



Tail Wind Times

Experimental Aircraft Association Chapter 1246

McKinney, Texas

Volume 7, Issue 1

www.EAA1246.org

January, 2005

100 Years of Aircraft Engine Integration



Erasmus Piñero will present the technical challenges and achievements on engine/airframe integration over the last 100 years of powered flight. The discussion will focus on fixed wing aircraft engine installations, but VTOL (including rotorcraft) and STOL aircraft engine integration will be briefly



discussed. After graduating from the University of Florida as an aeronautical engineer, Erasmus completed advanced studies at Embry-Riddle Aeronautical University, Daytona Beach, Florida. Erasmus served seven years in the U.S. Navy, most of them flying as a naval aviator and has over 800 hours of flight time on a variety of naval aircraft including 160 carrier landings. Please see page 2 for additional information. The meeting is Thursday:

**January 13, 7:00 PM, Pike Hall,
Collin County Community College, McKinney, Texas**

My Airplane, Velocity N350TX

By Dave Bertram

I was born in a small town in Indiana about five miles from the Wright brother's birthplace. I loved to watch the B-36 bombers fly over our house. They could be recognized without looking up because of their distinctive sound. I graduated from Ball State in 1961 as a second lieutenant in the US Air Force. I went to pilot training in Lubbock, TX where I met my wife Nita. The next seven years were spent flying the C-130 hauling cargo and chasing typhoons. In 1969 I went to work for Delta Air Lines for the next 31 years.

My interest in general aviation began in 1960 when I went into the flight instruction program of ROTC in the Cessna 150. I received my flight instructor rating in 1969 after I separated from the Air Force. Through the years I have owned a PA 16, PA 28, and a Beechcraft Baron. The Baron was my favorite except for the expensive annuals and overhaul on the engines. I joined EAA during the early 1990's and took a real interest in home-builts. I was looking for a four-place aircraft and became seriously interested in auto-engines after a \$52,000 overhaul on my



Baron's engines. Also, I came from an automotive family. My dad had worked in the engine test lab for Perfect Circle Piston Ring Co. for thirty plus years.

My choice for an aircraft was between the Lancair and the Velocity. I loved the performance of the Lancair and the different look of the Velocity. As usual, it came down to cost. The Velocity would cost in the neighborhood of \$150,000 and the Lancair over \$200,000. I found the Velocity folks far more open to talk about costs than the people at Lancair. So in July of 1999 at Oshkosh I ordered my Velocity.

I got the kit late in November of 1999. I spent the next weeks sorting the parts and wondering where I should start. I got the "fast-build" options on the good advice of a friend who had built a kit plane.. Therefore I got to start in

the middle (it seemed) of the builder's manual. For the next three and a half years I worked in my garage on the project. The Velocity folks did not encourage me to go with an auto engine. I am sure they have seen many projects struggle with the lack of support available when going totally experimental. However, they did suggest I put off my engine selection until I had the airplane basic design finished.

(Continued on page 3)

Message From The President

Greetings!

I am looking forward to participating with the great slate of officers and chapter members to make the next two years an exciting time for our chapter. Our previous officers have already put into motion traditions that we all look forward to each year and we will continue to add oil and keep the bugs off the windshields! Our goal will be to add a cleanup kit here and there and increase the useful load making it easier for more members to participate. So let's kick the tires, light the fires, and takeoff to a great New Year!

Additions to the SOP and checklists are encouraged so if you've got an idea, key up the mic and announce your intentions.

Susan Wilson

January Meeting Speaker Erasmó Piñero

Erasmó Piñero Jr. was born in Cuba. He obtained his freedom in 1974 and settled with his family in Tampa, Florida. After graduating from the University of Florida as an aeronautical engineer, he completed advanced studies at Embry-Riddle Aeronautical University, Daytona Beach, Florida.



After graduation, Erasmó joined the U.S. Navy and served seven years, most of them flying as a naval aviator, and has over 800 hours of flight time on a variety of naval aircraft including 160 carrier landings. He started his career in vertical flight with Sikorsky Aircraft, and worked on advanced helicopters such as the *Comanche*. As a

Test Engineer with Sikorsky's sister division Pratt & Whitney, Erasmó had an early role on the Joint Strike Fighter (JSF) engine test program. He continued with the JSF program until the end of the demonstration phase that included an assignment to Edwards Air Force Base, California. Shortly thereafter he transitioned to Pratt & Whitney's Advanced Engine Design Office, East Hartford, Connecticut.

Erasmó is currently working the Pratt & Whitney F135 Engine Test and Development Integration issues within the JSF Propulsion Integration Group at Lockheed Martin. Erasmó's interests include aircraft preliminary design, propulsion integration, aircraft preservation and Aviation History. He is regular contributor to trade magazines and the Journal *Vertiflite* of the American Helicopter Society.



Light Sport Aircraft

Is It Really Here? *By Mel Asberry*

In December the FAA held a prototype seminar in Oklahoma City to determine what information should be included in the training seminars for the new Light Sport Aircraft certification. This was a "working" seminar and only about 22 people were invited. Most attendees were from the FAA and industry (DAR wantables). I was one of only four current DARs. I was invited for my experience with amateur-built aircraft. Other DARs were there to provide input concerning powered parachutes, trikes, gyroplanes and lighter than air.

At the beginning of the meeting on Tuesday morning it was expressed that the first training seminar would probably be in January, 2005. By the end of the meeting Thursday afternoon that prediction had been changed to "maybe March". The reg concerning the certification process has a lot of problems.

There are basically two categories for Light Sport Aircraft. **Special LSA** Category covers aircraft that are factory built, test flown and sold ready to fly. DARs for S-LSA will be able to issue Special Airworthiness Certificates and special flight permits for test flying. **Experimental LSA** covers those aircraft built from kits. These kits are not required to meet the 51% rule as amateur-built are. The kit manufacturer may provide as much as 99% of the work. These kits must be assembled exactly according to instructions supplied by the kit manufacturer. After certification they may be modified or altered. (I didn't say it made sense.) DARs for E-LSA will be able to issue Experimental Airworthiness Certificates for the purpose of operating Light Sport Aircraft very similar to the present amateur-built aircraft.

One major difference between amateur-built and light sport aircraft comes in how maintenance and inspections are performed. Whereas an amateur builder may obtain a repairman's certificate allowing him/her to perform the annual condition inspection simply upon the basis of having built 51% of the aircraft, the LSA owner/builder must complete an 80 hr. course to perform maintenance and the condition inspection or a 16 hr. course to just do the condition inspection. These classes will be conducted by FAA and are still being developed. If the owner chooses not to complete this training, he can always hire an A&P mechanic to perform these tasks.

Another group included in the E-LSA is the "existing fleet." This includes the presently flying ultralights that do not actually meet part 103 regs for one reason another. This group also includes the 2-place ultralights flying under an "instruction only" exemption. These "existing" aircraft will have until January 2008 to be eligible for LSA certification. After that, it's a new ball game. Don't ask the obvious question. At this time no one has the answer.

As the regs are written now an LSA aircraft may not have retractable landing gear. A seaplane may have a repositionable gear, but it may not be operable from the cockpit. As you might guess, this is not popular with the amphib guys.

The other rather large gray area deals with how the drivers license/medical is handled. But that's an operational issue. We DARs have enough on our plate without getting into operations.

There will be several changes in the near future.
— Surprised?

(Continued from page 1)

Velocity N350TX

After looking at several possibilities, including diesel power, I chose the Chevy V-8 which gives the necessary horsepower without turbo-charging. This allowed me to go with a simpler engine installation. I picked Team-38 to build my engine. This was after careful consideration and research of their company. They have sound financing and are owned by a man who also has a racing team and builds endurance type cars.

My engine has been balanced and blueprinted. It was also run tested on a stand built specifically for that purpose. It is very important to have your engine properly tested prior to flight. My engine is a 383 cubic inch V-8 with dual MSD ignition, dual electric fuel pumps, a Racemate water-pump with dual 35amp alternators and manual fuel injection. I received the engine December 28, 2003 and we installed it during the next few days. The engine mount had to be designed just for my airplane. We had to fabricate it ourselves since this is the first V-8 flying on a Velocity. My engine man is very talented and very precise, so it took several months to build. Another item is the drive system to reduce the engine RPM to something the prop can handle. I am using a gear drive with a 1.73-1 reduction. The drive is built by Stinger and is used extensively in airboats with no known failures. My prop is a constant speed MT electric.

For my instrument panel I could not resist the urge to go modern. After flying the last several years in airliners with EFIS instrumentation, I ordered the Blue Mountain EFIS One. It has all the bells and whistles I could ask for including moving-map, terrain features, wind read-out, autopilot and on and on. However, beware of things advertised as "just plug it in and fly". I was fortunate to have a neighbor who understands computer lingo and operation. It still took many long hours to install, wire, and calibrate the instruments. I could not have done this alone.

This last summer with the engine running and my EFIS system working I thought the first flight was very near. But then came the brake problems, fuel leaks, redoing this and that over and over. The week before Thanksgiving the FAA inspector gave me my special airworthiness certificate and I was ready to begin test flying. This was just a few weeks short of five years since receiving the kit. The first flight was on Thanksgiving Day and my wife Nita was my cheerleader. The aircraft flew well but it became apparent my engine cooling was insufficient. It was very satisfying to finally get that first flight accomplished after so many hours of work.

Cooling is now the biggest problem to overcome. My radiator is on the underside of the engine and it is difficult to get the proper airflow through it and out the cowling. At

this time I am building an air scoop on the bottom to take the air up through the radiator.

For those of you who might get the bug to build I would like to offer some suggestions:

1. Be sure your wife is supportive of your decision. My wife parked her car outside for long periods of time. She was often the only one around to hold the light or wrench. She has said that I thought she was taller and stronger than she is. Your wife will be your biggest supporter.
2. Look long and hard at how you want to use the airplane. Will you just stay around the area or go on long trips with your family?
3. What is your experience level? Is the airplane you want high performance? Get advice from your chapter flight advisor. He can help with your decision.

4. Talk to people who have built airplanes, especially if there is someone who has built the model you want. Ask about factory support. Our Chapter Technical Counselors are another good source.

5. Find a convenient place to build. If it is over 20 minutes away you will find excuses for not working on your project. I spent over 2800 hours on my airplane and it is not finished.

6. Don't get discouraged. The final result is worth the effort.

I would like to thank all those who have given their help and support: especially Nita, Mike Pollock, Alan Holden, and the guys at MHOA. Without you I would never have gotten airborne.

ed. *Congratulations Dave!*



2005 Dues

It's time to pay your 2005 dues. Once again chapter 1246 has stood firm against inflation holding your annual dues to \$20 for 2005. Make checks payable to:

EAA Chapter 1246

Pay at the chapter meeting or mail to our treasurer:

**Patti Morris, 5504 Democracy Dr. Ste 220,
Plano, TX 75024**

Great Holiday Party !

By Dick Flunker

I had a fun time at the 2004 Holiday Party and I think (hope?) everyone else did as well. If you weren't able to attend, let me give you a brief recap. This year the short-



timer officers took turns MC'g the event. To get things going, Larry Spears welcomed everyone, and Dick Flunker explained that while waiting for their turn to go to the buffet, they should build paper airplanes. And of course if you build them, they will fly, so let's have

a paper airplane "First Flight Contest". Dick had some reasonable (?) yet fair (?) rules - **no test flights** - so everyone quickly passed the time building planes. Chuck Rehlin led the group with the blessing, and Hutchins BBQ catered an excellent holiday dinner.

Following the meal, Calvin Coffey conducted the paper airplane contest. This was a First Flight Contest, so there were no pre-contest test flights. To keep the entries to a manageable number, each table had to select one plane and one test pilot. There were definitely some interesting designs - and flights. One individual interpreted "use supplied paper only" to include part of the table decorations. That made for a much larger plane that almost took out a front row table when it "flew." Another individual designed "Snowball 1", and the launch looked more like a bowling ball delivery than an airplane launch. The winner was the closest to the wall, and of course two planes were so close that a fly-off was needed. Kathy Brown finished a nose closer than Dave Bertram for the award. And the award? It was a Plane Paper Award - of course. Check the TKI FBO bulletin board or the web-page for pictures.

Certificates were presented to the outgoing officers recognizing their efforts, and Larry Spears introduced the new officers for 2005-2006: President Susan Wilson, VP Tom Mitchell, Secretary Tom Moore, and Treasurer Patti Morris. The chapter leadership will continue in good hands.

The highlight of the annual party is always the "Year-In-Review". Tom Moore gathered pictures taken at various chapter events and compiled them into a very interesting slideshow. Tom Ferraro and Jeff Ferraro provided appropriate background music completing a great presentation.

Although we did several fun things, the best part of a party like this is just catching up with friends and wishing everyone a safe, fun holiday season .



Holiday Cheer

Tom Moore and Dick Flunker helped spread the Holiday spirit by delivering the EAA Chapter 1246 goodie basket to the TKI tower staff. Richard and John turned away from the mikes for a quick picture with Tom. EAA 1246 hopes that everyone in the tower had a great Holiday.



Samaritan Inn

By David Norman

The members of EAA Chapter 1246 contributed \$351 to the Samaritan Inn during the 2004 Christmas party on December 9, 2004. Below is a quote from the thank you letter received from the Samaritan Inn.

"Thank you for your generous donation as well as recognizing the Samaritan Inn this holiday season! Due to your support and that of other individuals and corporations, The Samaritan Inn is able to support the less fortunate people in Collin County who are experiencing homelessness.

Our goal for 2005 is to DOUBLE the number of individuals that may be helped on a daily basis. We will provide over 88,000 meals and 30,000 nights of shelter to individuals that are working hard to improve their lives.

Everyone at the Samaritan Inn thanks you for helping us continue our mission."



- Your Business Card Here -

For a reasonable fee, you can advertise your business in this newsletter *and* support EAA Chapter 1246.

Contact Newsletter Editor Dick Flunker (972-396-0018) for additional information.

Board Meeting Minutes

Minutes by Dick Flunker

The monthly EAA Chapter 1246 board meeting was held at the TKI terminal on December 16, 2004. Present: Calvin Coffey, Tom Moore, David Norman, Tom Mitchell, Susan Wilson, Patti Morris, and Dick Flunker. Following are the minutes from the meeting.

FBO Bulletin Board

Dick reported that he had updated the bulletin board highlighting the Christmas program. A volunteer is needed to do future bulletin boards. Tom Mitchell suggested that a regular section of the bulletin board should include information about the upcoming meeting, and pictures etc. from the previous meeting.

Member Profiles and Planes of Fame

A coordinator is needed for Member Profile and Planes of Fame articles for the newsletter. Discussion confirmed the profiles should include all members, not just pilots. As Newsletter Editor, Dick asked that the position be established as a team effort with assistant editors. Dick agreed to be the editor through 2005 – unless someone would like to takeover prior to the end of 2005.

Fly-outs

- January 15 - Lake Texoma Lodge - 11:00 am
- February 19 - Lake Murray - Fireside

Dick confirmed that insurance has been filed for the January 15 fly-out. Dick also confirmed that insurance has been filed to cover the monthly general meetings and the monthly board meetings.

Monthly Meetings Programs

January is Erasmo Pinero “100 years of aircraft engines”
February meeting is open
Discussion occurred regarding possible future meetings.

Chapter Registration

The registration forms were reviewed with the new officers and signatures obtained. Dick will complete the filing and get a copy of the final paperwork to Tom Moore. Dick will contact Walt Lammert about establishing generic email addresses for the respective officer positions.

Christmas Gift

Dick and Tom Moore will purchase a “basket” for the tower personnel to be delivered Saturday.

Officer Turnover

Turnover discussions occurred for each of the officer positions. David will work with Patti to complete the bank account authority transition, and Susan will contact Larry regarding changing the incorporation registration. Patti provided the return address to be used for the newsletter.

Calendar of Events

(Items in bold are Chapter 1246 events)

- Jan 13 Chapter Meeting 7:00 PM**
100 yrs of Aircraft Engines - Erasmo Piñero
CCCC, McKinney
- Jan 15 Chapter Fly-out to Texoma Lodge, 11:00**
- Jan 20 Officers Meeting, TKI, 7:30 M
- Feb 10 Chapter Meeting, 7:00 PM**
CCCC, McKinney
- Feb 17 Officers Meeting, TKI, 7:30 PM
- Feb 19 Chapter Fly-out to Lake Murray - Fireside**
- Mar 10 Chapter Meeting, 7:00 PM**
CCCC, McKinney
- Apr 12-18 Sun'n Fun
Lakeland, FL
- Apr 14 Chapter Meeting, 7:00 PM**
CCCC, McKinney
- May 13-15 Southwest Regional Fly-In (SWRFI)

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January

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5504 Democracy Dr. Ste 220
Plano, TX 75024



McKinney EAA Chapter 1246 Membership Application or Renewal

New Member: _____ or Renewal: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: Wk (_____) Hm (_____)

E-Mail Address: _____

* EAA Number: _____ * Exp. Date: _____

Pilot/A&P Rating: _____

Notes/Comments/Projects:

Membership dues are \$20 per year due Jan 1.
New memberships pro-rated to Jan 1. Make
checks payable to **EAA Chapter 1246**.
Mail applications to:

Patti Morris
5504 Democracy Dr. Ste 220
Plano, TX 75024

* National EAA membership required. National
EAA Offices:

EAA Aviation Center
P.O.Box 3086
Oshkosh, WI 54903-3086

Chapter Officers:

| | |
|-------------------------------|--------------|
| Susan Wilson (President) | 972-359-0578 |
| President@EAA1246.org | |
| Tom Mitchell (Vice President) | 972-548-8488 |
| VicePres@EAA1246.org | |
| Tom Moore (Secretary) | 214-491-8481 |
| Secretary@EAA1246.org | |
| Patti Morris (Treasurer) | 972-378-5699 |
| Treasurer@EAA1246.org | |

Chapter Volunteers:

| | |
|-------------------------------|--------------|
| Dick & Barb Flunker (Newsltr) | 972-396-0018 |
| Newsletter@EAA1246.org | |
| Dick Stephens (Flight Advsr) | 972-517-1647 |
| Dave Bertram (Flight Advsr) | 972-562-5967 |
| Mike Pollock (Tech Cnslr) | 972-530-8400 |
| _____ (Program Coord.) | _____ |
| _____ (Member Profiles) | _____ |
| _____ (Bulletin Bd) | _____ |