

LINDSTRAND HOT AIR BALLOONS LTD

SERVICE BULLETIN NO. 10

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TITLE: STITCH FAILURE IN Q-VENT INTERNAL PARACHUTE CROSS TAPES

Classification: This Service Bulletin has been classified as highly recommended by Lindstrand Hot Air Balloons Ltd

Applicability: Q-Vent deflation systems in Lindstrand envelopes manufactured in the first quarter of 2005

Serial Numbers Affected: 1025, 1027

Compliance Standard: Affected envelopes to be inspected prior to next flight and monitored during the following ten pre-flight inspections

Background: There have been two reported incidents of the failure of zig-zag stitching in the cross tapes on the inside centre of the parachute disc (see Photograph 1). These cross tapes are the main attachment point for the red coloured Q-Vent operating line (see Figure 1). Investigation has revealed that there is a possibility that the envelopes identified above may exhibit the same manufacturing problem.



Photograph 1

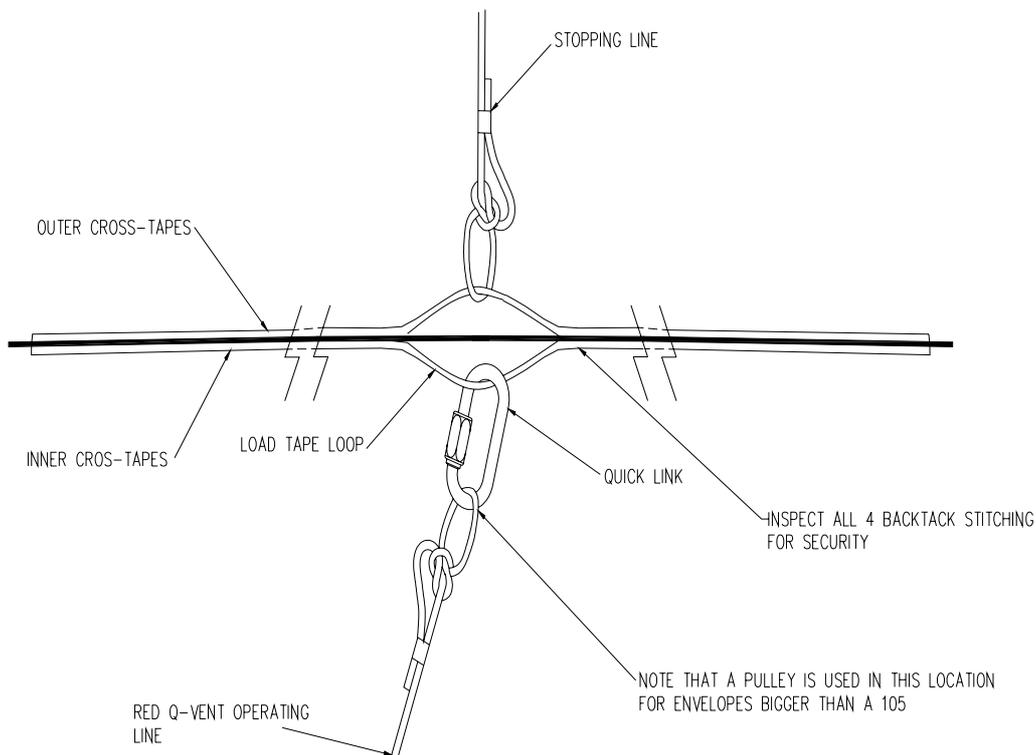


FIGURE 1 SECTION THROUGH THE PARACHUTE SHOWING THE INTERNAL CROSS-TAPES

Accomplishment Instructions:

Inspection

Pre-Flight Inspection

During the internal envelope inspection look closely at the stitching of the internal cross tapes. Pay special attention to the back-tack areas. Look for any evidence of fraying of the sewing threads on both the outside of the parachute and the inside. Look for evidence of the internal cross tapes separating from the underlying fabric. If there is evidence of thread fraying and / or of the tape separating from the fabric, then contact the factory. It would help the decision making process of what corrective action is required if a digital photograph can be taken of any observed failed structure and this photo e-mailed to chris@lindstrand.co.uk.

Load Test

This load test must be performed prior to the next flight and if there is any concern regarding the security of the stitching:

- a. Lay out the balloon envelope so that both sides of the parachute are accessible.
- b. Attach a 6 mm \varnothing rope or larger, through the external load tape loop at the centre of the parachute. This is the loop that the stopping line is attached to.
- c. Tie the 6 mm rope to a hard point.
- d. Locate the red Q-Vent operating line and organise the parachute such that the quick link attachment point to the internal cross tapes is visible.
- e. With two people pulling on the red Q-Vent operating line, pull the cross tapes as hard as possible.
- f. Repeat the pre-flight inspection identified above to establish whether there has been any stitching failure.

Recovery Action

If any failed stitching is detected the complete internal cross tapes should be unpicked and re-sewn down using the original stitch pattern. This is best achieved with a three-step zig-zag machine but it is possible with a single needle machine using the stitch pattern shown in Figure 5.1.2.3 of the Maintenance Manual.