REPUBLICA DE CABO VERDE

Circular Nº 10/DSV/2015

SUBJECT: REVIEWING, ACCEPTING AND APPROVING MANUALs

DATE: 24/09/2015

1. PURPOSE

1.1.1   This Circular contains direction and guidance to be used by operators who are required to develop and submit manuals for the approval or acceptance by the AAC. It is also to be used by AAC Inspectors or the Certification Project Manager (PM) for processing, reviewing, and accepting or approving manuals.

2. OVERVIEW OF MANUAL REQUIREMENTS

2.1.1   Cabo Verde Civil Aviation Regulations (CV-CARs) require operators to prepare and keep current various manuals for the direction and guidance of flight and ground personnel conducting air transportation operations.

2.1.2   Maintenance Control Manual: CV-CAR 9 requires that each operator prepare and keep current a maintenance control manual providing operator procedures and policy guidance for all of its personnel. The AOC holder's maintenance control manual must include a description of the organizational structure and the relationship between the maintenance department and the other departments of the company. The manual must also include adequate policy, direction, and guidance for the safe and efficient performance of the duties assigned to each category of employee. The CV-CARs only require an operator to produce a single manual. In practice, however, the manual system may require several manuals or volumes, even for relatively simple operations. Operators have wide latitude in structuring their manuals.

3. DEFINITIONS

3.1.1   The following terms are defined according to their use in this directive:

(1) Operations Manual (OM): A manual containing procedures, instructions and guidance for use by operational personnel in the execution of their duties.

(2) Maintenance Control Manual (MCM): A manual containing procedures, instructions and guidance for use by maintenance and concerned operational personnel in the execution of their duties.

(3) User Manual: A segment of an OM or a MCM that provides instruction, policies, procedures, and guidance to a specific category of employee. Examples of user manuals that are commonly used in the air transportation industry include the following:

(a) Inspection procedures

(b) Maintenance procedures

(c) Mass and Balance

(d) Training

(e) Typical Repairs

(f) Parts

(g) Structural Repair

(h) Wiring

NOTE: The user manual titles previously listed are only examples of common titles currently in use in industry. Inspectors should not interpret this as a list of required titles. Operators may choose to divide the MCM in any convenient way and may select different user manual titles.

(4) Policy: A written requirement established by an operator's management that is expected to be complied with by appropriate employee personnel. A policy may be within a procedure or stated separately. A written requirement such as, "No person may enter an aircraft fuel tank without a safety observer present" is an example of a policy.

(5) Recommendation: A preferred technique or action described by the operator which employees are expected to follow whenever practical. A recommendation is not a policy requirement.

(6) Procedure: A logical progression of actions and/or decisions in a fixed sequence that is prescribed by an operator to achieve a specified objective. In short, a procedure is step-by-step guidance on how to do something.

(7) Abbreviated Procedure: A list of sequential procedural steps without an amplified description or amplified set of instructions.

(8) Amplified Procedure: A description of sequential procedural steps with detailed explanatory descriptions and/or instructions accompanying each step.

(9) Technique: A method of accomplishing a procedural step or manoeuvre.

(10)   "Document": A written description of a system, a method, or a procedure; a written statement of authorisations, conditions, or limitations; or a file of information. A document serves as an official record of understanding and agreement between the AAC and the operator, describing the means the operator will use to comply with regulatory requirements. An approved document is not a manual. Relevant information from a document, however, may be extracted and published in user manuals. For example, the Operations Specifications (opspecs) are not a manual but an approved document from which information is extracted.

4. DISTRIBUTION AND AVAILABILITY OF MANUALS

4.1.1 Each operator is required to maintain a complete manual (or set of manuals) at its principal base of operations and to furnish a complete manual (or set of manuals) to the AAC. In addition, each operator must make available or furnish applicable parts of the manual (user

manuals) to crewmembers, maintenance and ground personnel who conduct or support flight operations. The manual may be in conventional paper format or in another form that is convenient for the user. Each employee to whom the manual or a user manual is furnished must keep it current. Each employee must have access to appropriate manuals or parts of manuals when performing assigned duties.

5. REVIEW OF MANUALS

5.1.1   Manuals must be reviewed by PMs and other qualified inspectors to ensure they contain adequate content and are in compliance with applicable regulations, safe operating practices, and the operator's SOPs. While PMs are encouraged to provide guidance and advice to operators in the preparation of their manuals, the development and production of an acceptable manual is solely the responsibility of the operator.

5.1.2   Initial Review. Before the initial certification of an applicant, a comprehensive review of the applicant's OM, user manuals and MCM must be conducted by the PM and other qualified inspectors. In addition, those items in the operator's Statement of Compliance that require the operator to develop a policy statement, system, method, or procedure, must be addressed. If user manuals are furnished, those topics that apply to the specific user must be addressed. Each topic must be presented with enough detail to ensure that the user can properly carry out the portion of the policy or procedure for which the user is responsible.

5.1.3   Review of Changes to Manuals.   After initial certification the PM should review each revision or proposed revision to a manual. Inspectors should not limit this review to a strict consideration of the change itself but should also consider the impact of the change on the operator's overall manual system and type of operation. Changes in the operator's SOPs should be accompanied by a review of applicable sections of the operator's manual.

5.1.4   Periodic Review of Manuals. After initial certification the continual review of an operator's manuals is necessary because both the aviation environment and the operations conducted by the operator are constantly changing. Each PM is responsible for developing a surveillance plan for the operator's manual system. At least one portion of the operator's maintenance control manual should be reviewed annually, and the entire maintenance control manual should be reviewed over a period of 1 to 3 years (depending on the complexity of the operation). This periodic review should be planned as a distinct event so that every portion of the manual is systematically reviewed at some time over a 1 to 3 year cycle. This periodic review should be co-ordinated between airworthiness inspectors and operations inspectors to ensure an appropriate exchange of information and to avoid redundant reviews.

6. FORMAT AND STYLE OF MANUALS

6.1.1   Each page of a manual must include the most recent revision date. In general, manuals should be easy to use and understand, and in a format that can be easily revised. When evaluating manuals for ease of use and understanding, inspectors should consider the following guidance concerning format and style:

6.1.2   Form. All or part of a manual may be prepared and maintained in conventional paper format (book form) or in other forms, such as microfilm or computer based storage with electronic image.

6.1.3   Introduction or Preface.   The first page of a user manual should contain a description introducing its philosophy and goals or a preface page containing a brief statement of the manual's purpose and intended user. The introduction or preface section should also contain a statement, which emphasizes that the procedures and policies in the user manual are expected to be used by company personnel.

6.1.4   Revision Control.   Each manual should be easy to revise. Also, each manual should contain a revision control page or section from which the user can readily determine whether the manual is current. This page or section should preferably follow the cover page but it can be organized in any logical manner. The control date of the most recent revision of each individual page must appear on each page. Complex operators should establish a bulletin system to bring temporary information or changes that should not be delayed by a formal revision process, to the attention of the user. The bulletin system should have a means of control that includes giving bulletins a limited life and systematically incorporating them into appropriate manuals in a timely manner. Users should be able to easily determine whether they possess all current bulletins.

6.1.5   Table of Contents.   Each manual should have a table of contents containing lists of major topics with their respective page numbers.

6.1.6   References.   Manuals must include references to specific regulations when appropriate. A reference to regulations or other manual material is appropriate when it is necessary to clarify the intent of the text or when it is useful to the user for looking up specific subject matter. References should not be made to advisory pamphlets, as these sources are advisory and not binding in nature. Operators should use caution when adapting the text of advisory documents into their manuals. Advisory text may not translate into a directive context.

6.1.7   Definitions.   Significant terms used in manuals should be defined. Any acronym or abbreviation not in common use should also be defined.

6.1.8   Elements of Style. Manuals should be composed in the style of general technical writing. This style should be clear, concise, and easy to understand. When evaluating manuals, inspectors should be knowledgeable of the following suggestions for accomplishing clarity in technical writing:

 (1)   Whenever possible, short, common words should be used. Examples of this include: using the words "keep" or "hold" instead of "maintain"; using the word "start" instead of "establish"; and using the word "stop" instead of "terminate."

 (2)   When a word has more than one meaning, the most common meaning should be used. For example, the word "observe" should be used to mean, "see and take notice of" rather than "obey and comply."

 (3)   Operators should standardize terminology whenever practical. For example, since the terms "throttles" and "thrust levers" refer to the same item, the operator should choose one term and use it consistently throughout the manual. Once a particular term has been used in a specific sense it should not be used again in another sense.

 (4)   Terms which command actions should be clearly defined, such as "checked," "set," and "as required." Since auxiliary verbs such as "may" and "should" are ambiguous and can create room for doubt, they should not be used when a definite action is commanded. Instead, verbs such as "shall" and "must" are preferable to use when an action is commanded, because they are more definite.

(5) To provide appropriate degrees of emphasis on specific points in the text, "cautions," "warnings," and "notes" should be in the operator's manuals.

(6) Any instruction, particularly a warning or a caution, must begin with a simple directive in the imperative mood that informs the reader precisely what must be done. To avoid obscuring the directive in the background information, the directive must be stated first and then followed with an explanation. An example of how a directive can be obscured in background information is as follows: "Warning - To avoid the hazard of striking ground handling personnel with the free end of a swinging tow bar, do not place feet on rudder pedals until the captain takes the salute from the ground handler. The hydraulic nose wheel steering can sling the tow bar with hazardous force." In contrast the following is an example of the preferred method of placing the directive first: "Warning - Do not place feet on rudder pedals until the captain takes the salute from the ground handler. The hydraulic nose wheel steering can sling a tow bar with sufficient force to cause serious injury to ground handling personnel."

(7) Descriptions in the manual should not be overloaded, but should be presented simply and sequentially. An example of an overloaded description is as follows: "A CSD per engine drives the AC generator at a constant speed of 8,000 RPM regardless of the speed of the engine or the load on the generator." The following is an example of a clearer, more concise description: "A CSD is mounted between each engine and generator. The CSD holds the generator speed at a constant 8,000 RPM."

(8) Long sentences should be avoided in the manual. The following example consists of subject matter put into a long sentence which makes it difficult to understand: "During gear retraction, the door operating bar located on the landing gear leg contacts and turns the latch, withdrawing the roller from the slot as a second roller entraps the door operating bar." The following example consists of the same subject matter used in the previous example, however, when it is broken down into shorter sentences, it is easier to understand: "During landing gear retraction, the door operating bar on the landing gear leg is pressed against the door latch. The latch turns, freeing the door roller. The roller moves out of the slot. A second roller then traps and holds the door operating bar."

7. ADEQUACY OF PROCEDURES

7.1.1 The following general guidance is provided for inspectors to use when evaluating procedures in any type of manual:

7.1.2 Objective. The objective of a procedure must be stated clearly unless it is so commonly understood that a statement of the objective is not necessary.

7.1.3 Logical Sequence. Procedures are to flow in a logical step-by-step sequence. The most effective procedures are usually simple and each contains only the information necessary for accomplishing that procedure. Preferably procedures should be described in a sequential step-by-step format rather than a narrative format.

7.1.4 General Considerations.

(1) A procedure must be an acceptable method for accomplishing an intended objective.

(2) The individual responsible for each step of a procedure must be clearly identified.

(3) The acceptable standards of performance for a procedure are to be stated if those standards are not commonly understood or clearly obvious.

(4) Since a variety of personnel with differing degrees of expertise are involved in procedures, adequate information concerning the accomplishment of a procedure must be provided for the least experienced individual. A procedure may be described very briefly and concisely when the user is capable of achieving the objective without extensive direction or detail. When the user has limited training or experience, however, a procedure must be described in enough detail for the user to correctly accomplish it. When the user has limited access to other sources of information and guidance while performing a procedure, enough detail should be provided to make the user independent of other sources of information.

(5) When a form, checklist, or tool is necessary to accomplish a procedure, the location of that item must be indicated in the procedure.

(6) Enough time should be available under normal circumstances for the user to accomplish a procedure. If sufficient time is not available to the user for accomplishing a procedure, either the procedure itself or the user's duties must be revised.

8. APPROVAL AND ACCEPTANCE OF MANUALS

8.1 GENERAL

8.1.1 This section contains direction and guidance for PMs or other qualified inspectors when approving or accepting an operator's manual system. This process is based on the general process for approval or acceptance

8.1.2 The Approval Process. The approval process for an operator's manual normally consists of phases one, through five of the general process. However, if the approval is not part of an initial certification, phase four (demonstration and inspection phase) may not be required.

8.1.3 The Acceptance Process. The acceptance process for a manual or manual section normally consists of phases one, two, and three of the general process. The operator must submit to the PM current copies of required manuals for AAC review. An operator's entire manual system must be reviewed during the document evaluation phase of initial certification. Once an operator is certified, the operator may revise, distribute, and use accepted material even though the PM has not completed a review of it. If after review, the PM determines that portions of the manuals or checklists are unacceptable, the operator must revise the unacceptable portions after notification by the PM.

8.1.4 Evaluation of Manuals for AAC Acceptance or Approval. An operator may develop and publish in its manual any policy, method, procedure, or checklist that the operator finds necessary for the type of operations conducted. These policies, methods, procedures, and checklists, however, must comply with the CV-CARs and be consistent with safe operating practices. PMs should encourage operators to be innovative and progressive in developing such policies, methods, procedures, and checklists. The PM's role in the review process is to provide an independent and objective evaluation of the operator's manual material. The PM must ensure that the operator's material complies with the CV-CARs, is consistent with safe operating practices, and is based on sound rationale or demonstrated effectiveness.

8.1.5 Discrepancies. When a PM finds a discrepancy in an operator's existing manual material, the PM shall take action to have that discrepancy resolved. Usually such discrepancies can be

resolved through informal discussions. When informal discussion cannot resolve the discrepancy, however, the PM is required to formally withdraw AAC approval or acceptance from the operator.

8.2   ESTABLISHING A FRAMEWORK FOR REVIEW

8.2.1 Methods for Manual Organisation. During the Pre-application phase (Phase 1), the PM should inform the operator that there are various methods that can be used to organise and format manuals, or manual sections requiring AAC approval/acceptance. The PM may inform the operator of the content of the following subparagraphs, which describe at least four possible methods that an operator may use:

(1) Limited Content. An operator may choose to limit the content of the manual solely to approved material. When this method is used, the entire manual must be approved and the operator may not revise the manual without additional review by the PM. While this method facilitates AAC review and acceptance, the manual may be difficult to use because the intended user may have to frequently switch back and forth between the approved manual and other manuals containing accepted material. When the operator chooses this method, PMs must ensure that the List of Effective Pages (LEPs) contain a AAC signature space conveying approval.

(2) Grouping Material. An operator may choose to group the AAC approved material in specified sections of the manual and place accepted material in the remaining sections. With this method, the PM must ensure that a header or footer is on each page of the approved sections indicating that the material on that page is AAC approved. The operator may submit the approved and accepted sections to the PM as separate packages.

(3) Interspersed Material. An operator may choose to intersperse AAC approved material and accepted material throughout the manual. When an operator chooses this method, the PM must ensure that the operator has clearly identified approved material each time it appears in the manual. This method of organisation allows for efficient manual use, but makes the operator's publication process and the approval process difficult.

(4) "Approval Document". The operator may choose to place material in an "approval document" solely for the purpose of obtaining AAC approval of that material. An approval document is a document and therefore may not be used as a manual. After the document has been approved, the operator must develop user manuals, which incorporate the approved information from the document along with detailed, guidance and supplementary information. When this method is used, the user manuals are treated as "accepted" material and do not have to be individually approved. The PM must, however, review the user manuals to ensure that the information in them is consistent with the approval document. When using this method, the operator may revise the information in user manuals without prior AAC approval, provided the revision is consistent with, and does not conflict with, the information in the approval document. If the operator or the PM finds it necessary for the approval document to be revised, the operator must submit the proposed revision for review and approval. A revision to an approval document must be approved before the operator can incorporate the changed information into the user manuals. When an operator uses this method for submitting manual or checklist material for AAC approval, PMs must ensure that the operator has stated on the first page of the user manuals that the manual contains AAC approved material. The manuals or checklists provided to the user, however, do not have to be specifically identified as being AAC approved ones.

8.2.2 Submission of Material. During the Pre-application phase, the PM should advise the operator on how to submit the documents, manuals, checklists and subsequent revisions for approval or acceptance.

(1) AAC Approval Submission. For material that requires AAC approval, the PM should advise the operator to submit the following:

(a) Two copies of the document, manual, manual section, or revision to be approved: or

(b) One copy of the document, manual, manual section, or revision, and two copies of the page control sheets for the material (the page control sheets, must show an appropriate revision number or original page number for each page, and the effective date of each page)

(c) A copy of any supporting documentation or analysis

(2) AAC Acceptance Submission. For material that is to be evaluated for acceptance by the AAC, the PM should advise the operator to submit the following:

(a) A copy of the manual, manual section, or revision to be reviewed.

(b) A copy of the page control sheets for the material to be reviewed when appropriate.

(3) The PM will perform a cursory review of submissions in phase 1. This review is intended to ensure that the applicant's submission is clear and contains all required documentation. This review is performed before the in-depth review.

8.3 PHASE THREE: IN-DEPTH REVIEW

8.3.1 A detailed analysis of the operator's submission is performed during the document evaluation phase. During this phase, a qualified inspector must review the operator's submission in detail to determine that the submission is complete and technically correct. The time to complete phase three depends on the scope and complexity of the submission. During the cursory review, the PM should determine how long the in-depth review would take. The PM shall give the operator an estimate of the time it should take to complete the review process at the formal application meeting.

8.3.2 The review and analysis should confirm that the operator's submission conforms to, or is consistent with, the following:

(1) Cabo Verde Civil Aviation Regulations (CV-CARs).

(2) Criteria and guidance in this Circular.

(3) The operator's Operations specifications.

(4) Criteria and guidance in TC 30-001 Certification of an Air Operator.

(5) Applicable maintenance manuals, manufacturer's service bulletins, and airworthiness directives.

(6) Safe operating procedures.

NOTE: The direction and guidance in this section for reviewing procedures and checklists have been developed after consultation with knowledgeable and experienced personnel in the air transportation industry and aircraft manufacturers. The information presented is considered to be the best guidance currently available on the topic. PMs should realise, however, that circumstances vary widely. The best set of procedures for one circumstance may not work well in another circumstance. Two recommendations may be in conflict. In such cases, the appropriate resolution must be achieved through compromise. For example, it may be more important for an operator's checklist and procedures design policies to be internally consistent than for an individual procedure to be designed in a specific way.

8.3.3   If this is not initial certification the PM should thoroughly consider the operator's experience and history when evaluating procedures. When an operator has a history of successful operations, the PM should normally approve submissions consistent with the operator's existing procedures.

8.3.4   If this approval is for initial certification the PM will require verification tests of some procedures before grating approval.

(1)   These verification tests may be conducted in either phase 3 or 4 of the certification process. Operators may submit evidence that a qualified party (the manufacture or another operator) has already conducted a validation of a procedure. When such evidence is available, the PM should not require another validation unless the operator's circumstances are significantly different from the original test.

8.4   GRANTING AAC APPROVAL

8.4.1   The PM grants AAC approval to the document, manuals, manual sections or revisions. During this phase the PM must formally notify the operator of the approval and also complete a specific record of the approval. For manuals and manual sections, which are not required to have AAC approval, written notification of acceptance is at the option of the PM.

8.4.2   Notification of Approval. When the PM decides to approve a document, manual, manual section, or checklist, the following procedures apply:

(1)   For documents, manuals, manual sections or revisions that contains page control sheets, the PM shall annotate both copies of the page control sheets with the phrase "AAC Approved." Under the words "AAC Approved," PMs shall enter the effective date of approval and sign both copies. The operator may pre-print the words "AAC Approved" and blank lines for the date and signature on the page control sheets or the PM may use a stamp to add the approval annotation on each sheet.

(2)   For manuals, manual sections, or checklists that do not contain page control sheets, the approval annotation must be placed by the PM on each page of the material. In this case the approval annotation must be made on two copies of the material. The annotation shall be the same as discussed above. This procedure should be used only for very short manuals, manual sections, or checklists (usually fewer than 5 pages) or when the use of page control sheets is not practical or serve little purpose.

(3)   When page control sheets are used, the PM shall return one copy of the annotated page control sheets to the operator. In the remaining cases one copy of the approved material must be returned to the operator with a notification letter stating that the material is approved. The letter should also contain a statement advising the operator to maintain, for its records, the signed page control sheets or the material with the approval annotation.

The PM shall retain the second copy of the signed page control sheets, or the annotated material, in the district office files.

8.4.3 Notification of Disapproval. The co-ordination, revision, and editing activities that take place throughout all phases of the process should eventually result in approved products. Under certain circumstances, however, it may be appropriate for the PM to terminate the process. For example, the operator may not take any action on the material for 30 days. To terminate the approval process, the PM shall return the entire submission to the operator with a letter that states that the AAC is unable to grant approval, along with the reasons why it cannot be granted.

8.4.4 AAC records. The PM shall maintain a record of approval for each operator-submitted document, manual, manual section, and checklist. Records of approval to revisions of this material must also be maintained. The records should consist of page control sheets, notification letters, and any other related correspondence. While superseded portions of documents, manuals, or checklists do not have to be retained, PMs may retain this type of material if they determine that it is appropriate. The PM should include with the material in the operator's file a brief memorandum containing the reasons for retaining the material.

João dos Reis Monteiro
President of the Board