

EAA Chapter 113
Mark Freeland
PO Box 193
Keego Harbor, MI 48320

**Next Meeting: Thursday, February 17th, 2011
7:30 PM at the EAA 113 Aviation Center**

EAGLE'S PROPWASH

February 2011 Issue



CHAPTER 113

"The Backyard Eagles"



Ready For Spring

Photo courtesy of Shunsuke Shibata

Our Web Site: www.eaa113.org EAA113@yahoogroups.com
**Meetings: 7:30 p.m. the 3rd Thursday of each month at the
*EAA113 AVIATION EDUCATION CENTER!***

Member Services

President: Tom Smith (734) 748-7940
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
 Scott Hebron Patrick Hebron

Dave Buck

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

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Webmaster: Donna Monson

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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.

Calendar of Events

February 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	1	2	3 7:30p Homebuilder's Project Corner	4 7:30p Friday Night Movies	5 8:30a Breakfast at Coney
6	7	8	9	10 7:30p Safety meeting	11	12 8:30a Breakfast at Coney
13	14	15	16 1p CCHA Meeting	17 7:30p EAA 113 Chapter meeting	18	19 8:30a Breakfast at Coney
20	21	22	23	24 7:30p EAA Chapter 113 Board Meeting	25	26 8:30a Breakfast at Coney 11a Frostbite Chili Fly in
27	28	1	2	3 7:30p Homebuilder's Project Corner	4 7:30p Friday Night Movies	5 8:30a Breakfast at Coney

WANTED!

EAA Chapter 113's Golden Anniversary is approaching fast and we're working on a project for the celebration.

We're looking for someone that has kept all or most of their EAA Chapter 113 Newsletters.

The more you have, the older they are, the better! Don't be shy, and don't forget to ask someone that's no longer a member or might not be on this newsgroup.

Please contact John Maxfield or Debbie Forsman if you can help us with this project.

Thank you

EAA CHAPTER 113 2011 AVIATION STUDIES SCHOLARSHIPS

EAA Chapter 113 Board of Directors has approved two, one thousand dollar (\$1000) scholarships for the 2011 Aviation Studies Scholarship program to be awarded to qualified local graduating high school seniors, college students or students attending the Michigan Institute of Aviation and Technology who are or will be enrolled in an aviation major curriculum.

Recognizing the EAA's primary interest in promoting sport aviation, the applicant eligibility criteria again includes high school graduates twenty-five years old or younger as of April 8, 2011 regardless of their course of post high school studies who are active flight students at an approved flight training facility and who have completed their first solo flight. The money if so awarded would be directed specifically at the continuation of the scholarship recipient's flight training.

In its twenty-third year, the EAA Chapter 113 program has awarded approximately twenty-three thousand five hundred dollars (\$23,500) to forty individual scholarship winners since the first awards were made in 1987. (Early records are incomplete) This is great testimony to the Chapter's dedication to the promotion of sport aviation and aviation careers among local area young adults.

The Chapter's membership is the best source of candidates. Members should consider it a mandate to be at the forefront in actively promoting aviation careers and sport aviation, encouraging young aviation-minded men and women to apply for the 2011 scholarships. A copy of the member sponsored scholarship application appears in this month's newsletter.

If you have any specific questions, please contact Scholarship Chairman Howard Rundell at 734 658-7701 g5av8or@aol.com or any Chapter Officer.



Tom Smith (734) 748-7940
tgsmith398@comcast.net

President's *Podium*

Chapter 113's fiftieth anniversary is this year. Save Friday, April 29th on your calendar. We will be having a dinner in recognition of the event, with EAA President Rod Hightower as our guest speaker. Dinner will once again be at the EAA Aviation Center hangar, and the tickets are available from Debbie Forsman. Watch our website for details.

Coming up on February 26th is our annual Frostbite Chili Fly-in. I know everyone has a favorite recipe, so be sure to bring a pot of your special chili. Make sure to invite your friends and neighbors to come as well to enjoy the food and learn about both EAA and the Backyard Eagles.

Have you renewed your chapter membership yet? Reminder letters are being sent out to those who haven't. Please return the letter with your \$35 dues to keep receiving your newsletters.

If anyone has a project or a new plane, please send in pictures and a brief description to our Webmaster at webmaster@eaal13.org, or to Pat Charles, our newsletter editor, at patrick.charles@michigancat.com.

Have you looked at our website lately? (www.eaal13.org). Donna has been doing a terrific job with it. Don't forget to check the site for what is showing at Friday Night at the Movies. The movie will be listed if we are able to decide ahead of time what it will be. We are always open for suggestions.

There are three simple rules for making a smooth landing. Unfortunately, no one knows what they are.

Tom

Paulson Aviation Library



Barb Cook (734) 277-3469
barb@armipay.com

A RANDOM LOOK AT OUR 358.4 SHELVES will reveal books on military aircraft with boxes labeled by country and manufacturer.

So here's what's in U.S.-GRUM box:

- A-6 INTRUDER in action (Squadron/Signal #138 by Joe Michaels
- GRUMMAN A-6A Intruder & EA-6 Prowler (Profile Aircraft # 252) by Kurt H Miska
- F4F WILDCAT in action (Squadron/Signal #84)
- Grumman F4F-3 Wildcat (Profile #53) by Frank L. Greene
- GRUMMAN BIPLANE FIGHTERS in Action (Squadron/Signal #160)
- GRUMMAN F8F-3/5 HELLCAT (Arco/Aircam #23)
- Supplement to GRUMMAN TBF/TBM Avenger (by B R Jackson)
- GRUMMAN (Eastern) TBF (TBM) Avenger (Profile # 214) by Rene J Francillon.
- Grumman F8F Bearcat (Profile # 107) by Hal Andrews
- Grumman F3F Series (Profile #92) by Benton Reams

** Of course there are many other books and portions of books on Grummans in our library - Oversize Shelf, Series Books, R/C Modeling books on 797.1 shelf, and more....

Members can use either of the 2 computers by the windows, open "Resource Mate-Patron Search" and search by author, title, subject, or keyword.

Happy Reading during those un-flyable days of winter...

Barb

Part III in a 5 part series:

low viscosity," he says. "When it gets hot, it vaporizes quickly. I'd expect it would all be burned out after a few hours of engine running time." The phosphorous additive, he says, is a good extreme pressure (EP) lubricant that would allow normal oil treated with MMO to perform well in standard industry friction tests like the Falex four-ball test.

Recommendations

First off, the stuff is illegal in Normal category airplanes, so we can't tell you to use it. But of course MMO is entirely legal in Experimental aircraft. So, assuming you have a Glasair or Eagle with a standard aircraft engine (wink, wink), here's our opinion:

We see no evidence that Marvel Mystery Oil can do any harm if used as directed. The one potential problem might be dilution of viscosity when added to the crankcase. If you run straight 30-weight oil, a 20 percent mixture of Mystery Oil would reduce viscosity to about 25—too thin for hard use in hot weather. On the other hand, Mystery Oil would help winter starting by reducing viscosity.

If you add Mystery Oil to the crankcase, particularly in the summer, make sure you have sufficient viscosity in your regular oil, and consider dropping the concentration of Mystery Oil to 10 percent.

Because it has no dispersant to hold dirt and sludge in suspension, Mystery Oil would dilute your oil's capacity to do so. This would seem to run counter to Mystery Oil's purported engine-cleaning role.

In old, dirty engines, be very cautious when adding MMO to the crankcase. Its detergent effect can break loose great globs of carbon and sludge that could block the oil screen and cause oil starvation. Follow the example of one of our readers and change the oil and filter and clean the screens every three to five hours until the sludge is removed.

As for Mystery Oil in the fuel, we got one report of a leaking fuel seal in an

Probing the Mystery

Since Marvel Oil Co. wouldn't tell us what Mystery Oil actually is, we sent a sample to a petroleum analysis laboratory operated by Bel-Ray Company, a marketer of synthetic oils for aircraft and automotive use. Here are excerpts from the report:

Marvel Mystery Oil is a light-viscosity naphthenic oil (less than a 5W), with about 20 percent solvent (probably mineral spirits, although this is difficult to determine for sure), dye, and 790 ppm of phosphorous additive.

It is the phosphorous that presumably provides the "protection against scoring or seizure" that is claimed on the packaging. It is a well-known fact that phosphorous will help in the prevention of scoring. And, indeed, tests showed that the addition of between 10 and 20 percent of Marvel Mystery Oil did not hurt any friction prevention characteristics of several oils tested (Aeroshell, Phillips, Amsoil and Bel-Ray). It did not improve anti-friction performance, however, since all of the oils tested already contained phosphorous.

Along with the low-viscosity oil itself, Marvel Mystery Oil is about 20 percent solvent. At low temperature, this will provide a measure of cleaning and sludge prevention.

Marvel Mystery Oil contains no dispersant to hold dirt in suspension. A 20-percent solution of Mystery Oil in normal aircraft oil would therefore dilute the dispersant in the oil by 20 percent.

Claims for improvement in viscosity index (an oil's resistance to viscosity changes with temperature) are laid to rest by checking the viscosity index of Marvel Mystery Oil itself. It is 101, about the same as most single-grade oils, and well below that of multi-viscosity aircraft oils, which range from 140 to 200. The addition of Mystery Oil would dilute the viscosity index of a multi-viscosity oil, thereby making it less resistant to viscosity changes with temperature.

Four point was measured at -43 degrees F., not the -60 degrees F. claimed on the can.

Viscosity at 100 degrees F. is 63.1 SUS. At 210 degrees F., it is 35.4 SUS. This is roughly equivalent to an SAE 3W.

We called Marvel and asked for a comment on this lab report. At first, Marvel president John Gardell said that there was in fact no phosphorous in the formula, and that its viscosity was roughly equivalent to SAE 8W. Then, conceding he was no chemist, Gardell asked us to send a copy of the report so that Marvel's technical person could respond. We sent a copy, but at press time no response had been forthcoming.

AA-1 after mixing MMO in the fuel. However, as with its benefits, there's no way to prove a direct cause-effect relationship. And the user concedes that he put a quart of MMO in with about 20 gallons of fuel—four times the concentration recommended by Marvel. A Marvel spokesman said that Mystery Oil does contain a solvent, and a high concentration might cause a leak in a defective seal.

It looks to us like Mystery Oil does indeed have an engine-cleaning effect. (Nothing much mysterious about that; solvent is a major component of MMO.) The evidence sug-

gests that Mystery Oil can free stuck rings and valves under certain conditions. If you suffer from these symptoms, it couldn't hurt to try some Mystery Oil in the crankcase before resorting to expensive repairs. And owners of engines prone to valve-sticking (in other words, any small Lycoming) might consider using Mystery Oil prophylactically—taking note of the aforementioned cautions about viscosity dilution and sludge accumulation, of course.

For hot running engines that tend to have valve and cylinder problems—the Continental TSIO-360 and TSIO-520, for example—some Mystery

You are invited to EAA 113's 50th Anniversary!

This spring we will be celebrating fifty years as a Chapter of the Experimental Aircraft Association. A fabulous catered banquet is being planned to celebrate this milestone. It is an honor to announce our guest speaker will be the President of EAA, Mr. Rod Hightower. In addition to our look back into the past fifty years, Rod will help us get a glimpse into our future. We hope you can join us for this very special evening.

This event is expected to have an overwhelming response. Tickets will be on sale beginning at our January 20th meeting. Please plan on purchasing early as space is limited and tickets will be on a first-come, first-served basis. We hope you can celebrate with us!

When: Friday, April 29th, 2011

Where: EAA 113 Aviation Center

Time: Cocktails 6:30 p.m. (bring your own)

Dinner 7:00 p.m.

Cost: \$30.00 per person

Attire: Semi-Formal

For tickets and questions: Contact Debbie Forsman (734) 397-3452

Builder's *Barn*

JODEL D92 LANDING GEAR

by Pete Waters

Walking around the Jodel belonging to Renee, I was very puzzled to notice that the two main legs on the Jodel were cambered. That is, the axles are not parallel to the ground.

The Jodel D9 was designed in the years following WWII, as the VW engines were "asking" to be used to power a small plane.

As the airstrips were mostly grass, it was a design feature to camber the axles away from horizontal and the D92 has its axles at 9 degrees off horizontal. My question has been "Why?".

Well, Renee enlightened me when he moved the plane away from his hangar.

He raised the tail, and it rolled smoothly, and easily, then he explained the axles give the gear a lot of toe in with the tail wheel down, and it was a low cost braking action. On his plane, he has added a brake to the tail wheel, so that it is even more held on low power.

I decided to change the configuration to something more modern, like disc brakes! This meant cutting off the welded axle ends, and making a fitting to take the new axles. This was carved out of a slug of 4130, 2 inches square and 3 inches long. I sure am glad I have the small cheap vertical mill!

These were welded into the empty legs, which were vertical to the ground, and the replacement axles bolted on. The brake plate is part of the axle assembly, and the top locked to the leg with a 1/4" x 28 bolt. I also added side plates to mount the projected wheel pants, and, whoopee the wheels fit very nicely and I am making the wheel pants down here this winter.

I will make toe brakes, and add parking brake controls too, being used for drag cars, and placed in line of the individual brake lines. The action will be to push down on the toe brakes, then hold and push in the parking brake controls. To unlock is another press of the control knobs.

Nice and warm in Florida



Jodel landing gear.

