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Memorandum

U.S. Department
of Transportation

**Federal Aviation
Administration**

Subject: Interim Policy to Require an Envelope Monitoring System on New Airship Designs

Date: DEC 0 1 1997

From: Manager, Standards Office, ACE-110

Reply to Attn. of: Lowell Foster
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To: ALL ACO's

The National Transportation Safety Board (NTSB) made several recommendations resulting from the investigation of the US LTA crash in New York City in 1993. The crash resulted, in part, from an undetected tear in the helium envelope. The pilot continued to inflate the ballonets (air bags inside the helium envelope) which pumped helium out of the envelope through the tear. Had the tear been detected earlier, the pilot would not have inflated the ballonets and had more time to make a safe landing. The airship descended, nearly out of control, finally coming to rest on top of a building.

One of the NTSB recommendations was that the Airship Design Criteria (ADC), Order 8110-2, be changed to require an envelope rip warning system on all airships. The Federal Aviation Administration (FAA) agreed with the NTSB that a change to the ADC is appropriate. However, we did not believe that the change needs to require aural and visual alerts or a complex electronic monitoring/warning system in all cases -- only where appropriate based on size, visibility, or complexity.

This memo precedes the change to the ADC. The Small Airplane Directorate asked for feedback concerning ADC requirements from the ACO and applicant of the most recent U.S. type certificated airship. The resulting comments were too numerous to affect timely changes to the ADC; therefore, the directorate issued this interim policy memo so that there are no delays in implementing the NTSB recommendation.

The interim policy for the envelope rip warning system adds the following to the ADC, section 4.43, Envelope design:

> Means to warn the pilot of envelope rips. Acceptable compliance means include systems as simple as locating and marking both envelope and ballonet pressure gauges so that unusual indications (rapid loss of helium) are immediately noticeable to the pilot. If an airship valving system is complex or automatic, a system such as a ballonet airflow rate change sensor connected to a warning system may be more appropriate.

If you have any questions or comments, please call Lowell Foster at (816) 426-6941.

for John Colomy

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