



AUSTRALIAN PARACHUTE FEDERATION

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RISER FAILURE

On Sunday 18 January 2009, a **PA Talon** riser failed on opening. It was the left riser with RSL fitted. The reserve was deployed into the trailing main by the RSL resulting in a main reserve entanglement. Fortunately and with luck the jumper managed to attain sufficient reserve inflation to survive the landing with broken bones in his back and shoulder.

During the investigation of his equipment it was found that the 3-ring closing loop had pulled out from under the confluence wrap, releasing the riser. It was reported as a snappy opening. The rig was built in June 99 and had undergone 12 reserve repacks over subsequent years.

In August 2001 the APF promulgated APF Service Bulletin No APF010801-A 3-ring Inspection And Maintenance. The inspection, Part A, is designated **Mandatory**. This rig's reserve had been packed six times since the service bulletin was published, and numerous other times when the main was packed and possibly the 3-rings serviced. Had the service bulletin been applied it would have highlighted that the riser did not meet the criteria of the service bulletin as **the locking loop was too short**.

Due to the unique method of construction on this riser of bar-tacking across the loop it is probable that over a period of jumps some of the stitches had broken due to the excessive load applied by the short locking loop until on this jump they failed completely allowing the loop to pull out of the riser, releasing it. It is impossible to visually inspect the stitching as it is covered by the confluence wrap, failure comes without warning signs. There was no kink in the left cutaway cable to warn of excessive loading. To prevent a similar event occurring especially when an RSL is fitted the following must occur.

MANDATORY INSPECTION in accordance with APF Service Bulletin **APF010801-B* Issued 23rd January 2009** of **all 3-ring riser assemblies before the next jump**. Inspection to be noted on reserve packing card and marked on inside of front riser with APF010801-B using a fine tip paint pen so it will be visible even if the risers are black.

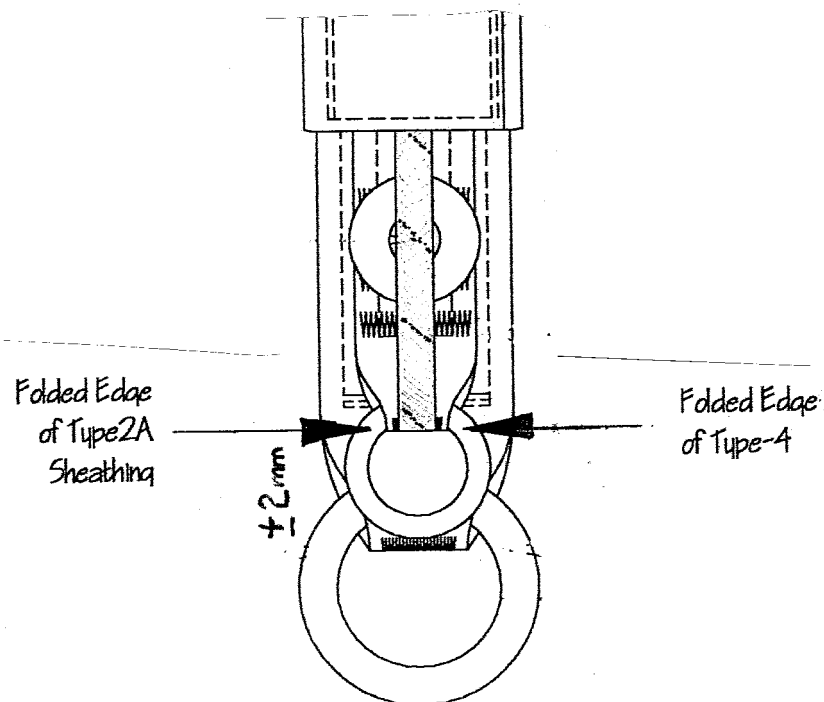
Note: APF SB 010801-B available for download from APF web site at: <http://www.apf.asn.au/apf-sb-racs.html>

Inspection to be carried out by a packer B or higher rating. If there is any doubt the assembly should be checked and evaluated by a rigger.

On all solo rigs and all types of riser style, one inch type 17 mini rings, type 8 mini rings and standard type 8 with the larger rings, the length of the locking loop should be level (+/- 2mm) with the end of the fold of the webbing that retains the small ring when the riser is laid flat with some tension applied to the small ring.

It is normal for new type 17 mini risers to be tight to interlock the rings, this is because they become more pliable with use, but the locking loop must still allow the housing some play and not pull the small ring against the riser, see side view on service bulletin.

**This Service Bulletin replaces APF SB 010801-A Issued August 2001. New inclusions:
Identification of personnel to conduct inspection and required method to record inspection.*



Typical view of locking loop length

See detailed views of all risers in UPT (Relative Workshop) 1998 specifications. (*Excerpts from this 20 pg manual are available from the APF Office for comparison of specific 3-ring construction tolerances. The entire manual is available from UPT.*)

When reserves are repacked the main parachute should also be inspected at all the key points of wear and function.

This inspection of all 3-rings may be an inconvenience now but it should identify older systems that may still be in use that should have been removed from use. The consequences of riser failure are potentially fatal and need to be removed for our safety.

Any inspections that result in identifying any 3-rings that do not conform to the inspection criteria outlined on APF SB 010801-B are to be recorded on an APF Equipment Defect Form and forwarded to the APF National Office c/o the Technical Officer. This form is available for download from the APF web site at: http://www.apf.asn.au/apf-all_documents_and_forms.html

Jo Chitty
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 23rd January 2009