International Civil Aviation Organization

Ninth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/9)

Video Teleconference, 01 – 03 June 2021

Agenda Item 3: Review of the Existing Traffic Flow Route Structures in SCS Airspace and Identifying Priorities

PROPOSAL TO REVIEW EXISTING FLIGHT PLANNING RESTRICTIONS ON ATS ROUTE L644

(Presented by Singapore)

SUMMARY

This paper presents the proposal to review the existing city pair restriction on ATS route L644 to allow operators to optimise flight routing, maximise route capacity and contribute towards reducing fuel burn.

1. INTRODUCTION

1.1 In August 2004, a Special ATS Coordination Meeting on the Hong Kong, China and Jakarta Routes was hosted by Philippines to discuss the implementation of city pair ATS routes to serve Jakarta and Hong Kong China, and destinations beyond Hong Kong China. The meeting was moderated by ICAO Regional Office and attended by participants from Hong Kong China, Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam, and IATA.

1.2 The city pair restriction to serve Jakarta and Hong Kong China and destinations beyond Hong Kong China have been in force since the implementation of L644 and M772 and in recent times, there have been requests from operators that do not fall under the restriction category to utilise L644.

2. DISCUSSION

Usage on L644

2.1 Civil aviation has been heavily affected by the COVID-19 pandemic. The aviation community should work together to tide over these difficult times to enable greater flexibility for flights to plan their routes. With flexibility, there will be potential for enhanced efficiency, which would lead to reduction in fuel consumption and subsequently translate to cost savings and lower carbon emission.

2.2 Pre-COVID data on flights operating on ATS route L644 revealed that the daily average number of flights recorded ranged from two to five, which indicated the potential to serve more flights from other destinations to maximise route capacity (See Figure 1).

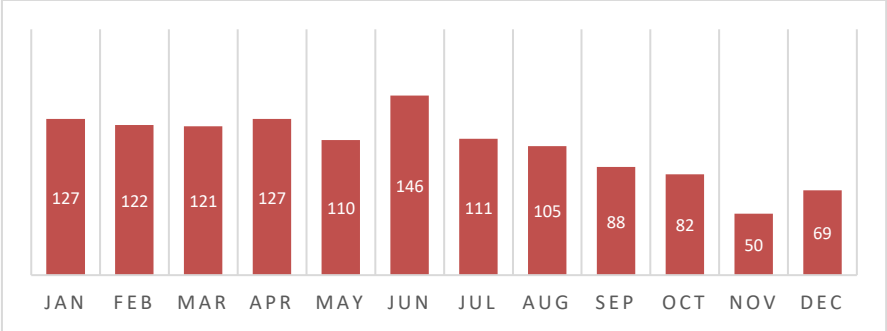

Figure 1: No. of Flights on L644 in 2019

Effective Flight Plan Route

2.3 Since the revised South China Sea (SCS) route structure in 2001, flights had suffered operational penalties of up to thirty minutes per round trip[1]. One of the major trunk routes, L642, has been the connecting route across FIR boundaries to serve various destinations. ATS route L642 has been connecting flights from aerodromes in China, Hong Kong China, Viet Nam, to destinations such as Indonesia, Malaysia, Singapore and beyond.

2.4 In 2005, in order to improve the situation, unidirectional ATS routes, L644 and M772 had been established to further enhance the SCS route structure. In comparison to the currently used ATS route L642, ATS route L644 provided a more efficient and direct routing within Singapore FIR for upstream flights arriving into Jakarta. Figure 2 shows a typical example of a flight departing from Vietnam (shown in yellow) vs a flight from Hong Kong China or beyond Hong Kong China (shown in red).

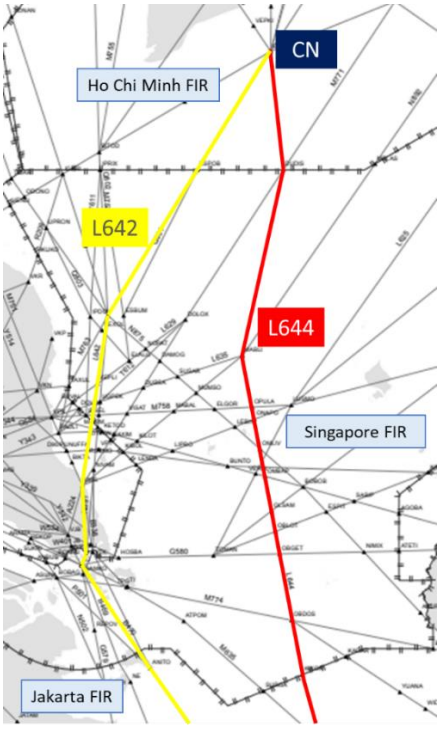

Figure 2: L642 (in yellow) and L644(in red)

[1] As reported in the 2004 Report of the Special ATS Coordination Meeting on the Hong Kong, China and Jakarta ATS Routes

2.5 Easing of city pair restriction on L644 would allow flights departing from aerodromes such as Ho Chi Minh and Hanoi to Jakarta, to route via CONSON (CN) for a more efficient route instead of utilizing L642. The easing could also potentially be used to serve aerodromes beyond Jakarta. With more flights being able to route via L644, the skewed traffic volume could be better distributed to alleviate the heavy usage of L642[1] and reduce air traffic management complexity.

Estimated Reduction of Flight Distance and Fuel Burn

2.6 The flight distance from CONSON to Jakarta via L644 is approximately 36 nautical miles shorter compared to routing via L642. An optimised flight plan routing could enable airlines to save gallons of fuel annually, reducing operational costs and carbon footprint.

2.7 The 36-nautical mile reduction in distance for a single aisle jet which is typically used between Ho Chi Minh and Jakarta was approximately 200kg, which equates to 632kg of carbon emissions reduction[2].

Conclusion

2.8 Given the rising operational cost and ever-present climate change issues faced by the aviation industry, the easing of city pair restriction on ATS route L644 would reduce the fuel cost to operators, the time needed for travel between destinations, and also decrease carbon footprint[3]. It would also contribute to an improved Air Traffic Management system where ATS route usage is optimised and traffic load more effectively distributed within the Asia and Pacific region.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) discuss on the review of flight planning restrictions on ATS route L644; and

c) discuss any relevant matters as appropriate.

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[1] 2019 data shows a total of 518 flights from Ho Chi Minh to Jakarta

[2] Calculation using ICAO IFSET tool on 36 nautical miles saving at FL330 for a single aisle jet.

[3] Fuel savings in the year 2019: if L644 was made available for flights from Ho Chi Minh to Jakarta, there could have been 103tonnes reduction in fuel and 327tonnes reduction in carbon emission.