# In this Issue

## UPCOMING EVENTS

**July Chapter Meeting**

**July 5.** Max Trescott, member and noted aviation author, Terminal Building

**Chapter 62 Board Meeting**

**July 12** at 7:30 PM in the Terminal Building, all welcome.

**July 11-14, Arlington Fly-In,** Arlington, Washington, *www.arlington-flyin.org*

**July 14, Young Eagles Event,** South County Airport, E16

**July 23 - 29, Oshkosh,** *www.airventure.org*

**August 9, General Meeting.** Members will provide us with reports on their trips to Oshkosh.

**August 18, Young Eagles** at RHV.

**Harris Ranch Fly-Out**
• date to be determined

## July Event:
### Max Trescott and ADS-B

Member Max Trescott has been kind enough to give us a presentation on the subject of ADS-B. Max spoke to our chapter at the Christmas Party about aviation applications and tablet computers, so we are particularly grateful that he is returning to our general meeting after such a short interval.

ADS-B is one of those difficult-to-remember acronyms meaning "Automatic Dependent Surveillance-Broadcast". The FAA will require all aircraft operating in controlled airspace to be equipped with some type of ADS-B by January 1, 2020. Some of the benefits of ADS-B are traffic awareness, including altitude, heading, speed, and distance relative to your aircraft; weather awareness, including radar returns and forecasts; and in certain cases TFRs and NOTAMs.

Max Trescott

Lake

**EAA Chapter 62's April meeting will be held at the RHV Terminal Building**

Everyone is welcome, and please bring friends

6:30 PM General Meeting
7:30 PM Presentation

## President's Letter, by Konstantin Blank

No President's letter available this month.



## Welcome new members!:

Derek Allen

David Hinojosa

Erik Schmidt



Extra 300 at Reid Hillview

# Young Eagle Rallies #1 and 2
## by Russ Todd

We're headed for the 3rd Rally of 2012 on Saturday, June23rd and it will be a good one because it's Reid Hillview Airport Day and we always get more kids when the event is associated with Airport Day. (Editor's note: Russ wrote this before the latest Young Eagles event, during which 15 pilots flew 161 new Young Eagles.)

**Number 1 Rally** got moved this year from Palo Alto Airport to Reid Hillview in hopes of having a bigger turnout. It was a bigger turnout than previous years, but not for that reason. It seems that everyone came to fly or help and we all had a good time. That was nice. The Terminal building seemed to fill-up several times with kids and then empty again throughout the morning.



Andy Werback, YE, and Bob Kindlund

Here's the reason for the big turnout:

*Admiral,* (Admiral refers to Carl Honaker) *Do you know any Rotarian or otherwise who would be willing to take 3 Chinese kids about 10 to 11 years old (maybe 70 lbs each) up for about 15-20 minutes and maybe 3 Washington School kids too? (Doesn't have to be all at the same time!) Touch and go, one circuit is fine. Just the thrill and a little momentary sight seeing.*

*They are coming Saturday, April 28 and leaving Saturday, May 5.*

Carl answered, *Hi Richard* (Richard Friberg),

*Thanks for the field promotion ;o) I've cc'd Russ Todd who puts on the events to see if they can work it out to get these kids a ride. Hope it works out…if not let me know and we'll try to set up some other ride opportunities for them.*

*Cheers,*

*Carl*

The three kids from China flew in that very morning and were immediately made into Young



Wolfgang Polak and YE



More YEs and pilot

Eagles. That must have been quite an introduction to their visit to America. I received this email from their mentor Richard Friberg:

*Hi Russ,*
*It sounds like our kids from China and Washington Elementary got to go up on Saturday in a plane and had a good time. Looks like we have some future pilots, all except one who got sick!*
*Thanks for doing this. Pass our thanks along to everyone that works on the Young Eagles.*

CFI Jim Grant's Maule

When I left the house that day I had 1 pilot and 15 kids registered.  I just have to have faith it will work out and it always does.  So we ended up with 8 pilots and 30 new Young Eagles.

The registering was wonderfully done by Sam Werback and her assistant. Thanks, it's so nice to have those registration forms filled-out completely and correctly.

The volunteers were Bob Kindlund, John Castner, Jeff West, Russ Todd Jr.

Those are good numbers and everyone had a good time.

| Pilots | Flights | Young Eagles Flown | Seats |
|--------|---------|--------------------|-------|
| Bob Leitch | 3 | 9 | 3 |
| Joel Williams | 2 | 6 | 3 |
| Bob Leuten | 2 | 4 | 3 |
| Rusty Wells | 3 | 3 | 3 |
| Chris Hand | 2 | 2 | 1 |
| Wolfgang Polak | 2 | 2 | 1 |
| Allen Roark | 2 | 2 | 1 |
| Andy Werback | 2 | 2 | 1 |
| **Totals** | **18** | **30** | **18** |

A highlight that morning was Sarah Todd, who came into the terminal with my two new grand daughters at 2 months, Jayme and Allison Todd.  Everybody cooed and admired them, and, of course, they were so cute just lying there in their tandem stroller the size of an Abram tank. I swear. I loved it.

A free BBQ lunch was served by Mark Kadrich and company.  A big thanks goes to him.

**Number 2 Young Eagle Rally** on the 19th was a big hit as it always is. It's part of the annual Wings of History Museum Open House and Fly In. The pilots flew 199 kids in 20 airplanes and 1 helicopter. The helicopter was flown by Larry Fernandez and Pat Belanger (42 kids combined).

Everybody had to go right to work, because when we arrived to set up at 8:15 AM there was a long line of kids and parents against the fence ready to fly.  We hustled to put up the tent, connect the computer, and handed out the registration forms.  The first flight was made by 8:45 AM.

Janet Hinojosa began the registration only to find that the computer would only print out the certificates for registered pilots and kids, but no new names could be entered.  Wolfgang and Russ, my 2 on-

call computer experts, peered into the machine but finally they decided it would have to be fixed on another day. That meant that the computer had to be set aside and entries and certificates completed by hand. You know, the way it was done in the old days before those magnificent beautiful efficient, accurate, reliable computers. Well, it was done beautifully by hand by Janet Hinojosa. She did them all. What a savior. Thanks Janet.
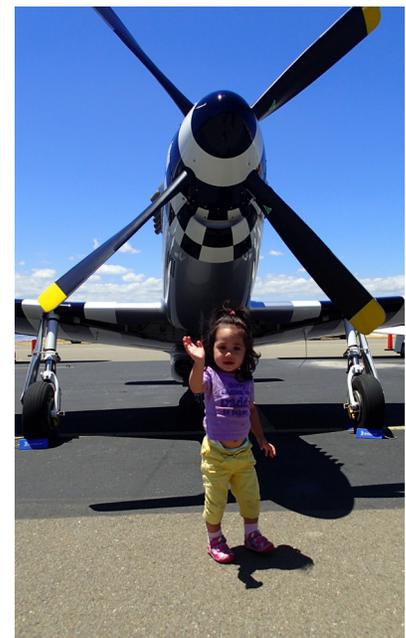
The weather was beautiful from the very start but by noon it was warming up and I'd say it was hot after lunch. There was no wind in the morning, which was nice, but after lunch it would have cooled things down a bit. Yeah, it's never there when you need it. We finished up just after 2 PM - tired and hot.

Wings of History supplied us with water, sandwiches, chips for lunch. EAA62 had it's own soda.

Here are the details:

| Pilots | Flights | Young Eagles Flown | Seats |
|--------|---------|---------------------|-------|
| Patrick Belanger | 8 | 24 | 3 |
| Gary Niva | 8 | 23 | 3 |
| Bob Leitch | 8 | 22 | 3 |
| Amin Abusaidi | 7 | 20 | 3 |
| Larry Fernandez | 6 | 18 | 3 |
| Joel Williams | 6 | 18 | 3 |
| Brian Stout | 4 | 12 | 3 |
| Blake Plattner | 4 | 12 | 3 |
| Jim MacKnight | 4 | 10 | 3 |
| Dennis Rose | 3 | 9 | 3 |
| David Hinojosa | 7 | 7 | 1 |
| Kevin Young | 6 | 6 | 1 |
| Christopher Hand | 4 | 4 | 1 |
| Raymond Peterson | 4 | 4 | 3 |
| Wolfgang Polak | 4 | 4 | 3 |
| Allen Roark | 4 | 4 | 1 |
| Paul Eastham | 1 | 1 | 1 |
| **Totals** | **95** | **199** | **47** |



Niner supervising the YEs

We couldn't have done it without the following wonderful group of volunteers:

Janet Hinojosa, John Castner, Andy Werback , Sam Werback, Russ Todd (son), Jeff West, Robert Britton, Dan Clark, Niki Green, Mark Guerrero, Jonathan Liebenberg, Tom Monte, Cristian Trigo (Gavilan College)

Nice job, thanks.

On the way to the sign-in tent



Thunder Mustang at Reid Hillview Airport Day

# Fun and Games in the Defense Industry
## by Andy Werback

This article is about my experiences in the US Defense industry, starting back in 1977.  I'm writing it mainly because it's about airplanes, not your typical homebuilt or GA aircraft, but about F/A-18's and F-16's and a few other fighter aircraft.  I spent about 20 years doing flight software, hardware/software integration, aircraft integration, flight testing, and developing flight line test/support equipment.  It was, overall, lots of fun, plenty of travel (OK, too much at times), and very interesting work.

Last century (well, 1977 to be specific), I was working in the bio-medical lab at U. C. Davis, programming a Raytheon 703 minicomputer and writing software for the first general purpose microcomputer, the Intel 8080.  We were doing data collection and analysis of exercise tread mill tests (measure heart rate, oxygen and carbon dioxide gasses, while exercising on a tread mill).

I interviewed at Applied Technology, in Sunnyvale, CA for the position of Scientific Programmer.   (These positions paid a little better than the job of regular programmer, since we were supposed to be more scientific about our coding.  Actually, there was a lot to learn about the hardware before you could write useable software).


Australian F/A 18s based at RAF Williamtown

At the time, Applied Technology (ATD) was heavily involved in developing and manufacturing Radar Warning Receivers (RWRs) for the US Navy and Air Force.  These radio/receiver systems would detect unfriendly radar signals and display the type and general location of the threat to the pilot so he could take evasive action or at least avoid the threat area.  They consisted of microwave antennas, microwave receivers, analog and digital processors, display devices, and some interfaces to other avionics.  Programming the processors to correctly identify the signals of interest was a bit tricky at times.

One of the people I met early on at ATD was Mr. Edward A. Bennett, our Security Officer.  A little later, someone mentioned that he received the Medal of Honor in WW II.  Unfortunately, I didn't follow up on that at the time, but you might want to check out his bio.

I spent the first few years at ATD writing software for the AN/ALR-67.  This was a new development with 2 ATAC-16M micro-computers, shared memory, both wide band crystal video receivers and a superhet receiver, and MIL-STD-1553 data buses.  We also developed a version called the ALR-45F, which was a digital computer replacement for the ALR-45 on current US Navy aircraft such as the A-7.  We flew the first prototype down to China Lake for bench testing in our Cessna 182.

By the way, a space qualified version of the ATAC-16M computer was used as the navigation computer on the Galileo Space Probe a few years ago.  The ATAC-16M used the AMD 2901 bit-slice ALU (arithmetic/logic unit) chips and was micro programmable – we could create new instructions for special requirements.

As the software and hardware matured (these things take awhile…) we spent a lot of time testing at China Lake's Echo Range.  This Range had many simulators that could generate the types of radar signals that we were supposed to detect and identify.  After each flight test, we would go over the recorded data to see what worked correctly and what needed to be fixed.  We also spent a lot

of time using our own ground-based simulation lab tools to recreate some of the scenarios so that we could debug the software.



Volume I
Technical Proposal For

ADVANCED ALGORITHM DEVELOPMENT

JULY 1985
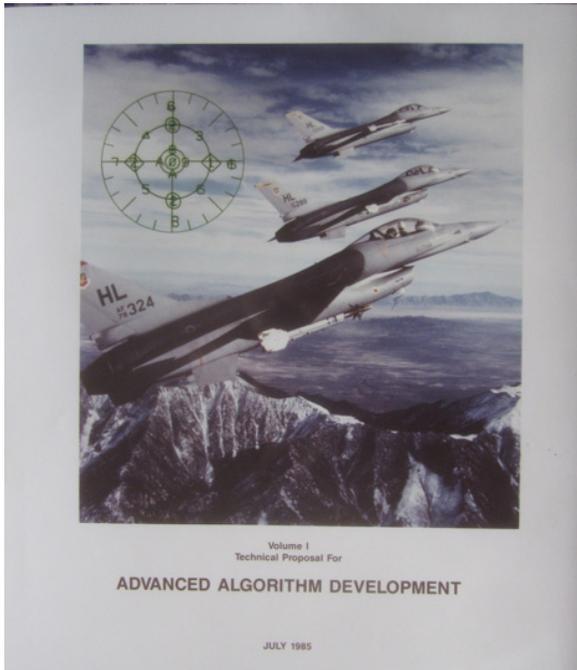
Once we had some software changes, we had to figure out how to get them installed in the flight hardware. This shouldn't have been a problem, and today it isn't an issue, but back then we were using one-time-programmable memory chips – to change the program, we had to program new chips, unsolder the old chips, and solder in the new ones. Eventually, we were able to change over to EEPROMS (Electrically Erasable/ Programmable ROMS).

Today, the ALR-67 is flying with the F/A-18s. It's been upgraded several times with new hardware and software.

ATD also had contracts with the US Air Force to develop the next generation RWR for the F-16 and a few other aircraft such as the F-4 (since retired). This was a real challenge as a) the Air Force sort of wanted to build the system their own way, even though we (the contractor) were responsible for the work and b) our first attempt didn't go so well (the new trend of "object oriented programming", or OOP, really didn't translate very well to computers with limited throughput and memory), so we were really behind the 8-ball. (Believe me, that's not a good time for your boss to say - Hey, have I got a project for you!).

So, we got to know Warner-Robins ALC (Air Logistics Command) really well. We spent months there designing, developing, testing, and doing it all over again. But at least this time we had enough money to build enough hardware and buy enough support (the Air Force contract was for about $50 M, the Navy ALR-67 contract was only about $6 M initially). Of course, in these contracts, the main thing is to get the production contract, and then try to make some money to cover the contractor's investment.

After a very long couple of years, we passed the ground simulator tests and started flying the equipment on the F-16 test aircraft at Eglin AFB. These tests actually went pretty well, but by this time, the politics in the Air Force had started to change, and another company was funded to build a version of their equipment for the F-16. We had a chance to bid on the production contract, but we made a "strategic" decision not to bid at the price that the Air Force was offering. The other company low bid the contract, got tied up in the 1985 Air Force procurement scandal (some government people went to jail), but they won the contract anyway. Then, in order to make the system work "properly", our competitor had to do a major engineering change, which totally changed the overall cost of the program. Guess who lost out, Mr. Taxpayer.

We also had some disputes about exactly what the requirements were, what work we actually did, who was to pay for it. We wound up going to trial, several of us testified, and the process took years. ATD "won", but I'm not sure they ever collected on the bill.

Now, if you've read this far, you might be asking - Well, how did all this get started? Well, as you may recall, we lost quite a few aircraft in the Vietnam War (something like 2700!). Many of the losses were

due to radar-guided anti-aircraft artillery (AAA) and Surface to Air Missiles (SAMs). While we were developing the ALR-74, one of our marketing/advisers was Cpt. Jack Donovan. He was part of the first group to be involved in neutralizing these sites – by attacking them directly with bombs or rockets. So the story is, during the briefing on how they were going to fly right into a SAM/AAA site (who shoots first!!?), his response was "You Gotta Be Shi**ing Me". And that's where the (unofficial) motto of the Wild Weasels came from. Anyway, Jack was quite a character who tried to make sure that we software "pukes" understood the real problem. (It's all there in Wikipedia, under Wild Weasels.) (For further info, check out the movie "First In, Last Out".)



Marketing photo of the ALR-74

Eventually there was some work on research and development, particularly with a device called a "Bragg Cell" – a crystal that could take a radio signal and modulate a laser beam to measure the radio frequency instantaneously, which was a great benefit to sorting out the radar signals in the software.

After Applied Technology, I worked for a spinoff company that did a lot of support/development for the Navy. We engineered portable software support equipment including a memory loader/verifier. With that, we were able to work with other countries (Canada and Australia, especially) that used the F/A-18 and the ALR-67. We travelled to Australia, Canada and Germany to install and train their people on the equipment. One of the locations was an RCAF base in Germany at Hockenheim (near Heidelberg). We spent a week reprogramming the ALR-67's in the F/A-18 shelters and working in the protected bunkers (a building within a building, mounted on huge steel springs, with massive airlocks). This of course was during the Cold War, so everything had to be just so. But the funny thing was, when something broke in the shelters, they had to call the local German technician to come out and fix it. A couple of years ago, we visited this airport – it's now the local regional airport, and all the bunkers/hangars are just used for storage.

Well, I think I need to wrap this up. Suffice to say, working at Applied Technology was a lot of fun, and I really enjoyed working with many great people in engineering and management.

The photo on page 7 is of Australian F/A-18s based at RAF Williamtown, north of Sydney (the beaches here were used during WW II for training in assault landings). I spent a week there doing training, then a couple more weeks with Sam and Katie vacationing on the east coast of Australia.



kids these days...

# Membership Notes
## by Donald Von Raesfeld, Jr.

**Membership Chairman**
**408-507-0951**

JULY 2012

Our last general meeting was held on June 7, 2012. The meeting was held at the home of our Vice President and Newsletter Editor Mark Wainwright in Los Gatos. Mark had a lot of help from his wife Mimi hosting this event. Around 30 or 35 guests made it to this meeting. I had a very good time and I'm sure everyone in attendance did too.

As you may or may not know Mark is in the process of building a Falco. This is a plans built aircraft. It is a single engine, two place, low wing, retractable gear, all wood, high-performance aircraft. Performance is good, with 175 knot average cruise speeds and +6G and -3G aerobatic capability. Mark had some of the completed parts of his kit on display. This is going to be a very time-consuming project. I wish Mark the best of luck in completing this aircraft. I know he can do it. It will just take time and money.





Pulling the Falco parts out of storage for the meeting

After some hangar flying and visiting, it was time for dinner. Rusty and Randy barbecued hamburgers while Mark and Mimi grilled veggies. After dinner Mimi brought out some delicious desserts (editor's note: member Marjorie Bachman cooked a delicious cheesecake and former President Terri Gorman prepared her excellent honeymoon cake). I want to thank Mark and Mimi for hosting last month's meeting. It was a great way to spend an evening. I think we need to do this a couple of times a year for our general meetings. It was great to be among friends and just relax for a few hours. Thanks again, Mark and Mimi.

### MEMBERSHIP RENEWALS

As of June 20, 2012 we have 45 paid members. If you were a member last year and have not yet renewed your membership your name has been dropped from the membership roster and you are listed as a past member. If you are not a member of the chapter you cannot access the "MEMBERS ONLY" section of the website. Membership can be renewed online or by sending a check for $30.00 made out to EAA Chapter 62. Checks can be sent to me or brought to the General Meeting.



Members in the backyard

**CAPS AND SHIRTS**

The chapter now has T-shirts and caps available at all of our general meetings for $15 each. See me if you are interested in purchasing a shirt or cap.

**YOUNG EAGLES**

Our next Young Eagles event will be on July 14, 2012 at South County (E16). As always, pilots and ground crew are needed. Contact our Young Eagles coordinator, Russ Todd, if you can help out.

Our last Young Eagles event was held on May 18, 2012 at South County in conjunction with their annual "Wings Of History" open house. The chapter flew a total of 199 kids. Thanks to all the volunteers who made this event a success.


Falco bits

**FLY OUTS**

We would like to have at least one Fly Out per month for chapter members. If you have any suggestions for a Fly Out destination please contact one of the officers or board members. The Fly Out to Harris Ranch is still in the planning stages at this time.

Don Von Raesfeld, Jr.

Membership Chairman

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## Correction

In the May issue I wrote that Rusty Wells was planning to install a "hand pump" to effect reverse pitch on his MT propellor. This is incorrect; I should have written "pre-oiler".

-ed.

Don Von Raesfeld
Membership Chairman
930 Monroe Street
Santa Clara, CA  95050

Address Label is RED,
time to pay your dues.



**MEMBERSHIP APPLICATION**

Name _____National EAA #._____

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