International Civil Aviation Organization

FIFTEENTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/15)
Bangkok, Thailand, 23 to 27 August 2004

Agenda Item 2: ASIA/PAC Air Navigation System and Related Activities
2.1 ATM/AIS/SAR Matters

THE NEED TO MANAGE THE TRAFFIC FLOWS ACROSS THE BAY OF BENGAL TO EUROPE

(Presented by IATA)

SUMMARY

This working paper describes operational inefficiencies in the Air Traffic Management over the Bay of Bengal sub-region and formally requests APANPIRG to take action in finding an Air Traffic Management solution for the westbound traffic flows across the Bay of Bengal to Europe.

1. INTRODUCTION

1.1 The westbound traffic flows across the Bay of Bengal to Europe is a difficult traffic flow for both air traffic control and airlines during the peak traffic periods. The reason being, there is no air traffic management programme in place that looks at the total flow with a game plan to ensure that all traffic will fit through the known bottlenecks of the system. Air traffic controllers clear flights from airports such as Singapore, Kuala Lumpur and Bangkok that joins onto competing parallel tracks from a single-track perspective only. They have no idea how they will fit in the big picture as traffic converges through India, Pakistan and Afghanistan. A successful evening event from their point of view is few ground delays. For the airlines and ATC from "down the line" departing airports, such as Delhi and Islamabad, the midnight rush is an exercise of frustration as most, if not all, of the slots are already taken by departures from Singapore, Kuala Lumpur and Bangkok.

1.2 The problem is that these uncoordinated departures do not always fit. Consequently, airlines continue to be surprised en route with expensive re-routes to circumnavigate around Afghanistan – mainly because they don't fit into the restrictive flow into Afghanistan. Usually such reroutes result in technical stops to take on additional fuel, meaning that besides the considerable extra expense of an unplanned landing, passengers will miss connections to their final destinations. Although such reroutes are not the fault of the airline, it is the airline that must provide alternative connections and also provide food and lodging if a reasonable new connection cannot be provided.

2. DISCUSSION

2.1 On 28 November 2002, the EMARSSH phase II route structure was implemented. This was a major step forward in air traffic services with the implementation of RNAV and RNP-10 routes. However, not all of the planned EMARSSH phase II program, as originally agreed by States, could be implemented. Therefore, instead of the envisaged 4 independent Asia – Europe flows across

the northern half of the Bay of Bengal and through India, Pakistan and Afghanistan, there are still the same two primary independent flows (via TIGER or SAMAR at the India/Pakistan FIR boundary) that existed prior to EMARSSH (see attached map). In addition, all flights that fly to Europe via Russia must file over SAMAR, which adds further strain to the system capacity. A new third parallel option will be completed soon as the ASOPO to Rahim Yar Khan (RK) segment was implemented this year and hopefully the RK – Kandahar leg, which will shorten the existing route by 57 NM, will be implemented by year's end. However, only 2 altitudes will be available for westbound traffic (FL310/350) and this will also compete with traffic flows out of Mumbai.

2.2 After considerable pleas for relief the military coalition forces in Afghanistan allowed a 4-hour window of FL 280 for L750, N644 and A466. However, FL280 has been taken away from N644. This currently leaves L750 as the only preferred route across the Caspian/Black Seas that offers FL280.

2.3 More needs to be done before there is a complete air traffic management system capable of accepting current and future traffic levels. This includes:

a) Providing greater use of FL280 for westbound operations through Afghanistan. A 4-hour window between 2000-2400 UTC continues to be the period that provides the biggest relief.

b) Improvement to the air-ground communication infrastructure across India and Myanmar controlled airspace.

c) Providing an air traffic management system that facilitates the management of traffic and slots through the airspace of India and Afghanistan prior to departure.

2.4 The IATA Asia Pacific Regional Coordination Group (RCG) of airlines are extremely concern with the lack of air traffic management to this traffic flow and requested IATA to take a closer look at available options for a collaborative decision making (CDM) means of slot control. IATA asked the US FAA and AirServices Australia to present options to the RCG regarding their automated systems that would allow airlines to collaborate and manage the slots over Afghanistan. These systems are summarised as follows:

2.4.1 US FAA Dynamic Ocean Track System Plus (DOTS+). DOTS+ and its Online Track Advisory service is capable of managing the westbound departures across the Bay of Bengal. DOTS+ does this by designating metered gateway fixes for each traffic flow on the BoB westbound tracks. Aircraft operators would submit gateway requests (with a provision to submit a 1st, 2nd and 3rd choice) via the Internet for each departure to Europe, which includes track selection, requested altitude and an ETA at the gateway fix for each flight. DOTS+ would then create a gateway reservation list that would take into account any constraints like flow and altitude restrictions for each track. Airlines would then refrain from asking ATC for a departure clearance until their DOTS+ generated slot for departure. This system could be owned and operated by a State ATS Provider(s) or by IATA and its member airlines.

2.4.1.1 IATA and airlines conducted a paper test on actual flights for a typical busy evening (20 May). The results of this paper test on a 10 minute flow rate was that DOTS+ scheduled "on time" releases for 74% of submitted flights. The distributions of delayed flights are as follows:

Delays 1 to 5 minutes:	2 flights
Delays 6 to 10 minutes:	8 flights
Delays > 10 minutes:	0 flights

2.4.1.2 Of the 39 flights processed, 39 were routed over their primary requested gateway and 35 were positioned at their primary requested altitude.

2.4.2 Airservices Australia's SKYFLOW. Airservices Australia (ASA) gave a presentation of their Central Traffic Management System that is being used to manage traffic into Sydney, using software called SKYFLOW, and described how this system could be modified to manage departures that fly across the Bay of Bengal. The proposed system would operate as follows:

- Airline schedules would be loaded daily via internet going through a defined gateway to Afghanistan
- Capacity at gateways would be decided by ATC
- Programme is run and results made available by agreed time
- Information sent to stakeholders via chosen predetermined means (internet, fax, etc.)
- Flight planning submitted based on final programmed time
- Flights depart on programmed time
- Tactical control still required for final management

2.4.3 In summary, either system should be capable of addressing the requirement to manage the traffic flows through Afghanistan. The FAA DOTS+ has proven itself for managing slots for departures from the US to Asia and the paper test confirmed this is a viable option. Although the existing SKYFLOW system at Sydney could not be quickly modified for a Bay of Bengal paper test, Airservices Australia has a proven track record in Asia Pacific for air traffic service and relationship with the airspace user.

2.5 IATA urgently requests that the Bay of Bengal ATS Providers adopt a collaborative decision making program to manage the traffic flows to Europe during the midnight rush. The two examples above should be considered as solutions. The problems are real, costly and will escalate. The 4-hour provision of FL 280 provided an interim capacity only. However, FL280 has been removed from one of the primary routes and starting from October, the winter charter operations will return and further exacerbate the unexpected reroutes from Afghanistan. The good news is that a solution can be easily implemented that is a win-win for all.

3. ACTION BY THE MEETING

3.1 APANPIRG is requested to take action to:

a) note the difficulties faced by airlines and ATS Authorities during the peak period traffic flows from Asia to Europe;

b) note the request by IATA and its Member Airlines for the implementation of a collaborative ATFM solution;

c) establish a mechanism with the objective of improving operational efficiency in this area by identifying and implementing an automated means of Collaborative Decision Making;

d) treat this matter with an urgent priority.

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