**STANDARD OPERATING PROCEDURE (SOP)**
**DOCUMENT NUMBER:** HKVACC-SOP004-R6
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**REVISION:** 6

**SUBJECT:** Hong Kong Terminal Airspace Standard Operating Procedures

**EFFECTIVE DATE: 23 APR 2024**

**SCOPE:** Outlines standard techniques for online ATC service in Hong Kong TMA positions on VATSIM.

# 1. PURPOSE

1.1 This Standard Operating Procedure (SOP) sets forth the procedures for all controllers providing terminal airspace air traffic control service in the Hong Kong Terminal Airspace (TMA) to improve communication, techniques, and to distinguish procedures that are specific to the online environment.

# 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 staffing ATC positions in the Hong Kong TMA, as well as other controllers who interface with Hong Kong TMA controllers.

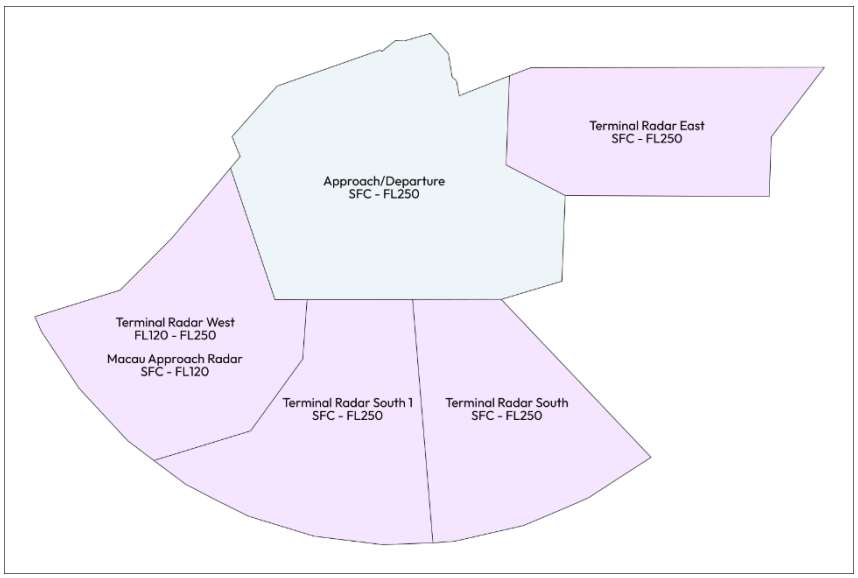
# 4. BACKGROUND

4.1 Over time, it has been observed that a written standard procedure is helpful to Hong Kong TMA controllers due to the vast knowledge required to control within this complex airspace. Due to operational differences between this online environment on VATSIM and that in the real world, it is also necessary to define procedures that are specific to the online environment.

# 5. AIRSPACE

## 5.1. AIRSPACE SECTORISATION

### 5.1.1. Hong Kong TMA Airspace Sectorisation



5.1.2. Controllers shall refer to HKVACC-SOP004 Annex I for specific details on airspace sectorisation within the Hong Kong TMA.

## 5.2. FREQUENCIES

5.2.1. The following frequencies, text call sign and voice call sign shall be used at all times. Frequencies other than listed may not be used. *(Refer to AIP ENR 2.1)*

| POSITION | TEXT CALL SIGN | VOICE CALL SIGN | FREQUENCY | CODE | SI |
|---|---|---|---|---|---|
| Hong Kong Approach | VHHH_APP | "Hong Kong Approach" | 119.100 | APP | AP |
| Hong Kong Departure | VHHH_DEP | "Hong Kong Departure" | 123.800 | DEP | DE |
| Hong Kong Departure High | VHHH_H_DEP | "Hong Kong Departure" | 122.000 | DEH | DU |
| Hong Kong Final Approach Director | VHHH_F_APP | "Hong Kong Director" | 119.500 | FAD | FD |
| Hong Kong Radar (Terminal Radar East) | VHHH_E_APP | "Hong Kong Radar" | 126.500 | TME | ME |
| Hong Kong Radar (Terminal Radar South) | VHHH_S_APP | "Hong Kong Radar" | 126.300 | TMS | MS |
| Hong Kong Radar (Terminal Radar South Departures) | VHHH_S1_APP | "Hong Kong Radar" | 123.475 | TMS1 | M1 |
| Hong Kong Radar (Terminal Radar West) | VHHH_W_APP | "Hong Kong Radar" | 127.550 | TMW | MW |
| Hong Kong Radar (Macau Approach Radar) | VMMC_APP | "Hong Kong Radar" | 123.950 | MCU | MM |
| Hong Kong Zone Control | VHHH_Z_APP | "Hong Kong Zone" | 120.600 | ZNC | ZN |

5.2.2. Controllers shall note that the sector identifier in EuroScope and the sector code as seen in SOPs are different, as per real world practices.

## 5.3. SECTORISATION

5.3.1. When only one _APP/_DEP controller is online, such controller shall use **VHHH_APP and frequency 119.100** to log in. Coverage will be the entire airspace with all Terminal Radar airspace (SFC – FL250) shown in Figure 5.1.1. unless an area radar controller is online.

5.3.2. If an area radar controller and VHHH_APP are online simultaneously, **VHHH_APP should manage Approach/Departure airspace only** while the rest of Terminal Radar airspace (TME, TMS, TMS1, TMW & MCU) will be managed by the area radar controller.

5.3.3. Hong Kong Air Movements Control South (VHHH_S_TWR) must be open before another _APP and _DEP position can be opened.

5.3.4. When two or more controllers covering the terminal airspace are online, depending on the current and upcoming traffic flow, those controllers shall coordinate and decide on the sectorisation of the airspace. The following are examples of sectorisation methods:

5.3.4.1. When there is one APP controller and one DEP controller, the APP controller shall use the **VHHH_APP** callsign and frequency **119.100**. The DEP controller shall use the **VHHH_DEP** callsign and frequency **123.800**.

5.3.4.2. When the majority of the traffic is arrival aircraft and there are two TMA controllers, one controller shall take **VHHH_APP (119.100)** and the other controller shall take **VHHH_W_APP (127.550)** or **VHHH_E_APP (126.500)** depending on where the traffic is coming from. Should more TMA controllers become available, then the other Terminal Radar positions can be opened as required.

5.3.5. Controllers shall refer to HKVACC-SOP004 Annex I for specific details on sector responsibilities and coordination between air traffic controllers under multi-sector operations within Approach/Departure airspace.

5.4. HONG KONG ZONE CONTROL

5.4.1. VHHH_Z_APP (Hong Kong Zone) is a position that controls VFR traffic in class C airspace except Hong Kong ATZ and Kai Tak ATZ. The APP suffix is used due to the nature of the position, requiring a controller rating of S3 or above. In reality, this is not an approach position and does not control IFR traffic within the terminal airspace. Controllers and pilots shall not confuse this position with other positions within the terminal airspace.

5.4.2. Controllers shall refer to HKVACC-SOP006 document for procedures related to Hong Kong Zone position.

5.5. HONG KONG DEPARTURE HIGH

5.5.1. VHHH_H_DEP (Hong Kong Departure High) is responsible for managing inbound traffic into Hong Kong, Macau (via SMT), Shenzhen, Guangzhou and outbound traffic from Macau to the east and south. Controllers shall refer to HKVACC-SOP004 Annex I for more details.

5.6. FINAL APPROACH DIRECTOR

5.6.1. VHHH_F_APP (Final Approach Director) manages the separation of the whole arrival stream in its final approach phase. Its controller must always **maintain his/her vigilance at aircraft's course, speed and altitude** so that aircraft can remain in the proper energy profile and position to commence its approach while attaining required spacing within the traffic stream. This position is exceptionally crucial during major events as it ensures

a high arrival rate, which maintains the whole airspace's capacity to intake traffic continuously. Controllers shall refer to HKVACC-SOP004 Annex I for more details.

5.7. HONG KONG RADAR (TERMINAL)

5.7.1. VHHH_E_APP, VHHH_S_APP, VHHH_S1_APP & VHHH_W_APP are responsible for the 4 Terminal Radar sectors within Hong Kong TMA airspace. They manage most inbound traffic into all 3 airfields within Hong Kong FIR, and as such they are ultimately responsible for the initial sequencing of arrival traffic in order to alleviate the workload of Approach/Departure controllers. Controllers shall refer to HKVACC-SOP004 Annex I for more details.

5.8. HONG KONG RADAR (MACAU APPROACH RADAR)

5.8.1. VMMC_APP is responsible for managing departures and missed approaches when runway 16 is in use, and for managing arrivals when runway 34 is in use. Additionally, when Zhuhai Approach (ZGJD_APP) is online (or the sector covering it top-down), VMMC_APP shall also be responsible for coordination for runway 16 instrument approach procedures, and runway 34 departures and missed approaches. This sector is also responsible for the Oil Rig Track D (Refer to SOP006). Controllers shall refer to HKVACC-SOP004 Annex I and the LoA between Hong Kong FIR and Guangzhou/Shanghai/Sanya FIR for more details.

5.9. TOP-DOWN COVERAGE

5.9.1. When no aerodrome ATC is available at airfields within Hong Kong FIR, the controller online responsible for TMA or Approach/Departure shall provide aerodrome ATC service to **all controlled airfields (VHHH, VHHX & VMMC),** except Shek Kong Airfield (VHSK). However, when an Area Radar controller is online, then the Approach/Departure controller shall provide aerodrome ATC service to **VHHH and VHHX**, with the Area Radar controller providing aerodrome ATC service to **VMMC**.

5.9.2. When VHHH_Z_APP is not online, VHHH_APP or other controllers controlling the Approach/Departure airspace in Figure 5.1.1. shall be responsible for VHHH_Z_APP.

5.9.3. When VHHH_H_DEP is not online, VHHH_DEP (or VHHH_APP if VHHH_DEP offline) shall be responsible for VHHH_H_DEP.

5.9.4. When VHHH_F_APP is not online, VHHH_APP shall be responsible for VHHH_F_APP.

5.9.5. When VHHH_W_APP is not online, coordination shall be performed such that Area Radar controllers (CTR positions) shall be responsible for the Terminal Radar airspace, with the Approach/Departure controller covering Terminal Radar only when Area Radar is offline.

# 6. GENERAL INFORMATION

## 6.1. PRIOR TO CONNECTION

6.1.1. Prior to each connection, Hong Kong TMA controllers shall check the weather information at each aerodrome and, if coverage for aerodrome positions is necessary, determine the runway(s)-in-use at the relevant aerodromes.

6.1.2. Hong Kong TMA controllers shall make use of the Hong Kong vACC Discord channel to coordinate with aerodrome controller(s) and Hong Kong Radar controller(s) if they are also online. When other TMA controllers are also online, the controller shall also make use of the Discord channel to arrange sectorisation of the positions. In addition, TMA controllers shall also check if other TMA controllers are already online. If so, arrangement of sectorisation shall be made prior to connection.

6.1.3. Hong Kong TMA controllers shall be **familiar with all SIDs, STARs and IAPs into the three major aerodromes (VHHH, VHHX & VMMC)** prior to connection. They should also be familiar with the airspace floors and ceilings of their respective positions (see Section 5.1). If needed, they should have all the SID/STAR guides ready prior to connection.

6.1.4. Controllers may toggle between day/noise abatement sectors within EuroScope by selecting either **DAY** or **NAP** in the row for the pseudo-airport **CONF**, which is available in the active runways dialog.

## 6.2. RADAR VECTORS

6.2.1. When departing aircraft is unable to follow SID, the departure controller shall provide radar vectors to such aircraft. Radar vectors departure shall be coordinated with aerodrome controllers so that the **proper initial climb altitude** and **heading** after departure is communicated to the aircraft prior to departure.

6.2.2. If an arrival aircraft is unable to follow STAR and/or published IAP, approach controllers shall provide radar vectors to such aircraft. In the case of aircraft unable to follow certain published ILS approaches, the approach controller may provide radar vectors to the final leg to intercept the localizer.

6.2.3. As a general practice, when providing radar vectors, controllers shall picture on the radar screen and predict whether the heading change and/or altitude change may cause potential conflict. A good rule of thumb is to provide radar vectors that follow closely the routes of the SID/STAR that the aircraft would be using if it was capable of doing so.

6.2.4. When initiating radar vectors, controllers shall state the intention of providing radar vectors. For example:
"UNITED 869, TURN LEFT HEADING 250, RADAR VECTORS TO ILS RUNWAY 07 LEFT."
"OASIS 205, FLY HEADING 020, DUE TO TRAFFIC."

6.2.5. It is common for pilots on VATSIM to deviate from the assigned route or not being able to immediately execute the instruction from a controller. If the deviation may cause potential conflict with other traffic in vicinity, radar vectors shall be provided to avoid such conflict.

6.2.6. Phraseologies: (Reference: ICAO Doc 4444, Chapter 12)

Phraseology:
**General assignment of heading:**
TMA Controller: (Callsign), **FLY HEADING** (three-digit heading); or,
(Callsign), **TURN LEFT** (or **RIGHT**) **HEADING** (three-digit heading) **[REASON IF NEEDED]**

Examples:
VHHH_APP: DRAGON 908, FLY HEADING 210 DUE TO TRAFFIC.

VHHH_APP: OASIS 801, TURN LEFT HEADING 250 FOR SPACING.

Phraseology:
**Holding Maneuvers:**
TMA Controller: (Callsign), **ORBIT LEFT** (or **RIGHT**) **[REASON IF NEEDED]**; or;
(Callsign), **MAKE A THREE SIXTY TURN LEFT** (or **RIGHT**).
TMA Controller: (Callsign), **STOP TURN NOW.**

Examples:
VHHH_APP: AMERICAN 137, ORBIT LEFT FOR SPACING.

Phraseology:
**No change of heading:**
TMA Controller: (Callsign), **CONTINUE HEADING** (three-digit heading); or,
(Callsign), **CONTINUE PRESENT HEADING.**

Examples:
VHHH_APP: OASIS 401, CONTINUE PRESENT HEADING.

Phraseology:
**Termination of Radar-vectoring:**
TMA Controller: (Callsign), **RESUME OWN NAVIGATION,** (Instruction).

Examples:
VHHH_APP: AMERICAN 137, RESUME OWN NAVIGATION, TRACK DIRECT OCEAN.

Phraseology:
**Assigning a heading after a certain waypoint:**
TMA Controller: (Callsign), **LEAVE** (waypoint) **HEADING** (three-digit heading); or,
(Callsign), **AFTER** (waypoint), (heading instruction).

Examples:
VHHH_APP: OASIS 401, LEAVE TANGO-DELTA HEADING 270.

## 6.3. TRAFFIC SEQUENCING

### 6.3.1. Basic Knowledge

Traffic sequencing normally starts at approximately 100NM from the airport. In the case of VHHH, it will be waypoint MAGOG, SONNY, CYBER and MAPLE. Once the aircraft has passed the aforementioned waypoints, controllers shall determine the aircraft's sequence based on its position from a reference waypoint, which, oftentimes, is the initial approach fix (IAF). In order to achieve a required arrival rate at IAF and the proper spacing at the localiser, controllers may need to adjust aircraft's speed or course.

Before giving out instructions, controllers need to be aware of 2 major natural factors that affect the spacing of aircraft in sequence. 1) True airspeed is lower at lower altitude with the same indicated airspeed. This means that an aircraft's true airspeed would keep reducing while the aircraft is descending. 2) A *compression* between aircraft would occur throughout the traffic sequence as it approaches the runway. The reduction in separation is the result of the first factor as aircraft at the front of the sequence have already descended to a lower altitude than those at the back, resulting in a lower true airspeed, thus the aircraft at the back are catching up. Therefore, when calculating the required separation between 2 aircraft, controllers need to consider the **effect of compression, speed difference** of the 2 aircraft and the **minimum separation required by HKAIP ENR1.6 Section 6**. A general rule of thumb is to aim for a 2-minute separation at IAF, except LIGHT aircraft, which need 3 minutes.

6.3.2. Speed Control

Air traffic management always applies strategies ahead of time to counter the possibilities that will happen in the future. The earlier the strategies are employed, the lesser the workload for controllers. Speed control is one of the techniques that are used at the early stages of an approach. It is only effective when it is applied accurately and at the right time. The table below displays the time required for an aircraft maintaining a constant IAS to travel 45NM at a 3° glide, which is roughly the distance to cross Terminal Radar airspace. This would show you the effectiveness of using speed control.

| IAS | Time | Delta Time |
|---|---|---|
| 250 | 07′56″ | ___ 19″ |
| 260 | 07′37″ | ___ 16″ |
| 270 | 07′21″ | ___ 15″ |
| 280 | 07′06″ | ___ 15″ |
| 290 | 06′51″ | ___ 14″ |
| 300 | 06′37″ | ___ 13″ |
| 310 | 06′24″ | ___ 12″ |
| 320 | 06′12″ | ___ 11″ |
| 330 | 06′01″ | |

| IAS/FL250 | TAS |
|---|---|
| 250 | 375 |
| 260 | 390 |
| 270 | 405 |
| 280 | 420 |
| 290 | 435 |
| 300 | 450 |
| 310 | 465 |
| 320 | 480 |
| 330 | 495 |

For example, 2 aircraft, which are 1.5-minute separated, have just entered Terminal airspace. Both aircraft are travelling at 300 KIAS. The trailing aircraft needs to reduce to 280 KIAS so that 2-minutes spacing can be achieved when reaching APP/DEP airspace.

6.3.3. Point Merge

*Point merge* is a spacing technique used to combine traffic streams from different directions into a single waypoint. The key parameters of this technique involves a target, target reference lines, an image and image reference lines. When an aircraft enters the target reference line, controllers shall imagine a virtual image on the image reference line with equidistance from the reference point. Two examples are shown in the following images.

Figure 6.1

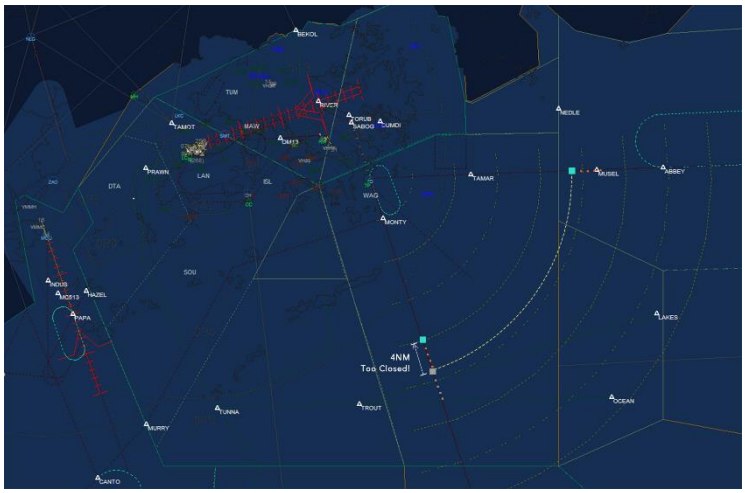



Figure 6.2

For arrival streams into VHHH, point merge technique is heavily applied at waypoint GUAVA (during 07 ops) and TD (during 25 ops). Figure 6.1 shows the technique used on traffic from BETTY2A and ABBEY3A arrival. A virtual image of the traffic on ABBEY3A is placed on the track of BETTY2A so that controllers can estimate the separation when the two aircraft reaches GUAVA. The same method is done in Figure 6.2, which shows the image being too closed to the preceding traffic. In this situation, controllers shall apply appropriate strategies, e.g. speed control or stretching aircraft's path. If applicable, controllers can even provide radar vectors to instruct the aircraft to fly along the radial lines as shown on the radar screen. Once adequate spacing is achieved, controller can instruct the aircraft to direct to the reference waypoint.

6.3.4. Speed control, radar vectors and holding are the instructions that are used in sequencing traffic. The first two are often applied. However, holding should only be used if aircraft needs to be delayed 6 minutes or more. This strategy would often lead all subsequent traffic in an arrival stream into the holding pattern, thus raising the workload of controllers.

6.3.5. Controllers shall keep in mind that all sequencing strategies must be done as effective as possible in order to keep controllers' workload at minimum.

## 6.4. HANDOFF RELEASE

6.4.1. The TopSky plugin used at Hong Kong vACC allows controllers to specify the type of release for an aircraft on handoff. This allows controllers to release aircraft for climb, descent or turns as follows:

6.4.2. Release For Climb

For traffic transferred on a release for climb, the receiving controller is allowed to instruct the traffic to continue their climb past the handoff level within the transferring controller's airspace.

6.4.3. Release For Descent

For traffic transferred on a release for descent, the receiving controller is allowed to instruct the aircraft to continue their descent past the handoff level within the transferring controller's airspace.

6.4.4. Release For Turn

For traffic transferred on a release for turn, the receiving controller is allowed to instruct the aircraft to make turns in the same general direction (no more than 45°).

6.4.5. Full Release

For traffic transferred on a full release, the receiving controller is allowed to instruct the aircraft to make turns in the same general direction (no more than 45°), and issue further climb or descent instructions.

6.4.6. Unless otherwise coordinated, traffic handed off to a different Hong Kong sector shall be released according to a written agreement specified within HKVACC-SOP004 Annex I. **Controllers shall not issue instructions whilst on a release that would cause aircraft to re-enter the transferring controller's airspace without prior coordination.**

6.4.7. Traffic released for climb or descent are not allowed to level off at an intermediate level until the traffic has exited the airspace of the transferring controller, except in case of a potential conflict with another aircraft.

# 7. DEPARTURE PROCEDURES

## 7.1. RADAR CONTROL OF DEPARTING AIRCRAFT

7.1.1. All RNAV-capable aircraft shall be assigned and shall follow a Standard Instrument Departure (SID) after departure. Non-RNAV aircraft may be given radar vectors or assigned the RAMEN / RUMSY contingency SIDs if departing from VHHH.

7.1.2. Departure controller shall refer to the Hong Kong vACC Cue Card for a list of all available SIDs at major aerodromes within Hong Kong FIR and their corresponding transition routes.

7.1.3. TMA controllers shall note that some historic aircraft may not be able to follow RNAV SIDs as those aircraft is not capable of RNP1. If such is the case, controllers shall provide radar vectors for departure. Departures from VHHH may alternatively be issued the RAMEN / RUMSY contingency SIDs. Controllers shall vector these aircraft to the first enroute fix on their flight plan after reaching PORPA / ROVER / POVEG / PRAWN.

7.1.4. A diagram of all departure routes of VHHH and VMMC can be found in Hong Kong AIP ENR6.5 and ENR6.6.

7.1.5. Once departure aircraft is airborne and has contacted the TMA controllers, it shall be radar identified. An altitude check shall be performed prior to radar identification by checking the altitude reported by the pilot against the displayed altitude on the radar. Such aircraft should be climbing or maintain the assigned initial climb altitude until a higher altitude is assigned.

Phraseology:
VHHH_DEP: (Callsign), **SAY PASSING ALTITUDE.**
Pilot: (Indicated altitude), (Callsign).
VHHH_DEP: (Callsign), **IDENTIFIED.**

Example:
VHHH_DEP: CATHAY 401, HONG KONG DEPARTURE, SAY PASSING ALTITUDE.
CPA401: 1500 FEET, CATHAY 401.
VHHH_DEP: CATHAY 401, IDENTIFIED.

7.1.6. Clearances to aircraft on a SID with remaining published level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. Controllers shall use phraseology specified in ICAO Doc 4444, Section 6.3.2.4.

7.1.7. When assigning the next altitude for departing aircraft from **RWY07L/07R** of **VHHH**, the TMA controller must consider whether it would cause potential conflict to aircraft on ABBEY3A

arrival between **TUNG LUNG VOR/DME (TD)** and **GUAVA**, especially during major events. Controllers shall provide adequate vertical separation as required. Only provide speed control and/or radar vectors separation if absolutely required.

7.1.8. If the cruising altitude of a departing aircraft is higher than to the ceiling of the position of the TMA controller (which is true for most jet flights), temporary climb altitude may be assigned to the ceiling of the TMA controller when it is safe to do so or when there is no other traffic in vicinity. Controllers shall not assign an altitude outside of their airspace.

7.1.9. TMA controllers shall be aware of the slower-than-normal climb rate of long-haul aircraft. These aircraft usually climb slower due to heavy weight and may have constraints on the range of speed at which they are able to fly. Controllers shall avoid assigning vertical speed or horizontal speed restriction on these aircraft unless it is absolutely necessary.

7.1.10. TMA controllers shall always follow the separation minima recommended in ICAO Doc 4444, Section 5.6 when controlling departure aircraft.

7.2. HANDOFF BETWEEN TMA CONTROLLERS AND AREA RADAR CONTROLLERS

7.2.1. When the departing aircraft approaches the ceiling of the position of the TMA controller, handoff shall be initiated unless it is deemed unsafe or special arrangement with other TMA controllers has been made.

7.2.2. Controller shall use the handoff function (i.e. F3 & F4 buttons - Refer to radar client manuals) to properly handoff an aircraft. Pilots shall be instructed to change frequency AFTER the receiving controller has accepted the aircraft.

7.2.3. As a good practice, in a situation where there is no other aircraft in vicinity, the TMA controller shall initiate the handoff prior to the aircraft reaching the ceiling of the position of the TMA controller. Doing so can ensure that the aircraft can have an uninterrupted climbing without making any unnecessary stop at an intermediate altitude.

7.2.4. Controllers shall ensure that during handoffs, the receiving controller has accepted the radar tag of the aircraft being transferred before transferring communications.

7.3. COORDINATION BETWEEN TRAFFIC DEPARTING CHEK LAP KOK AND KAI TAK

7.3.1. Since Chek Lap Kok International Airport (VHHH) and Kai Tak International Airport (VHHX) were not designed to coexist, special operation arrangements must be made in order to maintain separation between traffic to/from the two airports on the network.

7.3.2. When VHHH operates in 07 configuration and VHHX operates in 13 configuration, the Approach controller shall coordinate with the Tower controller(s) at VHHH such that

departures should not be released from VHHH whenever an aircraft flying the IGS 13 at VHHX has passed CH. The Approach controller shall be responsible for notifying the Tower controller(s) when departures can be resumed, usually after the aircraft on the IGS has crossed the outer marker.

7.3.3. When VHHH operates in 07 configuration while VHHX operates in 31 configuration, **both** Hong Kong Air Movements Control and Kai Tak Air Movements Control controllers **shall not release traffic** without a release from the Approach/Departure controller.

## 8. ARRIVAL PROCEDURES

### 8.1. RADAR CONTROL OF ARRIVING AIRCRAFT

8.1.1. If there are no Area Radar controllers online, the controller covering Terminal Radar airspace controller shall clear the aircraft for the appropriate STAR according to the current arrival runway-in-use.

8.1.2. Once the Terminal Radar controller has assigned a STAR to an arriving aircraft, they shall amend the flight plan accordingly. The STAR and landing runway shall be added to the end of the flight plan following the initial fix of the STAR using the following format:

**(STAR identifier)/(runway)**

For example:
**ABBEY3A/07R**
**CHALI4A/34**

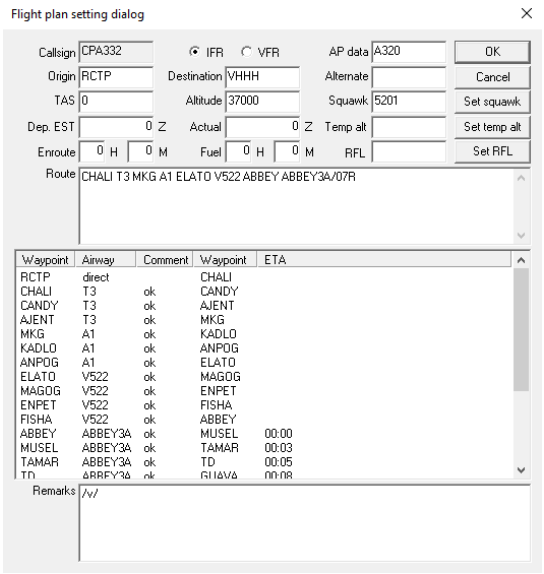



**Figure 8.1: Example of adding a STAR and landing runway to a flight plan**

8.1.3. On handoff from Terminal Radar, the Approach controller shall assign an arrival runway (and an IAP if not ILS). The aircraft shall be cleared for descent such that it is able to maintain an appropriate descent profile. Controllers shall remain vigilant and issue descent instructions in a timely manner.

8.1.4. TMA controllers shall note that **all STARs** into VHHH, except those whose numbers end with 1G (e.g. CANTO1G, ABBEY1G etc.), **lead aircraft to the IAF of an ILS approach.** Within the charts of these STAR procedures, it is specified that aircraft shall expect ILS approach for arrival. Therefore, when assigning an arrival runway while using these STAR procedures, **it is not necessary to state "expect ILS approach"**. For STAR procedures ending with 1G, controllers shall state the specific RNP approach the pilot shall expect for arrival.

8.1.5. Before an arriving aircraft reaches the initial waypoint of a STAR, the controller shall provide STAR clearance with the following phraseology:

Phraseology:
**STAR Clearance:**
Controller: (Callsign), **CLEARED** (STAR Identifier) **ARRIVAL. [ADD ADDITIONAL INFO IF REQUIRED]**

Examples:
VHHH_E_APP: AMERICAN 137, CLEARED ABBEY3A ARRIVAL.
VHHH_E_APP: AMERICAN 137, CLEARED ABBEY3A ARRIVAL. DESCEND VIA STAR TO FL130.

Note that the Area / Terminal Radar controller should not assign an arrival runway. Instead, the Approach controller is responsible for informing the aircraft of their arrival runway, pursuant to Section 8.1.3. For example:

"OASIS 201, LANDING RUNWAY 07L, DESCEND TO REACH 4000FT BY LIMES, QNH 1013."
"OASIS 201, EXPECT RNP Y RUNWAY 25R, DESCEND TO REACH 5000FT BY GUAVA, QNH 1013."

8.1.6. Clearances to aircraft on a STAR with remaining published level and/or speed restrictions shall indicate if such restrictions are to be followed or are cancelled. Controllers shall use phraseology specified in ICAO Doc 4444 Section 6.5.2.4.

8.1.7. In addition to Section 8.1.4, for arrivals into VHHH, **controllers shall by default assign a STAR that leads to ILS approach of the active arrival runway.** If a pilot has filed in the flight plan route that a STAR ending with 1G is requested, the controller shall confirm the request with the pilot prior to providing STAR clearance.

For example:

"HONG KONG SHUTTLE 801, CONFIRM REQUESTING RNP Y APPROACH."

8.1.8. Controllers shall note that there are no available STARs for RNP Y Runway 07R. As such, pilots requesting this approach shall be cleared for the regular STAR terminating at LIMES (e.g. ABBEY3A, BETTY2A). The Approach/Departure controller shall provide them with radar vectors to join the approach at TD.

8.1.9. TMA controllers shall pay close attention to the descent rate of arrival aircraft flying the same track, as often times different aircraft have different descent rate and speed. Controllers shall provide vertical separation or speed control as needed. Unless absolutely necessary, controllers shall avoid holding or orbiting within TMA airspace.

8.1.10. As a good practice, TMA controllers should start sequencing arrival aircraft into landing order by providing proper spacing. This is particularly true during major events when arrival aircraft are coming from one direction. Establishing such spacing as early as possible can prevent unnecessary radar-vectoring later on when arrival aircraft are too close together for landing.

8.1.11. Before an arriving aircraft descends below the Transition Level (TL), TMA controllers shall ensure that the arriving aircraft has received the latest ATIS or the current QNH number.

8.2. INSTRUMENT APPROACH PROCEDURES

8.2.1. TMA controllers shall be aware of the corresponding IAP(s) of each STAR and their **Initial Approach Fix (IAF)**. Most of the STAR procedures terminate at the IAF. Hence, controllers shall provide IAP clearance to arrival aircraft at the end of the STAR procedures.

8.2.2. Section 18.2 in AD 2.22 of the Hong Kong AIP states that the **standard instrument approach of VHHH shall be ILS approach procedure**. Therefore, it is not necessary to state the type of approach expected in ATIS, and IFR arrival aircraft into VHHH are expected to use ILS approach unless the pilot requests other approach methods. Controllers shall review Sections 18 to 23 in AD 2.22 of the Hong Kong AIP prior to providing arrival ATC service at VHHH.

8.2.3. Before issuing IAP clearance, controllers shall ensure that the aircraft is at an altitude adequate for the IAP. This altitude shall be consistent to the altitude indicated for the IAF on the IAP chart. Speed control shall also be applied if it exists.

For example,
Aircraft performing VHHH ILS RWY 07L approach shall cross LIMES between 3000 feet and 6000 feet.

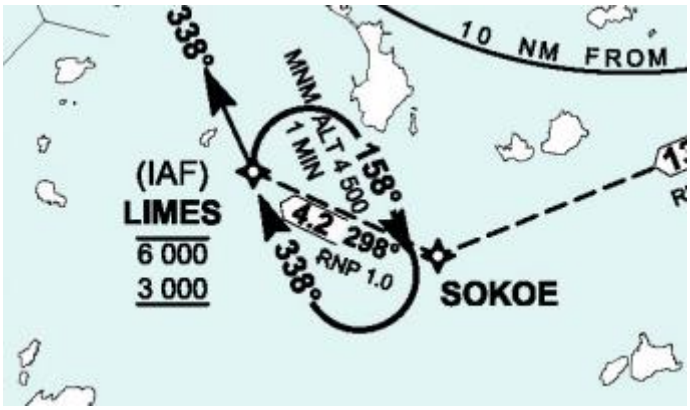



Figure 8.2: The IAF altitude for VHHH ILS 07L approach is between 3000ft and 6000ft. (Photo source: Hong Kong AIP AD-2-VHHH-IAC-05A)

8.2.4. TMA controllers shall provide clearance for an IAP before the aircraft reaches the IAF of such IAP.

Phraseology:
**Standard IAP Clearance:**
TMA Controller: (Callsign), **FROM** (Waypoint) **CLEARED** (IAP Identifier) **APPROACH [ADD ADDITIONAL INFO IF NEEDED].**

Examples:
VHHH_APP: AMERICAN 137, FROM LIMES VIA TUTBA, CLEARED ILS RUNWAY 07L APPROACH.

Phraseology:
**ILS Clearance under radar vectors:**
TMA Controller: (Callsign), **TURN LEFT** (or **RIGHT**) **HEADING** (three-digit heading)**, CLEARED ILS** (Runway) **APPROACH [ADD ADDITIONAL INFO IF NEEDED].**

Examples:
VHHH_APP: AMERICAN 137, TURN RIGHT HEADING 040, CLEARED ILS RUNWAY 07R APPROACH.

8.2.5. When handing aircraft off to Final Approach Director (VHHH_F_APP), the Approach controller shall instruct aircraft to state their callsign only on initial contact.

8.2.6. Following real-world practices, when clearing VHHH ILS RWY 07L/07R approach, it is recommended to add the instruction "**FROM LIMES VIA TUTBA**" (RWY 07L) or "**FROM LIMES VIA STELA**" (RWY07R) due to pilots often deviating from the published approach by skipping the waypoints STELA and TUTBA. Radar vectors shall be provided to an aircraft skipping these waypoints in order to provide separation against other aircraft.

8.2.7. When clearing aircraft on the ILS 25R approach, controllers shall first clear aircraft on the RNAV transition to ILS 25R. Controllers shall note the use of the following phraseology:

Phraseology:
**RNAV Transition to ILS 25R:**

TMA Controller: (Callsign), **FROM TD, DESCEND VIA RNAV TRANSITION TO 2700FT.**
(after reaching TOPUN)
TMA Controller: (Callsign), **FROM TOPUN, CLEARED ILS RUNWAY 25R APPROACH.**

Examples:
VHHH_APP: CATHAY 501, FROM TD, DESCEND VIA RNAV TRANSITION TO 2700FT.
(after reaching TOPUN)
VHHH_APP: CATHAY 501, FROM TOPUN, CLEARED ILS RUNWAY 25R APPROACH.

8.2.8. Controllers shall note that the instruction "**REPORT ESTABLISHED ON THE LOCALIZER**" is not mandatory and shall only be used when needed.

8.2.9. For VMMC arrivals, controllers shall refer to and be familiar with the LOA between Guangzhou/Sanya/Shanghai FIR and Hong Kong FIR regarding the division of responsibility between Hong Kong Approach and Zhuhai Approach.

8.3. HANDOFF OF AIRCRAFT TO TOWER CONTROLLERS

8.3.1. For ILS approaches and VHHX IGS RWY 13 approach, aircraft shall be handed off to the Tower controller once the aircraft has established on the localizer. For RNAV/RNP approaches, aircraft shall be handed off to the Tower once the aircraft has established on the final approach course.

8.3.2. As Tower controllers do not provide radar control to IFR aircraft, handoff to Tower shall be performed by simply dropping the aircraft on the radar client (i.e. pressing the F4 button without identifying the next controller).

8.3.3. If missed approach is required, the tower controller shall instruct the aircraft to contact the TMA controllers again. TMA controller shall radar identify such aircraft once it has contacted the controller. The tower controller shall also activate the missed approach alarm in order to notify the TMA controllers of a go around.

## 8.4. COORDINATION BETWEEN CHEK LAP KOK AND KAI TAK ARRIVALS

8.4.1. Controllers shall be aware that current airspace is not designed for simultaneous arrival streams into the 2 airports as the 2 airports were not operated concurrently. Therefore, special operation arrangements must be made in order to maintain separation between traffic flying to the 2 airports on the network.

8.4.2. VHHX and VHHH arrival streams should be sequenced independently and separated vertically. It is recommended that Kai Tak arrival streams are kept on top of Chek Lap Kok arrivals since the vertical profile into Kai Tak is higher than that into Chek Lap Kok. Controllers shall pay special attention to traffic's descent rate. If necessary, controllers may provide radar vectors to maintain lateral separation between the two arrival streams.

8.4.3. When VHHX operates in 13 configuration while VHHH operates in 25 configuration, IGS 13 and only ILS 25R should be used. Traffic information shall be provided to aircraft flying these two approaches simultaneously. **IGS 13 and ILS 25L shall never be used simultaneously due to the lack of separation between the two approaches.**

8.4.4. Whilst this SOP permits ILS 25R and IGS 13 to be flown simultaneously, controllers are advised to do their best to avoid this situation. A simple way to prevent this is not to let traffic cross TD and CH at the same time.

## RECORD OF REVISION

| DATE | REV. | REVISION CONTENT | APPROVAL |
|---|---|---|---|
| 31 JUL 2018 | 1 | Updated Diagrams<br>Updated Overall Content | B. BROWN |
| 17 JUN 2020 | 2 | Updated sector diagrams in section 5.1<br>Updated frequencies in section 5.2.1<br>Added section 5.3.2<br>Added section 6.3<br>Updated section 7.1.3<br>Added section 7.3<br>Added section 8.4<br>Updated appendix A<br>Added appendix C<br>Added HKVACC-SOP004 Annex I | J. CHENG |
| 1 DEC 2021 | 3 | Updated VHHH runway designators<br>Updated section 8.2.3 | J. CHENG |
| 09 SEP 2023 | 4 | Removed appendix A, B & C<br>Added section regarding handoff releases<br>Rewritten STAR and approach clearance procedures<br>Added section designating primary terminal radar sector<br>Added descriptions for Terminal Radar & Macau Radar<br>Added Terminal Radar South 1 | T. SIU |
| 03 APR 2024 | 5 | Updated Section 5.8.1 (Oil Rig Track D)<br>Updated Section 7.1.3 (Guidance for RAMEN/RUMSY Contingency SIDs)<br>Updated Section 8.1.3 (Expected approach not required if ILS)<br>Updated Position Names of VMMC_APP, VHHH_S1_APP and VHHH_F_APP to match reality<br>Updated Aerodrome Position Names to match reality<br>Updated primary Terminal Radar position to VHHH_W_APP<br>Updated Section 7.1.1 (Include RAMEN/RUMSY SIDs)<br>Updated Section 8.1.1 (Move responsibility of issuing STARs to Area Radar)<br>Added Section 8.2.7 (ILS 25R RNAV Transition Phraseology)<br>Split Sector Identifiers and Sector Codes | T. SIU |

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|---|---|---|---|
| 23 APR 2024 | 6 | Updated Section 5.9.1<br>Updated Section 5.3.4.2 | T. SIU |