



GOVERNMENT OF INDIA

O/o The Directorate General of Civil Aviation

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GUIDELINES FOR THE
APPROVAL OF
AIR TRAFFIC SERVICES (ATS)
TRAINING ORGANIZATION
[ATO]

DIRECTORATE OF AIRSPACE &
AIR NAVIGATION SERVICES STANDARDS

EDITION - 2016

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FOREWORD

The scope of this document deals with the approval of training organizations which provide training to Air Traffic services personnel for the purpose of acquiring skill, knowledge and competency to obtain rating for ATS unit.

As stipulated in Rule- 114 of the Aircraft Rule 1937

“The Director- General, on being satisfy, may approve a training organization for conducting an approved training course for students to enable them to attain the level of competency required for obtaining a licence or rating specified in rule 95.”

In pursuant to the above rule, the guidelines for approval of ATO (ATS Training Organization) has been developed & approved by DGCA, India to comply with the provisions of ICAO Annexes & documents for establishing the training standards.

Airports Authority of India enacted through an Act of parliament accordingly, Airports Authority of India (AAI) has been entrusted with the duty and responsibility to provide Air Traffic Services within territory of India and also within the FIR boundary. To achieve the objective AAI provide training to the ATC personnel, on the basis of competency based training methodology. Thereafter these personnel complete the On-the Job training in the ATS unit and are assessed for the proficiency and competency to provide services for the operational ATS Unit.

The Air Traffic Controllers provides the Air Traffic Services in accordance with the provisions stipulated in the Annex 1 of ICAO and are completing the induction training at Civil Aviation Training College, Allahabad. This training establishment has been in existence since 1948 and was part of Civil Aviation Department till the formation of National Airports Authority enacted through an Act of Parliament in the year 1985 and came into force from 1st June 1986. Thereafter National Airports Authority and International Airports Authority of India merged and the AAI, Act 1994 came into force w.e.f. 1st April 1995. Civil Aviation Training College, Allahabad is under the AAI and is an Air Traffic Services training organization for the training of Air Traffic Controllers.

These guidelines prescribe the standards that detail the process & procedures for the approval of ATO in India along with the approval of ATS training courses & ongoing regulatory oversight by DGCA. ATS Training Organization personnel shall be familiar with the provisions of these guidelines to discharge effectively the functions of organization.

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(Approved vide F. No.AV.27052/01/2016-ANSS Dated)

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GLOSSARY OF TERMS AND ABBREVIATION/ACRONYMS

AMO	Approved maintenance organization
ATO	ATS training organization
KSA	Knowledge, skill(s) and attitude(s)
QA	Quality assurance
QS	Quality system
RA	Risk assessment
RSOO	Regional safety oversight organization
SMM	Safety management manual
SMS	Safety management system

DRAFT

DEFINITIONS

When the following terms are used in this manual, they have the following meanings:

Accountable Manager. The individual who has corporate authority for ensuring that all training commitments can be financed and carried out to the standard required by the Directorate General of Civil Aviation (DGCA) and any additional requirements defined by the ATS training organization (ATO).

Note. — The Accountable Manager is normally the head of training and may delegate to another person within the organization the day-to-day management functions but not the overall approval management responsibility. In complex corporate structures, the Accountable Manager may be responsible for several different ATOs, each with its own head of training

Approved training. Training conducted under special curricula and supervision approved by DGCA.

ATS Training Organization (ATO) -Training organization duly approved by DGCA for the purpose of providing training in Air Traffic services courses to Student Air Traffic Controller leading to rating and licencing of an Air Traffic Controller

ATM equipment approved for operational use;

All engineering systems, facilities or devices that have been operationally released to be used either by airspace users (e.g. ground navigation facilities) directly, or are used in the provision of operational air traffic management services.

NOTE: These comprise the systems, facilities and devices operated or supervised by the Operating Organisation and serving the purpose of air navigation, regardless of whether the products used to fulfil the tasks involved in air traffic management have been specifically developed to air traffic management requirements.

Chief Instructor. The manager responsible for the day-to-day delivery of training services that consistently meet regulatory requirements and organizational objectives.

Competency-based training and assessment. Training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

Note. — This training process is derived from a job and task analysis and is focused on the achievement of well-defined benchmarked standards of performance as opposed to training programmes simply focused upon the acquisition of prescribed levels of experience.

Competency element. An action that constitutes a task that has a triggering event and a terminating event that clearly defines its limits, and an observable outcome.

Competency unit. A discrete function consisting of a number of competency elements.

Compliance. The state of meeting those requirements mandated through regulation.

Conformity. The state of meeting established criteria, standards, specifications and desired outcomes.

Evaluator. A generic term used in the context of an ATO to describe a person who is qualified, authorized and assigned to carry out specific assessment, checking, testing and/or auditing duties to determine that all required standards of performance have been satisfactorily achieved.

Note 1. — These standards of performance may be obligated as an end-state objective or be required to be met on a continuous basis. In either case, the evaluator is responsible for making a determination of the actual standards attained and any recommendations for immediate remediation.

Note 2. — Evaluator functions may be assigned to suitable ATO instructors for the continuous evaluation of students in a competency-based training programme and for progress checks at the end of a phase of training. Evaluator functions, associated with the role of an examiner may also be assigned to ATO instructors for the final examination at the completion of the training programme, process approved by the DGCA.

Engineering and technical personnel undertaking operational safety related tasks; Personnel who operate and maintain ATM equipment approved for operational use.

NOTE: this definition is not intended to cover other equipment related functions, such as design, testing, commissioning and institutional training.

Finding. A finding is a conclusion by the DGCA's audit personnel that demonstrates either non-compliance with a regulation or non-conformity with a specific standard.

Hazard. A condition or an object with the potential to cause injuries to personnel, damage to equipment or structures, loss of material, or reduction of ability to perform a prescribed function.

Head of training. The individual responsible for the organization's activities, policies, practices and procedures while ensuring the continued maintenance of the training organization's approval status.

Note. — The head of training is normally the Accountable Manager; however, in complex corporate structures it may be possible that the Accountable Manager is located at company headquarters and oversees the operation of several different ATOs.

Instructional systems design (ISD). A formal process for designing training which includes analysis, design and production, and evaluation.

Knowledge, skill and attitude (KSA). The three performance domains that are under constant evaluation and form the basis for the performance criteria statements.

Performance criteria. Simple, evaluative statements on the required outcome of the competency element and a description of the criteria used to judge whether the required level of performance has been achieved.

Policy. A document containing the organization's position or stance regarding a specific issue.

Process. A set of interrelated or interactive activities which transform inputs into outputs.

On-the-Job Training (OJT); The integration in practice of previously acquired job related routines and skills under the supervision of a qualified On-the-Job instructor in a live traffic situation.

Operational Training; Training given in the operational work situation and following institutional training. It comprises transition training, pre-OJT and OJT training.

Quality. The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

Quality assurance (QA). All the planned and systematic actions necessary to provide adequate confidence that all training activities satisfy given standards and requirements, including the ones specified by the approved training organization in relevant manuals.

Quality audit. A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Quality inspection. That part of quality management involving quality control. In other words, inspections accomplished to review a document or observe events/actions, etc., in order to verify whether established operational procedures and requirements are being fulfilled during the accomplishment of the event or action, and whether the required standard is being achieved. Note.— Student stage checks and skill tests are quality inspections, and they are also quality control functions.

Quality Assurance manager. The manager responsible for the quality monitoring function and for requesting remedial action.

Note.— The Quality Assurance manager is responsible directly to the head of training. In the event the ATO's head of training is not the Accountable Manager, reporting mechanisms should be instituted to ensure that the Accountable Manager is aware of all issues impacting the quality of the training services being provided by the affected ATO.

Quality management. A management approach focused on the means to achieve product or service quality objectives through the use of its four key components: quality planning; quality control; quality assurance; and quality improvement.

Note.— This definition is specific to this manual.

Quality manual. The document containing the relevant information pertaining to the approved training organization's quality system.

Quality of training. The outcome of the training that meets stated or implied needs within the framework of defined standards.

Quality system (QS). The aggregate of all the organization's activities, plans, policies, processes, procedures, resources, incentives and infrastructure working in unison towards a total quality management approach. It requires an organizational construct complete with

documented policies, processes, procedures and resources that underpins a commitment by all employees to achieve excellence in product and service delivery through the implementation of best practices in quality management.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Note 1.— A safety management system, consisting of documented policies, processes and procedures designed to manage risks, integrates operations and technical systems with the management of financial and human resources to ensure aviation safety and the safety of the public.

Note 2.— The requirement to adopt SMS practices is restricted to only those entities whose activities directly impact upon the safe operation of aircraft.

Safety manager. The manager responsible for providing guidance and direction for the planning, implementation and operation of the organization's safety management system.

Note.— The safety manager is directly responsible to the head of training. In the event that the ATO's head of training is not the Accountable Manager, reporting mechanisms should be instituted to ensure that the Accountable Manager is aware of all issues impacting the safety programme of the affected ATO.

Testing. The comparison of the knowledge about a task, or the skill or the ability to perform a task against an established set of criteria to determine that the knowledge, skill or ability observed meets or exceeds, or does not meet, those criteria.

Unit Training Plan; A plan required by the State, created by an operational ATC unit and approved by the Designated Authority, to provide structured objective based training so that personnel may achieve and maintain validation standard thus satisfying the requirements of the unit competence scheme.

CHAPTER 1

ATS TRAINING ORGANIZATION (ATO) – GENERAL

1.1 CHARACTERISTICS OF AN ATO

ATO is an organization providing training which may include Initial training, Rating Training, continuation training, specialized training etc. to ATS personnel. An ATO is to be approved by the DGCA in pursuant to Rule- 114 of The Aircraft Rules 1937 to deliver specific approved training programmes to ATS personnel. As a prerequisite to the approval process this organization will have demonstrated that it is staffed, equipped, financially resourced, and operated in a manner conducive to achieving the required standards

1.2 ORGANIZATIONAL STRUCTURE

1.2.1 The design and make-up of its organization structure should ensure that the delivery of training meets the applicant's needs and expectations while maintaining compliance with the applicable regulatory requirements. Therefore, ATOs need to have a management structure that is designed around best quality management practices.

1.2.2 In all cases, ATOs require an accountable – manager who is the final corporate authority on decisions that may impact upon the continued suitability of the organization to deliver training to ATS personnel. Since the Accountable - Manager may not have a day-to-day awareness of the training activity, that person must rely heavily upon the performance and advice of key personnel within the organization. As a result, the qualifications and competencies of ATO personnel must be maintained to a very high standard.

Note. — Appendix A provides organizational structures for consideration.

1.2.3 ATOs should establish separate and distinct managerial positions, each of which reports directly to the head of training, which have overall authority for the following areas of responsibility:

- a) training or instructional services; and
- b) quality management processes.

1.3 TRAINING SERVICES

- 1.3.1 Annex 1 obligates ATOs to have all their services authorized under the terms of their organization's approval. The content of each approved training programme including the courseware, facilities and equipment used needs to be documented.

1.4 COMPETENCY-BASED TRAINING

- 1.4.1 Competency-based training and assessment is defined as “training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.” It is important to realize that this training process is derived from a thorough job and task analysis and is focused on the achievement of well-defined benchmarked standards of performance as opposed to other training programme that simply focus on the acquisition of minimum prescribed levels of skill, knowledge and experience.
- 1.4.2 In competency-based training, the training programme focus is on trainees acquiring all the knowledge (K), skill (S) and attitude (A), often referred to as KSA, necessary to achieve the competencies, to perform their duties in a safe, efficient and effective manner at the workplace. This goal of competency-based training is very different from other training programme, which are designed so that the trainee meets the minimum skill, knowledge and experience requirements of the license, certificate, rating or operational authorization being sought.
- 1.4.3 Competency-based training demands continuous assessment of trainees against benchmarked performance standards. Additionally, ATOs need to ensure that the development and delivery of their training programme are captured by their quality assurance programme.
- 1.4.4 Competency-based training requires continuous evaluation of the trainee's progress. This assessment is to ensure that the individual is meeting the expected performance standards as derived from the programme's identified competency elements and units. Competency-based training programmes themselves need to be subjected to evaluation processes as well. This is particularly true during all phases of the evaluation stage.

Note: Doc 9841 describes Competency Based Training in greater detail.

CHAPTER 2

ATO APPROVAL PROCESS

2.1 STATUTORY AUTHORITY-

2.1.1 Section 4 of The Aircraft Act 1934 empowers Central Government to make rules to implement the Convention of 1944.

Quote “

The Central Government may, by notification in the Official Gazette, make such rules as appear to it to be necessary for carrying out the Convention relating to International Civil Aviation signed at Chicago on the 7th day of December, 1944 (including any Annex thereto relating to international standards and recommended practices) as amended from time to time.

Unquote”

2.1.2 Rule 29C of the Aircraft Rule 1937, stipulates the following regarding adoption of the convention & Annexes

(1) The Director-General may lay down standards and procedures not inconsistent with the Aircraft Act, 1934 (22 of 1934) and the rules made there under to carry out the Convention and any Annex thereto.

(2) The Director-General shall formulate the State Safety Programme and oversee its implementation.

2.1.3 Rule- 114 of the Aircraft Rule 1937 stipulates

1. The Director- General, on being satisfied, may approve a training organization for conducting an approved training course for students to enable them to attain the level of competency required for obtaining a licence or rating specified in rule 95.

2. The training organization shall submit a Training and Procedures Manual containing the information specified by the Director-General for approval and the simulator training in such organizations shall be undertaken only on the simulators approved by the Director-General.

3. **Approval of a training organisation shall be valid for a period of five years and may be renewed for a period not exceeding two years at a time subject to the terms and conditions specified by the Director-General.**
4. **(a) For the grant of approval, a training organization shall pay a fee of one lakh rupees and fifty thousand rupees for renewal on each occasion.**

(b) The fee shall be paid by a demand draft drawn in favour of the Pay and Accounts Office, Director General of Civil Aviation, Ministry of Civil Aviation, New Delhi.
5. **The approved training organisation shall not impart any training which is not included in its scope and has not been duly approved by the Director-General.**
6. **The training records of the organisation shall be maintained in a manner specified by the Director-General and shall be produced on demand to the Director-General or any other officer authorised by him in this behalf.**

2.2 OBTAINING APPROVAL

An ATO shall submit an application to the DGCA for the approval of ATO in accordance with the Appendix B, along with a copy of the proposed ATO's training and procedure manual. The requirements for the contents of this manual are stipulated in Chapter 3 and detailed guidance on this subject is provided in Appendix D.

2.3 APPROVAL PROCESS

2.3.1 ANS Directorate, DGCA shall review the application for approval. Once it is assessed as satisfactory, a site inspection prior to final approval shall be conducted. Upon successful completion of the process, the DGCA will issue the approval. This consists of an approval certificate and additional documentation specifying the terms of the approval.

2.3.2 An ATO shall make arrangement for On-the-job Training to be provided to a student Air Traffic Controller on completion of Initial Training. As Air Navigation Service Provider (ANSP) only can make provision for On-the-Job training leading to rating & licensing of an ATCO, in order to achieve the same,

a letter of agreement between ATO & ANSP for the provision of OJT to a student controller shall be a pre-requisite for the approval of an ATO.

Note : The minimum requirement to be fulfilled by an ANSP to provide OJT to a student Air traffic Controller of an ATO is provided in Appendix "E"

- 2.3.3 An ATO shall offer specific curricula inclusive of quality instructional system and evaluation system including the theoretical and simulative aspects of training acceptable to and approved by the DGCA.
- 2.3.4 The issuance of an 'approval certificate' to an ATO and the continued validity of the approval shall depend upon the training organization being in compliance with the requirements prescribed herein.
- 2.3.5 The 'approval certificate' shall contain at least the following:
 - a) organization name and location;
 - b) date of issue and period of validity;
 - c) Terms of approval; and
 - d) List of Training Approval.

Note : The model of the 'Certificate of ATO' is mentioned in Appendix C.

- 2.3.6 Satisfactory completion of an approved training course shall be in accordance with The Aircraft Rule 1937.

2.4 VALIDITY OF CERTIFICATE

- 2.4.1 The validity of the certificate shall be for a period of five years as stipulated in Rule 114 of The Aircraft Rule 1937, unless:
 - a. The certificate is surrendered, suspended, cancelled or revoked;
 - b. A major change has been made to the ATO's facilities, equipment, system, Procedure etc. upon which the ATO's Certificate is based, without the prior approval of the DGCA.
- 2.4.2 An ATO shall demonstrate its capability to provide ATS training by holding an ATO approval certificate, issued by the Director General Civil Aviation (DGCA) in accordance with these guidelines

2.5 RENEWAL OF CERTIFICATE

- 2.5.1 An ATO shall demonstrate that it meets all provisions set forth for the issuance of the approval including the personnel, facility, approved training programme, training records, and recent training ability meeting the prescribed requirements.

- 2.5.2 In order to maintain current instructional skill and teaching proficiency, an ATO shall ensure that it does not remain without students for long periods of time. Preferably, ATO shall prove that it has trained at least one batch of not less than 12 students in basic stream in the preceding 12 months.
- 2.5.3 For the renewal of the approval certificate, an ATO shall have to be actively involved in the training process.
- 2.5.4 An ATO shall deposit necessary fee for the renewal of certificate in accordance with Rule 114 of the Aircraft Rule 1937.
- 2.5.5 An ATO shall submit documents for renewal of ATS Training Organization complete in all respect at least 90 days prior to expiry of the approval.

2.6 DISPLAY OF CERTIFICATE

- 2.6.1 An ATO shall prominently display its 'approval certificate' at its premises.
- 2.6.2 An ATO shall readily make its 'approval certificate' available for scrutiny when requested by the authorized officials of the DGCA, during the announced/unannounced inspection/oversight at all reasonable times.

2.7 CHANGES IN THE SCOPE OF THE APPROVAL

- 2.7.1 Whenever ATO requires changes in the scope of the approval, it should provide supporting information to the DGCA that will assess it using the applicable requirements. An amendment to the approval document should be issued after a satisfactory assessment.
- 2.7.2 Changes or modifications in equipment, software, facilities, or key managerial personnel should be reported to the DGCA to ensure that any required approvals are obtained without delay.

2.8 CONTINUED SURVEILLANCE AFTER THE APPROVAL

- 2.8.1 After receiving an approval, the ATO will be subjected to continued surveillance by the DGCA to ensure that the ATO is operating within the terms of its approval.
- 2.8.2 Guidance on the continued surveillance to be conducted by the DGCA is provided in Chapter 9.

CHAPTER 3

TRAINING AND PROCEDURES MANUAL

3.1 INTRODUCTION

3.1.1 The training and procedures manual describes the training programmes being offered and the way in which the training organization conducts its activities. This chapter explains how the training and procedures manual should be developed, implemented and managed by the ATO.

3.2 CONTENT

3.2.1 The content of the training and procedures manual is given in Appendix D to these guidelines.

3.3 DEPLOYMENT AND FEEDBACK

3.3.1 The training organization should monitor the use of the training and procedures manual after its release.

3.3.2 Ensure appropriate and realistic use of the manual, based on the operational environment, in a way that is operationally relevant and beneficial to the personnel for whom it is intended.

3.4 AMENDMENT

3.4.1 The training organization should develop an effective information gathering and review system to process information obtained from all sources relevant to the organization, such as DGCA, training customers, and equipment vendors, as well as distribution and revision control system.

3.4.2 The training organization should also develop an information review, distribution and revision control system to process information resulting from changes that originate within the organization. This includes changes to:

- a) The organization's policies, processes, procedures and practices;
- b) Respond to operating experience;
- c) The scope of training provided;
- d) The content of training programmes;
- e) Results stemming from the installation of new equipment;
- f) An approval document or certificate; and
- g) Maintain standardization.

- 3.4.3 The training and procedures manual should be reviewed in association with other operational documents that form the organization's document control system:
- a) On a regular basis (at least once a year);
 - b) After major events such as rapid growth;
 - c) After technology changes, e.g. the introduction of new equipment; and
 - d) After changes to safety regulations.
- 3.4.4 Permanent changes to the training and procedures manual should be communicated through a formal amendment process. The manual should be amended or revised as necessary to ensure that the information contained is kept up to date.
- 3.4.5 Distribution of amendments and revisions should have a tracking system. The tracking system should include some form of log combined with a procedure to ensure that all amendments are furnished promptly to all organizations or persons to whom the manual has been issued.

CHAPTER 4

ATO STAFFING

4.1 REQUIREMENTS

- 4.1.1 An ATO shall have Accountable - Manager and key managerial personnel. Typical key positions may include:
- a) Accountable - Manager;
 - b) Head of training;
 - c) Chief Instructor;
 - d) Quality assurance manager;
 - e) Technical maintenance manager;
 - f) Course development Manager
 - g) safety manager, if applicable.
- 4.1.2 Accountable Manager may be the Head of training but shall not be a Quality Assurance manager.
- 4.1.3 An ATO shall obtain the approval for the appointment of Accountable - Manager/ Head of Training, Chief Instructor and Quality assurance Manager from DGCA.
- 4.1.4 Depending on the size and scope of the organization and the requirements of the Authority, some of the key positions may be supplemented by subordinates as illustrated in the organizational charts in Appendix A. Small and less complex ATOs may wish to combine some key positions after proper justification when it becomes clear that the resulting position's roles and responsibilities would not be adversely affected by such a decision.
- 4.1.5 An ATO shall have the number of qualified and competent instructors and evaluators, who hold appropriate skill, knowledge & qualifications as deemed necessary by the DGCA.
- 4.1.6 Instructors and evaluators shall undergo initial training and recurrent training in order to update knowledge relevant to the most recent technology and training methodologies appropriate to the competencies for which the students are being trained and examined.
- 4.1.7 An ATO shall ensure that sufficient trained and competent personnel are available for the continued effectiveness of its quality system.

4.2 QUALIFICATION OF ACCOUNTABLE MANAGER/ HEAD OF TRAINING

4.2.1 An ATO shall have a suitably qualified and experienced person as Accountable Manager/ Head of the Training organization as accepted by DGCA.

4.3 QUALIFICATION OF CHIEF INSTRUCTOR

4.3.1 The Chief Instructor shall have at least the following qualifications and experience:

- a. He/She shall have passed a degree in Science or an equivalent examination with Physics and Mathematics, from a recognized University.
- b. Minimum five years of experience in procedural and surveillance rating of an International Airport having ATS units such as ACC and Radar surveillance unit.
- c. Have completed course in Instructional techniques

4.4 QUALIFICATION OF INSTRUCTOR(s)

4.4.1 The Instructors should be duly qualified and experienced having successfully completed applicable course(s) in the specialist field(s)/branch. The instructors should have an aptitude for teaching and should be patient, enthusiastic and be able to keep discipline.

The instructors shall have at least the following qualifications and experience:

- (a) He/She shall have passed a degree in Science or an equivalent examination with Physics and Mathematics, from a recognized University.
- (b) Minimum 5 year experience in procedural rating for procedural Instructor & minimum 5 years of experience with ATC rating out of which atleast 2 year experience of surveillance rating;
- (c) Have successfully completed course in Instructional technique;

4.5 REQUIREMENT OF MINIMUM NUMBERS OF INSTRUCTORS

4.5.1 One classroom shall have maximum of 12 (twelve) students

4.5.2 In case of practical training, each class shall have at least 1 (one) instructor.

CHAPTER 5

FACILITIES AND EQUIPMENT

5.1 FACILITIES

An ATO should have access to facilities appropriate to the size and scope of the intended operations provided in an environment conducive to learning & acceptable to DGCA. These facilities shall include:

- a. general areas which consist of sufficient:
 - Accommodation & recreational facilities for student and staff;
 - medical facility;
 - Office space for ATO managerial, administrative and training staff;
 - Study and examination rooms;
 - Reference/ library facilities; and
 - Storage areas, including secure areas for training and personnel records;
- b. classroom areas which are suitably equipped to effectively deliver the theoretical elements of the training programme in accordance with the training and procedures manual; and
- c. practical training areas for facilities which are designed and equipped to ensure the acceptable level of attaining skill, knowledge & competency of the trainee. These facilities shall include:
 - Operations, planning and briefing rooms;
 - Simulation and procedure trainer areas;
 - Parts, tools and material storage areas.

5.2 TRAINING COURSEWARE AND EQUIPMENT

An ATO shall ensure that all courseware and equipment required by the training programme, as specified in the training and procedures manual, are available and in good working conditions. Changes to these working conditions and any temporary “work-around” solutions shall be improved prior to continuing with the scheduled training.

5.3 APPROVAL OF TRAINING DEVICES

5.3.1 An ATO shall implement at least the following for all training devices:

- a. A routine maintenance programme to ensure that the training devices continue to function properly and, when applicable, continue accurately replicate any component, system or equipment for which training, checking or testing credits are being sought; and
- b. a record-keeping process for each training device to be established and maintained, which accurately records the device's use and lists any discrepancies with respect to its functionality or intended performance characteristics that may impact training.

5.3.2 An ATO shall establish criteria on the basis of guidelines provided in Appendix F for the determination of the suitability of a simulation training device for approved training programme.

CHAPTER 6

TESTING OR EXAMINATION PROCESS

6.1 REQUIREMENTS

- 6.1.1 ATS Personnel examinations shall be conducted to test the level of knowledge as specified in Schedule III of The Aircraft Rule 1937.
- 6.1.2 The Director-General may, appoint examiners for carrying out examinations and assessment required under Schedule III and may also appoint a Board to conduct oral examinations and assessment, wherever necessary.
- 6.1.3 An ATO shall establish a Testing or Examination Process to check the progress of each student and to demonstrate that the student has achieved a satisfactory level of knowledge, skill & competency. This system shall be managed and monitored in accordance with training and procedures manual approved by DGCA.
- 6.1.4 Competency-based training will require continuous evaluation of the trainee's progress. This assessment will be done to ensure that the individual is meeting the expected performance standards as derived from the programme's identified competency elements and units. Competency-based training programmes themselves need to be subjected to evaluation processes as well. This is particularly true during all phases of the evaluation stage.

6.2 PREPARATION OF EXAMINATION PAPERS:

An ATO shall establish an Examination Control Unit (ECU) and develop a examination conduction procedure acceptable to DGCA. On the basis of this procedure, the ECU shall conduct examinations.

6.3 QUESTION DATA BANK:

An ATO shall develop a Question Data Banks (QDB) and it shall be kept secure and protected from unauthorized access and it shall be established under Examination Control Unit (ECU). Examination papers and databank printouts shall be kept in locked cabinets under the control of supervisory staff.

6.4 EXAMINERS

6.4.1 Examiners shall have at least the following qualifications and experience:

- (a) He/She shall have passed a degree in Science or an equivalent examination with Physics and Mathematics, from a recognized University;
- (b) Minimum 10 (ten) years of experience with ATC rating out of which at least 5 (five) years experience of surveillance rating.

Note:- The Director General may exempt a person of the above mentioned requirements after being satisfied with the necessary experience and competency of the personnel.

6.5 ENGLISH LANGUAGE PROFICIENCY

6.5.1 An ATO shall conduct an English Language training in order to achieve at least Level 4 in ICAO English Language Proficiency Test by the trainees.

6.5.2 An ATO shall include in its ATS Training Course the syllabus of Aviation English so as to enhance the English Language Proficiency of trainees to meet English Language Proficiency Requirements.

6.5.3 Checking evaluation of Aviation English Language Proficiency of the course so included shall be conducted by authorized panel.

Note: The training programme shall be of a minimum 10 hours duration and shall include the following:

Overview of the six ICAO Rating Scale and six descriptors skill areas:

- (a) Pronunciation: Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.
- (b) Structure: Both basic and complex grammatical structures and sentence patterns are consistently well controlled.
- (c) Vocabulary: Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.
- (d) Fluency: Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.
- (e) Comprehension: Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.
- (f) Interactions: Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues and responds to them appropriately.

CHAPTER 7

COURSE COMPLETION CERTIFICATE

7.1 CONTENT OF A COURSE COMPLETION CERTIFICATE

- 7.1.1 An ATO shall issue a certificate to each student who successfully completes the training. The certificate shall include:
- 7.1.1.1 the name of the organization;
 - 7.1.1.2 the certificate number;
 - 7.1.1.3 the name of the ATCO to whom it was issued;
 - 7.1.1.4 the approved curriculum title;
 - 7.1.1.5 the date of graduation/completion of course;
 - 7.1.1.6 a statement that the student has satisfactorily completed each required stage of the approved course of training including the tests for those stages;
 - 7.1.1.7 an authentication by an official of the institute; and
 - 7.1.1.8 Any other relevant detail.

CHAPTER 8

RECORD-KEEPING

8.1 OBJECTIVE

8.1.1 Keeping accurate and complete training records is an important aspect of complying with the approval requirements. It is also an essential tool for the ATO to ensure the continuity and consistency of its training. The qualifications required for training personnel and trainees should be recorded in the record-keeping system to ensure that those qualifications are monitored and current.

8.2 CHARACTERISTIC & REQUIREMENTS OF RECORD KEEPING SYSTEM

8.2.1 The record-keeping system of an ATO should have the following characteristics:

- a. **Completeness.** The records kept by the training organization should be sufficient to provide documentary evidence of each training action and allow the reconstruction of the training history of each student or instructor in the organization.
- b. **Integrity.** It is important to maintain the integrity of records, ensuring that they are not removed or altered. A backup of the records is also necessary to ensure continuity in case of a major disaster.

8.2.2 An ATO shall maintain a detailed record to indicate that all requirements of the training course have been met as approved by the DGCA.

8.2.3 All training records shall be maintained & retained after the completion of the training. However, Examination question papers and student answer sheets shall be retained for a period of not less than 5 (five) years following completion of the training course.

8.2.4 Official notices, technical circulars and literature and other requirements shall be circulated by the training organization to the instructors, as soon as practicable after receipt. All superseded publications shall be withdrawn by the organization.

- 8.2.5 Each training organization should also establish rules for archiving personal employment and training records that are non-active. The rules for archiving records should also be consistent with the national requirement and the requirements contained in Appendix 2 to Annex 1, paragraph 8.3.
- 8.2.6 The respective Chief Instructor shall ensure that the policy & procedures are made & maintained i. r. o. the following:
- 8.2.6.1 attendance records;
 - 8.2.6.2 student training records;
 - 8.2.6.3 Examination results for all training courses;
 - 8.2.6.4 The commencement and conclusion dates of all training courses, and copies of each approved syllabus;
 - 8.2.6.5 staff training and qualification records;
 - 8.2.6.6 persons responsible for checking records and student personal logs;
 - 8.2.6.7 nature and frequency of record checks;
 - 8.2.6.8 standardization of record entries;
 - 8.2.6.9 personal log entries; and
 - 8.2.6.10 security of records and documents.
 - 8.2.6.11 Any other relevant record

CHAPTER 9

QUALITY ASSURANCE (QA)

9.1 OBJECTIVE

- 9.1.1 The objective of QA is to ensure the achievement of results that conform to the standards set out in the ATO's manuals and in those requirements and documents issued by the DGCA. The effective application of QA principles will aid the ATO in meeting all regulatory requirements.
- 9.1.2 Quality is an outcome of a number of processes. An ATO shall take corrective actions if any non-conformity is found, to improve processes and procedures. ATOs need to implement proactive as well as reactive processes. Appendix G describes proactive processes and provides guidance on how to institutionalize a quality system that incorporates QA and assists ATOs in reaching their full potential.

9.2 ELEMENTS

- 9.2.1 The following QA elements should be clearly identifiable in the training and procedures manual:
- 9.2.1.1 The organization's training policy (for clients as well as for its own personnel);
 - 9.2.1.2 Training standards;
 - 9.2.1.3 Allocation of responsibility;
 - 9.2.1.4 Resources, organization and operational processes;
 - 9.2.1.5 Procedures to ensure conformity of training with the policy;
 - 9.2.1.6 Procedures for identifying deviations from policy and standards and taking corrective action; and
 - 9.2.1.7 The evaluation and analysis of experiences and trends concerning policy and training Standards, in order to provide feedback into the system for the continual improvement of the quality of training.

9.3 QA AND THE QUALITY SYSTEM OF THE ATO

Details on the requirements for QA and the development of an overarching quality system for an approved training organization can be found in Appendix G.

CHAPTER 10

ON THE JOB TRAINING (OJT)

10.1 REQUIREMENT OF OJT

Student Air Traffic Controller shall have demonstrated, at a level appropriate to the privileges being granted, the skill, judgement and performance required to provide a safe, orderly and expeditious control service, including the recognition and management of threats and errors.

10.1.1 Rule 97 of the Aircraft Rule 1937 stipulates the Requirement of rating and unit endorsement

“No person shall perform duty as an air traffic controller in an air traffic services unit unless his licence contains the ratings for the said purpose;

Traffic Controller’s Licence may perform duty in a particular air traffic services unit without the relevant rating, for the purpose of qualifying for endorsement of such rating in his licence, under the direct supervision of a person holding the rating for that particular air traffic services unit and authorised by the Director General to act as an instructor”

Schedule III Section A para7 stipulates On-the-job training requirement **“The holder of a Student Air Traffic Controller’s Licence or an Air Traffic Controller’s Licence shall be required to undergo the on-the-job training under an authorised instructor for a period specified in this Schedule for grant of a particular rating:**

Provided that where the licensing authority, having regard to the traffic volume of the air traffic unit for which the rating is being sought and experience of the licence holder, is satisfied, it may approve the on-the-job training of a shorter period than the one specified in the Schedule.”

10.2 OBJECTIVE

10.2.1 In on-the-job training, a student already instructed in the principles of ATC learns its practical aspects from other controllers directly in centres and towers.

10.2.2 On-the-job training is not a replacement for simulation training but is considered to be essential, to show that the student can cope with the strains of controlling real, as distinct from simulated, air traffic, and to build the student controller's experience of real air traffic while an instructor or experienced controller is present. On-the-job training also reveals the high standards of professionalism and competence which the controller must achieve to gain the trust and respect of colleagues. The task of the on the-job instructor is a demanding one. Not all controllers make good Instructors, nor do all controllers want to become Instructors. The controller who provide OJT must be willing to teach, must be proficient and confident in his or her own skills, and must be able to handle a traffic situation through another person, teaching skills to that person while at the same time maintaining over-all command of the situation. There are Instructional principles and techniques which all instructors should be aware of so that the training is efficient and the standard of air traffic services is maintained. Providing OJT is a specialist task, one that is carried out in addition to controlling aircraft. For this reason, it will be seen that a certain amount of operational experience is necessary before a controller commences OJT.

CHAPTER 11

Personnel Licensing

11.1 INTRODUCTION

11.1.1 Annex 1 contains Standards and Recommended Practices adopted by the International Civil Aviation Organization as the minimum standards for personnel licensing.

11.1.2 The Annex is applicable to all applicants for and, on renewal, to all holders of the licences and ratings specified herein.

11.2 STUDENT AIR TRAFFIC CONTROLLER

11.2.1 Contracting States shall take the appropriate measures to ensure that student air traffic controllers do not constitute a hazard to air navigation.

11.2.2 Medical fitness

A Contracting State shall not permit a student air traffic controller to receive instruction in an operational environment unless that student air traffic controller holds a current Class 3 Medical Assessment.

11.3 AIR TRAFFIC CONTROLLER LICENCE

11.3.1 Requirements for the issue of the licence

Before issuing an air traffic controller licence, a Contracting State shall require the applicant to meet the requirements of 11.3.1 and the requirements of at least one of the ratings set out in 11.4. Unlicensed State employees may operate as air traffic controllers on condition that they meet the same requirements.

11.3.1.1 *Age*

The applicant shall be not less than 21 years of age.

11.3.1.2 *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the holder of an air traffic controller licence, in at least the following subjects:

Air law

- a) rules and regulations relevant to the air traffic controller;

Air traffic control equipment

- b) principles, use and limitations of equipment used in air traffic control;

General knowledge

- c) principles of flight; principles of operation and functioning of aircraft, engines and systems; aircraft performance relevant to air traffic control operations;

Human performance

- d) human performance including principles of threat and error management;

Note. — Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc9683).

Meteorology

- e) aeronautical meteorology; use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry;

Navigation

- f) Principles of air navigation; principle, limitation and accuracy of navigation systems and visual aids; and

Operational procedures

- g) air traffic control, communication, radiotelephony and phraseology procedures (routine, non-routine and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.

11.3.1.3 ***Experience***

The applicant shall have completed an approved training course and not less than three months of satisfactory service engaged in the actual control of air traffic under the supervision of an appropriately rated air traffic controller. The experience requirements specified for air traffic controller ratings in 11.4 may be credited as part of the experience specified in this paragraph.

11.3.1.4 **Medical fitness**

The applicant shall hold a current Class 3 Medical Assessment.

11.4 AIR TRAFFIC CONTROLLER RATINGS

11.4.1 Categories of air traffic controller ratings

Air traffic controller ratings shall comprise the following categories:

- a) Aerodrome control rating;
- b) Approach control procedural rating;
- c) Approach control surveillance rating;
- d) Approach precision radar control rating;
- e) Area control procedural rating; and
- f) Area control surveillance rating.

Note. — The World Meteorological Organization has specified requirements for personnel making meteorological observations which apply to air traffic controllers providing such a service.

11.4.2 Requirements for air traffic controller ratings

11.4.2.1 **Knowledge**

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted, in at least the following subjects in so far as they affect the area of responsibility:

11.4.2.1.1 **aerodrome control rating:**

- a) aerodrome layout; physical characteristics and visual aids;
- b) airspace structure;
- c) applicable rules, procedures and source of information;
- d) air navigation facilities;
- e) air traffic control equipment and its use;
- f) terrain and prominent landmarks;
- g) characteristics of air traffic;
- h) weather phenomena; and
- i) emergency and search and rescue plans;

11.4.2.1.2 **approach control procedural and area control procedural ratings:**

- a) airspace structure;
- b) applicable rules, procedures and source of information;
- c) air navigation facilities;
- d) air traffic control equipment and its use;

- e) terrain and prominent landmarks;
- f) characteristics of air traffic and traffic flow;
- g) weather phenomena; and
- h) emergency and search and rescue plans; and

11.4.2.1.3 ***approach control surveillance, approach precision radar control and area control surveillance ratings:***

The applicant shall meet the requirements specified in b) in so far as they affect the area of responsibility, and shall have demonstrated a level of knowledge appropriate to the privileges granted, in at least the following additional subjects:

- a) principles, use and limitations of applicable ATS surveillance systems and associated equipment; and
- b) procedures for the provision of ATS surveillance service, as appropriate, including procedures to ensure appropriate terrain clearance.

11.4.2.2 ***Experience***

11.4.2.2.1 The applicant shall have:

- a) satisfactorily completed an approved training course;
- b) provided, satisfactorily, under the supervision of an appropriately rated air traffic controller:
 - i. *aerodrome control rating*: an aerodrome control service, for a period of not less than 90 hours or one month, whichever is greater, at the unit for which the rating is sought;
 - ii. *approach control procedural, approach control surveillance, area control procedural or area control surveillance rating*: the control service for which the rating is sought, for a period of not less than 180 hours or three months, whichever is greater, at the unit for which the rating is sought; and
 - iii. *approach precision radar control rating*: not less than 200 precision approaches of which not more than 100 shall have been carried out on a radar simulator approved for that purpose by the Licensing Authority. Not less than 50 of

those precision approaches shall have been carried out at the unit and on the equipment for which the rating is sought; and

c) if the privileges of the approach control surveillance rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator approaches on the surveillance equipment of the type in use at the unit for which the rating is sought and under the supervision of an appropriately rated controller.

11.4.2.2.2 The experience specified in 11.4.2.2.1 b) shall have been completed within the 6-month period immediately preceding application.

11.4.2.2.3 When the applicant already holds an air traffic controller rating in another category, or the same rating for another unit, the Licensing Authority shall determine whether the experience requirement of 11.4.2.2 can be reduced, and if so, to what extent.

11.4.2.3 ***Skill***

The applicant shall have demonstrated, at a level appropriate to the privileges being granted, the skill, judgement and performance required to provide a safe, orderly and expeditious control service, including the recognition and management of threats and errors.

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (Doc 9868, PANS-TRG), Chapter 3, Attachment C, in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683) and in Cir 314, Threat and Error Management (TEM) in Air Traffic Control.*

11.4.2.4 ***Concurrent issuance of two air traffic controller ratings***

When two air traffic controller ratings are sought concurrently, the Licensing Authority shall determine the applicable requirements on the basis of the requirements for each rating. These requirements shall not be less than those of the more demanding rating.

11.4.3 Privileges of the holder of the air traffic controller rating(s) and the conditions to be observed in exercising such privileges

11.4.3.1 Subject to compliance with the requirements specified in Annex 1 Para 1.2.5, 1.2.6, 1.2.7.1 and 1.2.9, the privileges of the holder of an air traffic controller licence endorsed with one or more of the under mentioned ratings shall be:

- a) *aerodrome control rating*: to provide or to supervise the provision of aerodrome control service for the aerodrome for which the licence holder is rated;
- b) *approach control procedural rating*: to provide or to supervise the provision of approach control service for the aerodrome or aerodromes for which the licence holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service;
- c) *approach control surveillance rating*: to provide and/or supervise the provision of approach control service with the use of applicable ATS surveillance systems for the aerodrome or aerodromes for which the licence holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service; subject to compliance with the provisions of 11.4.2.2.1 c), the privileges shall include the provision of surveillance radar approaches;
- d) *approach precision radar control rating*: to provide and/or supervise the provision of precision approach radar service at the aerodrome for which the licence holder is rated;
- e) *area control procedural rating*: to provide and/or supervise the provision of area control service within the control area or portion thereof, for which the licence holder is rated; and
- f) *area control surveillance rating*: to provide and/or supervise the provision of area control service with the use of an ATS surveillance system, within the control area or portion thereof, for which the licence holder is rated.

11.4.3.2 Before exercising the privileges indicated in 11.4.3.1, the licence holder shall be familiar with all pertinent and current information.

11.4.3.3 A Contracting State having issued an air traffic controller licence shall not permit the holder thereof to carry out instruction in an operational environment unless such holder has received proper authorization from such Contracting State.

11.4.3.4 *Validity of ratings*

A rating shall become invalid when an air traffic controller has ceased to exercise the privileges of the rating for a period determined by the Licensing Authority. That period shall not exceed six months. A rating shall remain invalid until the controller's ability to exercise the privileges of the rating has been re-established.

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CHAPTER 12

HUMAN FACTOR

12.1 SELECTION OF APPLICANTS

- 12.1.1 Air traffic control is a demanding profession — its safety and efficiency depend on selecting those who will become most capable of doing the jobs within it. A good selection procedure eliminates unsuitable candidates at an early stage and saves training costs. Selection and training are mostly concerned with liveware, although they are influenced to some extent by all other interfaces within the SHEL model.
- 12.1.2 For the selection procedure to be effective, the number of applicants must exceed the number of vacancies by a substantial margin. A prerequisite for a successful selection procedure, therefore, is that ATC be viewed as a desirable profession, attracting many applicants. National publicity and positive advertising may be needed to encourage enough suitable applicants to apply. The more stringent the criteria for selection are, the larger the proportion of applicants rejected will be, and the larger the initial pool of qualified applicants must be. Given suitable applicants, the selection process is the first vital step towards producing proficient air traffic controllers. An impartial selection procedure based on Human Factors principles is essential.
- 12.1.3 Analysis of the ATC jobs within a particular context establishes the skills, abilities and knowledge needed to perform them and the degree of commonality among them. If there is a high degree of commonality, the same selection procedure can be used for all ATC jobs; if the commonality is low, different jobs may require different selection procedures. Various local system requirements or ATC characteristics may point to further relevant human attributes that could be included; these include the amount and patterns of traffic, the nature of the terrain, the navigational and other aids, the geographical relationships between nations, and climatic and meteorological factors.

12.2 TRAINING

- 12.2.1 The objective of air traffic controller training is to ensure that controllers possess the required knowledge, skills and experience to perform their duties safely and efficiently, and to meet national and international standards for ATC. A controller must be able to understand and assign priorities to the relevant information, to plan ahead, to make timely and appropriate decisions, to implement them and to ensure compliance with them.
- 12.2.2 Training is a matter of learning, understanding and remembering. It relates what the controller already knows to the information that the system provides

about current and pending traffic. It relates the information which the system presents automatically to the controller to the information which the controller must remember unaided, and it provides guidance on how human memory can be strengthened and made more reliable. Training also relates the principles for learning and displaying ATC information to the capabilities and limitations of human information processing and understanding. The aim is to make the best use of human strengths and capabilities and to overcome or circumvent human inadequacies or limitations, particularly in relation to knowledge, skill, information processing, understanding, memory and workload.

12.3 TRAINING CONTENT AND TEACHING

- 12.3.1 Two essential aspects of training are training content and the teaching process. With regard to training content, it is beneficial to divide the training into a series of courses or phases. These start with basic principles and practices, and progress on successful completion of each phase towards more complex aspects of ATC. This approach requires mastery of the basic principles and practices first, which helps to ensure that the later stages of training build on knowledge already acquired. Separate courses coupled with impartial assessments provide benchmarks of training progress and a form of quality assurance applicable to training. This can be particularly helpful to demonstrate that changes in the training, whether in its content or in the teaching methods such as the introduction of automated teaching aids, have been successful and beneficial.
- 12.3.2 It is possible to deduce from envisaged tasks what the content of training must be and what the controller must learn, only to discover that it cannot be taught or that controllers cannot learn it. In introducing changes in systems for whatever reason, therefore, it is vital to establish what new knowledge the controller must acquire and to show that it can be taught and learned. New forms of automated assistance must be teachable; if they are not, the expected benefits will not materialize and new forms of human error may arise because the automated assistance is not completely understood.
- 12.3.3 Various teaching methods can be employed in ATC training. Classroom instruction of principles and theories according to traditional academic methods, common in the past, is currently diminishing, partly because more active participation is favoured, partly because the relevance of theory is often disputed and partly in response to financial pressures. Instruction based on real-time simulation, some of which can be quite rudimentary, is strongly favoured as a practical means of training groups of students, and fundamental reliance on simulation training is common. In on-the-job training, a student already instructed in the principles of ATC learns its practical aspects from other controllers directly in centers and towers. Soon there will be more self training packages for the student to practice particular procedures and skills on a computer.

- 12.3.4 Instruction based on real-time simulation, is a practical means of training groups of students, and fundamental reliance on simulation training is common. In on-the-job training, a student already instructed in the principles of ATC learns its practical aspects from other controllers directly in canters and towers.
- 12.3.5 The efficiency of learning depends on teaching methods, content and presentation of material, attributes and motivation of the student and on whether the instruction is provided by a human or a machine. It also depends on whether the instruction is theoretical or practical, general or specific. The content of what is taught, the sequence in which items are taught, the pace of teaching and the amount of reinforcement and rehearsal of taught ATC information should all be established according to known learning principles. Knowledge of results and of progress is essential for successful learning.
- 12.3.6 The proficient controller needs to know and understand:
- How ATC is conducted;
 - The meaning of all presented information;
 - The tasks to be accomplished;
 - The applicable rules, procedures and instructions;
 - The forms and methods of communication within the system;
 - How and when to use each tool provided within the workspace;
 - Human Factors considerations applicable to ATC;
 - The ways in which responsibility for an aircraft is accepted and handed over from one controller to the next;
 - The ways in which the work of various controllers harmonizes so that they support rather than impede each other;
 - What changes or signs could denote system degradations or failures;
 - Aircraft performance characteristics and preferred manoeuvring;
 - Other influences on flight and routes, such as weather, restricted airspace, noise abatement, etc.

12.4 ASPECTS OF TRAINING

- 12.4.1 ATC is not self-evident. The typical ATC workspace contains no instructions or guidance about what it is for, what the tasks are, what the facilities are, what the displayed information actually means, what the controls and other

input devices do, what constitutes success or failure or what should be done next after each task has been completed. Even in quite automated systems, ATC cannot function without human presence — it is reliant on controller intervention and will remain so for the foreseeable future. Hence the importance of identifying all that the controller needs to know and ensuring that it is known, all that the controller needs to do and ensuring that it is done, and all that the controller needs to say and ensuring that it is said clearly and correctly and at the right time. These are essential objectives of training.

- 12.4.2 Training should follow recommended Human Factors procedures and practices. It should be flexible enough to be adaptable to the needs of individual controllers. It should incorporate a basic understanding of Human Factors so that controllers have some insight into their own capabilities and limitations, particularly with regard to possible human errors and mistakes. Controllers should know enough to be able to select the most appropriate aids in their workspace to improve their task performance and efficiency, especially in choosing display options.
- 12.4.3 Training must also ensure that the controller can cope with the workload required to control the traffic offered. This means knowing what the correct actions and procedures are in all circumstances, as well as executing them properly. The controller also needs to be able to learn how to schedule work efficiently. Training aims to teach the controller how to plan ATC and to deal successfully with any unexpected situations. Important objectives of training are to instill good skills, knowledge and habits, and to reinforce them so that they are durable and retained. They have to be maintained actively because skills degenerate, knowledge is forgotten and habits are broken if rarely used. Over-learning can be helpful in the form of extra training and practice deliberately intended to reinforce what has already been learned.
- 12.4.4 Training should not only encourage certain actions but discourage or prevent others. An important part of training is to break bad habits or prevent them from arising. For example, the controller must give priority to an emergency and offload other tasks. Yet the controller must never become so totally absorbed in a single problem as to fail to notice what else is happening. This might entail breaking the habit of concentrating on a single task until it has been completed and forming the new habit of frequent scanning of the radar screen or other displays to check that all is well. Training must encourage this constant scanning and alertness.
- 12.4.5 It is vital that the controller be capable and confident in handling high levels of traffic so that these tasks do not become excessively demanding or burdensome. Training must be related to the maximum handling capacity of the system for which the controller is being trained. Positive intervention by the controller to forestall an overload condition is just as important as the ability to keep aircraft separated. Training should also prepare the controller

for conditions of under loading, when there is little traffic but the control positions must still be staffed, and the controller must be alert and able to detect any unexpected events at once.

12.4.6 Training engenders self-confidence through achieved performance. Illness or lack of well-being from whatever cause has to be remedied if its consequences render the controller inefficient or even potentially unsafe. Training which has successfully generated sound knowledge and confidence in applying that knowledge can help to sustain controllers through events which might lead to stress in others who lack such training.

12.4.7 Issues which should be addressed by specific Human Factors training for controllers include:

- learning and understanding all the rules, regulations, procedures, instructions, scheduling, planning and practices relevant to the efficient conduct of ATC;
- procedures for liaison and co-ordination with colleagues and pilots;
- recognition and prevention of human error;
- matching the machine to the controller so that any human errors are noticed, prevented and corrected;
- verification of the training progress of each student by impartial assessments that are accepted as fair by all;
- identification of individual weaknesses that require extra training or practical experience and the provision of appropriate extra training and support to overcome these weaknesses and to correct faults and sources of error;
- acquisition of knowledge about professional attitudes and practices within ATC, which are the hallmark of professional competence;
- acceptance of the professional standards that prevail and the personal motivation always to attain and exceed those standards.

11.4.8 The initial training of the new controller and the retraining of qualified controllers following system changes are not always the same. Initial training builds on the foundation of knowledge of the principles and practices of ATC; retraining may entail not only the learning of new knowledge and practices appropriate to the new system but the unlearning and discarding of familiar knowledge and inappropriate practices.

CHAPTER 13

SAFETY MANAGEMENT SYSTEM (SMS)

13.1 OBJECTIVE & SCOPE

- 13.1.1 Appendix 2 to Annex 1 states that an ATO “that is exposed to safety risks during the provision of its services [shall be required to] implement a safety management system acceptable to the [Contracting] State.”
- 13.1.2 A Training Organization involved in Air Traffic Controller student training would be required to institute an SMS programme. Although an ATO not directly posing a risk to the safe operation of aircraft would be an ATO that provide approved training using only simulation training devices. On-the-job Training is provided by Air Navigation Service Provider (ANSP) which may lead to hazard therefore, the SMS requirement may be satisfied if an air navigation service provider’s SMS specifically covers the training activity.
- 13.1.3 SMS is a management system consisting of documented policies, processes and procedures designed to manage safety risks, which integrates operations and technical systems with the management of financial and human resources to ensure aviation safety and the safety of the public.
- 13.1.4 The scope of an ATO’s SMS should be directly proportional to the organization’s size and the complexity of its operations.

13.2 SAFETY POLICY

- 13.2.1 Appendix 2 to Annex 1 requires all ATOs that engage in activity which directly impacts the safe operation of aircraft to operate within a safety management system. Doc 9859 provides very detailed guidance on the history of aviation safety, why SMS is so important in industry’s collective effort to reduce safety occurrences, and how to design and maintain an effective SMS.
- 13.2.2 Safety is defined as the state in which the possibility of harm to persons or of property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and safety risk management. The purpose of an SMS is to provide the ATO with effective policies, processes and procedures that permit it to achieve and maintain safe operations.
- 13.2.3 The way an ATO operates is affected primarily by the decisions and actions of its management. The style of management and the approach that is taken in

dealing with operational issues will profoundly influence the employees' beliefs, behaviours, and even their values. Therefore, it is essential that the ATO's senior management take an active and genuine interest in the development and maintenance of the organization's SMS. That enthusiasm and commitment must be repeatedly conveyed to all employees through the words and action of every single member of the management team.

- 13.2.4 The ATO's safety policy needs to be developed, documented and signed off by the Accountable Manager. It should be communicated and made clear to all employees. The policy is required to state the management's commitment to safety, all employee responsibilities and safety accountabilities with respect to the SMS, and to identify the key safety personnel. The policy should also reflect management's resolve to foster a robust safety reporting culture and should identify those conditions under which employees will not be subjected to punishment or retribution. The development of an SMS policy is detailed in Chapter 8 of Doc 9859.

Note: Appendix 4 to Annex 1 outlines the framework of an SMS and describes the necessary components and elements of such a system. Doc 9859 details the design and strategies for a phased-in implementation of SMS.

13.3 SAFETY MANAGER

- 13.3.1 Appendix 4 to Annex 1 requires all ATOs that operate within an SMS to appoint an individual to fulfill the duties of safety manager. The scope of the safety manager's duties should include safety planning, safety programme implementation and the operation of the SMS.
- 13.3.2 The safety manager, like the Quality Assurance manager, should report directly to the head of training

CHAPTER 14

OVERSIGHT EXERCISED BY THE DGCA

14.1 OBJECTIVE

14.1.1 Oversight is the responsibility of the DGCA. It consists of the approval process of an ATO and the continued surveillance of the ATO's training delivery after approval. The purpose of the surveillance activities is to ensure that the ATO is operating within the terms of its approval. It includes a review of the ATO's QA system, its administrative, technical and training records, as well as its operational activities. Surveillance is an ongoing function that may also include consideration of records held by the DGCA for example, examination results, in addition to on-site inspections, audits and other surveillance activities.

14.2 SCOPE

14.2.1 The main elements of the ATO activities that are subject to the DGCA oversight include, as applicable, the following:

- 14.2.1.1 staff adequacy in terms of number and qualifications;
- 14.2.1.2 validity of instructors' certificates, and authorizations;
- 14.2.1.3 logbooks;
- 14.2.1.4 appropriate and adequate facilities for the training and for the number of students;
- 14.2.1.5 documentation process (e.g. the review and update of the training and procedures manual), with particular emphasis on course documentation, including records of system updates, training/operations manuals, etc.;
- 14.2.1.6 training delivery in the classroom and in simulation devices and, if applicable, on the-job training, including briefing and debriefing;
- 14.2.1.7 instructor training;
- 14.2.1.8 QA practices;
- 14.2.1.9 evaluation and checking;
- 14.2.1.10 training, examination and assessment records;
- 14.2.1.11 documents and maintenance records; and
- 14.2.1.12 Training device qualification and approval.

14.3 DURATION

14.3.1 Safety Oversight shall be carried out at least once a year in accordance with the checklist provided in Appendix H.

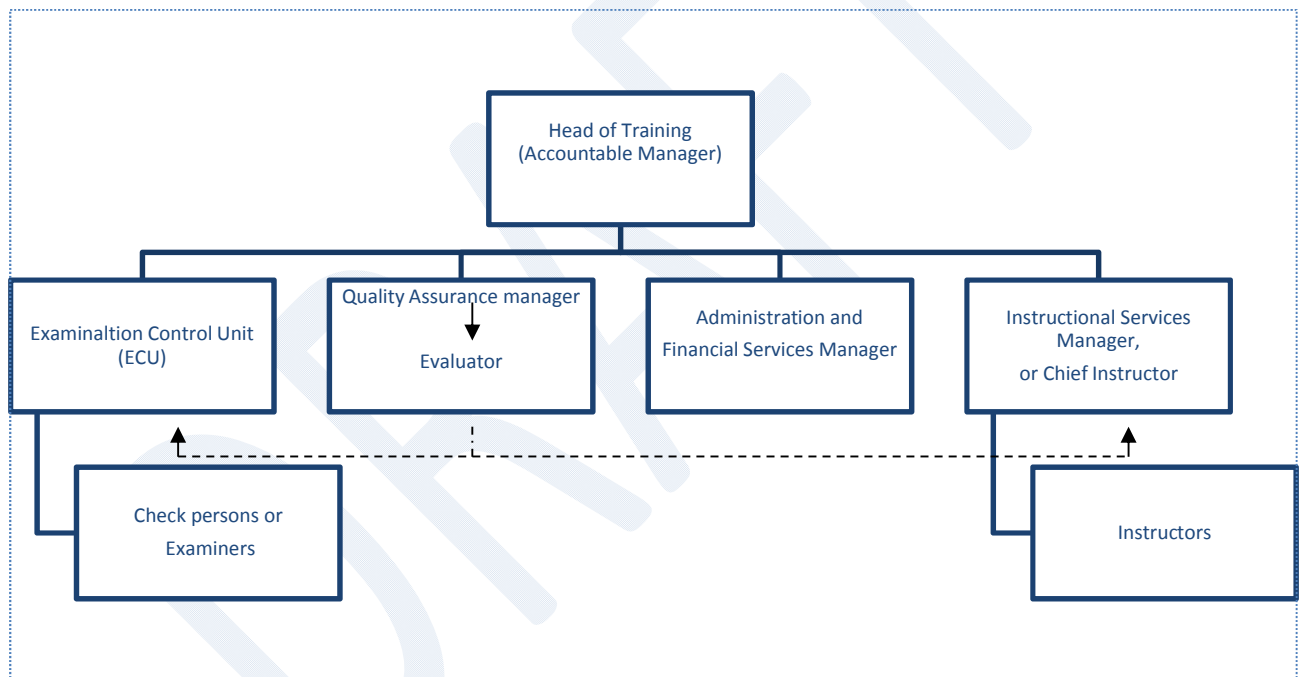
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Appendix A

ORGANIZATIONAL STRUCTURE OF THE ATS TRAINING ORGANIZATION

The following organizational chart is the minimum requirement for ATS organization but is by no means exhaustive and do not pretend to meet all operational requirements. It is provided only to assist training organizations in developing and maintaining an organizational structure that is consistent with the needs of an effective quality system governance model.

Example of a very small generic training organization



Appendix B

APPLICATION FORM ATS TRAINING ORGANISATION



APPLICATION FORM APPLICATION FOR APPROVAL AS AN ATS TRAINING ORGANISATION

(Please tick as appropriate)

Initial Issue

Renewal

Basic information:

1. Name of Organization:

2. Full Address: _____

(Website):

(Telephone)

(Fax Number):

3. Accountable - Manager:

Full Name

E-mail

Tel.

Fax

4. Faculties and Facilities

4.1 Faculties

a.

b.

c.

4.2 Facilities and equipment

a.

b.

c.

5. Particulars of ATS training course (if insufficient space, please attach a separate list) :

a.

b.

c.

6. Other courses applied for

a.

b.

c.

7. Submission Instructions

This form is to be completed and submitted with the Training and Procedures Manual of the applicant ATO. The completed form and manual should be forwarded to the following address:

Directorate General of Civil Aviation,
Opp. Safdarjung Airport,
Aurbindo Marg,
New Delhi-110003.

8. Others

8.1. Number of staff:

(involved in the activities under the Type of Training)

8.2 List of documentation to be provided with the application

- a) Organization Exposition including company flow-chart and Course Design Document and, as relevant, description and information on organization activities.
- b) Training Programme
- c) Training & Procedure Manual including Training plan
- d) Unit training plan for each ATS course for training course approval
- e) Relevant documents for approval of simulator as per Appendix 'E' of Guidelines
- f) A copy of the Quality Management or Assurance Certificate, etc.

Enquiries regarding approval of ATS Training Organization should be sent to the above address.

9. Declaration

I declare that the above particulars and all documents submitted in support of this application are true in every respect.

Name & Designation of Applicant Signature & Date

a. Certificate for approval of ATS Training Organization



CERTIFICATE FOR AIR TRAFFIC SERVICES TRAINING ORGANISATION

Certificate Number: Reference:

Pursuant to Rule 114 of the Aircraft Rule, 1937 and subject to the conditions specified below, the DGCA India hereby certifies:

[*Training Organization's Name*]

[*Address of the Training Organization*]

As a certified Training Organization with the privilege to provide ATS Training, as listed in the attached training approval.

Terms of approval and privileges

- This certificate is limited to the privileges and the scope of providing training as listed in the attached training approval.
- This certificate is valid whilst the certified organization remains in compliance with The Aircraft Rule 1937 & guidelines for approval of ATS Training Organization
- Subject to compliance with the foregoing terms of approval and privileges, this certificate shall remain valid unless the certificate has been surrendered, superseded, limited, suspended or revoked.

Date of issue: Period of Validity:

Signed:

Director General

b. List of Training Approval

[CERTIFICATE NUMBER / REFERENCE]

[NAME OF THE TRAINING ORGANISATION]

Has obtained the privileges to provide and conduct the following training

Type of training	Course	Remarks
<input type="checkbox"/> ATC Training	<input type="checkbox"/> Basic ATC training	
<input type="checkbox"/> Basic Aerodrome/ Approach/ Area Control Training	<input type="checkbox"/> Basic Aerodrome/ Approach/ Area Control Training	
<input type="checkbox"/> ATC Radar training	<input type="checkbox"/> Initial training	

this training course approval is valid as long as:

- (a) The ATO approval certificate has not been surrendered, superseded, limited suspended or revoked; and
- (b) All operations are conducted in compliance with The Aircraft Rule 1937 , guidelines for approval of ATS Training Organization & Terms of approval

Date of issue: _____

Signed: _____

Appendix D

TRAINING AND PROCEDURES MANUAL

1. GENERAL

- 1.1 An ATS Training Organization shall have an approved Training and Procedures Manual.
- 1.2 The Training and Procedures Manual should include the following elements as far as they are appropriate to the type of the training to be provided.
- 1.3 Preamble relating to use and authority of the manual
- 1.4 Table of Contents
- 1.5 Amendment, Revision and Distribution of the manual:
 - 1.5.1. Procedures for amendment;
 - 1.5.2. Amendment record page;
 - 1.5.3. Distribution list; and
 - 1.5.4. List of effective pages.
- 1.6 Glossary of significant terms and definitions.
- 1.7 description of the structure and layout of the manual, including:
 - 1.7.1. various parts, sections, their contents and use; and
 - 1.7.2. The paragraph numbering system.
- 1.8 Description of the scope of training authorized under the organization's terms and conditions of approval.

2. ORGANIZATION (CHART OF THE MANAGEMENT ORGANIZATION)

3. QUALIFICATIONS

- 3.1 qualifications, responsibilities and succession of command of management and key operational personnel, including but not limited to:
- 3.2 accountable managers;
- 3.3 head of training;
- 3.4 chief instructor/faculty head
- 3.5 instructors
- 3.6 Course Developer
- 3.7 Aviation English Trainer/tester
- 3.8 Quality Assurance manager; and
- 3.9 Facility repair and maintenance manager

4. POLICIES

- 4.1 policy regarding approval of training for ATS and others as applied
- 4.2 responsibilities of the training managers/faculties

- 4.3 Training planning procedures — general;
- 4.4 policy regarding instructor selection;
- 4.5 methods of course development and delivery
- 4.6 Trainee selection/recruitment procedures
- 4.7 Applicable hazards, accidents and incidents reporting and safety management systems;
- 4.8 Instructor development
- 4.9 Standardization of training, instructors and course development
- 4.10 Validation of training package
- 4.11 In-house training and instructional expertise development and socialization
- 4.12 Restrictions on training periods

5. FACILITIES

- 5.1 description of the facilities available, including:
- 5.2 the number and size of classrooms;
- 5.3 training aids provided; and
- 5.4 Flight simulation training devices and training positions
- 5.5 ICT integration for instructional delivery.

6. STAFF TRAINING

- 6.1 Persons responsible for standards and competency of instructional personnel.
- 6.2 Details of the procedures to determine competency of instructional personnel as required.
- 6.3 Details of the training program for instructional personnel as required by Annex 1.
- 6.4 Procedures for proficiency checks and upgrade training.

7. TRAINING PLAN

- 7.1 Aim of the course in the form of a statement of what the student is expected to do as a result of the training, the level of performance, and the training constraints observed.
- 7.2 pre-entry requirements, including:
 - 7.2.1. Minimum age;
 - 7.2.2. Education requirements;
 - 7.2.3. Medical requirements; and
 - 7.2.4. Language proficiency requirements.

8. TRAINING CURRICULA

- 8.1 training curricula
- 8.2 ATS curriculum - class room and simulator

9. TRAINING POLICY

9.1 training policies in terms of day to day activities:

10. EVALUATION POLICY

10.1 policy for the conduct of student evaluation, including:

- 10.1.1. Procedures for progress tests and skill tests;
- 10.1.2. Procedures for knowledge progress tests and knowledge tests;
- 10.1.3. Procedures for authorization for tests;
- 10.1.4. Procedures for refresher training before retest;
- 10.1.5. Test reports and records;
- 10.1.6. Procedures for knowledge test preparation, type of questions and assessments,
- 10.1.7. Standards required for a pass;
- 10.1.8. Procedures for question analysis and review and issuing replacement exams; and
- 10.1.9. Knowledge test re-write procedures.

11. TRAINING EFFECTIVENESS POLICY

11.1 policy regarding training effectiveness, including:

- 11.1.1. Individual student responsibilities;
- 11.1.2. Liaison procedures between training departments and non-training divisions/departments;
- 11.1.3. Procedures to correct unsatisfactory progress;
- 11.1.4. Procedures for changing instructors;
- 11.1.5. Maximum number of instructor changes per student;
- 11.1.6. Internal feedback system for detecting training deficiencies;
- 11.1.7. Procedures for suspending a student from training;
- 11.1.8. Requirements for reporting and documentation; and
- 11.1.9. Completion standards at various stages of training to ensure standardization.

12. TESTS AND CHECKS

- 12.1 Examination conduction procedures to be followed in the conduct of checks and tests;
- 12.2 Methods for completion and retention of testing records

13. RECORDS

13.1 policy and procedures regarding:

- 13.1.1 attendance records;
- 13.1.2 student training records;

- 13.1.3 Examination results for all training courses
- 13.1.4 The commencement and conclusion dates of all training courses, and copies of each approved syllabus
- 13.1.5 staff training and qualification records;
- 13.1.6 persons responsible for checking records and student personal logs;
- 13.1.7 nature and frequency of record checks;
- 13.1.8 standardization of record entries;
- 13.1.9 personal log entries; and
- 13.1.10 security of records and documents
- 13.1.11 Any other relevant record

14. QUALITY ASSURANCE SYSTEM

14.1 Provide a brief description of the quality assurance system with reference to a separate quality assurance manual or, include the full quality assurance system in the training and procedures manual.

15. APPENDICES

15.1 Sample progress test forms, test reports and records etc.

Appendix 'E'

Requirements for Air Navigation Service Provider for On-the Job Training

1. Introduction

- 1.1 **Air Navigation Service Provider** shall have personnel having Professional knowledge and Good Communications skills. ANSP shall have adequate Infrastructure, Equipment, Qualified instructors, Methodology, Record keeping of the trainees, Kind of training, Evaluation techniques, Instructional techniques, and Subject matter expert to comply with the Requirements for Air Navigation Service Provider for the On-the Job Training.
- 1.2 **Air Navigation Service Provider** shall provide the methodology they will use to establish details of the content, organisation and duration of training courses, unit training plans and unit competence schemes; this will include the way examinations or assessments will be organised. For examinations related to initial training, including simulation training, the qualifications of the examiners shall be detailed;
- 1.3 ANSP shall have all engineering systems, facilities or devices that have been operationally declared to be used either by airspace users (e.g. ground navigation facilities) directly, or are used in the provision of operational air traffic management services.

2. Requirements

- 2.1 Air Navigation Service Provider responsible to provide OJT shall require;
 - 2.1.1 to have an operational ATC units to have approved unit training plans;
 - 2.1.2 to have an operational ATC units implement procedures;
 - 2.1.3 to have operational ATC units to have approved procedures to ensure the ongoing competence of their air traffic controllers;
 - 2.1.4 to have a mechanism, based on operational experience or a competence checking system, or a combination of both, whereby controllers are monitored or regularly tested to ensure they maintain their competence.
- 2.2 **Unit Training Plan** - Every Air Traffic services unit shall prepare a Unit Training Plan, detailing the syllabus, on the job training, examination and procedures, to meet the requirement contained for rating(s) as prescribed in this schedule and submit to the licensing authority for approval.
 - 2.2.1 ANSP shall have a well-defined unit training plan for each operational ATS unit containing details such as layout; physical characteristics and visual

aids; airspace structure; applicable rules, procedures and source of information; air navigation facilities; air traffic control equipment and its use; terrain and prominent landmarks; characteristics of air traffic; weather phenomena; and emergency and search and rescue plans;

2.2.2 The purpose of unit training is to teach a trainee to apply local procedures and to enable them to gain the skills need to become an Air Traffic Controller at that unit, by building upon the knowledge and skills you gained during initial training.

2.2.3 The unit will have a unit training plan indicating the phases of training you will have to complete and what you will have to achieve within a particular timescale.

2.2.4 All training sessions will be reported upon to keep the trainee informed of the progress and any failings that is required to be addressed.

2.2.5 While the trainee is undertaking live training in an operational ATS Unit, he/she must comply with instructions given to you by OJT Instructor.

2.3 The scheme shall be fully documented indicating:

2.3.1 the process by which controllers will be assessed;

2.3.2 the operational objectives they will be required to meet;

2.3.3 the person/persons who are responsible for formally accepting that the process has been correctly conducted;

2.3.4 the formal mechanism by which the designated authority will notify the controller and service provider organisation of the result of any competence assessment;

2.3.5 the method by which controller competence records are to be retained;

2.3.6 ensure that the procedures as above, by which controller competence is assessed, are subject to oversight/audit by DGCA;

2.4 ANSP is required to be assessed for pre-entry training before commencing OJT in that rating;

2.5 OJT Instructor : An air traffic controller, before being permitted to provide operational training as an OJT Instructor, shall:

2.5.1 holds the appropriate valid rating(s), rating endorsement(s) and unit endorsement(s) appropriate to the ATC service being instructed/trained;

2.5.2 holds a valid OJT instructor licence/certificate of competence endorsement issued by the competent Authority;

2.5.3 prove his/her competency to provide the ATC services notified in his/her air traffic controller licence or certificate of competence;

2.5.4 holds a valid medical certificate of the appropriate class;

2.6 Student/trainee Air Traffic Controller: A student and/or trainee air traffic controller is adequately prepared for OJT by Transitional Training and Pre-OJT;

2.6.1 holds a current student air traffic controller licence or certificate of competence which authorises him/her to provide the ATC service for which he/she is undertaking OJT under the direct supervision of an Instructor;

2.6.2 holds a valid medical certificate of the appropriate class 3;

2.7 ATS unit(s) Operational Competence and Experience;

ATS unit(s) shall have an approved competence schemes to satisfy the requirement that Controllers must maintain for operational competence and experience. These procedures shall include requirements for controllers to:

2.7.1 complete a specified minimum number of controlling hours within a specified period on the sectors or operational positions for which they hold valid ratings;

2.7.2 be subject to an assessment of their continuing competence;

2.7.3 undertake periodical refresher and emergency training;

2.7.4 ensure operational competence after returning from extended periods of absence; ATS unit(s) have procedures for monitoring controllers for psychoactive substance abuse and to provide advice to controllers taking medicines;

2.7.5 ATS unit(s) have procedures to prevent the holder exercising the privileges of his/her licence or certificate of competence when there is any decrease in his/her medical fitness, or when the holder is under the influence of any psychoactive substance which might render the holder unable to safely and properly exercise these privileges;

2.8 Rating Examination: subsequent to successful completion of the unit training plan of the operational ATS unit, the trainee will be recommended for a rating examination. A rating examination will consist of:

2.8.1 a practical examination, during which trainee will be required to demonstrate that he/she can provide a safe Air Traffic Control service; and

2.8.2 an oral board, during which trainee will be examined on the knowledge of the local Air Traffic Control procedures and any of the underpinning knowledge which he/she learned during the initial rating course.

2.8.3 The examination will be conducted by a local ATC examiner, or in some cases by examination Board. Upon being declared pass by the rating board, the trainee will be eligible and may apply for an Air Traffic Controller licence.

- 2.9** ANSP shall require to have procedures at ATS units to monitor controllers for psychoactive substance abuse and to provide advice to controllers taking medicines;
- 2.10** ANSP shall require to have procedures at ATS units to prevent the holder exercising the privileges of his/her licence or certificate of competence when there is any decrease in his/her medical fitness, or when the holder is under the influence of any psychoactive substance which might render the holder unable to safely and properly exercise those privileges.
- 2.11** ANSP shall require having procedures at ATS units to prevent the holder exercising the privileges of his/her licence or certificate of competence when there is any case or occurrence which could question the level of the holder's competence. The ATS unit(s) have approved unit training plans by the Competent Authority, which detail the processes by which a student and/or a trainee air traffic controller is trained to meet the required standards to meet the objective of providing a safe air traffic control service;

Appendix F

CRITERIA FOR THE USE OF SIMULATORS IN ATS TRAINING

1. Introduction

- 1.1 All training plans are required to indicate the amount of training, if any, that will be conducted on a simulator. The simulator will be approved by the DGCA as part of the course approval process for the initial training plan. The training organization is required to demonstrate how the simulator and the associated exercises will provide adequate support for the particular training plan.
- 1.2 The approval of the use of a simulator and the part of the particular training plan for which the training organization proposes to use it will be based on an assessment against the criteria listed below. The extent to which the simulator achieves these criteria will be used to determine the adequacy of the simulator for the proposed use and the criteria are:
 - 1.2.1 The general environment, which should provide an environment in which simulator exercises may be run without undue interference from unrelated activities,
 - 1.2.2 The simulator layout;
 - 1.2.3 The equipment provided;
 - 1.2.4. The display presentation, functionality, and updating of operational information;
 - 1.2.5. Data displays, including strip displays, where appropriate;
 - 1.2.6. Co-ordination facilities;
 - 1.2.7. Aircraft performance characteristics, including the availability of manoeuvres, e.g. holding operation, required for a particular simulation;
 - 1.2.8. The availability of real-time changes during an exercise;
 - 1.2.9. The ability of the simulated environment to enable students to meet the stated objectives of the practical training exercises;
 - 1.2.10. The ability of the simulator and its exercises to enable the performance objectives to be assessed to the level determined in the training programme;
 - 1.2.11. The processes by which the provider can be assured that staff associated with the conduct of the simulation are competent;
 - 1.2.12. The degree of realism of any voice recognition system associated with the simulator;
 - 1.2.13. Where a simulator is an integral part of an operational ATS system, the processes by which the ATS Provider is assured that interference between the simulated and operational environments is prevented.

2. Training in Unusual and Emergency Situations

When an ATO wishes to use a simulator for training and assessment in unusual and emergency situations, the simulator shall be approved for the particular training plan on the basis of its ability to adequately support the plan's training objectives and assessment requirements.

Appendix G

QUALITY ASSURANCE SYSTEM

1. QUALITY POLICY AND STRATEGY

- 1.1. The ATO shall describe how the organization formulates, deploys, and review its policy and strategy and turns it into plans and actions applicable to all levels of the organization. A formal written quality policy statement should be established that is a commitment by the head of the training organization, as to what the quality assurance system is intended to achieve.
- 1.2. The Accountable - Manager of the training organization will have overall responsibility for the quality assurance system including the frequency, format and structure of the internal management review and analysis activities and may delegate the responsibility for the tasks, defined under paragraph below, to a Quality Assurance manager.

2. QUALITY ASSURANCE MANAGER

- 2.1. The primary role of the Quality Assurance manager is to verify, by monitoring activities in the Field of training, that the standards as established by the ATO and any additional requirements of the DGCA are being carried out properly.
- 2.2. The Quality Assurance manager should be responsible for ensuring that the quality assurance system is properly implemented, maintained and continuously reviewed and improved.
- 2.3. The Quality Assurance manager should:
 - 2.3.1. Have direct access to the accountable manager; and
 - 2.3.2. Have access to all parts of the ATO's organization.

3. QUALITY ASSURANCE SYSTEM

- 3.1. The quality assurance system of the ATO should ensure compliance with requirements, conformance to standards and adequacy of training activities conducted.
- 3.2. Every process that assists the ATO to achieve its results should be identified and the activities and procedures Documented.
- 3.3. The ATO should specify the basic structure of the quality assurance system applicable to all training activities conducted.
- 3.4 The ATO should ensure that corrective actions are both identified and promptly addressed. The feedback system should also specify who is required to rectify discrepancies and non-conformance in each particular case, and the procedure to be followed if corrective action is not completed within an appropriate timescale.

Appendix H

SAFETY OVERSIGHT INSPECTION/AUDIT CHECKLIST (ATS TRAINING ORGANIZATION)

Name of training organization

Address:

Date of Audit:

Name & Signature

Of Auditor/Inspector

GENERAL:

Aspects to be audited or questions to be answered	Status
Are DGCA Authorizations, Licenses & Approvals available & valid?	Yes/No
Does the Organization have an Organization Chart?	Yes/No
Are the duties & responsibilities of each person clearly defined?	Yes/No
Is the training organization maintaining its principal business offices at the same place and address that was previously approved by DGCA?	Yes/No
Is the principal business office being shared with any other organization?	Yes/No
Is the training organization using any other place/airport as base for imparting the training? If so, has the approval been obtained from DGCA?	Yes/No

PROCEDURE & DOCUMENTATION:

Aspects to be audited or questions to be answered	Status
Whether relevant ICAO ANNEXES & DOCUMENTS are available with the training organization?	Yes/No
Whether CARs, relevant Directives, Circulars & other Instructions available with the training organization?	Yes/No
Whether AIP with latest amendments is available?	Yes/No
Whether approved Maps and Charts along with its revisions available?	Yes/No
Whether an approved training manual contain the complete information with regards to the courses conducted by the ATO <input type="checkbox"/> Title of the Course. <input type="checkbox"/> Objectives of the Course. <input type="checkbox"/> Frequency of the Course. <input type="checkbox"/> Planned intake of the Course.	Yes/No

<ul style="list-style-type: none"> <input type="checkbox"/> Location where Course is to be conducted. <input type="checkbox"/> Duration of the Course. <input type="checkbox"/> Eligibility Criterion of the Students. <input type="checkbox"/> Phase/Subject wise course contents. <input type="checkbox"/> Planned periods/hours for each phase/subject. <input type="checkbox"/> Duration of each period/break. <input type="checkbox"/> External/ICAO Documents to be used. <input type="checkbox"/> Internal Documents to be used. <input type="checkbox"/> Study Material/Course ware to be provided to students. <input type="checkbox"/> Number of Instructors to be used. <input type="checkbox"/> Instructors Qualification criterion. <input type="checkbox"/> Audio/Visual training aids to be used. <input type="checkbox"/> Simulation Devices to be used, if applicable. <input type="checkbox"/> Logistics support details, where applicable. <input type="checkbox"/> Details of On Job or Field experience, if applicable. <input type="checkbox"/> Details of study tour/visits, if applicable. <input type="checkbox"/> System of progress/training reports. <input type="checkbox"/> Type and frequency of Examinations/Skill Tests to be conducted. <input type="checkbox"/> Number/type of questions in Examinations. <input type="checkbox"/> Pass criterion to be used for academic/Skill test, as applicable. <input type="checkbox"/> Assessment Forms/Contents of Personal Folders. <input type="checkbox"/> Specimen Course completion Certificate to be issued. <input type="checkbox"/> Any other relevant information. 	
<p>Check the conduct of Courses by the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Check training course contents. <input type="checkbox"/> Check assessment reports and results. <input type="checkbox"/> Check attendance sheet. <input type="checkbox"/> Check lecture program. 	Yes/No
<p>Is there a procedure to ensure incorporation of latest amendments into the approved course material?</p>	Yes/No
<p>Is procedure available for training & assessment for English Proficiency of a trainee</p>	Yes/No

Does an independent examination cell equipped with qualified personnel, for conduct of testing & examination for the approved training course exist?	Yes/No
Does all the facilities/system/equipment are maintained as per procedures defined in Training & Procedure manual.	Yes/No

EQUIPMENT & INFRASTRUCTURE:

Aspects to be audited or questions to be answered	Status
Does the organization have a technical library?	Yes/No
Check the followings in the Operations/Technical library: <input type="checkbox"/> Stock of books commensurate with the Number of students. <input type="checkbox"/> Satisfactory procedure of loaning books to the students. <input type="checkbox"/> Procurement of new books. <input type="checkbox"/> Revision status of the books available. <input type="checkbox"/> Check that official notices, technical circulars, literatures and other requirements are circulated by the institute to the instructional staffs as soon after receipt as practicable and all superseded publications are withdrawn promptly.	Yes/No
Are the trainees provided with complete sets of the course material?	Yes/No
Do the trainees meet the required criteria for the subject training?	Yes/No
Is a simulator being used for conducting the training?	Yes/No
If yes, is the Simulator approved?	Yes/No
Is the radio equipment of the ATS simulators working properly?	Yes/No
Are the clocks in the ATS simulators properly synchronized; and in good working condition?	Yes/No
Is there enough number of simulators?	Yes/No
Are the lighting facilities in the classrooms and simulators satisfactory?	Yes/No
Are the classrooms and simulators equipped with temperature control devices?	Yes/No
Are the classrooms equipped with adequate audio-visual aids?	Yes/No
Whether adequate training aids are available?	Yes/No
Whether the space used for instructional purpose is properly lighted and ventilated?	Yes/No
Does the Organization have an appropriate Physical Infrastructure commensurate with its authorization, scope of work and load of work in terms of: <input type="checkbox"/> Appropriate current maps and charts. <input type="checkbox"/> Communications to ATS and the operations room. <input type="checkbox"/> Adequate briefing rooms/cubicles of sufficient size and number.	Yes/No

<input type="checkbox"/> Suitable offices for the supervisory staff and room(s) to allow instructors to write reports on students, complete records, etc. <input type="checkbox"/> Room (s) for Administration. <input type="checkbox"/> Toilet(s). <input type="checkbox"/> Stores (s)	
Are copying / printing facilities available?	Yes/No
Are alarm bell and siren facilities at a suitable location available with the training institute?	Yes/No
Are sufficient numbers of Fire extinguishers available?	Yes/No
Is a First-aid room with proper kits and validity available?	Yes/No
Is trained manpower available to handle safety services?	Yes/No
Does proper coordination with local Fire station exist?	Yes/No

HUMAN FACTOR & QUALITY MANAGEMENT:

Aspects to be audited or questions to be answered	Status
Check if competence requirements of each employee have been defined & complied i) Instructors ii) Others	Yes/No
Do the instructors meet the required criteria for approval as instructor?	Yes/No
Is there a process to ensure the up keep of the professional knowledge of the instructors through refreshers?	Yes/No
Do the instructors keep abreast with the latest developments in Air Traffic Services Specially CNS-ATM?	Yes/No
Are the practical exercises for the trainees realistic?	Yes/No
Are the quality management practices are being followed?	Yes/No
Is a trainee after completing a course unsatisfactorily given a chance to represent appeal against the decision?	Yes/No

RECORD KEEPING & MAINTENANCE:

Aspects to be audited or questions to be answered	Status
Are stores relating to Files and records maintained in a manner that they provide Safekeeping, identity, and ease of retrieval?	Yes/No
Is the control of records satisfactory in terms of: Responsibility / retention/ secrecy	Yes/No

