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### Calendar of Events

#### Thursday, February 5, 2009

6:30pm – Hangar Flying, with Hot Dog dinner.

7:30pm - Meeting

Guest Speaker: David Cunningham, EAA 62 member and President of the San Francisco Branch of the Tuskegee Airman

#### Thursday, February 12, 2009

##### Board Meeting

7:30 PM in the conference room in the Terminal at Reid-Hillview Airport

### Flyouts

#### Saturday March 7

Flying Gourmets will fly to Hollister and meet at the Ding-a-Ling restaurant at 11 am. RSVP to flyrhv@aol.com or 408-828-6707. Inclement weather cancels the flight

**Where Do We Meet**

Victory Aviation  
 2502 John Montgomery Drive  
 Reid Hillview Airport  
 San Jose, CA 95148

**Newsletter Deadline**

Articles need to be submitted by the 15th of the month to be included in the next newsletter

# Andy's Lancair visits the factory



## It snows in Oregon!

See factory photos on page 2

## Upcoming Speakers

### March 5, 2009

*Mike Shiflett, CFII, Flight Examiner, Software Engineer: Funny Things That Happen on Checkrides.*

### April 2, 2009

*Todd Whitmer, Professional Aerobatic Pilot, International Aerobatic Champion flying an Edge 540.*

### May 7, 2009

*Bill Randolph, RV-8 Owner/Builder, will speak on "Touring the world in an RV-8"*

### June 4, 2009

*Hank Huddlestrom will talk about "Sixty-three years of Building & Aviating"*

### July 2, 2009

*Bryan and Sherrie Wood will talk about Flying their RV9A to the Bahamas*

### August 13, 2009

*Chapter members will reports on their AirVenture experience*

### September 3, 2009

*Dave Saylor, RV owner-builder, owner of AirCrafters at Watsonville*

### October 1, 2009

*Lee Behel, Lancair Pilot, flying at the Reno Air Races*

### November 5, 2009

*Jay Skovbjerg, will be talking about flying Solo to Alaska in a Cozy III*

### December 2009

*To be announced*

## Presidents Corner

By Andy Werback

Sure is nice to have sort of a quiet period over the holidays. Good news on gas prices coming down a bit, some nice weather (at least in the Bay Area), and lots of things to do. Whoops! It's deadline time again. Try to fire up Windows one more time and see if the DSL thing still works.

It was great to see everybody at the Chapter Christmas party. Hope you had a good time, as we did. Thanks to Loree and Harry Hirschman for being our guests and giving us some insight into what it's like being Navy carrier pilots. And many thanks to Terri, Barbara, Dottie and Kathy for organizing, preparing and decorating.

In the meantime, your Chapter officers have been busy getting things organized for 2009. We need your help on Young Eagles – specifically, we need a Coordinator and some people to help get out the word and share some of the load. The first YE event is just a few months away. And, we are starting to look for candidates for Air Academy.

Then, there is the new look for the Chapter web site that was introduced late last year, and hopefully another good year for the newsletter. Chapter finances are in good shape, and we have a pretty full schedule of guest speakers. Lots of work by our dedicated volunteers.

On a more personal note, Sam and I spent a week at Lancair in December, doing basic assembly on the new (old) Legacy kit. We got there just as the cold weather started (snow in Seattle and Portland? Yup). Every-day was a test to see if we could get to the factory over the icy roads. We came back on Dec 16 towing the fuselage and wings. More ice and snow, chewing up tire chains. I have no plans to do this again, but if we do, next time it will be in the summer! By the way, the Garmin 496 works great on the road too, along with XM weather for when you're driving.



It was a nice day when we got there...



Bonding a Legacy wing at the Lancair factory.



Attaching the fuselage to the center wing.



Closing out the tail.

## Presidents Corner *continued*



Sam applying BID strip to the wings

## What's happened to the Web?

### By Wolfgang Polak

If you've visited our Chapter web site recently you will have noticed a new look. The menu on the left has not changed and the picture of the week (contributions are welcome) is still where it used to be.

There is now a calendar on top of the page that shows the events of the current month. When you place the cursor on an event date a brief description will appear and clicking on the date field will get you to the full events calendar. Using the blue arrows, you can navigate to the calendar for the next or previous month.

The most important change is a list of site updates that is shown at the bottom of the main page. There



## What's happened to the Web? *continued*

is actually lots of information hiding on our site and from the web log it is apparent that hardly anyone ever looks at that or knows about it. So the point of the list of updates is to tell you whenever anything changes anywhere on our site. This could mean a new event announcement, a picture gallery, news story or anything else.

The updates are listed in reverse chronological order, i.e., the most recent update is on top. You can click on the icon on the left and jump directly to the page that has changed. Occasionally, an external link to a site of interest is shown here. Again, the icon on the left will get you there. Note that these external links will eventually disappear from the list. So if you want to go back there later, set a bookmark in your browser. If you find a site of interest to Chapter members, email it to your Webmaster and it will be shown.

The list of updates is also available as an RSS (Really Simple Syndication) feed. The link to the feed is shown at the bottom of the page. If you are using a feed reader, you'll know how to add a subscription. When you click on the feed link in Internet Explorer it will give you details about RSS feeds and offer to create a subscription. The Firefox web browser uses feeds to create Live Bookmarks that change as the feed contents changes.

As always send comments and suggestions to your Webmaster and keep your roster up to date.

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### Shop & Swap — OPEN

# Give Me A Brake!

By Dave VanDenburg EAA#559792, EAA Chapter 439

The brakes on our aircraft are something many of us take for granted, as they work good, and last a long time. Eventually however, the friction surfaces will wear out and must be replaced. This month I would like to discuss replacing the pads on Cleveland hydraulic disc brakes, which are very common on light GA aircraft and very popular with amateur aircraft builders. First though, lets examine how the system works.

The modern hydraulic disc brake assembly usually consists of a sliding piston, which fits into a housing and is sealed against leakage with an "O" ring. Fluid pressure in the brake system is created when the pilot presses on the brake pedal, and is transmitted through the brake fluid to this housing. That pressure is applied to one side of the piston, forcing the brake pad against a steel disc, which rotates with the wheel. A fixed brake pad is held against the other side of the rotating disc. This enables the two brake pads to squeeze the disc and the friction created converts the energy of the moving aircraft to heat energy, slowing the aircraft. Figure 1 is an exploded view of the brake assembly and disc.

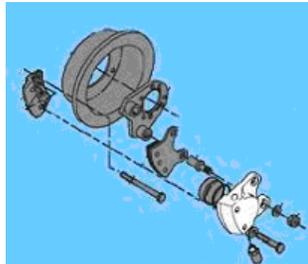


Figure 1



Figure 2

These brake pads, which are consumable, are riveted to steel backing plates, which are not. When the brake pads are worn out (usually considered worn out when the lining thickness is less than 0.10 inch thick), they can be removed from the backing plates and replaced with new pads. This involves driving out the rivets,

which hold the pads to the backing plates, and riveting new pads onto the plates. Before we can do that, however, we must remove the brake pads and backing plates from the aircraft.

Removing the brake pads and backing plates from the brake caliper assembly is very easy. First, remove the wheel fairing (if so equipped) so as to expose the brake assembly. Then, simply cut the safety wire and remove the two bolts holding the assembly together. Figure 2 shows a typical brake assembly and these bolts. Do not disconnect any hydraulic lines, as this is not necessary and will simply make a mess. It will also require "bleeding"

# Give Me A Brake! *continued*

the brakes and lines to remove any air that may be introduced. Remove the "fixed" backing plate (the one between the disc and the wheel), then pull the caliper slightly away from the disc and remove the "moveable" backing plate from the pins upon which it slides. You should now have two backing plates in hand.

Once the brake pads and backing plates are removed from the brake housing (which should remain connected to the aircraft by the brake line), we can remove and replace the pads. This is another of those jobs, which really require the proper tool.

Luckily, the tool is neither expensive nor hard to find. It can be obtained from any of our usual aircraft suppliers such as Aviall, Wicks, or Spruce. Figure 3 shows this tool, a new brake pad, and some rivets.



Figure 3

To remove the pads from the backing plate, put the tool in a vise, place the backing plate and pad in the tool (pad down), and use the punch supplied with the tool to drive the rivets out. Do this with all the rivets holding the pad to the backing plate. Figure 4 shows how this is done.

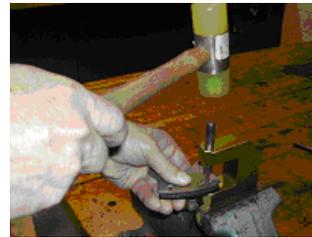


Figure 4

Once the rivets are all driven out, the pad can be separated from the backing plate, and we can rivet a new brake pad to the plate.

Riveting new pads to the backing plate is just as easy. Begin by placing the anvil (the little round piece that came with the brake tool) into the hole in the base of the tool. This gives us a firm surface against which we can set the new rivets that will hold the new pads to the backing plate. Then hold the new pad against the backing plate (the writing on the pad should be against the backing plate) and place a new rivet in the holes (lined up) of the pad and backing plate. The flat side of the rivet (manufacturers head) should be in the recess counter bored in the brake pad. Now place the brake pad and backing plate assembly over the anvil in the brake tool. The anvil should fit nicely into the counter bore of the brake pad and ride against



Figure 5

## Give Me A Brake! *continued*

the flat head of the rivet. Next we use the setting tool supplied with the brake tool to form the shop head of the rivet. Figure 5 shows this operation. We simply repeat the procedure for the remaining rivets and the pads and backing plate assembly are ready to reinstall.

Reinstalling the new pads and backing plate assembly is just the reverse of removing them. Put the moveable backing plate over the pins so the backing plate is against the piston and the pad faces the disk. Then hold the fixed backing plate in place (on the other side of the disc) and replace the bolts holding the assembly together. Be sure to properly torque and safety the bolts. The wheel should now turn freely with only a slight brake drag. Replace the wheel fairing (if so equipped) and most of the job is done. The new pads however, must be reconditioned prior to use.

Breaking in or "conditioning" new brake pads is easy but very important. The conditioning procedure will wear off any high spots and generate enough heat to create a thin layer of glazed material on the lining friction surface. To condition the lining, proceed as follows.

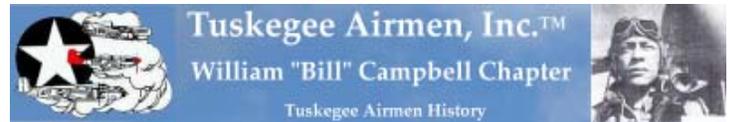
If you have installed non-asbestos organic linings (most common), taxi the aircraft for about 1500 feet with the engine set at 1700 RPM. While doing this, apply enough brake pressure to maintain a 5 to 10 MPH taxi speed. Then allow the brakes to cool for 10 to 15 minutes and do a static run-up. If the brakes will hold the aircraft at a high power setting, they are properly conditioned and ready for service. If the brakes will not hold the aircraft at a high power setting, allow them to cool completely and reaccomplish the procedure. Also note, in service, light brake usage may cause the glaze to wear off and thus require reconditioning, and this procedure may be done whenever necessary to restore effective braking.

If you have installed metallic linings, simply make two consecutive full stops from a speed of 30 to 35 MPH. Do not allow the linings to cool between these stops. Then allow the brakes to cool for 10 minutes and try a static run-up. If the brakes will hold at a high power setting they are ready for service. If they will not, allow the brakes to cool and repeat the above procedure.

This all sounds complicated but and once you do a "brake job" you will be amazed at just how easy it really is. As always, feel free to call or Email if you have questions. Also, I am available for an "over the shoulder" if you would like. After all, that is what Technical Counselors do! Till next month then, fly safe and keep the workshop warm.

## In the Right Seat

By Terri Gorman



Our speaker for February is David Cunningham, President of the William "Bill" Campbell Chapter of the Tuskegee Airmen and a member of EAA Chapter 62. I found it very appropriate to ask David to be my guest speaker for February because February is designated as Black History Month and because David's father was an original Tuskegee Airmen. David was born in Hawaii where his father, at one time, was stationed. There are many celebrations of Black History Month taking place in San Francisco on February 8<sup>th</sup>, and one of them is a tour of the USS Hornet where you can learn about the triumphs and challenges of the legendary Tuskegee Airmen. For exact times, please visit their website.



David is seen here at Reid Hillview Airport standing next to his Piper Warrior after giving a flight to the two recipients of the Tuskegee Airmen's Airplane Ride Raffle which occurred last summer.

Amidst the racial slurs during WWII, the first African-American fighter pilots were commissioned in 1941 to help defend distressed bombers in the European theater. These airmen were known as the Tuskegee Airmen, those forgotten pilots who fought with bravery and skill to save lives and prevent the loss of bombers to enemy fighters. Recognition of the abilities of these airmen came slowly. They were all black, graduates of the Army Air Forces Flying Training Program at Tuskegee, Alabama. The Air Corps reluctantly admitted the first black flying cadets in 1941 and like other black servicemen, they remained segregated throughout the war. Distinguishing themselves from other pilots, they painted the

## In the Right Seat *continued*

empennage of their P51C Mustangs red.



After our presentation by our speaker, David Cunningham, you, too, will walk away with a continued respect and honor for the Tuskegee Airmen. On Saturday, February 7<sup>th</sup>, Les Williams, original Tuskegee Airmen and founder of the William "Bill" Campbell Chapter of the Tuskegee Airmen, is scheduled to speak in the Hiller Aviation Museum at 11 AM.

All the Tuskegee Airmen were invited to the inauguration of our upcoming president. Captain Williams will be attending the event with his daughter.

### **EAA Chapter 62 Calendar**

As Vice President of the chapter, I not only replace Andy, our president when he's off flying his Lancair, I bring in all the speakers and I'm taking care of the Chapter Calendar. If you want to set up a fly out and/or have a speaker you would like me to contact, please let me know. The Chapter 62 Flying

Gourmets will fly to Hollister on Saturday, March 7<sup>th</sup>. We can tour the mini-museum after lunch. Meet at the Ding-a-Ling at 11 AM. RSVP to [lyrhv@aol.com](mailto:lyrhv@aol.com) or 408-828-6707. Inclement weather cancels the flight.

Impromptu flights happen at any time when the weather is good, I will contact you by email and/or give me a call. Anyone can lead a flight. With blue skies, high temperatures and fuel prices at \$3.50, Richard and Dottie Moriarity led a flight to Los Banos Airport where they met up with Gary Niva and passenger Roger Kopp in Gary's Bonanza; Allen Roark and his brother Eddy flew down in their Flight Design; Bob and I flew in our Warrior. Unlike our friends back at EAA National, we are enjoying great flying weather with temperatures hitting 80. Check out our website at [www.eaa62.org](http://www.eaa62.org) for all events.



## Bending Metal

By Roger Cole EAA #520298, EAA Chapter 153

I recently had to bend a piece of 0.063-inch-thick, 6061T6 aluminum that was almost 2 feet long. If you have ever tried to bend that thickness without a brake, you know how much it resists bending. Here is how I did it. The bend required a 3/16-inch radius to avoid cracking the metal. To make a bending form I routed a notch in the edge of a 2x6. A 3/8-inch diameter aluminum rod with screws at each end fits in the notch. I also cut the edge at an angle to allow for spring-back on a 90° bend. A second 2x6 forms a clamp for the metal. Next, I marked the area of the bend on the metal. The width of the bend is  $w = \pi \times \text{radius} / 2$  for a 90 degree bend. For a 3/16 radius the width is 0.29 inches. I also marked an alignment line 3/16 inch from the beginning of the bend, Figure 1.

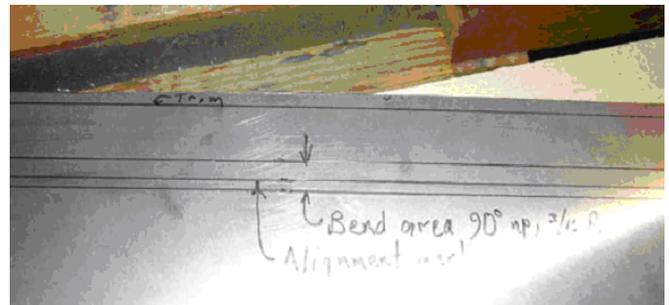


Figure 1

I clamped two small pieces of wood to the metal so the edges of the wood were on the alignment line, Figure 2. The pieces of wood are used to align the



Figure 2

metal with the bending form and will be removed later. The metal was set on the bending form so the two pieces of wood rest on the aluminum rod, and the vise was tightened. This procedure ensures that the aluminum rod touches the metal exactly on the line that marks the beginning of the bend.

With the metal clamped tightly in the vise, the two pieces of wood are removed. Two large C-clamps hold the ends of the 2x6s to keep them from spreading under the force of the bending.

A ratchet strap clamped to the top of the metal and

# Bending Metal continued

running to the back of the workbench starts the bend. A soft-faced, dead-blow mallet does the bending. Hit close to the bend and distribute the blows so the bend is uniform. Thin metal can be bent by hand



Figure 3

with the mallet used only enough to wrap the metal tightly around the aluminum rod.

If I were to do this again, I would laminate pieces of plywood together with glue to a thickness of about 2 inches. This would eliminate the tendency of the 2x6s to split along the grain

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Or to our website at [www.eaa62.org](http://www.eaa62.org)

Chapter Membership - \$30.00 Annually  
National EAA membership is required  
Chapter dues can be paid on-line with PayPal

**General Meeting: Thursday, February 5, 2009**

**Board Meeting: Thursday, February 12, 2009**

***February Speakers: David Cunningham, President of the Tuskegee Airmen,  
San Francisco Branch***

**Our meetings** are open to the public. EAA members, their GUESTS, AND VISITORS ARE ALWAYS WELCOME. Chapter 62 usually meets on the 1st Thursday of each month (the 2nd Thursday in August), at 7:30 PM. at Victory Aviation, Reid Hillview Airport, 2502 John Montgomery Drive, San Jose, CA 95148.

**Hangar Hour:** Come meet your Fellow EAAer's, make new friends, have some food, and enjoy the camaraderie. Food will be sold from 6:30: to 7:25 during which time you can "hangar fly." The meeting will start promptly at 7:30 PM.

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