



**Agenda Item 2: Air Navigation Services**  
**2.1 Air Navigation Matters**

**AERODROME DEMAND AND CAPACITY**

(Presented by the Secretariat)

SUMMARY	
This working paper presents relevant aspects on aerodrome demand and capacity and the work developed by the Task Force of the GREPECAS Aerodromes and Ground Aids / Aerodrome Operational Planning Subgroup (AGA/AOP/SG) on these issues.	
<b>References:</b>	
<ul style="list-style-type: none"><li>Annex 14 — Aerodromes, Volume I — Aerodrome Design and Operations, Chapter 1</li><li>Final Report of GREPECAS/14</li></ul>	
<i>Strategic Objectives</i>	<i>This working paper is related to Strategic Objectives A and D.</i>

**1. Introduction**

1.1 Aerodromes in the CAR/SAM Regions have been experiencing significant problems with aerodrome infrastructure meeting the demand of continued air traffic growth. In some cases, aerodromes are prevented from expanding due to lack of physical space and, in other cases, the lack of proper aerodrome organizational management.

1.2 Some States have implemented procedures and improvements to increase aerodrome capacity in all types of weather conditions through air traffic management.

1.3 The reduction of runway occupancy times, the use of improved runway geometry, providing quick-exit taxiways, and procedures that include runway separation minima and improvement of aircraft ability to manoeuvre on the runway in any weather conditions are all options that are highly recommended to increase aerodrome capacity.

1.4 The GREPECAS AGA/AOP/SG created an Aerodrome Demand and Capacity Task Force to analyse case studies presented by States/Territories who have congestion problems and provide guidance on demand management and increasing capacity to alleviate apron congestion.

1.5 Likewise, the ICAO NACC Regional Office together with States and Territories in the Region have been developing a series of initiatives that are in line with the ICAO Strategic Objectives, mainly with the improvement of global safety and air operations efficiency (Strategic Objectives A and D).

1.6 Follow-up on the strategic objectives requires joint efforts to consolidate and develop air operations in a short period of time, which integrate the Global Air Navigation Plan (Doc 9750) in an optimum scenario. Consequently, a summary of follow-up activities that are related to airport demand and capacity issues in the Region are presented in the following paragraphs.

## **2. Discussion**

2.1 Analysis of aerodrome capacity is carried out to determine two important aspects. One is to objectively measure the capacity of the different components of an aerodrome system to handle the estimated growth and traffic flow, and the other is to estimate delays in the system in relation to different levels of demand.

2.2 Capacity refers to physical characteristics of the air side and the elements to accommodate aircraft. This is a preventive measure of physical characteristics, and it is independent of the magnitude, traffic flow, and amount of aircraft delay.

2.3 Surveys carried out and presented to the AGA/AOP/SG/6 Meeting indicated that there are several conflicts among various players at the aerodrome who operate on the aprons. Based on this new scenario, the Meeting had an exhaustive discussion regarding the future work of the Task Force to address apron demand and capacity to contribute to improved apron management.

2.4 In coordination with the Task Force Rapporteur, the NACC and SAM Regional Offices circulated a survey with 20 topics, which is attached as **Appendix A** to this paper. Likewise, **Appendix B** presents a summary of the responses to the survey, which were received from some States/Territories and airport operators in the CAR Region. The complete CAR/SAM list with responses can be found in Appendix C to Agenda Item 5 of the AGA/AOP/SG/6 Meeting Report.

2.5 The survey was oriented towards States/Territories and aerodrome operators regarding the level of compliance with ICAO standards and other regulations that have been completed by the corresponding aeronautical or aerodrome authority in regard to apron management, the control of activities of various apron users, SMS implementation, and apron accident/incident statistics, among others.

2.6 States/Territories were requested to objectively respond to the survey in order to determine the progress regarding the provision of improvements to aerodrome capacity that alleviate congestion during pre-determined hours of the day. This information will allow the Task Force to identify possible recommendations for improvement, specific training needs, support from the ICAO Technical Co-operation Bureau, and other aspects necessary to comply with ICAO aerodrome operations SARPs.

2.7 In order to enhance aerodrome capacity and improve Regional Office support to States/Territories, it is important to obtain the information requested in the questionnaire contained in Appendix A in order to allow the Airport Demand/Capacity Task Force to issue specific criteria for the next Meeting of the AGA/AOP Subgroup, which will be held in August 2009.

### **3. Recommendations**

3.1 The Meeting is invited to:

- a) take note, review and fill-out the questionnaire contained in Appendix A, and forward this information to the NACC Regional Office before 15 October 2008; and
- b) consider recommended actions by the relevant Task Force regarding the alleviation of airport congestion, considering ICAO Standards and Recommended Practices (SARPs).

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**APPENDIX A**

**STATE QUESTIONNAIRE REGARDING THE USE OF AERONAUTICAL STUDIES TO DEAL WITH AERODROME DEFICIENCIES**

The objective of this questionnaire is to help establish criteria for use of aeronautical studies in the aerodromes and ground aids (AGA) field to support SARPs compliance by States/Territories.

- 1) In your State, does your aerodrome legislation allow an AGA aeronautical study to be presented when physical or operational restrictions prevent compliance of rules and standards?
- 2) In your State, does your aerodrome legislation consider AGA aeronautical studies as an alternative for the case mentioned in number 1 above?
- 3) If you answered yes to the previous question, does your State's aerodrome legislation mention any orientation on applicability (specific cases), focus, and minimal content the AGA aeronautical studies must have to be accepted by the ruling authority?
- 4) If your answer to questions 2 and 3 was affirmative, are there any cases of AGA aeronautical studies validated by the ruling authority in your State?
- 5) If you answered yes to question 4, would your State be willing to share its experience in that field?
- 6) In case your answer to question 2 was negative, would your State consider including the concepts mentioned in questions 2 and 3 in your legislation useful?
- 7) If your State generated legislation on AGA aeronautical studies, what technical criteria would you consider using as a basis for it?
- 8) An AGA aeronautical study is meant to mitigate risk due to non-conformity with a ruling disposition; if there is a standard-related accident whose compliance was supported by the study, this generates liabilities for the author of the study and the authority who validated it. What is the opinion of your State regarding this issue?
- 9) Do you consider that aeronautical studies, as long as they are validated by the State aerodrome authority, to be useful in the aerodrome certification process?
- 10) Is there any comment your State would like to contribute regarding AGA aeronautical studies?

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**APPENDIX B****SUMMARY OF SURVEY ON  
DEMAND/CAPACITY AND SAFETY IN OPERATIONS IN APRONS**

<b>QUESTION</b>	<b>BARBADOS</b>
1	No
2	Through regulations provided by the CAA and the airport authority
3	Yes
4	Yes
5	Through regulations and administrative directives
6	Yes
7	Both
8	----
9	Accident/incident investigations shared through airport safety committee meetings, information circulars and training sessions.
10	Set via SMS
11	Any aircraft movement on the apron is controlled by aerodrome tower. Airline ramp officials are responsible for ensuring the safety of the aircraft in relation to equipment and marshalling of aircraft.
12	Airport operator
13	Aerodrome control
14	Aerodrome control
15	Airport is responsible for the orderly and safe operation of all persons and vehicles on the apron
16	Airport Security Committee, safety training, rigorous investigations of incidents, establishment of standards, CAA oversight.
17	No
18	Satisfactory
19	Barbados has no objection
20	No

<b>QUESTION</b>	<b>COSTA RICA</b>
1	Yes
2	Yes
3	No
4	Yes
5	Control is made of both the various equipment as the personnel form the various companies working within the apron
6	No
7	Yes
8	Only that established by the civil aviation authority
9	Only between the civil aviation authority and the companies involved in the accident or incident
10	SMS has not been implemented
11	The airport
12	By the airport
13	The airport
14	Aerodrome control

<b>QUESTION</b>	<b>COSTA RICA</b>
15	Carried out through radio communications
16	Standardized procedures
17	Yes
18	Good
19	NIG
20	NIG

<b>QUESTION</b>	<b>NICARAGUA/GROUND HANDLING AIR SERVICE NICARAGUA (GHANSA)</b>
1	Yes, there are inconsistencies on occasions.
2	Yes. In occasions, no.
3	Yes, three times this year.
4	Yes. In special events, no.
5	No, there are no external actors to make the procedure more flexible.
6	No, in process.
7	Yes, but sometimes no
8	Yes
9	Some cases yes, others no.
10	No, Only the current airport procedures.
11	The airport, through tower and OPS
12	By the airport
13	The airport (EAAI)
14	Airport (through ATC)
15	Tower informs, operations assigns gate number (arriving), departing captain requests pushback and run-up to towers, tower authorizes
16	Coordination via meetings
17	In high season, in peak hours (Midday Saturday)
18	Medium
19	----
20	That some missing operators integrate.