

**Subject: Re: [Re: [c-a] AV-10 engine monitor.]**

**Date:** 8 Feb 00 14:00:40 EST

**From:** David Wood <dvwood@netscape.net>

**To:** David Orr <canardfinder@worldnet.att.net>

David Orr <canardfinder@worldnet.att.net> wrote:

Dear Dave,

Peter Rummell has taken the reins at Audio Flight. He is trying to seperate Rod and the past management team from Audio Flight as they were less than honorable in there dealings with some customers. He is trying to honor the past commitments of the company and in my dealings with him he has promised to send me the rest of my order.

He can be reached at 416-264-0968. address: Mr. Pete Rummell  
AFA  
1885 Kingston Road  
Toronto, Ontario  
Canada M1N1T3

Good Luck, Dave Wood.

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Re: [c-a] engine monitors/fuel flow

**Subject: Re: [c-a] engine monitors/fuel flow**

**Date:** Sun, 18 Jul 1999 09:06:56 -0400

**From:** Eric Westland <ewestland@altavista.net>

**To:** "canard-aviators@canard.com" <canard-aviators@canard.com>

[The Canard Aviators's Mailing list]

I'll add that I like my AV-10 very much. Their website is  
<http://www.afavionics.com/>.

While all of the previous monitors mentioned are probably as good, the AV-10 was much less \$ than the Vision Micro System and if you added the fuel flow option, was less than the Allegro. I'll also add that if you purchase the AV-10 at OSH (or probably just give Rod a call), he usually has a discount.

One other advantage of the AV-10 was that the "brain" unit actually mounts on the firewall, so "normal" length probe leads simply hook up to it. A separate cable then runs forward to the display unit on the instrument panel. This makes checking connections or swapping leads quite easy.

To my knowledge, all of the fuel flow monitors use the Flowscan transducer, so since they are all just counting pulses, they should all be equally accurate.

More food for thought.

Eric Westland

Bill Allen wrote:

>

> I am looking to install more precise engine monitoring on my O-320  
> LongEZ than the Westach 4-way instruments currently provide. They are  
> very touchy and not too reliable.

>

> Bill G-WILY Allen



**Subject: Re: [c-a] Fitting Electric Start to Vari-Eze**

**Date:** Fri, 8 Oct 1999 09:15:50 -0400

**From:** Bruce Layne <laynes@lex.infi.net>

**To:** canard-aviators@canard.com

[The Canard Aviators's Mailing list]

I really like the starter on my LongEZ. It's good peace of mind should the engine quit at low altitude where I couldn't dive to 130 KIAS to windmill start. On the harder to justify side, hand propping seems old fashioned and thus inconsistent with the sleek looks of a canard plane. But hand propping makes a lot of engineering sense. Why add all that weight and screw up you for a device that's used for five seconds every flight? Burt certainly didn't like the idea, as demonstrated in the numerous Canard Pusher articles.

That said, if you're still set on the idea you might look into the new 4.4 pound sealed lead acid battery that provides 200 Amps of starting current. It's called the UltraStart Red high cranking battery, it sells for \$79 and is marketed by Flightstar Aircraft. This information came from the November 1999 Kitplanes magazine, page 13. You can reach FlightStar at 860-875-8185, or <http://www.fly-flightstar.com/>

If you mounted the battery and starter contactor very close to the starter and near the CG, you would not need a long run of heavy wire to carry the current from the nose, you'd have very little loss in the wiring providing more effective cranking, and you'd minimize the effect to the weight and CG.

Of course, nothing is free. Flight Star is in the business of selling ultralight planes. The 4.4 pound battery will not have anywhere close to the capacity of the 25 Amp hour battery I have in my LongEZ. The 200 amp starting capacity is close enough to the larger battery's 225 cold cranking amps, but it won't last nearly as long. If your Varieze starts in three pulls, you'll probably be OK most of the time. After that, you'll probably be back to flipping it over by hand. The reduced capacity also won't allow you to add lots of energy consuming devices and expect the battery to source the load for very long if the alternator dies. Also, before committing to the small battery, be sure you can adequately charge it without overcharging it.

Chief Aircraft had a starved electrolyte battery that weighed about 11 pounds, provided enough amps for starting, about 12 Amp hours of capacity and could be completely discharged without damage, but it doesn't seem to be in the last catalog they sent me. You could call them at 800-447-3408 and ask.

Lastly, Aircraft Spruce has a 10 pound 14 Amp hour capacity Yumicrom battery that they describe as "used in the VariEze and LongEZ. Easily handles the load of starting a Lyc. O-235 engine." Check out page 348 of the 1999/2000 catalog, part number YB14LA2.

Whatever you decide, one of the newer light weight permanent magnet high performance starters seems essential. Good luck, and many happy starts.

Ian Pountney wrote:

> Does anyone have any advice on the following: I have a Vari-Eze which



> is hand swung, I am considering converting to electric start, but have a  
> few questions as to the viability of fitting the extra items.

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A horizontal line with a vertical tick mark on the left and a series of left-pointing chevrons.



**Subject:** [c-a] Great Instrument Vendor

**Date:** Fri, 6 Aug 1999 03:09:06 -0400

**From:** Eric Westland <ewestland@altavista.net>

**To:** "canard-aviators@canard.com" <canard-aviators@canard.com>,  
Cozy Builders Mailing List <cozy\_builders@canard.com>

[The Canard Aviators's Mailing list]

I am so pleased with the flight instruments I received from Howard Francis that I wanted to pass along my experience.

Nat Puffer runs a line or two in his newsletter mentioning Howard and if you need any of the six basic flight instruments, you should check him out. Two-plus years ago I bought a used attitude indicator, DG, altimeter, VSI, electric turn and bank, airspeed indicator (he paints in the arcs to your specs) and a 2-1/4" vacuum gauge. I saved about \$1,000 from what I would have paid for new. All of his stuff is used, but before Howard sends them out, he rebuilds whatever needs doing - he is retired from this profession. Myself and two other local builders have bought from him, the instruments look like new. However, you will be able to judge for yourself since after telling Howard what you want, he sends them to you when they're ready. Then you either accept them and send him a check or return them.

Last month it became apparent that my attitude indicator was sticking. Although I was careful to occasionally spin it up during the two years I had it, I probably had not done it often enough, so I called Howard to see if he had a replacement he could send me. He did not at the time, but told me to send mine to him for repair. Well, I just didn't get to it very fast and last week he called me to see what it's status was. So I sent it off and had it back right away as good as new. He even paid for the return shipping.

You can contact him at:

Howard Francis, 5613 S. Crows Nest Rd., Tempe, AZ 85283 (602) 820-0405.

Eric Westland  
Mukilteo, WA



**Subject:** [c-a] Strong pitch trim

**Date:** Tue, 17 Aug 1999 05:06:14 -0400

**From:** David Domeier <david010@earthlink.net>

**To:** "cozy\_builders@canard.com" <cozy\_builders@canard.com>,  
Canard mail list <canard-aviators@canard.com>

[The Canard Aviators's Mailing list]

I test flew the Strong pitch trim system yesterday and an delighted at how well it works.

In the Cozy MKIV (at least mine) the unit fits almost perfectly between the elevator crank arm and the lower corner of the instrument panel bulkhead. Instead of attaching to the elevator push rod, I made a bracket at the that fits in the lower corner as described and substituted an AN4-15 bolt at the elevator. The elevator push rod is outboard of the arm and the Strong rod is inboard. The angle to the floor corner is somewhat greater than the push rod but it seems work just fine.

Instead of taking my stick grip apart and rewiring it, I installed an AN3027-7 DP DT momentary on-off-on switch just aft of the throttle. Seems to be a very natural place to find trim and it too is satisfactory. Had to reverse the leads to get it to go the right way but that was easy.

dd



**Subject: Re: [c-a] GPS link to wing leveler**

**Date:** Sun, 22 Aug 1999 21:02:33 -0400

**From:** JMeyerEZ@aol.com

**To:** canard-aviators@canard.com

[The Canard Aviators's Mailing list]

Hi, Lynn,

I think that the device you need is the "Smart Coupler" built and sold by Jim Ham in Los Altos, CA. You can reach him at his e-mail address: jimham@porcine.com or by phone at 650-326-2669, which is his work phone.

Tell him exactly what equipment you're connecting (brand name and model number) and will know whether his coupler will do the trick or not.

Local pilots have used his stuff for years with great success.

John Meyer      Long EZ 58JB



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**From:** Bruce Layne <laynes@lex.infi.net> [[Save address](#)]

**To: Canard-aviators@canard.com**

**Subject: Re: [c-a] headset**

**Date:** Wed, 26 May 1999 18:00:42 -0400

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**[The Canard Aviators's Mailing list]**

I bought the Lightspeed 20K headset and loved the quality of the active noise cancellation. I found it comparable to the original Bose. The comfort couldn't be beat due to the light weight and lots of padding. The problem arose in the LongEZ. With the top of my head 1" from the canopy where it should be, the top and sides of the headset would occasionally rub against the canopy.

This resulted in a sudden burst of conducted airframe noise. The random loud buzzes would surprise me. It was annoying. All the more so because the headset was so good at reducing noise when it wasn't touching the canopy. After only one 4.5 hour trip, I sold the Lightspeed headset because of this. I know of at least one other person who did exactly the same.

I would expect this phenomenon to effect all EZ drivers. Regardless of height, the seat cushions should be adjusted to place the pilot's head 1" below the canopy for proper forward vision. Something to consider for the Lightspeed headsets.

The middle of last June I purchased a pair of the Headsets Inc. (800-876-3374, 806-358-6336) active noise reduction modules for my trusty old Dave Clark headsets. I had tried them and really liked the way they sounded almost as much as the Lightspeed headsets.

The modules are still sitting in the bottom of the closet waiting for me to modify my Dave Clark headsets. If I like them I'm planning on adding a 9 volt linear regulator to the EZ and have a third power jack next to the mic and phone jacks for the pilot and copilot headsets, thus eliminating the ANR battery box.

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**Subject: Re: [c-a] crimping or soldering electrical terminals**

**Date:** Sun, 27 Oct 2002 08:56:00 -0700

**From:** "Scott Derrick" <scott@tnstaafl.net>

**To:** "Len Johnson" <lgjohnson@adelphia.net>, <Canards@tnstaafl.net>,  
"Canard at Yahoo" <canard-aviators@yahoogroups.com>

Len,

Great expo on soldering.

Though I do think the judicious use of a torch on very large connections is acceptable. It does require a delicate touch or you will overheat the wire at the connection. Using a large wattage iron on large connections can take overly long to get the joint up to the solder's melting point that the heat wicks up the wire and you cook the insulation.

As in all things that have to do with soldering, as you and Bob N. agree, it takes practice. Crimping with a ratchet type crimper can be done by just about anybody with a minute of practice. Soldering on the other hand requires a longer learning curve. And some folks just aren't willing to take the time.

Scott

From: "Len Johnson" <lgjohnson@adelphia.net>

| It's worth noting that, at least with smaller wiring, the 'experts' are  
| split. King terminals remain crimp-on, while Garmin and others utilize  
| pins with solder cups. The latter simply can't be crimped. I've seen  
| King terminals pull loose during Avionics upgrades. Properly soldered  
| terminals won't do that. Nor do properly soldered wires become brittle.

| Here's my technique:

| 1) Make sure wires to be soldered are perfectly clean. If you stripped  
| them yesterday, cut and strip again today. Don't handle bare wire with  
| dirty hands- wash first. No grease, no oil, no nothing.

| 2) Use liquid flux on the bare wire and terminal and apply it with a  
| small, clean brush wherever you want solder to stick. The  
| brush-in-bottle kind is perfect. Use flux designed specifically for  
| electronics that does not leave a residue after soldering. It will say  
| so on the bottle.

| 3) Immediately tin the wire and terminal, or both wires if it's a  
| wire-to-wire joint. (Tinning means to apply just enough solder to coat  
| the area to be soldered on a terminal, or to turn the stripped portion  
| of the wire a bright silver prior to actually putting the two pieces  
| together.

| Wire will 'wick' the solder up; you don't have to move it around.) Use  
| a damp sponge to clean the iron, put a small dab of new solder on the  
| tip, and transfer heat through that dab of solder. If the liquid flux  
| had time to dry before you tin, start over.

| 4) Use an appropriate wattage; 40 for larger wires and terminals, 25 for  
| everything smaller. If you need a torch for electrical work, you don't  
| need solder. Be patient with your iron and give it time to properly  
| heat. Never solder with a warm iron.

| 5) Don't use too much solder or take too long at it. It really doesn't



take much of either to tin using this technique. You should not have blobs of solder anywhere, nor should you singe any insulation.

6) You never have to put a curve in a solder joint. The wire is always tinned straight. To solder two pieces of wire together, just place the tinned ends side by side and heat briefly. No additional solder is needed.

7) I prefer 63/37, because it has a very narrow liquid to solid heat range. If you move a solder joint after removing the heat and before it's solid, you may have fractured the joint. This may not be visible externally.

8) Even though there is no requirement to clean the residue after soldering, I try to keep a small bottle of alcohol and some qtips and cotton swabs handy to clean the area afterwards. Not neccessary, but professional. The liquid flux becomes sticky and whatever it drips on will hold dirt.

9) Always use shrink tubing to protect your solder joints wherever possible. Use the good stuff that starts out very flexible. The stiff, shiny radio shack stuff becomes too brittle after heating. If you forget to slide it on before soldering a joint and can't get it on afterwards, take the joint apart and start over.

Don't use electrical tape for any reason on any solder joint; it will not age well. Don't use a match or torch on heat shrink; use a heat gun, and use just enough heat. You don't want the shrink tube to become brittle or to split. If a joint has sharp edges, smooth these before applying the shrink tube so the edge doesn't work through the tube over time.

10) As in all skills, practice makes perfect. Practice on loose bits of wire when you aren't trying to install a \$7,000 radio in time to impress your friends at that really cool fly-in.

11) Finally, use heat sinks whenever you are working around delicate equipment. I usually use forceps.

I should also note that 63/37 solder has a melting point of 361 degrees Farenheit; CHT's routinely exceed this in an air-cooled engine, and pretty much all exhaust systems do. That's why I wouldn't use a solder joint close to the engine or exhaust.

Apart from the heat aspect, solder connections on really large wires are not neccessary. When you're working with large hunks of metal and big wires crimping is effective, and for really large joints you'd have to use a torch. That's OK for plumbing, not for electronics. You never want to heat insulation or components that much.

Just my opinions, for whatever they're worth. I know others with equal experience feel differently about some aspects. That's what makes it an interesting world.

-- Len