International Civil Aviation Organization

The Combined Meeting of the South Asia Indian Ocean Co-ordination Group SAIOACG/4 and the South East Asia Co-ordination Group SEACG/21

Hong Kong, China 24-28 February 2014

Agenda Item 3: Review of Current Operations and Problem Areas

ENHANCING EN-ROUTE CAPACITY OVER THE BAY OF BENGAL

(Presented by Malaysia and Singapore)

SUMMARY

This paper presents the proposal to explore ATM solutions to enhance en-route capacity over the Bay of Bengal especially with the continued growth of air traffic between South East Asia - South Asia and beyond.

1. INTRODUCTION

1.1 The air traffic movement over the Bay of Bengal serving air traffic between South East Asia – South Asia and beyond have been steadily increasing over the years. With the recent entrant of new aircraft operators such as Jet Airways, Air India Express, Indigo and others, there has been significant increase in traffic demand without any matching increase in en-route capacity.

1.2 Additional, air traffic movement to and from the Middle East and Europe continue to increase in tandem. These flight burns more fuel per nautical mile due to the additional weight from the extra fuel required to make the trip. Less that optimal cruising levels would lead to excess fuel burn and emission and at worst could lead to an un-planned technical stop for re-fuelling.

1.3 Without any enhancement of en-route capacity, there would be increased delays, fuel burn and emission as a result of flights not operating optimally.

2. DISCUSSION

2.1 The current No Pre-departure Coordination (NPDC) Flight Levels allocated for west-bound flights on routes such as N877, P628, L759 and M770 are FL280, FL 300 and FL340. Other levels such as FL360 and above are subject to coordination. FL320 is not available as it has been reserved for crossing routes such as P762 and L301.

2.2 The Bay of Bengal Cooperative ATFM System (BOBCAT) to manage air traffic flow over Kabul FIR has served the region well for the last few years. The ATFM procedure regulates the convergence of traffic from many departing airports prior to entering Kabul FIR. This results in potential bunching at segments with constricted en-route capacity.

2.3 The eastern portion of Bay of Bengal is one area where convergence of BOBCAT participating flights from Malaysia and Singapore operating based on their Allocated Wheels-Up Time (AWUT) may result in bunching prior to entering the Bay of Bengal. The root cause of such bunching may be due to the limited number of cruising levels that are available over the Bay of Bengal. Such occurrence results in ad-hoc holding to achieve the necessary procedural longitudinal separation. The effect of this eventually would also affect the compliance to the allocated time to enter Kabul FIR. Additional flight levels made available during the BOBCAT operating hours would alleviate such occurrences and enhance operators' compliance to the ATFM measures over Kabul FIR. Also 'by pass route" should be activated whenever bunching occurs upon coordination.

2.4 Apart from the above, there are also westbound departures to Europe, Middle East and South Asia that are not part of the BOBCAT ATFM procedures departing from Malaysia and Singapore. These flights are typically assigned FL280 and FL300 NPDC. These flights are spaced 10 minutes apart given that procedural separation would be applied over the Bay of Bengal. Given the string of departures around 1500 to 1600 UTC, some flights would have to delay departure for up to 40 minutes as they wait their turn to depart at intervals of 10 minutes. This is where an additional NPDC flight level such as FL320 would be useful to reduce the departure delay for westbound flights.

2.5 There are also occasions where tropical cyclone would severely impact the operations and efficiency of flights over the Bay of Bengal. During such periods, some routes would not be available leading to flights converging to operate on any other routes that are available. This further compound the issue of limited flight levels. With the distinct direction of traffic flow over the Bay of Bengal, i.e. majority westbound between 1600 to 1900UTC and majority eastbound between 2000 and 2300 UTC, there would be an opportunity to explore assigning more flight levels to cater for the predominant flow. Such would require an in-depth analysis on the traffic flow over the Bay of Bengal and also supporting connector routes within areas where there are surveillance coverage to ensure safety would not be compromised.

2.6 With the advent of Automatic Dependent Surveillance – Broadcast (ADS-B), there would be potential to deploy sensors in remote areas to enhance surveillance coverage over the Bay of Bengal. For instance, with the planned implementation of ADS-B at Port Blair and other cross-border ADS-B collaboration, there is opportunity for reduction of conventional procedural separation especially at crossing routes like P762 and diverging routes such as N571 and N877. An example would be, the reduction of procedural separation at points crossing P762 and the diverging point of N571 and N877. Surveillance separation could replace the procedural separation to enhance the safety and operational efficiency for flights operating on those routes.

2.7 There is a need for States in this region to continue to work together and collaborate towards the common good of the aviation industry and the travelling public. Through such collaboration, the level of safety and efficiency of civil aviation could be elevated to the next level in preparation for the future demand of air traffic growth.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note the current situation for flights between South East Asia – South Asia and beyond, operating over the Bay of Bengal.

b) Discuss ways to enhance en-route capacity over the Bay of Bengal to reduce flight delays, fuel burn and emission.

c) Discuss any relevant matters as appropriate

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