International Civil Aviation Organization
The Second Meeting of South China Sea Major Traffic Flow Review Group (SCS-MTFRG/2)
Haikou, China, 22-24 July 2015

Agenda Item 3: Review of the existing MTF route structures in SCS Airspace and identifying priorities

Agenda Item 4: Review of the current and planned CNS/ATM capabilities and identifying associated reduced horizontal separation

COORDINATION BETWEEN SANYA AND ADJACENT CONTROL UNITS

(Presented by CHINA)

SUMMARY

This paper presents the control separation when radar or ADS-B surveillance is available in Sanya FIR and the transfer separation with Hanoi FIR, Ho Chi Minh FIR, Hongkong FIR. The separation on PBN routes, the separation in the event of Large-Scale Weather Deviation and Mach Number Technique (MNT) are also mentioned. At the same time, it also introduces the FLAS in Sanya FIR.

1. INTRODUCTION

1.1 Sanya FIR has been implemented with radar control, Area navigation (RNAV), Reduced Vertical Separation Minimum (RVSM), Large Scale Weather Deviation Contingency Procedure (LSWDCP), Mach Number Technique (MNT), Automatic Dependent Surveillance-Broadcast (ADS-B) and many other advanced ATC technologies. According to the trend forecasts of next-five-year flight development, route groups of South China Sea will also become the most needed and the fastest-growing in amounts of flights for the airspace users.

1.2 Routes A202, G221, A1, L642, M771 and N892 are air channels linking Southeast Asia with China and Northeast Asia which are very busy and important. FLAS has been implemented on SW/NE unidirectional routes L642, M771 and N892 for the purpose of allocating additional flight levels.

1.3 As time goes on, coordination amongst FIRs in South China Sea Area has been more smoothly in recent years. LOA between Sanya and Hanoi, Ho Chi Minh, Hongkong, Manila have been updated several times. Harmonious collaboration environment is of great importance to enhance the safety and efficiency of civil aviation in this area.

2. DISCUSSION

Control Separation

2.1 Radar control separation. It has been achieved a full regional radar coverage in Sanya Flight Information Region. The minimum longitudinal spacing applied to traffic is 10KM (5.4NM) when radar surveillance is available in Sanya FIR

2.2 ADS-B control separation. It has been achieved ADS-B coverage on PBN routes L642 and M771. The minimum longitudinal spacing applied to traffic is 10KM (5.4NM) when ADS-B surveillance is available, as same as on radar control.

2.3 50NM lateral separation shall be applied between RNP10 approved aircrafts when operating at or above FL290 on PBN Routes L642 and M771. Vertical separation has to be provided between non RNP10 complied aircrafts when operating at or above FL290 on adjacent routes.

2.4 With the application of Mach Number Technique (MNT), the minimum longitudinal separation between turbojet aircraft on the same track at the same level along ATS route A1 and PBN Routes L642 and M771 shall be as follows:

a. If the preceding aircraft is faster than the following aircraft, the minimum longitudinal separation at the transfer of control points shall be in accordance with the following table:

Difference in Mach Number	Separation in Minutes
0.01	10
0.02	9
0.03	8
0.04	7
0.05	6
0.06 or greater	5

Table 1

b. If the following aircraft is faster than the preceding aircraft, the minimum longitudinal separation at the transfer of control points shall be in accordance with the following table:

Difference in Mach Number	Separation in Minutes
0.01	11
0.02	12
0.03	13
0.04	14
0.05	15
And so on	(multiply difference by 100) + 10 Minutes

Table 2

Transfer separation

2.5 Transfer separation with Hongkong FIR. For aircraft operating at the same altitude, the

minimum longitudinal spacing applied to traffic on Route A1 is 30 NM and it is 50NM on Route L642 and M771 when radar surveillance is available in both Hong Kong FIR and Sanya FIR. At the same time, minimum longitudinal spacing between aircraft shall be constant or increasing. With the application of Mach Number Technique (MNT), the minimum longitudinal separation on route A1/P901, L642 and M771 can be found in the table 1 and table 2 above.

2.6 Transfer separation with Ho Chi Minh FIR. For aircraft operating at the same altitude, the minimum longitudinal spacing applied to traffic on Route A1 is 30 NM and it is 50NM on Route L642 and M771 when radar surveillance is available in both Ho Chi Minh FIR and Sanya FIR. The minimum longitudinal non-radar separation to be used should be 10 (ten) minutes. At the same time, minimum longitudinal spacing between aircraft shall be constant or increasing. With the application of Mach Number Technique (MNT), the minimum longitudinal separation on route A1, L642 and M771 can be found in the table 1 and table 2 above.

2.7 Transfer separation with Hanoi FIR. The minimum longitudinal spacing applied to traffic on Route A202 is 30 NM when radar surveillance is available in both Hanoi FIR and Sanya FIR. The minimum longitudinal non-radar separation to be used between aircraft assigned the same level along the same route between Hanoi and Sanya FIRs shall be 10 (ten) minutes. In all case, minimum longitudinal separation shall be continuous or increasing

Transfer Flight Level

2.8 Transfer Flight Level with Hongkong FIR. There are 3 transfer points between Sanya FIR and Hongkong FIR, which are IKELA (on bi-directional route A1), EPKAL (on unidirectional route L642 from Hongkong to Sanya) and DOUST (on unidirectional route M771 from Sanya to Hongkong). Transfer level as follows:

a. A1/P901, transfer point: IKELA

i. Hongkong to Sanya: FL280, FL300, FL340, FL380, FL400, FL430. In the event of large-scale weather deviation: FL300, FL340, FL380

ii. Sanya to Hongkong: FL270, FL290, FL330, F370, FL390, FL410, FL450 (FL390 no pre-coordination level between 1601 UTC and 2300 UTC). In the event of large-scale weather deviation: FL250, FL290, FL330, F370, FL410.

b. L642, transfer point: EPKAL

Hongkong to Sanya: FL280, FL310, FL320, F350, FL360, FL390, FL400 (FL390 no pre-coordination level between 2301 UTC and 1600 UTC).In the event of large-scale weather deviation: FL280, FL320, FL360, F400.

c. M771, transfer point: DOUST

Sanya to Hongkong: FL270, FL310, FL320, F350, FL360, FL390, FL400 (FL390 no pre-coordination level between 2301 UTC and 1600 UTC). In the event of large-scale weather deviation: FL270, FL310, FL350, F390.

2.9 Transfer Flight Level with Ho Chi Minh FIR. There are 4 transfer points between Sanya FIR and Ho Chi Minh FIR (PBN route N892 is temporarily delegated by the Ho Chi Minh), which are BUNTA (on bi-directional route A1), EXOTO (on uni-directional route L642 from Hongkong to Sanya) and DONDA (on uni-directional route M771 from Sanya to Hongkong). Transfer level as follows:

a. A1 (G221), transfer point: BUNTA

i. Ho Chi Minh to Sanya: FL250, FL290, FL330, F370, FL390, FL410. (FL250 is only for traffic departing from Da Nang or arriving at Sanya Airport.)

ii. Sanya to Ho Chi Minh: FL260, FL300, FL340, FL380, FL400, FL430.(FL260 is only for traffic departing from Sanya or arriving at Da Nang airport.)

b. L642, transfer point: EXOTO

Sanya to Ho Chi Minh: FL310, FL320, F350, FL360, FL390, FL400. In the event of large-scale weather deviation: FL320, FL360, F400.

c. M771, transfer point: DONDA

Ho Chi Minh to Sanya: FL310, FL320, F350, FL360, FL390, FL400.In the event of large-scale weather deviation: FL310, FL350, F390.

2.10 Transfer Flight Level with Hanoi FIR. The transfer point between Sanya FIR and Hanoi FIR is ASSAD on route A202.

a. Sanya to Hanoi: FL280, FL300, FL340, F380, FL400

b. Hanoi to Sanya: FL290, FL330, FL370, F390, FL410.

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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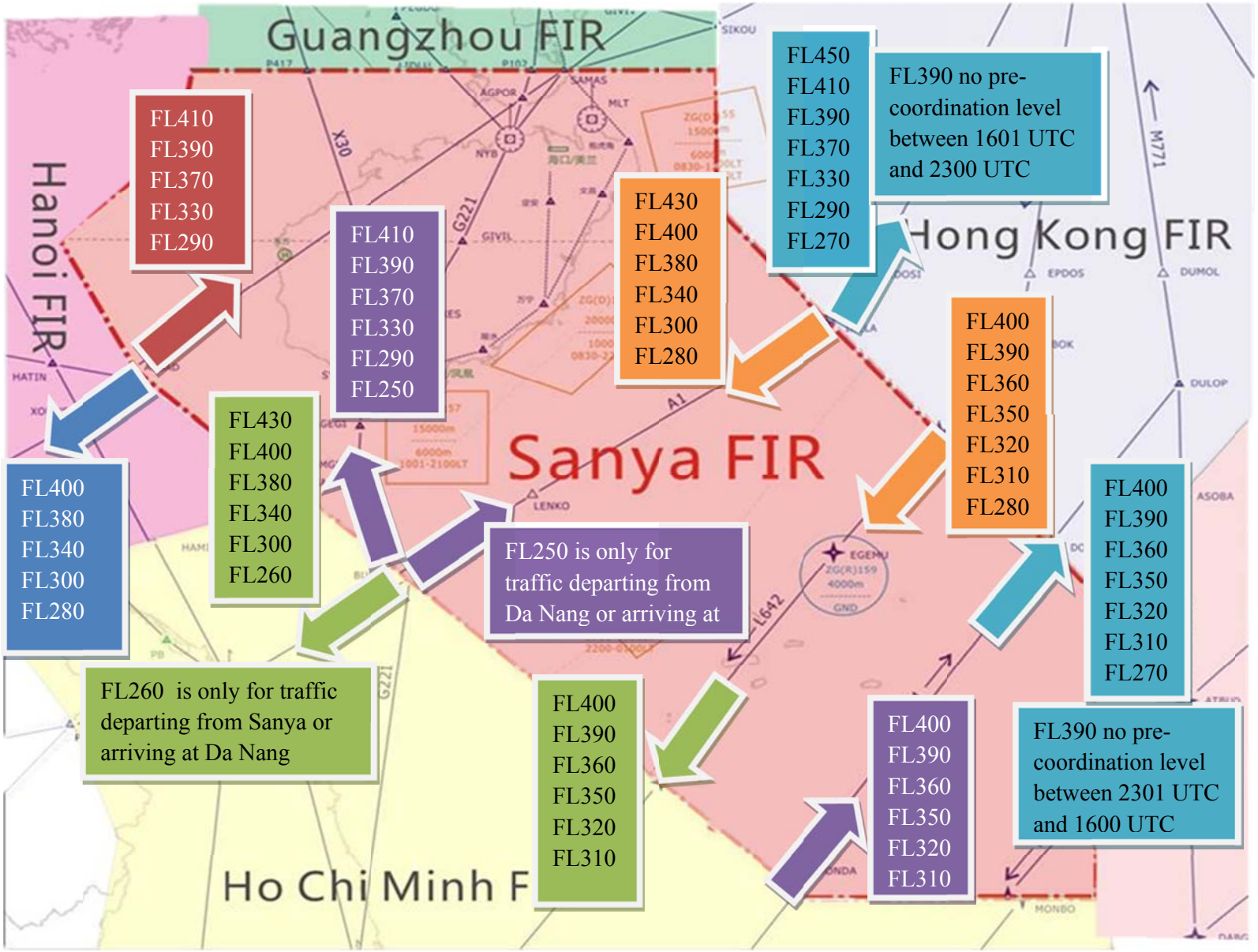
Guangzhou FIR
Hanoi FIR
Hong Kong FIR
Sanya FIR
Ho Chi Minh F
FL410
FL390
FL370
FL330
FL290
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FL370
FL330
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FL390 no pre-coordination level between 1601 UTC and 2300 UTC
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FL260
FL250 is only for traffic departing from Da Nang or arriving at
FL260 is only for traffic departing from Sanya or arriving at Da Nang
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FL390 no pre-coordination level between 2301 UTC and 1600 UTC