



**Next Meeting: Thursday, February 19, 2009  
7:30 PM at the EAA 113 Aviation Center**

**EAA Chapter 113**  
Mark Freeland  
42636 Faulkner Drive  
Novi, MI 48377

# ***EAGLE'S PROPWASH***

February 2009 Issue



**CHAPTER 113**

***"The Backyard Eagles"***

.....  
Mettetal Airport (1D2), Canton, Michigan



If Shunsuke is in the pic, who's taking the photo??

Our Web Site: [www.eaa113.org](http://www.eaa113.org)

**Meetings: 7:30 p.m. the 3<sup>rd</sup> Thursday of each month at the**

***EAA113 AVIATION EDUCATION CENTER!***

[EAA113@yahoogroups.com](mailto:EAA113@yahoogroups.com)

## Member Services

**President:** Dave Buck (734) -4535375  
**Vice President:** Jim Trick (248) 766-2092  
**Secretary:** Bob Wagner (313) 274-8292  
**Treasurer:** Grant Cook (734) 223-2688

### Board of Directors:

Al Bosonetto David Forsman  
Pete Waters Bill Brown  
Mike Scovel Rick Titsworth  
Bob Skingley Tom Smith  
Joe Griffin Pat Charles  
John Maxfield Lou Lambert  
Barb Cook Sean Crooks  
Les Gallagher

### Membership Committee:

**-Roster:** Mark Freeland (248) 624-9654  
**-Dues:** Grant Cook (734) 223-2688

### Technical Counselors:

Joe Hillebrand (480) 895-6314  
Randy Hebron (734) 326-7659  
Pete Waters (248) 437-4244  
Dan Valle (313)-539-9818

### Flight Advisors:

John Maxfield (248) 348-1417  
Dan Valle (313)-539-9818

**Scholarships:** Howard Rundell (734) 658-7701

**Library:** Barb Cook (734) 277-3469

### Young Eagles:

Dave James (734) 721-4213  
Debbie Forsman (734) 397-3452

**Bald Eagles:** Mark Freeland (248) 624-9654

**Refreshments:** Joe Griffin (734) 455-3107

**Newsletter:** Sean Crooks (734) 516-9939

[Urcapt@hotmail.com](mailto:Urcapt@hotmail.com)

**Webmaster:** Paul Brent

[webmaster@eaal13.org](mailto:webmaster@eaal13.org)

### Aviation Center Management Committee:

Al Bosonetto (734) 261-5518  
Dave Buck (734) 453-5375  
Bill Brown (734) 420-2733  
Bob Skingley (734) 522-1456

## Mission Statements Chapter

*"EAA Chapter 113's major focus is on the relationships with people who have diverse aviation interests, centered around their love of flight, fellowship, learning and fun. Chapter members have a passion for flying and are willing to share it with others. Chapter 113 provides the opportunity for exchange of information as well as the interaction that leads to friendships that last a lifetime."*

## Board

*"The Board of Directors are to provide both advice and assistance to the chapter officers on an ongoing basis."*

## President's Podium



**Dave Buck (734) 453-5375**  
[dbuck19208@aol.com](mailto:dbuck19208@aol.com)

February 2009 Newsletter

February 21st is the *EAA 113 Frost Bite Chili Fly-in*. This is again the first fly-in of the year in Michigan and we need you to bring a large pot of your special recipe chili. A number of flyers were passed out at GLIAC, with a lot of pilots saying they plan on attending. Chapter 55 from Mason plans on making it a chapter outing and either flying or driving to 1D2. We should have a large crowd. Plan on attending for some hangar flying with some old and new friends. (Don't forget to bring chili.)

Invite your friends, neighbors, and family also. It is a great way to introduce them to EAA and the Backyard Eagles. Perhaps they might be interested in joining. You don't have to be a pilot or aircraft owner to be a member of EAA; you only need an interest in aviation.

Have you renewed your Chapter membership for 2009? Reminder letters are being sent out. Please return them with the \$35 dues to keep your newsletter coming.

The *Annual Awards Banquet* is swiftly approaching. March 21 is the magic date. Check elsewhere in this newsletter for complete details. Hope to see you there.

Know any kids ages 12 – 18 that are interested in aviation? Now is the time to sign them up for the *2009 EAA Air Academy* summer camp. Details are available at [www.airacademy.org](http://www.airacademy.org). Contact me for possible scholarship opportunities.

This month's speaker at the regular meeting will be Howell resident Duane Zemper. During World War II, Duane served as a

photoreconnaissance officer with the U.S. Army Air Corps. Perched with his camera over the bomb bay doors on B-17 missions, Duane survived harrowing flights and returned with stunning photographs of the air war. Duane will share these photos, and amazing stories of the courage displayed by the bomber and ground crews. Duane has been featured in several Michigan Television documentaries.

Dave Buck

## **Calendar of Events**

### **EAA 113 Frost Bite Flyin**

EAA Hangar Feb 21<sup>st</sup> 11am-3pm

### **Annual Awards Banquet**

EAA Hangar Mar 21<sup>st</sup> starts 6:30 dinner 7pm

### **Friday Night at the Movies EAA 113**

First Friday of the month 8:00am

### **Saturday Morning Breakfast**

Every Saturday 8:30am at the Coney Island on Lilley Rd. across the street from Mettetal airport.

**EAA 113 – YAHOO!** To access our YAHOO Group Site, go to <http://groups.yahoo.com/group/EAA113/> New users click “SIGN UP.” Already a member of a YAHOO Group? Click “JOIN THIS GROUP” You’ll have to sign in every time to access all the features. Contact Donna Monson for further information.

## ***PAULSON LIBRARY***

**Barb Cook (734)277-3469**

barb@armipay.com

February 2009

And who, exactly, is Katherine Stinson, you ask? She’s the lady who is pictured (in our Vintage Photo bathroom) standing in front of an airplane.

Want to know more? We now have a book telling her life story: learning to fly in the 1910’s, starting a flying school, mentoring her brother, Eddie Stinson, and eventually building Stinson Aircraft. Debra Weingarten’s book, “Katherine Stinson; Flying Schoolgirl” is now in our library on the 629.130 92 shelf.

If you’d rather re-live life as a carrier or fighter pilot, have a look at the 359.9 shelf where we have several diaries and first-hand accounts of this kind of life. The newest one is “No Easy Days”.

Here are the others:

- |                      |  |
|----------------------|--|
| 359.3.255.0973.20    | U.S. aircraft carriers in action (Warships ; no. 5)                          |
| 359.3 255 20         | Carrier warfare (New face of war)  |
| 359.32 McG 2004      | Midway Magic   |
| 359.8.3.20           | U.S. Navy ships and Coast Guard cutters (Naval Van Orden, M. D., 1921- / Van |
| Institute            | book for young readers)  |
| 359..83              | Wings over the sea : History of naval aviation, Wragg, David W.              |
| A                    |  |
| 359.9                | No Easy Days : Incredible Drama of Naval                                     |
| Aviation             |  |
| 359.9 4 092 Lin 1991 | Eighty knots to MACH 2 : Forty-five Years in                                 |
| the Cockpit          | Linnekin, Richard.   |
| 359.9 4 0973074      | Spirit of naval aviation : : National Museum of                              |
| Naval Aviation       | Goodspeed, M. Hill. / Rogers, E.   |
|                      | Information: 1st ed.   |

## Ann and Don Pellegrino

by Norm Donaldson

The Amelia Earhart talk at the 2008 Chapter 113 Annual Awards Banquet reminded me of some of the 1960's Chapter 113 Members. There was a group of four members who drove to chapter meetings together - Ann and Don Pellegrino of Saline, Stan Wallis of Ypsilanti, and Ed Leshner of Ann Arbor. Ann and Don both earned private pilot licenses and instrument ratings, with Ann adding those of multiengine and flight instructor. Don and Ann built a Smith Miniplane, which was painted black with gold trim.

In the early 1960s, the couple owned a Cessna 140, which was given its annual inspection by Lee Koepke, a mechanic at Willow Run Airport. In 1962, Lee mentioned that he was rebuilding the same type of airplane that Earhart had used on her attempted world flight in 1937 and asked if Ann would be interested in flying that route on the 30th anniversary of that flight using Lee's restored Lockheed 10A.

That Lockheed had been involved in a landing incident at Willow Run Airport in 1959 and Lee had been given the wrecked plane minus the engines, radios, and instruments. He took the fuselage, wings, and empennage to his quonset hut hangar on the airport and began the restoration of Lockheed N79237. The two largest repairs were the right wing spar and a gear pivot casting. The latter he had cast and milled since no replacement parts were still available.

The Lockheed was flying by the fall of 1966. Lee and Ann talked in January 1967 and agreed to attempt making the flight. The plane was equipped with extra fuel tanks (bringing the total fuel capacity to 600 gallons), radios, and other required equipment. The flight departed from Oakland, California, on June 6, 1967. Ann Pellegrino flew as pilot, Col. William R. Payne as copilot, William L. Polhemus as navigator, and Lee as owner and chief mechanic. The Lockheed flew east around the world, landing at all spots possible at which Earhart had landed. Finally, on the second day of July, the crew found Howland Island on which Ann dropped a wreath in memory of Amelia Earhart and Fred Noonan. Ann and her crew completed their flight,

arriving at Oakland, California, on July 7, 1967. Total fuel consumption was about 10,000 gallons for the 28,000 mile trip. The Michigan Legislature declared "Ann Pellegrino Day" for July 15th, and a parade was hosted by the town of Saline, Michigan, for the crew and their families.

In the spring of 1968, Lee sold the Electra N79237 (which had begun its flying career in 1937 for Air Canada Airlines as CF-TCA) to the Canadian Aviation Museum. Air Canada volunteers restored the Lockheed 10A to its original airline configuration

Ann and Don moved to Iowa in 1969 where Don taught at Iowa State University. In 1974 Ann was appointed to the Aeronautics Commission, the first woman thus serving in Iowa, and also to the Iowa Department of Transportation Commission, the first woman in the nation to serve in that capacity. She was inducted into the Iowa Aviation Hall of Fame in 1990, the Michigan Aviation Hall of Fame in 1991, and the Experimental Aircraft Association-Vintage Aircraft Association Hall of Fame in 1997. Her first book, *World Flight, The Earhart Trail*, was published in 1971. Volumes one, two, and three of her trilogy, *Iowa Takes To The Air*, were published in 1980, 1986, and 2005. Ann was inducted into the Iowa Women's Hall of Fame in 2001.

Don and Ann moved to Texas in 1998 and built a hangar and house at a residential airport. They own a Piper Arrow, a Piper Cub, and the only Fairchild XNQ-1 or T-31. Don enjoys working on antique and classic airplanes and is currently restoring a Rearwin 8090 with a 90-hp LeBlond engine. My wife and I visited them at their home in Texas on November 18, 2008. We had a great time discussing our past EAA friends and current projects.

Note: Ann has copies of her books for sale and will personally autograph them to a person, persons, or an institution. Norm Donaldson will have information available on the Iowa books and *World Flight* at the Chapter 113 meeting. There will be no shipping charges for Chapter 113 members.

## I Learned from THAT!

With an Experimental plane, we seem to be always able to “improve” the designs, by incorporating updates from the manufacturer or via the on-line groups. In my case, the AVID Forum and a newsletter from AVID UK, gave much help.

One worthwhile addition, is a LOW FUEL WARNING system, so let me back track and relate the need.

The Avid, like Kitfox and other experimentals, have dual wing tanks that feed down to a header tank, and from there to the engine. Usually, the header tank also acts as the lowest fuel level gas collator too. UK AVID described a system that triggered a warning light on the IP when there was a drop in the fuel level of the header tank. Their system used a refractive index sensor, which I used, but it was very easy to pop the LED and I now have a simple float switch mounted about 1 1/2 inches from the top.

With the system, it is necessary to bleed all the air out of the tank, using a valve, as the switch will indicate a problem when there is air in the header, particularly, when the fuel tanks are dry! My original header was a 2 in diameter tube with end caps and line fittings, which has been replaced with a 5 inch tube, that gives me almost ¾ gallon, to get to a safe landing.

Each wing fuel tank is made of molded polyester and fiberglass mat, with a sump that has the quick drain and an outlet with a finger strainer to the cabin fuel valve and then into the header. During use, loose glass fibers become trapped in the “O” rings of the quick drain, and it then leaks, so I have to empty the tank, remove the quick drain, clean and replace it. Each tank's sump has a 3/16” aluminum plate molded in, the threaded holes need a lot of sealing, and the outlet elbow screws into the finger screen. I used a pipe thread thick paste that is not affected by fuel and dried hard. I now use a non hardening type.

The Pre-Flight fuel test, checks that all fuel valves are on, samples the tanks and the gas collator, checks the that header bleed is

“overflowing”, and all is happy! The engine has a fuel pressure gauge, as the 912 has pressure carbs, and I also have a boost pump.

One day, here we go, flying around Novi, I noticed that the left tank had about 8 gallons, the right tank about 4, all hunky dory. As time went, I kept seeing the right tank get lower, but the left staying at 8! It's not unusual to get uneven use from the tanks, but this looked strange, and soon I became uneasy... and decided to go home. However, I suddenly had a sailplane, and had to thump it down in Northville Downs, (now marked as “Pete's Landing” on Welsh sectionals!)

For several years I have been convinced that I had missed the fuel tap on the left tank, during the pre-flight, and I still felt idiotic! Hence, a new larger header tank with the low fuel warning system.

The AVID was rebuilt with a stretched fuselage and engine testing completed. Now I needed to check the calibration of the wing tanks, as I had changed the floats in the indicators. I was pouring in a gallon at a time into the left tank, when the phone rang. I was keeping check on the gallons with washers in a cup, but when I came back my *partziemers* took effect, as I could not remember if I had already dropped one in, or was GOING to drop one in, to increase the count. Muttering bad phrases, I decided to start again, so turned on the drain of the header tank and opened the valve on the left tank. Guess what... no fuel coming out. Strange, must be a blocked line, so removed the rubber hose from the elbow in the bottom of the tank. Still no fuel! Heck, I'll poke it with a flexible wire... nothing. Hmmm, now I will have to empty is through the not so quick drain. This done, I removed the elbow together with the finger strainer, and then removed the latter from the elbow. BINGO!!!! There was a hard film of pipe sealer over the end of the elbow! That's what stopped the engine, not my possible pre-flight mistake! Too much thread sealer.

This has shown a flaw in my pre-flight list, which may also be a warning to other users of this type of fuel system. There was no step to verify that fuel actually FLOWED from the tank into the header! Now this step is to remove enough fuel from the header, by closing both tank valves, and opening the air bleed and gas collator quick drain on

the header, until the low warning occurs. I close the gas collator and I open each fuel valve in turn, and LISTEN FOR THE SPLASHING IN THE HEADER TANK. When the header fills, the low fuel warning should quit too. Needless to say, this is now in my pre-flight list.

I would suggest that your Pre-Flight Check List be examined by several members of your chapter, and even have someone run though an actual inspection. I look at this as another step in trying to get a higher confidence level in our planes.

Pete Waters N62PT

## EAA 113 ANNUAL AWARDS BANQUET

This year's Annual Awards Banquet will be "returning home" to our own Aviation Center on Saturday, March 21<sup>st</sup>, 2009. The gathering will begin at 6:30 p.m. with dinner being served around 7:00 p.m. Tickets are \$15.00 per person and must be purchased in advance from Debbie. This will include entertainment, dinner, dessert, coffee, and soda. (You may bring your own alternate beverage, if you would prefer.)

Today's economy has lead to scaling back on the fancy extras that have so often been a part of our banquet. The meal will still be catered by a local restaurant; however, we will not be adding the expense of a wait staff, renting round tables and place settings. We are fairly certain the food will taste the same on paper as it does on china! After all, it is truly the company of fellow aviators and their families which make this banquet such a special event.

We hope that everyone will be able to attend. The Awards Banquet is not only a chance to get together to eat good food, but a chance to celebrate! We have many members who have given a great deal of their time and talents to this Chapter. Also, there are several this year, which have made tremendous accomplishments on their projects or in aviation. Please consider joining us to *celebrate* with our EAA 113 "family"!

EAA Chapter 113

# Annual Awards Banquet

March 21st, 2009

"Returning Home"

to the  
EAA 113 Aviation Center  
Mettetal Airport

Gathering 6:30 p.m.

Dinner 7:00

p.m.

\$15.00 per person

*Includes dinner, coffee, soda, and entertainment.  
Bring your own alternate beverage, if desired.*

For tickets contact:  
Debbie Forsman (734) 397-3452



## 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.

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" 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.

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. 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 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 re-accomplish 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.

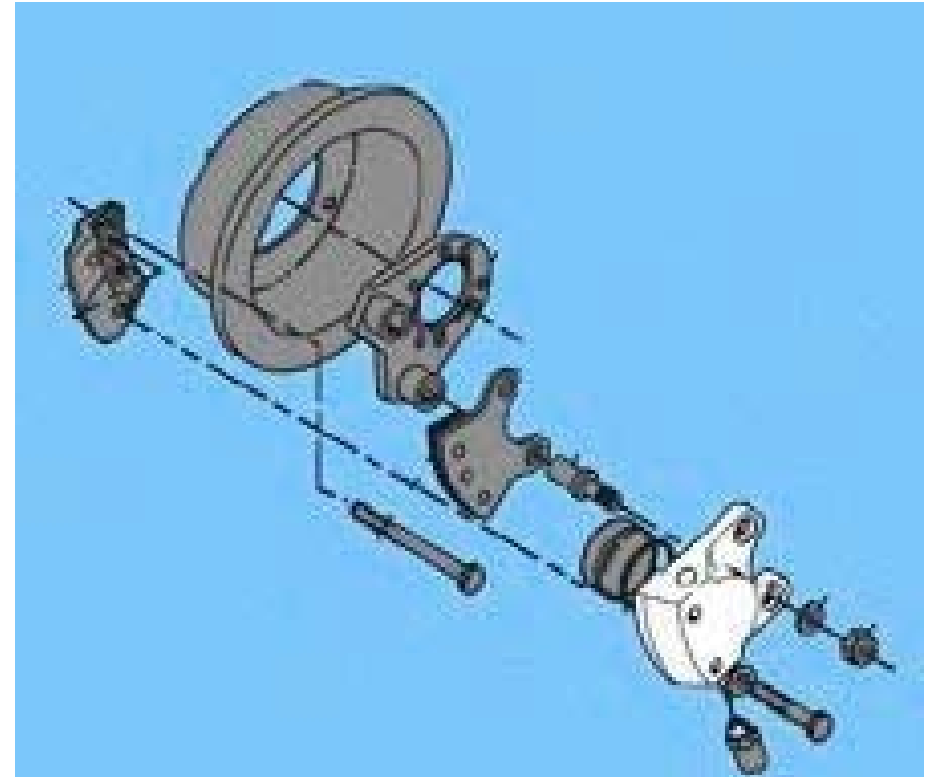


Figure 1



Figure 2



Figure 4



Figure 3



Figure 5



**EAA 113**

invites you to their annual:

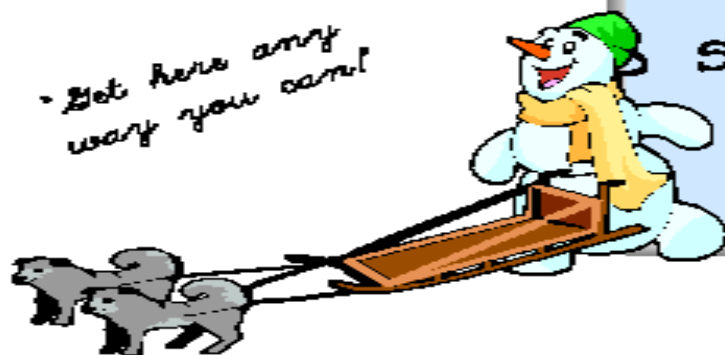


# FROST BITE CHILI FLY-IN

**Warm hangar, hot food and good company!**

Chili, Hot Dogs and Brats will be provided

*Get here any  
way you can!*



Saturday, February 21st, 2009  
11:00 a.m.-3:00 p.m.  
EAA 113 Aviation Center  
Metfetal Airport (1D2)

*Donations are accepted and kindly appreciated*

For more information visit our website: [www.eaa113.org](http://www.eaa113.org)