

	<p style="text-align: center;"><b>TANZANIA CIVIL AVIATION AUTHORITY AIR NAVIGATION SERVICES INSPECTORATE</b></p>	<p style="text-align: right;"><b>Revision: 1</b></p>
<p><b>Document No:</b> TCAA/QSP/SR/AC/ANS - 08</p>	<p><b>Title: Determination of ATS Personnel Adequacy</b></p>	<p style="text-align: right;"><b>Page 1 of 8</b></p>

## 1.0 PURPOSE

This Advisory Circular provides guidance material on determination of personnel requirements for Air Traffic Services

## 2.0 REFERENCES

- 2.1 The Civil Aviation (Personnel Licensing) Regulations, 2017
- 2.2 Doc 9426 – ATS Planning Manual

## 3.0 GUIDANCE INFORMATION

### 3.1 SCOPE

#### 3.1.1 Determination of personnel requirements

3.1.1.1 The upsurge in air traffic movements in most States in recent years has resulted in a rapid increase in the number of controllers needed. Manpower planning is essential to ensure that there is always sufficient trained staff available to meet the demands of the service. Such planning should forecast future manpower requirements for at least five years. In planning for manpower requirements acquisition of reliable data plays as important a role as does determining the methods of handling the traffic. Personnel requirements are usually determined by a study based on a comprehensive assessment of the duties to be performed.

3.1.1.2 A properly balanced workload scheme not only justifies the number of persons employed but it also protects against the overloading of any particular work position. In the latter capacity, it acts as a safeguard because employees who are frequently overloaded cannot be expected to be as efficient as those working under normal conditions.

3.1.1.3 A significant feature of air traffic services (ATS) work is the necessity for speedy and prompt action in all fields of operation. Such action may be required to be performed at high pressure during peak hours while action may slacken off during other times of the day or night. Such variations in the activity patterns have shown the need for the definition of a “peak man-hour” as the amount of work which can be performed by one person in an average peak hour: ATS workload schemes shall be based on these peak man-hours. The purpose of the workload system shall provide a basis, but

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not necessarily a rigid yardstick, for the assessment of the number of staff required at

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each unit, to identify periods of significant activities at units and to ensure that adequate safety margins are maintained. Should it be found that overloading becomes a frequent occurrence, a review shall be conducted to determine which modifications of working arrangements or facilities are needed to provide relief, or whether additional staff is required. In some cases, such a review may also indicate that, by appropriate modifications of the working arrangements, savings in manpower are possible. Seasonal variations in traffic may have significant effects upon the workload, but these should normally be anticipated and provided for by manpower scheduling or other management action.

3.1.1.4 To convert the abstract requirement for the provision of specific services into the number of days of operation from which the number of controllers required to provide that service can be calculated, the following method may be used

- a) determine the number of days of facility operation based on a general calculation of expected controller utilization or availability; This calculation should be based on a statistical mean and will give only an average figure
- b) determine the average number of days during which the average controller is away from the facility. Days away from the facility should include days off duty, leave, sick leave, absence for advanced training and any other cause;
- c) the information on the number of days of facility operation and average number of days a controller is away from the facility should then be inserted into a formula in order to obtain the number of controllers required to provide the service in question in the course of a year. A typical example of such a formula is;

$$\text{Personnel needed} = \frac{\text{Number of days a position is in operation per year}}{\text{Number of days of operation of the facility per year}} \times \frac{\text{Number of functional hours* per year}}{\text{Average number of hours worked per year by a controller**}}$$

\* "Functional hours" means the hours when the position is occupied plus time for hand over.

\*\* The "average number of hours" worked per year by a controller is obtained by

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subtracting from the days of the year the number of days the average controller

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is away from the facility. This figure is then multiplied by the average number of working hours per day of a controller.

3.1.1.5 As duty at some positions is more fatiguing than at others, supervisors should, at their discretion, rotate staff during their shifts between heavily loaded and more lightly loaded positions.

3.1.1.6 When making a workload study of any operating position, sector or unit, the study should be related to an hour-by-hour loading and normally not be confined to only one day's operations. A more representative result will be obtained if the study covers a week or longer period. The arithmetic average of the workload values obtained for individual hours should then be plotted. However, any exceptionally busy day or other shorter period may be plotted separately if it appears desirable to make this occurrence more outstanding.

3.1.1.7 Workload studies should be made in support of all proposals to change the staffing whenever such a proposal is based on work loading. Otherwise, studies should be made when it is believed that overloading is occurring with some regularity or that the functions of two or more positions may be combined without compromising safety or creating overloading of the so combined new positions.

3.1.1.8 An essential feature of any method used in conducting workload studies is that the assessment team should include a controller who is experienced in controlling traffic in the area under review but not personally involved in the control function.

### **3.1.2 Recruitment**

3.1.2.1 The requirements for issuing ATS licenses and ratings are prescribed in the Civil Aviation (Personnel Licensing) Regulations, 2017. The standards a candidate must meet to satisfy the medical and experience requirements determine to a large extent the conditions which govern the recruitment and selection process.

3.1.2.2 Selection methods normally follow established interviewing techniques requiring both written and oral examination with the latter emphasizing motivation. Psychological aptitude and manipulative tests are used and it is necessary to have candidates medically examined in accordance with the requirements in the Civil Aviation (Personnel Licensing) Regulations, 2017 as part of the selection process.

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3.1.2.3 Because of the special nature of the ATS, persons selected for service in ATS require considerable training before they can qualify for a license. Such training is a costly process, making it necessary to have arrangements whereby a candidate, who is unable to reach a satisfactory standard of performance within set time limits, may have his employment terminated.

3.1.2.4 In addition to classroom instruction, candidates should be tested on the job by assigning them to units where they should perform supplementary duties assisting the controller, but under continuous supervision. In this way, the candidate will gain confidence and the employer can assess his potential and possibly take corrective action before a loss of confidence occurs. This on-the-job training is the most significant element of the training process and the ability to handle people firmly but compassionately should therefore be a major criterion in the selection of supervisory personnel.

### 3.1.3 Career progression

3.1.3.1 Service with the ATS is a career in itself, but in common with most other disciplines, as employees become more skilled, some of them are likely to aspire to increased responsibilities and the associated social advances. As the task of controlling air traffic does not develop management skills, personnel should therefore be given the opportunity to attend varying levels of administrative instructional courses to provide a career structure through to top management positions. Individual assessments of progress, together with the on-the-job assessments, will permit an employee the opportunity to demonstrate fitness for promotion, and also allow management to have a broader group from which to select possible candidates. ATS staff are required to pass promotion examinations. However, regardless of the method chosen, it appears unlikely that a good controller will automatically become a good supervisor unless he is given adequate training and opportunity.

3.1.3.2 Once a candidate has qualified for an ATS license, he will be required to obtain a rating, qualifying him to work at a specific ATS position. It is usual for a basic grade controller to return to the training school to be taught advanced ATS techniques so that he can compete for positions of higher responsibility and also to ensure that a pool of qualified staff is always available to meet normal staff attrition.

*Signature*

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