CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

Advisory Circular

AC43-1

Draft **Revision 5**

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Aircraft Maintenance

General

Civil Aviation Authority advisory circulars contain guidance and information about standards, practices, and procedures that the Director has found to be an **acceptable means of compliance** with the associated rules and legislation.

However the information in the advisory circular does not replace the requirement for participants to comply with their own obligations under the Civil Aviation Rules, the Civil Aviation Act 1990 and other legislation.

An advisory circular reflects the Director's view on the rules and legislation. It expresses CAA policy on the relevant matter. It is not intended to be definitive. Consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate advisory circular. Should there be any inconsistency between this information and the rules or legislation, the rules and legislation take precedence.

An advisory circular may also include **guidance material (GM)** generally, including guidance on best practice as well as guidance to facilitate compliance with the rule requirements. However, guidance material should not be regarded as an acceptable means of compliance.

An advisory circular may also include **technical information** that is relevant to the standards or requirements.

Purpose

This advisory circular provides methods acceptable to the Director for showing compliance with the general maintenance rules set out in Civil Rule Parts 43 and 91 Subpart G.

Related Rules

This advisory circular relates specifically to Civil Aviation Rule Part 43- *General Maintenance.*

Change Notice

Revision 5 incorporates Part 43 recent amendments, in particular to supervision issues.

Cancellation

This advisory circular cancels advisory circular AC43-1 Revision 4 dated 18 May 2009.

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Version History

History Log

Revision No.	Effective Date	Summary of Changes
0	14 July 1995	This was the initial issue of the advisory circular.
1	19 January 1996	This revision re-numbered this advisory circular from AC43-1 to AC43-1A. AC43-1 was revoked and replaced
2	25 December 1997	This revision re-numbered this advisory circular from AC43-1A to AC43-1B. AC43-1A was revoked and replaced.
3	27 April 2007	This revision re-numbered this advisory circular from AC 43-1B to AC 43-1 Revision 3.
4	18 May 2009	This revision incorporated Part 43 amendment numbers 33, 34, 34A, 35 & 36 , revoked and replaced AC43-1 AC43-1 Revision 3 was revoked and replaced.
5	Xx yy zz	This revision incorporates Part 43 recent amendments, in particular to supervision issues. AC43-1 Revision 4 revokes and replaces.

Table of Contents

1. General

1.1 Part 43 details the core standards for the performance of maintenance and release-to service at the completion of maintenance, of aircraft, aircraft products, and components either installed, or to be installed to aircraft, that are required by Part 91, to have an airworthiness certificate issued under Part 21.

1.2 Only rules requiring guidance and informative/explanatory material are included in this advisory circular.

1.3 This is achieved by prescribing minimum standards for the performance of maintenance, persons who may certify maintenance and the manner in which maintenance is recorded and certified.

1.4 Additional requirements for certificated maintenance organisations are prescribed in Parts 119 and 145. Acceptable means of compliance for Parts 119 and 145 can be found in advisory circulars AC119-series and AC145-series.

1.5 For an aircraft or component subject to a maintenance programme approved under Parts 115, 119,137 or rule 91.607, the maintenance must be performed in accordance with that maintenance programme (refer Part 43).

1.6 For an aircraft maintained to a manufacturer's schedule, all requirements of that schedule are to be complied with, including manufacturers service information, special inspections and any aging aircraft programme requirements. If the manufacturer's maintenance schedule does not provide for an aircraft that operates for less than 100 hours in service per year, the operator is to ensure that the manufacturer's 100 hour inspection, or an equivalent, is completed within the preceding 12 months (refer rules 43.1(4) and 91.605(c)).

1.7 Advisory circular AC91-14 *Light Aircraft Maintenance Programme—Aeroplanes* provides the detail of a maintenance programme acceptable to the Director, for the maintenance of standard and restricted category piston engine aeroplanes that are not operated on air operations under Part 119, and have a MCTOW of 2730 kg or less. Advisory circular AC91-14 was principally developed to aid in the continued airworthiness of aged aircraft for which there is very limited or no manufacturer support.

1.8 Aircraft operating on a special category airworthiness certificate are to be maintained on a maintenance programme approved under rule 91.607 (refer to rule 43.1(4)).

1.9 The applicable maintenance programme option specified in rule 91.605(a) is to be identified in the maintenance logbook and technical log for the aircraft (refer to rule 43.1(4)).

1.10 Advisory circulars AC91-12 *Aircraft Maintenance Programmes* and AC119-5 *Aircraft Maintenance Programmes* provide methods acceptable to the Director by showing compliance with requirements for the development and approval of aircraft operator's maintenance programmes.

1.11 Additional applicable regulatory inspection requirements are to be carried out at the periods specified in rule 91.605(e) (refer to rule 43.1 (4)).

2. Definitions:

NOTE: *See also Part 1 of the Civil Aviation Rules for other terms.*

2.1 For the purpose of this advisory circular:

Equivalency means functionally equivalent to that recommended by the aeronautical product or aircraft manufacturer.

3. Subpart B—Maintenance

3.1 GM 43.51(a)(6) Under direct supervision

3.1.1 Direct supervision, involves a form of active participation. It imposes on the supervisor and persons performing maintenance, a joint responsibility to ensure that the work is carried out properly. This requires both parties to meet all relevant requirements of the Civil Aviation Rules.

3.1.2 Consequently, for direct supervision.

3.1.2.1 A supervisor should:

(a) have considered the competence (e.g. training, knowledge, experience) of those performing the tasks, and availability of appropriate resources (refer rule 43.53)

(b) know when the maintenance is being undertaken

(c) be immediately available, in person, for consultation with and to provide advice and direction to the persons carrying out the work

(d) directly observe the work being done at important stages; to approve or disapprove of the work.

3.1.2.2 Persons performing the maintenance must:

- be aware of, and meet, the relevant performance requirements (in conjunction with the supervisor) (refer rule 43.53)
- ensure that they are being directly supervised.

3.1.2.3 The extent and nature of the supervision will ultimately depend on the maintenance being performed, and the competence of those performing the maintenance. In all cases it should be made clear by the supervisor, to the person performing the work, at what stage and under what circumstances, it is necessary for the supervisor to be consulted. For the proper control of maintenance tasks, it may be appropriate that this is recorded in the maintenance records.

3.1.2.4 Nevertheless, direct supervision can only be achieved if the supervisor personally observes the work being carried out to the extent necessary to ensure that it is being carried out properly, and if the supervisor is readily available, in person, for consultation.

3.1.2.5 Within a certificated Part 145 organisation the process for direct supervision should be detailed in their exposition.

3.1.2.6 To meet the direct supervision safety requirements, a maintenance provider should have appropriately licensed, rated full time staff on the premises, and readily available to provide direct supervision.

3.1.3 Human factors considerations

3.1.3.1 Supervision and the role of the supervisor are key elements in the organisational safety culture of a maintenance organisation. Both supervisors and those being supervised are to have an appreciation of the role that management and supervisors have in ensuring a positive safety culture.

3.1.3.2 The following is an excerpt from UK CAA CAP 715 - *An Introduction to Aircraft Maintenance Engineer Human Factors for JAR 66.* This document provides guidance material for aircraft maintenance engineers to understand human factors principles relating to aircraft maintenance.

UK CAA CAP 715 - CHAPTER 3 - Social Psychology

Section 7 - Management, Supervision and Leadership

The previous section made frequent reference to the team leader. Management, supervision and leadership are all skills that a team leader requires. Of course, management is also a function within an organisation (i.e. those managers responsible for policy, business decisions, etc.), as is the supervisor (i.e. in an official role overseeing a team).

Managers and supervisors have a key role to play in ensuring that work is carried out safely. It is no good instilling the engineers and technicians with 'good safety practice' concepts, if these are not supported by their supervisors and manager

7.1 The Management Role

Line Managers, particularly those working as an integral part of the 'front line' operation, may be placed in a situation where they may have to compromise between commercial drivers and 'ideal' safety practices (both of which are passed down from 'top management' in the organisation). For example, if there is a temporary staff shortage, he must decide whether maintenance tasks can be safely carried out with reduced manpower, or he must decide whether an engineer volunteering to work additional hours to make up the numbers will be able to perform adequately. The adoption of Safety Management Principles may help by providing Managers with techniques whereby they can carry out a more objective assessment of risk.

7.2 The Supervisory Role

7.2.1 Supervision may be a formal role or post (i.e. a Supervisor), or an informal arrangement in which a more experienced engineer 'keeps an eye on' less experienced staff. The Supervisor is in a position not only to watch out for errors which might be made by engineers and technicians, but will also have a good appreciation of individual engineer's strengths and weaknesses, together with an appreciation of the norms and safety culture of the group which he supervises. It is mainly his job to prevent unsafe norms from developing, and to ensure that good safety practices are maintained. There can be a risk however, that the Supervisor becomes drawn down the same cultural path as his team without realising. It is good practice for a Supervisor to step back from the day-to-day work on occasion and to try to look at his charges' performance objectively.

3.2 GM 43.51(c) Authorisation process

3.2.1 The persons are required to be authorised in writing by the operator of the aircraft to perform the maintenance and be appropriately trained both in carrying out the task and fulfilling the recording and certifying requirements of Part 43. The training is required to ensure the competence and ability of the person wishing to complete the maintenance task. The training is required to be carried out by a licensed aircraft maintenance engineer with the appropriate rating on the particular aircraft or system or by a person authorised within a certificated Part 145 organisation to conduct training.

3.2.2 In completing the task the applicable and appropriate technical data must be available each time the task is performed to ensure that the task is completed in accordance with acceptable methods, techniques, and practices.

3.2.3 The person performing the work is to make an entry in the aircraft logbook or other acceptable record stating what work has been performed. The person must also certify a statement of release- to-service for the work carried out. It is part of the responsibilities of the pilot-in-command to ensure that the aircraft is not operated unless the aircraft has a current release-to-service.

3.2.4 For maintenance to be performed on aircraft that are required to be maintained within a Part 145 certificated maintenance organisation, which has capability for the type, the person performing maintenance must be appropriately trained and hold the appropriate authorisation issued by that maintenance organisation.(Refer to rule 43.51(c)(2)).

3.3 GM 43.51(d) Glider maintenance

3.3.1 This rule permits a person, not meeting rule 43.51(a), to perform maintenance on a glider or glider component if they are authorised by a gliding organisation to perform maintenance or are directly supervised by a person who is authorised, by a gliding organisation.

3.3.2 This rule does not preclude a person meeting the requirements of rule 43.51(a)(1) from performing maintenance on a glider.

3.4 GM 43.51(e) Special category aircraft maintenance

3.4.1 Rule self-explanatory. Also refer Part 43 Subpart F.

3.5 GM 43.53 Performance of maintenance

3.5.1 This rule prescribes the standards for the performance of maintenance. It contains a number of necessary elements that must be present to provide conditions that are acceptable for the performance of maintenance.

3.6 GM 43.53(1) Familiarity with the actions required

3.6.1 This rule requires persons to be familiar with the maintenance actions for the continued airworthiness of the aircraft, aircraft product or component, and understand the technical data required to accomplish the maintenance.

3.6.2 This requirement places the responsibility on the engineer to ensure that they are competent to assess and certify an aircraft, aircraft product, or component as fit for release-to-service. In assessing their personal competence it may not be sufficient to rely solely on the appropriate rating on an aircraft maintenance engineer licence.

3.6.3 For example; if a licensed aircraft maintenance engineer has a rating for a helicopter type but has been working on fixed wing aircraft for the previous three years, that engineer may not consider themselves familiar with the tasks involved in maintaining that type of helicopter. To rectify the situation it may be necessary for the engineer to study the manuals, attend a refresher course, or discuss the maintenance with another engineer who is familiar with the type of helicopter. These actions would generally satisfy the requirement to become familiar with the maintenance actions required.

3.7 GM 43.53(2) Adequate housing and facilities

3.7.1 This rule requires persons performing maintenance are required to have available adequate housing, facilities, and an environment commensurate with the maintenance task to be undertaken on the aircraft, aircraft product or component. This environment must be sufficiently adequate to ensure that the quality and safety of the work being undertaken is not compromised and

must, as a minimum, comply with the conditions prescribed in the applicable manufacturer's instructions for continuous airworthiness and acceptable technical data.

3.7.2 Hangar accommodation should generally be available, appropriate for the aircraft to be maintained and should have adequate lighting and power supplies.

3.7.3 If only line maintenance or rectification is carried out, hangar accommodation may not be necessary. This line maintenance may include tasks such as ramp checks. It is not considered acceptable for a provider of heavy/base maintenance, or other maintenance services on a continuous basis, to lack access to permanent maintenance facilities.

3.7.4 Suitable accommodation should be available for the storage of publications, records, spares and equipment. Where aircraft components, parts or materials are held they should be stored and handled in accordance with the procedures of advisory circular AC00-2 *Storage and Distribution of Aeronautical Supplies.*

3.7.5 Many maintenance facilities hold aircraft log books on the aircraft owners' behalf. The maintainer should consider some sort of protective storages that are fire-resistant and water-resistant.

3.8 GM 43.53(3)(i) Methods techniques and practices

3.8.1 These methods, techniques, and practices are in most cases specified in the instructions for continued airworthiness published by the aircraft or equipment manufacturer.

NOTE: *Where there is a conflict between the manufacturer's information and the methods, techniques, and practices detailed in the New Zealand rules, the rules take precedence.*

3.8.2 Under United States Federal Aviation Regulations (FARs) Parts 23, 25, and 27, aircraft designers and manufacturers are required to provide instructions for continued airworthiness. Appendix G to each of these FARs defines the content of the instructions for continued airworthiness. Design standards of other foreign aviation authorities contain similar provisions. These are the maintenance documents referred to in Part 43.

3.9 GM 43.53(3)(ii) Acceptable means of compliance

3.9.1 Standard practices are those which are published either by a manufacturer or by a reputable body such as a national airworthiness authority. United States FAA advisory circulars, and United Kingdom CAA CAP 562 civil aircraft airworthiness information and procedures, contain standard maintenance practices which will normally be acceptable to the Director

3.9.2 If any doubt exists as to the acceptability of any documented maintenance practice, a request should be made to the Director to confirm that it is acceptable.

3.9.3 If it is intended to use equipment, documentation, or work practices which do not meet the original criteria of acceptability then such changes are to be submitted to the Director for acceptance. The Director will accept changes if satisfied that the alternative methods, techniques or practices provide an equivalent level of safety.

3.10 GM 43.53(4) Materials, parts, and appliances

3.10.1 Part 21 Subpart K and advisory circular AC00-1 *Safety Management* detail the criteria for the acceptability of materials, parts and appliances, for use during the maintenance of an aircraft, aircraft product or component.

3.10.2 Essentially three types of parts have differing requirements to be considered acceptable, including:

(a) airframes, engines, propellers, and rotors having export airworthiness documentation, normally in the form of an authorised release certificate such as—

(1) FAA Form 8130-3 or 4

(2) EASA Form One

(3) CASA Form One

(4) Transport Canada Form One

(b) life limited parts having the above documents, or foreign domestic repair station documents that can be used by a certificated Part 145 maintenance organisation during the conformity process required to issue a CAA Form One

(c) other components having sufficient documentation to assure the engineer fitting the item that the part conforms to its design and will enable the aircraft to be returned to its original or properly modified condition.

NOTE: *Where a part is accompanied by documentation from a foreign national airworthiness authority that is not detailed as being acceptable to CAA, the intending purchaser should contact the CAA Aircraft Certification Unit for further advice or clarification, prior to the purchase.*

3.11 GM 43.53(5)-(7) Tools, test equipment and special test equipment

3.11.1 Persons assessing equivalency (refer rule.43.53 (6)) should do the following.

(a) Ensure that limitations, parameters, and repeatability of tooling, equipment or test equipment are at least equivalent to that of the manufacturer's recommended equipment. This may include data from the manufacturer or another source of data used to manufacture tooling, equipment or test equipment

(b) Be able to demonstrate fit, form and function of tooling, equipment, test equipment or process.

(c) Ensure that the substantiation fully demonstrates equivalency of manufacturers tooling, equipment or test equipment.

(d) Keep a record of the substantiation process and any applicable data used in the determination.

3.11.2 Determination of equivalency

3.11.2.1 For determining equivalency, a comparison is to be made between the technical specifications of tooling, equipment or test equipment recommended by the manufacturer with the proposed equivalent replacements. Tooling, equipment or test equipment may look different, be made of different materials, be a different colour, etc. However, providing tooling, equipment or test equipment is functionally equivalent and the material used is compatible for the specific use, test or check, tooling, equipment or test equipment may be accepted for use.

3.11.2.2 The level of accuracy is to be equal to or greater than that specified by the manufacturer of the tooling, equipment or test equipment.

3.11.2.3 A finding of equivalency can be made based on an evaluation of the technical specifications and sometimes the demonstration of fit, form or functionality of the proposed tooling, equipment or test equipment. Substantiation may include, but not be limited to data, drawings, specifications, instructions, photographs, templates, certificates, and reports necessary to determine that tooling, equipment or knowledgetest equipment is equivalent to that recommended by the manufacturer.

3.11.2.4 In the case of calibration equipment, the substantiation is to include data sheets attesting to the accuracy.

3.11.2.5 If tooling, equipment or test equipment is required to be calibrated; a calibration system should be established with documented procedures demonstrating traceability to a national or international standard.

3.11.2.6 It is emphasised that an engineering assessment of a finding of equivalency is to be made by a person with appropriate skills or qualifications. An appropriate person may be an engineer with skills in the discipline related to the assessment required, however, in some other aspects a licensed aircraft maintenance engineer or instrumentation/electronic engineer, may more appropriate.

3.11.3 Equivalent tooling, equipment or test equipment and development of alternative instructions for continued airworthiness

3.11.3.1 Assessment of the instructions for continued airworthiness may be required to determine the need for change as a result of using equivalent tooling, equipment or test equipment. The development of alternative instructions for continued airworthiness can only be made based upon an evaluation of technical data. Typically the substantiation would contain a breakdown; step by step of the instructions for continued airworthiness required by the manufacturer and the equivalent instructions for continued airworthiness proposed by maintenance organisations or persons performing maintenance. The substantiation may include, but not be limited to data, drawings, specifications, instructions, photographs, templates, certificates, and reports.

"G23.4 Airworthiness Limitations Section. The Instructions for Continued Airworthiness must contain a section titled ***Airworthiness Limitations*** *that is segregated and clearly distinguishable from the rest of the document. section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required for type certification. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual.* 3.11.4 Recording or control of data

3.11.4.1 The process for accepting the equivalent tooling, equipment and test equipment and alternative instructions for continued airworthiness, should be included as a revision in the maintenance organisation's exposition or formally documented by the person performing maintenance.

3.11.4.2 Where the tooling, equipment or test equipment is locally made from data provided by the component or aircraft manufacturer then no acceptance is required, however details are to be recorded indicating the source of the data that tooling, equipment or test equipment was manufactured to.

3.11.5 Summary

(a) Check if the aircraft or aeronautical product manufacturer supports the use of the proposed alternate tooling, equipment or test equipment.

(b) Carry out an engineering assessment.

(c) Prepare a document that details the substantiation, including a register.

(d) Prepare and substantiate new work instructions if required.

(e) Have equivalents accepted.

3.12 GM 43.53(8) Perform the maintenance

3.12.1 Applicable airworthiness requirements manuals and publications (instructions for continued airworthiness) relevant to the range of aircraft to be maintained are to be available and reference made to whilst conducting the maintenance. The data used should be current, the applicable manufacturer produces. The user should ensure that it is the latest amendment/revision.

Instructions for continued airworthiness are to be maintained up-to-date via subscription or other amendment system.

3.12.2 Irrespective of which rule 91.605(a) option the aircraft is being maintained on, all service information published by the manufacturer is to be assessed by the operator in consultation with the maintenance provider, to determine applicability, and whether the instructions for continued airworthiness are affected, the type certificate is affected or whether it forms part of the maintenance schedule. The outcome of these assessments, including reasons for any decision not to embody the manufacturer's service information, should be documented and retained with the aircraft records.

3.12.3 Where service information could affect the safety of flight, for example, manufacturers mandatory service bulletins, are not complied with the operator will need to consider what changes will be made to the maintenance programme, to mitigate the identified risk of failure, therefore ensuring that the aircraft remains in an airworthy condition. Refer rule 91.603(a)(1).

3.13 GM 43.53(9) Completion of maintenance

3.13.1 A person on completion of maintenance is to ensure the aircraft, aircraft product or component is satisfactory for release-to-service, and at least equal to its original or properly modified condition in respect of the maintenance or inspection performed. This is an all-embracing statement to ensure that, after a required inspection is completed, the aircraft is fit for release-to-service.

3.13.2 To ensure the aircraft condition can be easily determined, persons carrying out the inspection should use worksheets or check lists to provide assurance of compliance with an approved schedule. These worksheets or checklists are to provide a means of indicating that each inspection item has been completed. In many cases worksheets are provided by aircraft manufacturers based on the maintenance schedule contained in the aircraft maintenance manual or inspection manual.

3.13.3 Checklists normally contain a list of the items in the schedule and a means for persons doing the work to indicate the item has been completed. They are required to be initialled, or signed. The checklist and co-ordination document should have the printed name, sample initials and signature of each individual who carried out the task identified. This document is to include the individual's licence, approval, or authorisation number if applicable, and the date of completion of the maintenance.

***NOTE**: The use of checklists does not remove the requirement to reference the technical data to perform the required work. Refer rule 43.69(d).*

3.13.4 These checklists form part of the maintenance records of the aircraft. They are required, by Part 91, to be retained by the aircraft operator until the work is repeated or superseded, or for 5 years after the work is performed whichever occurs first. Refer rule 91.623(a)-(d).

3.14 GM 43.53(10) Aircraft noise and emissions

3.14.1 It is not intended to make a person performing the maintenance responsible for the design of an aircraft or modification. The assurance of compliance with acceptable technical data is normally sufficient to ensure the condition of an aircraft or component is at least equal to its original or properly modified condition.

3.15 GM 43.53 (11) Duty times / rest periods

3.15.1 With respect to duty times which applies to both engineers and pilots performing maintenance, refer to rule 43.53(11).

3.16 GM 43.54 Maintenance required under Part 145

3.16.1 This rule provides a demarcation list of maintenance activities that are required to be completed within a certificated Part 145 organisation.

3.17 GM 43.54(c) Excludes aircraft operated under Part 115

3.17.1 This rule now excludes aircraft operated under a certificated Part 115 organisation from using this clause even though they may be operating an aircraft with a special category airworthiness certificate.

3.18 Recording of overhaul

3.18.1 This rule defines the conditions under which certification may be given by a person holding a Part 145 certificated organisation authorisation, may state that an aircraft, aircraft product or component has been overhauled. The definition of overhaul is contained in Part 1. The rule requires overhaul work to be conducted in accordance with methods techniques and practices acceptable to the Director.

3.18.2 The methods, techniques and practices are normally found in the original equipment manufacturer overhaul instructions or equivalent document. The rule states these requirements are to be met before the aircraft or component can be released-to-service from overhaul.

3.19 GM 43.65 ELT and AELS tests and inspections

3.19.1 The above rules require persons performing the radio, altimeter, transponder and emergency location transmitter inspections are to carry out the inspections as prescribed in the appropriate Appendix to Part 43. It is the operator's responsibility to ensure the inspections are carried out at the appropriate time.

3.19.2 Aircraft being maintained to manufacturer's schedule are to comply with these rules.

3.19.3 Aircraft being maintained to a maintenance programme approved under rule 91.607 require all the inspections and tests to be complied with. Aircraft operating under the provisions of an air operator's certificate, all requirements of the operator's approved maintenance programme as required by Parts 115 or 119, are to be complied with. Programmes submitted as part of an air operator's exposition are to comply with these rules or show that an equivalent level of safety is achieved by some other means.

3.20 GM 43.67 Non-destructive testing

3.20.1 Refer AC43.8 *Non-destructive Testing* and rule 43.69(a).

3.20.2 This rule contains details of maintenance entries to be made after completion of any maintenance. The intent of this rule is to ensure that sufficient detail is written into the logbook; to ensure that any maintenance personnel, reviewing the logs without reference to the detailed work records, and understands what work has previously been done to the aircraft. These are minimum details to be entered in the applicable maintenance logbook and /or technical log, or maintenance record sheet attached to the technical log. Maintenance logbooks include instructions for use on the inside front cover, and should be read as part of this advisory circular. The detail content of the maintenance logbook is clearly defined in the rule.

3.21 GM 43.69(a)(5)(iii) The means of compliance

3.21.1 When an airworthiness directive (AD) is actioned, explanations should be stated along with the reasons making it not applicable, FE, or E. Reasons are to be recorded in the appropriate section of the AD logbook.

3.21.2 In the event an AD has more than one or a staged compliance, it is important that each compliance required is separately identified unless the compliance action completely terminates the AD.

3.22 GM 43.69(b) Associated worksheet

3.22.1 Associated worksheets may be used, but any record is to be in permanent form and include details listed in this rule. Where associated worksheets are utilised, maintenance log books must contain a summary of the maintenance performed and reference the worksheets. The worksheets then become part of the aircraft records.

3.22.2 This summary must enable the reader to understand what work took place. The following would be typical items in the summary:

(a) what routine inspections were carried out

(b) what airworthiness directives were actioned

(c) any repair carried out

(d) any modification carried out

(e) any component changes

(f) any additional inspections carried out.

3.23 GM 43.69(c) Maintenance to rectify a defect:

3.23.1 This rule describes the use of the technical log. The important point to note is that there is an obligation on the certifying personnel, to ensure the details of the work carried out are ultimately transferred to the appropriate maintenance logbooks. Where the maintenance logbooks are not available, details or the work carried out are to be forwarded to the holder of the maintenance logbooks, other than in the aircraft to which the maintenance has been performed.

NOTE: *The CAA400 'Maintenance Record Sheet and Separator Card' also provides a duplicate that can be inserted into the maintenance logbooks to satisfy the requirements of rule 43.69(c)(2)&(3). Refer advisory circular AC91-6 'Aircraft Technical Log'.*

3.24 GM 43.69(d) Maintenance record

3.24.1 The maintenance record is to be made carefully and completely, as it forms the official history of the aircraft and is critical in any subsequent fault finding, reporting, or other analysis. All maintenance is to be recorded in the applicable maintenance logbook or other maintenance record acceptable to the Director. The operator owns the maintenance logbooks and all maintenance documents. Maintenance providers are to surrender the maintenance logbooks and maintenance documents when requested by the operator to do so. Maintenance providers should ensure that the operator has copies of all work records prior to disposal the work records.

3.24.2 Computerised records may be an acceptable format for maintenance documents. If used as an assistant only, the computerised information is to be transferred to the maintenance logbook as soon as practicable. An operator wishing to use a computer system instead of a physical logbook – should provide the Director with details of the system's abilities.

NOTE: *When other means of recording maintenance are being used (e.g. computer based systems), this method must be acceptable to the Director. A reference to that method, and location of records, is to be made in the relevant section of the applicable maintenance log book.*

3.24.3 Records can be kept electronically but systems are to ensure the information security, integrity, and retrieval. A system of backing up electronic data would be considered appropriate. Procedures for electronic record and document keeping are to consider the following:

(a) avoidance of data loss in the event of power interruptions

(b) software control, including amendments and prevention of corruption

(c) unauthorised access

(d) audit trail facilities

(e) archiving and retrieval of data in a similar manner to hardcopies, and for a similar period

(f) backup of critical information, preferably once a day, with storage for that backup information

(g) data verification, on entry and retrieval

(h) publication provision

(i) staff training

(j) amendment and protection of stored data

(k) a problem report register including the problem details and solutions.

3.24.4 These requirements are to be documented in an exposition and subject to quality system's controls. It is not considered appropriate and will not normally be accepted for, non-certificated maintenance providers to keep records electronically.

3.24.5 Persons performing maintenance on an aircraft or a component are to include the following information as part of the maintenance record:

(a) the person's name and signature except if the maintenance logbook or worksheet is in electronic format

(b) if applicable, the person's licence, approval, or authorisation number

(c) date of completion of the maintenance

(d) persons performing scheduled maintenance on an aircraft required to be fitted with a time-in-service recorder are to, on completion of that maintenance, record in the appropriate maintenance logbook. Refer rule 91.509(b).

(e) the total time-in-service reading of the recorder:

(1) any indication that the time-in-service recorder has been tampered with since the last scheduled inspection.

3.24.6 The person required to record details of the maintenance performed are to record the details accurately and legibly in ink or other permanent means. Refer rule 43.69(a) - (e).

4. Subpart C—Release to Service

4.1 GM 43.101 Persons authorised to certify release-to-service

4.1.1 This rule lists those persons who may release aircraft, aircraft products or components to service after maintenance. This person must meet one of the following criteria.

(a) Person holds a licensed aircraft maintenance engineer with appropriate ratings.

(b) Person authorises by a certificated Part 145 organisation.

(c) Person trains by a licensed aircraft engineer and authorised by the operator may release an aircraft, aircraft product or component to service after performing maintenance in Part 43 Appendix A1 and A2. Refer rule 43.51.

(d) The Director may authorise other persons to certify release-to-service following specific maintenance. This provision relates to the issue of maintenance approvals. The provision of a maintenance approval is covered in Part 66 and is not intended to replace the aircraft maintenance engineer licence. It applies where persons need to certify for limited maintenance tasks, but they do not satisfy all of the requirements for the issue of an aircraft maintenance engineer licence or rating. Limited tasks may by way of example include:

(1) special process or processes not covered in the present aircraft maintenance engineer licence area, such as explosives or egress systems

(2) maintenance on new aircraft types where no aircraft maintenance engineer licence holder can satisfy the experience criteria

(3) maintenance on amateur built aircraft.

(e) Person holds an appropriate licence issued by an ICAO Contracting State may issue a release-to-service on a New Zealand aircraft for maintenance performed outside New Zealand. This provision is intended primarily for those occasions where New Zealand aircraft are transiting other countries and applies only to aircraft used on operations other than for hire or reward. Provisions for the approval of overseas maintenance personnel certifying air operator's aircraft are contained in the operator's maintenance manual, or in the exposition of the contracting maintenance organisation.

(f) For a glider, person authorises by a gliding organisation to certify release-to-service on a glider or glider component.

4.1.2 Duty time limits apply to any persons involved in maintenance activities on aircraft, aircraft product or components and include any persons performing, supervising, and/or certifying maintenance. 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:

(a) a period of at least 8 consecutive hours in the 24-hours period immediately before certifying the release-to-service

(b) at least 4 periods of at least 24 consecutive hours each in the 30-days period immediately before certifying the release-to-service.

4.2 GM 43.103 Requirements for certifying release-to-service

4.2.1 This rule identifies the pre-requisites that are to be met before a release-to-service can be certified.

4.3 GM 43.105 Certifying release-to-service after maintenance

4.3.1 This rule prescribes the release-to-service statement to be given after maintenance has been performed. The statement is to be used in the maintenance logbook or other form of acceptable maintenance document, following or alongside the record of maintenance carried out. Because the statement is in the rule, it must be used word for word with no modification. A release-to-service may be provided in an electronic form provided the system meets the requirements detailed in this advisory circular. The electronic signature should be:

(a) identifiable to each individual

(b) secured to each individual

(c) permanently recorded against the maintenance records when entered

(d) controlled by the organisation to ensure the above conditions are true.

4.3.2 Due to controls, electronic and procedural, required on electronic systems it is unlikely that a non-certificated organisation will be able to utilise a fully computerised system.

4.3.3 Release-to-service statements are to be accompanied by the printed name, signature, licence, approval or authorisation number of the person releasing the aircraft, aircraft product or component to service, and date of the entry.

4.4 GM 43.107 Inoperative equipment

4.4.1 This rule requires that any equipment left inoperative in an otherwise serviceable aircraft then such equipment must be identified in both the technical log and maintenance logbook. Flight crew must be provided with suitable visual identification adjacent to the indication or activation medium of such equipment.

***NOTE**: Only instruments or equipment permitted by rule 91.537 may be inoperable.*

4.4.2 A detailed description of the inoperative equipment, the reason for its non-serviceability, and future date to reassess the maintenance required is to be included in the maintenance records. A release-to-service statement is to be made in maintenance records indicating the aircraft, aircraft product or component is fit for release-to-service. Refer rule 91.603(a)(5).

4.4.3 If equipment is inoperative during an inspection, maintenance review or a review of airworthiness, it is to be reassessed. It is not necessary to rectify the inoperative equipment but an entry should be made in appropriate records that the equipment has been reassessed and remains inoperative.

***NOTE**: For aircraft maintained to an approved maintenance programme under a certificated Part 119 organisation, except as may be provided by a minimum equipment list approved under rule 91.539 for use for the aircraft, all instruments and equipment installed in the aircraft must be in an operable condition.*

4.5 GM 43.109 Defects

4.5.1 If a person who is responsible under this rule for certifying an aircraft or component for release-to-service does not certify the aircraft, aircraft product or component for release-to-service because the defect has not been cleared, that person must, before further flight, enter the details of the defect in the technical log, or the maintenance logbook.

4.5.2 If practicable, ensure the defect is entered in the appropriate maintenance logbook and adjacent to the details of the defect/s; enter his or her name, signature, licence, approval or authorisation number and the date of entry. Refer rule 43.69(c).

4.6 GM 43.113 Duplicate inspection of controls

4.6.1 A duplicate safety inspection is a method used to capture errors that may occur in the maintenance of safety critical systems.

4.6.2 The rule identifies that a duplicate safety inspection be performed on control systems, but there may be other safety critical systems (e.g. rotorcraft drive systems) where a duplicate safety inspection could be considered appropriate by an operator and/or maintenance provider.

4.6.3 For further reading on errors, including avoiding and capturing error refer to: UK CAA CAP 716 *Aviation Maintenance Human Factors*.

4.6.4 When required

4.6.4.1 A duplicate safety inspection is to be made after assembly, disturbance, or adjustment of any part of a control system. Duplicate safety inspections are to apply to all parts of control systems subject to assembly, disturbance, or adjustment.

***Note:** The duplicate inspection requirements apply to both fitted components and components undergoing maintenance separately.*

4.6.4.2 Certifying persons are not permitted to issue a release-to-service for maintenance that includes the initial assembly, adjustment or disturbance of a control system unless a duplicate safety inspection has been completed and certified in maintenance logbooks or worksheets.

4.6.5 Who performs

4.6.5.1 The first part of the duplicate inspection would normally be carried out by the person who is certifying a release-to-service for the work requiring inspection.

4.6.5.2 The second part of the duplicate inspection is to be carried out and certified by a person. The first certifying person considers having adequate:

(a) training

(b) knowledge

(c) experience

(d) hold one of the following documents:

(1) a current aircraft maintenance engineer licence issued in accordance with Part 66

(2) an appropriate current certificate of maintenance approval issued in accordance with Part 66

(3) a current pilot licence with a rating on the aircraft type issued in accordance with Part 61

(4) a current authorisation issued by the holder of a maintenance organisation certificate issued in accordance with Part 145

(5) a current appropriate maintenance engineer licence or approval issued under the appropriate authority of an ICAO Contracting State.

4.6.5.3 The person performing the second inspection must be made aware of the requirements and be familiar with the tasks and technical data involved.

4.6.6 What is a control system

4.6.6.1 A control system is defined in Part 1.

4.6.6.2 A control system includes all associated units, whether mechanical, electrical, electronic, hydraulic, or pneumatic.

4.6.6.3 For fixed wing aircraft, the systems include the attachments of, and means of actuating:

(a) primary control surfaces

(b) tabs

(c) air brakes

(d) flaps

(e) other control systems that affect the attitude of the aircraft on the ground or in the air.

4.6.6.4 For rotorcraft, the systems include:

(a) the attachments of all rotary control surfaces

(b) the means of operating collective pitch, cyclic pitch, and yaw control.

4.6.6.5 For engines and propellers, the systems include all associated units – mechanical, hydraulic, electrical, electronic or pneumatic that control:

(a) power output and control

(b) power absorption

(c) emergency operation.

NOTE: *Detailed consideration must be given to electronic and /or computer controlled engine management and/or flight control systems including all components that interface with such systems.*

4.6.7 Performing the inspection

4.6.7.1 As part of performing a duplicate safety inspection both persons need to be familiar with the particular control system and have the available relevant technical data e.g. manufacturer's maintenance manual or instructions for continued airworthiness that detail maintenance requirements specific to the system.

4.6.7.2 Each of the persons performing a duplicate inspection must verify that:

(a) all parts of the system which have been disturbed are assembled and function correctly, the inspection should include checks to ensure:

(1) correct rigging

(2) correct locking

(3) no possibility of fouling or jamming

e.g. ensuring control cables are correctly routed and any work aid cable locking mechanisms removed

(b) for the complete system, the controls function throughout their entire range of travel in each mode, and with each alternative means of actuation:

(1) freely and in the correct sense

(2) without excessive backlash

(3) with the correct static friction.

4.6.7.3 During installation of control systems, all system components that will not be accessible for inspection after complete assembly must have a duplicate safety inspection performed before concealment.

4.6.7.4 After initial assembly of a new aircraft, or the reassembly of an aircraft after maintenance, a duplicate safety inspection must be completed as the final operation on the control system before flight.

4.6.7.5 Table 1 provides guidance acceptable to the Director on best practice when performing an inspection.

Table 1: Duplicate Safety Inspection 'Best Practice'

Both parts of the duplicate inspection must be carried out by suitably qualified persons.
The second part of the duplicate inspection should be carried out by a person not involved in the original task.
Inspection and checks should be carried out thoroughly, and not influenced by any knowledge concerning the competence of the original technician who did the work of the certifying technician who carried out the first check.
Thoroughness of inspection should not be interpreted as a lack of trust in the accuracy of the original work.
It should take place as soon as possible after the task has been completed and the original inspection has taken place, with the dates and times of both inspections recorded.
For control systems, the duplicate inspection should cover checks for full and free movement (freedom and range of movement).
Measurements should be taken, e.g. range of movement, clearances, tensions, operating performance, etc., compared against required figures (maintenance manual limits) and recorded.
Avoid just recording "complied" or "satis" as results of checks; record the nature and extent of the movement or result of the inspection observed during each step of the check.

(1) freely and in the correct sense

(1) without excessive backlash

Source: UK CAA CAP 716

4.6.8 Certification of inspection

4.6.8.1 Following inspection, certification of a duplicate safety inspection is to be entered in the aircraft logbook or other acceptable maintenance record, it is to:

(a) clearly identify the control system

(b) detail the scope and extent of the inspection

(c) clearly identify what parts or sections of the control system have been inspected

(d) quote the specific statement required as follows:

"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." Refer rule 43.113(c)(3).

4.6.8.2 Each certifying person must enter the following adjacent to the duplicate inspection statement:

(a) their name

(b) licence, approval or authorisation number

(c) signature

(d) date of the inspection.

4.7 GM 43.115 Engine performance checks

4.7.1 This rule details the engine performance checks required and is applicable to piston and turbine engines. Depending on the aircraft manufacturer's requirements, the performance checks may have to be accomplished on the ground or in flight.

4.7.2 This advisory circular is not the authority to run aircraft engines. A person is to have completed appropriate training on the aircraft-engine combination before carrying out any engine running. The level of required training is to be acceptable to the operator, and be specifically addressed in a Part 115 or a Part 119 expositions provided the aircraft is maintained to a Part 115 or a Part 119 maintenance programme.

4.7.3 Engine parameters to be checked are those specifically defined by the aircraft manufacturer. Rules require that a complete set of results of any required performance check, including the ambient conditions of temperature and atmospheric pressure are to be recorded in the maintenance logbook or worksheet.

NOTE: *Where a manufacturer has performance charts for an engine to determine the required test results for given engine/propeller configurations and atmospheric conditions these must be evidence of these being used in the work records.*

4.7.4 If the aircraft is fitted with a constant speed propeller the guidance information found in continuing airworthiness notice 72-001 will assist persons running the engine to establish reference RPM for future comparison.

4.7.5 A performance check must be carried out the following:

(a) 100hr or equivalent inspection IAW the aircraft maintenance schedule

(b) an engine change

(c) a propeller change

(d) subsequent to any other maintenance carried out where the aircraft manufacturer recommends an engine performance check.

NOTE: *Aircraft that have maintenance programmes approved under Parts 115, 119 or rule 91.607 are exempt from the above providing the maintenance programme includes the equivalent of the engine performance checks.*

4.7.6 These records are important for the continued health monitoring of an aircraft piston or turbine engine.

5. Subpart D—Review of Airworthiness

5.1 General

5.1.1 The review of airworthiness is principally an inspection of aircraft, its products and components, to ensure conformity to its original national airworthiness authority type certificated or properly modified state.

5.1.2 Review of airworthiness checks that the operator has carried out all maintenance including any design changes and applicable airworthiness directives on time, to acceptable data, and correctly documented.

5.1.3 A general condition inspection of the aircraft is also required.

5.1.4 The review of airworthiness is to be carried out within the preceding 365 days for those aircraft with a standard and restricted category airworthiness certificate. For aircraft with a special category airworthiness certificate, 365 days after the issue of an airworthiness certificate and within the preceding 730 days thereafter.

NOTE: *The period of review of airworthiness for special category aircraft operated under Part 115 'Adventure Aviation' remain at 365 days. Under Part 135, air operators have the option of a review of airworthiness or maintenance review. Refer rule 135.402(a) and AC119-3 'Air Operator Certification - Part 135 Operations'.*

5.2 GM 43.151 Persons to perform review

5.2.1 This rule prescribes who may certify a review of airworthiness. A review of airworthiness may only be certified by a person holding an inspection authorisation issued under Part 66. For a glider, a person authorised by a gliding organisation to perform a review of airworthiness on a glider. *Refer rule 43.151 (b)(1) and (2).*

5.3 GM 43.153 Review requirements

5.3.1 This rule contains detailed requirements for accomplishment of the review of airworthiness required by Part 91. This requirement is intended to separate the ongoing inspection and maintenance of the aircraft from the periodical review of the aircraft's conformity and condition.

5.3.2 The review of airworthiness is a statement that the aircraft's maintenance history has been reviewed against its maintenance programme. This includes the airworthiness limitations section of the manufacturer's instructions for continued airworthiness and any STC holder's instructions for continued airworthiness as well as airworthiness directive listing published by the CAA. Reviews will also include checks for conformity against the aircraft's type certificate and check no unapproved modifications are installed. Aircraft logbook statements detail individual requirements of rule 43.153(a)(1)-(6) have been complied with.

5.3.3 Aircraft with a special category airworthiness certificate, the requirements to check conformity to a type certificate and reference to acceptable technical data for installed modifications and repairs, is not applicable.

5.3.4 Any defective items of equipment that have been rendered inoperative and placard are to be inspected to ensure the required maintenance has been completed. The required maintenance may include the re-certification of any inoperative equipment. That is, it is not necessary to rectify the inoperative equipment but an entry should be made in the appropriate record that the equipment has been reassessed and may remain inoperative.

NOTE: *Aircraft on air operations are required to have all instruments and equipment operational, other than inoperative instruments and equipment covered by an approved minimum equipment list. The procedures for assessment of inoperative equipment will be found in the particular operator's maintenance manual.*

5.4 GM 43.155 Certifying review

5.4.1 The review of airworthiness statement is to be entered in the aircraft maintenance logbook and date of the next review entered in the appropriate section of the technical log by the holder of an inspection authorisation. The statement to be used is:

"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"

5.4.2 The aircraft operator has a 30 days period from the commencement of the review of airworthiness to have the review completed. Within 7 days of the expiry of this 30 days period, the review of airworthiness must be certified, or a new review of airworthiness is to be carried out.

6. Subpart E—Certifying Conformity following Major Modification or Major Repair

6.1 GM 43.201 Purpose

6.1.1 This subpart details requirements for certification of conformity following major modifications or major repairs (design changes) to aircraft issued with a standard or restricted category airworthiness certificate under Part 21 Subpart H.

NOTE: *Refer advisory circular AC43-9. It provides more information on major modifications and major repairs.*

6.1.2 A major modification or repair that could potentially affect the safety of an aircraft or its occupants where, as a result of its embodiment, one or more of the following incidents may occur:

(a) structural collapse

(b) loss of control

(c) failure of motive power

(d) unintentional operation of, or inability to operate, any systems or equipment essential to the safety or operational function of the aircraft

(e) incapacitating injury to any occupant

(f) any reduced level or serviceability or maintainability.

NOTE*: Refer advisory circular AC43-14 'Avionics, Installations - Acceptable Technical Data'. It contains a list of avionics installation examples that are considered major.*

6.1.3 It is the responsibility of persons releasing the aircraft, aircraft product or component to service on completion of the modification or repair task, to assess the particular modification or repair for its consequences. This assessment will determine whether the modification or repair is major or not, and accordingly, any need to liaise with and involve a suitably experienced holder of an inspection authorisation before commencement of the modification or repair.

6.2 GM 43.203 Persons to certify conformity

6.2.1 Certification of a major modification or major repair requires the assessment of the work against acceptable technical data or data approved by the Director. Persons, who can certify conformity to acceptable technical data or data approved by the Director, are:

(a) holders of inspection authorisations issued under Part 66

(b) Part 145 authorisation holders who have had equivalent training

(c) persons authorised by the manufacturer of the aircraft, aircraft product or component

(d) for gliders, glider engineers with equivalent training.

6.3 GM 43.205 Certifying requirements

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

NOTE: *A modification or repair must be compatible with all previous modifications or repairs to assure continued compliance with airworthiness requirements. All operating limitations and flight manual supplements are to be included in the flight manual.*

6.3.2 The acceptable technical data is listed on the Form CAA 337 and is to be assessed for applicability by the certifying person. This rule requires a physical check of the modification or repair and the associated documentation requirements, to ensure the work has been carried out in accordance with the technical data specified on the Form CAA 337.

NOTE: *Refer to advisory circular AC43-9 Modifications, Repairs, and the Form CAA337. It includes details on the use of Form CAA 337.*

6.4 GM 43.207 Certification

6.4.1 Certification of conformity of a major modification or major repair is completed on the Form CAA 337. The original of the completed Form CAA 337 is to be provided to the operator of the aircraft for retention in the maintenance records. A copy of the Form CAA 337 is to be sent to the CAA within 7 days for retention on the aircraft file.

6.4.2 Form CAA 337 is intended for use by the majority of industry, but certificated maintenance organisations may have systems and other documents that may fulfil the same function. Reference is to be made on these alternative forms to indicate their function as being equivalent to the Form CAA 337.

7. Subpart F—Maintenance for Special Category Aircraft

7.1 GM 43.301 Purpose

7.1.1 This subpart prescribes the 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 Part 21 Subpart H.

7.2 GM 43.303 Performance of maintenance

7.2.1 Additional to the performance of maintenance requirements of rule 43.53, a person performing maintenance in accordance with a maintenance programme required by rule 91.605, on an aircraft with a special category airworthiness certificate, is to inspect the aircraft at the start of the maintenance programme for any likely defects or configuration anomalies unlikely to be detected in future routine inspections. This inspection may require the removal of panels or structure not normally required during routine inspections.

7.2.2 After this initial inspection, routine and detailed inspections are to be carried out in accordance with the maintenance programme.

7.3 GM 43.305 Recording of overhaul

7.3.1 For aircraft with a special category airworthiness certificate, a person may state that an airframe, engine, propeller or component has been overhauled if it has been disassembled, cleaned, repaired as necessary, reassembled and tested using methods and techniques documented by the aircraft or component manufacturer or a military authority to standards acceptable to the Director. However for aircraft with a special category – exhibition or limited airworthiness certificate, these requirements are to be specified in the maintenance programme required under rule 91.605.

7.4 GM 43.307 Maintenance records

7.4.1 Aircraft with a special category airworthiness certificate on completion of maintenance, record the following reference for any replacement part or component:

(a) origin of the part or component

(b) source of the part or component

(c) documentation associated with the part or component

(d) history of the part or component.

7.4.2 It is not a requirement to make reference to applicable release documentation as required by an aircraft with a standard or restricted category airworthiness certificate. Refer rule 43.69 (a)(2)(iii).

8. Appendices A to F

8.1 The appendices include inspection requirements to be met when completing tests and inspections required by Parts 43, Part 91, and any other rule. Specifically:

(a) Appendix A1 and A2 – Maintenance

(refer rule 43.51(b))

(b) Appendix B – Aircraft radio station tests and inspections

(refer rule 43.59 and 91.605)

(c) Appendix C – Reserved

(d) Appendix D – Altimeter system tests and inspections

(refer rules 43.61 and 91.605)

(e) Appendix E – SSR transponder tests and inspections

(refer rules 43.63 and 91.605)

(f) Appendix F – Emergency locator transmitter tests and inspections

(refer rules 43.65 and 91.605)

9. Additional Information

9.1 Airworthiness limitations

9.1.1 Compliance with any airworthiness limitations specified by the aircraft manufacturer forms part of the instructions for continuous airworthiness and is mandatory. For example, under the United States Federal Aviation Regulations (FARs) airworthiness requirements, the requirements for the airworthiness limitations are clearly defined in the instructions for continued airworthiness in a section titled 'Airworthiness Limitations'. The following extract from FARs Part 23 Appendix G explains in detail the content of this part of the manufacturer's documentation. (A similar statement appears in United Kingdom CAA BCAR A5-3.)

"G23.4 Airworthiness Limitations Section.
The Instructions for Continued Airworthiness must contain a section titled ***Airworthiness Limitations*** *that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required for type certification. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is FAA approved and specifies maintenance required under 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved."*

9.2 GM 91.605(a)(1)-(5) Maintenance programmes

9.2.1 If an aircraft or component is subject to a maintenance programme approved under rule 91.607, Part 115 or Part 119, the maintenance must be performed in accordance with that programme.

9.2.2 Advisory circulars AC91-12 *Aircraft Maintenance Programmes* and AC119-5 *Aircraft Maintenance Programmes* provide methods acceptable to the Director for showing compliance with the requirement relating to the development and acceptance of aircraft operator's maintenance programmes.

9.2.3 Advisory circular AC91-14 *Light Aircraft Maintenance Programme – Aeroplanes* provides the details of a maintenance programme that is acceptable to the Director for the maintenance of standard category and restricted category piston engine aeroplanes that are not operated on air operations under Parts 115 or 119 and have a MCTOW of 2730 kg or less. This programme must be identified in the maintenance logbook and the technical log for the aircraft as the maintenance option specified in rule 91.605(a)(4). Advisory circular AC91-14 was principally developed to aid the continued airworthiness of aged aircraft where there is very limited or no manufacturer support. Where the manufacturer still supports the aircraft type, CAA recommends the use of the manufacturer's instructions for continued airworthiness.