



Civil Aviation Safety Authority
of Papua New Guinea

Advisory Circular

AC119-1

Air Operations - Certification

Issue 2

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GENERAL

Civil Aviation Safety Authority Advisory Circulars (AC) contain information about standards, practices and procedures that the Director has found to be an Acceptable Means of Compliance (AMC) with the associated rule.

An AMC is not intended to be the only means of compliance with a rule, and 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.

This Advisory Circular also includes Explanatory Material (EM) where it has been shown that further explanation is required. Explanatory Material must not be regarded as an acceptable means of compliance.

PURPOSE

This Advisory Circular provides methods and explanatory material for showing compliance with the air operator certification requirements of Part 119 for air operations conducted in accordance with Civil Aviation Rule Parts 121, 125, 135 and 136.

RELATED CAR

This AC relates specifically to Civil Aviation Rule Part 119 but also refers to the operating rules in Parts 121, 125, 135 and 136.

AC100-1 Safety Management Systems/Quality Management Systems

CHANGE NOTICE

This AC replaces the Issue 1 dated 01 April 2015.

APPROVAL

This AC has been approved for publication by the Director of Civil Aviation

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Note:

Where the rule is self-explanatory no information is given and a statement to this effect is made.

Subpart A – General

EM 119.1 Purpose

Air operations are conducted under the authority of an Air Operator Certificate issued under Part 119 that authorises operations under Part 121, Part 125, Part 135 and Part 136. To conduct such operations persons must be domiciled in Papua New Guinea.

Domiciled in Papua New Guinea means that all persons referenced in rule 119.51 will have permanent residence within Papua New Guinea, the organization is registered in Papua New Guinea and the principal base of operations is in Papua New Guinea.

Air operations are defined as the carriage of passengers, mail or cargo by air for hire or reward.

EM 119.3 Definitions

This rule is self-explanatory and the definitions contained in Part 1 should also be consulted.

EM 119.5 Requirement for Certificate

This rule is self-explanatory.

EM 119.7 Application for Certificate

The application form CA 119/01 must be completed in full and must identify the full extent of the intended operation including any training and competency checks to be conducted under the certificate. This information will be used in determining the scope of the operation and the assessment and preparation of the limitations contained in the operations specifications.

The applicant is required to submit the application as described in Rule 119.7, not less than 90 days before the date of the intended operation. For operators that apply without giving the required 90 days' notice the CASA cannot offer any confirmation that the operation will be certificated in time to meet the operator's deadline.

Operators should plan their certification programme in advance and early consultation with the CASA will ensure all issues are dealt with well before the planned start-up date. Having said this, the time involved for certification is dependent on the quality and completeness of the application and exposition.

EM 119.9 Issue of Certificate

Air Operator Certificates are issued in accordance with Section 49 of the Civil Aviation Act 2000. The Director has certain obligations when issuing certificates. These include:

- a fit and proper person test on the nominated senior persons in the organisation; and
- ensuring the applicant meets the applicable requirements of Subpart B of this Part; and
- being satisfied that the exposition includes procedures detailing the organisation's methods of compliance with the relevant rule Parts; and
- being satisfied that granting the certificate is not contrary to the interests of aviation safety.

EM 119.11 Privileges of Certificate Holder

When an AOC is issued it will list the privileges that the certificate holder is permitted to perform. In addition to the listing on the certificate, the supporting operations specifications amplify those privileges.

EM 119.13 Operations Specifications

The operations specifications form part of the certificate and are issued with the AOC. The Director may amend the operations specifications at any time as the operator changes and develops their operation. The operation specifications are automatically generated by the CASA database at the time of producing the certificate and are based on the data taken from the CA 119/01 application form. It is therefore important that the applicant ensures that the scope of the intended operation is clearly identified on this form.

The operations specifications will not list in detail the operations to be conducted, only the types of operation. The complexity of the information that must be addressed depends on the complexity of the planned operation. Where the operation is limited to specific kinds of air operation the limitations section may read something similar to the following—

- for 135 operations – photography, line inspection, or helicopter air operations
- for 121 operations – charter flights, cargo operations or scheduled passenger
- IFR or VFR.

The contents of the operations specifications will be assessed for each applicant and may not need to contain specific information to satisfy the requirements of subparagraph 119.13(b)(7).

It should be noted that any authorisation of SEIFR passenger operations under Part 125 on the operations specifications might be granted for a period less than the period specified on the Part 119 certificate. Annotating “SEIFR” against individual aeroplanes in the operations specification signifies the SEIFR capability.

Where an applicant has been granted specific exemptions against the rules, these will also be listed on the operations specifications. General exemptions will not be printed on the operations specifications.

EM 119.15 Duration of Certificates

New Applicant

The initial issue of a certificate will normally be for a period of six months to enable the operator to demonstrate compliance with their exposition and Part 119. Prior to the expiry of the certificate the CASA will conduct a compliance inspection of the operator and, if satisfactory, a longer duration certificate, usually one year, will be issued.

Subsequent renewals will depend on the results of ongoing audits of the operator and if these results are favourable, the certificate period may further be issued for up to five years. The operator will be subject to a reassessment of the exposition for compliance with the Rules at least every five years.

It should be noted that this rule also addresses circumstances when the certificate holder must surrender the certificate to the Director.

EM 119.17 Notification of Termination of Operations

This rule is self-explanatory.

EM 119.19 Renewal of Certificate

The rule specifies a period of 60 days before the certificate expires for application for renewal. The certificate holder should make provision for this in the exposition.

Subpart B – Certification Requirements

General

This Subpart covers the certification of operators for operations under Parts 121, 125, 135 or 136. The CASA will issue an Air Operator Certificate under Part 119 to conduct air operations under Parts 121, 125, 135 or 136 as appropriate to the scope of the operator's intended activity.

An operator and the CASA working in harmony towards a common aim can achieve the safe conduct of air operations. Functions of the two bodies are different, well defined, but complementary. In essence the operator complies with the standards set through putting in place a sound and competent management structure. The CASA working within a framework of law (statute) applies the entry standards applicable to the operator and monitors the operator's compliance with those standards as detailed in the exposition.

Rule 119.51 makes provision for the applicant for the grant of an Air Operator Certificate to employ, contract or otherwise engage any or all the nominated senior persons required under this rule. The CASA is aware that the functions required of senior nominated persons, in many cases, will not make it appropriate to employ a person on a full time basis but may require the expertise of a person on a more casual basis. This rule makes provision for engagement of personnel on an as needed basis. In the terms of this rule *employ, contract and otherwise engage* all have the meaning to commit by prior arrangement, to provide services and expertise for an agreed period.

AMC 119.51 Personnel Requirements

119.51(a)

An operator must identify their Chief Executive and other key personnel whose required qualifications are specified in Appendix A.

The applicant's nominated senior persons must be employed, contracted or otherwise engaged to work sufficient hours such that the individual can fulfil the management functions associated with the size and scope of the operator's business.

119.51(a)(1),(2) & (3)

The rule identifies what are considered the safety critical members of an organisation who will exercise an appropriate level of control, direction, and responsibility, to ensure the continued effectiveness of the operation. Further, the applicant must have in their exposition an organisation chart showing the lines of responsibility extending from the CEO through to each location where operational staff are located.

An applicant may utilise any organisational structure as part of their overall business structure provided the applicant can satisfy the Director as to the effectiveness of the reporting lines and control required to be exercised. Applicants should note that approval of alternative organisation structures is not automatic.

119.51(b)(2)

Appendix A to this AC prescribes the minimum experience and qualifications of persons nominated for senior positions. Within this appendix there are areas where the Director can make assessment of equivalent standards.

EM 119.51 Personnel Requirements

119.51(a)(1)

The intent of the rule regarding the responsibility and authority of the Chief Executive is to ensure that:-

- the aviation activities carried out by the organisation can be financed

- those activities are carried out in accordance with Part 119
- the organisation complies with the requirements of Part 119.

It is clear that this person needs to have the authority to ensure the activities of the operation can be financed. A suggested method of demonstrating this could be by presenting an annual business forecast, or have as a part of compliance with rule 119.75(a)(3), the authority to finance the operation clearly defined as part of the Chief Executive responsibilities.

The Chief Executive must assure that the exposition complies with the rules. The exposition amendment procedures should cover this.

The Chief Executive must also be assured that the operation is conducted in compliance with the exposition. Ensuring compliance with the exposition is the responsibility of the senior persons under rule 119.51(a)(2) and the assurance that the Chief Executive requires could be shown through the medium of the internal audit reports or inspections.

This person will need to demonstrate during initial application and at any other time, that they have the knowledge to control the organisation.

119.51(b)

For the airline air operator separate people are considered necessary for each of the roles listed in the rule. However, this is clearly not appropriate to a small 135 or 136 air operator and 119.51(c) allows the Director some discretion if the size and scope of the operator's organisation indicates that combining of some responsibilities is acceptable. An applicant requesting this discretion should consult with the CAA during the initial meetings.

Where positions are combined the operator will be required to provide evidence to demonstrate the person has sufficient time and resources to be reasonably expected to fulfil the responsibilities for the positions, considering the size and scope of the operator's business.

Some functions should not be combined as they conflict with responsibilities assigned to the intended positions, for example, the functions of Chief Executive and Quality Assurance or the functions of Air Operations and Quality & Safety Manager in regard to flight operations.

119.51(d)

This clause permits a senior person, responsible for a function identified in 119.51(b)(1), to delegate that function to other staff member/s. However the rule is also very clear that the responsibility for the function still remains with the nominated senior person and that the planned delegation must be acceptable to the Director.

However, where these functions are combined it would only be acceptable to the Director provided the person responsible for the function does not personally carry out any internal audit of that function.

119.51(e)

At the time of application the applicant must consider how they will deal with transfer of the senior person functions, to other suitable and qualified persons during periods of absence. Although the rule does not make provision for or have any requirement for the situation where a senior person may be absent for a prolonged period of time, or vacates the position it is advisable to provide for this in advance. Consideration should also be given to a situation where a senior person has been incapacitated. This would in effect cause the position to be vacant for the period of incapacitation and would require a substitute person to meet the requirements of this Part. In the event that the responsibilities and functions are transferred to another person they would also be required to be fit and proper, and meet the experience and qualifications set out in Appendix A.

In the event an air operator chooses not to provide for the situation where a senior nominated person vacates

a position, it should be remembered that the Director has to be notified of such a situation and the operator will also be called to provide details of the contingency arrangements to be implemented pending a permanent solution being achieved.

It should be noted that where a change of senior person is proposed, rule 119.111(b) requires the prior notification of the change and acceptance by the Director.

In accepting such contingency arrangements, the Director may impose limitations or conditions of a temporary nature for the period of the contingency as provided for in Part 119.111(c). The conditions or limitations imposed by the Director in all cases will be clearly stated to the operator in writing, and could be as simple as providing a time frame for events to take place or a total suspension of operations.

AMC 119.53 Personnel Competency Requirements

The rule requires the applicant to establish procedures in their exposition to initially assess and maintain the competence of personnel authorised by the operator to plan, perform, supervise, inspect or certify the air operations listed in the operator's exposition.

With regard to personnel who are required to "plan", this means the high level planning of the operation and would encompass the development of new routes, procedures, equipment requirements, staffing levels etc.

With regard to personnel who are required to "perform", this means any person who is required to accomplish or complete any function relating to an air operation. This could encompass management of the training programme, competency checking, quality assurance, management system or flight administration. It will also cover the flight crew competency that is specified in the operational rules.

With regard to personnel who are required to "supervise", this means any person who is required to oversee or be in charge of any part of the air operation and includes those persons nominated as senior persons.

With regard to personnel who are required to "inspect", this means any person who is required to examine or investigate any part of the air operation and includes those persons nominated as senior persons.

With regard to personnel who are required to "certify", this means any person who is required to make a formal statement or attest to any function or part of the air operation including maintenance and could include those persons nominated as senior persons.

The applicant's procedures can be tailored around the size of their operation. Procedures should indicate how that person maintains their ability to safely perform the operations and may be along the lines of an annual competency check. This is not restricted to just the pilot competency requirements.

The written authorisation given to staff, after they have been assessed as competent should authorise them to perform the tasks for which they are employed. This usually takes the form of a company Authorisation Certificate signed by the Quality Assurance Manager. In the case of a one person operation the exposition may be, in effect, the authorisation.

EM 119.53 Personnel Competency Requirements

This rule has two aspects to be considered and the operator will need to make a choice as to the direction that is to be taken.

119.53(a)

This option requires the operator to establish procedures to initially assess and to maintain the competence of personnel. In this case the operator will produce the programme in its entirety, and engage, contract or otherwise employ an appropriately qualified examiner to carry out the training and competency checks within the programme.

119.53(b)

This option enables an air operator to contract to an organisation that is appropriately certificated under Part 141 to perform the functions of checking to assess, or training to maintain the competency of the applicant's personnel.

Part 141 organisation authorisations generally relate to the assessment and training of flight crew but may include maintenance personnel. Assessment and continuing competency of senior persons in their respective management responsibilities, as specified in the job descriptions, must be carried out under the Part 119 certification.

Where an organisation is not qualified to carry out this function relating to management responsibilities then suitability qualified persons will need to be engaged for this function. This could for example be carried out by a consultant that is expert in this field, through peer review and assessment of past performance, briefing sessions, seminars, symposiums or simply training courses.

119.53(b) requires an air operator to include in the exposition details of the functions being transferred to a Part 141 organisation and the scope of the checking and training and the authority of that organisation in respect to those functions. The rule correctly identifies that the assessment and training functions are the responsibility of the air operator. It then enables the air operator to transfer any or all the functions to a Part 141 organisation. The rule asks for details to be included in the exposition and therefore this part should be very clear and concise as to the functions and the scope to avoid any confusion over who is to carry out each function. The air operator must then authorise the Part 141 organisation to carry out the tasks and submit any reports that may be specified. The detail and authorisation required by this rule could be included in the form of a contract between the operator and contractor. See Appendix B for details on subcontracting in general.

EM 119.55 Resource Requirements

This rule requires the air operator to provide resources in support of the proposed air operation. These should include items such as accommodation, workshops, hangar, equipment, tooling, training aids, data and documentation.

Rule 119.75(a)(9) requires descriptions of the necessary resources of the applicant to be included in the exposition. The CASA will examine the types of operations proposed by the applicant and compare the proposed resources for applicability.

This consideration is not an exact science but applicants should carefully consider the suggestions of the CASA representatives who will have examined many different operators and therefore have a good knowledge of requirements. The rule provides for an ability to vary the requirements by stating *where appropriate* with regards to the listed resources. This variance allows operators to provide only those items considered appropriate to their operation. Some items, such as offices and documentation, will, however, be required by all operators, some low utilisation equipment may not be required to be held on a permanent basis provided there are arrangements for resources to be made available as and when they may be needed.

EM 119.57 Proving Flights or Tests

The intent of this rule is to satisfy the Director, that an operator can meet prescribed requirements by demonstration in a particular aircraft type.

An existing operator who makes a significant change to the type of aircraft or kind of operation may be required to demonstrate that the relevant requirements can be met.

The CASA will observe a proving flight and may require the applicant to demonstrate any or all the aspects of a typical flight that is within the proposed scope of the operation. The demonstration may start at the initial enquiry by a customer through to the final completion of the flight and including documentation. It is not intended to be a route check and in some cases may not require an actual flight.

EM 119.59 Airworthiness Management and Maintenance Control Responsibilities

The intent of this rule is to make the operator responsible for determining what maintenance is required, when it has to be performed, by whom and to what standard, and to ensure the airworthiness of the aircraft being operated.

An operator should therefore have adequate knowledge of the design status (type specification, operator options, ADs, modifications, operational equipment) and the required maintenance to be performed.

The exposition must detail how the applicant is going to control the airworthiness of their aircraft.

The procedures should provide for a maintenance management or planning system that allows the operator to manage the airworthiness of their aircraft. This may take any form, including computerised systems. However where computerised systems are used, provision must be made to protect the data (password protect etc.), provide back up and consider contingency plans for reversion to a paper system in the event equipment failure.

Whilst the operator is not permitted to delegate responsibility for ensuring continuing airworthiness, scope does exist for the operator to contract with other persons (a maintenance provider) for the provision of certain maintenance control functions and services. The maintenance provider, whether in house or contracted, will be assessed as part of the certification process. The level and depth of assessment will depend on the maintenance provider's known performance within the aviation system. The assessment will establish that the maintenance provider has the ability to support the operator's aircraft and proposed operation.

The rule uses the words scope, functions and authority when contracting out. Explanation of these words are given by the following examples—

Function: - "Carry out assessment of service bulletins / letters / ADs / AOLs; defect reports";

Scope: - "Heavy maintenance and line maintenance / mechanical component overhaul";

Authority: "Liaise with CASA on defect incidents" or "Procure services of specialist subcontractors as required".

Note:

See Appendix B & C for details on subcontracting in general, and subcontracting maintenance activities.

EM 119.61 Maintenance Programme

The core of a maintenance programme is a compilation of the individual maintenance and inspection tasks, referred to as schedules, used by an operator to maintain the airworthiness of an aircraft.

The schedules contained in a programme must include those of aircraft manufacturer, those required by Part 91 and 121, 125, 135 or 136 and those issued by the manufacturers of installed equipment.

The programme must also include procedures and detailed instructions (or reference thereto) for the accomplishment of the maintenance and inspection schedules, references to technical manuals for maintenance standards and methods, and specifications for recording and certification of schedules.

In order to define the maintenance programme, a **Maintenance Programme** document should be produced which lists all required maintenance and inspection schedules and either specifies in detail, or provides a summary cross reference to, the required procedures and instructions listed above.

For the operators of large aircraft, the Maintenance Programme should form a separate manual and contain detailed procedures and inspections.

For most air operators, procedures and instructions are normally contained in the operator's maintenance

control manual or, in the case of smaller operators, that section of a single volume exposition. For these operators the Maintenance Programme document will normally be an Appendix to the maintenance control manual but may be lodged as a controlled document within the organisation's overall system for managing controlled documents. A separate Maintenance Programme document is still a part of the operator's exposition.

An air operator's Maintenance Programme document should—

- identify by type and registration the aircraft which are subject to the programme
- list all manufacturer's inspection schedules and instructions for continued airworthiness, including pre-flight and post flight inspection
- list inspections required after abnormal occurrences such as heavy landings or severe turbulence
- identify the Airworthiness Directives which must be complied with
- identify airworthiness limitations that must be complied with, i.e. finite lives and TBOs
- include the inspection requirements of Part 91
- provide instructions for applying latitude to inspections
- provide instruction for trend analysis if the programme utilises condition monitored maintenance
- provide instructions for recording, rectification and deferral of deficiencies
- provide instructions for release to service
- provide details of the inspections required to induct an aircraft onto the programme
- provide instructions for changing an inspection interval due to service experience
- provide details of role equipment which is subject to the programme
- have a unique issue date and revision status

Further information on the development and establishment of maintenance programmes is contained in AC91-10. Depending on the complexity of the programme, it may however be necessary to obtain expert industry advice in order to compile the required information.

EM 119.59(c) In addition to those procedures and instructions directly linked to the Maintenance Programme document shown above, the operator's maintenance control manual should contain—

- a maintenance policy and procedures section that includes an explanation of the maintenance tracking systems, maintenance programme, administration procedures, flight check requirements, and other subjects that are peculiar to the operator
- the responsibilities of the various maintenance personnel
- details of certification requirements, sign off sheets, and the compilation and retention of records, reports, and technical reference material including—
 - AD compliance procedures and record keeping
 - life-limited parts record keeping
 - time-controlled components record keeping
 - general aircraft records
- a procedure for assessing manufacturer's recommendations and applying them to the programme.

- role equipment procedures including provisions for—
 - storage
 - inspection before use
 - identification of the equipment
 - installation and removal of the equipment
 - personnel required to install and remove the equipment
- contractual arrangements with the persons performing work for the operator on a continuing basis
- arrangements for maintenance away from the operators' regular maintenance facilities.

EM 119.59(c)(11)(x) If the maintenance programme utilises condition monitored maintenance or information from health and usage monitoring systems procedures should be developed to ensure that the required data is recorded, analysed and the results interpreted appropriately.

EM 119.59(c)(11)(vi) This rule requires an operator to include in the maintenance programme procedures for the recording and correction of discrepancies found during maintenance. This includes discrepancies found by the pilot, in service or during the normal pre-flight and after-flight inspections.

A **discrepancy** can be described as any form of abnormality. The item may be un-airworthy, or may still be fit for its intended purpose and so still be airworthy. An authorised person must assess the item and the airworthiness of the aircraft and determine if it should be reclassified a **defect** (i.e. the item is not fit for use and airworthiness is affected) or confirm it is a discrepancy, (i.e. airworthiness is not affected) and certification to that effect is made.

The maintenance programme procedures must detail how the assessment and certification of discrepancies is carried out, how discrepancies are reclassified as defects where airworthiness is affected and how discrepancies not affecting airworthiness may be deferred, tracked and cleared.

EM 119.59(c)(12) A general requirement of the operating rules, 121, 125, 135 and 136 is that all instruments and equipment installed in the aircraft must be in an operable condition unless otherwise provided for in a minimum equipment list (MEL).

Therefore any defects must either be rectified before further flight or deferred in accordance with an MEL.

The maintenance programme procedures must detail:

- how a defect is recorded
- the manner in which the defect is inspected to approved data by a qualified person
- how the defect is cleared or deferred in the technical log and the pilot advised of the maintenance status of the aircraft and any conditions or limitations that may apply
- how deferred defects are tracked
- how release to service is made in the maintenance record certifying that the aircraft has been inspected or repaired to approved data and is released to service.

EM 119.59(c)(13) This rule relates to retention of maintenance records, reference to data and identification of the person certifying the release to service. The rule has a direct relationship to rules 43.69, 91.617, 91.621, 91.623 and Advisory Circular 91-6 and can be broken into the following elements of a procedure:

- **A description of the work performed.** This could be in the form of an entry in the technical log, a

maintenance work sheet or a logbook entry. The detailed description of the work may be a complete description of the work or a brief description with reference to the acceptable data that was used to perform the work. This may be the instructions contained in a manufacturer's service instruction, service bulletin, maintenance manual or the instructions contained in a supplementary type certificate. This is the requirement of rule 43.69.

- **Aircraft logbook.** Where work records or the technical log is used to record details of the maintenance task, reference to those records must be made in the aircraft logbook. When transferring maintenance information to a logbook from the technical log or work records that contain the release to service, no further release to service is required. However if the release to service certification is made by a person outside the air operator's organisation then the name of that person should be included.
- **Retention periods** for maintenance records are specified in rule 91.623 and it is the air operator's responsibility to ensure they are kept for the prescribed period. In some cases the maintenance organisations have claimed maintenance records as their own property. This is not the case and all maintenance records generated during the life of the aircraft are considered to be a part of the aircraft and are therefore the property of the person who holds the Certificate of Registration for the aircraft.
- **Transfer of maintenance records** is the responsibility of the holder of the Certificate of Registration when transferring the registration to another person. This is specified in rule 91.621.

EM 119.63 Documentation

The procedures required by this rule should consider all documentation required for use by the operator. They should include all relevant technical data such as service bulletins, airworthiness directives, maintenance manuals, flight manuals and operational data such as AIPs and dangerous goods manuals.

The procedure should describe how the individual documents are entered into the system, reviewed, authorised and where they replace other documents, how that obsolete documentation is purged. Some form of marking of the documents should be employed to show it has been through the control process.

Documents may be kept in hard copy or electronic form. The rule allows for other formats of information, however, the CASA will consider any other format on its merits.

Note:

Refer to Appendix D for information regarding electronic records and documentation considerations.

EM 119.65 Records – Personnel

The procedures required by this rule should consider all personnel records required for use by the operator. These will include all persons required to hold a licence or rating, a delegation or authorisation from the Director, or exercising an authorisation granted by the certificate holder. This may include the nominated senior persons. The record must contain the information required by the rule and be retained for the specified period. Documents may be kept in hard copy or electronic form.

EM 119.67 Records – Resources

The procedures required by this rule should ensure all details of tests, checks, and calibration of safety-critical resources etc. required by the Rule are accurately recorded. Typical equipment requiring these tests could include scales used for weighing passengers, baggage or freight, refuelling equipment, meteorological equipment, strops and lifting equipment. It should not cover maintenance tooling as that is addressed by Part 43 or Part 145, unless the operator is conducting their own maintenance and combining the operator's and maintainer's expositions.

This particular rule is not intended to include any of those items that are already covered by the equipment

requirements of Subpart F of the operational rules and maintained by the approved aircraft maintenance programme.

EM 119.69 Air Operator Security Programme

This rule requires a certificate holder who is providing a regular air operation under Parts 121 or 125 to establish a security programme that meets the requirements of Part 108. Regular air operation is defined in Part 1.

EM 119.71 Establishment of Operations Procedures

The intent of this rule is to require the operator to think about how an operation will be carried out, and describe the basic procedure in the exposition for their employees to follow. The applicant should remember that their personnel will utilise the exposition and operations procedures in complying with a rule.

The requirements for procedures are spread amongst many Parts and operators should examine them all, **but develop procedures only for those requirements relevant to their operation and the rules that specifically require a procedure.**

Those rules that are not applicable to the operation should be shown in the compliance matrix as N/A so that the CASA assessor can establish that the operator has at least considered them.

An operator using a combination of large, medium, or small aircraft should write one set of procedures that encompasses all their operations in accordance with the higher Part. For example, if Part 121 requirements are met then generally Parts 125 and 135 will be met, and only the differences between the rules need to be checked. The exception would be if a fixed wing operator also operates helicopters – then it is likely that there will be types of operation that are peculiar to Part 136 that need to be included in the exposition.

Compliance matrices should fully covers the requirements of—

- Part 12 regarding accidents, incidents, and statistics
- Part 43 regarding maintenance requirements
- Part 61 regarding pilot licensing
- Part 91 regarding general operating and flight rules.
- Part 92 regarding the carriage of dangerous goods
- Part 100 regarding the safety and quality management systems
- Part 119 regarding certification
- Part 135, 125 or 121 as applicable
- Part 141 regarding training organisations
- Part 108 regarding security programmes

The rules contain prohibitions, mandatory requirements, matters that an operator must “ensure”, and areas where a procedure is required to be established.

Where a mandatory requirement or a prohibition is stated and the rule is clear, the operator is not required to reproduce the rule or any part of that rule in the exposition.

However the operator must assure the CASA that the operation is conducted within the scope of the rules. The operator is required to have in place training and competency testing programmes that give personnel sufficient knowledge of the rules and the ability to operate within the scope of these rules. The training and competency testing programmes could be utilised to satisfy the operator and hence the CASA that the operation is conducted within the scope of the rules.

Where the applicant is required to ensure that a rule is complied with, this may need a procedure. Alternatively the training and competency testing programmes, supported by the quality assurance system of internal audits may be sufficient in themselves to ensure compliance with a rule.

Developing procedures

A procedure may take many forms and be as complex or brief as need be. The operator may use any form that is suitable for the purpose and these may be:

- In the form described below:
- A flow chart:
- A checklist or:
- A form to be completed.

The level of training, experience or qualifications held by the individuals may also have a bearing on depth and extent of any procedure. In order for it to be effective the procedure should describe the who, what, when, where, why and how, as appropriate, to the task or action to be carried out.

One method of presenting the components of a procedure can be described as follows—

- Who* - the procedure is speaking to
 will accomplish the procedure
 is responsible to see that the procedure is done – an individual, a position, an organisation
- What*- the procedure is about
 the procedure is trying to accomplish
 the person performing the procedure should do
- When* - the procedure is to be accomplished
- Where* - the procedure will be accomplished
- Why* - the procedure is required
- How*- the procedure will be accomplished – identified manual, operator's programme, other document
 the person determines what procedure will be used and if it has been accomplished

Another method of establishing a procedure may take the following form that generally follows an ISO standard format. This may be varied as appropriate where using all the elements is not required.

Policy: This part would contain the company policy in regard to the subject area. This could become repetitive and in some cases a general policy statement of the Chief Executive may have covered this.

Purpose: This will state the purpose for the procedure or process.

Scope: This should cover the extent or limits of the procedure or process.

Responsibility: This should identify the person responsible for carrying out the procedure or process normally by position title.

References: This will make reference to any other documents or reference material that is required for

the performance of the procedure or process and should include any exemptions.

Records: This will identify any record or forms that are to be completed. For example flight and duty records, load sheets or technical log etc.

Process or Procedure: This is the explanation or instructions to carry out the task that satisfies the purpose for the process or procedure.

Procedures may be ordered in this manner or in any other way that achieves the desired outcome for the operator. They may be very simple or quite complex and this will depend on the outcome that is to be achieved. They could be in the form of a written description, flow diagram or completion of a checklist. In the case of a flow diagram or checklist the instructions for use could be very simple.

The procedures should have sufficient information to satisfy regulatory compliance. This may mean that other related rule references and prohibitions are included in the primary procedure. For example planning for flight and preparation may include elements of rules 91 Subpart B, C, D and E, 135 Subpart B and C that in themselves do not require a procedure but must be considered during the planning phase.

This should have the effect of condensing procedures into areas relating to operational functions, and overcoming the need to produce a procedure for each and every rule.

AMC 119.73 Internal Quality Assurance

Rule 100.103(a)(3)(i) specifically requires procedures for the appointment of qualified and well trained auditors. Rule 100.103(b) requires the internal auditor to be independent of those directly responsible for the activity being audited. Training of internal auditors should be through an organisation acceptable to the Director. Alternatively operators may conduct the training through their own training system. The outcome will remain the same with the person conducting the audit being competent in the area being audited and also being trained in auditskills.

Any course of training should include quality system principles, safety management systems and lead auditing techniques.

EM 119.73 Internal Quality Assurance

The purpose of the internal quality assurance system is to provide assurance to the Chief Executive that the organisation is in compliance with its exposition, its safety objectives, and the exposition demonstrates compliance with all the applicable operating rules.

The internal quality assurance system requires basic quality management procedures and the creation of safety policies and straightforward quality objectives. Applicants should not be concerned with over-complicating the system or introducing features that are not relevant to the size and scope of their operation. 119.75(a)(14) requires details of the quality system to be *appropriate*. Generally this can be taken to mean all the elements of a typical quality system must be present but the complexity of each element can be greatly reduced for the simpler operations. The quality management system should not stand aside from functional operations, but should form part of the operator's standard business practices.

AC100-1 provides guidance on the development of a safety and quality assurance system required by this Part.

EM 119.75 Air Operator Exposition

General requirements

Applicants should consider the exposition as a general description of how their operation works; a tool of management in the operation of the business; and a means of instructing staff in how they are to perform their tasks. A properly written exposition can be concise and very effective.

The purpose of an exposition is to express the Chief Executive's requirements for the conduct of the organisation and to state how the organisation will meet regulatory requirements. It sets out the procedures and methods of a certificated organisation. The philosophical benefits of the manual are considerable and important to the safe operation of commercial aviation. The complex nature of aviation may give rise to procedural needs an operator is unaware of including ongoing changes to rules, airspace, compliance requirements and they all require a follow up system that the exposition must provide.

The exposition is the means by which an organisation defines its operation, and shows both its employees and the CASA how it will conduct its day-to-day business and ensure compliance with the rules.

An exposition should commence with the corporate commitment by the Chief Executive. The remaining parts of the exposition may be produced as any number of separate manuals, sections or procedures, or as one simple document depending on the extent of the operations proposed.

Depending on an organisation's structure and size, the exposition could be arranged either as separate documents or a single document with separate sections according to the following —

- Management and Policy
- Operations
- Training
- Maintenance Control Procedures
- Quality Assurance
- Contractual Arrangements
- Emergency Situation Action Plan

Separate manuals should be cross-referenced to the management part of the exposition.

While the CASA does not wish to tell an operator how to structure a manual suite, experience has shown that having an upper level manual (or section if a single document is to be used), generally containing management and policy material, makes for a more user friendly exposition. All of the other associated manuals (or sections) link to this upper level manual (or section), which would have all the organisational information such as—

- Corporate Statement
- Description of manual hierarchy
- Identification of required senior personnel
- Organisation chart
- Duties and responsibilities of senior personnel
- Exposition amendment processes
- Scope of Operation
- Profile of the organisation, including resources and base(s) of operation

Where an operator holds more than one certificate, there should be no confusion between the contents of the expositions for Part 119 and any other Part. For example, where an operator holds both a 119 and a 145 certificate, the maintenance control manual requirements should stand alone within the Part 119 exposition and not be addressed in the Part 145 exposition.

119.75(a)(1) Corporate commitment

The statement by a Chief Executive is required by the CASA as a corporate commitment by the organisation. It should clearly state the goals and objectives of the organisation in respect of the safety standards prescribed by Part 119. It may also contain the organisation's goals and objectives in respect of its commercial activities. The exposition is intended to be a tool of management and is the means by which the organisation's operation is presented to its staff, its customers, and the CASA.

119.75(a)(2) & (3) Senior persons

The titles and names of the senior persons within the organisation must be listed in the exposition. Their duties and responsibilities, and the areas in which they are directly responsible for liaison with the Director must be clearly defined.

119.75(a)(4) & (5) Scope of operations

The organisation is required to identify each location at which it intends to carry out air operations and the scope of activity at those locations. This requirement should identify where operations staff are normally based but does not need to include temporary bases for ad hoc charter operations. It does include functions that are contracted out such as, ground handling, training, security, dangerous goods etc.

119.75(a)(6) Organisational chart

There must be an organisation chart showing the reporting lines of the organisation. The chart must show the **lines of responsibility** from the nominated senior persons to the Chief Executive. The exposition must show the staffing arrangements at each place where the organisation intends to carry out air operations. It is also recommended that the organisational chart also show non-senior person positions and appointments, e.g. supervisors and administrators.

119.75(a)(7) Staffing structure

Summary of staff at each location. This does not require the names of individuals but should identify staff numbers for functions and operations that are to be conducted.

119.75(a)(8) Principal bases

The intent of this rule is to identify the location of principal bases where operations staff and aircraft are normally based to conduct air operations. This does not include temporary bases for ad hoc charter operations. The location of the principal maintenance base must be identified, this does not require maintenance out stations to be identified by the operator.

119.75(a)(9) Details of resources

This rule requires details of the resources that the air operator must provide in support of the proposed operation. (Refer rule 119.55 for details). The rule provides for an ability to vary the requirements to provide only those items considered *appropriate* to their operation. Some items, such as offices and documentation, will, however, be required by all operators, some low utilisation equipment may not be required to be held on a permanent basis provided there are arrangements for resources to be made available as and when they may be needed.

119.75(a)(10) & (11) Details of maintenance

These rules require details of the maintenance programme required by 119.61 and identification of the organisation that will perform maintenance as the principal maintenance provider.

119.75(a)(12) Detailed procedures

The procedures are not listed in this rule but they should cover all rules requiring a procedure relevant to the operator's organisation and proposed operations. The procedures should accurately describe the organisation's practices related to its operations.

These could take the form of written text supported by flow charts, forms, performance graphs, etc. to simplify the procedure. The exposition's content with regard to air operations can be generalised into broad areas. Applicants should address the requirements to the extent that they apply to the particular scope of intended activity.

119.75(a)(12) Details of programmes

This rule requires details of the programmes required by Part 119 and other Parts to be included in the exposition. This could include programmes for maintenance, training, operational competency, air operator security, flight and duty and internal audit.

119.75(a)(13) & (14) Details of SMS and QMS systems

This rule requires details of the SMS/QMS programmes required by Part 100 and other Parts to be included in the exposition. This should cover all the SMS elements in CAR Part 100-Subpart B and the QMS elements in CAR Part 100-Subpart C.

119.75(a)(15) Laws of foreign State

Where an operator intends to operate to, from or within a foreign State then the operator is required to have procedures that ensures the operation is conducted within the scope of rules of that State.

119.75(a)(16) Exposition amendment

A clear procedure is required to control, amend and distribute the exposition. This procedure needs to give consideration to the different processes required when dealing with the changes required by rule 119.111(b) as distinct from routine changes that take place on a day-to-day basis.

119.75(b) Exposition acceptance

Operators should take ownership of, and responsibility for, their exposition. The exposition should work for the operator by being relevant to their operations.

The acceptance of an organisation's exposition by the Director is one step in the process of certification. Unless the Director accepts an exposition a certificate cannot be issued.

Multiple Certification

When an organisation seeks certification under more than one Part – Parts 119, 141, and 145 for instance – which all require expositions, it may be possible for some sections of the exposition to be common to each certificate. For instance, if the same management set-up is used for each certificate, the management part of the exposition could be common. Equally all of the Quality Assurance procedures for one or more certificate could be placed in one manual.

Whatever exposition format is chosen, it must clearly show how each element of the applicable rule is satisfied. To reduce the cost of CASA assessment and to ensure that all required rules are addressed, a completed rule compliance matrix should accompany the exposition. Any difficulty in establishing compliance will require more CASA investigation time, and this can only result in additional cost to the applicant.

Subpart C – Operating Requirements

EM 119.101 Continued Compliance

No further explanation required.

EM 119.103 Operating Requirements

In the case of aeroplanes, this rule requires certificate holders to comply with the operating requirements of Parts 121, 125, 135, or 136, depending on *passenger seating configuration*. This passenger seating configuration is the certificated seating capacity, either specified on the type certificate or modified by STC or other approved design change and is **not** the actual number of seats installed in the aircraft.

EM 119.105 Charter and Leasing of Papua New Guinea Registered Aircraft

General

It is recommended that any lease agreement be sufficiently comprehensive to identify the parties to the lease and persons responsible for any function under the lease. The period of the lease, with a commencement and termination date, training and competency requirements that may be necessary, control and direction of maintenance, maintenance providers and defect control should all be included.

Under a lease, Part 47 governs the limitation of the duration of the lease. A lease period exceeding 27 days will require the certificate of registration to be transferred into the air operator's name.

119.105(a)

Regardless of the type of lease arrangement the pilot in command must be notified under which air operator certificate the operation is being conducted. This could be provided to the pilot in the form of the identification of the flight records that are to be used.

119.105(b)

Where an air operator leases an aircraft with or without aircrew from any person who does not hold an air operator certificate, then the operation must be conducted under the certificate of the air operator. This will require the aircraft to be introduced into the operational and maintenance system of the air operator. When all the factors are considered the applicant may determine that it is not a practicable option as it will require amendments to the operator's exposition, operations specifications and maintenance actions to operate the aircraft.

Where the lease is from another air operator the lease agreement should make provision for training, operational competency, control and direction of maintenance and maintenance providers.

119.105(c)

No further explanation required.

119.105(d)

No further explanation required.

EM 119.107 Use of Non-Papua New Guinea Registered Aircraft

An operator intending to operate a non-Papua New Guinea registered aircraft must notify the Director of the details required by this rule at least 90 days prior to the intended operation. They should provide the CASA with sufficient time to process the application and conduct the necessary liaison with the applicant. In special cases where the applicant can show substantiating evidence that the operation must start within these 30 days, then the CASA will assess these reasons and may allow a shorter notification period. The shorter

period is considered an exception to the requirement and should be treated as such by operators. It must be remembered that the operation of a foreign registered aircraft will require agreements between the State of Registry and CASA PNG for the safety oversight of maintenance and flight operations areas. Applicants must allow adequate time for this agreement to be drafted and approved by both State of Registry and CASA PNG.

The non-Papua New Guinea registered aircraft must be of the same type and series as aircraft that are presently being operated by the AOC holder. This is the requirement of rule 119.107(g).

Operation of a non-Papua New Guinea registered aircraft is limited to up to 6 calendar months after which the aircraft must be placed on the PNG register or cease to operate under a PNG AOC.

EM 119.111 Changes to a Certificate Holder's Organisation

As a certificate holder's operation changes, the operator has the responsibility for amending their documents accordingly. These changes may require amendment of the operator's *operations specifications*, and the operator has the responsibility of making appropriate application for any such required amendment. The required forms are available from the CASA. At all times the exposition must remain a current description of the organisation.

Any change to the items listed in 119.111(b) require prior notification to and acceptance of the Director.

EM 119.113 Changes to a Maintenance Programme

No further explanation required.

EM 119.115 Special Flight Permits – Continuing Authorisations

No further explanation required.

APPENDIX A – Qualifications and Experience of Senior Persons

This Appendix prescribes the qualifications and experience for the senior persons responsible under 119.51(b)(1).

No further explanation is required.

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APPENDIX B – Subcontracting – General

Introduction

This section details the considerations for any air operator when subcontracting activities to subcontractors who may, or may not, be certificated by the CASA.

This subcontracted work is considered to be an extension of the work carried out by the certificated air operator and under the control of its operational procedures and quality control systems.

The responsibility for providing the necessary documentation and liaison rests with the certificated operator.

General Conditions

When activities are subcontracted, the subcontractor's facilities, personnel, and procedures related to the subcontracted activity should comply with Part 119 or other rule requirements for the duration of that activity.

As the rule does not specify that a CASA certificate is required, an operator may subcontract activities to a non-certificated organisation provided there is provision in the operator's exposition for subcontracting.

The operator should have their own expertise to decide whether the subcontractor meets the necessary standards and that any activity is carried out in accordance with the operator's instructions.

An operator may find it necessary to include several specialist subcontractors in their exposition to enable the training and maintenance activities supporting their operation. The organisation should provide the Director with evidence that it has the expertise and procedures to control the subcontractors.

The operator is responsible for all activities carried out by their subcontractors. **Where an operator fails to control a subcontractor it may put at risk part or all of its own Part 119 certification.**

The extent of the subcontracting is only limited by the expertise and procedures of the Part 119 organisation. Acceptance of the subcontract is shown by the Director accepting the exposition containing a specific section on the control of subcontractors and a list of those subcontractors.

Procedures

When creating procedures for the control of subcontractors the following information should be considered—

- a pre-assessment procedure where the certificated organisation visits a prospective subcontractor before any activity is placed with the subcontractor. The visit will determine whether those parts of the subcontractor that it wishes to use meet the requirements of the Part 119 operator.
- if the sub-contractor does not meet the requirements, a procedure may be needed to ensure the upgrade, of the relevant parts of the subcontractor to meet the intent of Part 119.
- an assessment of the extent to which the Part 119 operator will use the subcontractor's services.
- procedures for the control of subcontractors, to record visits to subcontractors, to have a corrective action follow-up plan, and to show when subcontractors are being used.
- Procedures for the audit of the subcontractors, by the Part 119 operator's quality assurance personnel.

APPENDIX C – Subcontracting Maintenance

Introduction

This section details the procedures to be followed when an air operator wants to arrange with a CAR Part 145 certificated maintenance organisation, for the maintenance organisation to carry out some or all of the operator's maintenance tasks. This information will also be of use to maintenance organisations certificated under Part 145 and wishing to carry out contracted maintenance tasks for air operators.

Responsibilities

The aircraft operator is responsible for all aspects of the maintenance of their aircraft, including both planning and carrying out the maintenance. This includes responsibility for—

- properly planning all necessary maintenance
- providing adequate documentation, such as operator's maintenance manuals, aircraft maintenance, repair, and parts manuals, maintenance programmes and associated recording documents necessary to ensure that the planned maintenance can be properly carried out and recorded
- providing aircraft reliability programmes, and control of the development of maintenance programmes
- airworthiness occurrence control including reporting and control of defects
- complying with all applicable airworthiness directives
- assessing, and actioning as appropriate, all manufacturers' service bulletins or other service recommendations
- providing adequate and trained technical staff so that the maintenance can be properly carried out
- providing adequate accommodation, equipment, tools, calibration and facilities so that the planned maintenance can be properly carried out
- providing, accepting, and storing aircraft spares
- making the aircraft available to the persons who are to perform the maintenance whenever maintenance is due, and giving adequate technical direction for all work to be carried out
- carrying out necessary servicing of aircraft and aircraft components
- completing all required flight records and logbooks, and actioning any required entries
- maintaining all aircraft documents such as aircraft flight manuals and associated minimum equipment lists to their correct status

Note:

The operator may choose to contract other persons or organisations to carry out any or all of the above tasks.

However, contracted arrangements for accomplishing these tasks do not absolve the operator from the final responsibility for ensuring the safe operation and continuing airworthiness of their aircraft.

Where an operator fails to control a subcontractor it may put at risk part or all of its own Part 119 certification.

General Conditions

When establishing a contract between an air operator and a maintenance organisation to carry out any of the above listed tasks, the following general conditions should be considered by the air operator:

- conditions to satisfy the CASA that the maintenance organisations are able to satisfy the terms of the contract

- a formal agreement established between the two parties in accordance with this advisory circular defining which functions are to be contracted. This agreement should form a part of the exposition of each party as appropriate. **The operator should contact the CASA Airworthiness branch for a copy of the maintenance agreement 'contents' checklist when drafting a maintenance agreement with the subcontractor. This will ensure that the maintenance agreement covers the minimum content expected by the CASA.**
- nomination of a senior person from within the operator's company to liaise with the contracting organisation on contract matters
- an arrangement, by which more than one maintenance organisation is nominated by an operator, in respect of a particular aircraft type, will not normally be acceptable to the CASA, other than for tasks carried out at route stations.
- in its assessment of the arrangements made by the operator for the sub-contract of any of the listed tasks, the CASA may need to examine all technical agreements between the parties. The contract should form a part of the exposition of each organisation
- any proposal to significantly change the contract or technical agreements requires the prior acceptance of the CASA and should be notified as soon as practicable.

Note:

This could be, for example, an intention to change to another maintenance organisation, or a significant organisational, procedural or technical change to an agreement. Delayed notification may result in the changes not being processed in time for the intended date of change.

Contracting to a Foreign Maintenance Organisation

Where an air operator wishes to contract all or part of its maintenance tasks to a foreign maintenance organisation, the following items should be considered—

- a formal agreement should be established between the two parties, in accordance with this advisory circular, defining which tasks are to be contracted
Note: *Where the arrangements provide only for rectification of defects at route stations, a formal maintenance agreement need not be established.*
- the maintenance organisation which is to be used should be acceptable to the Director for the tasks to be contracted.
- the foreign airworthiness standard, under which the maintenance organisation has been certificated, must be known by the CASA to be comparable to the Papua New Guinea CAR Part 145 standards.
- the arrangements should provide for the CASA to inspect the facilities at any of the nominated locations if it makes a request to do so to make a determination of equivalence to CAR Part 145 standards.
- details of the proposed maintenance arrangements should be forwarded to the CASA for acceptance. The operator's exposition should be amended to include this information
- the method of certifying individual maintenance tasks and the responsibilities of nominated signatories must provide equivalence to Papua New Guinea certification requirements. The signatories should be persons employed by the foreign maintenance organisation
- all work must be completed and certified in accordance with the Papua New Guinea air operator's exposition.
- all necessary maintenance manuals or equivalent technical literature should be provided.
- **all work completed by a foreign maintenance organization within Papua New Guinea territory must be carried out in a CAR Part 145 approved facility and certified by holders of**

PNG Aircraft Maintenance Engineer Licences issued under CAR Part 66. Foreign maintenance organizations doing work within Papua New Guinea territory without using a CASA approved facility and PNG licensed engineers may put at risk part or all of their CAR Part 145 certification.

Detailed Content of the Maintenance Agreement

Note

Written agreements should clearly define what action is allowed by the maintenance organisation without prior consultation, and what tasks require operator agreement.

The operator should contact the CASA Airworthiness branch for a copy of the maintenance agreement 'contents' checklist when drafting a maintenance agreement with the subcontractor. This will ensure that the maintenance agreement covers the minimum content expected by the CASA.

Note

Whenever an aircraft is presented for scheduled or unscheduled maintenance, it is essential that a precise indication is given of the inspections required. All known defects must be documented, together with any additional work required – after consultation with the maintenance organisation as necessary.

The formal written agreement should consider the following items, as appropriate for the particular arrangement—

- organisational structure – the general divisions of responsibility between the two parties for the overall support of the aircraft, compliance with statutory regulations and other relevant requirements
- coordination between the two parties – contact points for the interchange of airworthiness matters
- responsibilities for any secondary authorisations and sub-contracted tasks such as NDT, aircraft weighing or painting
- provision of adequate numbers of suitably trained and qualified engineering personnel
- planning of maintenance manpower allocation and control
- procedures for developing and carrying out reviews and amendments to the maintenance schedule. Arrangements for authorising schedule variations
- preparation of documentation needed to implement schedule requirements
- procedures for the assessment and incorporation of Service Bulletins, modifications and manufacturers technical programmes
- management and operation of reliability programmes
- provision of covered accommodation for aircraft undergoing maintenance
- provision of tools and equipment for scheduled and unscheduled tasks
- component and material control – the provision of spares, their source, acceptance and storage. Particular attention must be paid to the provision of replacement parts and components, for defect rectification, and of spares pooling arrangements
- control, distribution and amendment of technical manuals, publications and drawings
- compilation and control of technical records, compliance with Airworthiness Directives, component life control, and completion of logbooks
- defect control and management – control of deferred and repetitive defects
- arrangements for line station support and the rectification of defects away from base
- provision of management and technical Engineering Instructions

- airworthiness occurrence control and reporting
- responsibilities for quality assurance, definition of the quality assurance programme. Responsibilities of both parties for effective follow-up of QA reports
- operator's name and *Air Operator Certificate* number. Name and CASA certificate number, if any, of the sub-contracting organisation
- title and reference number of the Exposition or Engineering Manual in which the sub-contracting arrangements are described

APPENDIX D – Electronic Records and Documentation

General Information

Documentation and records are required to be kept in an easily accessible form, so that operations and other requirements can be assessed later, if required. These documents also form an important part of the reference material for other operations tasks, staff training, and continued air operator responsibilities.

Records can be kept electronically but systems should ensure information security, integrity, and retrieval. A system of backing up electronic data is considered vital. Procedures for electronic record and document keeping should consider—

- prevention of data loss in the event of power interruptions
- software control, including amendments and prevention of corruption
- prevention of unauthorised access
- audit trail facilities
- archiving of data in a similar manner to hardcopies, and for a similar period
- backup of critical information, preferably once a day, with storage for that backup information
- data verification, on entry and retrieval
- publication provisions
- staff training
- amendment of stored data
- problem report register including the problem details and solutions.

Note:

For ease of access records may also be microfilmed or magnetically stored but the original documents should be retained in a secure environment.