

Circular No. 1-312

Guidelines for Evaluation of Quality Control for Manufacturing

September 30, 2005 First issue (KOKU-KU-KI-5029)
June 30, 2011 Amended (KOKU-KU-KI-282)

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

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JCAB Circular

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

Subject: Guidelines for Evaluation of Quality Control for Manufacturing

1. Application

This JCAB Circular describes policies for evaluating quality control in respect to inspections of manufacturing processes that are performed in inspections of type certification, etc. for aircraft made in Japan.

This JCAB Circular applies to type certification for aircraft designed in Japan and type approval for products (engines and propellers). With regard to inspections of manufacturing processes, etc. to which this JCAB Circular applies and that are conducted in places other than the Aircraft Engineering and Certification Center, institutions that use the name of the Aircraft Engineering and Certification Center in this JCAB Circular shall be replaced by the name of regional offices responsible for conducting such inspections.

2. Purpose

This JCAB Circular aims to provide the guidelines for evaluating quality controls in respect to inspections of manufacturing processes that are performed by the Japan Civil Aviation Bureau in inspections of type certification, etc. (hereinafter referred to as “evaluation(s) of quality control (s)”) by clarifying the relevant standards and procedures.

3. Basic Policies for Evaluation of quality control

If the quality assurance or other management method stipulated by the applicant has applied to the aircraft that is to receive an inspection of manufacturing processes as part of type certification inspection, said management method and system are subject to evaluation by the Japan Civil Aviation Bureau.

Evaluation of quality control is intended to confirm that, for individual manufactured products provided by the applicant who applies for a type certification, the quality management system is sufficient enough to certify conformity with the design data that has received a conformity certification, as well as that the quality management system has definitely been applied to the aircraft that is to receive the inspection.

3.1 Evaluation of Quality Control

The evaluation of quality control listed below are performed on the applicant's quality management system.

- 1) Evaluation to confirm whether the quality management system is sufficient enough to ensure that the manufactured products subject to an inspection of manufacturing processes will conform to the design data that have been found to comply with the standards
- 2) Evaluation to confirm that, with regard to the process to which the quality management system is applied, the system will definitely be applied

3.2 Consideration of Manufacturer's Past Record, Experiences, Systems, etc.

For performing an evaluation of quality control, the manufacturer's past record, experiences, systems, etc. may be taken into consideration.

What may be taken into consideration as a manufacturer's past records, experiences, systems, etc. includes the retention of capability in accordance with the approval of organizations stipulated in Article 20 of the Civil Aeronautics Act and the acquisition history of type certification, etc. according to Article 12 of the Civil Aeronautics Act.

If it is deemed that the established quality management system has been applied with sufficient reliability, the evaluation of quality control in the inspection of manufacturing processes may be regarded as having been performed by the confirmation.

4. Procedures for Evaluation of Quality Control

The procedures and management of an evaluation of quality control for each project shall be as follows.

4.1 Submission of Explanatory Documents about Quality Management System

- a. The applicant must explain to the Aircraft Engineering and Certification Center about Appendix 1, "Document to Explain the Quality Management System," required for an evaluation of quality control (hereinafter referred to as "quality management document") by submitting it to the center well in advance of the commencement of manufacturing.
- b. The Aircraft Engineering and Certification Center will perform an initial evaluation with reference to the document submitted and the applicant's explanation to examine whether the manufacturing process proposed by the applicant will ensure conformity with the design data, as well as whether the application of said manufacturing process to the products will be maintained and employed properly to fully achieve the purpose.

4.2 Evaluation of Quality Control System

An evaluation of the quality control system shall be performed as follows.

- (1) In the case that the applicant has obtained an approval to manufacture and inspect the said type of aircraft in accordance with Article 20 of the Civil Aeronautics Act

If it falls under this section, the quality management system is deemed to be established properly; therefore, an evaluation of quality control system shall be regarded as having been performed by confirming that the manufactured products under inspection are applicable to said quality management.

- (2) In the case that the applicant has obtained an approval of organizations in accordance with Article 20 of the Civil Aeronautics Act, but has not obtained an approval to manufacture and inspect the said type aircraft, or has only obtained a type certification, etc. according to Article 12 of the Civil Aeronautics Act

An evaluation of quality control system shall be performed by confirming that the management methods approved by said certification, etc. are applicable to the manufactured products under evaluation, as well as that said control methods have been applied properly.

If a failure is found in the management methods and application status in the course of evaluation, Section (3), items (c) through (d) shall be applied for resolution.

- (3) Cases Other Than the Above

The following shall be used for cases that do not fall under (1) or (2) above.

- a. The Aircraft Engineering and Certification Center will perform an evaluation of quality control on Appendix 1, Section 9 of the quality management document titled “Supplementary Volume” (hereinafter referred to as “Quality Management System Manuals”) submitted by the applicant.
- b. The evaluation mentioned above will be performed by applying mutatis mutandis Section 3.1, items (1) through (3), (5) and (6), (a) through (j) of JCAB Circular No.2-001 “General Policies for Approval of Organizations.” On-site inspection shall be conducted if it is deemed necessary.
- c. The applicant will be notified of the evaluation result through Appendix 2, “Quality Management System Confirmation Result Report.” If a discrepancy is found, the applicant will be asked to report his/her corrective actions by submitting Appendix 3, “Corrective Actions Report.”
- d. With regard to the manuals concerning quality management and quality management system that completed an evaluation, the applicant will be asked to submit the information as reference material for completion of the inspection of manufacturing processes.

4.3 If any change to the Quality Management System Manual submitted has occurred, the following shall be used.

- (1) If any change to the quality management system and Quality Management System Manual that has been granted a type certification, etc. has occurred after completion of an evaluation, the applicant must apply for an approval for change to type design, etc.

The Aircraft Engineering and Certification Center will perform an evaluation and approval process for the change in accordance with Section 4.2 of this JCAB Circular.

- (2) JCAB Circular No. 1-002 “Approval for Minor Drawing Change Concerning Aircraft Made in Japan That Have Obtained Type Certification” shall apply mutatis mutandis to a minor change that is not regarded as a change to the system and methods, such as correction of typographical errors and omissions and personnel change. Then, the applicant must obtain approval of the Aircraft Engineering

and Certification Center.

The term “drawing” described in JCAB Circular No.1-002 shall be replaced by the term “management system” or “management manuals.”

5. Miscellaneous Provision

Regardless of the provisions in the preceding section of this JCAB Circular, an evaluation of quality control for manufacturing may be performed by other means when it is deemed necessary by the director of the Aircraft Engineering and Certification Center to do so.

Supplementary Provision

1. This JCAB Circular shall apply from October 1, 2005.

Supplementary Provision (June 30, 2011)

1. This JCAB Circular shall apply from July 1, 2011.

Contact the following for inquiries, opinions, etc. concerning this JCAB Circular.

Aircraft Engineering and Certification Center

Airworthiness Division

Aviation Safety and Security Department

Japan Civil Aviation Bureau

Ministry of Land, Infrastructure, Transport and Tourism

Nagoya Airport, Toyoba, Toyoyama-cho, Nishi-kasugai-gun, Aichi Prefecture 480-0202

Tel.: +81-568-29-1985

Fax: +81-568-29-1990

(The form shown below is an example; similar information may be specified.)

To the Director of the Aircraft Engineering and Certification Center

(Name of applicant, in-house document reference number, and date of issue)

Document to Explain the Quality Management System

1. Name of applicant	[XX Heavy Industries, Ltd.]
2. Location of applicant	[Nagoya Airport, Toyoba, Toyoyama-cho, Nishi-kasugai-gun, Aichi Prefecture]
3. Project number	[AECC-0-165]
4. Project overview	[Type certification for A184-type rotorcraft manufactured by XX Heavy Industries, Ltd.]
5. Responsible authority	[Aircraft Engineering and Certification Center]
6. Affiliation and name of the applicant's point of contact	[Mr. Tsuguo Tawa Quality Inspection Group, Quality Assurance Department]
7. Affiliation and name of the personnel managing the quality management system	[Mr. Takeshige Hamaai Quality Inspection Group, Quality Assurance Department]
8. Applicant's past results and experiences and information on the quality management system	
(1) Past results and experiences	[Describe your past records and experiences in regard to the Japan Civil Aviation Bureau Example: • Received an inspection of manufacturing processes and obtained a type certification for OH114-type aircraft manufactured by XX Heavy Industries. • Obtained a type approval for the auto pilot system of 9684-type rotorcraft manufactured by XX Heavy Industries.]
(2) Quality management system	[Describe certifications, etc. granted by the Japan Civil Aviation Bureau Example: Obtained an approval for manufacturing and inspection for OH114-type aircraft manufactured by XX Heavy Industries.]
(3) Other	[Describe your past records and experiences in regard to other authorities or foreign manufacturers as well as approval status of the quality management assurance system.]
9. Quality management system applied to the aircraft with type certification	

The quality management system applied to the aircraft with type certification shall be as follows.

(1) In the case that the applicant has obtained an approval of manufacturing and inspection

Describe “In accordance with the Approved Organization Exposition of XX Heavy Industries, Ltd.”

(2) In the case that the applicant has obtained an approval of organizations other than an approval of manufacturing and inspection

At a minimum, compile documents that describe information corresponding to the approval of manufacturing inspection under Section 3.1, items (1) through (3), (5) and (6), (a) through (j) of JCAB Circular No.2-001 “General Policies for Approval of Organizations,” and submit these documents as a supplementary volume titled “Quality Management System Manual for A184-type Rotorcraft Manufactured by XX Heavy Industries.”

This supplementary volume may be composed, so that the items of Approved Organization Exposition are referred.

(3) In the case that the applicant has not obtained any approval of organizations

At a minimum, compile documents that describe information corresponding to the approval of manufacturing and inspection under Section 3.1, items (1) through (3), (5) and (6), (a) through (j) of JCAB Circular No.2-001 “General Policies for Approval of Organizations,” and submit these documents as a supplementary volume titled “Quality Management System Manual for A184-type Rotorcraft Manufactured by XX Heavy Industries.”

This supplementary volume must not only describe the names of company manuals and item titles.

(4) Common to all

If the documents described above do not include the list of reference materials for presentation specified in the next section (materials that describe each document number, revision letter, document name, and establishment date), these documents must be compiled as an appended supplementary volume for submission.

10. Reference materials for presentation

[Documents that must be presented at minimum for an evaluation of quality control system are as follows.

- Company manuals concerning the supplementary volume described above
- Each process specification of special processes applied to aircraft with type certification]

Quality Management System Confirmation Results Report

1. Name of applicant, project number, and aircraft type concerning inspection of type certification, etc.

Name of applicant:

Project number:

Aircraft type:

2. Purpose of report

Evaluation of quality control

(Document review Onsite inspection)

Evaluation of changes to quality management manuals

(Document review Onsite inspection)

3. Evaluation result

No matters pointed out

Matters pointed out are as follows

Number	Matters pointed out	Related requirements, etc.

4. We hereby inform you that the confirmation result of the quality management system is as indicated in Section 3.

Date:

Director of the Aircraft Engineering and Certification Center

Corrective Actions Report

1. Name of applicant, project number, and aircraft type concerning inspection of type certification, etc.

Name of applicant:

Project number:

Aircraft type:

2. Document number, date of issuance, and category

Document number and date of issuance: (Date:)

Evaluation of quality control

Document review Onsite inspection)

Evaluation of changes to quality management manuals

Document review Onsite inspection)

3. Corrective actions

Number	Corrective actions	Time when the corrective actions will be taken
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4. We hereby inform you that the corrective actions for the matters pointed out are as indicated in Section 3.

Date:

Name of reporting person: