International Civil Aviation Organization

The Thirteenth Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/13)

Beijing China, 16 – 18 July 2025

Agenda Item 2: Review of the Current and Planned CNS/ATM Capabilities and Identifying Associated Reduced Horizontal Separation

REVIEW OF LARGE SCALE WEATHER DEVIATION PROCEDURES

(Presented by IFATCA)

SUMMARY

This paper presents information on a proposal to revise the Large Scale Weather Deviation (LSWD) procedures in the South China Sea (SCS) area. One project is on-going and this paper proposes a similar project could be undertaken in another part of the SCS airspace. In addition, information on a new real-time turbulence data distribution centre established by IATA is given. This centre could provide valuable reference material for reviews of the vertical separation applied in LSWD procedures.

1. INTRODUCTION

1.1 In 2002 the LSWD procedures were devised as part of the project for the development of the current South China Sea airspace structure. The FLOS and FLAS procedures were introduced as effective and innovative ways of best managing the major traffic routes and the subsidiary crossing routes based on RNAV 10 practices. Those LSWD procedures and practices are now neither efficient nor practical, and result in lengthy ground delays for flights throughout the region when only one area is affected by adverse weather. With greatly improved surveillance and direct communication coverage now available, some ANSPs have initiated actions to revise the current LSWD procedures for some routes.

2. DISCUSSION

2.1 At the Fourth Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination group Meeting (SAIOSEACG/4) in Bangkok in March 2025, Singapore presented WP 12 ‘Addressing Capacity Constraints on ATS Routes L642 and M7771 During Large Scale Weather Deviation (LSWD) Events’.

2.2 The Paper detailed a proposal for revising LSWD on routes L642 and M771 based on the full surveillance coverage and direct VHF communication in the airspace. With the adoption of 20 NM longitudinal spacing by all units for normal operations, the Paper proposed that for LSWD operations the current 50NM longitudinal spacing could be revised to 30 NM in order to reduce the significant ground delays to traffic that transit the South China Sea area. At the meeting the respective parties agreed in principal to apply surveillance separation and minimise additional longitudinal spacing as far as practicable during LSWD activities.

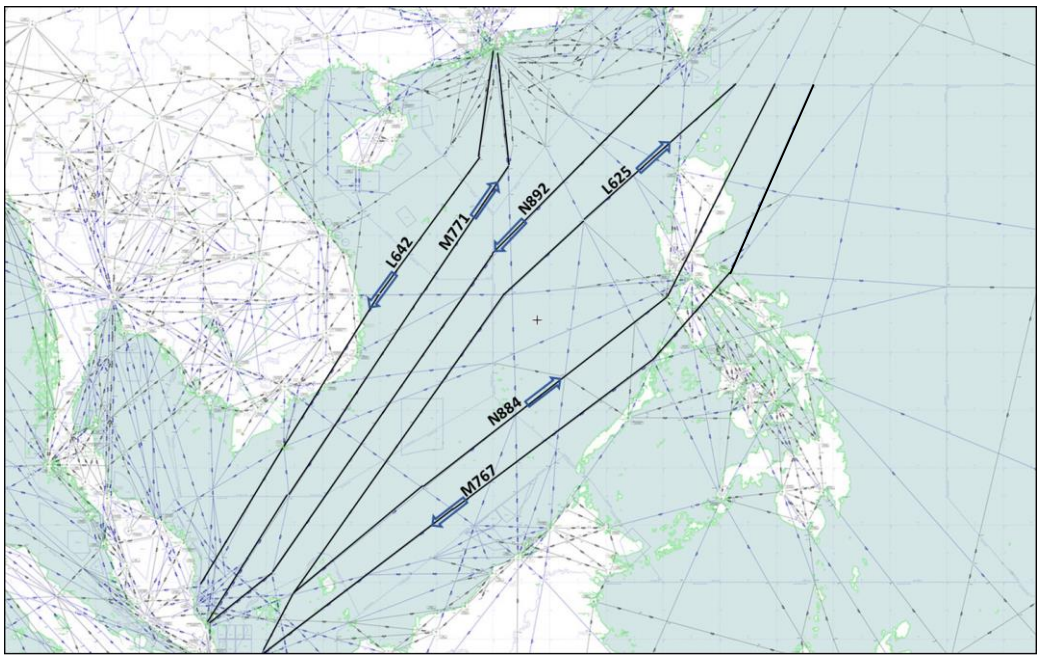

Fig 1 South China Sea Major Traffic Routes

2.3 At the MET/ATM Seminar held in Bangkok in April in conjunction with ATFMSG/15, a presentation on the current work of the ICAO MET Panel gave information on the Future MET Information Services that is planned to provide additional forecasts to assist ATFM and ATM operations in the coming years. The Hazardous Weather Information Service (HWIS), will combine satellite information and real-time observations with AI modelling to provide probabilistic forecasts of convective activity and other adverse weather events. (It is interesting to note that the Hong Kong Observatory is already providing similar types of forecast to Hong Kong ATC.)

2.4 This type of information will provide an opportunity for ATFM units to conduct strategic planning and for front line ATM personnel to synchronise tactical operations to plan appropriate contingency measures when LSWD procedures have to be implemented. This will enable both ATFM and ATM units to progress from being purely reactive in implementing LSWD procedures on an ad hoc basis, to become proactive and plan organised contingency routes based on a structured plan that would result in minimal ground delays for affected flights and orderly revised routings in the affected areas.

2.5 Implementing a revised LSWD procedure on the other major SCS trunk routes, L625 and N892, is not possible at this time because these routes do not have full surveillance coverage. (Note although space-based ADS-B data is available in the Manila airspace, it has not yet been implemented for operational use). However, it is hoped that ATC will have full surveillance capability over the entire SCS in the future. Therefore, it would be prudent for the units concerned to commence an initial review of the LSWD procedures for L625 and N892, based on the process used for the L642 and M771 revision.

2.6 This will not only enable those ANSPs to finalise revised procedures at the earliest opportunity once full surveillance coverage is available, but as the vast majority of the traffic on L625 and N892 have RNP4 or better capability and CPDLC equipage, it would still be possible to progress plans for structured contingency routes based on RNP4 procedures in the affected areas. Thereby reducing ground delays to traffic whilst still maintaining safe operations during LSWD periods.

2.7 It should be noted that LSWD procedures are based on an increase of both horizontal and vertical separation standards. The vertical portion is to protect flights encountering large height

variations in the event of severe turbulence, However, the purpose of the horizontal track deviations is to keep flights away from those areas where the intense convective activity can generate severe turbulence. Therefore, it could be supposed that a track deviation should provide an adequate lateral clearance from areas of convective activity and result in only moderate turbulence encounters at worst.

2.8 At SIOASEACG/4, IATA presented a paper detailing their new Turbulence Aware Project which has established a real-time collection point for world-wide pilot reports of turbulence as part of a service to inform airlines of the latest turbulence reports. An analysis of this data could provide accurate information on the frequency and severity of turbulence encounters during LSWD operations and could provide useful reference information for a future review of the current LSWD vertical separation procedure.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate.

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