

Civil Aviation Rules



Part 43

CAA Consolidation

10 March 2017

General Maintenance Rules

DESCRIPTION

Part 43 prescribes the requirements for the maintenance and release to service after maintenance of aircraft, and components to be fitted to aircraft, that are required by Part 91 to have an airworthiness certificate issued under Part 21.

This document is the current consolidated version of Part 43 produced by the Civil Aviation Authority, and serves as a reference only. It is compiled from the official ordinary rules that have been signed into law by the Minister of Transport. Copies of the official rule and amendments as signed by the Minister of Transport may be obtained from the Civil Aviation Authority or may be downloaded from the official web site at: www.caa.govt.nz

Bulletin

This Part first came into force on 1 June 1995 and now incorporates the following amendments:

Amendment	Effective Date
Amendment 1	1 April 1997
Amendment 2	1 April 1997
Amendment 3	25 December 1997
Amendment 4	28 July 2003
Amendment 5	1 March 2007
Amendment 6	22 November 2007
Amendment 7	3 December 2009
Amendment 8	25 March 2010
Amendment 9	10 November 2011
Amendment 10	1 April 2014
Amendment 11	25 September 2015
Amendment 12	10 March 2017

Summary of amendments:

Amendment 1 (Docket 1062)	43.103 revoked and replaced. The following new rules are inserted: 43.201, 43.203, 43.205 and 43.207.
Amendment 2 (Docket 1007)	43.1(4) amended replacing the word “maintenance” with “airworthiness”. The following rules are revoked and replaced: 43.51, 43.101, Subpart D (43.151 to 43.157 inclusive).
Amendment 3 (Dockets 1253 & 1259)	Notes removed from 43.1 and 43.55. The following rules are revoked and replaced: 43.51(a)(3), 43.51(a)(4), 43.51(b), 43.51(c), 43.53, 43.57 to 43.69 inclusive, 43.101(b), 43.103(c), 43.105, 43.107, 43.109, 43.113. Rule 43.51(a)(5) is inserted. The following rules are revoked: 43.71, 43.73, 43.75 and

	43.111.
	The title of 43.101 is amended by inserting the words “to service” after the word “release”.
	Appendices A to F inclusive are revoked and replaced.
Amendment 4 (99/CAR/1342)	43.53 is revoked and replaced.
Amendment 5 (1/CAR/1357)	Rules 43.1, 43.3, 43.51, 43.53, 43.69, 43.101, 43.103, 43.105, 43.107, 43.109, 43.113, 43.115, 43.153, 43.155, 43.201, 43.203, Appendices A.1, A.2 and F are revoked and substituted, rule 43.54 is inserted, and rule 43.57 is revoked and the rule number is reserved, Appendix C is revoked and heading Appendix C is reserved, Appendix G is inserted, rules 43.117, 43.119, 43.157 are revoked.
Amendment 6 (4/CAR/8)	Rule 43.65 is revoked and replaced, Appendices A.1, B and F are revoked and replaced.
Amendment 7 (5/CAR/2)	Rules 43.51, 43.54 and Subpart D are revoked and replaced, Subpart F is inserted.
Amendment 8 (9/CAR/1)	Paragraph A.2 of Appendix A, and Appendix F are revoked and replaced.
Amendment 9 (5/CAR/1)	Rule 43.54 and Appendix E.1 are revoked and replaced.
Amendment 10 (13/CAR/1)	Rule 43.155 and Appendix A.1 are revoked and replaced.
Amendment 11 (14/CAR/3)	Rule 43.113 is replaced

Amendment 12
(16/CAR/1)

Revoking Appendix G.

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Subpart A — General

43.1 Purpose

(a) Except as provided in paragraph (b), this Part prescribes rules governing—

- (1) the maintenance of aircraft that are required by Part 91 to have an airworthiness certificate issued in accordance with subpart H of Part 21; and
- (2) the release-to-service after maintenance of aircraft that are required by Part 91 to have an airworthiness certificate issued in accordance with subpart H of Part 21; and
- (3) the maintenance, and the release-to-service after maintenance, of components to be fitted to aircraft that are required by Part 91 to have an airworthiness certificate issued in accordance with subpart H of Part 21; and
- (4) the maintenance, and the release-to-service after maintenance, of instruments and equipment that, subject to other applicable operating rules, are required by Part 91 to be fitted to an aircraft; and
- (5) the annual review of airworthiness.

(b) Unless specified otherwise in a technical arrangement, the requirements of subparts B and C do not apply to a person performing maintenance on a New Zealand registered aircraft or on a component intended to be fitted to a New Zealand registered aircraft if the maintenance is performed—

- (1) in another State that is party to a technical arrangement; and
- (2) under the authority of and in accordance with a maintenance organisation certificate or approval issued by the State referred to in paragraph (b)(1); and
- (3) in accordance with the relevant procedures and authorisations of the maintenance organisation referred to in paragraph (b)(2); and

- (4) in accordance with the relevant maintenance standards and procedures of the State referred to in paragraph (b)(1) unless specified otherwise in the technical arrangement; and
- (5) in accordance with any conditions specified in the technical arrangement.

43.3 Definitions

Definitions relating to this Part are contained in Part 1.

43.5 Falsification, reproduction, or alteration of maintenance documentation

A person shall not make or cause to be made—

- (1) any fraudulent or intentionally false entry in any record or report that is required to be made, kept, or used to show compliance with any requirement under this Part; or
- (2) any reproduction or alteration, for fraudulent purpose, of any record or report made under this Part.

Subpart B — Maintenance

43.51 Persons to perform maintenance

(a) Except as provided in paragraphs (b), and (d), and subject to paragraph (e), and rule 43.54, a person must not perform maintenance on an aircraft or component unless the person—

- (1) holds a current aircraft maintenance engineer licence in an appropriate category and with an appropriate rating issued in accordance with Part 66; or
- (2) holds an appropriate current aircraft maintenance engineer licence and an appropriate rating issued by the Civil Aviation Safety Authority of Australia, and has had that licence registered by the Director in New Zealand under the Trans Tasman Mutual Recognition Act 1997; or

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- (3) is authorised to perform the maintenance by the holder of an aircraft maintenance organisation certificate issued, with an appropriate rating, in accordance with Part 145; or
 - (4) holds a current certificate of maintenance approval, with appropriate endorsement, issued in accordance with Part 66; or
 - (5) for maintenance performed outside of New Zealand, holds an appropriate current maintenance engineer licence or approval issued under the authority of an ICAO Contracting State for the type of aircraft or component; or
 - (6) performs the maintenance under the direct supervision of an appropriate person referred to in paragraphs (a)(1), (a)(2), (a)(3), (a)(4), or (a)(5).
- (b) Subject to paragraph (c), a person who does not meet the requirements of paragraph (a) but holds any of the following licences may perform the maintenance specified in Appendix A.1 on an aircraft that is used to perform air operations under the authority of an air operator certificate issued in accordance with Part 119, or may perform the maintenance specified in Appendices A.1 and A.2 on an aircraft that is not used to perform air operations:
- (1) a current pilot licence with an aircraft type rating for the aircraft, issued in accordance with Part 61;
 - (2) a current aircraft maintenance engineer licence issued in accordance with Part 66;
 - (3) a current aircraft maintenance engineer licence issued by the Civil Aviation Safety Authority of Australia if that licence is registered by the Director in New Zealand under the Trans Tasman Mutual Recognition Act 1997.
- (c) The person referred to in paragraph (b) must—
- (1) be authorised in writing by the operator of the aircraft to perform the maintenance and be appropriately trained by the holder of a current and appropriate aircraft maintenance engineer licence with an appropriate rating issued in accordance with Part 66; or

- (2) for an aircraft that is required by this Part or Parts 121, 125, or 135, to be maintained under the authority of a maintenance organisation certificate issued in accordance with Part 145, be appropriately trained and hold an appropriate authorisation, issued by the holder of the maintenance organisation certificate, to perform the maintenance on the aircraft type.
- (d) A person who does not meet the requirements of paragraph (a) may perform maintenance on a glider or glider component if the person—
- (1) is authorised by a gliding organisation to perform maintenance on a glider or glider component; or
 - (2) performs the maintenance under the direct supervision of a person who is authorised by a gliding organisation to perform maintenance on a glider or glider component.
- (e) A person must not perform maintenance on an aircraft that has a *special category—exhibition* airworthiness certificate or *special category—limited* airworthiness certificate unless the person is appropriately trained and is authorised by the principal provider of maintenance services named in the operator statement required for the aircraft by rule 47.55(c).

43.53 Performance of maintenance

A person performing maintenance on an aircraft or component must—

- (1) be familiar with the maintenance actions required for the continued airworthiness of the aircraft or component; and
- (2) use adequate housing and facilities for the disassembly, inspection, and reassembly of the aircraft or component; and
- (3) use—
 - (i) methods, techniques, and practices that are specified in the instructions for continued airworthiness issued for the aircraft or component; or
 - (ii) equivalent methods, techniques, and practices that are acceptable to the Director; and

- (4) use materials, parts, and appliances in accordance with the requirements of subpart K of Part 21; and
- (5) use the tools, equipment, and test equipment necessary to ensure completion of the work in accordance with paragraph (3); and
- (6) use the test equipment recommended by the manufacturer, or equivalent test equipment that provides the same capability for the person conducting the test to ensure that the component being tested is in an airworthy condition; and
- (7) if specified in the maintenance procedures, use the special test equipment recommended by the manufacturer or equivalent test equipment that is acceptable to the Director; and
- (8) perform the maintenance so as to ensure that the aircraft or component meets every applicable airworthiness requirement; and
- (9) on completion of the maintenance, ensure that the condition of the aircraft or component is satisfactory for release-to-service and is at least equal to its original or properly modified condition with regard to—
 - (i) aerodynamic function; and
 - (ii) structural strength; and
 - (iii) resistance to vibration and deterioration; and
 - (iv) other qualities affecting airworthiness; and
- (10) on completion of the maintenance, ensure that the aircraft or component complies with the applicable certification requirements for aircraft noise and engine emission; and
- (11) not perform the maintenance unless he or she has been relieved from the performance of maintenance on an aircraft or component for—

- (i) a period of at least 8 consecutive hours in the 24-hour period immediately before the maintenance is performed; and
- (ii) at least 4 periods of at least 24 consecutive hours each in the 30-day period immediately before the maintenance is performed.

43.54 Maintenance required under Part 145

(a) A person must not (except under the authority of a maintenance organisation certificate issued by the Director under the Act and Part 145) perform maintenance on, or certify for release-to-service,—

- (1) an aircraft that has a MCTOW of more than 5700 kg or a certificated passenger seating configuration, excluding any required crew member seat, of 10 seats or more if the aircraft is used to perform—
 - (i) air operations under the authority of an air operator certificate issued by the Director under the Act and Part 119; or
 - (ii) adventure aviation operations under the authority of an adventure aviation operator certificate issued by the Director under the Act and Part 115; or
- (2) a component fitted or intended to be fitted to an aircraft referred to in paragraph (1).

(b) Except as provided in paragraph (c), a person must not (except under the authority of a maintenance organisation certificate issued by the Director under the Act and Part 145) perform any of the following kinds of maintenance on an aircraft or component, or certify the aircraft or component for release-to-service after the maintenance:

- (1) overhaul of a component:
- (2) maintenance on an aircraft or component if the relevant instructions for continued airworthiness require the use of a jig that is approved or certified by the manufacturer or that is approved by the Director:

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- (3) maintenance on a component if the maintenance involves the disturbance of any part of the component that is supplied as a bench tested unit, except if—
- (i) the disturbance is for the replacement or adjustment of a part normally replaceable or adjustable in service; and
 - (ii) subsequent functioning of the part disturbed can be demonstrated without the use of test apparatus that is additional to the test apparatus used for normal functioning checks:
- (4) maintenance on an aircraft engine if the maintenance involves—
- (i) dismantling and reassembly of a piston engine, except where the dismantling and reassembly is to obtain access to the piston or cylinder assembly; or
 - (ii) dismantling and reassembly of a main casing or main rotating assembly of a turbine engine, except if the dismantling and reassembly is for the replacement of a main casing or rotating assembly and the instructions for continued airworthiness for the engine provides instructions for the replacement, and the replacement of the main casing or rotating assembly of the engine is achieved solely by disconnecting the flanges of main casings; or
 - (iii) disturbance of reduction gear:
- (5) aircraft propeller balancing other than in situ dynamic propeller balancing in accordance with the aircraft manufacturer's instructions:
- (6) maintenance on a helicopter if the maintenance involves the dismantling of any transmission gearbox, except if the dismantling is for separation of casings to obtain access for the purpose of internal inspection in accordance with the helicopter manufacturer's instructions.

(c) Except for an aircraft that is operated on an adventure aviation operation, paragraph (b) does not apply to—

- (1) an aircraft that has a *special category* airworthiness certificate issued by the Director under the Act and Subpart H of Part 21; or
- (2) a microlight aircraft; or
- (3) a glider or powered glider; or
- (4) a hot air balloon.

43.55 Recording of overhaul

A person shall not state in any maintenance document entry required by any CAR that an aircraft, airframe, engine, propeller, or other aircraft component, has been overhauled unless it has been—

- (1) disassembled, cleaned, inspected and repaired as necessary, and reassembled, using methods and techniques acceptable to the Director; and
- (2) tested in accordance with—
 - (i) current standards and technical data acceptable to the Director, which have been developed and documented by the holder of the type certificate, supplemental type certificate or other production approval, issued under Part 21; or
 - (ii) other standards or technical data approved by the Director.

43.57 Reserved

43.59 Radio station tests and inspections

Each person performing an inspection of an aircraft radio station required by Part 91 shall perform the tests and inspections listed in Appendix B.

43.61 Altimeter system tests and inspections

Each person performing an inspection of the altimeter system required by Part 91 shall perform the tests and inspections listed in Appendix D.

43.63 SSR transponder tests and inspections

Each person performing an inspection of the SSR transponder required by Part 91 shall perform the tests and inspections listed in Appendix E.

43.65 Emergency locator transmitter tests and inspections

A person performing a test and inspection of an emergency locator transmitter as required under subpart G of Part 91 must perform the applicable tests and inspections specified in Appendix F.

43.67 Non-destructive testing

Each person performing maintenance on an aircraft or aircraft component where the applicable maintenance data requires a non-destructive test using fluorescent penetrant, magnetic particle, eddy current, ultrasonic or radiography methods shall—

- (1) hold a certificate issued by the CBIP, appropriate to the technique being used, or an equivalent certificate acceptable to the Director; and
- (2) perform the non-destructive testing using appropriate methods, techniques and practices acceptable to the Director.

43.69 Maintenance records

(a) Except as provided in paragraph (b), a person performing maintenance on an aircraft or a component must, on completion of the maintenance, record the following information in the appropriate maintenance logbook:

- (1) details of the maintenance including, if applicable,—
 - (i) the identity of any inspection carried out; and
 - (ii) a description of the work performed; and
 - (iii) the technical data used; and
 - (iv) the requirement for an operational flight check if the maintenance requires a flight check under rule 43.103(a)(4):

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- (2) if a component is removed or fitted during the maintenance,—
 - (i) a description of the component; and
 - (ii) its part number and serial number, if any; and
 - (iii) the references to the applicable release documentation:
 - (3) details of any measurements or test results, including the results of any ground or air tests that have been performed as part of the maintenance:
 - (4) for altimeter system test and inspection, the date and maximum altitude to which the altimeter has been tested:
 - (5) if an AD is actioned as part of the maintenance,—
 - (i) the AD number; and
 - (ii) the revision date; and
 - (iii) the means of compliance:
 - (6) the location and, if applicable, the name of the facility where the maintenance was carried out:
 - (7) the reasons for performing the maintenance.
- (b) A person performing maintenance on an aircraft or a component may use associated worksheets to record the details of the maintenance performed if—
- (1) a summary of maintenance performed is recorded in the appropriate maintenance logbook; and
 - (2) the worksheets are referenced in the summary of maintenance required under paragraph (b)(1).
- (c) A person performing maintenance on an aircraft to rectify a defect that is entered in the technical log or to carry out an inspection that is entered in the technical log must on completion of the maintenance—

- (1) record the completion of the maintenance in the technical log;
and
 - (2) record the details required by paragraph (a) in the appropriate maintenance logbook; or
 - (3) if the maintenance logbook is not readily available, forward written details of the maintenance to the place where the maintenance logbooks are held by a means, where practicable, other than carriage in the aircraft on which the maintenance has been performed.
- (d) A person performing maintenance on an aircraft or a component must, after recording the details required by paragraphs (a) to (c), include the following information as part of the maintenance record:
- (1) the person's name:
 - (2) the person's signature except if the maintenance logbook or worksheet is in electronic format:
 - (3) if applicable, the person's licence, approval, or authorisation number:
 - (4) the date of completion of the maintenance.
- (e) A person performing scheduled maintenance on an aircraft that is required by rule 91.509(b) to be fitted with a time-in-service recorder must, on completion of that maintenance, record in the appropriate maintenance logbook—
- (1) the total time-in-service reading of the recorder; and
 - (2) any indication that the time-in-service recorder has been tampered with since the last scheduled inspection.
- (f) The person required under any of paragraphs (a) to (e) to record the details of maintenance performed must record the details accurately and legibly in ink or by other permanent means.

Subpart C — Release to Service

43.101 Persons to certify release-to-service

(a) Except as provided in paragraph (b), and subject to paragraph (c) and rule 43.54, a person must not certify an aircraft or component for release-to-service after maintenance unless that person—

- (1) holds a current aircraft maintenance engineer licence in an appropriate category and an appropriate rating issued in accordance with Part 66; or
- (2) holds an appropriate current aircraft maintenance engineer licence and an appropriate rating issued by the Civil Aviation Safety Authority of Australia, and has had that licence registered by the Director in New Zealand under the Trans Tasman Mutual Recognition Act 1997; or
- (3) is authorised to certify such aircraft or components for release-to-service by the holder of an aircraft maintenance organisation certificate issued with an appropriate rating in accordance with Part 145; or
- (4) holds a current certificate of maintenance approval, with appropriate endorsement, issued in accordance with Part 66; or
- (5) for maintenance performed outside New Zealand, holds an appropriate current maintenance engineer licence or approval issued under the authority of an ICAO Contracting State, acceptable to the Director, for the type of aircraft or component; or
- (6) has performed the maintenance under rule 43.51(b).

(b) A person may certify a glider or glider component for release-to-service after maintenance if that person is authorised by a gliding organisation to certify such a glider or glider component for release-to-service.

(c) A person must not certify an aircraft or component for release-to-service after maintenance unless that person has been relieved from the

performance, supervision, or certification of maintenance on an aircraft or component for—

- (1) a period of at least 8 consecutive hours in the 24-hour period immediately before certifying the release-to-service; and
- (2) at least 4 periods of at least 24 consecutive hours each in the 30-day period immediately before certifying the release-to-service.

43.103 Requirements for certifying release-to-service

(a) A person must not certify an aircraft or component for release-to-service after maintenance unless—

- (1) the maintenance has been performed in accordance with this Part; and
- (2) the person meets the requirements of rule 43.101; and
- (3) in respect of that maintenance, the aircraft or component is fit for release-to-service; and
- (4) if the aircraft has undergone maintenance that may have appreciably affected the flight characteristics or operation of the aircraft,—
 - (i) a satisfactory operational flight check has been carried out in accordance with rule 91.613 and the completion of the flight check is recorded in the aircraft maintenance logbook or worksheet, and the technical log; or
 - (ii) ground tests, inspections, or both, show conclusively that the maintenance has not appreciably changed the flight characteristics or substantially affected the flight operation of the aircraft and details of the ground tests and inspections, as the case may be, have been recorded in the aircraft maintenance logbook or worksheet; or
 - (iii) the release-to-service is for the purpose of performing the operational flight check required under paragraph (a)(4)(i).

(b) A person must not certify an aircraft or component for release-to-service after the performance of a major modification or a major repair unless—

- (1) the person meets the requirements of rule 43.101; and
- (2) the major modification or major repair has been certified for conformity with acceptable technical data in accordance with subpart E; and
- (3) in respect of that major modification or major repair, the aircraft or component is fit for release-to-service; and
- (4) if the acceptable technical data under paragraph (b)(2) includes changes to the operating limitations or flight data in the flight manual, the changes have been incorporated into the flight manual.

(c) The person responsible for certifying an aircraft for release-to-service under paragraph (a)(4)(iii) for the purpose of an operational flight check must record in the aircraft maintenance logbook or worksheet, and the technical log —

- (1) the following statement of release-to-service:

In respect of the recorded work, the aircraft is released-to-service for an operational flight check only; and

- (2) adjacent to the statement of release-to-service—
 - (i) the person's name; and
 - (ii) the person's signature except if the maintenance logbook or worksheet is in electronic format; and
 - (iii) the person's licence, approval, or authorisation number; and
 - (iv) the date of entry.

43.105 Certifying release-to-service after maintenance

(a) Except as required in paragraph (b), a person who certifies an aircraft or component for release-to-service after maintenance must record the following information in the appropriate maintenance logbook or worksheet, and the technical log as may be necessary, immediately adjacent to the details of the maintenance that is required to be recorded under rule 43.69—

- (1) the person's name; and
- (2) the person's signature except if the maintenance logbook or worksheet is in electronic format; and
- (3) the person's licence, approval, or authorisation number; and
- (4) the date of entry; and
- (5) the following statement of release-to-service if the maintenance logbook, worksheet, or technical log, as the case may be, does not include a preformatted equivalent statement:

“The maintenance recorded has been carried out in accordance with the requirements of New Zealand Civil Aviation Rule Part 43 and in respect of that maintenance the (aircraft) (component)* is released to service”.*

** delete as applicable*

(b) If a component is not installed on, or allocated to an aircraft, the person certifying the component for release-to-service must certify the release-to-service on—

- (1) *CAA Form One – authorised release certificate* if—
 - (i) rule 43.54 requires the maintenance to be performed under the authority of, and in accordance with the provisions of, a maintenance organisation certificate issued in accordance with Part 145; or
 - (ii) the component is to be exported in accordance with the provisions of a maintenance organisation certificate

issued in accordance with Part 145 or an aircraft manufacturing organisation certificate issued in accordance with Part 148; or

- (2) *CAA Form Two – New Zealand domestic part label.*

43.107 Inoperative equipment

A person who certifies an aircraft or component for release-to-service that includes inoperative instruments or equipment that are permitted to be inoperative under rule 91.537 must, before signing the statement of release-to-service as required under rule 43.105,—

- (1) list the inoperative instruments and equipment in the technical log; and
- (2) place a placard on each inoperative instrument and on or adjacent to the cockpit controls of each item of inoperative equipment, marking each item *Inoperative*.

43.109 Defects

If a person who is responsible under this Part for certifying an aircraft or component for release-to-service does not certify the aircraft or component for release-to-service because a defect has not been cleared, that person must before further flight of the aircraft—

- (1) enter the details of the defect in the technical log if the defect is not already entered in the log; and
- (2) if practicable, ensure that defect is entered in the appropriate maintenance logbook; and
- (3) adjacent to the details of the defect that the person may have entered under paragraphs (1) and (2), enter—
 - (i) his or her name and signature; and
 - (ii) his or her licence, approval, or authorisation number; and
 - (iii) the date of entry.

43.111 Reserved**43.113 Duplicate safety inspection of control system**

(a) A person must not certify an aircraft or component for release-to-service after the initial assembly, subsequent disturbance, or adjustment of any part of the control system of the aircraft or the control system of the component unless—

- (1) the applicable requirements of Subpart C have been complied with; and
- (2) a duplicate safety inspection has been carried out to ensure that—
 - (i) the control system of the aircraft or the component, as the case may be, functions correctly; and
 - (ii) in respect of the maintenance that has been performed, the control system is assembled correctly and every required locking mechanism is in place; and
- (3) the certification and signatures required by paragraphs (c) and (d) have been completed.

(b) The duplicate safety inspection required by paragraph (a)(2) must be carried out by—

- (1) a person who meets the requirement in rule 43.101 to certify the aircraft or component for release-to-service; and
- (2) another person who is nominated by the person specified in paragraph (b)(1) and has adequate training, knowledge and experience to carry out the safety inspection, and who holds—
 - (i) a current aircraft maintenance engineer licence issued in accordance with Part 66; or
 - (ii) a current certificate of maintenance approval issued in accordance with Part 66; or
 - (iii) a current pilot licence with a rating on the aircraft type issued in accordance with Part 61; or

- (iv) a current authorisation issued by the holder of a maintenance organisation certificate issued in accordance with Part 145; or
 - (v) a current appropriate maintenance engineer licence or approval issued under the appropriate authority of an ICAO Contracting State; or
 - (vi) a current glider pilot certificate or an engineer's approval issued by a gliding organisation.
- (c) The person specified in paragraph (b)(1) must enter in the appropriate maintenance logbook or worksheet—
- (1) the identification of the control system that has been inspected; and
 - (2) the detailed scope and extent of the safety inspection that has been carried out; and
 - (3) the following statement—
“We certify that a duplicate safety inspection has been carried out and the identified control system of the aircraft/component functions correctly, and in respect of the maintenance performed, the control system is assembled and locked correctly.”
- (d) The following details of the person specified in paragraph (b)(1) and the person specified in paragraph (b)(2) must be entered in the maintenance logbook or worksheet adjacent to the statement required under paragraph (c)(3):
- (1) the name of the person; and
 - (2) the signature of the person except if the maintenance logbook or worksheet is in electronic format; and
 - (3) the licence number, approval number, or authorisation number for the person; and
 - (4) the date of entry.

43.115 Engine performance checks

(a) Except as provided in paragraph (c), a person must not certify an aircraft for release-to-service after the following maintenance activities unless an engine performance check has been performed in accordance with the aircraft manufacturer's recommendations:

- (1) a 100-hour, or equivalent inspection carried out in accordance with the aircraft manufacturer's maintenance schedule:
- (2) an engine change:
- (3) a propeller change:
- (4) any other maintenance if the aircraft manufacturer recommends an engine performance check after the maintenance.

(b) A person who certifies an aircraft for release-to-service after an engine performance check that is required in paragraph (a) must ensure that the following information is recorded in the appropriate maintenance logbook or worksheet:

- (1) the ambient conditions of temperature and atmospheric pressure:
- (2) the details of the results of the engine performance check.

(c) Paragraph (a) does not apply to an aircraft that is maintained in accordance with a maintenance programme—

- (1) approved under Part 119; or
- (2) approved under rule 91.607.

Subpart D — Review of Airworthiness

43.151 Persons to perform review

(a) Except as provided in paragraph (b), a person must not perform a review of airworthiness for an aircraft unless the person holds an inspection authorisation issued under Part 66.

(b) A person may perform a review of airworthiness on a glider if—

- (1) the person is authorised to perform a review of airworthiness on a glider by a gliding organisation; and
- (2) the person has satisfactorily completed a course of instruction, including an examination, that is acceptable to the Director, on the inspection of aircraft and components for conformity with the CAR.

43.153 Review requirements

(a) Except as provided in paragraph (b), a person performing a review of airworthiness, required under rule 91.615, for an aircraft must, within the 30 day period immediately before certifying that the review has been completed—

- (1) check that the aircraft conforms to its type certificate data sheet or equivalent type data that is acceptable to the Director; and
- (2) check that every instrument and item of equipment required under Subpart F of Part 91 is fitted; and
- (3) for an aircraft that is required under rule 91.509(b) to be fitted with a time-in-service recorder—
 - (i) record the time-in-service recorder reading in the appropriate maintenance logbook; and
 - (ii) compare the aircraft's total time-in-service recorded in the technical log with the time-in-service recorder reading; and
 - (iii) ensure that any discrepancy in the aircraft's total time-in-service that is identified under paragraph (a)(3)(ii) is included in the reports required under rule 43.155(a)(4); and
- (4) check that since the last review of airworthiness, or inspection for the issue of an airworthiness certificate—
 - (i) every modification and repair has been correctly recorded and certified for release-to-service referencing the

- applicable technical data listed in Appendix D to Part 21;
and
- (ii) all due maintenance specified in the applicable maintenance programme has been correctly recorded and certified for release-to-service; and
 - (iii) every airworthiness directive relevant to the aircraft type and its installed components has been assessed and certified as being 'embodied', 'found embodied', or 'not applicable', and if an airworthiness directive is repetitive, check that it is recorded in the repetitive section of the appropriate maintenance logbook; and
 - (iv) every defect recorded in the technical log has been rectified and the aircraft released to service or the defective instruments and equipment are recorded in the technical log, and placarded as inoperative if they are permitted to be inoperative under rule 91.537; and
 - (v) every applicable release-to-service has been completed and certified in accordance with Subpart C; and
 - (vi) the recorded weight and balance data reflects any changes to the aircraft's weight and balance and that the recorded weight and balance data is within the published weight and balance limitations for the aircraft; and
 - (vii) the flight manual, including every applicable supplement is the current version for the aircraft in its existing state; and
- (5) check that the overhaul and finite life of each lifed component is recorded and is within the limits laid down in the applicable manufacturer's document and, if practicable, verify serial numbers by physical inspection; and
- (6) perform a general condition inspection of the aircraft.

(b) The requirements in paragraphs (a)(1) and (a)(4)(i) do not apply to an aircraft that has a *special category* airworthiness certificate issued under Subpart H of Part 21.

(c) The person performing the review of airworthiness must record any new defects identified during the review in the technical log and in the appropriate maintenance logbook.

43.155 Certifying review

(a) Subject to paragraph (b), a person who performs a review of airworthiness for an aircraft must, on completion of the review—

- (1) certify that the review has been completed by entering the following statement in the appropriate maintenance logbook:

“I certify that an (annual)(biennial)* review of airworthiness has been carried out on this aircraft and that the requirements of Civil Aviation Rule 43.153(a) have been complied with”;* and

* delete as applicable

- (2) adjacent to that statement, enter—
 - (i) the person’s name; and
 - (ii) the person’s signature except if the maintenance logbook is in electronic format; and
 - (iii) the person’s inspection authorisation number; and
 - (iv) the date that the review was completed; and
- (3) in accordance with paragraph (c), enter the due date for the next review of airworthiness in the technical log; and
- (4) forward a report of the review to the Director in a form acceptable to the Director—
 - (i) within 7 days from the date of completing and certifying the review in accordance with paragraphs (a)(1) and (a)(2); or

- (ii) if the review is not completed and certified in accordance with paragraphs (a)(1) and (a)(2), within 7 days from the expiry of the 30 day period specified in rule 43.153(a) for completing the review.
- (b) Except for instruments and equipment that are permitted to be inoperative in accordance with rule 91.537, a person who performs a review of airworthiness for an aircraft must not certify the review as being complete unless every defect has been rectified and the aircraft certified for release-to-service in accordance with Subpart C.
- (c) The the next review of airworthiness must not be more than 1 year or 2 years, as specified in with rule 91.615(a)(1), after—
- (1) the date that the review is certified under paragraph (a); or
 - (2) the beginning of the extension period if the due date for the review has been extended under rule 91.615(c)(1).

Subpart E — Certifying Conformity following Major Modification or Major Repair

43.201 Purpose

This subpart prescribes rules governing the certification of an aircraft, that is issued with a standard or restricted category airworthiness certificate under subpart H of Part 21, for conformity with acceptable technical data following major modifications or major repairs.

43.203 Persons to certify conformity

- (a) A person must not certify that an aircraft or component conforms to acceptable technical data following a major modification or a major repair unless that person—
- (1) holds a certificate of inspection authorisation issued in accordance with subpart E of Part 66; or
 - (2) holds an authorisation, issued by the holder of a maintenance organisation certificate issued in accordance with Part 145, to certify conformity of the aircraft or component; or

- (3) is authorised by the manufacturer of the aircraft or component to certify conformity of the aircraft or component.
- (b) Notwithstanding paragraph (a), a person may certify that a glider or glider component conforms to acceptable technical data following a major modification or a major repair if that person—
- (1) is authorised by a gliding organisation to certify conformity of gliders and glider components; and
 - (2) has attended a course of instruction and passed an examination on the inspection of gliders and glider components that is acceptable to the Director as an equivalent to the requirements in Subpart E of Part 66 for the issue of a certificate of inspection authorisation.

43.205 Certifying requirements

Each person certifying conformity of an aircraft or aircraft component following a major modification or a major repair shall, before certifying to that effect, ensure that the modification or repair conforms to the applicable technical data acceptable to, or approved by, the Director.

43.207 Certification

- (a) Except as provided by paragraph (b), each person who certifies that an aircraft or aircraft component conforms to the applicable technical data required by 43.205 following a major modification or a major repair shall complete form CAA 337 and provide the holder of the certificate of registration for the aircraft with a copy of the completed form.
- (b) A maintenance organisation certificated under Part 145 may use documents other than the form CAA 337 to record the information required by paragraph (a).
- (c) Each person who certifies conformity on a form CAA 337 shall forward a copy of the completed form to the Director within seven days of the completion of the certification.

Subpart F — Maintenance for Special Category Aircraft

43.301 Purpose

This Subpart prescribes rules, that are additional to, or exceptions from the requirements of Subparts B and C for the maintenance of an aircraft that has a *special category* airworthiness certificate issued under Subpart H of Part 21.

43.303 Performance of maintenance

In addition to rule 43.53, a person performing maintenance in accordance with a maintenance programme required under rule 91.605 on an aircraft that has a *special category* airworthiness certificate or a component fitted or intended to be fitted to an aircraft that has a *special category* airworthiness certificate must—

- (1) at the start of the maintenance programme, inspect the aircraft for any defect or configuration anomalies which would be unlikely to be detected by the inspections required under paragraph (2); and
- (2) after the initial inspection, conduct routine inspections and detailed inspections in accordance with the maintenance programme.

43.305 Recording of overhaul

(a) In spite of rule 43.55, and subject to paragraph (b), a person may state in an appropriate maintenance document for an aircraft that has a *special category* airworthiness certificate that an airframe, engine, propeller, or component of the aircraft has been overhauled if it has been disassembled, cleaned, inspected, repaired as necessary, reassembled, and tested using methods and techniques documented—

- (1) by the aircraft or component manufacturer; or
- (2) by a military authority to standards acceptable to the Director.

(b) For an aircraft that has a *special category—exhibition* airworthiness certificate or a *special category—limited* airworthiness certificate, the methods and techniques required by paragraphs (a)(1) and (a)(2) must be specified in the maintenance programme required under rule 91.605.

43.307 Maintenance records

In spite of rule 43.69(a)(2)(iii), a person performing maintenance on an aircraft that has a *special category* airworthiness certificate must on completion of the maintenance, record the following references for any replacement part or component—

- (1) the origin of the part or component; and
- (2) the source of the part or component; and
- (3) documentation associated with the part or component; and
- (4) the history of the part or component.

Appendix A — Maintenance performed by a person under rule 43.51(b)

A.1 Aircraft used to perform air operations

The following maintenance may be performed by a person under rule 43.51(b) on an aircraft that is used to perform air operations under the authority of an air operator certificate issued under the Act and Part 119, or an adventure aviation certificate issued under the Act and Part 115:

- (1) greasing and lubrication that does not require disassembly other than removal of access panels, fairings, or cowls;
- (2) replacing the aircraft battery;
- (3) replacing fuses and lights;
- (4) GPS equipment maintenance including—
 - (i) the installation and removal of GPS receivers if the receiver has quick disconnect capabilities, and any subsequent test requirements are built in to the receiver, and the applicable information for the installation and removal of the receiver is immediately available; and
 - (ii) the routine updating of GPS receiver database information;

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- (5) compressor washing if—
 - (i) the installation of the wash equipment does not require the disassembly of any primary engine control system; and
 - (ii) the applicable information for the washing is immediately available and includes procedures for the installation and removal of any wash equipment and the safe operation of the engine during the wash runs and any necessary drying runs:

 - (6) installation and removal of seats, doors, and role equipment if—
 - (i) the configuration of the aircraft with the particular equipment installed or removed has been approved; and
 - (ii) the flight manual incorporates the necessary information for the safe operation of the aircraft with the equipment installed or removed, including weight and balance data for each configuration; and
 - (iii) the applicable information for the installation and removal of the equipment is immediately available; and
 - (iv) no special tooling, special equipment, or subsequent inspection is required:

 - (7) the completion of repetitive airworthiness directive inspections between scheduled maintenance inspections if—
 - (i) the airworthiness directive states that a pilot may complete the inspection; and
 - (ii) any conditions stated in the airworthiness directive are complied with; and
 - (iii) no special tooling or special equipment is required:

 - (8) replenishment of engine oil:

- (9) deferral of defects relating to inoperative instruments and equipment if the aircraft can be operated with inoperative instruments and equipment in accordance with rule 91.537:
- (10) the performance of routine maintenance that is intended by the aircraft manufacturer to be performed by a pilot provided no special tooling or equipment is required:
- (11) operating the self-test function on a 406 MHz ELT.

A.2 Aircraft not used to perform air operations

The following maintenance, in addition to the maintenance listed in Appendix A.1, may be performed by a person under rule 43.51(b) on an aircraft that is not used to perform air operations:

- (1) replacement of landing gear tyres or tail skid shoes:
- (2) simple or temporary fabric patch repairs if—
 - (i) the repair is not applied to any flying control surface; and
 - (ii) the repair does not require the removal of any control surface or structural part; and
 - (iii) the repair does not involve restringing or rib stitching:
- (3) restoration of damaged or worn decorative coatings and application of preservative or protective material to components, if the work does not involve—
 - (i) the removal or disassembly of any primary structure; or
 - (ii) the disturbance of any operating system; or
 - (iii) the restoration, preservation, or protection of a control surface; or
 - (iv) a significant repaint of the aircraft:
- (4) simple or temporary repairs to fairings or non-structural cover plates:

- (5) replenishment of hydraulic fluid in hydraulic reservoirs:
- (6) replacement of engine oil:
- (7) replacement of pressure oil filters:
- (8) removal and replacement of turbine engine igniters:
- (9) removal and replacement of piston engine spark plugs:
- (10) removal and replacement of brake pads.

Appendix B — Aircraft Radio Station Inspection

A person referred to in rule 43.59 must—

- (1) examine the maintenance records for service history and compliance with the applicable maintenance rules; and
- (2) inspect and test the bonding of mounting racks and shock mounts for a maximum resistance of 0.05 ohms; and
- (3) inspect and test the complete radio station for interference between items of equipment; and
- (4) inspect and test the audio integration and intercom systems to ensure that—
 - (i) the residual noise level is below -30 dB in the absence of an audio input signal; and
 - (ii) with input signals of the normal magnitude, the ratio of wanted to unwanted output is not less than 45 dB; and
- (5) check that the VSWR of the transmission lines and aerials is less than 3:1 for the following:
 - (i) VHF Communications:
 - (ii) HF Communications (T/R to antenna coupler):
 - (iii) DME; and

- (6) check that the system channelling is correct for the following:
 - (i) VHF Communications:
 - (ii) HF Communications (T/R to antenna coupler):
 - (iii) ILS:
 - (iv) VOR:
 - (v) DME; and
- (7) inspect and test the VHF Communications system to ensure that the performance of the system is acceptable during normal operation; and
- (8) inspect and test the HF Communications system to ensure that—
 - (i) the antenna integrity and insulation resistance is acceptable; and
 - (ii) the performance of the system is acceptable during normal operation; and
- (9) inspect and test the operation of ADF including—
 - (i) testing the sense antenna for integrity and insulation resistance; and
 - (ii) testing the audio function; and
- (10) inspect and test the operation of ILS receivers with a field test set, including—
 - (i) testing flag warnings for modulation failure, centre line and glide path accuracies, sense, and course widths; and
 - (ii) testing the audio function; and
- (11) inspect and test the operation of VOR with a field test set, including—

- (i) testing flag warnings for modulation failure; and
 - (ii) omni-radial resolving, and radio magnetic indicators, accuracy at 30° intervals; and
 - (iii) carrying out $\pm 1^\circ$ test for freedom of meter movement, sense, and course width; and
 - (iv) testing the audio function; and
- (12) inspect and test the operation of the marker receiver with a field test set including—
- (i) testing operations of 400, 1300 and 3000 Hz tones and associated lamps; and
 - (ii) where fitted, operation of hi/lo sensitivity; and
- (13) inspect and test the operation of DME with a field test set, including—
- (i) testing range accuracy and ground speed readings; and
 - (ii) testing the audio function.

Appendix C—Reserved

Appendix D—Altimeter System Tests and Inspections

This appendix applies to persons referred to in 43.61.

D.1 The static pressure system test:

- (a) Ensure freedom from entrapped moisture and restrictions.
- (b) Ensure the leakage is within the following established tolerances:
 - (1) For unpressurised aeroplanes:
 - (i) **Method:** Evacuate any static pressure system incorporating a static port to a pressure differential of approximately 1 inch of mercury or to a reading, on the

altimeter, 1000 feet above the aircraft elevation at the time of the test:

- (ii) **Tolerance:** Without additional pumping for a period of 1 minute, the loss of indicated altitude shall not exceed 100 feet on the altimeter:
- (2) For pressurised aeroplanes:
- (i) **Method:** Evacuate the static pressure system until a pressure differential equivalent to the maximum cabin differential for which the aeroplane is type certificated is achieved:
 - (ii) **Tolerance:** Without additional pumping for a period of 1 minute, the loss of indicated altitude must not exceed 2 per cent of the equivalent altitude of the maximum cabin differential pressure or 100 feet, whichever is the greater:
- (c) Determine that the static port heater, if installed, is operable.
- (d) Ensure that no alterations or deformations of the airframe surface have been made that would affect the relationship between air pressure in the static pressure system and true ambient static air pressure for any flight condition.

D.2 The altimeter test:

- (a) Unless otherwise specified each test for performance may be conducted with the instrument subjected to vibration.
- (b) When tests are conducted with the temperature substantially different from an ambient temperature of approximately 25 degrees Celsius allowance should be made for the variation from the specified condition.
- (c) Altimeter tests shall be carried out in accordance with the following:

Scale error:

- (1) The altimeter shall, with the barometric pressure scale at 1013.25 millibars, be subjected successively to pressures corresponding to the altitude listed in Table 1 up to the

maximum normally expected operating altitude of the aircraft in which the altimeter is to be installed:

- (2) The reduction in pressure shall be made at a rate not exceeding 20 000 feet per minute to within approximately 2000 feet of the test point:
- (3) The test point shall be approached at a rate compatible with the test equipment:
- (4) The altimeter shall be kept at the pressure corresponding to each test point for at least 1 minute, but not more than 10 minutes, before a reading is taken:
- (5) The error at all test points shall not exceed the tolerances listed in Table 1:

Hysteresis:

- (6) The hysteresis test shall begin not more than 15 minutes after the altimeter's initial exposure to the pressure corresponding to the upper limit of the scale error tests prescribed in paragraph (b)(1)-(5) and the hysteresis test shall commence while the altimeter is at this pressure:
- (7) Pressure shall be increased at a rate simulating a descent in altitude at the rate of 5000 to 20 000 feet per minute until within 3000 feet of the first test point which is 50 % of maximum altitude:
- (8) The test point shall then be approached at a rate of approximately 3000 feet per minute:
- (9) The altimeter shall be kept at this pressure for at least 5 minutes, but not more than 15 minutes, before the test reading is taken:
- (10) After the reading has been taken, the pressure shall be increased further, in the same manner as before, until the pressure corresponding to the second test point which is 40 % of maximum altitude is reached:

- (11) The altimeter shall be kept at this pressure for at least 1 minute, but not more than 10 minutes, before the test reading is taken:
- (12) After the reading has been taken, the pressure shall be increased further, in the same manner as before, until atmospheric pressure is reached:
- (13) The reading of the altimeter at either of the two test points shall not differ by more than the tolerance specified in Table 2 from the reading of the altimeter for the corresponding altitude recorded during the scale error test prescribed in paragraph (b)(1)-(5):

After effect:

- (14) Not more than 5 minutes after the completion of the hysteresis test prescribed in paragraph (b)(6)-(13), the reading of the altimeter, corrected for any change in atmospheric pressure, shall not differ from the original atmospheric pressure reading by more than the tolerance specified in Table 2:

Friction:

- (15) The altimeter shall be subjected to a steady rate of decrease of pressure approximating 750 feet per minute.
- (16) At each altitude listed in Table 3, the change in reading of the pointers after vibration shall not exceed the corresponding tolerance listed in Table 3:

Case leak:

- (17) The leakage of the altimeter case, when the pressure within it corresponds to an altitude of 18 000 feet, shall not change the altimeter reading by more than the tolerance shown in Table 2 during an interval of 1 minute:

Barometric scale error:

- (18) At constant atmospheric pressure, the barometric pressure scale shall be set at each of the pressures, falling within its range of adjustment, that are listed in Table 4, and shall cause the pointer

to indicate the equivalent altitude shown in Table 4 with a tolerance of 25 feet.

(d) Altimeters that are of the air data computer type with associated computing systems, or which incorporate air data correction internally, may be tested in a manner and to specifications developed by the manufacturer.

D.3 The automatic pressure altitude reporting equipment and ATC transponder system integration test:

(a) Each test shall be conducted in accordance with paragraph (b).

(b) Measure the automatic pressure altitude at the output of the installed ATC transponder when interrogated on Mode C at a sufficient number of test points, to ensure that the altitude reporting equipment altimeters, and ATC transponders perform their intended functions as installed in the aircraft.

(c) The difference between the automatic reporting output and the altitude displayed at the altimeter shall not exceed 125 feet.

TABLE 1— SCALE ERROR

Altitude	Equivalent pressure (millibars)	Tolerance ±(feet)	Altitude	Equivalent pressure (millibars)	Tolerance ±(feet)
-1000	1050.406	20	14 000	595.239	100
0	1013.250	20	16 000	549.152	110
500	995.075	20	18 000	505.998	120
1000	977.166	20	20 000	465.633	130
1500	959.518	25	22 000	427.915	140
2000	942.129	30	25 000	376.009	155
3000	908.117	30	30 000	300.896	180
4000	875.105	35	35 000	238.423	205
6000	811.996	40	40 000	187.539	230
8000	752.624	60	45 000	147.477	255
10 000	696.817	80	50 000	115.972	280
12 000	644.408	90			

TABLE 2 — TEST TOLERANCES

Test	Tolerance ±(feet)
Case Leak Test	100
First test point (50% of maximum altitude)	75
Second test point (40% of maximum altitude)	75
After effect test	30

TABLE 3 — FRICTION

Altitude (feet)	Tolerance ±(feet)
1000	70
2000	70
3000	70
5000	70
10 000	80
15 000	90
20 000	100
25 000	120
30 000	140
35 000	160
40 000	180
50 000	250

TABLE 4 — PRESSURE ALTITUDE

Pressure (millibars)	Altitude (feet)
951.55	-1727
965.10	-1340
982.03	-863
998.96	-392
1013.25	0
1032.82	+531
1046.37	+893
1049.41	+974

Appendix E—ATC Transponder Tests and Inspections

This appendix applies to persons referred to in 43.63.

E.1 General

- (a) The ATC transponder tests may be conducted using a bench check or portable test equipment.
- (b) If portable test equipment with appropriate coupling to the aircraft antenna system is used, operate the test equipment for ATCRBS transponders at a nominal rate of 235 interrogations per second to avoid possible ATCRBS interference.
- (c) For Mode S, operate the test equipment at a nominal rate of 50 Mode S interrogations per second.
- (d) An additional 3 dB loss is allowed to compensate for antenna coupling errors during receiver sensitivity measurements conducted under paragraph E.4 (a)(3) below when using portable test equipment.

E.2 Radio reply frequency test

- (a) For all classes of ATCRBS transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 3 MHz.
- (b) For classes 1B, 2B, and 3B Mode S transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 3 MHz.
- (c) For classes 1B, 2B, and 3B Mode S transponders that incorporate the optional 1090 ± 1 MHz reply frequency, interrogate the transponder and verify that the reply frequency is correct.
- (d) For classes 1A, 2A, 3A, and 4 Mode S transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 1 MHz.

E.3 Suppression test

- (a) When classes 1B and 2B ATCRBS Transponders, or Classes 1B, 2B, and 3B Mode S transponders are interrogated at a rate between 230 and 1000 Mode 3/A interrogations per second or when Classes 1A and 2A ATCRBS Transponders, or Classes 1B, 2A, 3A, and 4 Mode S transponders are interrogated at a rate between 230 and 1200 Mode 3/A interrogations per second—

- (1) verify that the transponder does not respond to more than 1 % of ATCRBS interrogations when the amplitude of P_2 pulse is equal to the P_1 pulse; and
 - (2) verify that the transponder replies to at least 90 % of ATCRBS interrogations when the amplitude of the P_2 pulse is 9 dB less than the P_1 pulse.
- (b) If the test is conducted with a radiated test signal, the interrogation rate shall be 235 ± 5 interrogations per second unless a higher rate has been approved for the test equipment used at that location.

E.4 Receiver sensitivity test

(a) Verify that, for any class of ATCRBS Transponder, the minimum triggering level of the receiver for the system is -73 ± 4 dbm, or that for any class of Mode S transponder, the minimum triggering level of the receiver for Mode S format (P_6 type) interrogations is -74 ± 3 dbm by use of a test set—

- (1) connected to the antenna end of the transmission line; or
 - (2) connected to the antenna terminal of the transponder with a correction for transmission line loss; or
 - (3) utilising radiated signals.
- (b) Verify that the difference in Mode 3/A and Mode C receiver sensitivity does not exceed 1 db for either any class of ATCRBS transponder or any class of Mode S transponder.

E.5 RF peak output power test

Verify that the transponder RF output power is within the following specifications for the class of transponder using the conditions prescribed in E.4 (a):

- (1) For class 1A and 2A ATCRBS transponders, the minimum RF peak output power is at least 21.0 dbw (125 watts):
- (2) For class 1B and 2B ATCRBS transponders, the minimum RF peak output power is at least 18.5 dbw (70 watts):

- (3) For class 1A, 2A, 3A, and 4 and those Class 1B, 2B, and 3B Mode S transponders that include the optional high RF peak output power, the minimum RF peak output power is at least 21.0 dbw (125 watts):
- (4) For class 1B, 2B, and 3B Mode S transponders, the minimum RF peak output power is at least 18.5 dbw (70 watts):
- (5) For any class of ATCRBS or any class of Mode S transponders, the maximum RF peak output power does not exceed 27.0 dbw (500 watts).

E.6 Mode S diversity transmission channel isolation test

For any class of Mode S transponder that incorporates diversity operation, verify that the RF peak output power transmitted from the selected antenna exceeds the power transmitted from the non-selected antenna by at least 20 dB.

E.7 Mode S address test

Interrogate the Mode S transponder using the correct address and at least two incorrect addresses and making the interrogations at a nominal rate of 50 interrogations per second and verify that it replies only to its assigned address.

E.8 Mode S formats test

- (a) Interrogate the Mode S transponder with UF for which it is equipped and verify that the replies are made in the correct format using the surveillance formats UF=4 and 5.
- (b) Verify that the altitude reported in the replies to UF=4 are the same as that reported in a valid ATCRBS Mode C reply.
- (c) Verify that the identity reported in the replies to UF=5 are the same as that reported in a valid ATCRBS Mode 3/A reply, if the transponder is so equipped, using the communication formats UF=20, 21, and 24.

E.9 Mode S all-call interrogations test

Interrogate the Mode S transponder with the Mode S-only all-call format UF=11, and the ATCRBS/Mode S all-call formats (1.6 microsecond P₄

pulse) and verify that the correct address and capability are reported in the replies (downlink format DF=11).

E.10 Mode S ATCRBS-only all-call interrogation test

Interrogate the Mode S transponder with the ATCRBS-only all-call interrogation (0.8 microsecond P_4 pulse) and verify that no reply is generated.

E.11 Mode S Squitter test

Verify that the Mode S transponder generates a correct squitter approximately once per second.

Appendix F — Emergency Locator Transmitter Inspections and Tests

The following inspection and tests must be carried out by the person referred to in rule 43.65 to ensure compliance with the requirements prescribed in Subpart G of Part 91 for the inspection and testing of emergency locator transmitters:

- (1) inspect the emergency locator transmitter and its mountings and aerial connection for general condition particularly for corrosion or corrosion deposits:
- (2) operate the self-test function of the emergency locator transmitter and check for satisfactory performance in accordance with the manufacturer's instructions.

Appendix G [Revoked]