Team Rocket Newsletter 5-22-2025 View in browser

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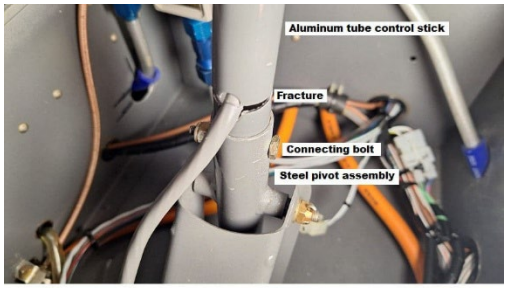

The fracture occurred at the wiring pass thru hole. We have also heard reports of the aluminum tube breaking at the connecting bolt or at the top of the steel pivot assembly.

Note: The available Team Rocket control sticks are a single piece, welded assembly.

The Team Rocket steel front control stick assembly offers an approximately 3" aftward bend in the stick body.

Service Bulletin regarding use of aluminum tubes for the control stick

FSB 06 Use of aluminum control sticks prohibited
Issue date 5-21-2025

The use of aluminum tube control sticks has been advised against for many years. Recently an F1 suffered an aluminum control stick fracture during takeoff, happily with no damage or injuries.

Compliance: Check your control sticks to verify that they are made of steel by

placing a magnet on the control stick tube. If the magnet doesn't adhere, verify the control stick material by other means as necessary. If it is determined that the control stick tube is aluminum, it should be replaced with a steel control stick tube as soon as possible. Replacement before further flight is recommended.

Note: It might be possible to simply replace the aluminum control stick tube with a thicker wall steel one. It is also an option to order a single piece steel control stick assembly from Team Rocket. The Team Rocket steel control stick features an S-bend to the stick which many find to be more comfortable. Alternately, a standard (straight) Van's RV-4 front stick assembly, available from Van's Aircraft may also work.

Gear leg nut height

I regularly receive questions on how many threads should protrude from the large nuts on top of the gear legs. The answer is complicated by the variable amount of reaming required to "clean up" the gear leg sockets.

The gear leg socket, i.e. the steel tube that receives the gear leg into the engine mount, is a machined and welded assembly. It must be reamed with a very expensive tapered reamer* after the final welding of the engine mount is complete.

The reaming procedure is required to eliminate any welding warpage to the gear leg socket. Otherwise the carefully machined taper on the gear leg won't fit properly. If it doesn't fit properly, the gear leg will not be retained securely by the friction of the metal to metal contact in the tapered bore of the socket. That is very bad.

Q: So, what does the big nut actually do?
A:It's job is to draw the gear leg into intimate contact with the tapered bore inside the socket.

Q: Do you mean that the nut doesn't hold the gear leg in position?
A: No it doesn't. It simply pulls it into position where the tapered walls can meet the tapered gear leg. The friction does the rest. If you don't believe it, just remove the previously tightened nut and see if you're man enough to pull the gear leg out.

Anyway, the large nuts are intentionally "short" to save weight. And so are the threads on the gear legs. Put them together and you'll have threads that are typically too short to protrude above the nut.

Protruding threads don't do any work anyway, so why carry them around?

** ... a very expensive tapered reamer: 20 years ago, or more, Mark used to loan out the 12 reamers that he had. Builders were charged with reaming their own engine mount sockets. This practice stopped after about 7 or 8 or the pricey reamers disappeared. If you have one, or know someone who might have one, please send them back to Vince (or Mark). I'll even pay the shipping. No questions asked... only a big thank you.*

While we're talking about gear legs...

While we're on the subject, let's talk a bit more about the general gear leg installation, care, and feeding:

- During initial gear leg installation you'll be much happier if you're careful to NOT tighten that big nut on top of the gear leg. You will undoubtedly want to remove the gear legs for various other operations as you continue the construction. If you do tighten it, you'll need a mini sledge hammer and a LARGE brass drift to pop the gear leg loose. Be careful to not bugger up the threads.
- Before you're ready to do the wheel alignment you may want to browse the original manuals, but do NOT use their bench alignment procedure. It is not satisfactory.
- What is satisfactory is to align your wheels using the procedure found here: Using the gear leg socket clamps
- Once you're ready to do the final alignment, as shown above, you'll want to snug the big nuts down. Mark says to use 50 ft lbs, but honestly the torque isn't that critical. They just need to be snugged down and then give the

wrench a firm tug. The reason for this is that they will loosen in service. Keep reading....

- The big nuts will loosen in service until your gear legs reach the point where they simply won't insert themselves any deeper into the gear leg socket. This will depend on runway conditions, engine compartment heating and cooling cycles, and so forth. So it is important to re-tighten those big nuts periodically during your first 100+/- hours of flying. After they stop loosening, then simply recheck when convenient, say at each oil change. Just reach in whenever the cowling is off to see if they are loose. If they are, tighten them. They'll stop eventually.
- The gear legs typically won't require any other unusual care, although it is possible to bend them if you drop in too hard on landing. Replacements are available if necessary.
- Shimmy. We talked about shimmy in the 5-16-2025 newsletter. Shimmy can cause cracking and other issues. Refer to the newsletter above for more tips on combating shimmy.
- For other tips and tricks, check out the Dropbox info cache, the Team Rocket forum, and, of course, various builder websites online such as vincesrocket.com and others.

Cheers!

Team Rocket forum updated

We did a modest update to the Team Rocket forum today. The topic orders were organized to a more logical format and several topics that somehow had been not accessible to most users were made accessible. It is hoped that these changes will make it easier for users to chat and to find topics of interest.

Items for sale

Items for sale were listed in the 5-16-2025 newsletter. They are not repeated here for brevity. Please refer to the earlier newsletter for more details.

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