



AP/ATM/11
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**International Civil Aviation Organization
South American Regional Office**

**ELEVENTH MEETING/WORKSHOP OF ATM AUTHORITIES AND PLANNERS IN THE
CAR/SAM REGIONS
(AP/ATM/11)**

(Lima, Peru, 28 to 30 September 2005)

**Agenda Item 2: RNAV/RNP issues related with the ATC Operations Working Group
(ATC/WG)**

**Development of a comprehensive profile of operators and aircraft types expected to use CAR/SAM
airspace where the RNAV RNP Concepts could be applied**

(Prepared by CARSAMMA)

Summary

This working paper presents the results of analysing a traffic sample collected during the period 01-15 July 2005 in the CAR/SAM airspace. The traffic sample is summarized in terms of observed airspace users, aircraft types and flight levels.

1. Introduction

1.1. At the Tenth Meeting/Workshop of Air Traffic Management (ATM) Authorities and Planners, it was decided that traffic movement data should be collected for the CAR/SAM Regions in order to provide an assessment of the composition of the traffic in this area. Accordingly, States providing air traffic services in that portion of the CAR/SAM Regions agreed to collect traffic movement data for the period of 01-15 July 2005.

1.2. This traffic sample is necessary to facilitate the readiness and safety assessments for the planned RNAV RNP implementation. The States concerned were noted to be those located in CAR/SAM Regions.

1.3. The purpose of this working paper is to present the results of collecting this sample.

2. Discussion

2.1 Traffic movement data for operations in CAR/SAM airspace were received by CARSAMMA prior to August 2005. Some data, due to the format or lack of information could not be treated.

2.2 The total number of flights observed in the traffic samples is 51437. It is necessary to observe that the data from the Brazilian airspace included the traffic flying in the lower airspace.

2.3 Table 1 shows the top 20 operators, in terms of total operations, as observed in the traffic sample. These operators account for roughly 79.49 % percent of the operations observed in the sample. The top 10, representing over 66.1 % of total operations in the data sample, are General Aviation, TAM(TAM), VARIG (VRG), GOL (GLO), State aircraft, American Airlines (AAL), Aerolíneas Argentinas (ARG), Línea Aérea Nacional de Chile (LAN), Companhia Panamericana de Aviación (CMP) and LAN Express (LXP). Analysis of the FIR samples shows that commercial operators conducted roughly 80% of operations, with general aviation operators responsible for 15.79% and state operators responsible for 3.72% of operations.

CIA	TOTAL	%	% CUM.
GA	8120	15,79	15,79
TAM	7278	14,15	29,94
VRG	5313	10,33	40,26
GLO	4394	8,54	48,81
State ACFT	1912	3,72	52,52
AAL	1720	3,34	55,87
ARG	1606	3,12	58,99
LAN	1426	2,77	61,76
CMP	1324	2,57	64,34
LXP	1270	2,47	66,81
COA	898	1,75	68,55
LPE	887	1,72	70,28
TAI	856	1,66	71,94
TTL	723	1,41	73,35
AUT	718	1,40	74,74
LRC	557	1,08	75,82
BRB	549	1,07	76,89
TIB	452	0,88	77,77
ONE	452	0,88	78,65
DAL	430	0,84	79,49

Table 1. Top 20 Operators Observed in CAR/SAM Airspace Traffic Sample Presented in Rank Order

2.4 The distribution of the top 20 aircraft types is shown in Table 2. The top 20 aircraft types account for roughly 78.64 % of the operations in the traffic sample. The top seven aircraft types representing over 52.12 % of the operations in the combined FIR samples are: A320, B737, B733, A319, B732, B767 and F100.

TYPE	TOTAL	%	% CUM.
A320	6384	12,41	12,41
B737	5920	11,51	23,92
B733	3969	7,72	31,64
A319	2893	5,62	37,26
B732	2799	5,44	42,70
B767	2606	5,07	47,77
F100	2237	4,35	52,12
B738	2170	4,22	56,34
B757	1736	3,38	59,71
B727	1170	2,27	61,99
E120	1153	2,24	64,23
AT43	1139	2,21	66,44
MD80	978	1,90	68,34
E110	969	1,88	70,23
B735	909	1,77	71,99
C208	839	1,63	73,63
A340	764	1,49	75,11
PA34	613	1,19	76,30
MD11	602	1,17	77,47
B777	598	1,16	78,64

Table 2. Top 20 Aircraft Types Observed in CAR/SAM Airspace Sample Presented in Rank Order

2.5 Table 3 shows the flight level utilization for those flights with flight level data. Aircraft operating in the Brazilian lower airspace were considered in the analysis.

FL	TOTAL	%	% CUM.
340	6261	9,37	9,37
370	6165	9,22	18,59
330	5742	8,59	27,18
350	5730	8,57	35,75
360	5140	7,69	43,44
380	3762	5,63	49,06
320	3697	5,53	54,59
310	2598	3,89	58,48
300	2430	3,63	62,12
390	2412	3,61	65,72
280	2270	3,40	69,12
270	2192	3,28	72,40

FL	TOTAL	%	% CUM.
400	1849	2,77	75,16
290	1683	2,52	77,68
410	1094	1,64	79,32
250	920	1,38	80,69
90	749	1,12	81,81
200	736	1,10	82,92
260	720	1,08	83,99
180	695	1,04	85,03

Table 3. Flight Level Utilization in CAR/SAM Airspace Sample

3 Conclusions and Recommendations

3.1 This working paper has presented the results of analysing traffic samples from CAR/SAM airspace where the RNAV RNP operations are planned for implementation. The data was collected during the period 01-15 July 2005. Traffic samples included in this analysis are those received by CARSAMMA prior to August 2005.

3.2 Analysis of the samples indicates that roughly 80 percent of operations were conducted by commercial operators, with general aviation aircraft and state operators accounting for roughly 20 percent of the operations.

3.3 20 operators including GA and State aircraft accounted for roughly 80 percent of total operations in the traffic sample, with the top ten of these operators responsible for slightly more than 66 percent.

3.4 20 aircraft types accounted for roughly 79 percent of total operations in the traffic sample, with the top seven aircraft types accounting for over 52 percent of the operations in the sample.

3.5 The Task Force is invited to review the results of the traffic movement data collection as presented in the body of the text.

3.6 Some samples reached CARSAMMA in a different format than the one agreed upon. States are requested to send the data, in the next sample to be collected, in a date to be determined, using the form agreed by the RNAV RNP TF.