

*Herb Sanders (GA)* - I was glad to see that you honored Vance Atkinson for his articles and participation in CSA. Many people may not have stopped to consider the significant value we get from Vance, Ken Miller, and others who do the same testing.

When a new system comes out that we all have an interest in and someone is willing to buy the system, go to the work of installing it, experience the risk of injury, death, or even worse (loss of his EZ), foot the fuel bill and expenses to do the flight tests, and then **give** us an unbiased report of the performance and results, we are certainly getting a lot for our nickel.

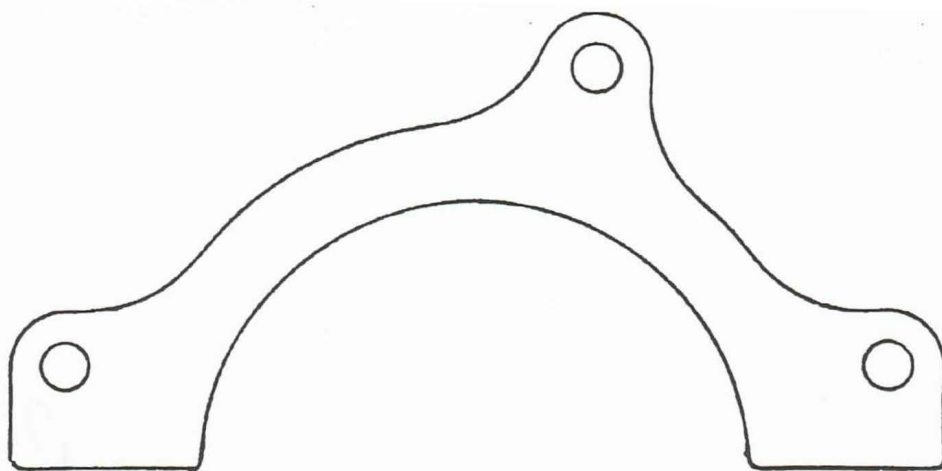
*AMEN Herb!!*

### More Landing Gear Shake

*Baine Whipkey (GA)* - I have heavy duty Cleveland wheels and brakes on my Long-EZ. While doing taxi tests I experienced **SEVERE** vibration when braking from 40 mph on down. I checked disc run-out and found each one at more than .020". I called Cleveland and found their run-out limits were .020". They checked my set and found my discs were good but replaced both of my wheel assemblies.

On the new set I found run-out still over .010". I checked with Mike Melvill and discovered the run-out must be less than .010" to work satisfactorily. After much hassle I got a third wheel assembly from Cleveland that had less than .010" run-out. After that change I've had no further vibration problem.

The most important thing I would like to pass on is that run-out is not necessarily only in the disc but may be in the two wheel halves. The wheel wobble causes the disc to also wobble. I find that just the paint between the two wheel halves makes a difference in run-out. You can also assemble each wheel in three differ-



ent positions - so pick the one with the least run-out.

Run-out on an automobile wheel is a problem when it exceeds .002". I fail to see how Cleveland expects us to accept ten times as much on their product. It's no wonder we are having problems with vibration.



*John Nicholson (ONT)* - When I built my O-320 powered Long-EZ in 1984 I could not get the 28 gallons per hour required flow because of a FLOSCAN sender in the fuel line. If you look into the unit the hole appears quite large but it is a tapered hole and will not pass a 1/8" drill. I estimate the hole is less than 3/32" in diameter. While talking to the people at DPS Instruments, I learned they want the FLOSCAN sender to be installed downstream from the fuel filter.

In view of the tiny hole and the foam chips we sometimes find in our tanks I think it would be a good idea to warn builders, for safety's sake, that the sender **MUST** be installed downstream of the filter.

If FLOSCAN has redesigned their unit since 1984 perhaps this warning is no longer valid. I doubt it though!

### Crankshaft Seal Retainer

*John Nicholson (ONT)* - Here is a drawing for a crankshaft seal retainer which I made and installed. The pattern is from a Lycoming part. Two are required for a complete extension. I made them from 1/16" cold rolled steel but aluminum would probably be OK. They were cut out with a hacksaw and filed to contour. They didn't take long to make.

To drill and tap the crankcase, first remove the prop and extension and draw the large prop bolt bushing out of the crankshaft flange using a socket and short 3/8" bolt as a puller. Through this hole you can drill and tap a hole for a 1/4"-20 x 1/2" bolt. Two people are required for this. One will drill and one will give drill alignment. With the airplane parked nose down it is almost impossible to line up the drill by yourself. Install the retainer plates with the 1/4"-20 x 1/2" bolts and lock washers.

*Editor note: If you drill and tap a 1/2" deep hole you'd better use a bottom tap or you may run out of threads before you get the bolt screwed in all the way.*

Reinstall the prop bushings, extension, and prop. You'll now have no more worries about losing your oil.

The installation takes about 2 hours if you have to drill and tap the crankcase, less if your case already has the holes drilled and tapped.



## Brake Pad Change

*David Haggard (KS)* - My Long-EZ has heavy duty Cleveland brakes and has used the asbestos Parker Hanifin #66-102 pads until recently. I found they were no longer being sold and that the replacement pad, #66-106, was of a different thickness.

To change to the new size pads I was told I needed to purchase a special modification kit. It consisted of a spacer that is .098" aluminum, AN - 4H - 15A bolts, and the new pads. This wonderful kit, #199-2000, **ONLY** costs \$33 per wheel. I could have also made the spacer out of aluminum sheet and saved the Parker Hanifin charge.

I explained that I thought this was a real rip-off as **they** had changed the pad size for **their** convenience and that I had no control over the situation. I still wanted the old style pads that were thicker, therefore, giving a longer service life. After much discussion I reached Parker Hanifin's service representative, Sandy, at 800-272-5464. I explained the problem again and found she would send me a free kit for both wheels if I would use the magic words "warranty replacement" in my request. I wasn't really expecting free brake pads, however, the shim # 068-00401 should definitely be a warranty replacement.

Try it. It worked for me.

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## Keeping Cool

## Fuel Line Failure

*Vance Atkinson (TX)* - Recently a new Cozy was damaged during an off field landing in the Washington, D.C. area. The forced landing resulted from power loss attributed to fuel starvation due to a broken fuel line. It seems the builder had an O-320 with an Airflow Performance fuel injection system installed.

The fuel line that runs from the throttle body to the fuel distribution block was made of solid metal line. The tubing flare broke, causing fuel starvation.

A call to Airflow Performance revealed that you are **NOT** supposed to run a solid line in that area. However, their instructions make no mention of that statement. I have all flex lines in my engine compartment.

*Editor note: It is easy for me to see why the builder would use a solid line in this application. It has been accepted policy, by many, to run solid lines on engines between parts that are solidly connected to the engine. The theory is that they vibrate at the same frequency and shouldn't have any relative motion to cause fatigue. Evidently this thinking is not correct.*

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## Roger Ramjet Sez

Some EZ flyers are really frustrated jet jockeys and like to keep up on the latest jargon. While at KCGIG 93 I asked Norm Howell, official Edwards AFB test pilot, what the latest buzz word was. He said the new acronym