SAT/14
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INTERNATIONAL CIVIL AVIATION ORGANIZATION

FOURTEENTH MEETING ON THE IMPROVEMENT OF AIR TRAFFIC SERVICES OVER THE SOUTH ATLANTIC

Montevideo, Uruguay, 7 to 9 May 2008

Agenda Item 1: Air traffic management (ATM)

1.3. Follow up of the AORRA airspace implementation.

ADDITIONAL ENTRY/EXIT WAYPOINTS FOR EFFICIENT ACCESS TO AORRA AIRSPACE

(Presented by IATA)

SUMMARY

This paper discusses additional Entry/Exit waypoints to facilitate access to AORRA airspace for aircraft operating from the Middle East but applies generically to all operators.

1. INTRODUCTION

1.1 On the 21st of December 2006, the South Atlantic States implemented a Random Route area for aircraft operating between Africa and South America called Atlantic Ocean Random Routing RNAV Area (AORRA). Random Routing in Oceanic airspace is not new having been first implemented in the North Atlantic in the early 1970s, in the 1990s in the Pacific and more recently in the Indian Ocean from South Africa and the Middle East to/from Australia.

1.2 Participating airlines will be able to realise large benefits from the tracks designed to maximize wind affect by seeking tailwinds and avoiding headwinds. Maximum airline participation is encouraged by minimal requirements and restrictions applied to the use of the Random Routes. In the Indian Ocean example, the extrapolated benefits from actual data on savings are estimated to be in excess of 2.7 million kilograms of fuel per annum within the Melbourne FIR alone.

1.3 The implementation of the AORRA area within the South Atlantic is complicated by the coordination required amongst the Air Traffic Service Providers in this Region. Aircraft flying Random Routes within AORRA will use the conventional fixed routes outside of the AORRA area and commence Random Routes at a published waypoint on the boundary. As the conventional fixed ATS-Route structure will not always position the aircraft efficiently for the optimum route on any given day, benefits to airlines can increase with the availability of additional Entry/Exit waypoints on the AORRA boundary along with suitable transitions from the existing Domestic airway structure.

1.4 IATA has recently reiterated the need for airlines to concentrate on utilising the processes and procedures instigated by dedicated ANSPs to assist airlines in achieving fuel efficiencies. An associated benefit of reduced fuel burn is the subsequent reduction in green house gas emissions.

2. DISCUSSION

2.1 The original AIP SUPs defining the South Atlantic AORRA area specified a limited number of existing Waypoints as Entry/Exit points for Random Routing. These were basically waypoints on Airways at the Oceanic Boundary. It is submitted that to gain ultimate flexibility a number of additional named Waypoints need to be defined on the AORRA boundary. Examples are attached from the North Atlantic where Entry/Exit waypoints into the Oceanic area are located on 1° increments of Latitude on both sides of the North Atlantic.

2.2 As an example, a pictorial of the Gander Oceanic Entry Points is shown in Attachment A, to this Working Paper.

2.3 Similarly, Attachment B shows a graph of the Shanwick Oceanic boundary, along with their waypoints.

2.4 Attachment C lists a series of waypoint data in Latitude/Longitude format as candidates for named 5-letter waypoints.

2.5 It is also requested that Entry/Exit waypoints be published on the Northern boundary of the Random Routing area on a 5° Longitude basis to allow aircraft to enter/exit the AORRA area when operating on a North-East or South-West axis. These are given in Attachment D.

2.6 The addition of these named Waypoints by the participating States will allow work to begin with the Air Navigation Service Providers (ANSPs) on defining more efficient hook-ups to these Entry/Exit Waypoints from the existing Domestic Route structure outside of the current AORRA boundaries.

2.7 Individual ANSPs have limited potential to improve long haul fuel efficiencies. However multiple ANSPs working to a common goal have the capacity for dramatic gains. And with the deployment of Ultra-Long Range aircraft on new city-pairs around the world, it is incumbent that ANSPs work together to provide efficiencies in areas and on route orientations where it was never envisaged before.

2.8 In parallel with the ULR aircraft, ANSPs also must, to the degree possible, have similar operational procedures with other Oceanic airspaces around the world. The operating crews today can operate in the North Atlantic one week, the South Pacific the next week, and the Indian Ocean the third week, and now the South Atlantic all in the same month.. Operational requirements and crew procedures for the various contiguous airspaces around the world need to be as harmonious as possible in this new environment.

2.9 Experience in the Indian Ocean tells us that more Waypoints are required than one would consider useful. In the June-to-August timeframe on Dubai/Melbourne, flight plans are filed that are consistently up to 6° Latitude South of the destination, Melbourne, only to pick up the strong Jet Streams along the Roaring 40s.

2.10 The SAT 13 Task Force Meeting, Cape Town 21-23 February, reviewed and noted the benefits to the airlines by the Random Routing areas and upheld the requirements for Air Navigation Service Providers (ANSPs) to actively support airlines efficiency. It also agreed that publishing more waypoints will be useful and that multiple ANSPs working to a common goal have the capacity for greater gain than individual ANSP's limited potential.

2.11 The need for SAT States and concerned FIRs to define and support more efficient hook-ups to the current Entry/Exit Waypoints from the existing Domestic Route structure that are outside of the current AORRA boundaries should be encouraged by all concerned FIRs .

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Publish the waypoints listed in the Attachments in 5-letter format, as soon as practicable,

b) Support and encourage ongoing collaborative development of efficient route segments within the South Atlantic AORRA area by providing choices for airlines and defining efficient hook-ups to these Entry/Exit Waypoints from the existing Domestic Route structure outside of the current AORRA boundaries.

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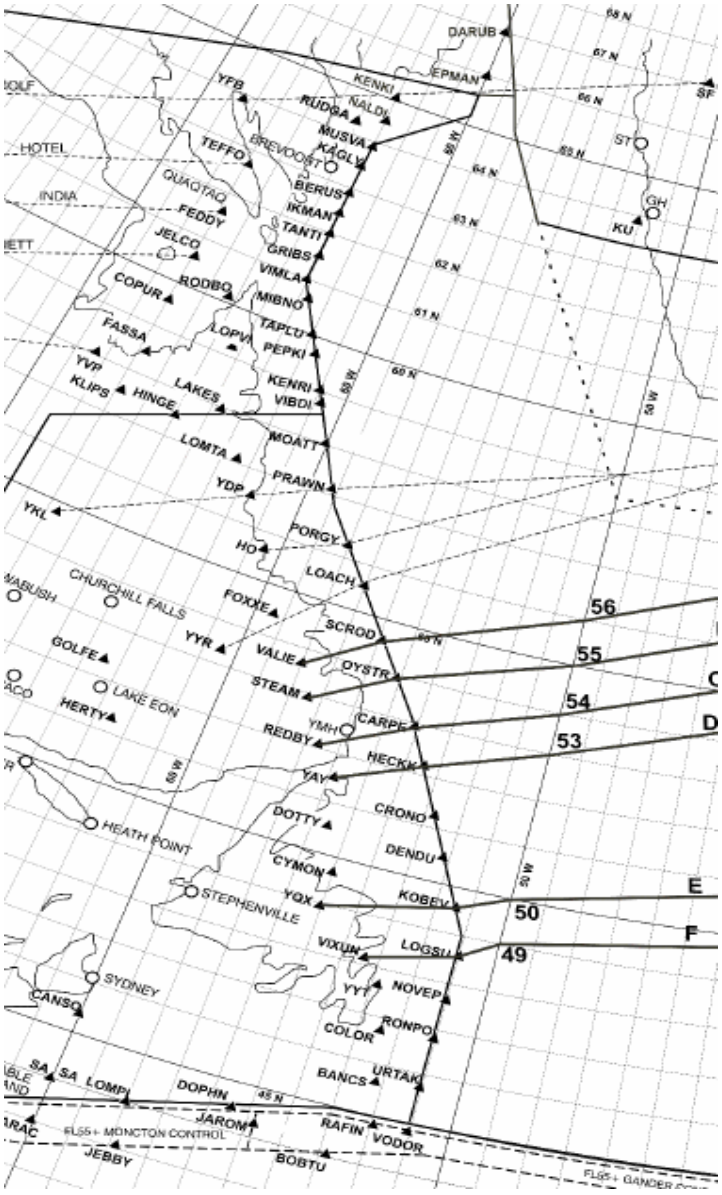
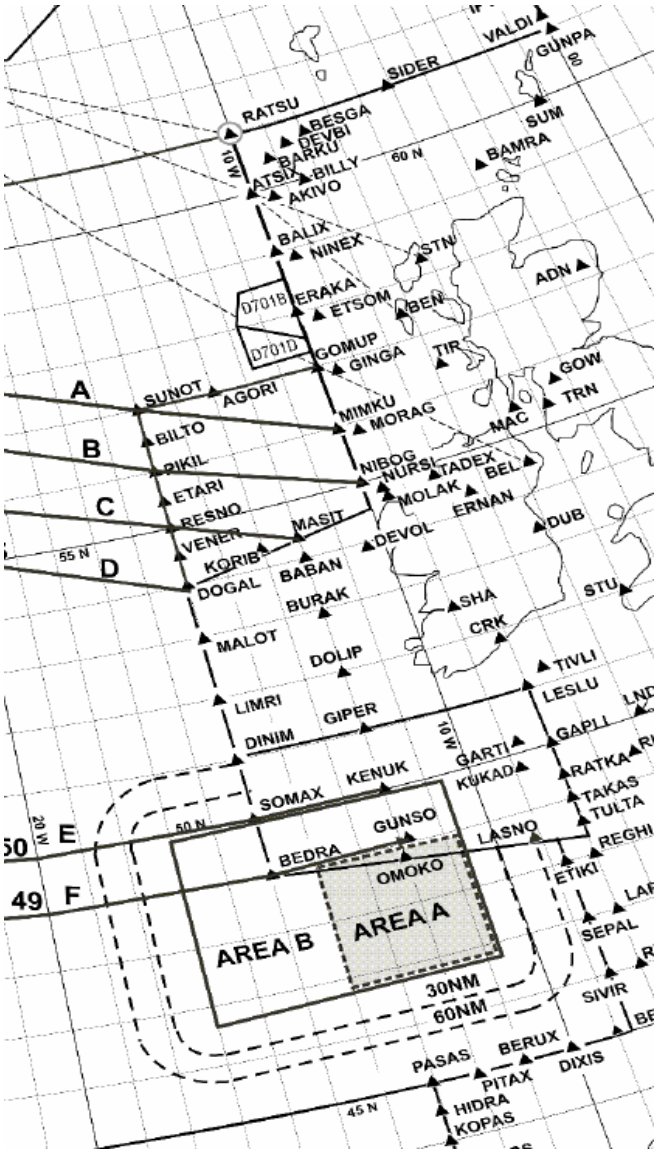
Attachment A



Gander Oceanic Entry Points

Attachment B



Shanwick Oceanic Entry Points

Attachment C – Latitude Waypoints

Cape Town FIR / Johannesburg Oceanic FIR
S27 30 00.0 E015 00 00.0
S30 00 00.0 E015 00 00.0
S31 00 00.0 E015 00 00.0
S36 00 00.0 E015 00 00.0
S37 00 00.0 E015 00 00.0
(May not be adequately South for any Cape Town operations but will suffice for Johannesburg.)

Windhoek FIR / Johannesburg Oceanic FIR
S17 30 00.0 E011 13 00.0
S19 00 00.0 E010 00 00.0
S20 00 00.0 E010 00 00.0
S21 00 00.0 E010 00 00.0
S22 00 00.0 E010 00 00.0
S23 00 00.0 E010 00 00.0
S24 00 00.0 E010 00 00.0
S25 00 00.0 E010 00 00.0
S26 00 00.0 E010 00 00.0
S27 00 00.0 E010 00 00.0

Atlántico FIR / Luanda FIR
S12 00 00.0 W010 00 00.0
S13 00 00.0 E010 00 00.0
S14 00 00.0 E010 00 00.0
S15 00 00.0 E010 00 00.0
ETAXO
S16 00 00.0 W010 00 00.0
S17 00 00.0 W010 00 00.0
ILGER
S18 00 00.0 W010 00 00.0
S19 00 00.0 W010 00 00.0
S20 00 00.0 W010 00 00.0

Atlántico FIR
1 Degree steps of Latitude from S19 43.0 W034 35.0 to S34 00.0 W050 00.0

Montevideo FIR
S34 00.0 W051 33.33
1 Degree steps of Latitude from S34 00.0 W051 33.33.0 to S36 45.5 W053 11.783

Ezeiza/Comodoro Rivadavia FIRs
1 Degree steps of Latitude from S36 45.5 W053 11.783 to S058 00.0 W053 00.0

Attachment D – Longitude Waypoints

Atlantico FIR – Northern Boundary
S19 43 00.0 W034 35 00.0
S18 28 43.3 W030 00 00.0
S17 04 09.3 W025 00 00.0
S15 30 50.2 W020 00 00.0
S13 49 14.7 W015 00 00.0
S12 00 00.0 W010 00 00.0

Luanda/Johannesburg FIR – Northern Boundary
S20 00 00.0 W010 00 00.0
S18 00 00.0 W005 00 00.0
S18 00 00.0 W000 00 00.0
S18 00 00.0 E005 00 00.0
S18 00 00.0 E010 00 00.0

Montevideo FIR – Northern Boundary
S34 00 00.0 W051 00 00.0