International Civil Aviation Organization

The Eighteenth Meeting of the ICAO RVSM Implementation Task Force (RVSM/TF/18)

Bangkok, Thailand, 30 June – 01 & 04 July 2003

Agenda Item 2: Operational Considerations

SINGLE ALTERNATE FLIGHT LEVEL ORIENTATION SCHEME (FLOS) FOR WESTBOUND TRAFFIC ON ATS/RNAV ROUTES A1/P901

(Presented by Hong Kong, China)

SUMMARY

For the harmonisation of FLOS applicable on ATS/RNAV Routes A1/P901/A202, RVSM/TF/16 Meeting had asked States concerned to assess the situation and prepare a Working Paper for discussion at the post-implementation review meeting of the Task Force (RVSM/TF/18), taking into account the following:

(a) Unidirectional and parallel route segment;
(b) Transition schemes by the use of radar and procedural methods;
(c) Three options for westbound traffic based on the Single Alternate FLOS:
  (i) FL300, FL320, FL340, FL360, FL380 and FL400;
  (ii) FL300, FL340 and FL380; and
  (iii) FL320, FL360 and FL400.
(d) The impact of the level transition process on other aspects of their ATS systems.

This paper reports the findings of Hong Kong, China on the prospect of effecting level transition for westbound traffic on ATS/RNAV Routes A1/P901/A202 in the airspace within which Hong Kong, China provides ATS (hereunder referred to as Hong Kong airspace).

1. BACKGROUND

1.1 About 80% of the westbound traffic joining A1/P901 at positions DAGON and IKELA respectively come from Taipei FIR. Such traffic enter the Hong Kong airspace at KAPLI on G86 at levels corresponding to those in the Table of Cruising Levels as stipulated in ICAO Annex 2 Appendix 3 b), i.e. F310, FL350, FL390, etc. Hong Kong ATC recently requested Taipei ATC for such traffic to operate at the Single Alternate FLOS levels, i.e. FL300, FL320, FL340, etc, when entering the airspace within which Hong Kong, China provides ATS. However, due to operational difficulties, Taipei ATC is unable to do so at this stage.

1.2 Hong Kong, China then carried out a study on the feasibility of conducting transition to the Single Alternate FLOS in Hong Kong airspace without unduly increasing the loading on the ATS system, which may otherwise impact on flight safety.

2. DISCUSSION

2.1 The Hong Kong airspace is mainly a Terminal Control Area type of airspace in which traffic density and complexity are high. Any significant re-alignment of established routes or changes to the vertical profile may disturb the balance of the entire route structure. Before introducing such changes, a thorough safety case study taking into account the prevailing environment as well as predicted developments in both the local and regional dimensions will have to be conducted.

2.2 In relation to the feasibility of conducting transition to the Single Alternate FLOS in Hong Kong airspace, a safety case study was therefore performed. The objective of the study was to assess the safety impact on the Hong Kong ATC system due to the increase in workload in conducting the FLOS transition. Extensive radar simulation was employed to collect as much data as possible to assist in decision making.

2.3 Findings

(a) Transition of levels from the Annex 2 Appendix 3b) FLOS to the Single Alternate FLOS in Hong Kong airspace for westbound traffic before IKELA (P901)/DAGON (A1) is feasible. However, before implementation the following conditions must be satisfied:

(i) FL300, FL320, FL340, FL360, FL380 and FL400 are made available as non-PDC (FLAS) levels; and

(ii) sufficient lead-time is available for proper and timely procedures documentation / promulgation and staff conversion training. In this connection it is considered that implementation of the new FLOS arrangement, if adopted, should not be earlier than the RVSM target implementation date for the Bay of Bengal and beyond, i.e. 27 Nov 2003.

(b) To lower the technical collision risk value, a dual-track system allowing unidirectional flow of traffic on A1/P901, instead of the present reciprocal track situation, is recommended, should the Single Alternate FLOS be applied.

(c) It is feasible to adopt the Single Alternate FLOS on the portion of ATS Route A202 within Hong Kong airspace. However, as a certain segment of A202 west of SIKOU is in non-RVSM airspace, it is anticipated that there will be difficulties in implementing Single Alternate FLOS along the entire ATS Route A202.

3. ACTION BY THE MEETING

3.1 The meeting is invited to discuss the above findings in conjunction with inputs from other States concerned.

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