



What's the AeroElectric List all About Anyway?

Some months ago, I received an email from a reader who opined that the List could be much better . . . especially if participants would refrain from esoteric discussion of the physics and concentrate more on cook-bookish approaches to assisting builders with their questions. I published a considered response to his comments on the List.

Since that time, I've had a few private e-mails that took issue with my response, but more that agreed with it. To make sure that the philosophy I've embraced is published in an unambiguous way, I've converted the List conversation to a permanent article for the 'Connection website:

In the following transcript, my responses to the gentleman are in *bold italics*.

Bob,

I believe one of the reasons this list has only a handful of active participants is because opinions (and observations and anecdotal evidence) are generally not welcomed. Anyone with the temerity post an opinion gets met with a barrage of responses asking for supporting data, reasoning, FMEA and a detailed analysis of why they hold such an opinion. Few are willing to examine why they have reached an opinion and fewer still are willing to actively debate it.

Would you have it any different? Suppose I offered: "In my opinion, you should hand carve your prop from Tasmanian snagroot". I would hope that any OPINION can be supported by a discussion of simple-ideas that hold it up even if so simple as data showing hundreds of airplanes are flying with snagroot props. But wouldn't you be curious for more detail? Suppose all the successful snagroot prop airplanes were powered by big ol' rotaries that run 900 RPM wide open?

Would snagroot be suited for a prop that turns 2700 rpm? No matter how attractive the opinion might be to you, would it not be important to understand everything there is to know about it?

So, if one is loath to offer an opinion because they're

unable to support it, so be it.

If someone is seeking to have an opinion validated or debunked, then offer it to the List as a question or hypothesis . . . then let the IDEA be evaluated to see if it stands or falls. This isn't about preying on people's timidity or fears, it's about validating ideas. One may choose to be either participant or observer. However, nobody benefits from the question never asked, a hypothesis never offered or bad ideas never exposed for their lack of value.

So if you aren't prepared for a Socratic bludgeoning you just don't post. Socratic teaching can be intimidating and I suspect most will avoid it if given the choice.

It would be a very sad condition if your assertion had any validity. I'll suggest that it suffers from what Dr. Dee would call "Fundamental Attribution Error". I will suggest that your assertion simply cannot be valid.

Are the 1300 "silent majority" on the List simply voyeurs who enjoy watching other people conduct technical dog-fights? I have to believe that most perceive value in observing some if not all of the discussions in progress. If they were simply looking for gladiators to champion, the World Wrestling Federation and Monday Night Raw are far more exciting than watching discussions on the AeroElectric List. What's more, the antics offered on TV are carried out in full color with special effects and home theater surround-sound.

I think it's a bit quixotic to believe that the non-posters are all on some quest for knowledge and "clarity of vision." I'll bet most just want to wire their airplane and are hoping someone else will ask their question before they have to. They just want to know what parts to use rather than how to design the ultimate system. Like Freud said "sometimes a cigar is just a cigar." The final stages of completing an RV (or other kit plane) are difficult because you're thrust into unknown territory where suddenly nothing is designed or spec'd. Van doesn't (or didn't) even provide a starting point. Bob's book is often offered to fill that void. It's great on education but short on any practical advice. If every

homebuilder had to go through the same level of design effort on the airframe as is suggested for the electrical system, there wouldn't be any kit planes and darn few homebuilts at all.

An EXCELLENT point . . . I've made multiple offers every year at OSH to every kit supplier I could find in the tents to craft a factory wire book for a Z-11 like system. They could recoup their costs in the first dozen kits of parts they could sell. After ten years of trying, I gave up and concentrated on the 'Connection, aeroelectric.com and ultimately the AeroElectric-List.

That's exactly why the AeroElectric-List was started . . . to fill the gap between simple ideas (the book) and practical solutions (buying parts and bolting them to your airplane). When a list participant asks how to solve a particular problem with installation and fabrication, I expect that there may be multiple solutions . . . these are not opinions but manifestations of experience and common sense. If the solution works on someone's project, then that success is a simple fact - not an opinion to be debated.

In case of multiple solutions there is perhaps room for debate but one may always ignore the debate and choose from the most attractive of the demonstrated solutions.

Don't get me wrong, I've taken away some valuable ideas but at a cost far greater than I think necessary. Take the e-bus idea. To implement it you need a diode. What diode? Well any xx amp or a Scholtzky [sic] (isn't that a sandwich shop?) or a bridge rectifier or some such, or just get any old diode at Radio Shack. No sample part numbers. Can you conceive how un-helpful that is to the electron-challenged, like me? OK, I bought a part that looks like one I saw in a picture but I still don't really know if it's right. Then how do I wire it? Get out the VOR and test all four legs till I find a path that works. I bet that chamfered corner would give me a clue for the hook-up but there's no description of it in the "book" and 30 yrs after EE101 I can't decipher the schematic. All told, probably 3 hours messing with a 5 minute task and no net knowledge gained.

Why didn't you post a question on the List? Have you looked over B&C's offerings of a suitable diode on their website? Have you seen notes 12 and 24 of appendix Z of the 'Connection where a Radio Shack 276-1185 is suggested and functionality illustrated? There's some discussion of the diode bridge rectifier on page 1-9 of the 'Connection. You could have e-mailed me directly and received a specific suggestion sans tributes to Socrates where I would have referred you to a picture at . . .

<http://www.aeroelectric.com/Pictures/s401-25.jpg>

. . . along with the suggested the Radio Shack p/n.

You seem to be suggesting that folks like yourself have gone staving for basic information because they are intimidated by the conversations of others on the List. I'm sorry, that just doesn't make sense..

I believe the pedantic style of this list does a disservice to the broader OBAM community by not offering practical, how-to advise. The glowing exceptions are Bob's picture books, but even those are hard to find. Why aren't they in the "book"?

If I were to put everything "in the book" as multiple figure, full color pictures, it would be three times as thick and sell for 5 times the price. The website servers offer a way to put huge amounts of visual data up at ZERO cost to the reader. If I operated as you suggest, very few people would buy the book.

Hard to find? Just ask . . . or download the free website image from <http://www.aeroelectric.com/CD/> and browse the articles and images at your leisure.

I would have killed for some of them when I wired my first RV but if they existed then I was not aware of them. I think there's a real need for an OBAM version of AC43.13, i.e. 21st century acceptable methods and practices, not theory. As much as I view Greg Richter as a snake oil salesman, I think he offered a valuable to the needs of a large segment of the OBAM world. Every airplane's electrical system does not have to be custom designed. There are >4000 RV's flying - surely they all don't have to be different. It should really be OK to do something less than optimal as long as it's still within the bounds of safe and acceptable solutions. Bob's response to Richter's paper as an eloquent restatement of Bob's philosophy but really just came down to an antithetical preference, custom design everything vs one-size-fits-all.

Absolutely not so! If you had studied the conversation I was trying to have with Greg, he never answered a single question. He started out asserting that some of the worst wiring jobs he'd ever seen were based on The 'Connection. But when queried as to which paragraphs had so badly misled the builders, he was unwilling or unable to answer.

Had someone handed me a box full of parts and Greg's document . . . I could not tell how those parts go together nor was it apparent how they served as alternatives to "atrocious work" driven by the 'Connection.

His document contained no data nor a rational explanation behind the philosophy of the proposed architecture. I studied his drawings in detail and could not deduce what he was suggesting. Unlike discussions here on the List, he refused to answer a single one of dozens of specific questions aimed at clarifying his assertions/suggestions.

You want a one size fits all? Figure Z-11 is it. This fits the needs of perhaps 90-plus percent of all builders. The fact that options beyond this configuration are offered doesn't mean they need to be agonized over. I thought chapter 17 offered food-for-thought and options to consider should a builder want more. The reason for crafting Z-11 and placing it first in the architectures is because it's probably going to do the job for the vast majority of builders.

Are there only the extremes? Or is there a middle ground?

Yup, figures Z-12, and Z-13 are all middle grounds between Z-11 and Z-14. Then there are some very simple cases wherein alternators supplied on Rotax and LOM engines drive you to something simpler yet than Z-11.

To really advance the state of the OBAM fleet is going to require getting a high percentage of new aircraft to embrace a higher standard.

Not sure what you mean by "standard" . . . to my way of thinking, the OBAM aircraft community is going to thrive because there are NO STANDARDS. New ideas can be tried and retained or discarded on at will. Folks who are adventuresome and/or have larger missions are free to expand their project's capabilities beyond anything offered by BePipCesMo without disturbing the majority of folks who will be happy with a Van's/Bengel's approach.

And that's going to require making that standard both convenient and accessible. The folks buying Van's electrical system kit aren't consciously choosing a 1940's system, it's just all there is that's convenient. Except for maybe the EXPbus;-) Most want something better but their only other choice is design it themselves. Surely we can offer something better, maybe not perfect, maybe not customized.

Yeah, that's compromise so I guess it's a terrible thing to do. Worst wins. But doesn't worst win too if there are only a handful of "perfect" examples and thousands of obsolete ones?

You missed the point I was making concerning compromise . . . The ranges of features offered in the Z-figures are not compromises of each other but choices by which one may OPTIMIZE a system to fit a mission. To install figure Z-11 in a full-up, long-legged cross-country IFR machine like a Glasair or Lancair is not a compromise of electrical system but a compromise of the airplane's potential for conducting certain missions. You don't get those choices when you buy a nice ol' used C-210 . . . it's wired just like a C-150. But if you want a day-vfr/occasional night fun-machine . . . Z-11 is a carefully considered solution flying in hundreds of airplanes. It's easy to morph into Z-13 if your mission grows and/or you get tired of stroking vacuum driven components.

The words "standard" and "want something better" are diametrically opposed to each other in purpose and result.

The FAA has given us regulation (standards) and they've brought new development (something better) to its knees. On the other hand, those who truly want something better are getting it done in their basements and garages and leaving certified aviation trailing in the dust. Want OBAM aviation to fail? Set up any kind of standards for design and fabrication and an organization to oversee those standards. It doesn't have to be the FAA but it's a sure bet that a few decades hence, the FAA and any new organization set up to standardize OBAM aviation would be indistinguishable from each other.

Opinions offered with the utmost respect to all who contribute.

I'm not sure I understand your difficulty with the List. If you like the EXP-Bus, you're certainly free to install one. Hundreds are flying and as far as I know, owners are happy with them. I perceive no safety issues with the EXP-Bus or similar products. I do believe them to be of poor value and I've explained why in details that the designer and manufacturer of the product refused to discuss.

I have the utmost respect for experience and simple-ideas backed up with intelligent and lucid teaching. At the same time, I will be short on patience with those who are unwilling or unable to be teachers but who insist on injecting their opinions laced with non-quantified adjectives, superlatives, and pejoratives that do not advance understanding.

If you find Greg's assertions convincing, then ask him to build you one of his one-size-fits-all boards for your project, he may be quite accommodating. The vast majority of OBAM aircraft builders are doing a clone of contemporary spam can architecture with Van's installation kit. They're going to be just fine. I don't expect them to perform any worse than the airplanes I MUST rent every time I want to fly somewhere. I prefer not to be convincing but illuminating. My goal here on the List is not to convince anyone of anything . . . only to be a good teacher and to share what I've learned along with any new discoveries.

The PRIMARY function of the List is to address exactly the issues you've raised. I'm sorry if you're cautious of getting splashed with blood from somebody else's dog-fight. However, I've noted multiple threads on the List discussing a variety of topics that seem to move ahead oblivious to conversations about esoteric topics or opinions.

Sounds like your problem has nothing to do with sorting opinions but simply tapping into the pool of experience and common sense possessed by many folks here on the

List. You've cited a perception of data being hard to find and List participants so busy beating up on each other that they don't have time to answer your questions.

I'm sorry but I must suggest that your perceptions could not be more wrong. We are all at your service sir. How may we assist you?.