

August 29, 2000 First Issue (KU-KI-134)
June 30, 2011 Amended (KOKU-KU-KI-282)

Circular

Director, Airworthiness Division,
Safety and Security Department,
Civil Aviation Bureau,
Ministry of Land, Infrastructure, Transport and Tourism

Subject: Long-term monitoring of aircraft structural safety after implementation of large scale structural repair

The notice issued by the Director General of the Civil Aviation Bureau is directed to seven (7) air carriers, as KU-KEN-989 dated July 24, 1987 relating to the recommendation (the recommendation No.1, Item 2) of the Aircraft Accident Investigation Commission (AAIC, currently Japan Transport Safety Bureau). However, other organizations that perform the air transport service using category T aircraft must be requested to follow this circular to implement an appropriate action.

Supplementary Provisions

1. This circular shall be effective on August 29, 2000.
2. JCAB Circular TCL-137-87 shall be abolished by an issuance of this circular.

Supplementary Provisions (June 30, 2011)

1. This circular shall be effective on July 1, 2011.

Please contact for questions or comments regarding this Circular to:

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KU-KEN-989

July 24, 1987

Attention: The President, seven Japanese scheduled air carriers

Director-General, Civil Aviation Bureau

Maintaining airworthiness for aircraft after implementation of large scale repair

An investigation report for aircraft accident of Japan Air Lines, Boeing 747SR-100, JA8119 on August 12, 1985 was publicized by the Aircraft Accident Investigation Commission recently with submittal of recommendations as attached herewith.

In order to take the intention of the recommendation and apply the lessons learned of this accident for further aviation safety enforcement, the Civil Aviation Bureau specified, as shown below, the corrective action regarding a management system on the major repair, including alteration on the aircraft primary structure, accomplished at locations other than the production facility of that aircraft and a means of a special inspection following the major repair. The Civil Aviation Bureau requests the sufficient awareness of this circular and efforts to prevent a recurrence of a similar accident.

Long-term monitoring of aircraft structural safety after implementation of large scale structural repair

If large scale repair including replacement of primary structural elements, etc was performed after restoration of damages, etc by aircraft accident, it may be required to establish special inspection items and to monitor condition consecutively. Therefore it is requested to establish long-term monitoring program (hereinafter referred to as "Long-term Monitoring Program") as necessary in accordance with the following directions and make every possible effort to keep structural safety of aircraft.

(1) Applicable structural repair

Typical examples categorized as "large scale repair" that requires establishment of the Long-term Monitoring Program are as follows. However the establishment of the program is not necessary, if effect of the large scale repair can be monitored properly by existing maintenance program.

- a If repair for primary structural elements is performed by methods other than methods in accordance with technical data of structural repair manual, manufacturing drawing issued by a manufacturer of the aircraft or basic repair method
- b If extent of repair is widespread
- c If load factor which causes the damages is complicated or not entirely clear

(2) Areas for monitoring

Areas required for the Long-term Monitoring Program are as follows.

- a Areas of the repaired and adjacent areas for structural repair of item 1 above.
- b Areas not categorized as item a. above, but areas having possible affect by the external force which causes the damages and the affect may not become apparent after a long period of time.

(3) Method of monitoring

It is requested to establish appropriate inspection method and interval, etc for areas indicated by item 2 above, in order to detect defects caused by fatigue, corrosion, stress corrosion, etc early and properly. It is also requested to establish them with special attention on areas of stress concentration such as fastener holes, etc or areas of environmentally susceptible to degradation.

(4) Others

Items relating to Long-term Monitoring Program shall be specified in the Maintenance Manual.

Recommendation No.1

June 19, 1987

Attention to Honorable Ryutaro Hashimoto, the Minister for Transport

Aircraft Accident Investigation Commission

Chairman: Shun Takeda

Member: Yoshiomi Enomoto

Member: Kiyoshi Nishimura

Member: Jiro Koo

Member: Akira Azuma

RECOMMENDATION ON SECUREMENT OF AIRQWORTHINESS OF AIRCRAFT

The Aircraft Accident Investigation Commission (AAIC) has completed the accident investigation on JA8119, a Boeing 747 SR-100 of Japan Air Lines Co. Ltd., which crashed into mountains of Ueno Village, Tano County, Gunma Prefecture, Japan on August 12, 1985.

Based on the investigation results, the AAIC recommends the followings pursuant to the provision of Paragraph 1 of Article 21 of the Aircraft Accident Investigation Commission Establishment Law because the AAIC believes that they should be conducive promptly to prevent of aircraft accidents.

1. In case where large-scale repairs such as modification of primary structural elements of an aircraft are carried out at a place other than the production facility of that aircraft, for recovery from or repair of damage caused by aircraft accident, as much guidance (supervisory) as possible should be provided to the repair agency engaged in the repair work so that the planning and management of the repairs are conducted with special care as individual condition requires.
2. In case where large-scale repairs such as modification of primary structural elements of an aircraft are carried out for recovery from or repair of damage caused by aircraft accident, as much guidance (supervisory) as possible should be provided to aircraft operator so that special instruction (inspection) items, if necessary, are established for the portion concerned and continuous monitor is maintained.
3. In this accident, ruptures of the fuselage tail, vertical fin, and hydraulic flight control systems were caused as a chain reaction by flow-out of the pressurized air due to rupture of aft pressure bulkhead. To prevent the recurrence of such situation, a study should be initiated on the addition to the airworthiness criteria of the provisions concerning the fail-safe capability of peripheral structures, functional systems etc. against rupture of pressurized structural components such as the aft pressure bulkhead on a large aircraft.