International Civil Aviation Organization
UNDP/ICAO Regional Project RLA/98/003
Transition to CNS/ATM Systems in the CAR and SAM Regions

Tenth Meeting/Workshop of ATM Authorities and Planners in the CAR/SAM Regions (AP/ATM/10)

(Lima, Perú, from 10 to 14 May 2005)

Agenda Item 2: Evaluation of RNP 10 Pre-Operational Implementation in the Santiago de Chile-Lima segment of parallel routes UL 780 and UL 302

Follow on monitoring of the RNP 10 operations

(Presented by CARSAMMA)

Summary

This working paper presents a follow on in terms of number of operations in the Santiago -Lima corridor and its influence in the collision risk.

1. Introduction

1.1. The RNP 10 was implemented in the segment of routes UL 380 and UL 302 between Santiago and Lima on January 22nd.

1.2. The implementation was considered at that time as pre-operational.

1.3. During the AP ATM/8, it was requested to the States involved to collect a traffic sample from 15 March to 14 April 2005 that should reflect the operations after the implementation and that this traffic sample should be sent to the CARSAMMA to verify the parameters involved in the safety analysis.

2. Discussion

2.1. The States involved have collected and sent to CARSAMMA the traffic sample necessary to perform the analysis.

2.2. The idea is to follow on the operations to verify if the main parameters of the collision risk remain inside the limits.

2.3. According to the data received there were no lateral deviations larger than 10 NM.

2.4. The increase in the movement of traffic, relating to the last traffic sample was of 12.86%.

2.5. The composition of the traffic sample in terms of aircraft types and companies didn't present a significant variation, do not jeopardizing the safety of the operations.

2.6. In the **Appendix A** to this paper it can be found a summary of the operations related to the traffic sample collected in 2005 and the summary of the traffic sample collected in 2003 is shown for reference.

3. **Recommended actions**

3.1 States are requested to take note that the use of the 50 NM lateral separation in the Santiago – Lima corridor continue to be safe.

3.2 The States involved in the operations are requested to continue to inform the CARSAMMA on the lateral deviations of more than 10 NM as well as the large height deviations (LHD).

APPENDIX A

ENTRY FIX	EXIT FIX	TOTAL	%	Cum. %
SORTA	VAKUD	211	22,47	22,47
IREMI	ILMAR	165	17,57	40,04
ARPON	IREMI	156	16,61	56,66
VAKUD	SORTA	156	16,61	73,27
IREMI	PADOX	57	6,07	79,34
PADOX	IREMI	48	5,11	84,45
ARNEL	SORTA	34	3,62	88,07
SORTA	ARNEL	27	2,88	90,95
IREMI	MIRLO	19	2,02	92,97
IREMI	ENRUT	13	1,38	94,36
IREMI	ARNEL	11	1,17	95,53
IREMI	ROLUS	9	0,96	96,49
ROLUS	IREMI	9	0,96	97,44
MIRLO	IREMI	8	0,85	98,30
ARNEL	IREMI	5	0,53	98,83
IREMI	PLG	5	0,53	99,36
VAKUD	IREMI	2	0,21	99,57
IREMI	IREMI	1	0,11	99,68
TERAS	IREMI	1	0,11	99,79
TITAN	IREMI	1	0,11	99,89
IREMI	VAKUD	1	0,11	100,00
TOTAL		**939**	**100,00**	

Movement by fix – Mar 05

ENTRY FIX	EXIT FIX	TOTAL	%	Cum. %
SORTA	MOXES	241	28,97	28,97
ILMAR	IREMI	240	28,85	57,81
IREMI	ILMAR	207	24,88	82,69
MOXES	SORTA	141	16,95	99,64
MOXES	MOXES	1	0,12	99,76
IREMI	MOXES	1	0,12	99,88
ILMAR	ILMAR	1	0,12	100,00
TOTAL		**832**	**100,00**	**200,00**

Movement by fix – Aug 03

FL	TOTAL	%	Cum. %
350	173	18,42	18,42
320	170	18,10	36,53
340	143	15,23	51,76
370	140	14,91	66,67
300	91	9,69	76,36
360	69	7,35	83,71
380	51	5,43	89,14
330	50	5,32	94,46
390	31	3,30	97,76
410	9	0,96	98,72
310	6	0,64	99,36
400	3	0,32	99,68
280	2	0,21	99,89
290	1	0,11	100,00
TOTAL	**939**	**100,00**	

FL distribution – Mar 05

FL	TOTAL	%	Cum.%
370	269	32,33	32,33
310	197	23,68	56,01
350	188	22,60	78,61
330	88	10,58	89,18
390	56	6,73	95,91
410	15	1,80	97,72
290	7	0,84	98,56
450	4	0,48	99,04
280	4	0,48	99,52
430	2	0,24	99,76
220	1	0,12	99,88
200	1	0,12	100,00
TOTAL	**832**	**100,00**	

FL distribution – Aug 03

ORIGIN	DEST	TOTAL	%	Cum. %
SCEL	KMIA	149	15,87	15,87
SCEL	SPIM	135	14,38	30,24
SPIM	SCEL	126	13,42	43,66
KMIA	SCEL	83	8,84	52,50
MPTO	SCEL	36	3,83	56,34
SCEL	KDFW	31	3,30	59,64
SPIM	SAEZ	31	3,30	62,94
KATL	SCEL	31	3,30	66,24
KDFW	SCEL	31	3,30	69,54
SEGU	SCEL	31	3,30	72,84
SAEZ	SPIM	31	3,30	76,14
SCEL	MPTO	31	3,30	79,45
SCEL	KATL	30	3,19	82,64
SCEL	SEGU	21	2,24	84,88
SCEL	CYYZ	20	2,13	87,01
CYYZ	SCEL	19	2,02	89,03
SCEL	SEQU	13	1,38	90,42
SCEL	SVMI	13	1,38	91,80
SCEL	MUHA	12	1,28	93,08
MUHA	SCEL	12	1,28	94,36
SCEL	SKBO	10	1,06	95,42
SKBO	SCEL	7	0,75	96,17
SCEL	MMMX	6	0,64	96,81
SCEL	SELT	5	0,53	97,34
SCEL	MDPC	4	0,43	97,76
MDPC	SCEL	4	0,43	98,19
MMMX	SCEL	4	0,43	98,62
SEGU	SAZS	2	0,21	98,83
SAZS	MPTO	2	0,21	99,04
MUHA	SAEZ	1	0,11	99,15
MROC	SCEL	1	0,11	99,25
SCEL	MROC	1	0,11	99,36
SAZS	SEMT	1	0,11	99,47
SCEL	KATL	1	0,11	99,57
SEMT	SCEL	1	0,11	99,68
KDAL	SCEL	1	0,11	99,79
SCEL	KMIA	1	0,11	99,89
SAEZ	MUCA	1	0,11	100,00
TOTAL		**939**	**100,00**	

Origin – Destination – Mar 05

ORIGIN	DEST	TOTAL	%	Cum. %
SCEL	SPIM	135	16,23	16,23
SCEL	KMIA	127	15,26	31,49
SPIM	SCEL	122	14,66	46,15
KMIA	SCEL	76	9,13	55,29
MPTO	SCEL	35	4,21	59,50
SCEL	MPTO	31	3,73	63,22
SCEL	SEGU	31	3,73	66,95
KATL	SCEL	31	3,73	70,67
SPIM	SAEZ	30	3,61	74,28
SCEL	KATL	30	3,61	77,88
KDFW	SCEL	29	3,49	81,37
SCEL	KDFW	29	3,49	84,86
SEGU	SCEL	24	2,88	87,74
SCEL	SEQU	21	2,52	90,26
SCEL	MMMX	19	2,28	92,55
SEQU	SCEL	12	1,44	93,99
SCEL	MUHA	10	1,20	95,19
MUHA	SCEL	9	1,08	96,27
MMUN	SCEL	5	0,60	96,88
MMMX	SCEL	5	0,60	97,48
TJSJ	SCEL	4	0,48	97,96
SCEL	SELT	4	0,48	98,44
SCEL	MMUN	4	0,48	98,92
SCEL	SVMI	3	0,36	99,28
SCEL	MGGT	1	0,12	99,40
SAZS	SPIM	1	0,12	99,52
SPIM	SAZB	1	0,12	99,64
MMTO	SCEL	1	0,12	99,76
SPIM	SAZS	1	0,12	99,88
SPIM	SEGU	1	0,12	100,00
TOTAL		**832**	**100,00**	

Origin – Destination – Aug 03

TIPE	TOTAL	%	Cum. %
B763	586	62,41	62,41
A322	98	10,44	72,84
A310	62	6,60	79,45
B737	43	4,58	84,03
B744	26	2,77	86,79
A343	23	2,45	89,24
DC10	23	2,45	91,69
B738	19	2,02	93,72
A319	12	1,28	94,99
B742	11	1,17	96,17
MD11	9	0,96	97,12
B762	5	0,53	97,66
CL60	5	0,53	98,19
B747	4	0,43	98,62
YL62	2	0,21	98,83
C560	2	0,21	99,04
F2TH	2	0,21	99,25
FA90	2	0,21	99,47
B722	1	0,11	99,57
FA50	1	0,11	99,68
A320	1	0,11	99,79
GLF2	1	0,11	99,89
B752	1	0,11	100,00
TOTAL	**939**	**100,00**	

Aircraft type – Mar 05

TIPE	TOTAL	%	Cum. %
B763	386	46,39	46,39
A320	93	11,18	57,57
B767	63	7,57	65,14
B737	57	6,85	72,00
B772	52	6,25	78,25
A343	46	5,53	83,77
MD88	27	3,25	87,02
B744	24	2,88	89,90
A319	17	2,04	91,95
MD11	12	1,44	93,39
L101	11	1,32	94,71
DC10	7	0,84	95,55
B777	5	0,60	96,15
B732	5	0,60	96,75
MD80	4	0,48	97,24
GLF4	3	0,36	97,60
B742	2	0,24	97,84
C750	2	0,24	98,08
AJ25	2	0,24	98,32
C130	2	0,24	98,56
WW24	2	0,24	98,80
F900	2	0,24	99,04
B762	1	0,12	99,16
CL60	1	0,12	99,28
DC8	1	0,12	99,40
DC9	1	0,12	99,52
F2TH	1	0,12	99,64
G5	1	0,12	99,76
H25B	1	0,12	99,88
C141	1	0,12	100,00
TOTAL	**832**	**100,00**	

Aircraft type – Aug 03