



Civil Aviation Authority

EMERGENCY AIRWORTHINESS DIRECTIVE



Number: G-2024-0001-E

Issue date: 30 April 2024

This Airworthiness Directive (AD) is issued by the UK CAA in accordance with UK Regulation (EU) No. 748/2012 Part 21.A.3B, acting as the Authority of the State of Design for the affected product(s), under Article 34 of the Air Navigation Order 2016 (ANO) and UK Regulation (EU) 2018/1139.

In accordance with UK Regulation (EU) No. 1321/2014 Annex I (Part-M), M.A.301 / Annex VB (Part-ML), ML.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified or agreed by the CAA [Part-M, M.A.303 / Part-ML, ML.A.303].

Design Approval Holder's Name:

Lindstrand Technologies Limited

Type/Model Designation(s):

All Types/Models of hot air balloon envelopes fitted with optional Polyester Filled Aramid (Kevlar) Load Tapes

Effective Date:	02 May 2024
TCDS Number(s):	UK.TC.BA.00006
Foreign AD (if applicable):	N/A
Supersedure:	N/A

ATA - Hot Air Balloons - Envelopes with Polyester Filled Aramid (Kevlar) Load Tapes – Removal from Service

Manufacturer(s):

Lindstrand Technologies Limited.

Applicability:

All Types/Models of hot air balloon envelopes with a date of manufacture after March 2017.

Definitions:

Affected Serial Numbers: All envelope serial numbers with a date of manufacture after March 2017 that have been found, by inspection, to be fitted with optional Polyester Filled Aramid (Kevlar) Load Tapes.

Note: for guidance in identifying the specific tape type, refer to Appendix 1.

Reason:

During a routine 100 hr/Annual inspection of an envelope, it's been discovered that the polyester filled aramid load tapes have degraded significantly (see Figure 1).

The damage has allowed the Kevlar core (coloured yellow) to become exposed which would degrade the strength of the tape due to ultraviolet exposure. Both horizontal and vertical tapes are affected and there is significant distortion to the horizontal tapes.

Additionally, in the area where the tape loops around the crown ring, the polyester has failed completely, and Kevlar is totally exposed. In other areas the load tapes have stretched and frayed.

The envelope that has been inspected has only completed 100 flying hours.

Although the maintenance manual states no damage to the load tapes is acceptable, an unsafe condition could exist as the rate of degradation is unknown and the residual strength of the tape, following exposure to UV, cannot be determined.



Figure 1: Examples of load tape damage

Required Action(s) and Compliance Time(s):

1. Before further flight from the effective date of this AD carry out a visual inspection to determine the date of manufacture (from the envelope data plate) and whether the envelope is fitted with Polyester Filled Aramid (Kevlar) load tapes.

Note: For guidance in identifying the specific tape type, refer to Appendix 1.

2. If the date of manufacture is after March 2017 **and** the envelope has been found, by inspection, to be fitted with optional Polyester Filled Aramid (Kevlar) Load Tapes, the envelope must be considered as an **Affected Serial Number** for the purposes of this AD.
3. If the envelope is an **Affected Serial Number**, carry out a 100% visual inspection of the load tapes.
4. If damage is visible, no further flight is permitted until the damage has been rectified.
5. **If no damage is visible, amend the aircraft maintenance programme to include a 100% visual inspection of both the horizontal and vertical load tapes before each flight.**

Note: this visual inspection can be performed by the pilot/owner. In cases of doubt, the envelope should be inspected by a suitably qualified engineer.

Reference Publications:

Lindstrand Technologies Maintenance Manual and Supplements, Issue 7.2.

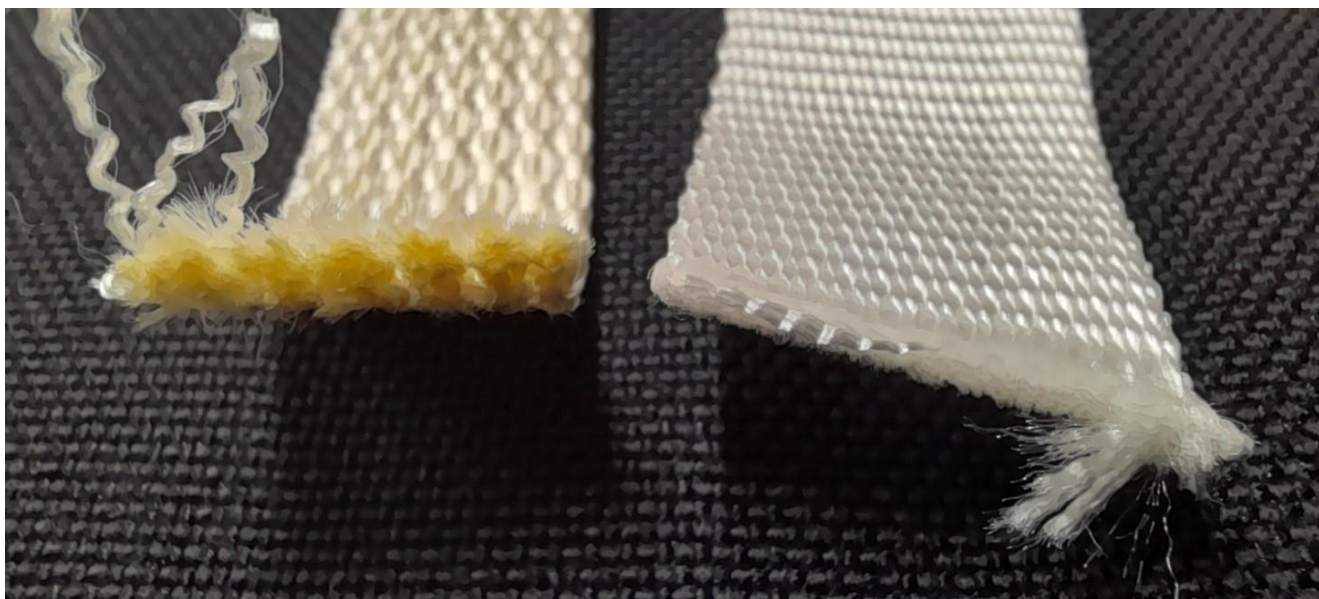
The use of later approved revisions of the above-mentioned document is acceptable for compliance with this AD.

Remarks:

- 1) The safety assessment has warranted immediate publication and notification without implementing the full consultation process.
- 2) If requested and appropriately substantiated, CAA can approve Alternative Methods of Compliance for this AD.
- 3) Information about any failures, malfunctions, defects, or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the [CAA aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
- 4) Enquiries regarding this Airworthiness Directive should be referred to: ga@caa.co.uk
- 5) The Type Design holder is in liquidation. For any questions concerning the technical content of the requirements in this AD, please contact: certificationGAU@CAA.CO.UK

Appendix 1: Identification of Polyester Filled Aramid (Kevlar) Load Tapes

The Polyester Filled Aramid (Kevlar) load tapes (shown on left) have a distinctive yellow core which will become visible if damage has occurred.



The Polyester Filled Aramid (Kevlar) load tapes (shown on left) is 15 mm wide; the standard polyester tape is 20 mm wide.

