



## USING A DYNA-VIBE PROPELLER BALANCER

by Dave Amsler

The rubber engine mount bushings for my CAE 3300 engine (an improved Jabiru) were getting soft and the engine was sagging. After having gone through two sets of the Jabiru bushings in seven years and having an unused set of Sonex supplied bushings, I decided to give those a try. The Sonex bushings are of a higher durometer (stiffer) rubber than the Jabiru bushings.

When those were installed the vibration transmitted to the airframe was noticeably higher. I have an auto compass mounted on the glare shield, and the higher vibration level was causing it to rotate aimlessly. Time to balance the prop.

I had seen some favorable comments on the relatively inexpensive DynaVibe Classic balancer kit. So I ordered one from Aircraft Spruce and it arrived 2 days later, standard free shipping.

The DynaVibe comes in a nice case and the manual is very simple, straight-forward and not at all technical. It is intended for an average person who does his or her own maintenance work. The kit consists of a hand-held monitor

**Continued on next page.**

## WHATTIZIT?

Vet Thomas is at it again. He brought this exquisite new piece to the BART session recently. As usual, the craftsmanship is beautiful.

Can you guess what it is, how it works, and for extra points, what airplane it will fly in? Hint: it is of course WWI-era vintage. Answer elsewhere in this newsletter.



## NOTICE OF ANNUAL MEETING OF EAA CHAPTER 44

The 2019 Annual Meeting of EAA Chapter 44 will be held on Tuesday November 19 at 6:30 PM at the Sport Aviation Center of Western New York, 44 Eisenhower Dr, Brockport NY 14420, at Ledgesdale Airpark. Voting for 5 open positions will occur.

**Dyna-Vibe continued**

unit with 30' cables, an accelerometer and a photo-eye. There is an optional mount for the accelerometer and photo-eye that is intended for conventional Continental and Lycoming engines but they did not look suitable for my CAE/Jab engine. So I made one.

I got a bit carried away with machining the mount and made one from solid block of aluminum that clamps to the engine without the need to disturb any bolts on the engine. When mounted, I ran the cables into the cockpit through a cockpit air vent so could read the monitor and run the engine with canopy closed.

The manual rightly suggests that one check prop tracking first, and best method I have found for that requires only a tape measure to a fixed point well back on belly of aircraft. Fortunately I was right on. I had already balanced the prop spacer and its longer custom made bushing to within 0.2 gr. which proved to be overkill as I added a total of about 50 gr. of washers.



An accelerometer measures the force of vibration. It must be rigidly mounted to the engine and oriented to point in towards the crankshaft. The photo-eye reads a small piece of reflective tape attached to a prop blade. The position of the photo-eye defines the "Zero Reference Point." The control unit knows

the engine RPM and the time of one rotation. From that it calculates how far from Zero the peak acceleration force (vibration) is located and displays that as a number. Simply put, high readings bad, low readings good. The manual shows anything over 0.25 as rough, with 1.25 as Extreme. My first reading at cruise RPM was 0.95. Not good.

This location of this vibration/force is the heavy side of the prop. To bring it into balance, I added or removed washers behind the prop bolt nuts, 180 degrees on the opposite side. (If an engine has a spinner, weights can be added to that. Mine does not, so simply changing washers under the prop bolt nuts on back of hub was effective.) The control unit told me where to locate or to remove weight, but not how much. This was trial and error. Once weight had been added, I ran it up again and noted new reading. *(This sounds like the same procedure for balancing a car tire, only different. Ed.)*

I did testing outside my hangar with the tail of plane tied to my truck. After a couple of adjustments by adding washers under the prop bolts I got the reading down to 0.14 and made quick test flight. Big improvement. The next day made I made one more adjustment and got the reading down to 0.02. Pilot and passenger, compass and airframe are all much happier now. Time to quit while I was ahead.

When warmer weather returns, I plan to make another mount for the accelerometer on back end of the engine, as CAE/Jab engines have a large flywheel with the starter's ring gear, magnets for magnetos and an alternator on the back end. I would like to insure that the flywheel is also balanced.

If anyone is looking to do their own prop balancing or vibration analysis, let me know. *(BART will be contacting you Dave, Thanks for the offer. Ed.)*

## OLD GOAT'S MUSINGS

by Art Thieme

Next year you will need a passport or a REAL ID license to fly anywhere on a commercial airline. No big deal – I'm not going anywhere. Wait a minute. That means I won't be able to fly to Oshkosh unless I go by LUCE AIR, an unscheduled service. So, I renewed my passport and can then go to the casinos in Canada.

*Plane & Pilot*, April 2017, listed what they think are the most beautiful aircraft. Remember, beauty is in the eye of the beholder.

Cessna Cardinal - a replacement for the 172 Skyhawk, but never came close to that

Cessna 195 - love that radial engine

Luscombe Silvaire – nearly 6000 were built –  
a shiny sheet metal dragonfly

Beechcraft Duke – good looking twin

Cessna 310 – slickest looking plane

Globe Swift – a real beauty

Beechcraft Bonanza – the V-tail makes it

Staggerwing Beech – the lower wing forward  
makes it

Piper Cub – most beautiful? You have to love it

I was part of the group welcoming back the last Honor Flight of the year. A great experience! It gave me a chance to visit the renovated terminal. The Curtiss Pusher is located in the west wing overview area. The Chummy is located on the far east and sat kind of lonely. It probably got more attention when it was hanging in the secure area. Move to the international room area?

You want to fun fly? Own your own plane? Can't afford it? *Kitplane*, Dec 2019, has listed over a 1000 aircraft that you can build. They range from Ultralights to war replicas. If you just want to fun fly, you can build an Ultralight for 10K plus engine and instruments. You can't take anyone or fly cross country, but it is fun and you don't need a license. However, flying lessons are highly recommended. And EAA members will help you build it.

Want candy? We had no trick-or-treaters this year. The weather or the fact that most of our neighborhood children are grown up and raising their children elsewhere.

Happy Thanksgiving!

Old Goat, out

## BART UPDATE

The well-known saying that a homebuilt is "90% complete with 90% to go" is very true with our project.

As we get closer and closer to finishing the right wing, more items on the punch list appear- trailing edge, leading edge, test fitting the cable runs, who knows what else needs to be done before covering.

I've recently learned that it would be a good idea pre-covering to mount the wings and tail feathers to see if the control surfaces work correctly. It would be difficult if not impossible to make fixes AFTER covering.



The big news on the metal front is that everything EXCEPT the fuselage has been primed and/or painted. Primed but unpainted pieces (tail feathers and landing gear) will be covered in fabric. The struts, the seat and control stick, the engine mount, and other parts of the landing gear are all now shiny RED!

At the January General Meeting you should see the primed and painted fuselage when you enter the SAC.

The boot cowl around the front of the cockpit and gas tank is almost completed. Its shape is tighter to the fuselage compared to when we got 75H.

## WOULD YOU LIKE A SLICE OF RASPBERRY PI?

Our Guest Speaker in October was Mike Moore, an electrical engineer and software developer. He presented on a one-board mini-computer called a Raspberry Pi. RPi's are a pocket-sized printed circuit board with a variety of standard input and output ports- audio out, HDMI, Ethernet, RJ-22 phone jack and an SD Card slot. None of that is new to most of us.

These are the 21st Century versions of Heathkit or Radio Shack electronics. You can build one yourself from a kit, or you can buy a complete finished product. What it does depends on the program on the SD card. Again, you could program it yourself if you are so inclined or buy it ready for loading into your RPi.

So, what can it do? I did an interweb search and found several applications for experimental homebuilders. With the Hangarbot <hangarbot.com> you can remotely control many functions in your hangar from your smartphone. For example, you can turn off and on devices in your hangar, open and close your hangar door, pre-heat your engine, and heat your hangar. It also provides motion detection and security functions.

One resourceful programmer wired an owl decoy with a motion detector that would activate red flashing eyes and predator screeches to keep birds from his plane.

At the other end of the spectrum is a complete iPad based system called FlightView <openflightsolutions.com>. for around \$2000 you can have real-time weather, traffic, AHRS synthetic vision, and WAAS GPS for \$240 plus iPads. Additional boxes from Open Flight Solutions add engine instruments, VFR navigation and ASD-B IN. This package is for Experimental aircraft only.

## BROCKPORT FLYING CLUB ON TAKE-OFF ROLL

by Mike Kuyt

After a long and sometimes challenging process, the Brockport Flying Club is ready to accept members, obtain insurance, and start flying. A final agreement has been reached between Brockport Flying Club LLC and Brockport Leasing LLC (the current owner of the airplane). The Bylaws, Operating Agreement, and Lease have been finalized and agreed upon.

A meeting has been scheduled on Monday Nov. 18<sup>th</sup> at 6:30 PM at the EAA 44 SAC. At this meeting we will be accepting applications for membership. There is a \$295.00 non-refundable (after 30 days) joining charge that we ask be paid at the time of application. The \$34.50 per month dues will start after insurance has been obtained and the airplane can be flown by members. There is also a \$29.50 per hour dry charge for flying the airplane based on Hobbs time. Fuel will be purchased separately by the members.

The airplane is the C172F that was previously owned by Mike Kuyt (me). Many of you are familiar with the airplane. It has a new (5 years ago) interior, new tinted windshield, Garmin 695 in panel, and has been recently upgraded to have ADSB out. It also has ADSB in if you have an iPhone or iPad with Foreflight. It recently had an annual performed by Boshart Aviation. They went through it with a fine-tooth comb. They took the tail surfaces off to get rid of bird nests, applied Corrosion X, replaced a number of hoses, checked all AD's etc.

The airplane has the smooth running 6 cylinder Continental engine and has 700 pounds of useful load with full fuel! This bird is ready, ready, ready to go. It is located GVQ and is tied down on the ramp. There is access on the ramp to an electrical outlet so we can utilize the engine preheater that it has and fly in the winter. We were hoping to fly it out of Ledge Dale but could not come to an agreement with the owners.

Any questions, please contact Randy, Norm, or Mike or come to the meeting.

## Experimental Aircraft Association – Chapter 44

### Board of Directors Meeting Minutes October 8, 2019

The regular meeting of the Board of Directors was called to order by President Randy Spurr on October 8, 2019, 7:11pm at the EAA44 SAC.

#### Board Members Attendance:

Present: R. Spurr, F. Grossman, J. Weinkauff, N. Isler, M Clayton, D. Kenney, F. Englund, K. Arganbright, P. Hazen

#### Absent:

**Other Attendees:** G. Isaacs, Treasurer; R. Nelligan-Barrett, Editor & BART Project Director

**Approval of September Minutes:** Motion by J. Weinkauff second N Isler to approve the September minutes with correction to the Dues Motion that was approved at the September meeting. Motion correction, remove the March 1<sup>st</sup> date and implication to existing members. Motion is for new members only. ***Corrected Motion new members joining and paying their dues after March 31<sup>st</sup> their dues will be prorated, based on the months remaining in the calendar year.*** Motion carried 6-0-3

### Officer Reports

#### President's Report

- The Byers providing sausage for next meeting
- Next meeting presenter on Raspberry Pi Computer
- Plea to general membership to increase support and volunteerism for the chapter

#### Vice President

- Aviation Explorer Post (ages 14 to 20) asking if we are interested in continuing the program on a regular basis? Our insurance is paid through the end of 2019. Difficult to commit without knowing if we have people to help run/operate it. Something to be discussed at next general meeting seeking volunteers.

**Secretary** – None

#### Treasurer's Report & Financials

- Fire insurance bill received. Randy will call and combine with the new coverages voted at last meeting to get accurate combined premium
- Gail secured donations from cold calls/sharing or getting the information out there. Discussion about how all members could do similar.
- Question on Dues – five people have paid **(amount redacted)** based on the original vote and then next meeting lowered to **(amount redacted)** so they are owed a **(amount redacted)** refund. 53 people paid **(amount redacted)**. Confusion regarding dues has ensued due to the two resolutions in the last two months. Discussion ensued again regarding if the dues price point is still adequate.
  - Discussion about making the budget challenge real to the membership. General meeting present the budget in total and on per member basis to show revenue gap.
  - Explain the problem and ask for feedback on ideas to close the gap
- Financials
  - Treasurer Report September Net Profit and transaction reports

- Budget Norm presented the monthly budget to actual revenue and expense report
- Mike commented that Baby Ace is approximately **(amount redacted)** positive, and inquired what anticipated expenses will be. To be discussed further at BART report. **(amount redacted)** of the seed funds was provided by EAA and to be repaid from proceeds of sale of the Baby Ace
- *Motion by Frances second Mike to approve the financial report 8 – 0 - 1*

### Committee Reports

#### Facility – K. Arganbright

- Fire extinguishers inspected

#### Capital Campaign – R. Spurr

- Need to re-ignite the campaign
- We are a majority of the way there but the last push has been difficult

#### Explorers – None

**Young Eagles** – Proposed 2020 Dates- five dates this year May 16, June 13, July 11, August 8, September 12 problem, 4 of the five are on same day as standard SAC Work days. Randy to talk with Elise and Gretchen

#### Budget Oversight & By-Laws – N. Isler

- tracking and report reviewed and discussed
- Norm working on updates and National recommendations but have not had a committee meeting yet

#### Baby Ace Restoration Team (BART) – Bob reported

- Provided Summary of September Purchases
- Reviewed the Treasurer's Expense Reports
- Restoration Update and October Plan – To Do's
  - One wing close to constructed then finish the other prior to covering
  - Instruments to be sent for inspection
  - Engine being inspected

#### Old Business

- Revisited Dues Discussion
- Phil shared a chart of dues cost for new members depending on prorated for when they join
- Thursday October 24<sup>th</sup> AOPA Air Safety Seminar – Difficult Decisions
- November 16<sup>th</sup> AOPA Rusty Pilot Event – Encore Aviation
- November is BoD elections. Three people running for five seats.
- New Business – None

Motion Mike second Frank to adjourn carried 9-0. 9:17pm

Respectfully Submitted: Darrin T. Kenney, Secretary



## CONTACT EAA 44

The Flyer is published monthly. For an electronic copy, go to <eaa44.org> and enter your email address where requested. For a mailed hard copy (\$10), contact Treasurer Gail Isaac. For membership info, contact Treasurer Gail Isaac

Stories and photos by the editor unless otherwise noted. Article deadline is 1<sup>st</sup> Tuesday of the month. Send submissions to Editor Bob Nelligan-Barrett.

The Chapter email address is:  
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**Volunteer Needed**

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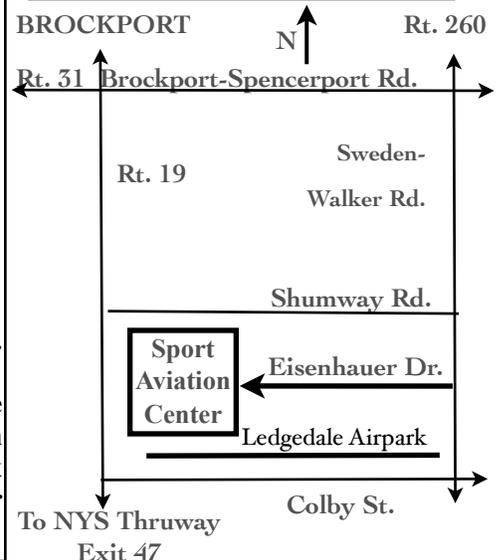
### YOUNG EAGLE COORDINATOR

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**EAA 44 is a 501(c)3 organization. Gifts of cash, securities or other property to the Chapter for the benefit of the Sport Aviation Center are welcome and fully tax deductible. Contact Treasurer Gail Isaac for details.**

## WHAT IT IZ

This is a fuel gauge for a SPAD aircraft. The cup at the bottom floats on the gas and moves up or down the central shaft causing the dial to move. Pretty slick design from back in the day.



## EAA 44 Calendar

### NEXT GENERAL MEETING

### Nov. 19 Annual Meeting, Elections, & Steak Night

This is our last meeting of the year. Let's go out with full stomachs of delicious homemade holiday eats.

**December 10 Board Meeting**  
**December 17 NO GENERAL MEETING** Enjoy the holidays with your family and friends.

All activities take place at the Sport Aviation Center, & are free & open to the public  
Sport Aviation Center  
44 Eisenhower Dr. 14420  
Brockport's Ledgesdale Airpark (7G0)

### **Baby Ace Restoration Team**

Every Wednesday 6-9 PM

### **History Committee**

1st Saturday of the month, 10 AM

### **Board Meetings**

2nd Tuesday 7 PM

### **SAC Work Days**

2nd Saturday, 10 AM

### **General Meetings**

3rd Tuesday

\$5 Dinner 6:30 PM, Mtg. 7:30-9

### **VMC Club**

4th Monday 6:30-8 PM

### **Flight Simulator Group**

4th Thursday, 5:30-8 PM

Bob Nelligan-Barrett  
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