

THE WINDSCREAM

SANTA MARIA EAA CHAPTER 499 NEWSLETTER

"Celebrating the Sprit of Flight"

FEBRUARY 2003

OFFICERS: Membership Committee:

PRESIDENT: John Ready 937-0976 Burt Adams, Chair 344-5303

VICE PRES.: Burton Adams 344-5303 Jerry Mendonca 938-1611

SEC'Y./NLE: Bob Popp 937-9797 John Ready 937-0976

TREASURER: Bob Davis 922-0019

Flight Advisor: Young Eagles Coordinator:

John Ready 937-0976 Ed Woods, Jr. 937-5139

Technical Counselor: Contributing Editor:

Jerry Mendonca 938-1611 Fred Williams (210)490-6814

THE NEXT CHAPTER MEETING will be held on Tuesday, February 11 at the Santa Maria Museum of Flight Early Aviation Hangar at 19:30. Bob Davis will host the refreshment bar.

LAST MEETING: President Ready called the meeting to order at 19:30 on 1/13/03. Attending were nine members and guests Phil Batterson, Vance Breese, Nils Eyton (Stockholm, Sweden EAA Chapter 222) and guest speaker Paul Lipps of SLO EAA Chapter 170.

TREASURER'S REPORT: Beginning Balance: \$4,391.97

Disbursements: 205.28

Sub-Total: \$4,186.69

Receipts: 20.00

Ending Balance: \$4,206.69

Report Approved.

DECEMBER MEETING MINUTES: Approved as published.

THE CHAPTER RECORDS ARE BACK: Burt Adams brought the box containing the chapter records to the meeting and turned them over to president Ready. These materials should be turned over to the president-elect following the bi-annual election of officers. These historical and procedural items aren't frequently used

in a normal term of office and, since the chapter has no dedicated facility, must be remanded to the stewardship of each succeeding president. Thanks, Burt.

OLD BUSINESS:

ANNUAL CHAPTER DUES: President Ready reminded the attendees that Treasurer Davis is ready and willing to accept their \$15 dues contributions and that new membership cards will be provided immediately to those who sign on.

HOLIDAY PARTY: Thirty-eight members and guests attended the Pot-Luck Christmas Party at Livio Bognuda's residence. Pres. Ready thanked Delmar Patton for his help in setting up and securing the facilities and further noted that Livio provided the diners with slices of his good garlic bread. The guests enjoyed the food and camaraderie and particularly the dessert dishes provided by the ladies who attended. Thanks to all who contributed to the success of this first annual event.

BOARD OF DIRECTOR VACANCIES: President Ready reminded the attendees that the chapter is still in need of volunteers to serve on the chapter Board of Directors. Well, so far we are still "rudderless" in this department!

NEW BUSINESS:

SANTA MARIA STRAWBERRY FESTIVAL/AIR FAIR: The Santa Maria Strawberry Festival/Air Fair will be held at the County Fairgrounds on April 23 & 4. The attendees discussed the possibility of the chapter participating in the fair by providing an aviation display next to the space that the Santa Maria Museum of Flight will occupy. It was pointed out that Phil Henry (Air Fair Director) would invite the chapter, as a non-profit organization, to provide a display and that the chapter would not be charged a fee for the required space. It was tentatively suggested that the members could probably take the "Photo-Plane" and the "T"-Tail Sailplane to the fairgrounds with the aid of a pickup truck and a few volunteers and with some additional help, staff a two-shift docent operation during the festival. Responding to a show of hands for volunteers were: Burt Adams, Phil Batterson, Jeff Cardinal, Bob Davis, Al Neary, Bob Popp, Delmar Patton and John Ready. **HERE'S HOPING THAT SOME MORE OF OUR MEMBERS WILL THROW THEIR HATS IN THE RING AT THE NEXT MEETING OR GIVE THE PRESIDENT A CALL TO SIGN ON.**

CHAPTER PROJECT/MEETING SPACE: With a growing chapter membership and the prospect of additional chapter and/or member projects on the horizon, the attendees discussed the potential need to provide for a dedicated chapter facility. It would be too expensive to consider erecting an "owner-built" hanger (about a \$60,000 investment) under current SMPAD provisions and since there are no plans to provide for any of the smaller "temporary" units, it was suggested that the chapter investigate the possibility of renting a "T"-hangar. The president volunteered to see if the SMPAD would permit the chapter to be included on the hangar rental wait-list. Burt Adams moved, seconded by Al Neary, that president Ready be authorized to propose to the airport manager that the chapter be permitted to apply for a position on the hangar rental waiting list and that the Treasurer be authorized to issue a voucher to SMPAD in the amount of \$136, as the application deposit fee, if the President can make the deal. The motion was approved unanimously.

DISCUSSION TOPICS:

WIND TUNNEL NEWS !: President Ready reported that he has been in touch with the Director of EAA's "Countdown to Kitty Hawk" Project to inform him of the existence of chapter 499's Wright wind tunnel replica and to suggest that they might be interested in including it as a part of their traveling display this year. Director Randal Dietrich expressed some interest in the idea and John sent him a copy of the article on our wind tunnel that had appeared in a recent issue of Sport Aviation. (See copies of the related e-mails regarding this activity in the post-meeting Wind Tunnel coverage below.) The attendees voiced their approval of the plan and recommended that John also suggest that Project Director consider the need to fund the cost of crating, shipping and insuring the wind tunnel in the event they would like to borrow it.

"COUNTDOWN TO KITTY HAWK": The EAA has published the tour schedule for their Countdown to Kitty Hawk touring pavilion. The pavilion showcases the EAA's accurate replica of the 1903 Wright Flyer. Included in the display are related documents from the Library of Congress collections and theatrical portrayals of Orville and Wilbur Wright. The events began in 2000 and will culminate with the National Celebration on December 17, 2003. The 2003 tour schedule planned is:

Sun 'n Fun EAA Fly-In, Lakeland, FL, April 2 - 8

Ford Motor Company's 100th Anniversary Celebration, Dearborn, MI, June 13 - 16

Inventing Flight Celebration, Dayton, OH, July 4 - 20

EAA AirVenture Oshkosh, Oshkosh, WI, July 29 - August 4

Museum of Flight, Seattle, WA, August 23 - September 2

First Flight Centennial Celebration, Kitty Hawk, NC, December 13 - 17

SHOW AND TELL: President Ready had the "Lift and Drift" mechanism for the wind tunnel on display at the meeting. This neat replica of the unit that the Wright Brothers had used to measure airfoil performance in their wind tunnel was crafted by Jim Norrie. Another fine job, Jim!

PROGRAM: "Light A/C Prop Design for Speed and Efficiency," a "lecture" by Paul Lipps, a member of San Luis Obispo EAA Chapter 170: Paul gave an interesting and informative presentation that went from simple obvious observations concerning the recognized efficiency of wing shapes to the detailed technical analysis of applications of airfoil effectiveness. He illustrated the benefits of the famous WWII Spitfire elliptical wing, with its high lift to drag ratio, and that this concept had inspired him to evaluate and improve the effectiveness and efficiency of G/A propeller designs. According to Paul, little has been done by industry to improve the performance of propellers since the thirties.

Initially, Paul experimented with modifying various props on his Lanceair. In one case, he was able to achieve an Oswald Efficiency Factor of 0.82 by rounding the prop tip and slightly chamfering/filing its under side, thereby causing the vortex to form at the tip trailing edge to increase the rpm efficiency.

Pursuing the goal of further improving propeller efficiency, he developed a revised analog of the Oshkosh Propeller Program on his computer to solve for the blade pitch angle required to obtain a desired constant coefficient of lift (thrust) at one-inch iterations from the root to the tip of the blade. The program parameters included the Desired Coefficient of Lift, Prop Diameter, Forward Speed and Available Engine Horsepower. The limiting factor to the final configuration was determined by the acceptable thickness of the propeller blank at the hub. The resulting propeller design was an unusual-appearing quasi-elliptical taper along the leading and trailing edges of a three-blade configuration that ended at the tip with a chord of only about an inch! Paul also pointed out that he had discovered that there was no significant difference in performance efficiency between a two- or three-blade propeller!

For any who would like to delve further into the field of aerodynamics and the technicalities of compressibilities, numbers of Mach, and Reynolds and Oswald Factors, Paul recommends the following literature:

"Theory of Flight," by Richard Von Mises

"Theory of Wing Sections," by Ira H. Abbott and Albert E. Von Doenhoff

"Aerodynamics for Naval Aviators," by H. H. Hurt, Jr. of USC

Then, for the highlight of the evening, Paul opened the hangar door and showed off his Model 235 Lanceair "N8PL", that was conveniently parked on the ramp, so we could see the unique three-bladed prop that he'd mounted on the front of the Lycoming O-235 L2C. Too bad that the demonstration was limited by darkness and he didn't demonstrate the sound of his air horn and many of the other mods and niceties he's designed and incorporated in the craft. He did point out many of the features and details of the heating and cooling ducting and drag-reducing fairings he's incorporated. Here's a partial list of his accessories:

Canopy-Mounted Solar Panel for trickle-charging the battery and/or running a cabin cooling-fan on the ramp.

The Innovative Warning Horn.

Unique Wing-tip Strokes with Solid State Life-Prolonging Flasher Circuits.

"EI Handy" Pilot Relief Tube.

Independent Dual Solid State Timing/Ignition Systems.

Harmonic Engine Impulse Balancer.

Capacitor Probe Driven Fuel Monitoring Warning Lights for Fuel Management.

Spring-Balanced Elevator Trim Control.

This certainly was a very educational, informative and interesting program and we extend the sincere thanks of the chapter to Paul (apl@surfari.net) for his excellent presentation.

PICTURES? We have some at the end of the Newsletter...

ADJOURNMENT: The meeting was adjourned to the refreshment bar at 20:47 to enjoy the lemon bars that Art brought from Mrs. Krueger's kitchen.

AROUND THE PATCH:

CHAPTER WIND TUNNEL - BIG TIME: The following e-mail message was sent to John Ready by "Countdown to Kitty Hawk" Project Director Randal Dietrich:

"Good of you to keep me moving. Sorry I have been slow to get back to you. Finishing up the million details - on a good note it looks like we have landed a documentary deal with the Discovery Channel (keep your fingers crossed). I do want to make the wind tunnel work. My budgets are adding up as do the details so I get a bit skiddish but your requests for reimbursement for crating and shipping and some insurance seems reasonable. I will have my assistant track down some numbers for me. I will need a couple more days - again sorry - but we should be in agreement hopefully in time for the newsletter and then certainly the chapter meeting."

STOP PRESS, 2/7/03 E-MAIL, DIETRICH TO READY

"John,

Ok, I would be very appreciative of the opportunity to make use of your chapter's 1903 Wind Tunnel for the Countdown to Kitty Hawk Tour. We will need to address expenses of crating, shipping and insuring. I would be happy to promote your chapter's leadership in this program. I would like to speak with you early next week to wrap up final details. Please provide a date and time that works best for you.

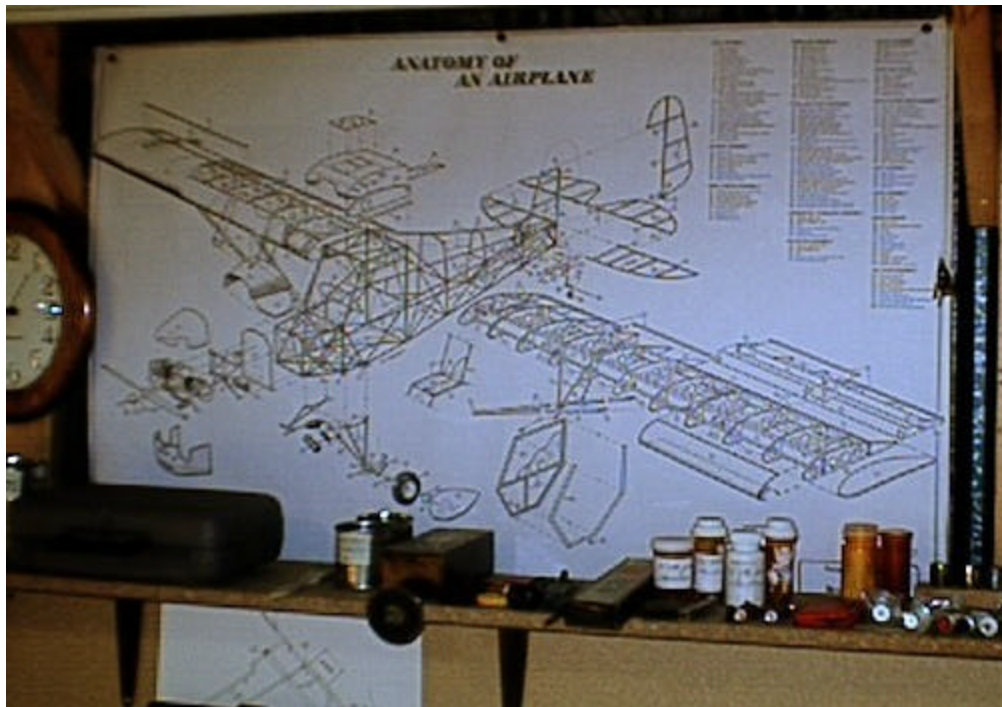
Randal Dietrich"

THE BIRTH OF AN AIRPLANE:

(the first flight of 7 Papa')

A few months ago some of our loyal members got a preview of a "soon to fly" project at SMX. Lou Biron invited us down to his hangar after one of our monthly meetings last year to see his craftsmanship and handywork that he has been doing for the last few years. We were all amazed and absolutely impressed when he rolled open his hangar door to reveal his Aircraft. This beautiful Yellow with black trim scaled down single place cub is actually an N3 Pup, weighs in under 254 lbs empty, and qualifies as an Ultralight. You might have seen Lou taxing around the hanger area with his cowling removed in the last few weeks. We are pleased to announce that they had their first flight a week ago January 27th.. Test Pilot, Pilot, Manufacturer and Aircraft are all doing just fine. "Phat Truck" Marlett, our local light wing loading expert, did the first flight around the pattern early one windless morning and then turned the Aircraft over to Lou for his first time in the sky with this new creation.

Congrats to you Lou !!!



LOU'S BIG PLANS



TAIL FEATHER CRITIQUE



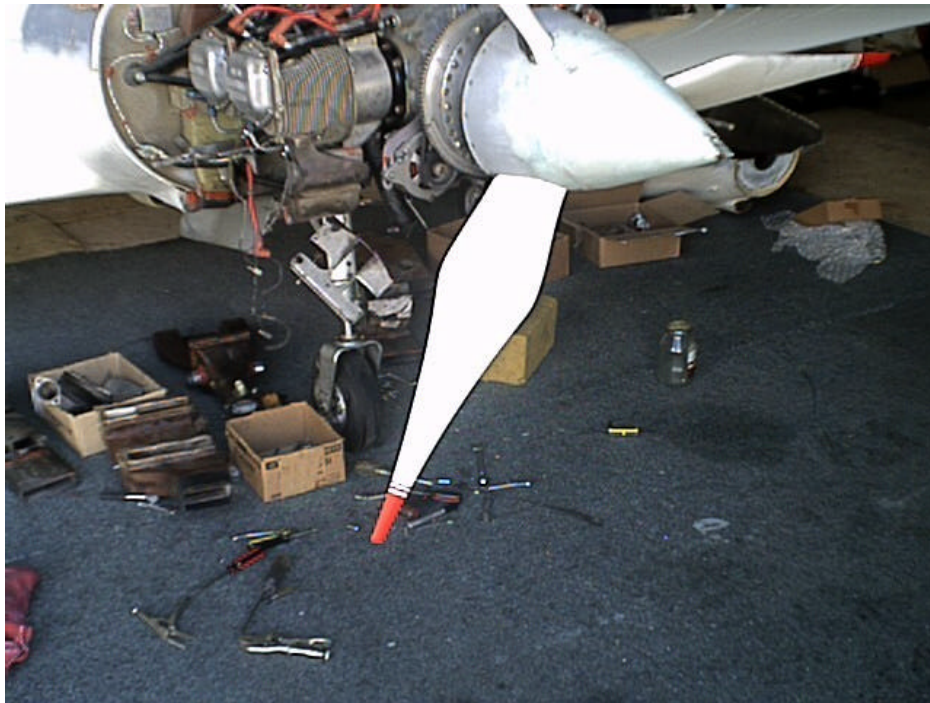
THE GO-JUICE TANK FITS HERE



LOU AND HIS N3 PUP



LOOKS GOOD FROM THE SIDE, TOO!



PAUL'S PROP



WINGTIP STROBE