



AP/ATM/10
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**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
of the CAR/SAM Regions (AP/ATM/10)**

(Lima, Peru, 10 -14 May 2005)

Agenda Item 1: Review of the RNAV Routes Implementation Programme in the CAR/SAM Regions

Implementation of an RNAV route from Viru Viru VOR to NADIR Intersection

(Presented by Bolivia and IATA)

Summary

This Working Paper proposes the implementation of an RNAV route between Viru Viru VOR at La Paz FIR and NADIR intersection at Recife FIR.

1. Introduction

1.1 The purpose of this Working Paper is to request to the States of Bolivia and Brazil to implement an RNAV route between Viru Viru VOR at La Paz FIR and NADIR intersection at Recife FIR.

1.2 This request is due to the need of connecting the cities of Santa Cruz and Madrid with a more efficient route. Between intersections NADIR at Recife FIR and ROSTA at Canaries FIR, the flight would follow a random navigation.

2. Economical benefits

2.1 At present four weekly flights, in both directions, join the cities of Santa Cruz and Madrid, with plans in a near future to increment to fourteen flights per week in both directions. The difference in distance between the conventional route and the proposed route is 264.7 NM. This reduction in distance would cut the flying time by approximately 33 minutes with a reduction in operating expenses of about US\$ 13,200 per week.

2.1 A second saving would be achieved by eliminating a technical stop at the Recife Airport. Approximately 25% of the southbound flights have to stop for refueling at Recife airport owing to headwinds and the Barajas airport elevation. Therefore, using a shorter route the fuel load would be reduced, and the refueling stop eliminated. The reduction of operating costs could be as much as US\$ 800 weekly for landing fees.

2.2 Finally, by using the proposed route, a reduction in fuel consumption of 3.300 kgs could be achieved. In this flight specifically, the fuel weight could be replaced by payload equivalent to 33 passengers / freight / mail. Conservatively, this increment in payload in just 25% of the flights we consider that the increase in revenue would be tantamount to US\$ 20.000 weekly.

2.3 Adding the previous benefits to the reduction of operating expenses, the total profit could be up to US\$1.8 million annually, operating four flights per week.

3. Trajectory of proposes route

3.1 Previous coordination has been maintained between Bolivia, Brazil and IATA and with an initial agreement the route would follow this trajectory:

Viru Viru VOR (La Paz FIR)
FIR boundary SBAZ/SLLF (15° 27' 51" S - 60° 14' 45.6" W)
ABATE (Amazonica FIR)
CANON (Amazonica FIR/Brasilia FIR)
Imperatriz VOR YTZ (Amazonica FIR)
NADIR (Amazonica FIR)

4. Discussion

4.1 Considering the above, and taking into account that only two countries are involved in the implementation of the proposed route, it would be appreciated that this route be implemented as soon as possible without considering it as part of Phase II-b of the CAR/SAM Regions RNAV Routes Implementation Program.

5. Conclusion

5.1 The meeting is invited to take note of the information provided in this Working Paper and, if deemed convenient, approve the proposed RNAV route and implement it within a two AIRAC cycles time period.