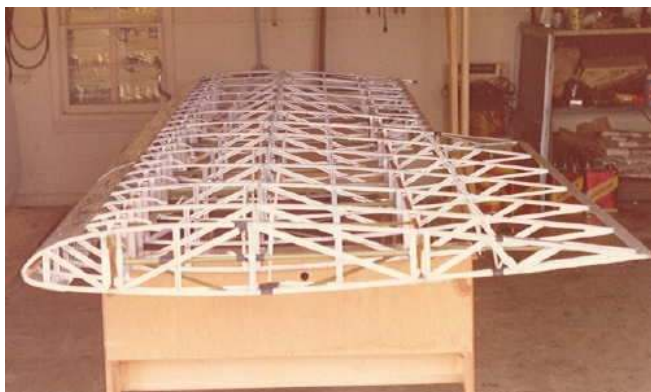
Some additional photos from our banquet, and from Mike Rodina's presentation in February,
Enjoy!



Thanks, Ken, for your support in Elgin!



The Flight Advisors and Tech Counselors take a bow.



For those who have been working down at the Elgin shop, this might look familiar!

PILOT AND ACTOR HARRISON FORD ACCEPTS CHAIRMANSHIP OF EAA'S YOUNG EAGLES PROGRAM



VAN NUYS, Calif. - (March 8, 2004) - Harrison Ford, best known as a renowned actor in more than three dozen films but also an extremely active pilot and member of the Experimental Aircraft Association (EAA), was introduced today as the new Chairman of the EAA Young Eagles Program, which has flown more than 1 million young people since 1992.

During a welcoming program at Van Nuys, Calif., with EAA President Tom Poberezny, Ford accepted the chairmanship of the program, saying, "It's daunting to step into General Yeager's shoes, but aviation is about learning new skills and the satisfaction that comes with practicing them and doing better."

Brig. Gen. Chuck Yeager, who has served as Young Eagles Chairman since 1994, has been named the program's Chairman Emeritus and will continue to participate as one of more than 35,000 volunteer pilots who have been involved since Young Eagles was founded

"Harrison Ford's passion for flight has grown through the years, as he has achieved several pilot certificates and ratings, and made aviation a major part of his life," Poberezny said. "He discovered Young Eagles on his own several years ago and quietly started flying young people. He now has flown 81 Young Eagles. He is a natural fit to help lead us to even greater achievements as EAA members prepare the next generation of aviators."



The Leader In Recreational Aviation

Buy, Sell or Trade. . . .

Classified ads may be submitted by any Chapter member free of charge. They will run for about 3 months unless canceled or renewed.. Non-Chapter members and sponsors may purchase a business card size ad for \$100 per year. Ads for shorter periods are \$10 per month

For Sale: K35 Bonanza (1/3 share) IO-470-C 250 hp, IFR GPS, dual NAV/COM/GS, A/P with altitude hold, Stormscope, Graphic Engine Monitor, Tip Tanks for bladder-busting range. Cruises serenely at 150+ knots while sipping 12 gph. Based Poplar Grove (C77). \$25K
Call: Mike Mulcahy at 847-515-3585

For Sale: 1968 Cessna 172I, 3500 TTSN, 1500 SMOH, Lyc. O-320, King KLN89B, King KX155, Collins VHF251, Collins VIR350, Narco AT50, Sigtronics 4 place int, Tannis heater, standby vacuum, New paint spring 98, Ext 9/ Int 6-7, Hangared, Annual Apr 2004, Good compression, NDH, \$45,000 - John Cosmos 847-

Wanted: Donate a 35mm Projector! – The chapter needs a 35mm slide projector for our meetings. If you have one that you'd like to donate, please talk to Dana.

FAA Wings Program



Abbie Friddell, Master CFI, CFII is offering an EAA Chapter 790 special discount. 3 hours Wings Program Instruction for \$75.

Flight Reviews

BFR Special: Ole Sindberg is offering a Biennial Flight Review for any Chapter 790 member for \$50.00. Also available are flight instruction in single and multi-engine aircraft, helicopters, as well as high performance and complex airplane checkouts. Phone: 847-426-7206.

Email: oleeva@mc.net



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EAA CHAPTER 790

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Thank you for your support

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Barrington, IL 60011

Chapter 790 Scrapbook

More photos from our Banquet at Emmetts, and from Mike Rodina's talk at our February members meeting.



All photos courtesy Ron Liebmann and Mike Rodina



Pre-meeting Checklist

Name Tags

Chapter Videos to return to meeting

Chapter Tools to return to Ole

The Newsletter is always looking for interesting articles and pictures by our chapter members. If you have written anything or would like to write something or have pictures that you believe would be of interest to the chapter members, please submit what you have. The newsletter staff prefer that you e-mail your articles to michael.perkins@rauland.com or trlegates@comcast.net. We prefer text written in Microsoft Word, however, you may submit the material any way that is easiest for YOU! We also accept hand-written copy, floppy disks (IBM format), Zip disks (IBM format), and CD's. Bring your article to the meeting or mail it to Mike Perkins at 17787 Sherwood Forest Rd, Havana, IL 62644

