

February 2004

Experimental Aircraft Association Chapter 33

A monthly publication of the Dr. Alexander M. Lippisch Chapter of the Experimental Aircraft Association, Cedar Rapids, Iowa.

Editor: David Koelzer

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## Polishing My Image

By David Koelzer

After a year of flying my bare aluminum Sonex, its image had become some what tarnished. Finger prints, bird dropping, bug splats, sweat drops and water stains had all left their mark on my raked Sonex. I had considered painting but I have always had bad luck with paint and consequently have grown to hate the painting process. I also learned that paint can add a substantial amount of weight to an airplane. About 20-25 lbs on a light plane and while this may not sound like much, 25 lbs is about 3% of the total empty weight of my Sonex.

The other option is polishing the aluminum. When ever I have brought up this option up in polite conversation I would always hear the same story which has almost attained urban legend status. You know the one where an owner/pilot of a CessPiperCraft 250RG stripped it down to bare metal in preparation for a new paint job but then liked the look so much he set about polishing the aluminum. He started in a small section with a commercial polish but was not satisfied with the results and went on to try out every polish on the mar-





ket. He found all of them wanting and set about devising his own polishing compound which after many months of trial and error he perfected a compound but will not disclose his secret formula to any living soul. He then put this polish to work and after many years of ceaseless toil and several marriages he unveiled his blinding mirror finish to the world. However, he kept the world back at least 25 feet from his beauty unless they were dressing in full surgical garb including face mask and latex gloves. He would constantly walk around his plane with polishing cloths in hand and ceaselessly curse every bird, bug and dust particle. Eventually he had a nerv-

ous break down and was committed to the home for the criminally insane. Of course this is just a myth. It did not take me years to polish my Sonex and you are all welcome to view my Sonex any time you like as long as you bring your own surgical garb and help me keep those damn birds away.

I started this project last October while the weather was still nice. Not too hot but still warm enough to work outside the hangar. The polish I selected was the Nuvite system which uses three grades of polish. The F7 grade is used to "compound" or work through the surface layer of aluminum oxide that builds up on all exposed aluminum. The C grade is used to smooth out the swirl marks left by the F9. Then the S grade is used to bring out the final shine of the aluminum. Other Sonex builders had used this system with success. The Sonex is some what unique in that it is constructed with 6061T6 aluminum rather than the 2024T3 alclad used on most other planes. 6001T6 does not come with an alclad coating and so is harder to polish initially but tends to hold its polish better than the soft aluminum alclad coating.

I started with a variable speed rotary buffer and wool buffing bonnet. This setup did work but it was slow going. Even on its slowest setting I found the polish would dry out quickly and I would need to reapply the polishing compound. I was using mineral spirits to clean the aluminum and by accident found that a surface wetted with mineral spirits would reactivate the dried compound and speedup the cutting process. This would also leave behind a black film on the surface but going over this with a dry wool bonnet would lift this film and leave a glorious shine. The down side was the rotary buffer would sling wet





black dots all over every thing including your hangar mate's bright yellow RV-8. To over come this I switched to a random orbit auto buffer again with a wool bonnet. The random orbit buffer is dual action, meaning it the pad moves in small orbits as the entire pad revolves. It never builds up the same centrifugal force as a single action rotary buffer and so would not sling excess polish off the bonnet.

The polishing technique I eventually developed started with dabbing a small amount of polish onto a 2' square section of aluminum. I would then go over the area with the random orbit buffer. As the polish dried out I would use a spray bottle filled with mineral spirits to moisten the bonnet and go back to work on that section. This action would turn the entire surface black with oxide that was being lifted from the aluminum. Depending on how thick the oxidation was I may have to moisten the pad a couple of times. After a while the bonnet would become encrusted with oxide and compound and I would use a spur type devise to clean off this excess. When the shine got to the point I liked, I would use the rotary buffer and a dry bonnet to clean off the black residue. Then it would be off to the next section.

Some residue would remain around crevices and rivet heads. I would wipe these areas with mineral spirits and again go over them with a dry bonnet. I also found it best to wear work gloves during this process other wise your hands will become blackened with residue and would not come clean even after repeated washings. It is also a good idea to mask off areas you are not polishing like the canopy. Painted surfaces and vinyl lettering did no seem to be harmed by the polishing in fact they seemed to be even shinier afterwards.

I spend about three weekends on the compounding phase and as you can see in the pictures it looks pretty good. After a few months in the hangar and about 10 flying hours the shine seems to be holding up quite well. Next spring I'll continue with the C & S grade polishing and really bring out the shine.



# Last Meeting – The Second Century of Flight

By Tim Busch

In the last newsletter, I teased you a bit by painting a picture of the future of aviation. A future where airplanes cost no more than your SUV and your aviation insurance bill is no worse than your car insurance bill. Aircraft factories will churn out tens of thousands of high performance aircraft and homebuilders will have easy sources of reasonably priced kits to choose from.

Is this just a dream? I don't think so. At the January Chapter 33 meeting, I added some information about how we, as EAA members, can play a large part in creating that future. I talked briefly about the Flying Start program and how it can do for adults what the Young Eagles program does for kids. Some suggested calling it the Old Eagles program or the Bald Eagles program (with me as the poster boy!). Today I would like to map out a plan for our chapter to grow aviation within our area. If this plan works, we will have a strategy for the other EAA chapters around the country to follow.

Here it is, the **Second Century Plan**. This should be planned as an annual sequence of events leading to new pilots at each airport. These actions will be recreated at every airport in our area:

- Find A Volunteer "Airport Growth Team Leader"
- Form A Group Of Volunteer Airport Growth Team Members
- Team Creates A Contact List Of Team Members, Airport Board Members, FBOs, Flight Schools, Public School Contacts, Flying Clubs, And Media Contacts.
- Team Meets With Airport Board, FBO, Schools, & Clubs
  - o We'll Need Buy-In From The Airport Community.
- Set Team Goals
  - o Go Crazy. Double The Local Pilot Population In A Year?
- Team Members Present Programs At Public And Private Schools In The Area
  - o Many Resources Are Available
  - o We Can Hold A Workshop To Describe Possible Programs
- Team Holds A Flying Start Event
  - o EAA's Flying Start Program Works!
- Sponsor An Open House/Young Eagle Event At The Airport
  - o Issue Press Releases 2 Weeks In Advance
  - o Chapter 33 Has A Great Young Eagles Crew. Let's Make Use Of It!
- Work With Local Instructors To Start A Private Pilot Ground School
- Team Members Adopt "Fledgling Flyers" Ala AOPA Project Pilot
- Continue Communication With Students To Help Them Finish Training
- Sponsor Airport Events To Keep The Community Involved In Its Airport!

First, I would like to hear from a handful of you who would be interested in leading an airport growth team or working as an airport growth team member. It does not need to take a lot of your time. What makes it work is having many willing volunteers to divide the effort into manageable pieces. The following are candidate airports within Chapter 33's area:

- Cedar Rapids Municipal
- Iowa City Municipal
- Marion
- Greencastle
- Vinton (I will lead that one!)
- Monticello
- Belle Plaine
- Tipton
- Amana
- Washington (Mike Roe?)

Of course, your first question, rightfully so, is "will this work?" I know it works. I started this experi-

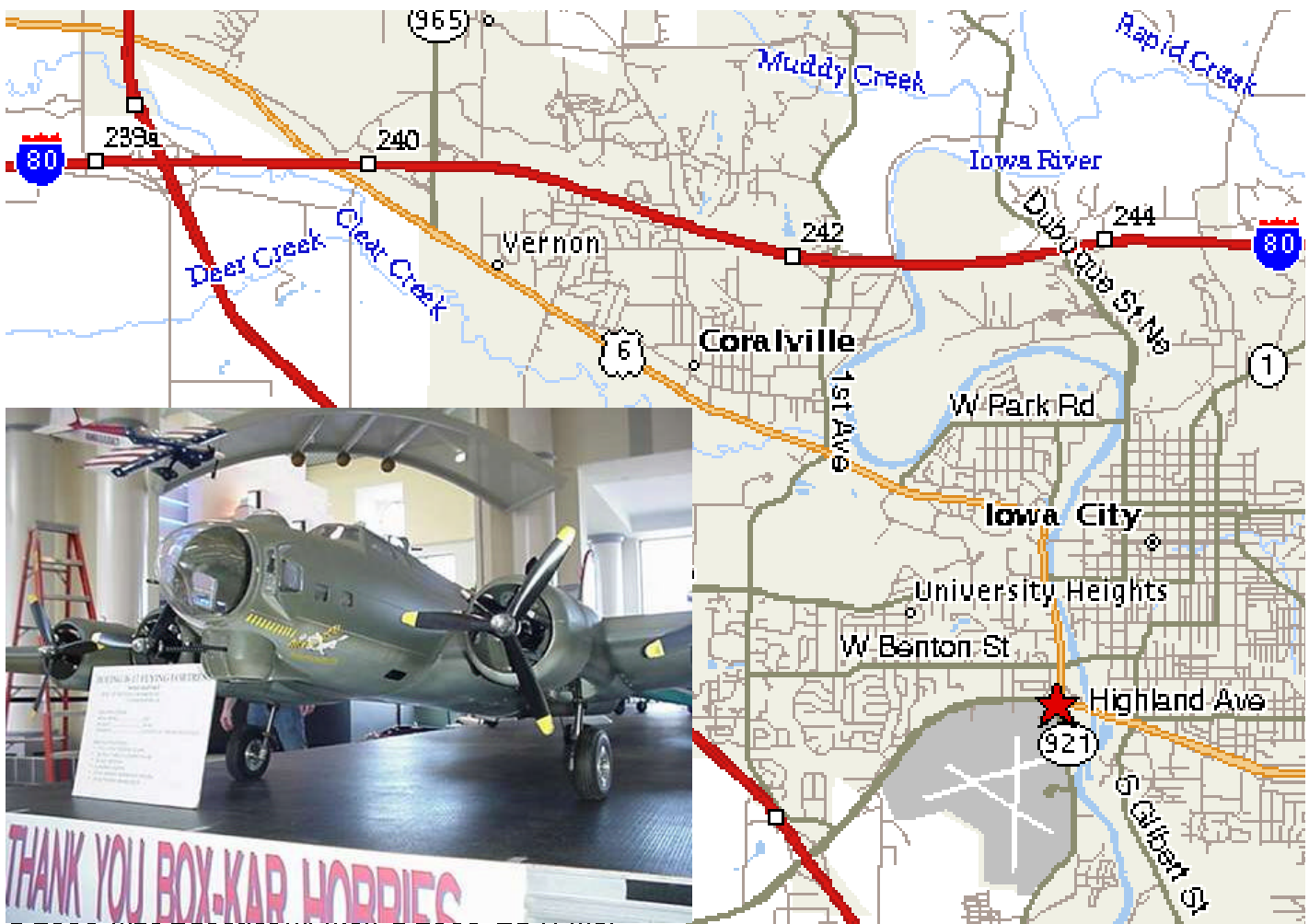
ment at Vinton over a year ago. Would you believe we gave over 100 Young Eagle rides at Vinton and had 500 people at the open house, and incredible media coverage for the event? How about a private pilot ground school with 15 students, with more waiting? If it hadn't worked a year ago, I wouldn't be doing it again this year and I certainly wouldn't be encouraging you to do the same!

Let's get started. You pick the airport. I will help you get started forming a team. We can do some workshops on writing press releases and setting up each event. Have you ever wanted to be a part of something that makes a difference, something that will make a positive change in general aviation? Contact me via email at [t.busch@mebbs.com](mailto:t.busch@mebbs.com) and we'll talk.

## Next Meeting - Sport Aviation, Miniature Style

By Tim Busch

A builder is a builder, right? Come to our next meeting and meet some of our aviation cousins and their home projects. We have contacted members from some of the local R/C clubs who have agreed to bring their creations and talk about building and flying radio controlled aircraft. We'll see the similarities and differences between full-size craft and their smaller brethren. The meeting is Wednesday, February 4 at 7:00 pm at the Alexis Park Inn in Iowa City. The Inn is located just north of the Iowa City airport, one of the oldest airports in the United States. Our hosts are Jay and Mary Honeck. They are the new owners of the Inn and are good aviation folks who are excited to have our group. Let's show them a good turnout!



# Public Lecture - The Search for Water at Mars

Tuesday, February 3, 7:30 PM Lecture Room I, Van Allen Hall

Professor Don Gurnett, Department of Physics and Astronomy The University of Iowa

The possibility of life on Mars has long fascinated human observers. Of the many unanswered questions concerning the possible existence of life at Mars, none is more important than the presence of water. In this talk Prof. Gurnett will discuss the history of the search for water at Mars, starting with Lowell's early 20th century ideas of "canals" and intelligent beings on Mars, extending through the modern era of robotic spacecraft exploration, and ending with a discussion of possible human flight to Mars. Professor Gurnett has provided instrumentation for over 30 major spacecraft projects, the most recent of which is a radar on the Mars Express spacecraft to search for sub-surface water at Mars, and has received many awards for his teaching and research. In 1994 he received the Iowa Board of Regents Award for Faculty Excellence, and in 1998 he was elected to the National Academy of Sciences.

Don Gurnett, a EAA Chapter 33 member is also a member of the National Academy of Sciences, is a veteran of more than 25 major spacecraft projects, including the Voyager 1 and Voyager 2 flights to the outer planets, the Galileo mission to Jupiter, and the Cassini mission to Saturn. He made the first observations of plasma waves and low-frequency radio emissions in the magnetospheres of Jupiter, Saturn, Uranus and Neptune and discovered lightning in the atmospheres of Jupiter and Neptune. Gurnett and his UI colleagues have over 120 years of spacecraft instrument design and construction experience between them.

## Thunderbirds Accident Report

Air Combat Command Public Affairs

LANGLEY AIR FORCE BASE, Va. (ACCNS) -- Pilot error caused a U.S. Air Force Thunderbirds F-16 aircraft to crash shortly after takeoff at an airshow Sept. 14 at Mountain Home Air Force Base, Idaho. The pilot ejected just before the aircraft impacted the ground.

According to the accident investigation board report released today, the pilot misinterpreted the altitude required to complete the "Split S" maneuver. He made his calculation based on an incorrect mean-sea-level altitude of the airfield. The pilot incorrectly climbed to 1,670 feet above ground level instead of 2,500 feet before initiating the pull down to the Split S maneuver.

When he realized something was wrong, the pilot put maximum back stick pressure and rolled slightly left to ensure the aircraft would impact away from the crowd should he have to eject. He ejected when the aircraft was 140 feet above ground - just eight-tenths of a second prior to impact. He sustained only minor injuries from the ejection. There was no other damage to military or civilian property.

The aircraft, valued at about \$20.4 million, was destroyed.

Also, the board determined other factors substantially contributed to creating the opportunity for the error including the requirement for demonstration pilots to convert mean sea level and above ground level altitudes and performing a maneuver with a limited margin of error.



# Editor's Rant

By David Koelzer

*Aviation in itself is not inherently dangerous. But to an even greater degree than the sea, it is terribly unforgiving of any carelessness, incapacity or neglect.— Captain A. G. Lamplugh* This is the quote that I am reminded of every time I hear about accidents like the recent Thunderbirds crash. You have got to be good to be selected by the Air Force to pilot jet fighters much less pilot those jets on the elite Thunderbirds demonstration team. This guy was no rookie or goof off or “accident waiting to happen”. This pilot is or rather was at the top of his game. And yet with a moments lack of attention our Air Force is 20.4 million dollars poorer and there is one more pilot out looking for a new job.

I'll bet that pilot is now writing a big thank you note to the inventors of the ejection seat. However most of our planes do not have ejection seats. If something goes wrong in our airplanes we will be the first person to get to the crash site! So we should never take anything for granted. We should never assume our airplanes are in the same shape they were the last time we preflighted them. We should never guess there is enough gas left in the tanks. And we should not just hope the weather will hold. Be careful out there!

# Fly Market

FOR SALE: 1/4 Share of 1981 Piper Warrior II (PA28-161), hangered at Cedar Rapids airport, 2509 TT, 272 SMOH, IFR. Contact Tom at 895-6989 or 368-0232.

FOR SALE: One wood project and one metal project; Moving, so best offer by end of month. Tom Harris (319)362-6323 or tom-annee-harris@juno.com

FOR SALE: Zenair 701 project. Fuselage on gear. Motor is a Geometro with turbo and Ravin redrive on fuselage Call Bruce Wutzke 319-377-2010





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In The February 2004 Issue...

Polishing My Image, The Search for Water at Mars, Thunderbirds

## Chapter 33 Calendar

**Feb 3, 7:30pm** Don Gurnett lecture "The Search for Water at Mars" Van Allen Hall, Lecture Room I

**Feb 4 Wed 7:00 pm** Meeting, R/C Fliers, Alexis Park Inn in Iowa City

**Feb 1 11am – 2pm** Soup Fly-in Sponsored by: Harlan 8-Ball Flying Club Harlan, Iowa Municipal Airport

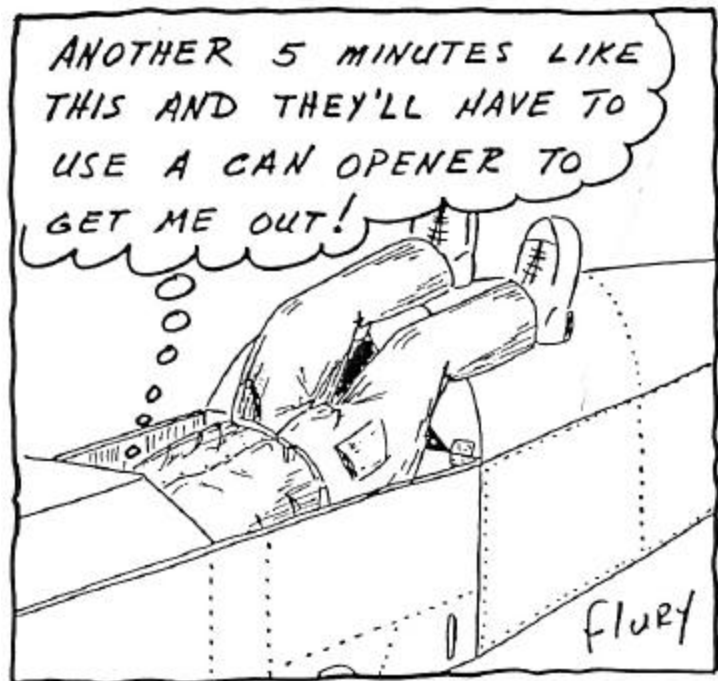
**April 3 11am - 2pm** Annual Chili Fly-in Fort Dodge, Iowa Regional Airport

**April 25** Fly-in / Drive-in Sponsored by: Sac City Kiwanis Sac City, Iowa Municipal Airport

**June 4-6** Fly Iowa 2004 Commemorating the 60th Anniversary of D-Day Attendees are encouraged to dress in 1940's style clothing or military uniforms. Washington, IA

### The Funnies

by Wayne Flury



Another Homebuilder finds access to some aircraft components can be quite challenging