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(Lima, Peru, 21 to 25 May 2018)

Agenda Item 3: Implementation of air traffic flow management (ATFM) and improvement of procedures for coordination between units

ACTIONS FOR ATFM IMPLEMENTATION IN ARGENTINA

(Presented by Argentina)

SUMMARY

This working paper presents the action taken in Argentina through ANSP EANA SE concerning ATFM implementation tasks. It also presents a study case of the action taken in face of increased demand during Easter this year.

References:

- Declaration of Bogota, 6/12/2013;
- Guide for the application of a common methodology to calculate airport and ATC sector capacity, for the SAM Region;
- ICAO Doc 9971;
- Manual on collaborative air traffic flow management – ICAO Doc 4444 PANS-ATM;
- Caribbean/South American air traffic flow management manual

1. Background

1.1 At the SAM/IG/20 meeting, EANA presented the work carried out concerning training and runway and ATC sector capacity measurements.

1.2 The meeting also took note of the development of an operational concept (CONOPS) with the CGNA of Brazil.

1.3 This working paper presents the steps being followed for the implementation of an ATFM service at national level.

2. Discussion

Action taken by EANA for ATFM service implementation

2.1 In order to implement the ATFM service and following the guidelines set forth in the Operational Concept, a series of measures have been taken for the implementation of the ATFM service.

Establishment of the ATFM work team

2.2 In order to designate staff with specific ATFM tasks, an internal search was undertaken among EANA controllers, where 8 were assigned on a permanent basis to ATFM service in a first stage.

2.3 The selected team is made up by a group of experienced controllers and a group of less experienced controllers but more knowledgeable about IT tools, thus combining experience in the provision of air traffic services and in the use of different technologies.

Training

2.4 Still in cooperation with CGNA, training was provided in Rio de Janeiro and Curitiba, where EANA personnel acquired the necessary knowledge for the organisation and provision of the service.

ATFM procedures

2.5 Once training was completed, the group, together with CGNA, drafted the operational procedures to be applied at the EZE FMU, in order to have standard processes for the provision of ATFM services.

Training and dissemination

2.6 Once the operational procedures had been completed, training and dissemination activities were conducted for EANA personnel and for the main aircraft operators, with whom points of contact were established. Finally, in order to disseminate all the information concerning the implementation and provision of the ATFM service among the aeronautical community, an aeronautical information circular (AIC) was prepared for dissemination among airlines, users and interested parties (see the **Appendix** to this paper).

Service start-up

2.7 Service is expected to begin during the first half of June. This is considered as the first stage, since it is expected to grow and evolve in coordination with the other States and based on the needs of Argentina.

Case study on increased demand during Easter

Introduction

2.8 The procedure development stage coincided with Easter, which is characterised by increased demand, and the national holiday on 2 April, resulting in an extremely long 5-day weekend. The result was a significant increase in traffic and a perfect opportunity for the ATFM team to start analysing how to manage traffic as efficiently as possible.

Planning

2.9 Planning started with the establishment of values to be used for both runway and airspace. A peculiarity at that time was that runway 11/29 of Ezeiza was to be closed for maintenance, and runway 17/35, with 55% less capacity than the former, was to be used.

2.10 Once the capacity values had been established in coordination with the ATC service, the expected demand was analysed. Data provided by ANAC on authorised itineraries was used to assess the capacity available to scheduled commercial aviation. With this information, a series of ATFM measures were planned for efficient management of traffic in those dates.

2.11 Once a plan had been developed based on the foreseen measures, meetings were held with the main operators and with ANAC to find the best way to manage traffic. Once the plan was agreed, it was shared with Uruguay and the internal sectors of EANA, which included a 2-day briefing with EZE ACC supervisors prior to the first day of Easter.

Execution

2.12 During the execution of the Easter plan, the entire ATFM team was present at the EZEIZA ACC, SAEZ TWR and SABE TWR (Aeroparque) to accompany and support the operation, and make tactical corrections as needed.

2.13 The measures taken included MIT to Montevideo, MINIT to the rest of the FIRs, MDI from San Fernando, and prohibition of AFILs within the airspace of the BAIRES TMA.

Values obtained, compared to the same event in 2017

2.14 Some figures registered during the execution of the Easter plan are shown below:

- Variation of max. hourly peak at the BAIRES TMA compared to 2017: **-4%**
- Variation of traffic at the BAIRES TMA compared to 2017: **+16%**
- Variation of traffic at Aeroparque compared to 2017: **+14%**
- Variation of traffic at Ezeiza compared to 2017: **+14%**
  Note: Runway 11/29 not available.
- Variation of traffic at San Fernando compared to 2017: **+23%**

Conclusions and lessons learned

2.15 In 2018, there was more traffic compared to the previous year, while the maximum hourly peak dropped. This was possible through event planning in advance, in coordination with the main stakeholders.

2.16 The measure of prohibiting AFILs was of great help, since controller’s time was fully devoted to ordering traffic and not to receiving and transmitting information.

2.17 Given the structure of Argentinian airspace, management measures are more effective if applied to groups of neighbouring airports rather than to individual airports.

3. **Suggested action**

3.1 The Meeting is invited to:

a) take note of the information provided in this paper;

b) discuss the processes used and suggest any improvements or common actions to be applied.

APPENDIX

AIC A/XX

A XX. IMPLEMENTATION OF THE AIR TRAFFIC FLOW MANAGEMENT (ATFM) SERVICE AT THE EZEIZA FIR

Effective date: XX XXXXXX 2018

1. PURPOSE

The purpose of this aeronautical information circular (AIC) is to inform the aeronautical community about the implementation of the ATFM service at the EZE FIR, the objective of which is ATM demand/capacity balancing, ensuring safe, orderly and smooth air traffic flow.

2. APPROPRIATE AUTHORITY

According to law 27161, the *Empresa Argentina de Navegación Aérea* (EANA S.E.) is responsible for the provision of air traffic flow management (ATFM) services. In order to comply with its policies and mission, it started providing this service pursuant to AIC A 02/09 dated 12 March 2009, effective 7 May 2009.

3. AREA OF RESPONSIBILITY

During a first stage, the ATFM service will be provided within the jurisdiction of the flight information region of Ezeiza (EZE FIR), maintaining demand/capacity balance (DCB), mainly in the Baires terminal area or at airports where demand is known or expected to exceed capacity.

4. UNIT RESPONSIBLE FOR THE PROVISION OF THE ATFM SERVICE

In a first stage, the unit responsible for the provision of the ATFM service will be the flow management unit of Ezeiza (EZE FMU) located in the area control centre of Ezeiza (EZE ACC).

5. WORK SCHEDULE

ATFM service will be provided 24 hours a day, 365 days a year.

6. DEFINITIONS

- Airports of ATFM interest

Airports where demand sometimes exceeds, or is expected to exceed, the declared airport capacity.

- ATC capacity

The generic term that encompasses the concepts of runway capacity and airspace capacity (of ATC sectors).

NOTE: ATC capacity figures are not static values but rather vary according to traffic complexity and other factors (*e.g.,* weather conditions, CNS/ATM system availability, demand, aerodrome design, etc.).

- ATM community

Set of organisations, bodies or entities that could participate, collaborate, and cooperate in the planning, development, use, regulation, operation, and maintenance of the ATM system.

- Demand

Number of aircraft requesting to use the system in a given time period.

- Central flow management unit (CFMU)

Unit responsible for the provision of air traffic flow management services within a specific area.

- Assessed element

Aerodrome or ATC airspace sector, whose capacity has been declared by the appropriate authority.

- Air traffic flow management (ATFM)

A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilised to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.

- Airspace management (ASM)

The process whereby airspace options are selected and applied to meet the needs of airspace users.

- Air traffic management (ATM)

Dynamic and integrated air traffic and airspace management conducted in a safe, cost-effective, and efficient manner, through the provision of seamless facilities and services in collaboration with all the parties.

- ATFM measures

Procedures adopted to maximise the use of available capabilities and/or to adjust air traffic flow in a given portion of airspace, along a given route, or in a given aerodrome, to avoid imbalances.

- Reference number (Nref)

The optimum number of aircraft that the ATC sector is capable of controlling simultaneously over a time period, without generating work overload for the ATC. It should be noted that the calculated capacity is the reference number.

- Peak number (NPico)

In the mathematical model, calculated capacity shall be treated as an optimum capacity number, to which a margin may be added to obtain the peak number for a time period.

- Hourly capacity of the sector (CHS)

The number of aircraft to which the sector can provide air traffic control services over a period of one hour.

- NOTAM

A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

- Flow management position (FMP)

Working position established within an appropriate air traffic control facility to control and balance traffic flows within its areas of responsibility in accordance with ATM directives – and to ensure the necessary interface between the local unit and the centralised ATFM unit, if any.

- Air traffic volume

The number of aircraft within a given airspace or movement area of an airport, over a given time period.

7. PROVISION OF THE ATFM SERVICE

7.1 General rules

The air traffic flow management (ATFM) service will be provided to all aircraft operating in the airspace of the EZE FIR and at the aerodromes within its vertical and horizontal boundaries.

ATFM measures may be applied to all flights, except:

a) flights having an emergency, including aircraft subject to unlawful interference;

b) flights in search and rescue and fire fighting missions;

c) flights conducting emergency evacuations specifically declared by health authorities;

d) flights carrying or intended for carriage of severely sick or injured patients who need urgent medical attention, or carrying vital organs for human transplant;

e) flights carrying national heads of state;

f) flights used for police, military air interception operations or for airspace defence activities;

g) other flights exempt by EANA S.E. through its FMU

Although the ATFM service is provided throughout the EZE FIR, special attention shall be paid to DCB at the Baires TMA, to which end the traffic volume of the following airports will be analysed: SAEZ, SABE, SADP and SADF. Other airports and sectors may be analysed when it is know or assumed that demand will exceed capacity.

7.2 ATFM measures

When it is foreseen that demand will exceed capacity, the EZE FMU may apply the necessary

measures, after analysing the factors leading to such decision, based on the criteria and measures established in ICAO Doc 9971.

Such measures are detailed below:

Miles in trail (MIT)

Tactical ATFM measure expressed as the number of miles required between aircraft (in addition to the required longitudinal minima) to meet a particular criterion that may be specific to separation, an airport, over a fix, at an altitude, through a sector or on a specific route. MIT is used to apportion traffic into a manageable flow, as well as to provide space for additional traffic (merging or departing) to enter the flow of traffic.

Example: an aircraft every 30nm *via* SARGO regardless of FL

Minutes in trail (MINIT)

Tactical ATFM measure expressed as the number of minutes required between successive aircraft. It is normally used in airspace without air traffic surveillance, or when transitioning from an airspace with surveillance to another without surveillance, or even when spacing is such that makes it difficult for the sector controller to measure it in miles.

Fix balancing

Tactical ATFM measure aimed at distributing demand and avoiding delays. The aircraft is assigned an arrival or departure fix that is different from the one specified in the flight plan. This may also be applied during periods of connective activity that prevent standard instrument arrival (STAR) or standard instrument departure (SID) procedures.

Rerouting

Tactical ATFM measure consisting of a route assigned by ATC that is different from the one specified in the filed flight plan. Route changes can be of various types, depending on the tactical situation.

Mandatory rerouting scenarios

Mandatory flow deviations to ease traffic in limited areas.

Level capping scenarios

Measure whereby the flight level is restricted (for example, flights from Buenos Aires to the Mendoza TMA shall fly below FL280 and flights from Buenos Aires to the Santiago de Chile FIR shall fly at FL300 or above).

Minimum departure intervals (MDI)

Tactical ATFM measure applied when the ATC establishes, for example, a departure flow rate of 3 minutes between successive departures. In general, MDIs are applied for 30 minutes at a time, at the most, normally when there is excessive congestion in a departure sector or when capacity is abruptly reduced (for example, due to equipment failure, meteorological conditions).

Slot swapping

Tactical ATFM measure that can be applied manually or automatically. Slot swapping enables

airspace users (AU) to change the order of departure of flights that should fly in a limited area. This measure allows AUs to manage and adapt their business models in a limited environment.

Collaborative trajectory options

Strategic, pre-tactical or tactical ATFM measure consisting of a series of routes developed, published and pre-defined in collaboration to address recurrent route scenarios. This series of options is a support tool for effective coordination of routes during periods of limitations in the system.

Ground stop (GS)

Tactical ATFM measure whereby certain aircraft remain on the ground. Given the impact of a GS on an AU, alternate ATFM measures should be examined and implemented before resorting to a GS, if time and circumstances allow. Normally, the GS is applied:

a) when airport capacity has been reduced large due to significant weather conditions or aircraft accidents/incidents;

b) to avoid long holding times in flight, to prevent the sector/centre from reaching near-saturation levels or to avoid total gridlock at the airport;

c) when the facility is totally or partially incapable of providing ATS due to unexpected circumstances; and

d) when routes are not available due to severe meteorological conditions or catastrophic events.

Airborne holding

Strategically designed tactical ATFM measure. It is a process that requires that an aircraft wait at a way-point in a pre-defined standard holding pattern. It is normally used for addressing demand-capacity imbalances reported on a short notice. It may also permit the creation of a list of aircraft that could take advantage of temporary capacity increases that arise on a short notice, such as those occurring during certain types of meteorological events.

7.3 CDM

The collaborative decision-making (CDM) process is a work methodology that permits decision enhancement through real-time awareness of, *inter alia,* preferences, limitations and situations of all the participants. To this end, each participant must be involved in a collaborative effort, sharing common responsibilities, information, resources, and objectives.

The EZE FMU will apply CDM processes whenever possible, in order to provide better ATFM solutions.

8. DISSEMINATION OF MEASURES

In a first phase, ATFM measures will be disseminated to the aeronautical community through NOTAMs. In a second phase, measures in force will be posted on a web platform.

9. CONTACT

FMU EZE
Tel: +54 (011) 4480-2318
Email: FMUEZE@EANA.COM.AR