

EAA Chapter 690

NAV-COM

November 1991

President's Message

The Chapter 690 Annual Air Fair is now history, but what a page in the Chapter's history it is! Never before have three aircraft judged at Sun-N-Fun or Oshkosh as award winners been in attendance. Never before have spectators seen glider operations. Never before have scheduled airplane rides been available and never in the memory of many of us has the weather been so ideal. From the pancake breakfast kick-off at 8:00 a.m. to close-down at 4:00 p.m., it was a day of aviation activity long to be remembered by all who attended. I want to thank all Chapter 690 members, friends, relatives, and others who tirelessly supported this project. All of us should commend Steve Ashby and his committee for planning, organizing, and managing this, our largest fund-raising project of the year.

The Chapter's new polo shirts were much in evidence during the Air Fair. Joel Levine managed to arrange last-minute delivery (the day before) from the supplier. Those individuals in Navy blue with the Chapter logo displayed were easy to spot as 690 members. Thanks Joel. Please pick yours up from Joel and wear it to the November monthly meeting.

Roy Stoutenburg, chairman of the Building Committee, reports that the building has been ordered and will be delivered in mid to late November. The committee is determining the extent of the work needed to prepare the building site. Scheduled work days will be planned both on weekends and weekdays so all members will have an opportunity to help with this project. All members are expected to have paid the assessment to John Connelly by now or to have made arrangements to do so. I want to emphasize that membership dues for 1992 will be increased significantly (from \$12 to \$48) for individuals not in the building assessment program. The dues discount (\$30) only applies to participants in this program.

We are all looking forward to the election of officers for 1992-1993 at the monthly November business meeting. A slate of candidates prepared by the Nominating Committee will be found elsewhere in this NAV-COM. I want to thank

those who accepted nomination. I also encourage all members to review this slate carefully. There may be other members you would like to nominate. This can be done at the meeting. Please attend this important meeting and vote.

When you read Tom Poberezny's Homebuilder's Corner in the October issue of Sport Aviation (p. 4), did you get a sense of déjà vu? The last paragraph was taken from the item by Steve Ashby in the Oshkosh Observations article in the September NAV-COM. Thanks Steve for your insight, thanks Jeff (NAV-COM editor) for sending NAV-COM's to Oshkosh and thank you EAA Headquarters for your sensitivity to the purposes and goals of the EAA movement. Who says that EAA is getting too big for its britches?

Speaking of the NAV-COM, how do you like the new format? I think it is great, but please, for us older folks, keep the print at least telephone-directory size (the FAA didn't hear that, I hope). Don't call editor Jeff on this point - he is tired of being reminded. There was a time-crunch in meeting the mailing deadline. Great job, Jeff, despite all the obstacles your contributors, including me, give you. (Editor's note - I can't blame anyone but myself on this one. All contributors were more or less on time. I simply got the idea for the format change way too late the night of the mailing deadline).

NAV-COM contributors come up with something new each issue it seems. Who but Ken Sharp would so descriptively relate an airborne ride "Under the Belly of an Ancient Whale." Jonah had a different point of view and a much greater readership (we're working on the circulation! - Ed). Ken, that was tremendous, almost as if we were seated beside you. I can still remember visiting the Goodyear airship dock in Akron when the Macon was being constructed and seeing those great silver cigars moaning their way over our house in northern Ohio. A great piece of history with only the non-rigids left to remind us of it.

Well, back to reality and the here and now. I hope to see all members at the November monthly meeting (Friday, November 8). This is the meeting where we will elect the chapter officers that will serve for the next two years. We are

blessed to have many members who are dedicated to the future of Chapter 690. We do need, however, to select those among us who can and will provide guidance and leadership as our chapter moves steadily from strength to strength.

Frank

Calendar of Events

November 2 - Building Work Day. 9 to 4, see "The Building Column".

November 8 - Chapter 690 meeting, 8 pm, St. Mt. Airport. Speaker: Mel Hall, Falcon Aviation, Inc. of Gwinnett Co. Topic: Buying and selling used A/C.

November 9-10 - Fort Pierce, Fla. EAA Chapter 908 "Delight of Flight" Fly-In. (407) 464-5411.

November 16 - Hangar Huddle, Peach State Airport, Williamson, GA, (404) 227-8282. A Hangar Huddle "provides the weather-frustrated aviator the opportunity to continue the illusion of flight via video" - (from the Peach State News).

November 16-17 - Aviation Festival 1991; Aviation Preservation and Safety Assoc. Warbirds, C-170 Assoc. New Smyrna Beach, Fla. (904) 423-5057

November 18 - "Evaluating In-Flight Weather", AOPA Air Safety Foundation, Dekalb Co. Library, 4115 Clairmont Rd., Chamblee, GA.

December 7-8 - "Wheels, Wings, and Interesting Things", Lakeland Linder Regional Airport, Fla. Vintage automobiles and airplanes plus many activities. Information: (813) 644-2431.

December 13 - Christmas Party at the Decatur Elks.

December 27-29 - 6th Annual Warbird Weekend in Florida Show; Flying Tigers Air Museum, Kissimmee, Fla. (407) 933-1942.

September 5-7, 1992 - Aerodrome 92, Guntersville, AL. This looks to be a BIG event. Planned activities center around World War I aircraft and memorabilia. Let's hope the 140 is done by then...

Monthly Fly-Ins (with thanks to Tom Crowder):

Winchester, TN Breakfast 1st Saturday (615) 967-0143

Rome, GA

McMinville, TN

Peach St. Airport

Collegedale, TN

Breakfast 2nd Saturday (404) 234-7419

Breakfast 2nd Saturday (615) 668-4806

Lunch 3rd Saturday (404) 227-8282

Collegedale, TN

Breakfast 3rd Saturday (615) 236-4340

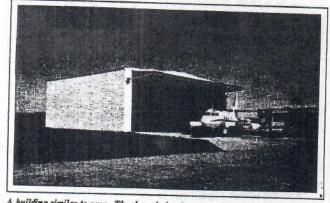
Guntersville, AL

Fly-In 4th Sunday (205) 586-1580

THE BUILDING COLUMN

The Building Committee met October 25, 1991 at the airport. It was reported that a contract was signed for the production and delivery of a metal hangar-type building that meets the specifications for the Chapter Building. The manufacturer of the building is Pasco Building Systems, Inc. of Columbus, GA and the local contact is Southern Building Systems. The building is 40' x 40', all metal, 12' eve height and a 10' x 38' door opening. The color is horizon blue on the sides with a silver Galvalnme roof. The cost delivered is \$7000, tax included. Also included are certified drawings necessary for obtaining a Dekalb County building permit. Delivery of the drawings is scheduled for late October with the delivery of the building in mid to late November.

The committee determined that the replacement of steps to the airport maintenance area was the first priority. Investigation showed that cement blocks arranged similar to the present steps would be acceptable. Following the step construction, removal of the eroded dirt banks will continue until completed. This will clear the site area as well as help determine the size and shape of retaining walls if needed. To continue preparation of the building site, Saturday, November 2 was designated as a work day. Work will begin at 9:00 a.m. and continue throughout the day. Members able to help at any time during the day should bring shovels and possibly a wheelbarrow. Also, brown bag lunch. We will probably slow down by 4:00 p.m.



A building similar to ours. The door design is not set. Who owns the Lockheed?

Air Fair 91

The 1991 Chapter 690 Annual Air Fair was an unqualified success! Fair chairman Steve Ashby wants to thank all members, family, and friends who helped. Without you, it would not have happened. Steve wants to stress that no one person should be singled out for praise, but he does say "Thanks" to the sail-plane folks, the Stone Mountain Airport management and crew, and the volunteers of the Civil Air Patrol.

The attendance this year differed greatly than fairs of the past. We had several more fly-in people and certainly more variety in aircraft type than the last three fairs. As "Air Boss", I should have kept track of this type of activity, but there were several times in the day when I was busier than a blind dog in a meat-packing house, so tabulations were in effect lost in the slipstream! Suffice it to say that we had more people arrive in more different planes from more different origins than any other fair in memory! Walk-ins, traditionally our biggest population, seemed down this year, but that did not hurt our revenues (see below). Plus, due to the overall quality of the fair and the cool weather, those that did show up had a better time. We had several projects on display, and I think several non-aero types were very interested in them. I had to call on several members to convince a friend of mine from the lab that wooden aircraft actually fly (she had seen the SE-5a project and refused to believe that it is more than a model!) I'm still getting positive feedback about Steve's abilities at public announcing. If your practice gets slow, Steve, you could always organize and announce airshows!

John Henderson, Jim Clarkson, and Duane Huff judged aircraft this year, with Charlie Sego organizing. Thanks, guys, congratulations to the winners, and here are the results:

Homebuilt: Vic and Carol Syracuse of Woodstock, GA for their beautiful Kitfox II.

Antique: Robert Lindley of Griffin, GA for his impressive and imposing (BIG) 1936 Stinson SR8E Reliant. This is an Oshkosh Grand Champion. My wife wants one!

Classic: Jack Shahan of Stone Mountain, GA for his oh so original Cessna 140A, a Sun'N'Fun Grand Champion and Oshkosh Reserve Grand Champion.

Warbird: Chris Manzo of Norcross, GA for his sterling Stearman PT-17.

Money! We made out like bandits this year! We cleared \$1000+! Even with the slightly lower overall attendance, this is \$400 more than we made last year in the summer heat.

Rounded to tens, grosses were:

Breakfast.......\$440
Lunch, etc.....\$820
A/C Rides.....\$220
Sail-plane Raffle.\$140
Expenses.....\$590
Profit......\$1030

These figures are approximate, but represent yet another measure of the success of the Air Fair. Again, a big THANK YOU to everyone who assisted in the fun time.

Nominations for 1992-93 Officers

This month's meeting (Nov. 8) will include elections of Chapter 690 officers who will serve in 1992 and 1993. The following have accepted nomination:

President: Charlie Sego

Vice-President: Frank Flessel John Goodman

Treasurer: Cheryl Black John Connelly

Secretary: Ben Jeffrey Joel Levine

Further nominations may be made at the meeting. Thank you to all those who accepted and to those who served on the committee.

Who Votes?

The question has arisen concerning voter eligibility in terms of the recent building assessment. As with any organization, only members in good standing may participate in official and formal business of the organization, such as in this case, voting for officers or holding an office. As set forth in a motion approved unanimously at the July 1991 chapter meeting and outlined in the August NAV-COM, "members in good standing" are those members who have paid their dues through December 31, 1991 and the building assessment (due this past September 15), or have made arrangements with the Building or Executive Committees concerning this assessment.

As always, we encourage all members to attend the November 8 meeting and for those "in good standing" to participate in nominating and electing officers.

Teacher Needs Help

Theresa Coleman, Chapter 690 member, is setting up an aeronautical course for exceptional students in grades 11 and 12 at the Fernbank Science Center. The course is scheduled to begin next Fall, and she would like some advice and possibly surplus items Chapter 690 members would care to give.

The presently-planned curriculum, which should cover most items in an FAA-type ground school (pvt pilot) is:

First quarter - basic aeronautics, including airfoil theory and wind tunnel experiments.

Second quarter - Advanced aeronautics, including forward canards and their peculiarities (e.g., deep stall phenomena).

Third quarter - rocketry theory, solid and liquid fueled model flights.

Theresa would like suggestions for the curriculum. In particular, she would like our views on books and other teaching aids appropriate for the course. She has used Aeronautics for Naval Aviation, which is getting pretty long in the tooth by now. Suggestions on video tapes, field trips, and interactive flying computer programs are also being solicited.

Theresa also is looking for various items, including broken plotters, old E6B computers, broken instruments (e.g., altimeters, gyro instruments, etc). She definitely needs old sectionals, hopefully twenty copies of the same area. I'm sure in a group as large as Chapter 690, we can come up with twenty or so old ATL sectionals.

If you have words of encouragement or advice or any items you would like to contribute to the effort, please contact Theresa at 498-3741(H) or 378-4050(W), or write her at:

5704 PennyBrook Court Stone Mountain, GA 30087.

Thank you in advance.

More on Sonerai N46RB

Bob Barton continues experimenting with his little aerial hot-rod...

Dear Jeff:

I was just fiddling with some numbers relating to cruise performance of my little Sonerai IIL and thought you might be interested. I flew N46RB from Winder up to my sister's in Hickory, NC a few weeks ago and obtained, for the first time, some good numbers on its cruise performance. The trip is 155 nautical miles each way. The outbound and return legs took the same time (within two minutes), so that wind was not a factor on this flight.

The round trip to Hickory was 310 nautical miles and the total fuel burned was 10.1 gallons. So what does this tell us? I'm tempted to say that the Sonerai gets 310/10.1 = 30.69 nm/gal. This means that if I burn all 10 gallons of gas on board, I should be able to go $30.69 \times 10 = 306.9$ nm. If I allow for 30 minutes of reserves, that would make its maximum range with reserves:

306.9 - 52.5 = 245.4 nm

But then I remember that this trip was made with only me on board so that the average weight for the flight was about 720 lbs. I suspect that if there had been a passenger aboard, the extra weight would mean extra drag and, therefore, less range...right? Right!

Well, a Frenchman named Breguet, doing what aeronautical engineers do on rainy days, came up with an equation that relates cruise performance to the airplane's initial and final cruise weights:

Range = $k(\log W1 - \log W2)$

...where W1 is the takeoff weight, W2 is the landing weight, and k is a constant (for a given airplane and cruise condition) that depends on the airplane's lift-to-drag ratio, the engine-specific fuel consumption, and the propeller efficiency.

Of course, each of these varies with cruise conditions such as altitude, and cruise speed. But suppose we fly so that they stay <u>almost</u> the same for all weights. Then we can solve for an average value for k that matches these cruise rules. For my trip to Hickory, the takeoff weight, W1, consisted of the empty weight (496.2 lbs), baggage (1.8 lbs), me (175 lbs), and full fuel (60 lbs). This gives a takeoff weight of 733 lbs. On each leg, I burned half of the 10.1 gallons (30.3 lbs), so my landing weight, W2, must have been 733 - 30.3 = 702.7 lbs.

According to Breguet: $155 = k(\log 733 - \log 702.7)$

Solving this for k, we get: k = 8454.

This constant applies only to my Sonerai IIL. You will have to plug in numbers describing your own airplane's performance to get the value of k for it.

I can now plug other weights into the range equation: $R = 8454(\log W2 - \log W1)$

For instance: What if, instead of landing at Hickory, I had gone on until I ran out of gas? How far could I have gone? (Note how much more fun it is to find this out on paper than in the airplane).

My final weight would be: 733 - 60 = 673 lbs.

R = 8454(log 733 - log 673) R = 313.5 nautical miles.

With reserves of 30 minutes at 105 knots, my range would be: 313.5 - 52.5 = 261 nm

My son, Matt, lives in Washington, D.C. That's only 412 nm away. I should be able to get up there with only one fuel stop. In fact, the mid-point would be 55 nm short of my single-place range capability. Now suppose I get there and he wants me to fly him back to Atlanta. Can we make that trip with only one stop, too?

Matt weighs 192 lbs. Matt, myself, the airplane, and full fuel add up to the Sonerai's max. takeoff weight of 925 lbs. According to Breguet, the no reserve range would be:

 $R = 8454(\log 925 - \log 865)$ so, R = 246.2 nm

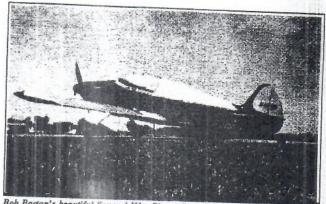
Allowing 52.5 nm for reserves, R = 193.7 nautical miles.

Whoa! I hit my reserves 12.3 nm short of the 206 nm midpoint. That's not smart or legal. Guess I had better plan on at least two stops on the way back.

Actually, there needs to be another factor in the equation that allows for how long I can sit in that little plane before I have to get out and stretch, etc.

Keep 'em flying,

(signed) Bob Barton



Bob Barton's beautiful Sonerai IIL. Photo: Bob Barton

Plane News

EAA Museum Milestone - Imagine walking through the door of the EAA Air Adventure Museum in Oshkosh and having bells, whistles, and lights go off! A loud-speaker blares, "Congratulations! You are the One Millionth visitor through those turnstiles!" Well, something like that just happened to Francis May of Memphis, Tenn. Mrs. May and her husband were visiting family in Appleton when they made the impromptu decision to visit the museum. She ended up with a party, several mementos, a one-year EAA membership, Convention passes for her and her immediate family, and a \$50 gift certificate. Wow! The museum opened in January of 1983. EAA National HQ sends thanks to all EAA members "who have helped us reach this historic day."

Agelessness of a challenge - EAA member Dave Davidson of Dallas, TX, recently became the oldest pilot to fly solo across the Atlantic Ocean, and the first to do so in an open-cockpit airplane. Dave, who is 70, built his Marquart Charger in his garage, slung two drop tanks between the landing gear, giving him a 104 gal. fuel capacity but putting him 750 lbs over gross design weight when full! His trip began in Dallas, with stops in Springfield, OH, Goose Bay, Greenland, Iceland, and finally, Stornaway, Scotland. He apparently had trouble convincing the Scots that he had just flown in from Dallas! He then went on to Headcorn, England, where the famed Tiger Club resides, and made quite a hit. He hopped the Channel, visited Paris, and plans to continue on to every European country before winding up in Moscow. Now let's see, drop tanks for a 140... (Taken from Flying, 11/91).

Simple Green - is a cleaning substance that is an excellent wash agent for A/C exteriors as it leaves no residue and does not corrode aluminum. It was used to degrease the waterfowl taken from Prince William Sound and the Saudi shoreline. It's alkaline, phosphate-free, non-flammable, non-abrasive and

can be flushed down the drain with impunity. Frank Wilcox says it's available at Servi-Star Hardware Stores. At Snellville Hardware, prices are: 16 oz. squirt bottle - \$5.79; 2 liter bottle - \$12.59; gallon jug -\$19.99; 5 gal. canister - \$94.49 (from "The EAA Technical Counselor News," contributed by Frank Wilcox).

Restructuring of FAA - The FAA is undergoing restructuring, renewing rumors that the present #1 man, James Busey, will become deputy secretary of the DOT. Joseph Del Balzo was named recently as the new FAA operations chief (see "Plane Sense" for more on Del Balzo). A prime contender for the Busey spot is Army Maj. General Jerry R. Curry (ret.), head of the National Highway Safety Administration. Gen. Curry is current in helicopters, fixedwing, and multi-engine aircraft. His views concerning sport aviation are unknown. (Taken from Aviation Week and Space Technology, 10/7/91).

Would you like to ride in my beautiful balloon? - The Earthwinds balloon crew plans to start their around-the-world trip from the old Goodyear blimp hangar in Akron, Ohio. To refresh your memory, this is the project in which three balloonists - a Soviet, an American, and a Briton, plan to circle the globe in a helium-filled balloon that is ballasted by a 100-ft diameter "anchor" balloon filled with pressurized air. The trip is planned to taken 12-14 days, and may be underway as you read this. Should be fun to watch their progress.

Going batty in the desert - A Stealth fighter (F-117) technician reports that in Saudi, a bat got into an F-117 hangar, searching for food. The hungry bat turned right into the F-117 rudder and flew away groggily after flopping to the ground. "I don't know what the radar return is for the vertical tails of the F-117, but I always thought it had to be more than an insect - I guess I was wrong!" Note that the ultrasound wavelengths used by bats approximate those of X-band radar! (AW&ST, 10/7/91)

Another Red Herring - The NTSB recently recommended to the FAA that stricter air traffic rules are required for the airspace over Chicago's Midway Airport. "The mixture of high-performance commercial aircraft with lower performance [VFR] traffic provides an environment that has been demonstrated to have a high collision potential," the NTSB said. WARNING: The following will have some of my opinions interjected. The recommendation follows an incident that occurred on Sept. 26 in which an unidentified prop-driven aircraft nearly collided with a Southwest Airlines 737 on final to Midway (missed by ~50 ft). But, one week later, a Midway DC-9 nearly hit another Southwest Airlines 737, and the evasive action of the DC-9 put it directly in the path of a Northwest Airlines DC-9. I submit that it is not the mix of the high vs low performance aircraft that is dangerous, but rather

the entire design of the approach/departure system endemic to <u>all</u> U.S. airports. The flipped (flipping?) wedding cake is stupid. Also, Midway airspace was redesigned May 2. If these problems did not exist prior to the change, maybe the near-misses are epiphenomena (i.e., FAA-induced problems that would not exist otherwise). <u>Plus</u>, why does the NTSB automatically assume that small planes are the problem when they <u>know</u> airliners are playing bumper-cars with one another too? To paraphrase the Bible: Get the DC-9 out of your eye before you worry about the Cessna in mine. (AW&ST, 10/7/91).

Aerial Photography - Steve Ashby and his partners have started an aerial photo business - "Southern Aviation, Inc." They specialize in air-to-air photography and video taping from a Cherokee Six. 469-0786 after 6 pm.

Plane Sense

Muddle House

In a letter to *Flying* magazine (Oct., 91), Joseph Del Balzo, Executive Director of System Development, FAA, affirmed the superiority of Mode S technology (he does not address the *need*), and defends the FAA Mode S policy as "not muddled". He claims that due to serious software problems, ground stations are not on line. But, now that these are resolved and actual testing is underway (of ONE, the single and only, ground unit made to date), "no impediments are envisioned to the delivery and commissioning of 137 ground stations by 1995."

The present regulations mandate the installation of Mode S transponders in our aircraft by July 1, 1992. The idea behind having all those Mode S units installed *three* years before they are useable is so that people won't continue buying Mode C transponders right up to 1995. If that happens, goes the FAA argument, then lots of new Mode C units would have to be ash-canned.

Let's think about this argument. First, is Del Balzo saying that the 1995 regulation will require all Mode C units to be scrapped? Presently, the 1992 regulation calls for replacement of C with S as the C units wear out. In other words, you can't install a new C but can use the existing unit in your plane until it breaks. Del Balzo's statement makes it sound as though the feds are planning on a much more severe replacement policy in 1995. This is not good and it is unclear if they actually intend this to occur. It is at best...muddled.

Second, shouldn't the FAA get its house in order before it asks us to spend LOTS of money on these new units? Del

Balzo's logic is: You guys buy Mode S so you'll be ready when we feel like making it work. I say, let's reverse the reasoning: FAA should have a working system before they force us to buy into it! If this sounds unreasonable to the FAA, possibly their thinking is...muddled.

Third, Mode S technology may be more advanced than Mode C, but for the design and use goal, it is a dinosaur. The federal government has *plenty* of cheap look-up and over-the-horizon radar units (used now by the Army for ballistics and the Border Patrol for drug-smuggling *aircraft*) that give a 3-D view of airspace. Plus, the real problem, that of separation, is best handled *on-board*. This technology exists and is cheaper! So, even from a technical stand, the FAA solution to separation is...*muddled*.

Fourth, another FAA spokesman interviewed at Oshkosh '91 said that the 1992 regulation is "currently under review." Translation: expect at least a date change. Sounds like the FAA boys are playing hide-the-slipper with each other and with you and me. It is of course another example of business-as-usual at FAA. Even among themselves, communication is...muddled.

One clear item has surfaced from the muck: FINALLY, FINALLY we get to see who is one of those idiots I keep wanting to find. You know, one of those faceless, nameless folks who make really bad decisions and get away with it because there is no accountability in the federal government. I don't know what his face looks like, but I know his name is Joseph Del Balzo, a.k.a Mr. Muddle.

Chain of Command

As reported in *Flying* (Oct. 91), 1990 was FAA's first full year of mandated drug testing of pilots, mechanics, and airline applicants. In this time, 28 people out of 340,000 tested positive for illicit drug-use (that's eight one-thousandth of ONE percent, folks, and that doesn't even take into account false positives). "Drugs - including alcohol - have not been involved in a single U.S. crash of a major airline."

A few years back, an airliner collided with a small plane over Cerrotis, CA. This eventually resulted in the Great Valentine's Day Airspace Grab, presided over by T. Allan McCarter, FAA stooge.

What do these two items have in common? They are FAA's responses to directives given them by either the Administration or the U.S. Congress. In defense of these policies, DOT chief Sam Skinner says that the FAA's #1 concern is safety. He claims that the FAA had to go to these policies to keep Congress from stepping in and "micro-managing" the

situations. He further warns that Congress too frequently takes the reins if it perceives the FAA is foot-dragging. Essentially, he justifies horrendous FAA policy with the argument that "it could be worse."

Look, Sam, it could always be worse - it could be raining... Also, he's not fooling anyone. Everyone knows that Congress was very unhappy with the Airspace Grab, and I'll wager they will force FAA to cut out blanket drug-testing if we make it clear to Congress that the above numbers prove the stupidity of the policy.

The real concern I have with Sammy is that he implies that we the people should not write our elected representatives with our concerns for fear that they may clog that smooth-running machine over at FAA or DOT. That's all well and good if Sammy promises to always be fair and never allow himself to be replaced by someone like, oh say, Lizzy Dole or Satan. But Sammy cannot make that promise. Nobody can. The best we can do is have elected representatives running government so that if any one person is a jerk, we can replace the rube by voting.

If FAA won't listen to its own highly educated and interested user group (us), then our only recourse is to force our elected officials to fix what the FAA has skunked. I think this type of system is called a Republic.

Fly Buys

For Sale: Zenair Tri-Z project: airframe 90% complete, no engine, no canopy. \$4,000 or trade for camper. Jerry Cummings 422-9458, 1629 Agnes St. Marietta, Ga, 30060.

1950 Piper Pacer PA-20, 125 HP - 1460 TT, 262 SMOH Annual 3/91. Very, original, STC for autogas, always hangared. 8" Scott tailwheel, complete and original paperwork. \$16,000. (404)938-3515(Eve); 885-8625(Day).

For Sale: Escort 110 NAV-COM (12V) \$375. Includes wired mounting tray and installation/service manual. Tom Reddeck 925-6229(W), 972-6047(H).

For Sale: OHC Lycoming starter, fits up to O-320, \$150. OHC 20 amp generator, make offer. Dave DeWinter, 471-4598.

Wanted: Headset with mike. Call Greg Jannakos, 296-0937.

Tri-Q project for sale. All major structures completed. Carbon spar/LS airfoil canard, all parts/plans to complete project including instruments, prop, Revmaster 2100-D engine. Frank Wilcox, 978-2403.

Evans VP-II project for sale. Fuselage and tail group 80%. Lndg gear, instr. panel., 1500cc engine, more. \$1500 OBO. Steve Ashby, 469-0786.

Long Eze project. Fuselage on gear, speed brake, center spar, and Roncze canard complete. Materials and hardware to finish, including canopy. Contact: Jim Sower, 564-0412.

CROSSWORD PUZZLE

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ACROSS

- 2. What pilot's eyes should do across the panel
- Many factors go into making a _____ flight
- Once again
- 11. General rule: tast plane no taster than on can

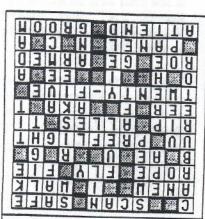
- Type of rays to avoid
 Essential type of check
- 24. Tear
- German for all Note of scale
- 28. Poetic for ever
- Also known as
- Frost on a wing can reduce maximum lift available by _______%
- Fish eggs General Electric
- 38. Equipped with weapon(s)
- 39. Instrument
- 41. Bride's companion

DOWN

- Anti-ice heat What pilots eyes should do across the sky
- Nothing
- Comp. dir.
- WWII mil. service Check these controls for freedom before takeoff
- out (make a living with great strain/effort) Negative
- Gov't agey.
- Sensible rule: keep an hour's ___ More dangerous Scent: to look over
- Overwater safety thent
- 20. Overwater 21. Flight level

- 22. Maneuver, falling
 23. Turbine inlet Temperature
 25. Use _____ for winter engine wear-and-tear
 30. Sponsor of various safety hints via this magazine
 32. Give up the right of way
- 34. Eve s mate Choose
- 37. Dooittle's rank
- Air National Guard
- 40. Comp. dir.

Our thanks to AVEMCO Insurance Company This crossword is from their Spring 1991 issue of On Approach



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