STANDARD OPERATING PROCEDURE (SOP)

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SUBJECT: Hong Kong FIR Flow Control Standard Operating Procedure

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SCOPE: Outlines standard techniques for traffic flow control within the Hong Kong FIR.

1. PURPOSE

1.1 This Standard Operating Procedure (SOP) sets forth the general responsibilities for managing the traffic flow within the Hong Kong FIR, ensuring that arrivals and departures are sequenced at an appropriate rate.

2. ROLES AND RESPONSIBILITIES

2.1 The Office of Primary Responsibility (OPR) for this SOP is the team under the supervision of the Facilities Director. This SOP shall be maintained, revised, updated or cancelled by the Facilities Director. Any suggestions for modification / amendment to this SOP should be sent to the Facilities Director for review.

3. DISTRIBUTION

3.1 This SOP is intended for controllers managing traffic flow within the Hong Kong FIR.

4. BACKGROUND

4.1. Over time, it has been found that approach and terminal sectors are easily overloaded due to a number of factors, such as aircraft flying missed approaches and poor weather. Because of this, a position has been established to allow strict flow control to be enforced during situations with large amounts of traffic.

5. REQUIREMENTS

5.1. CALLSIGN

5.1.1. The following callsign shall be used at all times for flow control positions within Hong Kong FIR. Callsigns other than listed may not be used.

POSITION	TEXT CALL SIGN	CODE
Hong Kong Flow Control	HKG_FMP	FLC

5.1.2. As flow control positions are not controller positions, controllers shall not select a primary frequency when operating these positions.

5.1.3. If a second Flow Control operator is needed, then said controller shall connect as HKG_1_FMP.

5.2. PREREQUISITES

5.2.1. Flow control positions shall only be opened when a large amount of arrival traffic (i.e. at least 5 aircraft per arrival stream) is being held within multiple terminal radar/area radar sectors.

5.2.2. Flow control positions shall only be opened when the following positions (HKG_W_CTR, VHHH_APP, VHHH_W_APP) have been staffed, and the following conditions have already been met:

- More than 40 aircraft inbound within a 1-hour timeframe, as seen on VATSPY or similar software.
- Under approval by the Director/Training Director of Hong Kong vACC on a one-off basis. Requests can be made in the #controller-chat channel on Discord.

5.2.3. Flow control positions may only be operated by controllers with a rating of C1 or above, providing that they also have the Flow Control endorsement. This endorsement is only awarded to staff members and mentors of the Hong Kong vACC, as well as specific controllers with approval from the Hong Kong vACC management team. Endorsed controllers will be listed on the roster.

6. RESPONSIBILITIES

6.1. The responsibilities of the Flow Control positions include, but are not limited to:

- Ensuring a smooth, efficient and orderly flow within each Terminal / Area Radar sector
- Splitting Terminal / Area Radar sectors and diverting traffic when one sector becomes overloaded
- Overseeing diversion of traffic between sectors when they are being split
- Monitoring of Approach / Departure airspace such that it is not overwhelmed with traffic arriving from Terminal Radar sectors
- Stopping and resuming the flow of traffic into Approach/Departure airspace where required

7. PROCEDURES

7.1. FLOW MANAGEMENT PROCEDURES

7.1.1. The Flow Control operator shall monitor each of the Terminal / Area Radar sectors with vigilance. When one sector can no longer accept any more aircraft (e.g. due to exhaustion of holding stacks), the Flow Control operator shall take initiative and begin diverting traffic towards a different sector through the use of tactical re-routes. Close coordination shall be performed with each of the Terminal / Area Radar controllers involved in the diversion such that there is no confusion as to when, where and how the traffic is being diverted.

7.1.2. When traffic is being diverted, the Flow Control operator shall request that each controller involved enforce a strict speed / altitude regime where required to prevent catch-up and to facilitate an efficient flow of traffic.

7.1.3. Where multiple Terminal Radar sectors are used for holding, the Flow Control operator shall retain the ultimate responsibility for deciding which sector is allowed to release traffic into Approach / Departure airspace, and which sectors shall hold traffic in order to avoid overwhelming the Approach / Departure controllers.

7.1.4. When non-published holdings are being used, the Flow Control operator may provide recommended details of the hold (i.e. holding direction, leg time / distance, inbound course) which will provide the most optimal traffic flow.

7.1.5. The Flow Control operator shall keep track of and notify each sector where holdings are being used as to the estimated time when aircraft can begin to be released from their sector, so that these controllers may pass on these estimates to aircraft for fuel planning purposes.

7.1.6. When traffic levels necessitate the opening of additional sectors, the Flow Control operator shall be responsible for selecting an appropriate sector to open that will allow for the most efficient flow of traffic.

7.2. COORDINATION WITH NEIGHBOURING FIRS ON FLOW OF TRAFFIC

7.2.1. Where appropriate, the Flow Control operator shall be responsible for requesting that neighbouring FIRs ensure that aircraft are released into Hong Kong FIR at a specific rate, to be determined by the Flow Control operator. A few methods of flow control for neighbouring FIRs are listed below for reference:

7.2.1.1. Minimum Departure Intervals

Minimum Departure Intervals may be enforced at nearby aerodromes of 2 hours where aerodrome controllers shall ensure that a specific amount of time has lapsed before departing each flight that meet the criteria outlined in the flow restriction.

7.2.1.2. Miles / Minutes In Trail

Miles / Minutes In Trail may be enforced where controllers shall ensure that the separation prescribed in the flow restriction is provided between each aircraft being transferred to the next sector.

7.2.1.3. Ground Stop

Ground Stop may be enforced at nearby aerodromes of 2 hours where aerodrome controllers shall not depart aircraft that meet the criteria outlined in the flow restriction, unless a release is obtained from the Flow Control operator.

7.2.2. The Flow Control operator is responsible for ensuring that neighbouring FIRs are notified of any necessary flow restrictions in a timely manner.

7.2.3. COORDINATION WITH TAIPEI ACC REGARDING TERMINAL TRANSITION ROUTE V525

7.2.3.1. When Terminal Radar / Area Radar East are overloaded with traffic, Hong Kong Flow Control may request that Taipei Area Control Centre tactically re-route aircraft inbound ELATO. Such aircraft may be re-routed towards BETTY instead of ABBEY through the use of Terminal Transition Route V525.

7.2.3.2. Hong Kong Flow Control shall be ultimately responsible for notifying Taipei ACC when this procedure is no longer required and aircraft can resume their original route towards ABBEY.

7.2.4. USE OF TERMINAL TRANSITION ROUTE W29

When Terminal Radar / Area Radar East are overloaded with traffic, aircraft that have already entered Hong Kong FIR via DOTMI, LELIM or ELATO may be re-routed towards

BETTY instead of ABBEY through the use of Terminal Transition Route (TTR) W29. Traffic shall be directed to route towards MEPUT to join TTR W29. Hong Kong Flow Control shall perform close coordination with the relevant Area Radar sectors such that traffic on W29 do not conflict with aircraft on V525, particularly near EATON.

7.2.5. STACK SWAPPING

To prevent a terminal hold from exceeding capacity, aircraft may be instructed to route towards a different fix to hold over. Hong Kong Flow Control may recommend the best routing for the affected aircraft. Examples are provided below for reference:

- Area East to BETTY:
  See Sections 7.2.3 and 7.2.4
- Terminal West to BETTY:
  DCT BETTY
- Area West to BETTY:
  GAMBA DCT BETTY
- Terminal South to CANTO:
  DCT CANTO

7.2.6. GUIDANCE ON SUGGESTED SPACING BETWEEN AIRCRAFT AT VHHH

The suggested spacing between aircraft depends on the runway configuration at Hong Kong International Airport (VHHH). If the north runway is being used simultaneously with the south runway, then the inter-arrival spacing for aircraft may be as low as 4nm. Conversely, if single runway operations are in force, then the inter-arrival spacing will require at least 8nm to facilitate departures. The exact figures are listed below for reference. Hong Kong Flow Control shall consider the effect of aircraft that do not have the new north runway, which will put additional pressure on the south runway so as to facilitate their arrival. Because of this, it is recommended that Terminal Radar controllers ask pilots if they have the new runway in order to prevent any surprises after entering Approach/Departure airspace. Hong Kong Flow Control shall also consider the effect that less-experienced pilots may have on achieving optimum spacing. **This suggested spacing is invalid when Kai Tak is also receiving arrivals simultaneously or when there is extreme weather (e.g, typhoon).**

7.2.6.1. SIMULTANEOUS RUNWAY OPERATIONS

When simultaneous runway operations are in effect, the inter-arrival spacing on the arrival runway shall be 4nm between each aircraft. This allows for landings to occur at

an interval of 100 seconds. In order to facilitate this, we assume that each aircraft is flying at 280KIAS when entering the Approach/Departure sector (MUSEL, MANGO, MURRY).

When there is a single stream of arrival traffic, the In-Trail spacing for this stream shall be 10nm between each aircraft.

When there are two streams of arrival traffic, the In-Trail spacing for each stream shall be 20nm between each aircraft.

When there are three streams of arrival traffic, the In-Trail spacing for each stream will depend on how much traffic there is per stream. If the traffic is balanced equally between all three streams, then the Miles in Trail spacing shall be 30nm between each aircraft. If there are two streams with larger amounts of traffic (40% of total traffic per stream) and one stream with lesser amounts of traffic (20% of total traffic), then the Miles in Trail spacing for the two larger streams shall be 25nm between each aircraft, and the spacing for the smaller stream shall be 50nm per aircraft.

Should traffic loads on each stream be different to the load specified here, then Hong Kong Flow Control shall interpolate the spacing and make appropriate adjustments as required.

7.2.6.2. SINGLE RUNWAY OPERATIONS

When single runway operations are in effect, the inter-arrival spacing on the runway shall be 8nm between each aircraft in order to allow departures. This allows for landings to occur at an interval of 200 seconds. In order to facilitate this, we assume that each aircraft is flying at 280KIAS when entering the Approach/Departure sector (MUSEL, MANGO, MURRY).

When there is a single stream of arrival traffic, the In-Trail spacing for this stream shall be 20nm between each aircraft.

When there are two streams of arrival traffic, the In-Trail spacing for each stream shall be 40nm between each aircraft.

When there are three streams of arrival traffic, the In-Trail spacing for each stream will depend on how much traffic there is per stream. If the traffic is balanced equally between all three streams, then the Miles in Trail spacing shall be 60nm between each aircraft. If there are two streams with larger amounts of traffic (40% of total traffic per stream) and one stream with lesser amounts of traffic (20% of total traffic), then the Miles in Trail spacing for the two larger streams shall be 50nm between each aircraft,

and the spacing for the smaller stream shall be 100nm per aircraft.

Should traffic loads on each stream be different to the load specified here, then Hong Kong Flow Control shall interpolate the spacing and make appropriate adjustments as required.

RECORD OF REVISION

DATE	REV.	REVISION CONTENT	APPROVAL
17 FEB 2024	0	Initial Release	T. SIU
24 JUN 2024	1	Updated Section 5.2.2	T. SIU