

Nuts And Bolts - A Newsletter Written By Mechanics For Mechanics



# Get On The Roller Coaster And Hang On

By Mike Jordan

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• If you are interested in safety and would like to help the FAASTeam spread the word in your local aviation community, we need to talk to you. Contact your local FAASTeam Program Manager.

Unless you just got into aviation, you have probably been a passenger on the economic roller coaster of aviation. It doesn't matter what part of our industry you are in, they are all affected by the current health of the economy. You may not have realized that when the DME handed you your first Mechanic Certificate and shook your hand that he also gave you a lifetime ticket for the roller coaster and if you haven't been on it you will. But don't get rattled, the roller coaster always levels off at a minimum and more often than not it goes back uphill.



Without a doubt the economy coaster is headed downhill right now. The experts think it is going to continue on this path for the remainder of 2009 and possibly beyond, in spite of the President's intervention. Unfortunately, this trend has caused a cut-back in spending, which results in fewer people buying airline tickets or fuel for their aircraft. This always trickles down to the maintenance hangar which = cut-backs or lay offs. And it's a fact, that it affects everyone, from the new hire to the ready to retire, including FAA employees. On a more positive note I will never forget what one of my A&P school instructors said, "In this business you may never get rich, but if you want to work you will never be hungry." In my 32 years I have become a veteran roller coaster rider and I can honestly say that the longest I was ever unemployed was a week, and when I did find a new job it was

better than the last.

**What can you do to prevent getting laid off or taking a pay cut?** Answer: Probably nothing!

**What can you do to prepare for lean times?**

1. Stay positive, no one wants to work with or hire someone with a bad attitude. Stress is a member of the dirty dozen and it shows.
2. Stay focused on the high standards of quality maintenance that you have always had. Safety is not negotiable and your reputation as a professional follows you.
3. Be proactive - expand your industry contacts by e-mail or phone, contact old buddies, stop in at the company next door and establish a contact, update your resume, network, get in touch with what's going on in the industry outside of your current hangar, stay focused on developing your plan B in case you need it.
4. Make yourself more marketable - get additional training, get additional ratings on your mechanic certificate if you don't have both A&P, get yourself an IA if you don't have it, or take a course on [FAASafety.gov](http://FAASafety.gov).
5. Be prepared to take a job that may pay less or have less benefits.
6. Be prepared to move if necessary, the fact is that mechanics never disappear, they just move around.

Hopefully you will not have to face the ugly issues of our troubled economy. But if you do, remember these facts. We can only control the issues in our inner circle of influence. You are not responsible for, nor can you influence (by yourself) the state of the national economy or your employer's bottom line. It's not your fault!

I think we are in a good place for the current economic crunch. There are many repair stations that are still doing business as normal in spite of the economy and I still get numerous calls from FBO's and MRO's looking for mechanics. Hang On, the coaster **will** go back uphill.

## 45th National General Aviation Award Winners Selected

This year marks the 45th annual presentation of the National General Aviation Awards, high honors recognizing the best in the specialized fields of flight instruction, aviation maintenance, avionics, and representatives. Recipients will receive their awards from the FAA Administrator at EAA AirVenture 2009 during a special presentation program at the Theater in the Woods. The winners and a guest receive an all expense paid trip to Oshkosh to attend the awards presentation.

"These awards highlight the important role played by these individuals in promoting aviation education and safety", said JoAnn Hill, General Aviation Awards Committee chairperson. "The awards program sponsors are pleased that these outstanding aviation professionals will receive the recognition they so richly deserve before their peers in Oshkosh." So here are the maintenance and avionics national winners:

### Alfred J. "Lucky" Louque — Aviation Maintenance Technician Of The Year

Growing up in Louisiana, Alfred J. "Lucky" Louque loved airplanes since childhood. Whenever he heard an airplane, he stopped what he was doing to gaze skyward. His mother always said that she knew she would lose him to airplanes.

When still a very young man, he jumped at the chance to move to Texas and work for an aunt and uncle at Air Salvage of Dallas. Now the general manager, Lucky has been turning wrenches there for almost four decades. He has an airframe and powerplant (A&P) certificate (39 years) and an inspection authorization (IA) for 35 years. For the past 15 years, he has served as a FAA Designated Maintenance Examiner (DME) as well as a Designated Airworthiness Representative (DAR). Lucky is a 39-year private pilot and holds ASEL and AMEL ratings.

Lucky works with the FAA, NTSB, and aviation industry on aircraft accident investigations and reconstructions. He spends days answering technical questions and also performs quality assurance inspections, researches parts, and handles customer sales. Lucky provides assistance with coordinating and scheduling accident investigations as well as aircraft component studies, engine teardowns, and test runs. Air Salvage of Dallas is located at the Lancaster Airport (LNC).

Aircraft accident investigation has been a large part of Lucky's profession for the past three decades. In that capacity, he teaches formal classes on the art and science of accident investigation. The past 20 years Lucky has provided FAA remedial training and presented aviation safety seminars for pilots and mechanics. He became a FAA Aviation Safety Counselor in 1994 and recently transitioned into the new safety program as a FAAS Team lead representative. Lucky has taught many courses on suspected unapproved aircraft parts and has conducted a popular annual IA renewal seminar in Dallas for the past 14 years. He also authors articles for the FAA newsletter *Nuts & Bolts* as well as several EAA chapter newsletters.



Alfred J. "Lucky" Louque

Lucky belongs to the Aircraft Owners and Pilots Association (AOPA) and is an advisor and speaker for the American Bonanza Society (ABS). He participates as an EAA Technical Counselor and conducts educational activities with Chapters 168 (Dallas); 59 (Grapevine); 983 (Granbury); and 34 (Dalworth).

*Lucky represented the Dallas FSDO area as well as the FAA's Southwest Region. This year's other regional AMT winners include Jack Bell, of Watkins, Colorado (Northwest Mountain Region); Keith Hetrick, of Topeka, Kansas (Central Region); Stephen Stodolski, of Colchester, Connecticut (Eastern Region); and Michael Dougherty of Kailua, Hawaii (Western Pacific Region).*

## 45th National General Aviation Award Winners Selected

### Jerry Stooksbury — Avionics Technician of the Year

A native of Tennessee, Jerry Stooksbury has been involved in aviation since he was a teenager. First soloing in 1978, he has since earned commercial pilot certification along with instrument, ASEL, and AMEL ratings. He has also been an active flight instructor for more than 20 years with airplane single-engine and instrument airplane ratings. As a cadet in the Tennessee Wing of the Civil Air Patrol, Jerry participated in several encampments as well as other CAP activities. The CAP organization and its people played a key role in shaping his professional development.

Jerry's interests in electronics started at about the same time as his aviation interests. He obtained an FCC 2nd Class Radiotelephone Operators permit and an Amateur Radio Operators license in the mid-1970s. In 1983, after graduating with high honors from the University of Tennessee with a degree in electrical engineering, Jerry relocated to Colorado to work for Hewlett-Packard as a systems engineer. HP employees and its corporate culture provided a wide range of experience in new technologies, sales, marketing, business management, and customer relations. Jerry spent three years with HP in Europe and took advantage of numerous general aviation flights while there.



In the mid 1990s, he joined Garmin as a technical marketing manager. In 2004, he founded [Avionics Specialists, LLC](#) at Colorado's Fort Collins - Downtown Airport, relocating the business to the Fort Collins-Loveland Airport the following year. The avionics industry was a natural fit for this engineer/flight instructor who loves to fly and teach others to fly. Jerry enjoys consulting with pilots to help them determine the right set of products and technologies for their type of flying and their budget.

AvSpec currently employs five people who specialize in avionics upgrades for piston singles and light/medium piston twins. Jerry is also the cofounder of [AirportView.net](#), a website providing real-time weather camera and AWOS information for airports located in Colorado and the Rocky Mountain region. He and his team are working to expand this network and the depth of information it provides for pilots.

A member of AOPA and AOPA's Airport Support Network, he also is a member of the Colorado Pilots Association (CPA), and the Aircraft Electronics Association (AEA) where he serves as an AEA/FAA Ambassador for the Denver FSDO. He is also a mission pilot with CAP's Colorado Wing.

*Stooksbury represented the Denver FSDO area and the FAA's Northwest Mountain Region. This year's other regional avionics technician winners were Klarann Voegle, of Highland, Illinois (Central Region); Ronald Wright, of Battle Ground, Indiana (Great Lakes Region); and Michael Phillips, of Glendale, Arizona (Western Pacific Region).*

## LUCKY'S CORNER

By Lucky Lougue

Hawker Beechcraft AD # 2008-13-17

The Hawker Beechcraft AD # 2008-13-17 that affects Circuit Breaker Toggle Switches found in a large number of Beech Aircraft has become quite a hot topic. The AD was issued and became effective on August 6, 2008. It was created due to numerous switch failures that caused smoke in the cockpit, burned wiring and fire under the panel. A "Serious Situation" to say the least. The switches that were affected carried Beech Part Number 35-380132-1 through 35-380132-53. The AD states that the "FIX" is to install a "New Improved" Potter Brumfield/Tyco Toggle Switch that carries Beech Part Number 35-380132-61 through 35-380132-113. Seems pretty straight forward, huh????? Think again!!!

Beech bought switches from different manufacturers both Potter Brumfield and Wood Electric. They put their own "Beech" ink stamped Part Number on them in addition to the original Manufacturer's Model and Part Number. So, a Potter Brumfield Switch would have the same "Affected" Beech Part Number as the Wood Electric Switch, even though they are not the same switch design.

Now my job as a technician is to figure out which of my customers have the "affected" switches and which ones don't. In doing this, I feel I have opened a "Can of Worms" that I can't seem to get the lid back on. The failed switches were all reported to be made by Potter Brumfield. So my question at this point is: "What about the Wood Electric Switches? Should they be included in this AD?" It seems we are condemning these switches simply because they were stamped with the same Beech Part Number as the Potter Brumfield ones.

Now let's talk about "What" is out there, in "What" airplanes, and "What" we can do at this point. You can't go to any switch manufacturer and buy a replacement switch. To comply with the AD, the switch must be replaced with a Beech Part Number 35-380132-61 through 35-380132-113 (Potter Brumfield/ Tyco). A huge problem is that Beech can't keep up with the demand for replacement Switches. The "Drop Dead Date" at this time for all switches to be replaced is August 31, 2009. No way can we make this "Drop Dead Date" when switches are being back ordered and can't be purchased. I believe there will have to be an extension or an AMOC (Alternate Means of Compliance) adopted into the AD before this is over.

I looked at an affected Beech V-35B the other day and it had 7 ea. Wood Electric Toggle Breaker Switches and 2ea. Potter Brumfield Switches in it. According to the AD, "ALL" switches in this aircraft must be replaced. Realistically, I should only have to replace the 2 Potter Brumfield Switches, but that is not what the AD says at this time. Here again, I expect to see a change to the AD, and hopefully it will be pretty quick as we are running out of time to comply! At this point, rather than just ordering all new switches for every aircraft you own or maintain, I would first determine what switches are in each aircraft and whether they are Wood Electric or Potter Brumfield. Then I would document which ones are where, as far as locations, to make life a whole lot easier later. And finally I would order the replacements for the Potter Brumfield units now, because we know they are defective and need to be replaced. My hopes are that a correction will be made to this AD that excludes the Wood Electric Toggle Switches. I have talked with the American Bonanza Society about this matter and shared what I have found and they are looking into the possible changes needed.

Now for the Worms!! If Potter Brumfield is the manufacturer of the Toggle Switch Breakers that are failing in the Beechcraft Series Aircraft, "What about all of the same type switches of that model and style sold to other manufacturers such as Cessna, Piper, Grumman American, Bell, Sikorsky and so on? Are they not a problem just because they do not have a Beech Part Number stamped on them? Shouldn't they be covered by this AD too? What about all of the spare and surplus Breaker Switches that came from used or salvaged aircraft and were installed in aircraft by avionics shops during avionics up-grades? How about Amateur built aircraft that have these switches? Now you know why this is a "Can of Worms". Beechcraft isn't the only one out there! Looks like maybe somebody needs to do a little more research on this one and make the needed corrections to this AD. I believe this AD should be rewritten as an appliance and come back under Circuit Breaker Switches/ Potter Brumfield and be addressed specifically by Manufacturer's Model and Part Number to assure that we purge all of the truly defective switches from the system therefore not condemning perfectly good ones. Lucky Lougue / Air Salvage of Dallas

**For a detailed explanation and photos of the difference in design of the two Switches, please visit Lucky's Corner at**

[www.asod.com](http://www.asod.com)

## TECH FORUM-AIRCRAFT WIRING PRACTICES-PART 2

By: Fred Gockel

This is a continuation of aircraft wiring practices that was initiated with "Nuts and Bolts" issue 08-02. So, we continue with a summary of what some of the new advisory circulars address.

### GROUNDING AND BONDING

Defined as the process of electrically connecting conductive objects to either a conductive structure or some other conductive return path for the purpose of safely completing either a normal or fault circuit. Some types of grounding are A/C returns, D/C returns, or others. Some points to make regarding grounding are:

Avoid mixing return currents from various sources. Noise created by multiple sources can interfere with digital systems.

Design of ground path should be given as much attention as other leads in the system.

Grounding should provide a constant impedance

Ground equipment items externally even when internally grounded.

For heavy current grounds, use grounding brackets with aircraft structure for a proper metal-to-metal ground. Give special attention to composite structures.

Equipment bonding should provide low impedance paths to aircraft structure for electronic equipment, as to provide radio frequency return circuits. Bonding facilitates a reduction of electromagnetic interference (EMI). Metallic surface bonding protects against static charges and lightning strikes.

### WIRE MARKING

Necessary for:

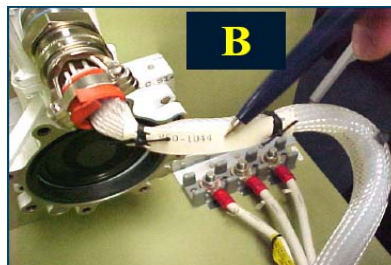
Identification of individual wires and bundles.

Safety for operation and personnel.

Ease of maintenance and troubleshooting.

Wire identification should include wire type, circuit, gauge size, and color. Markings should be legible in size, type, and color at published intervals along the wire.

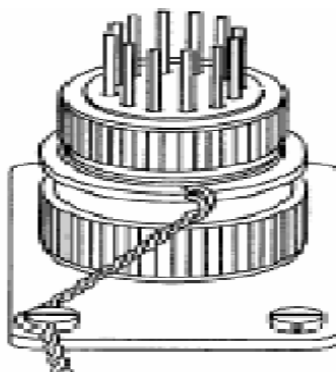
#### Example: Marking a Wire Bundle



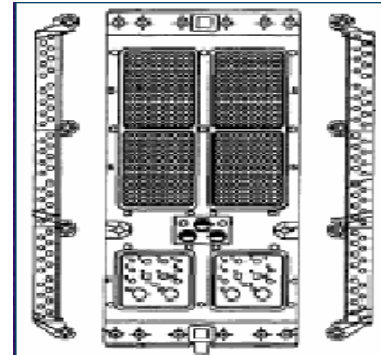
### CONNECTORS

Several types of connectors used. The more common ones are:

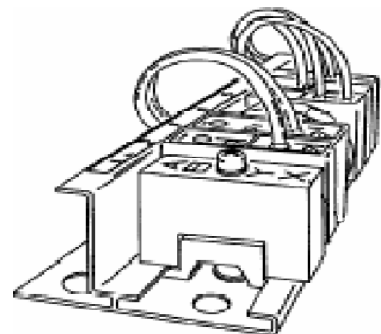
Circular type



Rectangular



Module Block



Connectors should provide a max degree of safety, and meet electrical and environmental requirements.

### CONDUITS

Provide mechanical protection, grouping, and routing of wires and cables. Ensure that they are properly clamped, have proper clearance from structures and moving objects, and have proper bend radii.

## TECH FORUM-AIRCRAFT WIRING PRACTICES-PART 2 Cont.

### CLEANING

One of the most important areas to discuss is the “clean as you go” philosophy which includes:

Keep wiring clean throughout the life of the aircraft.

Clean wiring periodically (vacuum, light brushing, etc.) during heavy maintenance when hidden areas are exposed.

### FOCUS AREAS

Clamping Points:  
Improper installation  
Clamp/wire damage  
Clamp cushion migration

Connectors:  
Worn seals  
Loose connections  
Lack of strain relief  
Drip loops  
Tight wire bends

Terminations:  
Lugs/splices

Backshells:  
Improper build-up  
Lack of strain relief

Grounding points:  
Tightness  
Cleanliness  
Corrosion

### INSPECTION

Inspection locations and emphasis should include:

Wings:  
Exposed wiring on leading/trailing edges during flap extensions

Engine/APU/Pylon/Nacelle:  
Heat, vibration, contamination. High maintenance area.

Landing Gear/Wheel Wells:  
Environmental, vibration, and contamination factors.

Electrical Panels/LRUs:  
High density and maintenance activity areas.  
Prone to broken or damaged wires.

Batteries:  
Prone to chemical contamination and corrosion.

Power Feeders:  
Beware of terminations and signs of heat distress.

Galleys/Lavatories:  
Susceptible to fluid contamination. Ensure proper drain provisions.

Cargo Bay/Under Floor Area:  
High Maintenance area.

Surfaces/Controls/Doors:  
Beware of moving and bending wire harnesses.

Access Panels:  
Prone to accidental damage.

Remember to **ALWAYS** consult the Standard Wiring Practices Manual for your particular aircraft.

**Author: Fred Gockel - FAAS Team  
Representative - Houston, TX**

## Do You Need Contact Information For Your FAASafety Program Manager or FAASafety Representative

1. Go to [faasafety.gov](http://faasafety.gov) and sign in.
2. Click on FAASafety Directory, left side of the page.
3. Click on View All Directory Information.
4. Click on Region, click on your FSDO or region from the drop down box.
5. Click on GO.

The system will display all of the FAASafety folks sponsored by the office you selected.

6. Select the Program Manager or Representative that you need to contact. By clicking on his/her name, that persons information will be displayed.

### 08-04 Newsletter, "What Is It?" Winner

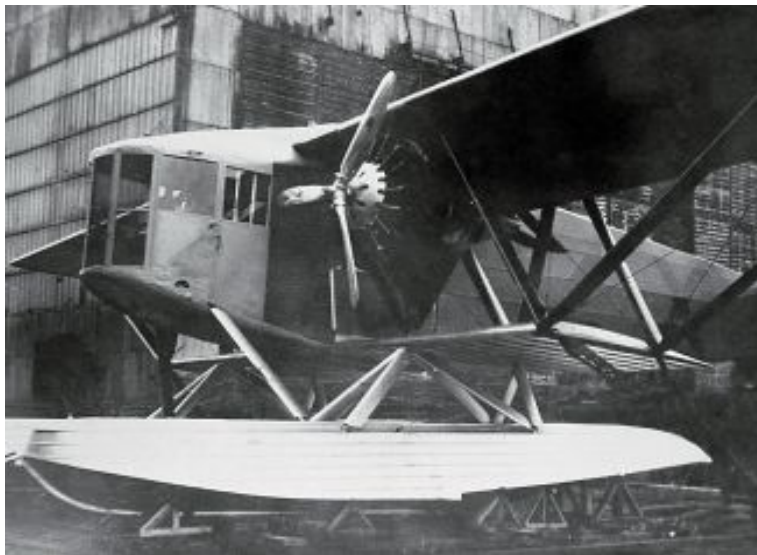


The first correct response to the 08-04 edition came from Mr. Brian Evans. Brian correctly identified the aircraft as a Convair Model 118. Brian used to work for Convair.

The 118 had a 25.5 HP Crosley engine in the rear powering the plastic bodied 4-seat car and a 190 HP Lycoming O-435C on the 34.5 ft. wing for flight. It flew on Nov. 1, 1947 and crashed three weeks later due to fuel starvation

### WHAT IS IT?

If you know, be the first to send me an e-mail at "[nutsandbolts@faasafety.gov](mailto:nutsandbolts@faasafety.gov)" and we will publish your name in the next issue giving you credit for your aviation savvy.



## AIR NOTES

### INTERNET SERVICE DIFFICULTY REPORTING (iSDR) WEB SITE

The Federal Aviation Administration (FAA) Internet Service Difficulty Reporting (iSDR) web site is the front-end for the Service Difficulty Reporting System (SDRS) database that is maintained by the Aviation Data Systems Branch, AFS-620, in Oklahoma City, Oklahoma. The iSDR web site supports the Flight Standards Service (AFS), Service Difficulty Program by providing the aviation community with a voluntary and electronic means to conveniently submit in-service reports of failures, malfunctions, or defects on aeronautical products. The objective of the Service Difficulty Program is to achieve prompt correction of conditions adversely affecting continued airworthiness of aeronautical products. To accomplish this, Malfunction or Defect Reports (M or D's) or Service Difficulty Reports (SDR's) are collected, converted into a common SDR format stored and made available to the appropriate segments of the FAA, the aviation community, and the general public. A great source for review and analysis before any inspection. SDR data is accessible through the "Query SDR data" feature on the iSDR web site at:

<http://av-info.faa.gov/sdrx/> (cut and paste this web address on your browser)

Do you need to find or get information about any FAA office?

[http://www.faa.gov/about/office\\_org](http://www.faa.gov/about/office_org)

## FAASTeam “Nuts and Bolts” Newsletter Article Submissions

If you are interested in submitting an article please type your article using 10 point Times New Roman font in a word document. Articles should not exceed 800 words maximum. If pictures are submitted, please title by number to match required caption. Best would be to paste into word document with the captions printed.

Limit pictures to reasonable quantity and size for article.

Your submission may be slightly modified to ensure correctness and due to space considerations. No major content change will be made without your notification. You are responsible for content and FAA assumes no liability and/or implied endorsements. Upon completion, please submit to Mike Jordan at [nutsandbolts@faasafety.gov](mailto:nutsandbolts@faasafety.gov)

If you are interested in offering a suggestion for an article or if you have a question or issue that you would like clarification on in our “Ask The Feds” column, simply send us an e-mail with your suggestion or request at the address above, and include the form below.

**Please submit the following information with your article, suggestion or request.**

<b>Your Name:</b>		<b>Phone #:</b>	
<b>Title:</b>			
<b>Company:</b>		<b>email:</b>	
<b>City:</b>		<b>State:</b>	

	YES	NO
Do you wish to have your article published:		
Do you wish to have your name, title and/or company name published:		
Are you a FAASTeam Representative		
I agree and attest to information provided		
<b>Signature:</b>		