

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

Next Meeting: Thursday, January 20th, 2011  
7:30 PM at the EAA 113 Aviation Center

# EAGLE'S PROPWASH

January 2011 Issue



CHAPTER 113

*"The Backyard Eagles"*



Christmas

*Photo courtesy of Shunsuke Shibata*

Our Web Site: [www.eaa113.org](http://www.eaa113.org) [EAA113@yahoogroups.com](mailto:EAA113@yahoogroups.com)  
Meetings: 7:30 p.m. the 3<sup>rd</sup> 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

**Newsletter:** Pat Charles (248) 978-3772

[bittybipe@wideopenwest.com](mailto:bittybipe@wideopenwest.com)

**Webmaster:** Donna Monson

[webmaster@eaal113.org](mailto:webmaster@eaal113.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.”*

## Calendar of Events

### January 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30 7:30p EAA Chapter 113 Board Meeting Cancelled	31 New Year's Eve	1 New Year's Day
2	3	4	5 7p Midwest RC	6 7:30p Homebuilders Project Corner	7 7:30p Friday Night Movies	8 8a Great Lakes International Aviation Conference at EMU 8:30a Breakfast at Coney 1p 99's
9	10	11	12 7:30p Ford Eagles	13 7:30p Safety Meeting	14	15 8:30a Breakfast at Coney 1p Tim Krause
16	17	18	19	20 7:30p EAA 113 Chapter Meeting	21	22 8:30a Breakfast at Coney
23	24	25	26	27 7:30p EAA Chapter 113 Board Meeting Cancelled	28	29 8:30a Breakfast at Coney
30	31	1	2	3 7:30p Homebuilder's Project Corner	4 7:30p Friday Night Movies	5 8:30a Breakfast at Coney

## Paulson Aviation *Library*



Barb Cook (734) 277-3469  
[barb@armipay.com](mailto:barb@armipay.com)

SO YOU WANT TO DESIGN YOUR OWN PLANE?  
OK- We've got some books you might find useful:

**Designers & Test Pilots** by Richard P. Hallion (SERIES: Time-Life: EPIC OF FLIGHT) 1983 Shelf no: 629.134 1

This is an historical and pictorial approach, and might be a good introduction to the subject.

**Design For Flying** by David B Thurston, Aeronautical Engineer. 1978. Chapters on Basic Design, Loads, Utility, Configuration, Crosswind Handling, Takeoff & Climb, Stability, Approach Conditions, Weight & Useful Load, Performance, Power plant, Airframe Design, Landing Gear, Seaplanes, Finish, Certification. With an index, and many charts, this is a good overview.

**Dan Raymer's Simplified Aircraft Design for Homebuilders**, 2003. 143 pages. Shelf number 629.134 1 RAY. Topics: You want to Design a Homebuilt, How big, Stuff in some Stuff, Draw a Smooth Outside, Safety, Analyze it, Range & Performance, Make it Better. Contains Appendix of Standard Charts, Abbreviations, Index, and References. This is 30 years newer, and written with a bit of humor. I liked the way he had the charts organized at the back of the book.

I welcome any of you would-be designers to read these and give us some critical feedback.

Barb

## President's *Podium*



Tom Smith (734) 748-7940  
[tgsmith398@comcast.net](mailto:tgsmith398@comcast.net)

Happy New Year, everyone. I hope everyone had a great holiday season, and here is looking forward to a prosperous year ahead.

Last month's chapter Christmas dinner was a great success, and was attended by many friends and guests. I want to thank Lou for cooking the turkey and everyone who helped by brining a dish or a dessert. I also want to thank those who were there to help setup the hangar and clean up afterward.

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. Watch our website for details.

Attached to this newsletter is information on the Chapter 113 Experimental Aviation Association Aviation Studies Scholarships. Applications have been distributed to local schools and colleges, however, chapter members may also sponsor candidates from outside the local school district. It would also be helpful if members could visit with the school counselors and talk about our program as well.

EAA Chapter 77 from Flushing is planning on taking a bus to the Wright Patterson Air Force Museum on February 26th. They are planning on making a stop in the Brighton area to take on passengers from this area who may be interested in going. See the attached flyer for more details.

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

Tom

## 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](mailto:g5av8or@aol.com) or any Chapter Officer.

## Part II in a 5 part series:

anti-icing agent, Alcor TCP anti-lead agent and Microlon Teflon engine treatment are probably the best-known examples), but these approvals are only an assurance that the stuff won't be a safety hazard. The FAA makes no assurance that the additives actually work. (Prist and TCP are well-accepted and usually do their jobs as claimed, but the benefits of Microlon are open to debate.)

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### The Mystery History

Marvel Mystery Oil was formulated shortly after World War I by an automotive engineer named Burt Pierce, the man who invented the Marvel carburetor. (The Marvel carb was the standard automotive carburetor of the time, and its heritage lives on in aviation today in the form of the Marvel-Schebler carburetor, the standard aviation carburetor of our time.) General Motors bought the rights to the Marvel carburetor and then hired Pierce as a consultant.

The Marvel carburetors were susceptible to clogging by lead and contaminants, so Pierce cooked up a mixture of light oil and various chemicals to clean out the carburetors. At first, it was used only around GM plants in company test cars. Pierce, a marketing genius even then, refused to tell his co-workers what the stuff was, and it soon became known around the GM factories as Burt Pierce's mystery oil.

In 1923, Pierce went out on his own and incorporated as Marvel Oil. He began selling his "mystery oil" in a distinctive red and black can that claimed it was ideal "for crank case, for transmission, for springs, for motor valves." It was claimed to be a universal lubricant and cleaner, "one for all, and all for one."

### Few Changes

Neither the formula nor the can has changed much since. For half a century Marvel was a family company, owned by Pierce and his descendants. For years, Marvel had its own chemical laboratory, research facility and even a test track out back of

The  
Aviation  
Consumer  
September 1,  
1987

the small factory in Port Chester, New York. Sales grew steadily over the years, and the product became a fixture in gas stations around the country.

In 1984, three long-time Marvel executives bought the company (and the secret formula, of course) from the Pierce family. By then, the labs and the test track had disappeared, and the company was buying all its raw materials from the big oil companies like Exxon and Lubrizol. Marvel today is actually nothing more than a blender, packager and marketer.

The company is almost as mysterious about its financial matters as it is its formula. When an *Aviation Consumer* reporter asked Marvel marketing v-p Joe Howard how much business the company did, he leaned back in his chair, looked over at a huge stuffed sailfish on the office wall, named a very substantial number in the low eight figures, and then immediately said, "But of course you can't print that."

Howard has no idea how much Mystery Oil is sold for aircraft use. "The first thing I want to say is that it is not approved for aircraft, and we do not endorse it for aircraft." Lycoming orders a few cases now and then, says Howard, but he doesn't know what they use it for. "Nobody wanted to talk about it."

### No Proof

Marvel has never done any real engineering tests to document Mystery Oil's claimed benefits. "That sort of testing would be very difficult to do," says Howard. "I can't show you any documented proof that Mystery Oil works."

What Marvel does do well is to market. The name and the art-deco can design have a magical appeal that the current management is smart enough not to tinker with. "The name plays a very, very big role in the the success of Mystery Oil," concedes Howard. "And to change the design of the can would be a catastrophe. A long-necked plastic bottle and a high-tech name would ruin the image."

Howard also credits STP impresario Andy Granatelli with making "snake-oil" additives legitimate. "I loved Andy Granatelli. By spending so much on advertising, he single-handedly made the public aware of additives. We rode on his coattails." Marvel does spend about \$1 million a year on advertising, mostly in co-op advertising with big retail outlets like Sears and K-Mart.

Whatever Marvel Mystery Oil's secret—a good product, a tantalizing name, a pretty can—its success is astonishing. According to Howard, sales have increased every year since 1923.

### Solving The Mystery

Here's the big question, of course: Just what exactly is Marvel Mystery Oil? What's the marvelous mysterious ingredient that has kept customers coming back for 70 years?

We put that question to Howard, and he smiled the weary smile of a man who's heard the question before. "I'm afraid we don't release that information," he said. "It's a Coca-Cola type secret. I can tell you that the basic formula hasn't changed since 1917, and that we start with a high-grade refined oil, a light lubricating oil like Exxon's Varsol 18. In addition, there are six or eight chemicals in the formula that I'd rather not discuss."

That answer wasn't good enough for our doggedly curious editors, however. So we bought a can of MMO and shipped it to an independent chemical lab for analysis. The full text of the lab report appears nearby, but here's a summary: essentially, Mystery Oil is nothing more than a very light naphtha-based oil (about SAE 5 viscosity) plus a solvent, mixed with red dye, wintergreen for smell and 790 parts per million of phosphorous. There were no detergents or dispersants or any other additives in the sample we tested, according to the lab.

According to Bob Yosco, a petroleum chemist and the man who did the analysis, naphtha-based oils are clean-burning. "A light oil like that has a detergent action by virtue of its

# Builder's *Barn*

## YA GOTTO MAKE THE DONUTS!

by Pete Waters

One of the difficult tasks in home building aircraft is making Rubber Donuts for engine or landing gear shock mounts. I had this problem with replacing the engine mounts on my Avid, and making new ones for the present project, the Jodel D92.

1. Vist the local supplier of sheet rubber, and buy a chunk of the suitable thickness you need.

I always visit Plymouth Rubber and Transmission, one street north of Joy and the airport.

They are extremely helpful and carry all kinds of rubber sheeting, steel, pressure hoses, belts and brass fluid fittings and taps. Their prices are very reasonable too!

2. Use the hollow punch you bought as part of a set, many years ago from Harbor Freight, and punch center holes for the donuts.

3. Make a false center to fill the hole, matched to the drill used in the next step.. I made mine from an aluminum rod, and drilled the center hole in my lathe. This fitting needs to be a sort of loose fit on the drill, and full depth of the rubber sheet.

4. Use a hole saw of the correct or slightly oversize diameter of your donut. Drill/cut the donuts slowly, right through the sheet, using a wood backing to drill into.

5. As my center holes were ½ “ diameter, I next used a short length of same diameter dowelling, or any tube or rod. This is used as an arbor to hold the donut against the sanding disk, and letting it spin freely. The trick is to position it so that the disc cust down and across the donut’s edge, so it will spin it and trim to size. I used this with a fixture in woodshop, to make wheels.

6. This should give you a nice rubber donut, or if a bad one, a practice hockey puck!





## CHAPTER 113 EXPERIMENTAL AIRCRAFT ASSOCIATION 2011 AVIATION STUDIES SCHOLARSHIPS

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EAA CHAPTER 77  
DALTON AIRPORT (3DA) FLUSHING MICHIGAN

**Special Event**  
**Saturday, February 26, 2011**

**Deluxe Motor coach trip to visit the  
UNITED STATES AIR FORCE MUSEUM  
DAYTON, OHIO**

**Includes Special on WPAFB visit to the  
PRESIDENTIAL AIRCRAFT GALLERIES**

Proof of US Citizenship required, (passport, drivers license, State ID card )

**Cost \$40.00 per person**

**Itinerary**

- 0530 Depart 3DA Dalton Airport EAA 77 Chapter parking lot.  
Coffee and rolls served**
- 0830 Rest Stop, Ohio**
- 1030 Arrive USAF museum and escort onto Wright  
Patterson AFB to Presidential Aircraft Galleries**
- 1200 Return to USAF Museum, Lunch in Cafeteria and visit  
USAF Museum**
- 1500 Load Motor coach for return**
- 1630 Rest Stop, Ohio**
- 1730 Dinner Stop, Toledo, OH.**
- 1830 Resume return trip**
- 2030 Arrive 3DA**

**CONTACT**

**Dan Willoughby 810 513 3917 or [homeport6@aol.com](mailto:homeport6@aol.com)**

**Gary Hopcraft 810 348 5968 or [ghoppcraft@comcast.net](mailto:ghoppcraft@comcast.net)**

Please make contact as soon as possible but no later than January 31, 2011  
Manifests must be provided to USAF for entry onto WPAFB  
Please provide name, address, birth date and type of proof of citizenship