



International Civil Aviation Organization

The Twelfth Meeting of the FANS Implementation Team, Bay of Bengal (FIT-BOB/12) and the Second Meeting of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF/2)

Bangkok, Thailand, 22 – 26 February 2010

Agenda Item 6: Future Direction and Arrangements

**ADDITIONAL ATS ROUTES TO BE CONSIDERED FOR
RNAV RNP 10 (50 NM) LONGITUDINAL OPERATIONS**

(Presented by the Secretariat)

SUMMARY

The purpose of this working paper is to make an assessment of all routes which may qualify for RNAV RNP 10 (50NM) operations, emanating from the Bay of Bengal, if not in whole but in part, especially in regard to extra long-haul routes leaving the Bay of Bengal and transiting the Indian Ocean.

1 INTRODUCTION

1.1 The meeting is reminded that there are several ATS routes crossing the Bay of Bengal (BOB) which the Task Force may wish to take into consideration in the implementation of RNAV RNP 10 50NM longitudinal separation.

1.2 It should be noted that, these ATS routes emanate from airports situated in Southeast Asia as well as Hong Kong linking with destinations in Southern Africa. They could be described as extra long-haul routes which either cross the Bay of Bengal, or enter the Bay of Bengal in a southwest direction and continue into the Indian Ocean.

1.3 In studying the overall route network in the Bay of Bengal, these particular routes should also be considered as they bisect many of the parallel routes which have been designed for air traffic transiting to/from Southeast Asia to the Middle East and Europe.

2. DISCUSSION

2.1 The design of the route structure in the BOB and Arabian Sea areas concentrates on a parallel route framework servicing aircraft to/from either Europe or the Gulf States in the Middle East. The majority of these routes were established by the EMARSSH project which was implemented in November 2002. The parallel routes were based on RNP 10 provisions and were established in the main with a reduced lateral spacing of not less than 50 NM. However, in regard to 50 NM longitudinal separation, the overall ICAO requirements in the BOB and Arabian Sea areas could not be met at that time by several States involved due to limitations in their ATS equipment.

2.2 Over the past few years, these States have been moving forward in the implementation of ADS-C/CPDLC equipage and it is expected that they will have operational CPDLC and possibly ADS-C by early 2011.

2.3 Other initiatives in the BOB have been the implementation of additional parallel routes to cater for the increase in traffic during the ATFM/BOBCAT operations each night.

Crossing routes in or through the BOB

2.4 The meeting should note that there are 3 major crossing routes affecting the BOB parallel tracks which need to be considered in the introduction of 50 NM separation in this area. These are:

- a) L301 for flights out of Bangkok, crossing routes M770, L759, P628 and L510;
- b) P762 for flights out of or overflying Bangkok, crossing routes M770, L759, P628, L510, N571, P574, N563 and M300;
- c) P627 (previously route designator A327) for flights out of or overflying Phuket, crossing routes P628, L510, N571, P574, N563 and M300. A further 6 crossing routes namely, P570, G462, L897 and further to the south, B340, A463 and A214 are considered not to be part of the parallel route structure but should be analysed for traffic movements.

2.5 L301 is generally used by aircraft operating from Bangkok or over Bangkok to Middle East destinations and return. This route remains exclusively within the BOB, then crosses Indian continental airspace and finally the Arabian Sea and onwards to the Gulf area or beyond.

2.6 The other 2 routes have somewhat different applications. P762 is used by aircraft operating westbound to Colombo, as well as for extra long-haul aircraft operating west/east to/from South Africa. The route designator changes to G465 or a small dog-leg (M512) to avoid Indian airspace after Colombo. The recently re-named P627 (was A327), has a routing which transits the BOB and then continues into the Indian Ocean. These crossing routes are pictured in the attachments to this working paper.

2.7 The meeting is invited to consider additional strategies in managing these ATS routes without impairing the efficiencies to be gained by the introduction of 50NM longitudinal separation. It should be noted that these crossing routes carry both regional and inter-regional air traffic, varying from relatively short haul operations across the BOB, to extra long range flights between Southeast Asia and South Africa. These latter flights a fuel sensitive particularly when operating in a westerly direction across a vast expanse of oceanic airspace.

2.8 The meeting is encouraged to look at the feasibility of planning for P762 and P627 to remain as RNP 10 50NM longitudinal separation beyond the Bay of Bengal, at least within the Asia/Pacific region. This could be achieved on a step by step basis once affected States such as the Maldives and Indonesia have implemented the necessary mechanisms for CPDLC capability.

2.9 As an example with respect to long- haul aircraft operating on RNAV route P762 from DAWEI (near Bangkok) to Colombo, which changes route designator to ATS route G465 (M512). G465 passes through the Mumbai FIR, Male FIR to the Seychelles FIR (Praslin) and beyond to South Africa. It is understood that the Maldives have now implemented or are in the process of implementing MSSR radar and ADS-C/CPDLC capability. Once this action is accomplished, it would allow aircraft using this major route operating from Bangkok and Hong Kong to gain added

efficiencies of 50 NM longitudinal separation for an extended period of time in the Indian Ocean. Until such time as this separation standard is implemented in other FIRs west of the Asia/Pacific region, Male ACC would be required to readjust the spacing before aircraft entered the Seychelles FIR.

2.10 In the case of P627, westbound aircraft transit from the Bangkok FIR to Jakarta FIR, Colombo FIR, Melbourne FIR to Mauritius FIR enroute to South Africa. Similarly, Melbourne ACC would be required to readjust the spacing before aircraft entered the Mauritius FIR.

2.11 This proposal may also trigger enhancements on additional extra long-haul routes which are presently being flown from Kuala Lumpur and Singapore to South African destinations.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the crossing ATS routes within the Bay of Bengal which could be included in the RNAV RNP 10 50NM longitudinal separation implementation planning process;
- b) Discuss a proposal to extend the 50NM longitudinal separation criteria for these crossing routes on a step by step basis beyond the Bay of Bengal into the Indian Ocean up to the promulgated boundary of the Asia/Pacific region, once specific Asia/Pacific States have the capability to apply either DCPC or CPDLC provisions within their respective FIRs;
- c) Discuss further enhancements on additional long haul routes which are used from Kuala Lumpur and Singapore to South African destinations;
- d) Where necessary to do so, change present ATS routes to RNAV route designators; and,
- e) Include these changes in the Task List for follow-up of further work by the BOB-RHS task force.

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BOB-RHS/TF/2 WP6 ATTACHMENT 3-P627

