

Inspections of Specialized Services, etc.

September 27, 2000	First issue (KU-K-I-1179)
June 30, 2011	Amended (KOKU-KU-KI-282)
November 15, 2017	Amended (KOKU-KU-KI-1708)
March 1, 2019	Amended (KOKU-KU-KI-1271)

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

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Director, Airworthiness Division
Aviation Safety and Security Department
Japan Civil Aviation Bureau
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Subject: **Inspections of Specialized Services, etc.**

1. Purpose

This JCAB Circular provides details of the procedures and standards for inspections of specialized services and non-destructive tests (hereinafter referred to as "specialized services etc."), when conducting an inspection for type certification, airworthiness certification and spare part certification, an inspection for type approval and specification approval, an inspection of repair or alteration, and an inspection for organization approval, provided in Chapter III, "Safety of Aircraft," of the Civil Aeronautics Law (Law No. 231 of 1952. Hereinafter referred to as the Law), as well as an inspection of operating facility etc. for air carriers, provided in Article 102 of the Law and an on-site inspection (safety audit), provided in Article 134 of the Law, and hence related persons are required to undertake procedures etc. in accordance with this Circular, in principle.

2. Applicability

Specialized services generally refer to the processes to change physical, chemical, electrical or metallurgical properties of materials or components, which cannot be assessed unless conducting a destructive test, non-destructive test or analysis.

This JCAB Circular applies to the specialized services, etc. listed in Appended Table 1, which was compiled based on such definition of the term.

3. Inspection methods

Inspections of specialized services, etc. are to confirm the compliance with the following examination standards. Inspections cover not only an applicant but also its contractors for their specialized services, etc. if it is found necessary.

(1) Facilities, equipment and devices

- a) Facilities, equipment and devices shall be based on publicly known standards, such as JIS, MIL SPEC, MIL STD, AMS and ASTM, or technical data prepared by aircraft manufacturers.
- b) They shall undergo necessary inspections and be managed and maintained based on properly established maintenance regulations. Records of management and maintenance are to be properly made and kept.

(2) Workers

- a) Workers shall have proper qualifications in accordance with public standards or criteria, such as JIS, MIL SPEC, MIL STD, AMS, AWS and NAS. In particular, for non-destructive tests and welding processes included in Appended Table 1, workers shall be those qualified respectively based on NAS410 and AMS-STD-1595 or other criteria found equivalent to these (for non-destructive tests, including workers who are qualified as a result of the qualification assessment based on the criteria that were established by the Japan National Aerospace Non-Destructive Testing Board in accordance with NAS410).
- b) Education and training shall be provided to workers in accordance with their qualifications, and workers' qualifications shall be properly managed, including periodic renewal thereof as necessary. Records of qualification management are to be properly made and kept.

(3) Working methods

- a) A working manual shall have been prepared based on public standards, such as JIS, MIL SPEC, MIL STD, AMS and ASTM, or technical data prepared by aircraft manufacturers. Procedures for altering the working manual shall also be specified to ensure proper management of the manual, including revisions thereof.
- b) Working records are to be properly made and kept so that the content of the work can be sufficiently traced.

With regard to welding and non-destructive test work, an on-site inspection may be conducted during an inspection for organization approval, an inspection of operating facility etc. and an on-site inspection (safety audit) for air carriers, or when it deems it necessary.

4. Documents to be submitted

Prior to the aforementioned inspections, a list of official examinations conducted for specialized services (Appended Table 2) shall be submitted, in principle. With regard to contracted specialized services, the originating organization shall submit the relevant list for each contractor.

Examination certificates, written inspection results, working standards and other documents concerning facilities, equipment and workers, etc. shall be presented, in principle.

5. Other

An internal examination system or other confirmation system with equivalent effects shall also be established for matters uncovered by official examinations.

Supplementary Provisions

1. This Circular shall be effective from September 27, 2000.
2. Circular TCM-23-008, titled "Inspections of Specialized Services shall be superseded by this Circular.
3. When it is difficult, due to the need to newly train personnel or other reasons, to immediately comply with this JCAB Circular with regard to specialized services, etc. to which this JCAB Circular is to be applied, such business shall prepare a plan for ensuring conformity and submit it to the relevant airworthiness engineer. The business is required to make efforts to achieve conformity to this JCAB Circular promptly in accordance with the plan it has submitted.

Supplementary Provisions (June 30, 2011)

This Circular shall be effective from July 1, 2011.

Supplementary Provisions (November 15, 2017)

1. This Circular shall be effective from November 15, 2017.
2. The revision concerning the qualification assessment by the Japan National Aerospace Non-Destructive Testing Board mentioned in 3(2) shall be effective from December 1, 2018.

Supplementary Provisions (March 1, 2019)¹. This Circular shall be effective from March 1, 2019.

For further questions or comments regarding this Circular, please contact the following:
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Special Services, etc. Subject to Inspections

Specialized Services, etc.	Coverage		Remarks
	Facilities, equipment and processes	Workers	
Gas fusion welding		✓	
Arc fusion welding		✓	
Resistance welding	✓		
Flash butt welding	✓		
Electron beam welding	✓		
Hand brazing	✓	✓ 1)	
Furnace brazing	✓		
Heat treatment of steel	✓		
Heat treatment of Al and Al alloy	✓		
Heat treatment of Mg and Mg alloy	✓		
Carburizing and nitriding	✓		
Cadmium plating	✓		
Chrome plating	✓		
Nickel plating	✓		
Silver plating	✓		
Copper plating	✓		
Zinc plating	✓		
Anodization	✓		
Chemical coating	✓		
Phosphate coating	✓		
Metal bonding	✓	✓	
Magnetic particle inspection	✓	✓	
Liquid penetrant inspection	✓	✓	
X-ray inspection	✓	✓	
Ultrasonic inspection	✓	✓	
Eddy-current inspection	✓	✓	
Shot-peening	✓		
Glass bead peening	✓		

Note 1) When there are no applicable public standards or criteria, criteria for qualification management shall be established separately.

Note 2) Work that does not fall under any of the specialized services, etc. in this table but requires highly advanced technology and facilities may also sometimes be treated as a specialized service.

Appended Table 2

List of Official Examinations Conducted for Specialized Services, etc. (Company Name)

Name of process subject to official examinations	Name of Facility or Worker, Qualification, Type, Capacity, etc.	Location (Plant name)	Conducted examination (or confirmation)					Remarks
			Examination organization	Criteria	Date	Pass No.	Expiration date	