International Civil Aviation Organization

WORKING PAPER

AN-Conf/13-WP/184[1]
27/9/18
Revision No. 1
28/9/18

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 2: Enabling the global air navigation system
2.1: Aerodrome operations and capacity

AERODROME OPERATIONS AND CAPACITY

(Presented by Airports Council International (ACI))

REVISION NO. 1

EXECUTIVE SUMMARY

This paper presents the views of Airports Council International (ACI) on the ICAO Secretariat working paper on aerodrome capacity and efficiency enhancement (AN-Conf/13-WP/14). It highlights airport views and initiatives to enhance the global air navigation system through implementation of operational improvements based on ICAO's strategic objectives.

Action: The Conference is invited to:
a) note ACI initiatives and
b) agree to the recommendations in paragraph 3.

1. INTRODUCTION

1.1 This paper comments on the Secretariat's working paper on aerodrome capacity and efficiency (AN-Conf/13-WP/14 refers).and covers some additional issues.

1.2 The main focus is on existing capacity-constrained airports and those which are expected to become capacity-constrained. Airport operators need to balance capacity across the whole airport and remove bottlenecks while meeting environmental, efficiency and safety targets. Operationally, many capacity-constrained airports have implemented airport collaborative decision making (A-CDM), an airport operational plan, and airport operational management centres, which enable the airport to optimize its performance and react quickly to any operational irregularity. Some airports are considering the further development of A-CDM into Total Airport Management (TAM), a concept that includes passenger terminal processes. At the same time, airport operators are paying closer attention to the passenger experience (B2C), while obviously continuing to meet airline needs (B2B).

[1] English, Arabic, Chinese, French, Russian and Spanish versions provided by ACI.

1.3 Airports are businesses whose owners and operators must plan their future, find means of meeting future airline demand and achieve sufficient return on capital employed. Thus, the airport master plan to increase capacity must meet the test of financial viability of the investment. Some States continue to provide public funding for capacity development, but this model is becoming less common.

1.4 As mentioned in AN-Conf/13-WP/14, airport operations constitute one of the most important performance improvement areas in the *Global Air Navigation Plan* (GANP, Doc 9750). Lack of airspace capacity at the interface with runways can be mitigated by options set out in the GANP, including the threads concerning airport accessibility (APTA), wake turbulence separation (WAKE) and runway sequencing (RSEQ).

1.5 Lack of airport capacity can be addressed through threads concerning surface operations (SURF), meteorological information (AMET), and most importantly through A-CDM. Other important issues for capacity are ground handling and the use of new generation and larger aircraft.

1.6 All these issues are elaborated on below.

2. DISCUSSION

GANP and Airport Performance

ACI supports the ICAO concept of Aviation System Block Upgrades (ASBUs) described in the GANP, and particularly Performance Improvement Area 1 on airport operations, which includes:

WAKE: increased runway throughput through optimized wake turbulence separation;
RSEQ: improved traffic flow through sequencing (AMAN/DMAN);
SURF: safety and efficiency of surface operations (A-SMGCS);
APTA: optimization of approach procedures including vertical guidance;
ACDM: improved airport operations through airport CDM; and
AMET: interoperable meteorological information services (PIA 2) is relevant.

2.1 In particular, as regards WAKE, ACI supports efforts to reduce aircraft separations on approach and departure, while maintaining safety. Runway occupancy times should be minimized by optimizing runway and taxiway infrastructure, such as determining the optimal location of rapid exit and access taxiways, and their lighting and marking.

2.2 As regards RSEQ, ACI supports the use of arrival and departure managers (AMAN/DMAN), which are important tools to maximize runway capacity, in terms of efficiency, environment and safety aspects. Time-based metering may be adopted to sequence departing and arriving flights efficiently regardless of wind conditions.

2.3 As regards SURF, ACI supports the development and implementation of advanced surface movement guidance and control systems (A-SMGCS) to bring airport capacity during instrument meteorological conditions as close as possible to the capacity achieved during visual meteorological conditions, without prejudice to safety standards. ACI supports development of models, tools and procedures, and considers that a useful measure of the capacity performance of airports or airspace can be derived from a careful assessment of delay information.

2.4 As regards AMET, ACI believes that a network-centric, service-oriented approach in sharing meteorological information will create better situational awareness for airports to plan and prepare for any weather disruptions and delays. ACI supports the ICAO objective to provide interoperable SWIM information services that can be suitably tailored to meet the needs of the operational users.

2.5 As regards precision approaches, a ground-based augmentation system (GBAS) landing system (GLS) can provide a real alternative to instrument landing system (ILS), supporting multiple runways with a single system. In the case of an ILS approach, the previous landing or departing aircraft can disrupt the signal, whereas GLS is immune from this interference and the stability of the guidance is thereby enhanced, maintaining capacity in low visibility operations - a particular advantage at capacity constrained airports.

ACDM, airspace and airport efficiency

2.6 ACI regards the airport operator as having a central role and promotes the need to move towards total airport management (TAM) as the next step in ACDM, integrating terminal and landside constraints. ACI believes that ACDM can also play a role in smaller or regional airports to facilitate regional networks and optimize airport efficiency.

2.7 While ACI appreciates the new inclusion of ACDM as part III of the *Manual on Collaborative Air Traffic Flow Management* (Doc 9971), we suggest that it become a separate document, to create more visibility by airports. ACI is also preparing a simple user guide on ACDM to support implementation by airports.

2.8 ACI believes that technical and operational means should be developed to improve the use of airport and airspace capacity, in addition to the building of new airport capacity where economically justifiable. ACI supports closer cooperation with air navigation service providers (ANSPs) and governmental agencies in control of airspace, which should improve airspace capacity and quality of service by fully exploiting the capability of aircraft systems. ACI supports the need to increase the capacity of approach and departure routes, in line with runway capacity.

Ground handling

2.9 ACI acknowledges the role of ground handling operations in improving both safety and efficiency at aerodromes. Standardization of ground handling activity as envisaged in the draft ICAO *Ground Handling Manual* and increasing the capacity of ground operations is a key enabler of aerodrome efficiency. A collaborative approach is required between the airport operator and the ground handlers to ensure this. ACI has published a policy paper on ground handling in 2016 and has just produced a template ground handling agreement between an airport and a ground handler, which can be adapted to local regulations and circumstances.

New generation aircraft

2.10 To cater for the projected increase in traffic, aircraft with greater operating efficiency and technological advances such as folding wingtips are being designed and manufactured. ACI works closely with aircraft manufacturers to support airports to accommodate new aircraft, and to influence the design of new aircraft so that they can be accommodated as easily as possible at airports.

Aerodrome design and operation

2.11 ACI fully supports ICAO in optimizing aerodrome design specifications and believes that aerodrome design and operations standards should be based on safety data and performance studies, to enhance aerodrome capacity without compromising the safe operation of aircraft.

Other initiatives

2.12 Drones and unmanned aircraft system (UAS): ACI has published a policy paper on drones, and fully supports the safe use of drones for airport operations such as inspection of movement areas, calibration of visual and navigational aids, wildlife management, security, etc. For this, common operating procedures for drones should be developed, to facilitate their integration at airports and ensure safety. Drone operations need to be regulated and potential issues must be addressed in a collaborative manner to avoid negative impacts.

2.13 New Experience Travel Technologies (NEXTT)[2]: ACI and IATA are presenting a separate paper explaining the concept of their joint initiative known as NEXTT, which aims at modernisation of airport and ground-based travel processes.

3. CONCLUSION

3.1 The Conference is invited to:

a) note the information provided on the ACI initiatives in supporting ICAO GANP.

b) recommend States to encourage their airport operators to approach ACI for assistance to address issues mentioned in this paper; and

c) request ICAO to continue to work on A-CDM, incorporating the concept of total airport management.

— END —

[2] AN-Conf/13-WP/293