



International Civil Aviation Organization

CAR/SAM Regional Planning Implementation Group (GREPECAS)

Sixth Meeting of the GREPECAS Aerodromes and Ground Aids / Aerodrome Operational Planning Subgroup (AGA/AOP/SG/6)

San José, Costa Rica, 23 to 27 June 2008

Agenda Item 5: Review of Task Forces activities

Airport Demand/Capacity Task Force

ANALYSIS OF SURVEY ON AIRPORT DEMAND/CAPACITY AND SAFETY IN APRON OPERATIONS

(Paper presented by the Secretariat as contribution to the Task Force on Airport Demand/Capacity)

SUMMARY

This working paper presents the result on the survey on airport demand/capacity and safety in apron operations sent to NACC/SAM States/Territories and International Organizations. This survey was carried out by the Secretariat as contribution to the Task Force on Airport Demand/Capacity.

References:

Report of the AGA/AOP/SG/5 meeting (Montevideo, Uruguay, 20-24 November 2006);
 Report of the GREPECAS/14 meeting (San José, Costa Rica, 16-20 April 2007); and
 Letters to NACC and SAM States/Territories EMX0529 of 12 May 2008 and LT 2/8.12.6.1-SA349 of 29 April 2008, respectively.

1. Background

1.1 During the fifth meeting of the AGA/AOP subgroup (Montevideo, Uruguay, 20-24 November 2006), the meeting agreed that, to improve capacity management, both in the area of air navigation and in airport infrastructure, it was necessary to obtain information on the impact of the forthcoming start-up of operations of new larger aeroplanes (NLA) in the CAR/SAM airports. In addition, observations made during missions to States have demonstrated there are congestion and safety problems in the operation of aprons.

1.2 With the aim of helping to minimize the above described problems, the Secretariat prepared a survey to permit States and Territories in establishing in what condition the operations in aprons are found in their airports or in the main aerodromes in their States/Territories.

1.3 Through a State letter sent to NACC and SAM States/Territories and International Organizations, the incumbent were requested to send the required information by 23 May 2008. To date, replies had been received from the following States: Argentina, Barbados, Bolivia, Brazil, Chile, Costa Rica and Uruguay. In addition, during the ACI/LAC Seminar on Safety Management Systems (SMS), Quito, Ecuador, 20 to 22 May 2008, eight (8) airport operators also answered the survey.

2. **Discussion**

2.1 This survey (**Appendix A**) permitted us to obtain a clear and updated view on the current situation at CAR/SAM States/Territories main airports with congestion problems, to provide guidance for demand management and capacity enhancement to alleviate congestion. The replies to the survey are included in **Appendix B** to this working paper.

2.2 The preliminary analysis in Appendix B to this working paper can be complemented with information that States and International Organizations can provide during the Meeting. In addition, the Task Force on Airport Demand/Capacity should continue with these studies, to prepare guidelines for operations in aprons, with the aim of reducing users' congestion problems and improve airport/aircraft safety.

3. **Action recommended**

3.1 The Meeting is invited to:

- a) Urge States and International organizations that have not yet done so, to reply to the survey and send their corresponding replies as soon as possible to the ICAO NACC and SAM Offices;
- b) Examine the information in Appendix B; and
- c) Request the Airport Demand/Capacity Task Force to develop an action plan for the elaboration of a standardized guide for airport operators (States/Territories), with the aim that operations in aprons be safer and congestion problems in same minimize.

APPENDIX A

SURVEY TO CIVIL AVIATION AUTHORITIES AND STATE'S MAIN AIRPORT OPERATORS IN SUPPORT TO THE GREPECAS AGA/AOP SUBGROUP TASK FORCE ON AIRPORT DEMAND/CAPACITY

DEMAND/CAPACITY APPROACH AND SAFETY IN APRON OPERATIONS

1. Do(es) your airport(s) comply with the standards specified in ICAO Doc 9830-AN/452 – “*Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual. (Doc 9830)*” or any other ICAO documents’ specifications ?
2. Do(es) your airport(s) comply with regulations provided by the civil aviation authority to manage the aprons, or is it managed through regulations elaborated by the airport authority?
3. Do you possess apron accident/incident statistics?
4. Do(es) your airport(s) comply with procedures recommended by ACI or ACI/LAC to manage the aprons?
5. How do(es) your airport(s) control the various actors operating in aircraft aprons?
6. Do(es) your airport(s) count with SMS? Does SMS taken into consideration these aspects?
7. Do the airlines comply with the regulations issued by the civil aviation authority, or by the airport authority?
8. Do the airlines hire the services to third parties under the supervision of the airport authority, following civil aviation authority dispositions, or through their own regulations?
9. Are the results of accident/incident investigations occurring in aprons shared by the various actors working in same? Are they shared with the airport? What accident/incident information is shared with the airport?
10. What parametres do you use to verify apron performance? Is there an SMS implemented taking this into consideration?
11. Who controls the aircraft operations in the aprons? The airport, aerodrome control or the same pilots?
12. How are ground vehicles controlled in the apron? By the airport, the aerodrome control, or any other organization(s)?
13. Who defines the aircraft stand taxilane? The airport, or another organization?
14. Who authorizes the aircraft to exit the aircraft stand taxilane? The airport, the aerodrome control, or any other organization?

15. What does the airport relate with the aerodrome control? How is this interface carried out?
16. In your airport(s), what measures presented greater impact in the aprons safety? Some examples could be: standard procedures, establishment of committees, supervision in the use of standard procedures, coordination meetings, initiatives to keep personnel motivated to concentrate on their tasks/attributions, hazard notification system, etc. Please indicate other measures implemented in your airport.
17. Does your airport experiment any type of apron demand/capacity congestions or problems? And in any other airport movement areas?
18. How would you consider the safety level in your airport(s) apron(s)?
19. What would you think if the GREPECAS AGA/SOP/SG Task Force on Airport Demand/Capacity could take under consideration all these aspects, for both demand/capacity and safety aspects?
20. Do you have any other contribution on the subject of apron movement management, particularly in the terms of the responsibilities of the various actors (regulations from the authority, airport, tower, airlines, others, etc.)?

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

QUESTION/ PREGUNTA	ARGENTINA	BOLIVIA
1	Yes	No. It has not been implemented in any aerodrome in the country. The airports are Category I and use the basic SMGCS system.
2	Yes	Yes. In the Bolivian Aeronautical Regulation (RAB) 107.53 are found additional procedures for apron safety. In the airport certification manuals, in Annex 5, are found indications regarding apron circulation procedures
3	Yes	No. To date nothing has been reported.
4	Yes	No. The Bolivian Aeronautical Regulation is followed.
5	At airports given in concession by the exploiter under supervision of the aeronautical authority. In the rest of the airports, through the aeronautical authority.	The control (ATC) guides the Aircraft from the runway to the aircraft stands. Coordination is carried out between the airport and the aerodrome control to assign aircraft stands. The control is carried out by the airport administrator, in accordance with indications in Airport Certification Manual (MCA), Annex 6.
6	Yes. In process of implementation in aerodromes of higher operations density. The certified airports should compulsorily present the SMS.	No. A Safety Management System at Certificated Airports, Part 5 of the MCA, has been developed and will be implemented in the second semester of 2008.
7	Yes	Yes. Bolivian Aeronautical Regulation RAB 108 is complied with.
8	The Airlines hire the services to third parties under the supervision of airport authorities, following dispositions set by the civil aviation aeronautical authority.	The Airlines hire ground services to third parties. The authority requests company employees offering these services to comply with apron safety courses. Own regulations approved by DGAC.
9	They are shared with all actors, through reports originated by the Civil Aviation Accident Investigation Board or the Civil Aviation Accident Prevention Commission.	AIG investigates them and shares the final report.
10	Apron incidents, FOD in apron, spills in aprons indicators are in implementation	SMS will be implemented at certificated airports, in the second semester of 2008.
11	Aircraft operations in aprons are controlled by the aeronautical authority through the ATC.	The airport controls apron Aircraft operations. Apron safety measures are specified in Certification Manual, Annex 6.
12	At airports given in concession by the exploiter, in coordination with the ATC dependent of the aeronautical authority. In the remainder, by the aeronautical authority.	The control is carried out by airport personnel, through communications between equipment. The airport controls ground vehicle operations in aprons, through the use of communications equipment and information. There is horizontal signaling in the apron, which helps in guiding the aircraft and service vehicles.
13	At airports given in concession by the exploiter, in coordination with the ATC dependent of the aeronautical authority. In the remainder, by the aeronautical authority.	The airport designates the aircraft stand in accordance in accordance with its apron design, communicating to the ATC regarding the procedure.
14	The aeronautical authority, through the ATC	The aerodrome control.

APPENDIX B

AGA/AOP/SG/6-WP/25

QUESTION/ PREGUNTA	ARGENTINA	BOLIVIA
15	Aerodrome control depends of the Airport Chief, who is the aeronautical authority of same.	An operational letter of agreement between the aerodrome control and the airport has been elaborated for apron operations. Coordination is carried out via phone or radio, the flight plan of various airlines is consulted upon, to achieve control, guide and designate aircraft stands.
16	Standardization of procedures and coordination meetings.	There are operational letters of agreement between the airport authorities and the ATC. The procedures to follow are presented to control and apron guide. DGAC Bolivia carried out inspections and develops action plans so solve problems encountered.
17	Only few present any apron capacity problems at peak hours of high season.	There is no type of congestion, maximum operational capacity has not been reached at any airport.
18	Very good	There is an appropriate level of safety at certified aerodromes.
19	In accordance with the character of the Surrey, the information would be oriented more towards safety than to demand/capacity.	We think it is an appropriate measure, but consideration should be given the the real characteristics of airports in the Region, many of which are not certified airports.
20	These aspects from part of Argentinean Civil Aviation Regulations, available at www.cra.gov.ar , together with other publications of interest	-----

QUESTION/ PREGUNTA	BARBADOS	BRASIL
1	No	Yes, Brazil, as ICAO member, seeks to meet the standards specified by the various ICAO documents.
2	Through regulations provided by the CAA and the airport authority	In Brazil, the various airport authorities must meet the regulations established by the civil aviation authority, in this case the Civil Aviation National Agency (ANAC).
3	Yes	Yes. It is within the Centre of Investigation and Prevention of Aeronautical Accidents (CENIPA) responsibility, organization subordinate to the Ministry of Defense, to elaborate accident/incident statistics occurring in aprons.
4	Yes	It is the airport operators' responsibility to answer to matters related with the management and operation of their airports.
5	Through regulations and administrative directives	It is the airport operators' responsibility to answer to matters related with the management and operation of their airports.
6	Yes	Brazilian airports are not in the same certification process period. Some already have an SMS proposal to be carried out.
7	Both	In Brazil, the Aircraft must comply with the regulations emitted by the civil aviation authority.

QUESTION/ PREGUNTA	BARBADOS	BRASIL
8	----	Exactly, the Airlines should hire the services to third parties under the supervision of the airport authorities, following dispositions of the Brazilian civil aviation authority.
9	Accident/incident investigations shared through airport safety committee meetings, information circulars and training sessions.	It is CENIPA's and airport operators' responsibility to answer to matters related with the result of accident/incident investigations occurring in aprons.
10	Set via SMS	Up to date, there is no SMS implemented in Brazilian airports.
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.	Aircraft movement control is managed, when it exists, by the control tower (aerodrome control). When there is no TWR, the control is carried out by the local airport authority.
12	Airport operator	Ground Vehicle movement control in apron is managed, when it exists, by the control tower (aerodrome control). When there is no TWR, the control is carried out by the local airport authority.
13	Aerodrome control	In Brazil, aerodrome control is managed by the airport authority or by DECEA.
14	Aerodrome control	Authorization for Aircraft stand clearance is managed by the tower control (aerodrome control). When there is no TWR, the control is carried out by the local airport authority.
15	Airport is responsible for the orderly and safe operation of all persons and vehicles on the apron	It is the airport operators responsibility to answer to matters related with the management and operation of its airports.
16	Airport Security Committee, safety training, rigorous investigations of incidents, establishment of standards, CAA oversight.	It is the airport operators responsibility to answer to matters related with the management and operation of its airports.
17	No	In Brazil, the airports in the Sao Paulo Terminal Area, as well as of Brasilia, experience congestion problems related with apron capacity, runway systems and with the terminals.
18	Satisfactory	Brazil takes care of its airports' safety, as can be verified by the accident/incident rate of the last years. The certification process must consolidate further the matter related with safety in Brazilian airports.
19	Barbados has no objection	There is close relationship between both matters, with a better demand management versus capacity; one can contribute to guarantee safety level maintenance.
20	No	To date we believe we will be unable to contribute further on the subject.

QUESTION/ PREGUNTA	CHILE	COSTA RICA
1	Yes. Only in the Santiago/Arturo Merino Benitez airport.	Sí
2	Yes. They are ruled by procedures elaborated by the airport authority, required by the aeronautical authority in the Aerodrome Manual.	Sí
3	All accidents/incidents must be reported to the aeronautical authority's entity in charge of investigating accidents and incidents.	No
4	The procedures adjust to the aeronautical authority's dispositions.	Sí
5	Through the application of monitoring procedures, which is carried out by airport authority personnel	Control is made of both the various equipment as the personnel from the various companies working within the apron
6	No. Airports SMS is in process of implementation. These aspects are being considered within the system.	No
7	Yes.	Sí
8	Airlines hire services from third parties, according to their own needs. These must comply with procedures dictated by the aeronautical authority regarding apron operations.	Only that established by the civil aviation authority
9	Once the accident/incident investigation process is concluded, its result is informed to the Department of Aerodromes and Aeronautical Services, responsible for the management of airports, for its dissemination.	Only between the civil aviation authority and the companies involved in the accident or incident
10	Forms to verify apron procedures are used.	SMS has not been implemented
11	The airport.	The airport
12	Ground vehicles are controlled by the airport, through the apron supervision service.	By the airport
13	It is defined by the airport concessions and by the airport authority when the aerodrome has not been given in concession.	The airport
14	The aerodrome control.	Aerodrome control
15	In Chile the aerodrome control is part of the airport's organization.	Carried out through radio communications
16	Application of standardized airport procedures, supervision of activities being developed in the apron by airport authority personnel, personnel training carrying out supervision tasks, airport operational committees, coordination meetings for apron maintenance jobs.	Standardized procedures
17	Eventually, at peak hours or due to delayed or in advance flights.	Yes
18	Chile considers its airports' apron safety levels as very good.	Good
19	It would be very convenient, as it would permit to know the situation of States members of the Subgroup as regards these subjects, exchange experiences and propose measures to improve airport safety levels.	NIG

QUESTION/ PREGUNTA	CHILE	COSTA RICA
20	Yes, Chile's working group on regulations and procedures is at disposal, as well as the training programme of the personnel acting as apron supervisor.	NIG

QUESTION/ PREGUNTA	URUGUAY	
1	Yes.	
2	Yes. They are ruled by national regulations, adequated in each airport by its authority or by the corresponding operator.	
3	No. There is little background to be able to elaborate incident statistics.	
4	Yes	
5	The airport authority has control, as well as the operator in those given in concession, later it is overseen through the aeronautical authority.	
6	No. It is being processed, has not yet been implemented, procedures established are being followed.	
7	Yes	
8	Certification of services given to third parties is ruled by the aeronautical authority. There are general standards contained in the apron management manual, and the strictly technical aspects are under the supervision of third party services.	
9	Once finished, they are shared through the DINACIA web page and safety committees.	
10	Not yet, only some safety procedures (SoP).	
11	Depending of the airport, generally CTA. In other cases where there is no CTA, by the pilot.	
12	By the airport authority.	
13	Airport authority of airport operations office personnel.	
14	The CTA.	
15	Telephone and VHF.	
16	Letter of agreement and control in their compliance, as well as updating of restrictions being internationally incorporated.	
17	No.	
18	Good.	
19	Positive.	
20	Authority to apron, collision prevention and regulation of monitoring procedures.	

AIR OPERATORS

QUESTION/ PREGUNTA	ECUADOR/AEROPUERTO QUITO/MARISCAL SUCRE	NICARAGUA/GROUND HANDLING AIR SERVICE NICARAGUA (GHANSA)
1	Yes	Yes, there are inconsistencies on occasions.
2	Yes. R-DAC 139	Yes. In occasions, no.
3	Yes	Yes, three times this year.
4	Yes, as consultation for improvements.	Yes. In special events, no.
5	On the basis of the Aerodrome Manual. MGO own procedures authorized by the aeronautical authority.	No, there are no external actors to flexibilize the procedure.
6	Yes	No, in process.
7	Yes. From both entities	Yes, but sometimes no
8	Supervised by the authority and own regulations certified by the authority	Yes
9	They are shared, they intervene in the investigation process and the results and measures are shared with companies with similar activities.	Some cases yes, others no.
10	We have indicators for SMS management.	No, Only the current airport procedures.
11	The certified operator with the procedures established in the Manual	The airport, through tower and OPS
12	The certified operator with the procedures established in the Manual	By the airport
13	The certified operator	The airport (EAAI)
14	The aerodrome control, in coordination with the operator	Airport (through ATC)
15	With the FIDS system, radio, telephone	Tower informs, operations assigns gate number (arriving), departing captain requests pushback and run-up to towers, tower authorizes
16	Awareness of the aerodrome manual by all actors working in aprons	Coordinations via meetings
17	The complexity of the itinerary left by the authority saturates aprons and taxiways.	In high season, in peak hours (Midday Saturday)
18	It is in an acceptable level, in accordance with statistics we have little incidents, 5 total in 2007	Medium
19	Excellent, it would help to guarantee a standardized airport operation.	----
20	Yes, contributing to the stops taken to operate as a certified airport.	That some missing operators integrate.

QUESTION/ PREGUNTA	PANAMA/TOCUMEN S.A.	PERU/LIMA AIRPORT PARTNERS
1	Yes. We use other ICAO documents as reference, but we must follow local AAC rules. They are ICAO-based.	No.
2	Yes. We use general AAC rules, but also own safety standards.	Yes
3	We have the reports, but we do not know whether detailed statistics are elaborated. Statistics are carried out by the ACC on the basis of our reports.	Yes
4	Some ACI procedures based on ICAO standards are followed, in accordance with AAC requirements.	Yes
5	Auditing, through operations officials, the compliance of both the operations regulations as the aerodrome manual (in process of AAC approval)	With close supervision by technically qualified personnel.
6	No. To date, personnel are being prepared to start said programme.	Yes
7	Yes. Non complying Airlines are subject to AAC sanctions.	Yes
8	Third parties are hired under the supervision of airport authorities and following AAC dispositions. Own regulations cannot be against airport rules.	In accordance with our regulations.
9	Yes, they are shared between the AAC and the airport authority.	Not yet, we share the amount of events.
10	Parameters on this are formally being worked on.	The number of accidents or incidents every 1000 operations is used. It is considered under the implemented SMS system.
11	The aerodrome control (AAC).	The aerodrome operator
12	Vehicle movement in maneuvering area is responsibility of the aerodrome control. In aprons, service routes and access, by the airport.	By the aerodrome operator
13	The airport, in coordination with ground control (who has Communications with the pilot).	The aerodrome operator
14	The aerodrome control.	The aerodrome control (TWR)
15	The operations management centre has direct contact via a hotline, radio and fax with the aerodrome control.	Agreement with the air traffic control and the operator. Concession contract. Aerodrome manual. Through coordination meetings.
16	All have been tried, nevertheless, major impact has had the monitoring in the use of procedures.	Reports. Coordination meetings. Safety/sanction resolutions.
17	There are demand/capacity problems, especially in the use of boarding bridges at peak hours.	Yes and also in other areas in the airport.
18	Upon lack of indicators, this is subjective. As an opinion, major incidents are few as regards the amount of operations, but the lesser ones are numerous.	For now, number of operations versus number of events per each 100 operations.
19	Yes, it can be taken into consideration.	It would be important to have parameters to carry out a general aeronautical study. The group should disseminate the information in the web – free.
20	Experiences and problems from the various operators could be gathered, to see which could be the best model.	That the aeronautical authority requires compliance in SMS implementation by all actors in the aerodrome

QUESTION/ PREGUNTA	Venezuela/NN	NN
1	Yes. In vertical signaling there are labels, but not illuminated, it is in process, being considered in future investments.	No.
2	Yes. There is a general law on civil aviation that is regulated, we are working to improve apron Management. There is an INAC RTA 14, with which we are working.	Yes
3	Yes. It is carried out, but some incidents are not reported, work is being carried out to improve the reports, a folder is opened for each to serve as a register.	Yes
4	Yes, but not complied with 100%; recommended procedures are under review to incorporate them in own apron procedures. Operations manual is updated	No.
5	Through contracts or agreement subscribed between the actors or service providers, they are trained on ramp procedures (operations manual).	Through the supervision of airport operations personnel
6	No. We are in the process, an SMS area has already been created in the organization, and personnel is also being trained.	Yes
7	Yes. The Airlines operating in the airport comply with the regulations emitted by the authority and airport procedures.	Yes. In addition, they comply with standards emitted by the operator.
8	Airlines hire third party services certified by the authority and that comply with airport procedures.	Through civil aviation and airport authorities.
9	The subject is dealt with all actors involved, the airport also involves the aeronautical authority.	They are shared with the actors and in general with the airport. Information from the agents originating the accident/incident are shared, with the aim of minimizing future risks and/or providing news
10	We have not implemented SMS; some SMS aspects have been included and work is being done to improve apron performance.	There is an SMS implemented.
11	The airport, the aeronautical authority, the handling operator, in close coordination but under supervision of the airport operator.	Control tower
12	There is a vehicle-related procedure, only authorized vehicles enter and must be conducted by trained people having a license (apron management manual)	By the airport operator through operations and safety personnel.
13	The aircraft stand point is defined by the operations area, in coordination with the apron services provider.	The airport operator through its operations department.
14	The aerodrome control – ATC, belongs to the airport organization.	Control tower (ATC)
15	The aerodrome control – ATC belongs to the airport and there is a procedure that coordinates the aerodrome control and the apron operations.	Coordination is made between both parties' operations, airport and aerodrome control
16	An apron Management working committee has been created, where all actors participate; training and operations inspections.	The establishment of an apron management standard.

QUESTION/ PREGUNTA	Venezuela/NN	NN
17	Currently, the capacity installed covers the existing demand.	There is no news to the consults, except when due to meteorological conditions other airports close their operations
18	Acceptable, but we need to implement SMS to manage safety at an acceptable level.	I consider it safe
19	We consider it is necessary to integrate both aspects, because they are related.	N/A
20	It would be convenient that a general guideline exist on the subject, this would permit to standardize some applicable procedures.	All actors' responsibilities are coordinated, in compliance with safety.

QUESTION/ PREGUNTA	NN	NN
1	No.	Yes
2	They comply with aeronautical authority general regulations.	No. They help us to carry out operations.
3	Yes	Yes
4	Yes	No.
5	Personnel accreditation and personnel competence evaluation, and review of optimum equipment condition.	Through the area control
6	No.	No.
7	Yes	Yes.
8	Under supervision of authorities and airport operator	The airlines hire services to third parties that are certified by the authority.
9	Yes, the aeronautical authority investigates it and shares it with the actors.	Yes, all results are shared.
10	No SMS. Verified by airport official as per operations regulations formats.	There are no parameters in existence.
11	The airport.	The air traffic control
12	The airport.	The air traffic control
13	The airport.	The airport
14	The airport.	The aerodrome control
15	The airport controls the apron; air control the runways and taxiways.	There is a schedule of activities to be followed.
16	Establishment of operations committees; supervision of movement areas; elaboration of operations regulations.	None has been implemented
17	Occasionally, at peak hours.	No.
18	Acceptable, but improvable	Low
19	---	It would be desirable to have more information.
20	Apron operations regulations should be homogenized at all airports.	No.

- END -