



# TTCAA Advisory Circular

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**Subject: GUIDANCE ON DEVELOPMENT OF AN OPERATIONS MANUAL FOR AIR NAVIGATION SERVICES**

**TTCAA Advisory Circular TAC-ANS001A**

**Date: 07/05/14**

## PURPOSE

1. (1) The purpose of this TTCAA Advisory Circular (TAC) is to provide guidance on the development of an operations manual and other aviation documents used by an air navigation services provider in the provision of air navigation services.

(2) TAC-ANS001A replaces and supercedes TAC-ANS001 which is now cancelled and should be destroyed.

## OVERVIEW OF ANS OPERATIONS MANUAL REQUIREMENTS

### *General*

2. (1) TTCAR No.15 contains the standards for the provision of Air Navigation Services (ANS). The ANS division has the responsibility within the TTCAA for the provision of Air Navigation Services on behalf of the TTCAA. ANS operations manuals should be developed within the ANS division to guide personnel in the conduct of their duties for each functional area within the division. In this context “ANS includes information, directions and other facilities furnished, issued or provided in connection with the navigation or movement of aircraft, and the control of movement of vehicles in any part of an aerodrome used for the navigation of aircraft”. There should be proper coordination between functional areas in the development of the operations manuals to ensure standardization. The following are typical manuals that might be developed for the ANS division to perform its functions:

- (a) Air Traffic Services operations manual;
- (b) Aeronautical Information Services operations manual;
- (c) Telecommunications and Electronics operations manual.

(2) The ANS operations manual should contain all the pertinent information concerning the provision of air navigation services including details of the operating site, facilities, aerodromes involved, services, equipment, operating procedures, organization and management including the safety management system and any other information needed by ANS personnel to comply with TTCAR No.15. In particular, the manual must address compliance with the provisions of TTCAR NO.15 and any limitations imposed by the TTCAA (see paragraph 3). The information presented in the ANS operations manual should demonstrate that the ANS division conforms to the required standards and practices and that there are no apparent shortcomings which would adversely affect safety of aircraft operations. The operations manual is a reference document showing how the required standards are to be achieved and maintained.

(3) The ANS operations manual is the source document for obtaining a Letter of Approval for the conduct of ANS operations by the ANS division. It should describe all operational procedures and how they are to be managed, including all information and instructions as may be necessary to enable the ANS operating staff to perform their duties. This must include information and instructions on the matters specified in TTCAR No.15 but should not be simply a statement of the requirements, but be a medium for promulgating all procedures and information relating to the safe management of air navigation services.

(4) The principal objective of an ANS operations manual should be to show how the ANS division will discharge its safety responsibilities. The manual will set out the policy and expected standards of performance and the procedures by which they will be achieved, describing what is to be done, how it is to be done, when it is to be done and by whom it is to be done. It is the means by which all operating staff are fully informed about their duties and responsibilities with regard to safety. It should describe the ANS services and facilities, all operating procedures, and any restrictions involved in the provision of the required services.

(5) An efficient management structure and a systematic approach to ANS operations is essential. The ANS operations manual should contain all the relevant information to describe this structure satisfactorily. Accountability for safety must start at the very top of any organization. One of the key elements in establishing safe working practices is for all staff to understand the safety aims of the organization, the chain of command, and their own responsibilities and accountabilities. As safety management principles are applied, the operations manual should be expanded to describe clearly how the safety of operations is to be managed at all times. There should never be any doubt to the user of the operations manual about who is responsible, who has the authority, who has the expertise and who actually carries out the tasks described in any section.

### ***Limitations***

3. The TTCAA may on occasions impose limitations on ANS Operations and these will be clearly stated on the Letter of Approval. The operations manual must contain all limitations imposed on ANS operations by the TTCAA.

### ***Clarification and Responsibility for Tasks***

4. (1) In each section of the operations manual, the following questions should be answered:

- (a) WHO is going to perform the task?
- (b) WHAT does the task consist of?
- (c) HOW is it to be performed?
- (d) WHEN should it be performed?

(2) WHO, WHAT, HOW, and WHEN are often closely associated, and most instructions will need to address all of them.

(3) **WHO.** The instructions in the ANS operations manual should be clear to staff who routinely perform the tasks described as well as to staff required to act when the usual chain of responsibility and authority is temporarily interrupted. The operations manual must explain what is required from a regulatory standpoint and clearly state who (functional position) is primarily responsible for carrying out each function. Since a person acting in the position might not normally perform (or directly oversee) a required task, the operations manual should provide specific instructions about critical aspects of the job, including whom to contact if problems arise.

(4) **WHAT and HOW.** The WHAT and HOW of operations manual instructions refer to the tasks assigned to various individuals or departments charged with achieving compliance with TTCAR No.15. Unless all personnel assigned to the task are fully familiar with the regulatory requirement, the operations

manual must provide guidance appropriate to the training and experience of the personnel. For example, an instruction in the operations manual to “provide position reports to operators in accordance with the TTCARs” is ambiguous unless the person to whom the instruction is directed has sufficient knowledge of the TTCARs. A more effective approach would be to have a procedural statement for giving effect to the requirement.

(5) **WHEN.** The timing of tasks will often be triggered by circumstances, such as local thunderstorms in the vicinity of an aerodrome, etc. The operations manual must clearly define the circumstances that trigger action. It must also address the frequency of tasks that are required on a regular basis.

## **FORM AND STRUCTURE OF THE MANUAL**

5. (1) An operations manual must-

- (a) Include instructions and information necessary for personnel to perform their duties and responsibilities with a high degree of safety;
- (b) Be easy to revise and contain a system which allows personnel to determine current revision status;
- (c) Have the date of the last revision on each page concerned;
- (e) Not be contrary to any applicable law or requirements of the TTCARs;
- (f) Include a reference where applicable, to the appropriate TTCAR.

(2) In addition, the manuals may be produced –

- (a) In a series of parts
- (b) As a series of volumes; or
- (c) As a single document.

(3) The ANS operations manual must be maintained in printed form. A simple format will make both the initial document and later revisions easier. The standard of printing, duplication and binding should allow the operations manual to be read without difficulty and ensure it remains intact and legible during normal use. Odd-sized or multicolor media and certain types of bindings (e.g., spiral or comb) can complicate the processes of reproduction, insertion, filing, and mailing. The following format is recommended for the ANS operations manual:

- (a) 8 ½ x 11 inch, loose-leaf paper;
- (b) Black-and-white printing, except where color is specifically required; and
- (c) Assembly in a three-ring binder.

### ***Amendment and Distribution of the ANS Operations Manual***

6. (1) Amendments to the operations manual will be needed either because the document requires to be brought up to date or in response to a request by the TTCAA. Any amendment or addition must be furnished to the TTCAA for approval before it comes into effect.

(2) Manuscript amendments are not acceptable. Changes or additions should always be the subject of an additional or replacement page on which the amended material is clearly identified.

(3) The EMANS is responsible for the accuracy of information in the ANS operations manual. He must, however, assign a person in his organization to be responsible for the maintenance of the ANS operations manual who must ensure that -

- (a) A record is kept of the persons who hold copies of the whole or part of the manual;
- (b) Amendments or information for the manual is distributed to persons who require such information.

(4) Each employee to whom the operations manual or part thereof is furnished must keep it current. Each employee must have access to appropriate operations manuals or parts of operations manuals when performing assigned duties.

## **ORGANIZATIONAL STRUCTURE AND FUNCTIONS**

### ***Organizational Chart***

7. The administrative section of the manual should include an organizational chart of the department or functional section within the ANS division showing –

- (a) How the department or section is inter-related with other departments or sections within the division and how the division is related within the organization;
- (b) The names and relevant qualifications, experience and positions of the key positions and supervisors within the division;
- (c) A statement of the duties and responsibilities of the supervisory position within the divisional structure; and
- (d) A statement showing how the division determines the number of operational staff required, including the number of operational supervisory staff.

## **FORMAT AND STYLE OF MANUALS**

8. (1) The manual will be subject to amendment in order to ensure that it is maintained up to date with current and accurate information. The manual must therefore –

- (a) Be in a form that is easy to revise;
  - (b) Contain a system which allows users to determine the current revision status;
  - (c) Have orderly and systematic numbering of pages and paragraphs to facilitate ease of reference;
  - (d) Show the date of the last revision on each page.
- (3) The following is a guide concerning format and style:
- (a) **Form.** All or part of a manual may be prepared and maintained in conventional paper format (book form) or in other forms, such as computer based storage with electronic image;
  - (b) **Foreword Page.** The first page of a user manual should be a foreword or preface page containing a brief statement of the manual's purpose and intended user. The foreword page should also contain a statement which emphasizes that the procedures and policies in the user manual are expected to be used by personnel for whom the manual was designed;
  - (c) **Revision Control.** Each manual should be easy to revise as follows:

- (i) Each manual should contain a revision control page or section from which the user can readily determine whether the manual is current;
  - (ii) The revision control page or section should preferably follow the foreword page but it can be organized in any logical manner;
  - (iii) The control date of the most recent revision of each individual page must appear on each page;
  - (iv) The manual should be supported by 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;
  - (v) 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;
  - (vi) Users should be able to easily determine whether they possess all current bulletins;
- (d) **Table of Contents.** Each manual should have a table of contents containing lists of major topics with their respective page numbers;
- (e) **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 circulars and to preambles of TTCARs, as these sources are advisory and not binding in nature. Service providers should use caution when adapting the text of advisory documents into their manuals. Advisory text may not translate into a directive context;
- (f) **Definitions.** Significant terms used in manuals should be defined. Any acronym or abbreviation not in common use should also be defined;
- (g) **Elements of Style.** Manuals and checklists should be composed in the style of general technical writing. This style should be clear, concise, and easy to understand. The following are some suggestions for accomplishing clarity in technical writing:
- (i) 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;"
  - (ii) 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;"
  - (iii) Service providers should standardize terminology whenever practical. Once a particular term has been used in a specific sense it should not be used again in another sense grade;
  - (iv) Terms which command actions should be clearly defined, such as "checked," "set," and "as required." Auxiliary verbs such as "may" and "should" are ambiguous and can create room for doubt; they indicate that discretion can be used when performing an act. They should therefore not be used when a definite action is commanded. Instead, verbs such as "shall" and "must" are preferable when an action is commanded, because they indicate a mandatory requirement;
  - (vi) To provide appropriate degrees of emphasis on specific points in the text, "cautions," "warnings," and "notes" should be in the service provider's manuals and checklists;
  - (ix) Long sentences should be avoided.

## ADEQUACY OF PROCEDURES

9. The following represents general guidance when formulating procedures for an operations manual:

- (a) **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;
- (b) **Logical Sequence.** Procedures should flow in a logical step by step sequence. The most effective procedures are usually simple and contain only the information necessary for accomplishing a particular procedure. Preferably procedures should be described in a sequential step by step format rather than a narrative format;
- (c) **General Considerations:**
  - (i) A procedure must be an acceptable method for accomplishing an intended objective;
  - (ii) The individual or unit responsible for each step of a procedure must be clearly identified;
  - (iii) The acceptable standards of performance for a procedure must be stated if those standards are not commonly understood or clearly obvious;
  - (iv) 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 sufficient 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, sufficient detail should be provided to make the user independent of other sources of information;
  - (v) When the use of a form or checklist is necessary to accomplish a procedure, the location of that item must be indicated in the procedure;
  - (vi) When the use of a tool is necessary to accomplish a procedure, the location of that tool must be indicated in the procedure accompanied by directives and safety procedures associated with its use;
  - (vii) When the use of specific equipment is necessary to accomplish a procedure (for example, use of binoculars in the tower, etc), the manual must contain directives and safety procedures associated with its use;
  - (vi) 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.

## REVISING THE OPERATIONS MANUAL

10. The operations manual must be a controlled document and, therefore, the amendment process must similarly be controlled.

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## APPENDIX

### CONTENTS OF AIR NAVIGATION SERVICE PROVIDER'S OPERATIONS MANUAL

#### *Air Traffic Services*

1. The general contents of an operations manual should show how and where an ATS provider provides, or proposes to provide, air traffic services. The operations manual must include:
  - (a) A statement setting out the Air Traffic Services, and the related functions, that the ANS division is required to perform under TTCAR No.15;
  - (b) A table of contents based on the items in the manual, indicating the page number on which each item begins;
  - (c) A description of the provider's organizational structure and a statement setting out the functions that the provider performs, or proposes to perform under TTCAR No.15;
  - (d) Method of compliance with applicable standards in TTCAR No. 15 (use a compliance checklist template as the basis);
  - (e) Maps of the airspace within which each service is to be provided;
  - (f) A description of the chain of command established, or proposed to be established, by the provider and a statement of the duties and responsibilities of any supervisory positions within the organizational structure;
  - (g) A statement showing how the provider determines the number of operational staff required including the number of operational supervisory staff;
  - (h) A list of the air traffic services that the provider provides, or proposes to provide;
  - (i) A statement for each air traffic service, showing the hours of operation of the service;
  - (j) A statement, for each air traffic service, that identifies the particular airspace within which the service is provided, or proposed to be provided;
  - (k) A statement, for each air traffic service, that identifies the location from where the service is provided, or proposed to be provided;
  - (l) If the provider provides, or proposes to provide, air traffic service for a controlled aerodrome:
    - (i) A description of the manoeuvring area of the aerodrome; and
    - (ii) Copy of the parts of the aerodrome emergency plan, set out in the aerodrome operator's ANS operations manual that are relevant to the provision of the service; and
    - (iii) A copy of the procedures set out in the aerodrome operator's ANS operations manual for preventing the unauthorized entry of persons or things onto the manoeuvring area of the aerodrome; and
    - (iv) A copy of the procedures set out in the aerodrome operator's manual for the control of surface vehicles operating on or in the vicinity of the manoeuvring area;
  - (m) A statement of the responsibilities and functions for each operating position;
  - (n) A description of the arrangements made or proposed to be made by the provider to ensure that it has, and will continue to receive, on a daily basis, the information necessary for providing the service;

- (m) A description of the arrangements made or proposed to be made by the provider to ensure that it has, and will continue to be able to provide, information in connection with its air traffic services to another person whose functions reasonably require that information (includes SAR alerting);
- (n) A description of the provider's document and record keeping system;
- (o) A copy of any agreement entered into by the provider in relation to the provision of any of the air traffic services;
- (p) A copy of the document that sets out the provider's safety management system;
- (q) A copy of the provider's contingency plan;
- (r) A copy of the provider's security programme;
- (s) A description of the processes and documentation used to present to staff the relevant standards, rules and procedures contained in ICAO Annexes 10, TTCAR No.15, ICAO PANS-ATM, ICAO Regional Supplementary Procedures, and any of the provider's sites specific instructions for the provision of air traffic services;
- (t) A description of the processes and documentation used to provide operational instructions to staff;
- (u) A description of the procedures to be followed to ensure all operational staff are familiar with any operational changes that have been issued since they last performed operational duties;
- (v) A description of the provider's training and checking program;
- (w) A description of the procedures to be used in commissioning new facilities, equipment and services;
- (x) The procedures to be followed for revising the operations manual.
- (y) A description of the safety management including the following elements:
  - (i) The ATS provider's safety policy and objectives;
  - (ii) The organizational and staff responsibilities for safety matters;
  - (iii) The establishment of the levels of safety that apply to the services, and the monitoring of the levels of safety achieved;
  - (iv) The process for internal safety reviews;
  - (v) The process for the internal reporting and management of safety concerns and incidents;
  - (vi) The process for the identification, assessment, control and mitigation of existing and potential safety hazards in service provision;
  - (vii) The definition of the interface arrangements, for safety management and related responsibilities and procedures, with internal functional groups and with aerodrome operators and support service providers;
  - (viii) The processes for the management of changes to existing services.

**Note:** Guidelines for the development of a safety management system are provided in TAC-044.



## ***Aeronautical Information Services***

2. The general contents of an operations manual for Aeronautical Information Services Department must include-

- (a) A description of the organizational structure and a statement setting out the functions performed or proposed to be performed by the department under TTCAR No.15 including -
  - (i) The names, relevant qualifications, relevant experience and positions of the key personnel;
  - (ii) The number of trained and qualified persons who will provide each service;
- (b) Method of compliance with TTCAR No. 15 Part III and IV and Schedules II and III;
- (c) Procedures for ensuring that the provision, supply quality assurance, application and usage of aeronautical information services are in accordance with mutual agreement with signatory States to the air navigation regional agreement;
- (d) Procedures for ensuring that services provided are adequate, of the required quality and timely;
- (e) Procedures to ensure timely receipt of required information and aeronautical data from other sources;
- (f) Description of AIRAC system and its use;
- (g) Description of Quality System including procedures, processes and resources;
- (h) System for ensuring that quality requirements related to publication resolution and data integrity are in accordance with the required standards;
- (i) Procedures for the acquisition or development of charts;
- (j) Coordination and control arrangements with the cartographic chart provider;
- (k) Terms of reference of cartographic chart provider;
- (l) System for ensuring that aeronautical data quality requirements related to data integrity and charting resolution are in accordance with standards;
- (m) System to ensure that information on charts is adequate, of required quality and current;
- (n) Procedures for ensuring that aeronautical charts are readily available to all users.
- (o) Procedures for ensuring that all applicable charts are published in the AIP.

## ***Telecommunications And Electronics***

3. The general contents of an operations manual for Telecommunications and Electronics must include -

- (a) A description of the organizational structure and a statement setting out the functions performed or proposed to be performed by the department under TTCAR No.15 including -
  - (iii) The names, relevant qualifications, relevant experience and positions of the key personnel;
  - (iv) The number of technicians who will provide each service;
- (b) Each standard that relates to the design, installation, testing, operation or maintenance of the service provider's services and facilities, and explain how each standard is met.
- (c) The functional specification of each of the Division's telecommunication or radio navigation services; and the values and method used to calculate the values or characteristics for each of the following that apply to the service-
  - (i) Availability;

- (ii) Reliability;
  - (iii) Accuracy;
  - (iv) Integrity.
- (d) For a radio navigation service, the integrity values or characteristics for each kind of navigation aid facility that forms part of the service.
  - (e) The kind and location of each facility;
  - (f) The technical specification of each kind of facility;
  - (g) How each facility interconnects with any other facility or service;
  - (h) The procedure that records the way in which each telecommunication or radio navigation service and each related facility is configured at any time;
  - (i) The procedure used to design each facility and each item of equipment so that it provides a safe service;
  - (j) The procedure that ensures that the design of, or changes to, a service or facility are authorized by a person who is qualified and competent to do so;
  - (k) The method to be used to specify any changes to a service or facility, and to design, test and implement those changes;
  - (l) The procedure to be used to commission a new service or facility;
  - (m) The system to be used to maintain a record of the operational performance of a service;
  - (n) The procedure to be used to monitor the performance of each service and facility, and to compare the results with the appropriate technical specification;
  - (o) The procedure to be used if a service fails or a facility fault occurs, including the way in which the failure or fault is to be reported and rectified;
  - (p) The procedure to be used to:-
    - (i) Report and rectify any defects found in equipment during operation and maintenance of the facility;
    - (ii) Change software to adapt to any changes to the configuration of hardware;
    - (iii) Change the design of equipment or facilities to adapt to any change to the functional or technical specification.
  - (q) The procedures used for maintenance, including the procedures used for repair;
  - (r) A description of the system used to schedule maintenance;
  - (s) The interval between performance inspections and the method used to determine the interval;
  - (t) A copy of the operating and maintenance instructions for the facility;
  - (u) An analysis of the workload of technicians and key personnel that takes into account their numbers and their qualifications;
  - (v) If one or more flight inspections are necessary:
    - (i) The standards and procedures used for flight inspections;
    - (ii) The interval between flight inspections;
    - (iii) The identity of the agency, organization or person who will conduct flight inspections;
    - (iv) Details of the agreement between the division and the agency, organization or person who will conduct flight inspection.

- (w) Details of the safety management system
- (x) Description of the procedures to maintain and calibrate test equipment.
- (y) Description of the procedure to be used if a telecommunication or radio navigation service is interrupted including:-
  - (i) Information on acceptable recovery time for each service;
  - (ii) Description of the procedure to be used if the acceptable recovery time of a service is exceeded; and
  - (iii) Description of the method to provide an alternative service if a service is interrupted
- (z) Description of the system by which documents are stored and retrieved.
- (aa) A description of the security programme.
- (bb) Description of the method by which changes are made to the operation and maintenance procedures.

### **INFORMATION NECESSARY FOR SERVICE PROVISION**

#### ***Input Data***

4. (1) The operations manual should include a description of the arrangements made or proposed to be made to ensure that the division will continue to receive the information necessary for providing each service including:

- (a) Information that is both internally and externally sourced;
- (b) The information requirement, its use in service provision, its source, and the means by which it is transferred, received and displayed;
- (c) The integrity levels of the data consistent with its operational critically.

(2) Data that is sourced from another State or service provider, or is in electronic form from a service provider who is in compliance with the relevant ICAO annexes and guidance manuals may be considered adequate.

#### ***Examples Of Data Sources***

5. Examples of data sources normally required are:

- (a) AIS;
- (b) AFTN;
- (c) NOTAM;
- (d) Flight notification;
- (e) Meteorological information;
- (f) Meteorological warning service;
- (g) Voice coordination with adjacent ATS providers;
- (h) Information on aerodrome condition and the operational status of facilities and navigation aids;

- (i) Aerodrome works and administration coordination;
- (j) ARFFS coordination;
- (k) Local and remote radar data;
- (l) Information on unmanned free balloons;
- (m) Information concerning volcanic activity;
- (n) Information concerning radioactive material and toxic chemical clouds.

### ***Output Data***

6. The operations manual should include a description of the arrangements made or proposed to be made to ensure that the division can, and will continue to be able to provide the information in relation to its air traffic services to other organizations whose functions reasonably require that information (e.g. other ATS units and centres).

- (a) The description should nominate the information requirement and recipient, and the means of its transfer;
- (b) The integrity levels of the data should also be defined, and be consistent with the division's operational criticality;
- (c) Examples of data recipients could normally be:
  - (i) AIS;
  - (ii) Adjacent ATS providers;
  - (iii) Aerodrome administration;
  - (iv) ARFFS;
  - (v) Other Government Agencies, MET, SAR, etc.

### ***Record Keeping System***

7. (1) The operations manual must include the requirement for a record keeping system that covers identification, collection, indexing, storage, security, maintenance, access and disposal of records necessary for the provision of air navigation services.

(2) The records systems must provide an accurate chronicle of ATS activities for the purpose of reconstruction of events for air safety investigation or for system safety analysis within the Safety Management System.

(3) The type of records to be kept, and the time of retention, is specified in TTCAR No. 15.

(4) Inspectors should ensure that the applicant has a system in place that will cover all the record types required, including operational voice records.

### ***Agreements With Other Organizations/Agencies***

8. An operations manual must contain a copy of any agreement with other bodies entered into by the ANS division or a TTCAA in relation to the provision of any of the air traffic services. The following agreements will normally be required:

- (a) An agreement with a Chart provider for the provision of ICAO charts;

- (b) An agreement with the meteorological services provider;
- (b) An agreement with an aerodrome operator in the situation where the ATS is providing an air traffic service at a controlled aerodrome. The ANS division must have an agreement with the aerodrome operator covering the arrangements for controlling aircraft, vehicles, and people on the maneuvering area of the aerodrome. Where the facilities necessary for ATS provision, such as a control tower, are the property of the aerodrome, the use of the facilities by the ATS provider should also be covered by the agreement;
- (d) An agreement with the PANS-OPS provider for checking and calibration of nav aids under the jurisdiction of the ANS division.

### ***Safety Management System (All Sections)***

**9.** (1) The Safety Management System (SMS) described in the operations manual must comply with all the standards encompassed in TTCAR No. 15:4 and 5 and Schedule 1, Part A.

(2) The SMS is an important component of all sections of the ANS operations. It defines the policies, procedures and practices for managing the safety in the provision of ATS, and managing any changes in the provision.

(3) The SMS should include the processes proposed for management review of its SMS, and the implementation of corrective action as necessary.

### ***Security Programme (All Sections)***

**10.** (1) An operations manual must include details in its security programme aimed at minimizing the risk of unauthorized access, entry by animals or malicious damage to a service or facilities. The security programme is to be in accordance with the standards in TTCAR No. 8 and TTCAR No. 12.

(2) Where an aerodrome owner controls the security of an ATS facility, the operations manual should include that as an element of the security programme.

(3) Off-site facilities e.g. (NDB on the highway etc).

### ***Disseminating Information To Staff***

**11.** The operations manual must contain a description of the procedures and documentation to be adopted and used by the ANS division to provide personnel with information on:

- (a) The relevant standards for service provision, including the ICAO standards in TTCAR No. 15 Schedule 1;
- (b) Operational instructions to staff; and
- (c) Operational changes that are to be conveyed to personnel.

### ***Training and Checking Programme***

**12.** (1) The operations manual must detail a training and checking programme and provide assurance that any individual performing any functions in any of the ANS is competent to perform that function.

(2) It is important that the proposed training and checking programme cover all elements and requirements of TTCAR No. 1 Part VI pertinent to certification where required.