U.S. Department of Transportation
Federal Aviation Administration

Memorandum

Appendix J

Subject: INFORMATION: Flyable Crack Limits in Primary Structures

Date: MAR 08 1983

From: Leroy A. Keith
Manager, Aircraft Certification Division, ANM-100

Reply to Attn of: ANM-112:IC

To: Manager, Aircraft Maintenance Division, AWS-300

We understand that certain manufacturers have prepared documents which contain information on flyable crack limits in primary structures. Supposedly, these documents are prepared to assist operators in developing their maintenance programs.

Since we do not encourage the development or distribution of such information, the FAA should not approve any maintenance documents which specify flyable crack limits. Airplanes are not certificated with known cracks in primary flight structures. Likewise, the FAR rules do not provide for continued operation after cracks are detected unless an Airworthiness Directive is issued which would assure an acceptable level of safety until the cracks are repaired.

This is a restatement of existing FAA policy which has served the interest of safety for many years. There may be some confusion about the critical crack length associated with fail-safe residual strength required by the new 25.571 damage tolerance rule. The critical crack lengths determined under 25.571 are used only to establish the upper bound for the detection interval and is not considered an acceptable crack size for operation.

The detectable crack size is associated with the lower bound of the detection interval and should provide ultimate residual strength capability. Again, the FAA should not approve maintenance or operating procedures which allow dispatch with known cracks unless under the auspices of an Airworthiness Directive.

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Los Angeles Area Office, MAR 10 1983

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