

Guideline for Evaluating Maintenance Manuals & Detailed Implementation Procedure

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Director-General
Japan Civil Aviation Bureau

Guideline for Evaluating Maintenance Manuals

I. General Provision

This circular provides the guidelines for evaluating the compliance with applicable technical standards and the matters concerning maintenance as stipulated in Article 214 of the CAR for Enforcement of the Civil Aeronautics Act (Ordinance of the Ministry of Transport No. 56 of 1952; hereinafter referred to as “the CAR”) for the Maintenance Manuals created by domestic air carriers under Article 104, paragraph (1) of the Civil Aeronautics Act (Act No. 231 of 1952; hereinafter referred to as “the CAL”) When an application for approval for Maintenance Manuals under Article 104, paragraph (1) of the CAL is submitted, in principle, the compliance with the technical standards in Article 214 of the CAR shall be investigated in accordance with this circular. These Guideline shall be used as a reference to review the maintenance standards created by aerial work service operators.

II. Evaluation Criteria for Maintenance Manuals

1. Maintenance Personnel (Related to “Duties of staff engaged in maintenance of aircraft”)

(1) Maintenance Organization

Responsible persons, organization, roles and responsibilities, etc. in the maintenance division must be specified properly.

(2) Eligibility requirements and designation method of maintenance personnel as well as standards for personnel distribution and the situation

① Eligibility requirements and designation method must be specified properly according to the content of maintenance to be performed, the degree of difficulty, etc.

② Distribution of maintenance personnel in the maintenance base, standards for distributing maintenance personnel in the maintenance base by qualification, situation of distribution of maintenance personnel, etc. must be specified properly.

(3) Roles of Maintenance Personnel

The scope and content of roles of maintenance personnel in (2) above must be specified properly according to qualifications.

(4) Procedures for change of shifts

Method of transfer of duties, etc. must be specified properly.

2. Maintenance Base (Related to “Disposition of maintenance station and facilities and equipment at a maintenance station”)

(1) Arrangement of maintenance base

It must be specified that arrangement, prioritization, etc. of maintenance base are performed properly.

(2) Maintenance facilities

Arrangement, management, etc. of facilities, equipment, apparatuses, spare parts, etc. must be specified properly.

3. Maintenance Method (Related to “Procedures for maintenance of airframes and equipment, etc.” (hereinafter referred to as “equipment, etc.”) and “Maximum hours of use for equipment, etc.”)

(1) Maintenance system

Maintenance must be categorized into regular maintenance, irregular maintenance, special maintenance, etc. to systematize the individual role and mutual relationship of each of the maintenance categories.

(2) Setting and change of maintenance method

Setting and change of maintenance method must conform to maintenance technical documents created by the Japan Civil Aviation Bureau, State of Manufacture and the manufacturer, etc. of the airframe, equipment, etc.. In addition to this, it must be specified to ensure the safety of flight operations by taking into consideration the technical standards and operating experience of the air carrier, the occurrence conditions of service difficulty in other air carriers, and other factors.

(3) Category of regular maintenance

Regular maintenance must be categorized into daily maintenance, periodic maintenance, etc. for each aircraft type to perform maintenance for each maintenance item in a planned manner; the timing or interval of performing maintenance must be also specified properly for each of the maintenance categories.

(4) Interval and principle items of maintenance

Interval and principle items of maintenance on the airframe, equipment, etc.. must be specified properly. With regard to aircraft, equipment, etc. with life limit, the maximum hours of use must be specified.

4. Maintenance Method (Related to “Procedures for performing maintenance of airframes and equipment, etc.”)
 - (1) Policy

The maintenance method must conform to the maintenance technical documents created by the manufacturer, etc. of the airframe, equipment, etc.. In addition to this, it must be specified to perform appropriate maintenance by taking into consideration the technical standards and maintenance experience of the air carrier.
 - (2) Maintenance Method

The maintenance method must be specified properly in line with each of the principle items of maintenance in Section 3.(4) above.
 - (3) Confirmation Method

The confirmation method by an approved maintenance organization (Article 19, paragraph (1) or Article 19-2 of the CAL) or by a qualified maintenance technician (Article 19, paragraph (2) of the CAL) must be specified properly.

5. Maintenance Management (Related to “Procedures for maintenance of airframes and equipment, etc.,” “Procedures for performing maintenance of airframes and equipment, etc.,” and “Maximum hours of use for equipment, etc.”)
 - (1) Technical management

Necessary matters must be specified with regard to the timing, principle items, and maintenance method on equipment necessary to maintain and improve the quality of aircraft, as well as to descriptions of alteration and setting or change of the maximum hours of use for equipment, etc..
 - (2) Quality management

Necessary matters must be specified with regard to the system and method of inspections, the procedures to prevent defective products from being mixed, and the audit system, etc.
 - (3) Management of maintenance plans

Necessary matters must be specified with regard to the management of the maintenance plan required to perform aircraft maintenance in a planned manner.

6. Keeping Maintenance Record and Reporting (Related to “Procedures for preparation and custody of maintenance records.”)
 - (1) Maintenance Record

Necessary matters must be specified with regard to the format, creation, and custody of maintenance records.
 - (2) Flight logbook

Necessary matters must be specified with regard to the format, creation, and custody of the flight logbook in accordance with Article 58 of the CAL and Article 142 of the CAR.
 - (3) Records of replenishing oil

Records of replenishing oil for engines must be stored properly.
 - (4) Records of other matters

It must be specified that records, etc. of qualifications, training, and evaluations of maintenance personnel must be stored properly.

(5) Reporting

It must be specified that Service Difficulty Reports etc. for aircraft is reported to the authority.

7. Standards for Aircraft Operational Limitations (Related to “Standards for aircraft operational limitations in cases where equipment, etc. are not used under normal circumstances.”)

(1) General

The concept of the Minimum Equipment List must be specified properly.

(2) Application

The application concept of the Minimum Equipment List must be specified properly.

(3) Items of the Minimum Equipment List

Matters that should be set as items of the Minimum Equipment List must be specified properly.

(4) Standards for carryover

Necessary matters must be specified with regard to the standards for carryover (e.g. the timing or base for the defect to be repaired, etc.) when repair work is carried over by applying the Minimum Equipment List.

8. Recent Maintenance Experience as Well as Educational Training and Evaluation (Related to “Procedure for training of staff engaged in maintenance work”)

(1) Recent maintenance experience

Necessary maintenance experience, etc. within the past 24 months must be specified properly with regard to a person who holds a maintenance technician license in accordance with Article 24 of the CAL.

(2) Educational training and evaluation

Necessary matters must be specified with regard to education training and review of maintenance personnel.

9. Entrustment of Maintenance (Related to “Procedures for entrustment of service relating to the maintenance of aircraft (to be limited to the entrustment of service relating to the maintenance of aircraft)”)

Necessary matters must be specified with regard to the basic policy on entrustment of maintenance, the scope and content of work to be entrusted, the criteria for trustee selection, the method of entrustment management, and other matters.

(Supplementary Provision) January 28, 2000

These Guidelines shall be enforced on February 1, 2000.

(Supplementary Provision) March 28, 2007

These Guidelines shall be enforced on March 30, 2007.

(Supplementary Provisions) May 8, 2015

1. These Guidelines shall be enforced on June 30, 2015.
2. With regard to the Maintenance Manuals of an air carrier that has actually received approval for the Operational Manual or has applied for approval at the time of enforcement of this circular, the provisions then in force shall remain applicable until the Operational Manual of the air carrier include the matters as stipulated in Section II.14., which was amended under the partial amendment to the “Guideline for Evaluating Maintenance Manuals” (May 8, 2015 [KOKU-KU-KOU-1]).

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Circular

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

Subject: Detailed procedure for evaluating the Maintenance Manual

I. General provisions

1. These detailed procedures provide guidelines for evaluating the compliance with the technical standards and the matters concerning maintenance as stipulated in Article 214 of the CAR for Enforcement of the CAL (hereinafter, “the CAR”) for the Maintenance Manuals created by domestic air carriers under Article 104, paragraph (1) of the Civil Aeronautics Act (hereinafter “the CAL”). If an application is made for the approval of a Maintenance Manual based on Article 104-1 of the CAL, in principle, the compliance with the technical standards specified in Article 214 of the CAR must be evaluated. And maintenance standards created by aerial work service operators will be evaluated in reference to these detailed procedures. With regard to the maintenance standards specified by an aircraft user, if the Maintenance Manuals approved under Article 14-2 of the Act are deemed to be equivalent or superior to the relevant maintenance standards, the aircraft user may treat the approved Maintenance Manuals as the maintenance standards.
2. If parts of these detailed procedures cannot be applied or other methods are considered more appropriate, other equivalent methods can be used within the scope of the technical standards provided in Article 214 of the CAR.
3. Editing of the main text and appendixes (if appendixes are attached based on II.1-3) of Maintenance Manuals should, in principle, follow the below:
 - (1) Use the paper size “JIS A4” as a standard.
 - (2) Use refillable binders.
 - (3) On each page, include the dates of approval, indication for changes made, and page numbers.
 - (4) Create a Table of Contents and a table of amendment history.
 - (5) As for entry order, refer to “II. Maintenance Manual evaluation criteria.”

- (6) To clearly identify effective pages, include the issue and revision dates on each page.
- (7) Distribution of Maintenance Manuals to the Civil Aviation Bureau or the Regional Civil Aviation Bureau in accordance with paragraph 1-7-5 of “II. Maintenance Manual evaluation criteria” may be done in electronic form.

II. Maintenance Manual evaluation criteria

1. General provisions

1-1 Objectives of the Maintenance Manual

The Maintenance Manual provides for matters related to the maintenance of aircraft used for air transportation services and shall be developed to ensure the safety of aircraft by complying with the CAL, the CAR, and this circular.

1-2 Responsibility of air carriers for maintenance

It shall provide for the responsibilities of air carriers regarding the following:

- (1) All aircraft they operate have valid airworthiness certificate and are maintained airworthy.
- (2) Equipment and emergency equipment necessary for air transportation are maintained usable.

1-3 Preparation of appendices to the Maintenance Manual

1-3-1 Appendices to the Maintenance Manual (hereinafter, “appendices”) may be prepared based on this procedure, where the details of the Maintenance Manual are provided. In this case, the structure of appendices shall be properly established.

1-3-2 If detailed matters of the Maintenance Manual are specified in the appendixes, a clause shall be included stating that the appendixes have the force and effect equivalent to the main text of the Maintenance Manual (hereinafter, “the main text”).

1-3-3 If a domestic air carrier is an organization approved by the Minister of Land, Infrastructure, Transport and Tourism under Article 20, paragraph (1)-4 of the CAL concerning the maintenance or alteration of aircraft (hereinafter, “the approved maintenance and alteration organization”), the relationship between the Maintenance Manual and the Approved Organization Exposition provided in Article 20, paragraph 2 of the CAR shall be properly provided. In this case, even if air carriers carry out their own maintenance as the approved maintenance and alteration organization, they must still observe the Maintenance Manual. The Maintenance Manual stipulates the maintenance items and their intervals that air carriers must carry out for their aircraft, whereas the Approved Organization Exposition stipulates specific procedures for such matters as organizational role sharing, facilities/equipment used, and

document management necessary for ensuring the quality of the services provided by the approved organizations. While these manuals have significantly different purposes, there are still requirements shared by these manuals; therefore, with regard to the overlapped areas, it is allowed to apply provisions of one to the other in consideration of the purposes of the maintenance and Approved Organization Expositions.

1-4 Applicability

1-4-1 Aircraft model which is subject to the Maintenance Manual (including the appendixes; the same applies hereinafter) shall be specified.

1-4-2 With regard to the aircraft to which the Maintenance Manual applies, their nationality symbols, registration symbols, the fact that the provisional clause of Article 14 of the CAL is applied (if that is the case), the partner air carrier's name and its chief maintenance staff's name (in the case of shared commercial flights) shall be specified. The aircraft to which the Maintenance Manual applies shall include the aircraft related to the management of maintenance service outsourced with approval under Article 113-2 of the CAL.

1-5 Compliance

It shall be specified that air carriers must conduct maintenance in accordance with the CAL, Ordinance, and the Maintenance Manual.

1-6 Establishment and Revision

1-6-1 It shall provide procedures for establishing or revising the Maintenance Manual.

1-6-2 It shall be specified that the establishment or revision of the Maintenance Manuals shall require approval of the Minister of Land, Infrastructure, Transport and Tourism or the Director-general of the Regional Civil Aviation Bureau.

1-6-3 Notwithstanding the provisions of 1-6-2, the establishment or change of any of the following items shall be notified to the Minister of Land, Infrastructure, Transport and Tourism or the Director-General of the Regional Civil Aviation Bureau in advance.

(1) Matters instructed by JCAB Airworthiness Directive (TCD) issued by the JCAB and Airworthiness Directives (AD) / Consignes de Navigabilité (CN), etc. issued by aviation authority of the States of Design or States of Manufacture.

E.g.:

- Establishment or change of the maintenance items for carrying out repeated inspections based on TCD, AD, CN, etc.

- Establishment or change of service life limit based on TCD, AD, CN, etc.

- Establishment or change of the listed maintenance items and the Minimum Equipment List based on TCD, AD, CN, etc.

- (2) Establishment or change of the maintenance items for carrying out repeated inspections based on service bulletin or service letter, etc. issued by the manufacturers of aircraft or equipment (including designers, the same hereinafter).
- (3) Changes in the following items (excluding the cases where aircraft types are added)
- i) Changes of maintenance items of the company, service life limit, Minimum Equipment List and CDL application criteria in accordance with the changes of following documents, etc.
 - Technical documents, etc. (hereinafter referred to as “technical documents”) such as MRB (Maintenance Review Board) Report, Airworthiness Limitation (AWL), Airworthiness Limitation Instruction (ALI), CMR and CMP, etc. approved by the JCAB or an aviation authority of the State of Design or State of Manufacture, and, AMM (Aircraft Maintenance Manual), etc. issued by aircraft or equipment manufacture, etc.
 - The CAL, the CAR, or documents separately issued or approved by the Japan Civil Aviation Bureau.
 - The MMEL (excluding the matters relating to permission set forth in the proviso of Article 60 of the CAL and the proviso of Article 61, paragraph 1 of the CAL)
 - The CDL in the flight manual
 - ii) Change to a Minimum Equipment List (MEL) stricter than the MMEL (e.g., shortening of the repair interval, increase of the number installed or the number required for dispatch, and addition of stricter conditions than those of the MMEL). Excluding the matters relating to permission set forth in the proviso of Article 60 of the CAL and the proviso of Article 61, paragraph (1) of the CAL.
 - iii) Change to the CDL application criteria stricter than the CDL in the flight manual
 - iv) Following changes of maintenance items already approved or accepted
 - Changes made within the maintenance interval provided in the technical documents, etc. (except relating to AWL, ALI, CMR and CMP) or change for increasing job depths of the maintenance items
 - Changes to the original maintenance items which are not based on the technical documents.
- However, if air carriers elect to use the reporting system under this provision, they must consider the following.
- Prepare comparison tables between technical documents and the company’s maintenance item table, between the MMEL and company’s MEL, and between the CDL in the flight manual and the company’s CDL application criteria and maintain to clearly identify the difference between the technical documents, etc., the MMEL or the CDL in the flight manual and company manuals.
 - With regard to 4), it must be confirmed in advance with the manufacturer that there are no

effects on airworthiness.

If the establishment or change is made by partially changing the technical documents, the MMEL or the CDL in the flight manual, service history of air carriers must be considered, thereby requiring permission, except for the case where air carriers elect to use the reporting system under this provision.

- (4) Establishment or change of provisions that are not based on these detailed procedures
- (5) Establishment or change of details for complementing the contents to be permitted or approved (Aircraft's marks of nationality and registration shall be reportable items under this provision.)
- (6) Establishment or change of contractors equipment, etc. other than those related to engines or propellers (including when components (modules, etc.) that have a significant impact on functions and performance are commissioned) among them stipulated in 11-2(2), which has already been certified for the capability stipulated in Article 20, paragraph 1, item 7 of the CAL (approved maintenance organization for aircraft parts) or which has already been certified by a foreign state that is a Contracting State to the Convention on International Civil Aviation for equipment, etc. other than those related to engines or propellers (including when components (modules, etc.) that have a significant impact on functions and performance are outsourced)

1-6-4 Notify the Minister of Land, Infrastructure, Transport and Tourism or the Director-General of the Regional Civil Aviation Bureau of any change in the following minor matters without delay, regardless of the provisions of 1-6-2.

- (1) Of the entrustee provided in 11-2, those that change the name of entrustee and that does not involve a change in the business to be entrusted.
A change in the name of a department or position that does not involve a change in the scope or content of duties as specified in 2-3-1.(2) A change in the assignment of maintenance personnel as specified in 2-2-2 that does not affect the implementation of maintenance.
- (3) A change in the name of a department or position that does not involve a change in the scope or content of duties as specified in 2-3-1.
- (4) Change in relation to an objectively evident error or omission, and, changes to article numbers due to the enactment, revision, or abolition of laws and regulations within the scope maintaining the identicalness of the details.

1-7 Management of the Maintenance Manual

1-7-1 It shall be specified that the Maintenance Manual must always be maintained up-to-date. With

regard to the provisions set in accordance with the technical documents or the MMEL, it shall be specified that any revisions to the technical documents or the MMEL must be reflected in the corresponding provisions as soon as possible.

1-7-2 An personnel responsible for the distribution and management of the Maintenance Manual shall be designated.

1-7-3 Methods for distributing the Maintenance Manual and its revisions shall be properly specified.

1-7-4 It shall be specified that if the Maintenance Manual has been revised, organizations and individuals that own the Maintenance Manual shall promptly be provided with the revisions. If such distribution is expected to take time, it shall be specified that the holders of the Maintenance Manual shall be informed of the details of the revision promptly, as necessary.

1-7-5 It shall be specified that the Maintenance Manuals must be submitted to the Air Transport Safety Unit of the Aviation Safety and Security Department of the Japan Civil Aviation Bureau or the Air Carrier Airworthiness Engineer Unit of the Air Traffic Services and Safety Department of the Regional Civil Aviation Bureau, and if revisions have been made, such revisions must be submitted to them.

1-8 Definitions

1-8-1 Definitions of the special terms and abbreviations used in the Maintenance Manual and other materials shall be properly provided.

1-8-2 Such definition shall be established, as necessary, based on the following:

“Minimum Equipment List”:

Standards established by an air carrier specifying, without compromising the safe operation of aircraft, whether the operation of said aircraft is allowed in cases when equipment, etc. are not functioning normally.

“Onboard maintenance staff confirmation system”:

System where instead of maintenance staff stationed at a base where preflight maintenance is performed, maintenance staff stationed at another station board the aircraft and carry out preflight maintenance for the aircraft at the destination. This system can be applied to respond to changes in personnel allocation, number of flight, in-service fleet, arrival/departure time, etc., not necessarily in cases when maintenance staff are not stationed at the destination.

“Preflight inspection”:

Maintenance and inspection performed before departure for the next flight since landing. However, corrective actions taken for malfunctions identified during said inspection are not included.

“Human performance”:

Human capabilities and limitations influencing the safety and efficiency of the operation of aircraft

“Human factor principle”:

Principle that applies to the design, certification, operation and maintenance of aircraft and training where safe interface between humans and other system components is attained through proper consideration of human performance

“CDL (Configuration Deviation List)”:

Standards on an aircraft’s external elements set by the designer and approved by states of design where they are designed without which aircraft are allowed to fly. Said standards may include such conditions as operating limitations as necessary.

“CMR (Certification Maintenance Requirement)”:

Inspection items required from design perspectives to show that type certification or airworthiness certification requirements are met

“CMP (Configuration, Maintenance, and Procedures document)”:

Document that lists configuration and operational and maintenance requirements necessary for the approval of ETOPS, life limit of hardware, and MMEL limitations and are approved by a type certification process

“MMEL (Master Minimum Equipment List)”:

Standards, set by the designer and approved by the State of Design, concerning whether aircraft are allowed to fly, even if some equipment are not functioning normally. Said standards include conditions such as operating conditions, operating limitations, and operating procedures.

2. Maintenance staff

2-1 Maintenance Organization

2-1-1 Authority, responsibilities, and appointment requirements of managers in each unit, including the chief of the maintenance unit, shall be established. Appointment requirements for the chief of the maintenance unit or staffs who directly assist him/her shall be specified in accordance with Circular No. 4-001, “Guideline for permitting the permission of air transport services and aerial work services and approval of changes to the operation plan (safety-related).”

2-1-2 Organization, roles, and responsibilities necessary for implementing maintenance properly shall be established separately for each organizations listed below. Also, the organization chart of the maintenance unit shall be attached.

(1) Organization to which people engaging in maintenance (hereinafter, “the maintenance staff”) belong

- (2) Organization to which people engaging in management of maintenance such as technical management, quality control, and maintenance planning (hereinafter, “the maintenance management staff”) belong
- (3) Organization that manages outsourcing (if maintenance is outsourced)
- (4) Other organization to which people engaging in maintenance belong

2-2 Eligibility requirements and appointment method for the maintenance staff, and allocation criteria and conditions

2-2-1 Details of maintenance performed, and eligibility requirements and appointment methods in accordance with work difficulty, shall be properly specified for the maintenance staff, including the items listed below. And it shall be specified that those whose eligibility requirements are set forth in the items listed below must meet the eligibility requirements concerned:

- (1) Certifying staff who carries out confirmation as approved aircraft maintenance and alteration organizations (Article 19, paragraph (1) and 19-2 of the CAL) or the maintenance staff who carries out confirmation as qualified maintenance technicians (Article 19, paragraph (2) of the CAL)
- (2) The maintenance staff who carry out preflight inspections. It is provided that the maintenance staff who carry out preflight inspections shall hold a maintenance technician license with rating that corresponds to the aircraft model for which said inspections are performed (hereinafter, “maintenance technician license”). However, if it is considered that aircraft can fly safely based on aircraft model, operational characteristics, inspection items, etc., preflight inspections may be replaced with the preflight confirmation by the captain of the aircraft concerned.
- (3) The maintenance staff who carry out inspections provided in 6-2-1
- (4) It shall be specified that those who board and taxi an aircraft shall adhere to TCL-131, “Ensuring safety during taxiing.”

2-2-2 Criteria and conditions pertaining to the allocation of the maintenance staff shall be specified as follows:

- (1) It shall be specified that the maintenance staff must be placed to maintenance bases in a way to ensure aircraft safety in consideration of operational and maintenance characteristics and maintenance workload.
- (2) Standards shall be properly established for placing the maintenance staff to maintenance bases for each maintenance technician qualification
- (3) Situation of allocation of the maintenance staff shall be specified.
- (4) The maintenance staff to be allocated shall be fully trained regarding the environment of the

airport concerned, entrustee, facilities, equipment, spare items, etc.

- (5) If the maintenance staff are dispatched to an airport to carry out maintenance or the onboard maintenance staff confirmation system is used, instead of stationing the staff at a particular airport, the following criteria shall be followed:
- i) Maintenance staff who can be dispatched or be allocated using the onboard maintenance staff confirmation system shall be properly managed by the staff list at each maintenance base.
 - ii) Regardless of the provisions of (4), training of the maintenance staff who are dispatched or allocated using the onboard maintenance staff confirmation system may be set differently in consideration of the following:
 - If more than one maintenance staff to be allocated by dispatch or the onboard maintenance staff confirmation system, each staff shall be provided with necessary training in consideration of the contents and methods of maintenance to be performed.
 - The maintenance staff shall be provided with proper training in consideration of whether maintenance staff are stationed at the maintenance base concerned.

2-3 Duties of the maintenance staff

2-3-1 Scope and details of the duties of the maintenance staff provided in 2-2-1 shall be properly specified for each qualification.

2-3-2 With regard to the maintenance staff, the following shall be specified:

- (1) The maintenance staff experiencing physical disorders that affect safe and precise operation shall not engage in their maintenance operation..
- (2) The maintenance staff shall not engage in their maintenance operation while they are under the influence of alcohol, i.e., a state that alcohol is being kept in their bodies, or while they might not be able to perform their normal operations due to the influence of drugs.
- (3) The maintenance staff shall not use illegal drugs.
- (4) Maintenance staff^(Note 2) who carry out the line maintenance^(Note 1), in addition to the (1) to (3) above, shall take an alcohol testing based on the Circular No. 4-022 "Guidelines for implementation of alcohol testing for aircraft crew etc." to confirm the existence of alcohol in their bodies before starting the line maintenance operation.

(Note1) "Line maintenance" in this section refers to pre-flight check implemented for the purpose of aircraft departure and maintenance that conducted simultaneously with the said pre-flight check, such as corrective work for malfunction or periodic maintenance carried out during the flights.

In the case that an aircraft of which maintenance methods don't include the pre-flight check, it refers to the maintenance performed for the purpose of aircraft departure, such as

work to apply the MEL or corrective work for malfunction, etc.

Regular maintenance and non-regular maintenance which are not carried out at the same time as pre-flight check, and which are not implemented for the purpose of aircraft departure, are not included.

(Note2) Maintenance staff who are subject to the alcohol testing are all those who are engaged in the line maintenance of the aircraft operated by Japanese air carriers, including maintenance staff of contractors who carry out maintenance work.

2-4 Takeover between shift workers

2-4-1 It shall be specified that takeover of duties must be properly done and responsibilities must be made clear.

2-4-2 The shift pattern, takeover methods, and other aspects of takeover shall be properly established.

3. Maintenance bases

3-1 Allocation of maintenance bases

3-1-1 Maintenance bases shall be allocated in accordance with the quality and quantity of aircraft maintenance.

3-1-2 Maintenance bases shall be graded in accordance with the category and details of maintenance to be performed.

3-1-3 Allocation status of maintenance bases shall be listed.

3-2 Maintenance facilities etc.

3-2-1 It shall be specified that maintenance facilities, equipment, and instruments that correspond to quality and quantity of aircraft maintenance must be allocated.

3-2-2 Allocation criteria for main facilities, equipment, and instruments shall be specified.

3-2-3 It shall be specified that in regard to the management of maintenance facilities, equipment, and instruments, managers must be appointed and they must be maintained in their best conditions using inventory, etc.

3-2-4 Management methods for maintenance facilities, equipment, and instruments, including accuracy control of measuring devices, shall conform to the methods designated by the designers or the manufacturers of aircraft or equipment and shall be determined in consideration of the service history of facilities etc. and experience of the air carrier, among other factors.

3-2-5 If maintenance facilities, equipment, and instruments are leased, necessary technical criteria

shall be established for them.

3-3 Spare parts etc.

3-3-1 Allocation and management criteria for spare items and spare parts (hereinafter, “spare parts etc.”) shall be properly established. In this case, it shall be specified that spare parts etc. must be stored in a way that does not reduce their quality and functions, and spare parts etc. that require time management and storage life management must be individually managed in consideration of usage time and shelf life. And it shall be specified that the validity of spare parts etc. must be labeled on them.

3-3-2 Criteria for leasing of spare parts etc. shall be properly established. If spare parts etc. are mutually procured between air carriers, the following relevant procedures shall be established (except for cases where Circular No. 4-015, “Replacing Critical parts without Spare Parts Certification for Aircraft used for International Air Transport Service” applies).

- (1) Methods for inspection when spare parts etc. are received from other air carriers shall be established. During said inspection, necessary Spare Part Certification, Authorized Release Certificate for spare parts issued by organizations approved under Article 20, paragraph (1) of the CAL, and valid forms stating that the said spare parts etc. are in a usable state shall be confirmed. Also, as necessary, satisfactory conditions (e.g., performance) of spare parts etc. shall be confirmed by test records and historical records, etc.. Furthermore, the spare parts etc. concerned shall be inspected for abnormalities by visual check.
- (2) With regard to the spare parts etc. that require usage time management, it shall be conducted in accordance with Circular No. 4-017, “Operating hours of rented components with a limit of operating hours set by Maintenance Manuals.”
- (3) If spare parts etc. are mutually procured regularly with a particular organization, a contract on the mutual provision of spare parts etc. shall be concluded with the organizations concerned. Also, in this case, the counterpart with which spare parts etc. will be procured shall be specified.

3-4 Other

3-4-1 Methods of storing emergency equipment shall be properly established (unless the Operating Manual stipulates applicable provisions).

3-4-2 Specifications and management methods for oils (excluding fuels and ice protection liquids; hereinafter the same) shall be properly specified. Specifications for oils shall be those designated by the aircraft manufacturer, etc. (unless there are no specifications designated by the manufacturer, etc.). Also, oils shall be stored in a manner that prevents deterioration in quality.

3-4-3 The provisions on the management of maintenance bases shall include the following:

- (1) Methods of management of outsourcing, facilities, equipment, parts and spare parts etc for each maintenance base.
- (2) To the maintenance bases at which the maintenance staff capable of performing management operations are not stationed, responsible management staffs shall be regularly dispatched in order to conduct the duties.
 - i) Responsible management staff to be dispatched shall include the maintenance staff (provided, however, capable of performing management duties) who can be allocated to the base concerned by dispatch from other bases or the onboard maintenance staff confirmation system.
 - ii) Regular dispatch of maintenance staff shall be done at an appropriate frequency and sufficient durations of time in accordance with the condition of the base concerned. Especially for overseas bases, a sufficient dispatch frequency should be secured to maintain a close relationship with the trustees as well as to make guidance and supervision effective.
- (3) For the maintenance bases at which maintenance staff capable of performing management duties are not stationed, a person shall be appointed who engage in indirect duties concerning maintenance such as routine management of facilities, equipment, and spare parts etc., preparation for incoming flights, and post-departure communication between bases. If the operations concerned are outsourced, the trustees concerned shall be provided with necessary training.

4. Maintenance Methods

4-1 Maintenance program

Maintenance shall be classified into regular maintenance, irregular maintenance, and special maintenance etc., and their roles and interrelations shall be systematized.

4-2 Establishment and change of maintenance methods

Maintenance methods shall be established or changed in a manner that ensures safety in accordance with the technical documents concerning maintenance prepared by the Japan Civil Aviation Bureau, aviation authority of the states of Design or States of Manufacture, and the manufacturers of aircraft and equipment etc. (hereinafter, "the technical documents"), based on the human factor principle as well as in consideration of the technological level and service history of the air carriers and the occurrence status of service difficulty at other air carriers, among others. Also, for any aircraft that has the registration of any foreign state, such as leased aircraft,

the maintenance methods used shall be approved by the foreign country concerned.

Note: If the technical documents do not contain preflight inspection items, the maintenance methods shall not need to include preflight inspections (unless considered necessary to ensure safety in consideration of the technological level and service history of the air carriers and the occurrence status of service difficulty at other air carriers).

4-3 Categories of regular maintenance

For each aircraft model, to conduct maintenance for individual maintenance items systematically, regular maintenance shall be classified into routine maintenance and periodic maintenance, among others, and the timing or interval of maintenance shall be properly specified for each of these categories. If regular maintenance is divided, to make sure that it will not compromise aircraft safety, procedures for properly implementing maintenance within time limits, managing record and among others shall be established.

4-4 Interval and items of maintenance

4-4-1 Interval and items of maintenance shall be established as follows:

- (1) For each airframe part that should be subject to maintenance, the interval and items of maintenance shall be specified in consideration of the occurrence of fatigue failures, environmental deterioration including corrosion, accidental damage, etc.
- (2) For each equipment (including systems), the interval and items of maintenance shall be established in consideration of the frequency of occurrence of failures, level of their impacts, etc. And the life limit shall be set as required..
- (3) If the airframe is divided into sections for maintenance purposes, the interval and items of maintenance shall be specified for each such section.
- (4) If aircraft have been altered or subject to significant repairs, the interval and items for maintenance of such alterations or repairs shall be established as necessary.
- (5) For emergency equipment installed onboard in accordance with Article 150 of the CAR, it shall be specified that inspections must be performed at appropriate interval in accordance with Article 151 of the CAR.
- (6) Procedures for changing the interval and items of maintenance shall be established.
- (7) In establishing the items of maintenance, maintenance processes (HT, OC, or CM¹) or maintenance tasks (operational inspection, functional inspection, exchange, etc.) shall be considered based on the same policy as the technical documents.

Note:

- Hard time (HT) Methods

Methods under which airframe structures or equipment are removed from the airframe for

overhaul or disposal at a fixed time interval.

- On-condition (OC) Methods

Methods under which airframe structures or equipment are regularly inspected or tested, and if any failures are found, appropriate measures are taken such as exchange or repair

- Condition monitoring (CM) Methods.

Unlike the above methods, instead of regularly conducting maintenance for equipment, service difficulty data are collected and analyzed, thereby taking appropriate measures, such as exchange and repair, as necessary.

4-4-2 Timing, contents, methods, etc. of maintenance shall be specified as necessary for conservation maintenance, maintenance of used aircraft at the time of introduction, maintenance performed at the time of transition from training flight to revenue flight, maintenance of jointly operated aircraft, and maintenance performed under particular conditions.

4-5 Reliability program

In implementing the reliability program (a series of actions where an aircraft's reliability is monitored by collecting and recording aircraft malfunction data, which are properly assessed and analyzed to identify the sources of the malfunctions and corrective measures [change of maintenance items, interval or procedures of maintenance, alteration of aircraft or equipment items, etc.] are functionally implemented), the system and details of the program shall be specifically established. For the aircraft whose maximum takeoff weights exceed 5.7 t, the reliability program shall be implemented.

4-6 Continuing structural integrity program

In implementing the continuing structural integrity program (program implemented with cooperation of the operator, including the inspection, corrosion prevention and control, structural modification, and repair assessment, etc added to the maintenance method set at the design stage based on the assessment by the designer on an aircraft's structural integrity using damage analysis etc. after aircraft have been placed in service.), the system and details shall be specifically established. For the aircraft whose maximum takeoff weights exceed 5.7 t, the continuing structural integrity program shall be implemented.

5. Implementation methods of maintenance

5-1 Policy

Implementation methods of maintenance shall be specified in accordance with the technical

documents so that proper implementation of maintenance are conducted in consideration of the technical level and maintenance experience of the air carriers concerned.

5-2 Methods of maintenance

Methods of maintenance shall be specified corresponding to each maintenance item provided in 4-4-1. Inspections and maintenance shall be implemented using work orders that specify maintenance procedures, etc. Also, procedures for responding to any failures, such as repairs, shall be specified.

5-3 Confirmation methods

Confirmation methods by the approved aircraft maintenance and alteration organizations (Article 19, paragraph 1 and 19-2 of the CAL) or by the qualified maintenance technicians (Article 19, paragraph 2 of the CAL) shall be properly established. These confirmations shall be performed for plans, processes and condition after completion of works of repair or alteration. With regard to a confirmation methods by the approved aircraft maintenance and alteration organizations, it may be referred to the Approved Organization Exposition.

5-4 Emergency equipment

Methods for carrying onboard emergency equipment shall be properly established (unless the Operation Manual contains applicable provisions). Specified emergency equipment shall be carried on board which has either passed the test under Article 152, paragraph (1) of the CAR or types of which have been approved by the Minister of Land, Infrastructure and Transport under the proviso of Article 152, paragraph (1) of the CAR.

5-5 Ensuring work safety

To prevent accidents caused by rotating propellers or rotor blades, necessary measures shall be taken in reference to No.3-014, "Prevention of accidents caused by rotating propellers and rotor blades" (applies only to air carriers that operate propeller-driven aircraft or rotor aircraft).

6. Maintenance management

6-1 Technical management

Basic matters regarding establishment or change of the timing, items, and methods of the maintenance of equipment needed to maintain or improve aircraft quality, description of alteration and the life limit of equipment etc. shall be specified as follows:

(1) Such establishment or change shall be made in accordance with the technical documents and

in consideration of the history of service difficulties at air carriers.

- (2) Methods for disseminating and distributing the technical documents shall be properly established.
- (3) Methods for assessing, reviewing, analyzing, or otherwise using the technical documents provided in (2) shall be properly established.

Service bulletins etc. issued by aircraft or engine manufacturers, etc. (including the service bulletins etc. issued by aircraft or engine manufacturers, etc. by covering the service bulletins etc. issued by the manufacturers, etc. of equipment etc.) and the technical documents corresponding to the maintenance methods described in Maintenance Manual (MRB Reports, Maintenance Planning Document [MPD], etc.) shall be promptly assessed and completed within the periods set below (i.e., completion of internal procedures for necessary application for approval or submission) unless here are compelling reason for not doing it (provided it will not affect airworthiness).

- i) Service bulletin etc.: Before the implementation deadlines of inspections, alterations, etc. instructed in the service bulletin
 - ii) Technical documents etc. corresponding to the maintenance methods described in Maintenance Manual that have significant impacts on airworthiness (AWL, ALI, CMR, etc.): Within one month of reception
 - iii) Technical documents etc. corresponding to the maintenance methods described in Maintenance Manual other than 2): Within six months after reception
- (4) Methods for responding to the directions etc. issued by aviation authority for ensuring safety (e.g., TCD, AD, CN) shall be properly established. Said directions etc. shall be promptly reviewed and TDC shall be completed by the implementation deadlines for the inspections, alterations, etc. instructed in said directions.
 - (5) Methods for issuing engineering order, or so and methods for managing them etc. shall be properly established.

6-2 Quality management

6-2-1 To maintain aircraft safety, as basic matters for quality management necessary for ensuring the implementation of maintenance, inspection systems, items that require inspection, and standards and methods of inspection shall be properly established. Standards and methods of inspection shall adhere to the following:

- (1) The standards on the inspection conducted upon acceptance of the materials, parts, equipment, etc. used in maintenance duties shall correspond to those designated as maintenance methods. In addition, the inspections shall use methods that are sufficient to judge compliance with the standards. (Refer to Circular No. 6-019 when operating from a remote location, etc.)

- (2) The standards and methods for in-process inspection and completion inspection for aircraft or equipment in maintenance duties shall correspond to the maintenance methods (including inspection by those who perform maintenance and inspection by independent third parties).
- 6-2-2 Basic policies for quality management, methods to prevent inclusions of defective parts and methods to prevent failures resulting from the improper maintenance shall be properly established.
- 6-2-3 Audit system, scope of audits, and methods for audits shall be properly established to ensure that individual maintenance organizations and maintenance systems are properly functioning (Refer to Circular No. 6-019 when operating from a remote location, etc.). The audit system of air carriers that use aircraft whose maximum takeoff weights exceed 5.7 t shall adhere to the following:
- (1) The chief auditor shall be appointed and said auditor or someone designated by said auditor shall conduct audit.
 - (2) The scope of audit shall cover the whole maintenance duties provided in the Maintenance Manual. Also, the audit shall inspect whether the maintenance duties is performed in accordance with the Maintenance Manual.
 - (3) All regular internal audits for maintenance duties shall be conducted annually at the main facilities and every two years at other facilities.
 - (4) Auditors shall belong to organizations independent of the subject of audit (not necessarily permanent organizations), have sufficient knowledge and experience in the duties audited, and receive internal training on audit methods. However, it is not necessarily to use an independent audit organization in cases when it is difficult due to the small scale of the organization.
 - (5) Audit results shall be recorded. If those other than the chief auditor conduct an audit, the results shall be reported to the chief auditor.
 - (6) For noncompliant items found in the audit, corrective measures shall be taken under the chief auditor's responsibility. The effects of such corrective measures shall be audited as necessary.
 - (7) Audit results and corrective measures taken shall be recorded and if requested provided to the authority.
 - (8) An audit may be outsourced if the outsourcer has confirmed that those who conduct an audit have abilities provided in (4) and designates auditing methods. However, the outsourcers shall still need to be responsible for planning and implementation of outsourced audits and monitoring of corrective measures taken based on results of the audit.
- 6-2-4 Feedback methods for the results of tests, audits, etc. shall be properly established, e.g., direct causes and factors for aircraft or equipment failures are explored and necessary measures are taken.

6-3 Management of maintenance plans

With regard to the management of maintenance plans necessary for implementing aircraft maintenance in accordance with the maintenance program, the following items shall be established:

- (1) Management of time history of aircraft
- (2) Development of maintenance plans
- (3) Management of maintenance work

7. Recording and reporting of maintenance

7-1 Recording of maintenance

7-1-1 Forms

Maintenance record (work records, reports, electronic data, etc.) forms shall be properly established to allow correct understanding of the results of maintenance.

7-1-2 Preparation

Maintenance records and names of Staff responsible for maintenance work shall be clearly written or entered.

7-1-3 Storage

- (1) Maintenance records shall be organized and stored by an appointed manager so that they can be reviewed at all times as needed.
- (2) Necessary storage periods for maintenance records shall be established. With regard to the records listed below, the records provided in 1)-5) shall be kept for 90 days after the disposal of aircraft or until aircraft are sold, or for 90 days after equipment is taken out of service permanently, and the records provided in 6) shall be kept for over one year following the confirmation concerned or until aircraft are sold.
 - i) Total flight time of aircraft as well as total usage time of equipment with life limit (hours, days, cycles)
 - ii) Compliance status to requirements such as TCD
 - iii) Details of major repairs and alterations of aircraft and main equipment
 - iv) Time since the last overhaul for aircraft and equipment with designated overhaul interval (hours, days, cycles)
 - v) Records that show that maintenance has been properly performed in accordance with the aircraft's maintenance program
 - vi) Maintenance records that show that confirmation by the approved aircraft maintenance and alteration organizations (Article 19, paragraph 1 and 19-2 of the CAL) or

confirmation by the qualified maintenance technicians (Article 19, paragraph 2 of the CAL) have been properly implemented.

- (3) To allow others to use the aircraft temporarily, there must be a provision that allows the user concerned to have access to the maintenance records as well. If aircraft are transferred or leased to others, the relevant maintenance records shall also be transferred or leased.

7-2 Flight logbook

7-2-1 The form of flight logbook and matters related to its preparation, and storage of flight logbooks shall be provided in accordance with Article 58 of the CAL and Article 142 of the CAR. Flight logbook shall be kept until the aircraft concerned have been disposed or sold. If aircraft are sold, relevant logbook shall also be transferred to the buyers.

7-2-2 Maintenance records for the rotor blades of rotorcraft shall be kept in accordance with Item 9 of Circular No. 3-021, "Guidelines for Keeping Flight Logbook after Performing Legal Inspections" (applies only to air carriers that operate rotorcraft).

7-3 Records on oils

Records on the use of engine lubricant shall be kept for three months or longer.

7-4 Other records

- (1) Qualifications, training histories, and evaluation records for the maintenance staff shall be properly kept.
- (2) Outsourcing agreements and the audit records by the trustees shall be properly kept. The audit records for the last two outsourcings shall be kept for at least one year after the termination of outsourcing

7-5 Reports

- (1) Of events that affect normal flight operations of any aircraft and are subject to be reported to the Minister of Land, Infrastructure and Transport by domestic air carriers under Article 111-4 of the CAL (including cases where it applies mutatis mutandis to Article 124) and Article 221-2 of the CAR, for those related to the maintenance unit, relevant information shall be properly collected and reported to authorities through relevant sections.
- (2) Any failures identified with aircraft whose maximum takeoff weights exceed 5.7 t shall be reported or notified to authorities and aircraft designers in accordance with Circular No. 6-001, "Report and communication about a failure related to an aircraft."
- (3) Any failures identified with aircraft whose maximum takeoff weights are 5.7 t or less shall be reported to authorities in accordance with Circular No. 6-002, "Service Difficulty Reporting

Procedure.” However, air carriers that operate aircraft whose maximum takeoff weights exceed 5.7 t may report in accordance with Circular No. 6-001.

- (4) Air carriers that operate domestically manufactured aircraft shall make reports to authorities in accordance with TCL-158, “Report to the Japan Civil Aviation Bureau for exported aircraft domestically designed and manufactured.”

7-6 Electronic signatures and electromagnetic record

When the flight logbooks prescribed in Article in 7-2 or the records prescribed in Article 7-1, 7-3, or 7-4 are handled in electronic form in place of paper documents, Circular No.6-018 “General Standards for Electronic Signatures and Electromagnetic Records” shall be followed.

8. Requirements for other maintenance etc.

8-1 With regard to maintenance, in addition to the provisions made in 4. to 7., applicable provisions of the latest Circulars in Exhibit shall be reflected in the Maintenance Manual.

8-2 Maintenance performed outside maintenance bases

To implement corrective measures for service difficulties etc., the following procedures necessary for implementing maintenance outside maintenance bases shall be properly provided. If maintenance is outsourced, Item 11 shall be adhered to.

- (1) Report of any service difficulty to the parties concerned
- (2) Dispatch of the maintenance staff
- (3) Arrangement of the facilities, equipment, spare parts etc.

9. Maintenance Equipment List (MEL) etc.

9-1 General

9-1-1 It shall be specified that the MEL does not cover all equipment items and does not include matters apparently necessary for ensuring aircraft safety such as engines and matters that do not affect aircraft safety.

9-1-2 It shall be specified that the MEL does not aim to allow aircraft to continue their services indefinitely with their equipment etc. being inoperative but to ensure safe operation of aircraft with their equipment being inoperative provided that prescribed repair and equipment exchange procedures are followed.

9-1-3 For the aircraft whose maximum takeoff weight exceeds 5,700 kilograms, the MEL for equipment, etc. listed in the Appendix shall be established within the scope of the Appendix.

With regard to the MEL for other equipment, etc. (including the MEL for the equipment, etc. that exceeds the number of operative equipment items listed in the Appendix), the MEL shall be developed in accordance with the MMEL, if any, and shall take into consideration the operational experience and technical level of the air carriers concerned within the scope of said MMEL. In addition, if the MMEL contains Preamble and Definitions, among others, these shall also be followed. With regard to the MEL for equipment, etc. that the MMEL does not be established, and that is not the equipment, etc. listed in Appendix, the MEL shall be developed in consideration of the operational experience and technical level of the air carriers concerned. When an aircraft operates without equipping or activating the equipment, etc. prescribed in Articles 60 and 61 of the CAL, permission under the proviso by the Minister of Land, Infrastructure, Transport and Tourism based on those Articles is required separately.

Appendix: Quantity and Conditions, etc. of Equipment, etc. Prescribed in the MEL

Name of equipment, etc.		Number of equipment	Number of operative equipment	Repair deadline	Operational conditions, etc.
ILS receiver		1 or more	0	3 calendar days	<ul style="list-style-type: none"> The condition in which the equipment is not required under the minimum weather condition at the time of approach.
		2 or more	1	10 calendar days	-
Weather radar		1 or more	0	3 calendar days (10 calendar days when wind shear detection alarm of the Ground Proximity Warning System or other equipment, etc. is available)	<ul style="list-style-type: none"> A flight shall be conducted in visual meteorological conditions in the daytime, or thunder clouds and other weather conditions that may affect the flight safety of the aircraft are not forecasted on the planned flight route (including the route to an alternative airport). Procedures shall be established to avoid and to recover from wind shear during flight as an alternative to a weather radar (limited to cases where a wind shear detection function is equipped).
Ground Proximity Warning System	Main unit	1 or more	0	2 flight days, or until the time to a place where repair or replacement is possible, whichever comes first	<ul style="list-style-type: none"> A flight shall be conducted after establishing alternative procedures (such as that the flight shall be conducted with attention to avoid the ground collision, monitoring the Altimeter, the Airspeed indicator, the Rate of Climb and Descent Indicator, and the flight routes; when a wind shear detection function is equipped, the procedures shall be confirmed to avoid and to recover from wind shear during flight.)
	Test mode	1 or more	0	2 flight days, or until the time to a place where repair or replacement is possible, whichever	-

				comes first	
	Functions specified in Article 147, item (4), (a) to (d) of the Regulations	1 or more	0	2 flight days, or until the time to a place where repair or replacement is possible, whichever comes first	<ul style="list-style-type: none"> A flight shall be conducted after establishing alternative procedures (such as that the flight shall be conducted with attention to avoid the ground collision, monitoring the Altimeter, the Airspeed indicator, the Rate of Climb and Descent Indicator, and the flight routes).
	Functions specified in Article 147, item (4), (e) of the Regulations	1 or more	0	3 calendar days	-
		2 or more	1	10 calendar days	-
	Functions specified in Article 147, item (4), (f) of the Regulations	1 or more	0	3 calendar days	<ul style="list-style-type: none"> A flight shall be conducted after establishing alternative procedures (such as that the flight must be conducted with attention to avoid the ground collision, monitoring the Altimeter, the Airspeed indicator, the Rate of Climb and Descent Indicator, and the flight routes).
Traffic alert and Collision Avoidance Saustem	Main unit	1 or more	0	3 calendar days	<ul style="list-style-type: none"> Inactivation processing shall have been done. Installation of the equipment is not required in enroute or approach procedure by the air traffic control authority.
	Audio function	1 or more	0	3 calendar days	<ul style="list-style-type: none"> Installation of the equipment is not required in enroute or approach procedure by the air traffic control authority.
	TA/RA	2 or more	1 (On the	10 calendar days	<ul style="list-style-type: none"> Applicable when the following conditions are

	integrated display function		side of Pilot in charge of operation (Pilot Flying))		met, limited to the side of pilot in charge of duties other than flight operation (Pilot Monitoring), such as monitoring the flight status of the aircraft. a) TA/RA display function on the Pilot Flying side shall work. b) Audio function on the Pilot Flying side shall work.
	RA display function	1 or more	0	10 calendar days	<ul style="list-style-type: none"> • TA display function and audio function shall be available. • TA only mode shall have been selected. • Installation of the equipment is not required in enroute or approach procedure by the air traffic control authority.
		2 or more	1 (On the side of Pilot Flying)	10 calendar days	(Only the RA display function on the Pilot Monitoring side can be inactivated.)
	TA display function	1 or more	0	10 calendar days	<ul style="list-style-type: none"> • RA display function and audio function shall be available. • Installation of the equipment is not required in enroute or approach procedure by the air traffic control authority.
	Lock and unlock function of the cockpit door which prevents penetration by bullets, grenades, or shrapnel and invasion to the cockpit by unauthorized persons, and which the pilots can lock and unlock from the regular position.	1 or more	0	2 flight days (10 calendar days when the function is independent from a function for rapid decompression)	<ul style="list-style-type: none"> • Inactivation processing for locking function shall have been done. • It shall have alternate solutions, such as applying other locking functions, and in that case, access procedures shall have been established.
	Flight Data Recorder, Airborne Image Recorder, or Airborne Information	1 or more	0	3 flight days	<ul style="list-style-type: none"> • Cockpit Voice Recorder, etc. shall be available.

Recording System (Flight Data Recorder, etc.)				
Cockpit Voice Recorder or Cockpit Audio Recording System (Cockpit Voice Recorder, etc.)	1 or more	0	3 flight days	• Flight Data Recorder, etc. shall be available.

(Note)

1. When the repair deadline is defined in days, the starting point is the day after the date the defect has been found. When the deadline is defined in the number of flights or flight time, the starting point is the first departure flight after the defect has been found.
2. The “3 calendar days” and “10 calendar days” of the repair deadline correspond to Categories B and C of the repair deadline category respectively in Circular No.1-009 “Evaluation and Approval Procedures for Minimum Equipment List.”

9-2 Application etc.

9-2-1 If the MEL is not satisfied, aircraft shall not be used for services.

9-2-2 Even if the MEL is satisfied, repairs shall be performed as much as possible to maintain good condition of aircraft.

9-2-3 For cases where equipment etc., for which the MEL has not been established, have been found not in their normal conditions, procedures for judging whether repair of such equipment etc. can be carried over shall be established.

9-2-4 In cases where multiple equipment items etc. to which the MEL applies are inoperative, aircraft shall not be used for services unless it has been established that the combined effects of such inoperative equipment etc. will not compromise safety to unacceptable level or will not cause excessive increase of workload for crew members.

9-2-5 In establishing or applying the MEL, consideration shall be made regarding the possibility of the occurrence of further failures during operations of the aircraft with inoperative equipment etc. Unless specially approved, application of the MEL shall not deviate from the limitations and emergency operations provided in the flight manual and other airworthiness requirements set by authorities.

9-2-6 If aircraft with inoperative equipment etc. are used by applying the MEL, prescribed operating conditions shall be adhered to. Also, in accordance with the MEL, appropriate instructions to the aircraft captain shall be made using, as an example, a placard for calling his/her attention. Also, application of the MEL shall be recoded appropriately in the flight logbook.

9-2-7 In applying the MEL, maintenance procedures for taking appropriate measures for inoperative

equipment etc. such as their deactivation shall be established. Also, necessary operation procedures for crew members shall be established.

9-2-8 Procedures and measures in applying the MEL shall be established. In this case, the captain shall have the right to make the final decision regarding whether the aircraft can depart or not.

9-3 Items of MEL

9-3-1 The number of equipment items, etc., the minimum numbers of operative equipment items, and conditions for application shall be established as the items of MEL for each aircraft model.

9-3-2 In setting conditions for application of items of MEL, flight conditions such as VFR, IFR, and weather, and the isolation of the failures concerned so that it will not cause other malfunctions, and signs to alert crew members, among other measures, shall be considered.

9-4 Repair carryover criteria

Repair carryover criteria (which provide the timing, maintenance base, etc. at which carried-over repairs must be implemented) shall be established by applying the MEL. Actions shall be established for cases where, due to unavoidable circumstances, a repair has to be carried over beyond the period provided in the repair carryover criteria. In this case, the decision to carry over a repair shall be immediately reported to the Director of the Air Transport Safety Unit of the Aviation Safety and Security Department of the Japan Civil Aviation Bureau or the Chief Air Carrier Airworthiness Engineer of the Aviation Safety and Security Department of the Regional Civil Aviation Bureau.

9-5 CDL application criteria

If the flight manual contains the CDL, the Maintenance Manual may be established in accordance with that.

9-6 Revision of the MEL

Methods for evaluating and reviewing the MMEL, CDL, etc. that correspond to the Maintenance Manual shall be appropriately established. Evaluation of the revision to the MMEL, CDL, etc. concerned shall be promptly conducted and, unless there are unavoidable circumstances (provided airworthiness will not be affected), shall be completed within 12 months of reception (completion of internal procedures for necessary applications for approval or submissions).

10. Recent maintenance experience and training/evaluation

10-1 Recent maintenance experience

10-1-1 A persons who holds a maintenance technician license provided in Article 24 of the CAL, unless in principle he/she satisfies the conditions provided in i) or ii) below in the last 24 months, shall not perform confirmation of the approved aircraft maintenance and alteration organizations (Article 19, paragraph 1 and 19-2 of the CAL) or confirmation of the qualified maintenance technicians (Article 19, paragraph 2 of the CAL).

i) Has experience of engaging in such operations as carrying out aircraft and equipment maintenance and serving as a maintenance instructor for over six months.

ii) Has passed a practical examination pertaining to an appropriate maintenance technician license.

10-1-2 A person who does not satisfy one of the conditions provided in the previous paragraph shall be provided with back-to-work training equivalent to the experience of i) or ii) of the previous paragraph and examined before he/she engages in confirmation of the approved aircraft maintenance and alteration organizations (Article 19, paragraph 1 and 19-2 of the CAL) or confirmation of the qualified maintenance technicians (Article 19, paragraph 2 of the CAL).

10-2 Training and evaluations

10-2-1 Training and evaluations shall be conducted to equip the maintenance staff with necessary knowledge and skills in accordance with their maintenance qualification, duties, experience, etc. and shall be conducted based on the implementation plan for maintaining the maintenance staff's skills.

Note: What is referred to as "training" in this guideline may include training for developing aircraft maintenance technicians and aircraft overhaul technicians provided in Article 24 of the CAL but shall also include training necessary for implementing the operation plan.

10-2-2 Training and evaluation systems shall be established in accordance with the qualification, duties, experience, etc. of the maintenance staff.

10-2-3 A person who has necessary knowledge and skills shall provide training. Also, a person who has necessary knowledge and skills shall conduct evaluations.

10-2-4 Eligibility requirements and designation methods for those who provide training and conduct evaluations shall be appropriately provided.

10-2-5 Necessary training (initial training, aircraft type transition training, regular training, etc.) shall be conducted.

10-2-6 Training items for maintenance staff shall be provided in accordance with the maintenance staff's qualifications, duties, experience, etc. Training pertaining to new aircraft models and

equipment shall be properly provided. Training on knowledge and skills pertaining to human performance such as cooperation with other maintenance staff and crew members shall be provided.

10-2-7 Training methods (theory training, practical training, etc.), training hours, and evaluation standards for maintenance technicians shall be properly provided in accordance with the qualifications, duties, experience, etc. of the maintenance staff.

10-2-8 The previous paragraphs shall apply even if training and evaluations are outsourced.

11. Outsourcing of maintenance

11-1 Basic policy

It shall be specified that maintenance must not be outsourced at the cost of the quality of the outsourcer's aircraft.

11-2 Scope and details of outsourced maintenance

The scope and details of outsourced maintenance shall be clearly provided.

- (1) In the case of outsourcing airframe maintenance, the aircraft type and work category or work contents to be outsourced to each trustee (when the trustee is an approved maintenance organization for aircraft, include the approval number thereof)
- (2) In the case of outsourcing of repair or alteration of equipment, the type or name of the equipment, etc. (when repair or alteration of the engine or propeller is consigned, the type of equipment) to be outsourced to each trustee (when the trustee is an approved maintenance organization for aircraft parts, or when approval has already been obtained by a foreign state which is a Contracting State to the Convention on International Civil Aviation, include the certification number, etc.). When repair or alteration of equipment other than engines or propellers is entrusted, the type and part number of the equipment concerned can be managed according to internal regulations, but it can be confirmed at the request of the national government.

11-3 Selection criteria for Trustees

11-3-1 For each outsourced maintenance, trustee selection criteria shall be established.

11-3-2 To outsource maintenance (excluding minor preservation; hereinafter the same) or alteration of the aircraft provided in Article 19, paragraph 1 of the CAL or the aircraft that fall under the airworthiness category "aircraft transport T," unless the aircraft are subjected to the inspection for repair and alteration provided in Article 17, paragraph 1 of the CAL, such maintenance or alteration shall be outsourced to the approved aircraft maintenance and

alteration organizations (including prospective approved organizations).

(Note) “The aircraft provided in Article 19, paragraph 1 of the CAL” shall refer to those used to provide air transportation services and meet the conditions provided in Article 31 of the CAR (aircraft or rotorcraft with 60 passenger seats or more or maximum takeoff weight of 27 t or more. These conditions were revised to 30 seats or more and 15 t or more, respectively, effective of March 30, 2008).

11-3-3 To outsource the maintenance of aircraft other than aircraft provided in Article 19, paragraph (1) of the CAL or the aircraft that fall under the airworthiness category “aircraft transport T,” unless the aircraft are subjected to the inspection for repair and alteration provided in Article 17, paragraph 1 of the CAL, such maintenance shall be outsourced to the approved aircraft maintenance and alteration organizations or others with sufficient maintenance experience.

11-4 Outsourcing management methods

11-4-1 It shall be specified that documents are provided to the trustees which details procedures and management measures for maintenance work conducted by the trustees, preparation of maintenance records, management of the secondary trustees (if secondary outsourcing is made to entities other than the approved organizations provided in Article 20, paragraph 1 of the CAL), the implementation of training for the maintenance staff, and alcohol testing (if applicable*), etc..

(*Note) In the case that the line maintenance stipulated in section 2-3-2 is outsourced, entrusters must let trustees implement the alcohol testing based on Circular No. 4-022 “Guidelines for implementation of alcohol testing for aircraft crew etc.”

Even when the line maintenance is outsourced to foreign maintenance organizations, regulatory standards equivalent to those for domestic are applied in principle. However, in the case that a reason that the alcohol testing etc. cannot be performed due to foreign laws or regulations, etc. is shown, other equivalent methods defined in the maintenance manual of entrusters might be accepted.

11-4-2 Reception standards that apply when receiving airframes and equipment etc. maintained by the trustees, including inspection items and details, shall be established. (Refer to Circular No. 6-019 when operating from a remote location, etc.)

11-4-3 Methods for auditing maintenance conducted by the trustees regularly or on an as-needed basis regarding maintenance implementation status, quality control, etc. and for taking corrective measures as necessary shall be properly established. (Refer to Circular No. 6-019

when operating from a remote location, etc.)

11-5 Corrective measures for failures

For cases where failures have been identified with the airframes and equipment etc. maintained by the trustees, methods for taking corrective measures, such as reflection in the maintenance items, shall properly be established.

12. Other

12-1 Handling of shared commercial aircraft

In incorporating aircraft shared by multiple air carriers in the operation plan, Circular No. 4-006, “Basic policies pertaining to the handling of shared commercial aircraft” shall be adhered to.

12-2 Wet lease

In engaging in operations under a wet lease (leasing arrangement whereby one air carrier provides crew and aircraft to another air carrier as a package), necessary items shall be listed in accordance with the following:

- (1) The air carrier engaging in operations under a wet lease (the lessee) shall hold the right to manage the leased equipment.
- (2) The lessee shall have the responsibility to ensure safety including maintenance of the leased aircraft. In this case, in relation to the maintenance, inspection, and repair of the aircraft concerned, sufficient measures for ensuring safety shall be taken based on the Maintenance Manual of the lessee.
- (3) Leased aircraft shall be pre-identified and be used only by the lessee during the lease period. (This does not apply, however, if the lessee believes that it will not disrupt its services and the lessor itself uses the aircraft concerned.)

12-3 Exceptions where permission is obtained for the entrusted/entrusting operational control of maintenance

In implementing maintenance with permission for entrusted/entrusting operational control of maintenance under paragraph 1 of Article 113-2 of the CAL, Circular No. 4-005, “Procedures for obtaining permission for entrusted/entrusting operational control,” takes precedence over this guideline.

Supplementary provisions

1. This Circular shall be enforced on February 1, 2000. However, for persons licensed to provide

regular or irregular air transportation services prior to February 1, 2000, “Procedures for evaluating the Maintenance Manual pertaining to regular air transportation service providers and international irregular air transportation service providers (June 30, 1997, KU-KI-712)” or “Procedures for evaluating the Maintenance Manual pertaining to irregular air transportation service providers (July 31, 1998, KU-KI-964)” may apply for one year (until August 31, 2003, in regard to 2-2-1 (2)).

2. Except in the case of paragraph 1, “Procedures for evaluating the Maintenance Manual pertaining to regular air transportation service providers and international irregular air transportation service providers (June 30, 1997, KU-KI-712)” and “Procedures for examining the Maintenance Manual pertaining to irregular air transportation service providers (July 31, 1998, KU-KI-964)” shall be abolished.

Supplementary provision (April 8, 2002)

1. This Circular shall be enforced on April 8, 2002.

Supplementary provision (October 1, 2005)

1. This Circular shall be enforced on October 1, 2005.

Supplementary provision (March 28, 2007)

1. This Circular shall be enforced on March 30, 2007.

Supplementary provision (March 30, 2011)

1. This Circular shall be enforced on July 1, 2011.

Supplementary provision (June 30, 2011)

1. This Circular shall be enforced on July 1, 2011.

Supplementary provision (March 30, 2012)

1. This Circular shall be enforced on March 30, 2012.

Supplementary provision (October 29, 2012)

1. This Circular shall be enforced on October 29, 2012.

Supplementary provision (April 11, 2014)

1. This Circular shall be enforced on April 11, 2014.
2. In applying this Circular, with regard to the already approved Maintenance Manuals and

appendices, the provisions then in force can be applied until October 11, 2014, regardless of this Circular.

3. "Operation of onboard maintenance staff confirmation system (March 18, 2002, KOKU-KU-KI-1235)" shall be abolished.

Supplementary provisions (May 8, 2015)

1. This Circular shall be enforced on June 30, 2015.
2. In applying this Circular to the already approved or under-application Maintenance Manuals and appendices of air carriers, the provisions then in force shall remain applicable until Chapter 2, Chapter 3, and Chapter 4-15 of the revised "Detailed procedures for evaluating Operation Manual (May 8, 2015, KOKU-KU-KI-4)" are incorporated in the Operation Manual of the air carriers concerned.

Supplementary provision (April 24, 2018)

1. This Circular shall be enforced on April 25, 2018.

Supplementary provision (July 13, 2018)

1. This Circular shall be enforced on July 13, 2018.

Supplementary provision (November 1, 2018)

1. This Circular shall be enforced on November 1, 2018.
2. With regard to the already approved Maintenance Manuals and the already authorized appendices of Maintenance Manuals or Maintenance Manuals seeking approval and appendices of Maintenance Manuals seeking authorization at the time of applying this Circular, notwithstanding the revised provisions, the provisions then in force shall remain applicable until March 31, 2019.

Supplementary provision (November 21, 2018)

1. This Circular shall be enforced on November 21, 2018. With regard to the content of the amendment made on November 1, 2018 (KOKU-KU-KI 796), the provisions then in force may be applicable until March 31, 2019.
2. With regard to the already approved Maintenance Manuals and the already authorized appendices of Maintenance Manuals at the time of applying this Circular, notwithstanding the revised provisions, the provisions then in force shall remain applicable until December 12, 2018.

Supplementary provision (March 29, 2019)

1. This Circular shall be enforced on April 1, 2019.
2. Based on the Maintenance Manuals that have been already approved or under application for approval and the appendices of Maintenance Manuals that have been established, etc., at the time

of applying this Circular, if the records prescribed in 7-1, 7-3, or 7-4 are prepared or stored in electronic form in place of paper documents, the provisions then in force shall remain applicable until November 4, 2020. However, after November 5, 2020, all the records prescribed in 7-1, 7-3, or 7-4 that have previously been handled in electronic form will be required to comply with Circular No.6-018 “General Standards for Electronic Signatures and Electromagnetic Records.”

Supplementary provision (April 1, 2019)

1. This Circular shall be enforced on April 1, 2019.

Supplementary provision (June 28, 2019)

1. This Circular shall be enforced on July 1, 2019.

Supplementary provisions (July 5, 2019)

1. This Circular shall be enforced on July 5, 2019.
2. In applying this Circular, with regard to the already approved Maintenance Manuals and their accepted Appendices, the provisions then in force shall remain until December 31, 2019, regardless of this Circular.

Supplementary provision (August 23, 2019)

1. This Circular shall be enforced on September 18, 2019.

Supplementary Provisions (June 17, 2020)

1. This Circular shall be enforced on June 18, 2020.
2. In the event that a person who has been approved for maintenance manuals at the time of the application of this Circular needs to make formal amendments to the descriptions in the maintenance regulations in accordance with the amended provisions of this Circular, it shall be sufficient for the person to submit a subsequent notification as provided for in Article 104, paragraph 4 of the CAL by August 18, 2020.

Supplementary Provisions (July 30, 2021)

1. This Circular shall be enforced on July 30, 2021.
2. In the event that a person who has been approved for maintenance manuals at the time of the application of this Circular needs to make formal amendments to the descriptions in the maintenance regulations in accordance with the amended provisions of this Circular, it shall be sufficient for the person to submit a subsequent notification as provided for in Article 104, paragraph 4 of the CAL by November 30, 2021.

- 3 Notwithstanding the provisions of 1-6-2, the provisions of 1-6-3(6) (advance notification) may be followed until June 17, 2022, when a person who has obtained approval for the maintenance manuals entrusts the repair or alteration of equipment other than critical components, even if such person is other than person that has already obtained approval for the capability set forth in Article 20, paragraph 1, item 7 of the CAL (approved maintenance organization for aircraft parts) or has already obtained approval from a foreign state that is a Contracting State to the Convention on International Civil Aviation.

Please direct any inquiries and feedback regarding this Circular to:

Aircarrier Airworthiness Engineer,

Air Transport Safety Unit, Aviation Safety and Security Department,

Japan Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism

2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo 100-8918

Tel: +81-3-5253-8732

Fax: +81-3-5253-1661

Exhibit

List of Circulars applicable to air carriers or aerial work service operators

- No. 1-008 Markings which shall be indicated in Japanese for Emergency Exit, Safety Equipment, etc.
- No. 3-006 Maintenance and management program for small turbine engines which have module structure
- No. 3-009 Handling of PMA parts
- No. 3-010 Standards and inspection for altimeters and static pressure systems
- No. 3-011 Periodic inspection for secondary radar transponder equipment
- No. 3-014 Prevention of accidents caused by turning propellers and rotor blades
- No. 3-015 Prevention of accidents caused by the movement of pilot seats during a takeoff run and climb
- No. 3-016 Handling of aviation fuel in winter
- No. 3-019 Management of the weight and balance of aircraft
- No. 3-026 Handling of repair and design data approved by the U.S. Federal Aviation Administration
- No. 4-001 Guideline for permitting air transport services and aerial work services and approval of changes to the operation plan (safety related)
- No. 4-005 Procedures for obtaining permission for entrusted/entrusting operational control
- No. 4-006 Basic policies pertaining to the handling of shared commercial aircraft
- No. 4-007 Policies for Establishing the Term of Validity of Airworthiness Certificate for Aircraft of Air Carrier
- No. 4-008 Requirements for equipment etc. related to large aircraft used in air transport services
- No. 4-012 Regular meetings between the Japan Civil Aviation Bureau and Japanese air carrier
- No. 4-013 Managing large-scale structural repair conducted outside of Manufacturer's facility
- No. 4-014 Long-term monitoring of aircraft structural safety after implementation of large scale structural repair
- No. 4-015 Replacing Critical parts without Spare Parts Certification for Aircraft used for International Air Transport Service
- No. 4-017 Operating hours of rented components with a limit of operating hours set by Maintenance Manuals
- No. 4-019 Limited use of equipment, parts, etc. by domestic air carriers (service trial)
- No. 4-020 General policy for establishing safety management system
- No. 4-022 Guidelines for implementation of alcohol testing for aircraft crew etc.
- No. 5-001 Approval standards and evaluation procedures for Category I operation

No. 5-002 Approval standards and evaluation procedures for Category II operation

No. 5-003 Standards for approving extended operations (ETOPS) and detailed procedures for examining aircraft and maintenance system pertaining to ETOPS

No. 5-004 Permission standards and evaluation procedure for RVSM navigation

No. 5-005 Establishment of implementation standards for flight under instrument flight rules that uses GPS

No. 5-006 Establishment of implementation standards for flight under visual flight rules that uses GPS

No. 5-008 Implementation standards for self-contained navigation

No. 5-009 Approval standards for operation using CPDLC

No. 5-010 Approval standards for operation using the VNAN function of the FMS in non-precision approach

No. 5-011 RNAV operation approval standards

No. 5-013 Approval standards and evaluation procedures for Category III operation

No.5-015 Implementation standards for Baro-VNAV approach

No. 5-017 Approval standards and evaluation procedures for RNAV

No. 5-018 Approval standards for operation using EFB

No. 5-019 Approval standards for operation using ADS-B OUT

No. 6-001 Report and communication about a failure related to an aircraft

No. 6-002 Service Difficulty Reporting Procedure

No. 6-010 Implementation of anti-icing measures for aircraft and the monitoring of icing situation

No. 6-011 Un-safe event report in accordance with Civil Aeronautical Law Article 111-4

No. 6-012 Publication of safety reports based on Article 111-6 of the Civil Aeronautics Act

No. 6-013 Procedures for using Aeronautical Safety Information Management and Sharing (ASIMS)

System No. 6-014 Report of equipment etc. suspected of being unauthorized items

No.6-018 General Standards for Electronic Signatures and Electromagnetic Records

No.6-019 Guidelines for Remote Receiving Inspection and Audit, etc.

TCL-125A Modular overhaul of turbine engines for small aircraft

TCL-130 Repair of small modular-structured turbine engines

TCL-131 Ensuring safety during taxiing

TCL-158 Report to the Japan Civil Aviation Bureau for exported aircraft domestically designed and manufactured