



PIA Informational Advisory

To: *Parachutists & Riggers - Worldwide*

Date: *3 August 2018*

Subject: *Tubular Retainer Band Failures*

Equipment: *Retainer Bands made of Surgical Tubing with Glued Overlap*

~~~~~

### **Scope**

“Tubular Retainer Bands” (TRBs) that fail during parachute deployment may adversely affect the opening and the structural integrity of the parachute, as well as the physical well-being of the parachutist.

### **Background**

Numerous reports of failed TRBs from worldwide sources indicate that both newly manufactured TRBs as well as older stock are failing at the glued overlap and other locations along the tubing.

Recent independent testing has shown that natural rubber latex (NRL) tubing is adversely affected by UV light, ozone, excessive heat and age. As a result of this testing, at least one company has initiated a 2-year product shelf life and ships their TRBs in sealed UV resistant packaging with DOM clearly marked to help ensure consistent performance.

Retainer bands (RBs), regardless of type, perform a vital function during parachute deployment. Orderly release of each suspension line bight from the deployment bag helps to ensure that the parachute’s deployment is properly sequenced. Complete line stretch must be achieved before the parachute is released from the deployment bag. When RBs fail during bag lift-off, it is possible for the canopy to exit the bag and begin inflating prior to full line stretch. When this occurs, the parachute may open with explosive force, possibly damaging fabric, lines and potentially injuring the parachutist. This is referred to as an “out-of-sequence deployment.”

### **Advisory**

Parachutists and riggers are advised to check the condition of their TRBs to ensure they are not defective or significantly weakened. A field test procedure is described on page 2 of this advisory. You should contact the manufacturer of your specific brand, not PIA, if you encounter product failure, or if you have further questions about a particular product. Substandard TRBs should be removed from service immediately and destroyed.

PIA expressly renders no opinion and makes no judgment as to the condition or quality of any specific TRB. Such determinations must be made by the individual rigger or user.

If you have any questions regarding this advisory, please contact the PIA Technical Committee Chair.

### **PIA - Technical Committee**

**T.K. DONLE – Chair** ([technicalchair@pia.com](mailto:technicalchair@pia.com))

**Betsy Hoats-Smith – Co-Chair** ([b.hoats@gmail.com](mailto:b.hoats@gmail.com))

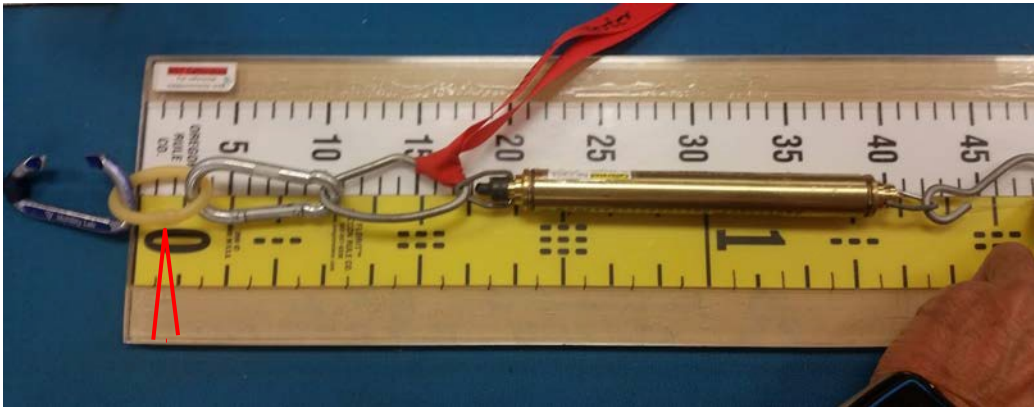


## PIA Informational Advisory

### Field Test Procedure for Tubular Retainer Bands

#### **Tool Requirements**

- Ruler: Twelve (12) inches long (300mm) minimum
- Spring Scale or digital equivalent (calibrated)
- Anchor Points : Smooth metal hooks or carabiners
  - $\frac{1}{4}$ " –  $\frac{3}{8}$ " (6.5 -9mm) diameter where the anchor meets the TRB (as shown below)



#### **Test Procedure**

1. Attach TRB to the table anchor point and to the carabiner on the spring scale.
2. Ensure the glued overlap is placed between the two anchor points. (Red arrow)
3. A minimum pull force of twenty-five (25) pounds (12kg) is applied for five (5) seconds.
4. During the pull-test, the TRBs should elongate to the measurements below without compromising the integrity of the material or the glue joint.
  - a. All Microline TRBs shall be pulled to nine (9) inches  $\pm \frac{1}{2}$ " (229mm  $\pm 13$ mm)
  - b. All Dacron TRBs shall be pulled to twelve (12) inches  $\pm \frac{1}{2}$ " (305mm  $\pm 13$ mm)
5. All TRBs should pass without failure. 3-5% of each lot/batch should be tested.
6. Report TRB failures to the manufacturer.
7. TRBs that are tested should not be used for parachute rigging applications.

~~~ End of Test Procedure ~~~