



SAFETY ALERT 2018-06

Issue 01

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SUBJECT:

ANSP MANPOWER PLANNING & MONITORING SYSTEM, AND CONTINGENCY PLANNING

REFERENCE PUBLICATIONS:

CAR Part 1, CAR 1.14(c.1)

CAR Part VIII Subpart 4, CAR 4.7(a.6); CAR 4.45(b.3)

ICAO ANNEX 11 Appendix C

REASON:

The GCAA is concerned that there is insufficient strategic planning by ANSPs to ensure they can maintain a sufficient number of personnel to perform both essential functions and maintain the support services for those essential functions.

The GCAA's oversight activities have identified that while a defined number of minimum personnel required has usually been determined, most ANSPs have limited strategy to ensure the actual number of personnel remains above this figure at all times.

This Safety Alert is issued to remind ANSP about their obligations to maintain effective manpower planning and monitoring (MPM), hence allowing the provision of the sufficient number of all personnel, in particular ATCOs, with the appropriate qualification, at all times and in the right place through the demonstration that a Manpower Planning and Monitoring methodology appropriate to their system and environment is in place.

RECOMMENDATIONS:

Recommendation No.1:

- a) In accordance with CAR-X, Air Navigation Service Providers and appointed Accountable Managers are reminded that they shall demonstrate to the GCAA their capability to maintain effective manpower planning and monitoring (MPM), hence allowing the provision of the right number of ATCOs, with the right qualification, at all times and in the right place.
- b) Air Navigation Service Providers shall consequently develop, clearly document, and regularly maintain a methodology to ensure that they have, at all times, a sufficient number of qualified personnel for the provision of air navigation services, and the support of those services (Appendix I refers).



Recommendation No.2:

Additionally, since ANSPs are required to maintain an Operational Contingency Plan¹, the Manpower Planning and Monitoring System should be closely coupled to it to determine if any reduction in personnel necessitates activation of the Operational Contingency Plan. When activated, the Operational Contingency Plan measures should be commensurate with the level of personnel available at that time.

The Manpower Monitoring Alert Levels indicated in Appendix I should include organisation actions and procedures that must be taken to attempt to rectify each situation other than 'Optimal', and to mitigate any systemic hazards that are inherent in the operation. Management of Change and Safety Assessments should be carried out when the level is deemed to be 'Marginal' or 'Critical'.

The Critical Alert Level should clearly indicate in addition to actions and procedures, what restrictions or limitations to level of ATS service provided, which may be necessary to enforce when the Critical Alert level 3 is reached.

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¹ To be activated in the event of disruption, or potential disruption, or limitation on available facilities or personnel, of air traffic services and related supporting services in the airspace for which they are responsible for.



APPENDIX I ANSP MANPOWER PLANNING AND MONITORING (MPM) SYSTEM

Air Navigation Service Providers shall develop, clearly document, and regularly maintain a methodology to ensure that they have, at all times, a sufficient number of qualified personnel for the provision of air navigation services, and the support of those services.

The methodology used should ideally be based on a valid dynamic model, used as a decision-making support tool, which conceptualises the ATM environment and provides greater insight into the causes and consequences of different events that could affect the outcomes of the MPM. Validation is generally performed by using the model over time to establish its suitability by achieving a better balance between ATCOs required and available at any time.

The model should be designed in a manner that ensures that the final decision-maker is provided with an accurate understanding of the real problems the organisation is presented with.

A. MANPOWER PLANNING

The following factors² should be considered when developing the manpower planning. Some of these factors are specific to Air Traffic Controllers, however the general principles remain constant for the Manpower Planning for all ANSP Disciplines.

a) Ab Initio Training

If the anticipated number of ab initio trainees reaching full qualification at the end of the training programme is not met, difficulties may arise in replacing outgoing staff, e.g. those retiring. It is therefore important to select trainees in such a way that the highest possible outcome may be expected. Indeed, training places occupied by trainees who fail during the course of training cannot be recovered and are consequently lost. Where the success rate is less than that expected in the planning model, the entry criteria should be reviewed, or the model adjusted to reflect the actual rather than desired success rate.

b) Expatriate Labour Support

For ANSPs that utilise expat labour for provision of services, these labour forces should be closely monitored. Changes in the international market can significantly affect the availability of new personnel and inhibit the retention of existing personnel. ANSPs that rely on a substantial expat force should ensure that the conditions are favourable in the international market. Additionally, various nationalities may be influenced by events in their home State and mass migrations can occur either to/from the UAE workforce at short notice. Where necessary, an additional buffer should be added to staffing figures to ensure resilience in unpredictable circumstances.

² <http://www.eurocontrol.int/sites/default/files/content/documents/nm/safety/first-report-on-air-traffic-controller-manpower-quantitative-requirements-in-ecac-states.pdf>



c) Current Controller Training

There is a requirement to maintain current ATCO competency, and train the workforce for new procedures and developments.

Training capacity - be it for ab initio trainees or qualified controllers - is a potential bottleneck, both for the anticipated influx of new controllers and the retraining of current ATCOs. In this context, the ageing of controllers should be addressed.

Training includes:

- Emergency Continuation Training
- SMS/QMS Training
- System upgrade training
- Refresher training
- Language training
- Qualification training
- Conversion training

d) Future Uncertainty

Changes to future concepts and the implication of uncertainty in terms of personnel requirements is a major contributor to imbalance within MP. Better coordination between technical developers and MP staff could overcome this. Planned major events, and airspace or system implementations should be considered as part of the manpower plan.

e) Controller Involvement in Planning and Decision-making

Management should pursue good relations with operational personnel, as it is obvious that overstretched motivational factors may have a negative impact on the overall capacity figure.

In the relationship between managers and ATCOs, confidence building needs to be an ongoing process.

ATCOs are increasingly involved in new developments and teamwork practice is becoming more common as more staff become involved in the wider business of ATS.

The core task of an ATCO is to deliver ATS from the working position. Next to this, ab initio trainees are trained by ATCOs in the OJT programme.

In addition, controllers are often requested to get involved in all kinds of other activities such as ab initio training itself, participation in working groups or simulations, where their professional experience is needed.

It is therefore necessary that the ATCOs workload outside the OPS room is accurately assessed and fully taken into account for the purposes of MP. Non-operational Duties may include:

- Incident investigation & analysis
- Staffing of training centre
- Expert team participation
- Participation in projects
- Administrational work



f) Organisation of Working Time

The way in which the ATCOs work is organised is important in terms of optimal workforce efficiency - whether it be achieved by team rosters, individual rosters or a hybrid of both. Time leaking away by overlapping duties, for example, is time that simply cannot be recovered.

The local and/or federal laws concerning certain aspects of the organisation of working time place restrictions on the organisation of working time. These restrictions constrain the scheduling process to provide cover for continuous working over 24 hours a day, 7 days a week. Effective fatigue management must be a core principle of roster design. It is inappropriate to mitigate personnel shortages only with revised rosters based on fewer numbers where this can further increase the problem by fatiguing the remaining staff and reducing morale, both of which will have a negative effect on staff retention.

g) Manpower Planning Figures

A more detailed representation of MP figures may improve the relationship between expected shortages (or surpluses) of ATCOs and the expected demands of air traffic.

Shortages (or surpluses) of ATCOs might occur because of deficiencies in the planning process - or be caused by reasons beyond the manpower planners control.

For example, the start-up of new projects involving ATCOs without informing the staff in charge of MPM, more retirements due to medical reasons than foreseen, or high turn-over rate etc. A closer examination of the special characteristics surrounding the planning process would therefore be very beneficial. Constant change is the main characteristic of the planning process.

It must be understood that planning figures entered in five-year forecasts may already be imprecise because of changes that have occurred in even the short period of time since that forecast was first written/updated.

A permanent information flow on 'what's going on' in the ANSP on all levels is of paramount importance to the MPM in order to fully assess the likely consequences of a decision on the manpower figures.

Different factors may exist to determine the number of personnel needed for an operational working position. Normal practice is to calculate a multiplication factor, or staffing factor, for each position in a specific environment. The calculation should reflect local requirements:

- number and size of control positions,
- operating hours of positions,
- number of shifts per annum,
- traffic volume and traffic distribution,
- number of days per year a position is in operation,
- number of days of operation of the facility (per year),
- number of functional hours,



- Rest-days
- Annual leave and public holidays
- Duration of working week
- Duration of working day
- Duration of rest-periods per day
- Annual leave and public holidays
- Duration of working week
- Duration of working day
- Duration of rest-periods per day
- Training, sick, or special (e.g. study, national obligation) leave
- Licensing Factors Contingencies: Rating failures, Loss of license, Loss of staff

Note: Operational requirements, determined by the traffic volume, distribution and complexity, define the opening times of the sectors necessary to guarantee a safe and orderly traffic flow.

It should be noted that anomalies may occur under certain circumstances which could render a standard staffing factor inadequate (e.g. different systems for calculating leave weeks and working weeks, uneven distribution of work cycles, rostering schemes used).

The staffing factor method takes into account the standard working time and covers all categories of absence but in a theoretical way. It does not take into account the inevitable efficiency loss or balancing losses inherent in all rosters. The staffing factor method cannot therefore be used to estimate the exact number of staff needed. It consistently fails to give an exact figure because, for example, it assumes:

- the effective working time of controllers to be fully accommodated,
- the effective time for breaks (rest periods) to be fully accommodated and evenly distributed,
- the number of leave and sickness days to be evenly spread over the year.

Roster balancing losses lead to a situation where the actual numbers of staff needed to run a certain roster are higher than the numbers calculated theoretically using the staffing factor method.

B. MANPOWER MONITORING

The monitoring of the existing compared to the required staff is critical to the effective implementation of the personnel plan, and should include various alert levels to ensure an and respond to any variations in optimal staffing resources, based on the following or similar model:

a) Optimal

- Resources allow for the unimpeded functioning of all services, training, and leave requirements. Overtime is rare.
- Staff vacancies are filled before, or shortly after, the position becomes vacant with the expected qualification; long term vacancies are exceptional.



- The organisation is prepared for any unexpected demands on additional staffing such as major events or projects.
- b) Sub-optimal (Alert Level 1)**
- Resources allow for the functioning of services, training and leave, although additional overtime may be utilised occasionally.
 - Staff are replaced in a timely fashion, although some vacancies are extended.
 - Additional demands such as events or projects are covered acceptably with some planning.
- c) Marginal (Alert Level 2)**
- Resources barely allow for the effective functioning of services, training and leave; additional overtime may be commonly utilised.
 - Staff are replaced after they leave, some vacancies become extended.
 - Additional demands such as events or projects place strain on the organisation.
- d) Critical (Alert Level 3)**
- Resources limit the functioning of the organisation. Services may require to be curtailed, training is minimal or cancelled, and permission for leave is difficult.
 - Staff are leaving at a rate faster than they can be replaced, there are long term vacancies for positions.
 - The organisation is effectively unable to cope with any large event or project.

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