International Civil Aviation Organization

MIDANPIRG/18 and RASG-MID/8 Virtual Meeting

(15-22 February 2021)

Agenda Item 7: **Any other business**

FLEXIBLE USE OF AIR TRAFFIC CONTROL SIMULATION DURING PERIODS OF ABNORMAL TRAFFIC LEVELS

(Presented by the United Arab Emirates)

SUMMARY
This paper presents the advantages of using simulation to provide flexibility regarding the conduct of both training and competency assessments, when required due to inadequate traffic, staffing or other unforeseen events.

REFERENCES
– ICAO Annex 1 - Personnel Licensing – ICAO Doc 9868 - Procedures for air navigation services- Training – ICAO Doc 10056 - Manual on Air Traffic Controller Competency-based Training and Assessment

1.   INTRODUCTION

1.1   The COVID-19 global pandemic has had an unprecedented impact on the aviation industry across the globe. With traffic levels plummeting to levels never before seen in recent history, Air Traffic Services Providers were forced to adjust their overall staffing requirements, adapt staff rostering to comply with state mandated lockdown restrictions and accommodate difficulties with staff availability for rostered duties. In addition, Air Navigation Service regulators have promulgated amended requirements with regard to Air Traffic Control currency, Fatigue Risk Management provisions and notably, the use of Air Traffic Control Synthetic Training Devices (simulators). Simulation has been used successfully to maintain active controller skills (mitigate skills fade), conduct competency examination for renewal and issue of Certificate of Competency (CoC) and to complete the Minimum Experience requirement for specific ratings. The UAE ACC located at Sheikh Zayed Air Navigation centre (SZC) in Abu Dhabi, normally uses simulation for pre-live Air Traffic Control operational training, Emergency and Continuation (ECT) training, On the Job Instructor Training (OJTI) and assessment of previous Air Traffic Control Officer (ATCO) competence. Additionally, simulation is used for any ad-hoc remedial, revalidation, airspace/procedure change and infrastructure renewal training. We invite delegates to discuss alternative uses for simulation when extraordinary circumstances dictate.

2.   DISCUSSION

2.1   USE OF SIMULATION AT THE UAE AREA CONTROL CENTRE FOR TRAINING OF AIR TRAFFIC CONTROL OFFICERS AND AB-INITIO STUDENTS

2.1.1   ICAO Doc 10056 and Doc 9868 proposes the use of simulation for the pre-live operational stage of Unit training as well as within the live operational environment to supplement OJT for those situations that do not occur regularly but need to be taught and assessed.

2.1.2   ICAO Annex 1 already makes provision for the Authority designated by a Contracting State in-flight crew training to approve the use of flight simulation training devices and authorizing for their use in gaining the experience or in demonstrating the skill required for the issue of a license or rating. In addition, in terms of an Approach Precision Radar Control Rating, Annex 1 also makes provision for experience gained on a radar simulator approved for that purpose by the Licensing Authority.

2.1.3   With consideration to Safety Decisions that were issued by the GCAA Safety Affairs Department, the UAE ACC applied the following with respect to the use of ATC simulation;

- In situations where operational environment traffic under normal operational conditions to complete the Minimum Experience, requirement was not possible, simulation was used provided that;

    o the ATCO or student ATCO was previously exposed to traffic representative of the level of density and complexity for the Unit immediately prior to the reduction in traffic due to COVID-19; and

    o simulation does not count for more than:

        ▪ 50% of the required experience for ATCOs with previous experience in the same rating;

        ▪ 20% for student ATCOs with no previous experience (ab-initio).

- When operational environment traffic under normal operational conditions was not possible to complete the examination for a Certificate of Competence, simulation was used.

2.2   AIR TRAFFIC CONTROL OFFICER CURRENCY/PROFICIENCY

2.2.1   The UAE ACC also used simulation to refresh controller's skills during this period of abnormal traffic levels for those that worked continuously throughout this time, and also for staff returning from extended work-from-home periods. The simulation was also used for the purposes of allowing controllers to maintain operational proficiency, in light of traffic levels that did not permit a realistic opportunity to maintain currency.

2.2.2   Given the experienced gained it would also be beneficial to use simulation in order to meet ATCO currency requirements, in lieu of low levels of live traffic. The intention being to preserve standards and ensure ATCO knowledge and skills are maintained at the required level as traffic levels return to normal.

2.2.3   Use of simulation in this manner may also be applicable when other circumstances dictate, for example where ATCO's return from leave or other extended periods of time where an ATCO is unable to work live traffic.

2.2.4   When prevailing operational traffic conditions do not permit the completion of an examination for the renewal of ATCO competency, the ATC simulator should be used to conduct the examination at traffic levels representative of normal operational traffic.

2.2.5   By way of example, Air Navigation Service Providers conduct Emergency and Continuation Training using simulation on a yearly basis since it is not possible to replicate the scenarios required during live operations. This training forms part of an ATCO's competency.

2.3   SITUATIONS WHERE THE UAE ACC USED REALISTIC SIMULATION DURING THE PANDEMIC

2.3.1   The UAE ACC made use of simulation to issue an initial Certificate of Competence as follows;

- Solely, for an initial issue Certificate of Competence leading to license issuance of one candidate in April 2020, without a check on live traffic. This consisted of twenty simulator exercises, including eight examination exercises containing traffic representative of normal levels for the sectors required.

- In conjunction with a separate check on live traffic, simulation was used to complete the check for an initial issue Certificate of Competence leading to license issuance on a further five candidates during October and November 2020, following the cessation of work-from-home measures.

- Simulation was also used for additional sector training of current ATCO's during this period, in preference to training on live traffic.

- Whilst simulation was not employed for the renewal of any Certificates of Competence during work-from-home restrictions at SZC, had there been a further extension in these requirements, this may have become necessary.

2.4   CONCLUSION

2.4.1   Experience at the UAE ACC has shown that the flexible use of simulation can be effective when employed in the manner described.

2.4.2   When either traffic, staffing levels or any other unforeseen event causes a reduction in air traffic levels, simulation can be used effectively to satisfy currency requirements, for the conduct of on-the-job training and also competency assessments.

2.4.3   The simulator that is utilized for this purpose needs to exactly match the equipment used in the live operational environment, provide realistic simulation of aircraft performance and accurately simulate the operational airspace and sector configuration. The simulator exercises employed need to be representative of normal traffic levels, depending upon the objective.

3.   **ACTION BY THE MEETING**

3.1   The meeting is invited to:

a) Propose to amend ICAO Annex 1 to allow flexible use of simulation during abnormal traffic periods;

b) propose to amend Annex 1 to allow use of simulation for ATCOs to gain minimum experience requirements towards the rating being sought; and

c) encourage States to maximize the use of realistic simulation to ensure ATCO currency and proficiency.

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