



AP/ATM/4
WP/03
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**International Civil Aviation Organization
UNDP/ICAO Regional Project RLA/98/003
Transition to the CNS/ATM Systems in the CAR and SAM Regions**

**Fourth Meeting/Workshop of Air Traffic Management (ATM) Authorities and Planners
(AP/ATM/4)**

(Santa Cruz, Bolivia, 27-31 January 2003)

Agenda Item 2: Revision of the Action Plan of the RNP 10 implementation in parallel routes UL780 and UL302 Santiago and Lima segment

(Presented by Peru)

Summary

This Working Paper presents the revision of the Action Plan for the Implementation of the RNP 10 Pre-operational Programme in parallel routes UL 780 and UL 302 in the Santiago – Lima segment.

1. Introduction

1.1. In the meeting AP/ATM/3, the action Plan for the Implementation of the RNP 10 Pre-operational Programme in RNAV parallel routes UL780 and UL302, Santiago and Lima segment was approved. Herein, the activities that should be carried out by Chile, Peru, IATA, users and the ICAO NACC and SAM Regional Offices, are described.

2. Analysis

1.2. The simultaneous use of routes UL780 and UL302 in the Santiago and Lima segment will clear, during peak hours, the air traffic of the over-flights among Santiago-Lima-Miami and vice versa, which cannot operate at their optimum flight levels.

2.2 In respect to the impact on the Peruvian airspace, there are not prohibited or restricted areas that disturb the development of RNP -10 pre-operational trials and demonstrations in RNAV routes UL780 and UL 302.

2.3 The work load of the controller in the South Sector of the Lima FIR will be reduced with the decrease in the communications congestion due to the frequent requests of the users to change the level of the routes, en-routing them to parallel routes. Likewise, coordinations with the Antofagasta

FIR will decrease, as for the change of level or speed setting when using the MACH number technique.

2.4. No significant deviations have been verified in the airspace according to the statistical data compilation and navigation deviation program for both the lateral and vertical planes. This data will be sent to the CARSAMMA, on time.

2.5. At the same time, the navigation performance in the routes mentioned when entering and exiting the radar range of the Lima ACC has been supervised. The data collected between June and November 2002 is shown in **Appendix A**.

2.6. It is foreseen that in March 2003 the Peruvian Aeronautical Authority shall establish the procedures for the RNP 10 operational approval of the aircraft and at the same time the establishment and maintenance of an updated register of RNP 10 approved aircraft.

2.7. We have coordinated with Chile the publication of an AIC in order to inform the aeronautical community about the introduction of the procedures and requirements for RNAV RNP 10 implementation of these routes. Proposed date AIC July 10th, 2003.

2.8. The proposed AIC is shown in **Appendix B**.

2.9. The Geodetics System WGS 84 has been implemented in the FIR Lima.

2.10. A training program for controllers will be given since the second fortnight of January of the current year. The flight crews operating in the Peruvian airspace will be invited to attend the scheduled seminars and workshops.

2.11. The States of Peru and Chile agree to continue with RNP 10 implementation programme.

3. **Action Suggested**

3.1. The meeting is invited to take note of the information contained in this Working Paper.

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APPENDIX A**MOVEMENT ROUTE UL 302 Lima-Santiago de Chile and Santiago de Chile – Lima segment**

MONTH	JUN	JUL	AUGS	SEP	OCT	NOV
DEPARTURES	169	161	167	135	151	157
ARRIVALS	150	141	143	122	143	159
TOTAL	319	302	310	257	294	316

MONTH	JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
A320	23	25	18	18	14	14	14	15	16	18	15	14
A340	18	23	24	24	24	24	23	21	21	19	20	21
A319	8	7	13	13	17	17	16	16	16	16	14	15
B721	0	0	0	0	0	0	0	0	1	0	0	0
B722	0	0	0	0	2	2			0	0	0	0
B737	1	1	0	0	2	0			2	2	1	0
B762	9	10	0	0	0	0			7	7	21	22
B763	70	71	71	70	75	75	54	60	59	66	54	59
C130	1	0	0	0	0	0			0	0	1	0
CL60	0	0	0	1	0	0			0	0	0	0
C550	0	0	2	2	0	0			0	0	1	2
C650	3	1	0	0	0	0			0	0	0	0
DC9	1	0	2	3	0	0			0	0	0	0
DC10	1	6	0	3	0	4	1	5	0	4	0	16
GRUMAN	2	0	0	1	1	0			0	0	0	1
WW125	1	1	0	0	1	2	1	1	2	2	1	1
MD83	3	0	0	0	3	0	9		6	0	2	0
MD88	28	0	31	0	27	0	17		21	3	27	1
B747	0	1	0	0	0	1			0	1	0	2
LR36	0	0	0	0	0	1			0	0	0	1
MD11	0	4	0	6	1	3		4	0	5	0	4
TOTAL	169	150	161	141	167	143	135	122	151	143	157	159

APPENDIX A

Operations in route UL 780 LIMA FIR, Lima-Santiago de Chile segment and viceversa in the LIMA FIR

MONTHS	R O U T E S		TOTAL
	UG436/UL780	UL780	
J U N E O	B763 = 05	B737 = 37 B732 = 13 B763 = 204 B767 = 66 A320 = 01	326
J U L Y	B763 = 06	B737 = 37 B732 = 17 B752 = 01 B767 = 75 B762 = 01 B763 = 221 B772 = 08	360
A U G U S T	B742 = 01 B767 = 02 B763 = 11 B772 = 09 C50 = 01	A320 = 08 B737 = 30 B732 = 17 B742 = 09 B767 = 55 B762 = 01 B763 = 246 B772 = 11	401
S E P T E M B E R	B742 = 12 B744 = 01 B767 = 02 B763 = 29 B772 = 18 B737 = 05 B752 = 02	B732 = 21 B737 = 14 B742 = 06 B747 = 01 B762 = 01 B763 = 260 B767 = 37 B772 = 04	414
O C T O B E R	B737 = 10 B742 = 13 B762 = 02 B763 = 21 B767 = 02 B772 = 22	B732 = 16 B737 = 10 B742 = 06 B762 = 01 B763 = 250 B767 = 52 B772 = 09 GV = 01	415
N O V E M B E R	B737 = 05 B742 = 14 B763 = 51 B772 = 02	B732 = 07 B742 = 05 B737 = 21 B767 = 24 B762 = 02 B763 = 262 DC8 = 01 F90 = 01 GIII = 01	397

APPENDIX A

Summary of NON authorized deviations in the Route UL780

DATE	TYPE OF ACFT	FLIGHT LEVEL	MAGNITUD / BEARING
06/07/02	B-767	370	100 PIES V / 50NM - ILMAR
07/07/02	B-767	290	1NM
09/07/02	B-767	370	1NM
09/07/02	B-767	350	3NM / 50 NM - ILMAR
10/07/02	B-767	350	1NM
10/07/02	B-763	310	0.2NM / 53NM LIM VOR
10/07/02	B-737	370	0.3NM / 75NM LIM VOR
20/07/02	B-732	390	1NM / 28NM SUR -MOXES
24/07/02	B-767	310	2NM

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1. Introduction

1.1 GREPECAS, through the International Civil Aviation Organization (ICAO), International Air Transport Association (IATA), the NACC Regional Office and the International Organizations/States of the SAM Region, have developed an RNAV RNP 10 pre-operational implementation programme in the Santiago de Chile/Lima segment in parallel routes UL 780 and UL 302 in order to enable operators to use the avionics already installed in their aircraft, and get immediate benefits with the use of more optimum flight levels, reduce delays and costs with the application of a 50 NM lateral separation by the ATS providers, among aircraft flying at the same flight level.

2. Objective

2.1. The objective of this AIC is to summarize the operational procedures that will support the RNAV RNP 10 implementation programme. For more information and details please consult the ICAO NACC and SAM Regional Offices, the IATA Latin-American Office or the Civil Aviation Administrations of the States that are included in these tests.

2.2. More information about the aircraft certification and approval process for RNAV RNP 10 operations, can be obtained from:

DIRECCION GENERAL DE AERONAUTICA CIVIL (CIVIL AERONAUTICAL
GENERAL BUREAU)

DIRECCION DE NAVEGACION AEREA (AEREA NAVIGATION BUREAU)

TEL: 4251780

FAX: 4251780

e-mail: rhurtado@mtc.gob.pe

3. Reference Documents

- ICAO: Doc. 9613 - Required Navigation Performance Guide (RNP)
- ICAO: Doc 7030/4 - CAR/SAM, Part 1, Rules of the Air, Air Traffic Services and Search and Rescue.

4. ATS Procedures

- a) The aircraft using these routes should be equipped with certified RNAV RNP 10.
- b) Minimum flight level FL 290
- c) A minimum longitudinal separation of 10 minutes/80 NM RNAV between aircraft at the same flight level will be used ensured with the MACH number technique (MNT) in routes RNAV UL780 and UL302.
- d) The ACC will execute the ATS coordination through the current established coordination means, and will include this route in the Operational Letter of Agreement.

- e) The aircraft flight plan forms using these routes of the RNAV RNP 10 Pre-operational implementation programme should complete Item N° 10, with the letter R (RNP type certification). In Item N° 15, the Mach number will be included.

5. Airlines, General Aviation and State Aviation Procedures

- 5.1 The operators shall communicate the dispatchers and the crews about the procedures and minimum requirements to fly these RNAV RNP 10 routes.
- 5.2. The Civil Aviation Administration shall report the procedures and requirements of RNAV RNP 10 routes, to the respective General Aviation and State Aviation.

6. Contingency Procedures

- 6.1 The Contingency Procedures will be the same contemplated by the States in their Operational Letters of Agreement, ICAO Docs. 4444 and Doc. 7030.
- 6.2 Guidelines for the use of lateral offsets other than those special procedures prescribed to reduce wake turbulence and disturbing on board systems alert.
 - 6.2.1 The aircraft that use parallel routes UL780 and UL302 between the Santiago de Chile and Lima segment are authorized to apply a 1 NM lateral offset under the following conditions:
 - a) Shall only be applied to aircraft that use the GNSS in Navigation Solution.
 - b) Shall only be made to the right of the centre line route relative to the flight direction.
 - c) Shall not be applied in addition to any other specified offset.
 - d) Shall not be applied below the minimum flight altitude
 - e) Shall not be applied in radar control Airspace.
 - 6.2.2 Pilots are not required to notify the ATC when a 1 NM lateral offset is being applied.

7. Implementation Dates

- 7.1 RNP 10/50 NM Pre-operational implementation programme in RNAV routes UL780 and UL302 will be effective on September 04th 2003, unless a different starting date is agreed.