

Panel Annals

Part 2: Out with the Old

By Tom Machum

Editor's note: The following is the second installment of an ongoing series that chronicles a professional panel upgrade on a single-engine, legacy aircraft; in this case, the author's 1979 PA-28-236 Dakota.

The goal of this series is to provide a behind-the-scenes look at what the owner of any legacy GA aircraft – be it Piper, Cessna, Beechcraft, Mooney or other – can expect when he or she decides to invest time and resources into a professional avionics upgrade.

Future installments will cover panel design considerations, installation of the new equipment, operation and reviews of the new equipment, how Tom and his plane partner, Paul, are addressing ADS-B (out and in), along with a bit of an introduction to the people and the facility where the work was done.

In case you missed it, the first installment – Panel Annals Part 1: Forming a Plan – appears on page 42 of the April 2017 edition.

As you may recall from last month, my airplane partner, Paul, and I decided to get some repairs and upgrades done to our instrument panel. Once the scope of the project was defined, the crew at Sarasota Avionics wasted no time beginning the work.

The first order of business was to make sure that any existing equipment that was to remain in the plane was functioning correctly. This would not only relieve any concerns Paul and I had in regard to the serviceability of our “old” instruments, but it would serve as a solid baseline on which the Sarasota staff could begin evaluating exactly what was good and what needed to be fixed or replaced.

This step also included a thorough run-up to make sure that the engine was running well. Thankfully, all of the tests were passed, and the shop crew was generally pleased with what they had to work with. Their observations eased our mind as well, as we wanted to hand them a “good” airplane.

A review of our records, however, indicated that our plane’s magneto was getting near overhaul time, so we opted to have it removed and sent away for overhaul.

Following the run-up and magneto removal, the airplane was moved from Sarasota’s maintenance hangar to their avionics hangar. Once there, technician Dan Albert began the task of removing all equipment from the panel.

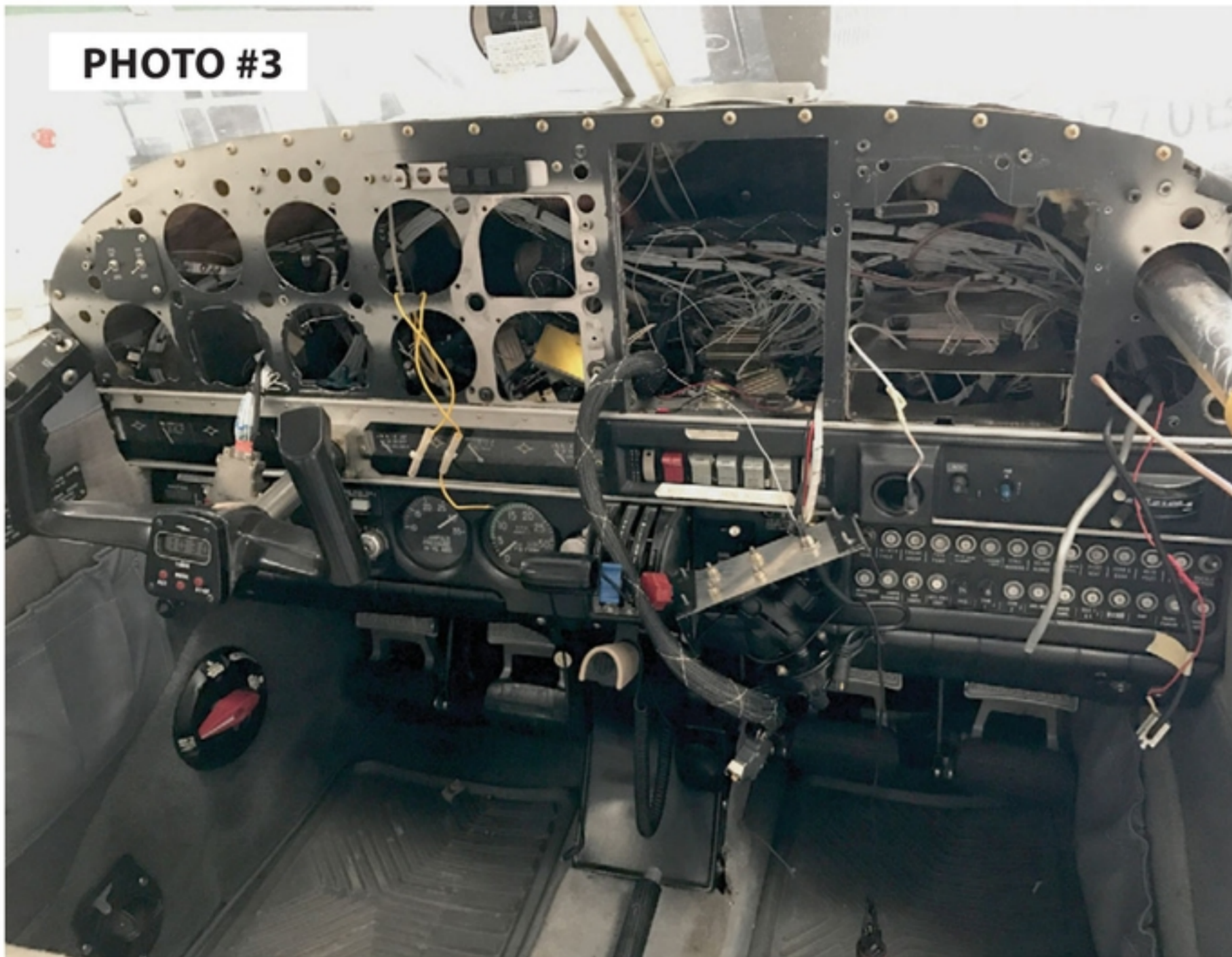
Dan commented to Paul that the panel and associated wiring were pretty typical of a 1979 vintage airplane that has had modifications over the years. To complete his work, Dan would sit in the right seat and place all of his various tools on a thick blue mat on the wing. Then he got to work methodically removing items from the panel.



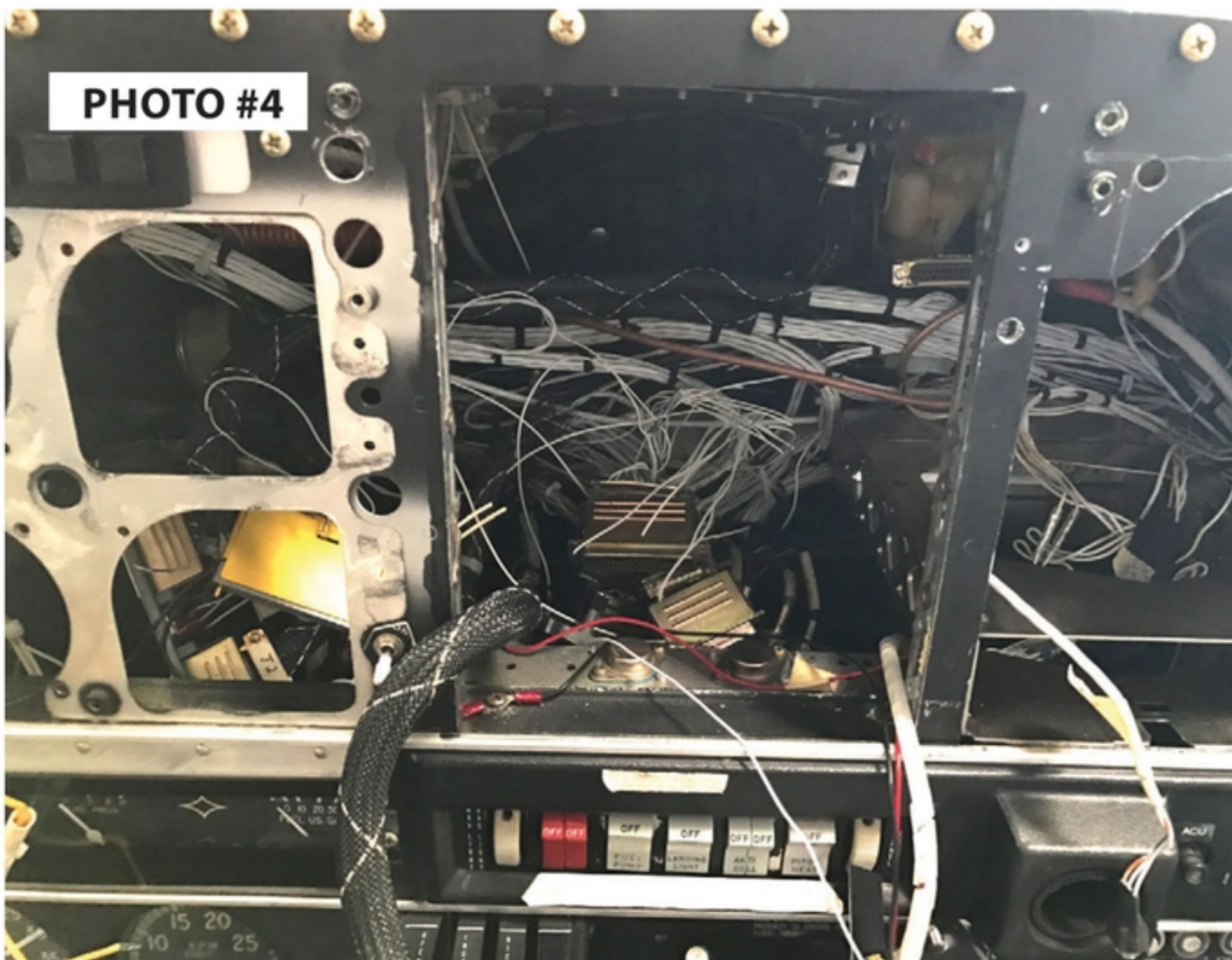
This photo shows the “hole” where the magneto should be.



Sarasota Avionics’ Dan Albert hard at work dismantling the panel and removing all equipment.



Looking pretty bare!



What will fill all those holes? And what connects to that rat's nest of wires?

Naturally, some of the equipment being removed will not make its way back into the panel as part of the project. In those cases, we have been assured that all accompanying items (including wiring and any antennas) will also be removed. As a result, the airplane will be completely rewired.

We are also using this as an opportunity to address Canadian Civil Aviation Safety Alerts (CASA) No. 2016-14. Essentially, the alert states that a high time (roughly 18,000-hr.) Cherokee in Canada experienced a failure of the T-bar assembly/control column (Piper part number 62703-033), causing a loss of pitch control.

The alert recommends that the assembly be checked to ensure no cracks are present. Since the panel will be stripped apart so thoroughly, completing this inspection at this time will make the job much simpler.

Transport Canada is currently working with Piper Aircraft to determine if further action is necessary.

The most important and overriding aspect of the rework is that everything we do needs to conform to the FARs, STCs and other regulatory documents.

A Look at Panel Redesign

As all of this was going on, Paul consulted with Dewey Henderson from Sarasota's design staff to sort out where items would be placed in the new panel. This, of course, is a multifaceted process. Certainly, aesthetics play an important role, but so do functionality, ergonomics, and alternate operating procedures.

For example, we spent a fair bit of time discussing the placement of items and how we would interact with the equipment should we end up in a scenario involving a primary instrument failure:

- What would our scan be?
- Are switches in the right place?
- Will USB charging wires for devices impede important views?

These are all important items that need to be considered. Ultimately, however, the most important and overriding aspect of the rework is that everything we do needs to conform to the FARs, STCs and other regulatory documents. We must ensure that what we are doing will be acceptable not only to the FAA, but also to Transport Canada, as our airplane is Canadian registered.

Thankfully, the staff at Sarasota has dealt with all of this before, so we're confident that our new panel will meet all of those criteria.

By now you're probably wondering what exactly we're doing and what equipment we're hoping to install. Well, you'll have to wait a little longer for that! ✈️



Which one is the better Jet?

We can't say, but we know which has the better visor System!



Replace your stock visor now with the Rosen Sunvisor System

Superior Range of Motion

Highest Quality Available

Neutral Density Tint so visible colors aren't

Rosen[®]
SUNVISOR SYSTEMS

800-284-7677

WWW.ROSENVISOR.COM



Niagara Air Parts, INC.

sales@niagaraairparts.com

We Ship Same Day, Anywhere in the World



2221 Niagara Falls Blvd.
Box 11
Niagara Falls, New York 14304
USA 800-565-4268
PHONE: 705-326-1368
FAX: 705-326-8105



CONTINENTAL STARTER ADAPTER SPECIALISTS

Large selection of
in stock adapter
exchanges
available

Let us resolve your starter adapter problems today. We are recognized world wide for our superior technical knowledge, customer support, and special approved repair procedures.

Call Today - Fly Tomorrow!



Direct replacement
for PA18 & PA19
STC for PA20 & PA22

Cub Cooler



50% better cooling / 58% less weight

800-565-4268 / 705-326-1368

www.niagaraairparts.com

sales@niagaraairparts.com