ENR 1.6 ATS SURVEILLANCE SERVICES AND PROCEDURES

1. **Primary Radar**

1.1 Hong Kong primary radar equipment is located at:

a)	TSR:	Hong Kong APP	Tai Mo Shan 222442N 1140724E, 24 kW, coverage 140 NM approximately.
b)	ASR:	Hong Kong APP	Sha Chau 222044N 1135324E, 23 kW, coverage 80 NM approximately.
c)	RSR:	Hong Kong ACC	Mount Parker 221605N 1141317E, 24 kW, coverage 200NM approximately.

2. **Secondary Surveillance Radar (SSR)**

2.1 Hong Kong secondary surveillance radar equipment is located at:

a)	RSSR:	Hong Kong ACC	Mount Parker 221611N 1141316E, 2 kW, coverage not less than 256NM up to FL490
b)	TSSR	Hong Kong APP	Tai Mo Shan 222442N 1140724E, 2.5 kW, coverage not less than 256 NM up to FL490
c)	ASSR	Hong Kong APP	Beacon Hill 222104N 1140959E, 1.6 kW, coverage not less than 256 NM up to FL490
d)	ASSR	Hong Kong APP	Sha Chau, 222044N 1135324E, 2.5 kW, coverage not less than 256 NM up to FL490

3 **Supplementary Services**

3.1 Radar Control Units are operated as an integral part of the Hong Kong ATS unit and provide radar service to aircraft to the maximum extent practicable to meet operational requirements. Many factors, such as radar coverage, controller workload and equipment capabilities, may affect these services, and the radar controller shall determine the practicability of providing, or continuing to provide, radar services in any specific case.

3.2 Pilots shall be advised on commencement and termination of radar services except radar service will be automatically terminated at the time the aircraft leaves the last assigned heading to intercept the ILS localiser.

3.3 Radar identification is achieved according to provisions specified by ICAO.

4. Application of Radar Control Service

4.1 Radar control service is provided in all controlled airspace. This service may include:

(a) Radar separation of arriving, departing and en-route traffic;

(b) Radar monitoring of arriving, departing and en-route traffic to provide information on any significant deviation from the normal flight path;

(c) Radar vectoring when required;

(d) Assistance to aircraft in emergency;

(e) Assistance to aircraft crossing controlled airspace;

(f) Warnings and position information on other aircraft considered to constitute a hazard;

(g) Information to assist in the navigation of aircraft; and

(h) Information on observed weather.

4.2 (Reserved)

4.3 Levels assigned by radar controllers to pilots will provide a minimum terrain clearance according to the phase of flight.

5. Radar Separation Minima

5.1 Radar separation minima applied between identified aircraft are in accordance with ICAO Doc 4444 PANS-ATM and range from 3 to 10 nautical miles depending on the position of the aircraft in regard to:

a) the type of airspace they are in,

b) their distance from the airport or from the radar head, and

c) the number and types of radar stations that are tracking them.

6 Wake Turbulence Radar Separation Minima

6.1 The following wake turbulence radar separation minima shall be applied to aircraft on approach to Hong Kong International Airport :

(a) when operating directly behind or crossing behind another aircraft at the same altitude or less than 1 000 ft below;
(b) when both aircraft are using the same landing runway.

Aircraft Category		Wake Turbulence Radar Separation Minima
Preceding Aircraft	**Succeeding Aircraft**	
Super (A380)	Super (A380)	Not Required
	Heavy	6.0 NM
	Medium	7.0 NM
	Light	8.0 NM
Heavy	Heavy	4.0 NM
	Medium	5.0 NM
	Light	6.0 NM
Medium	Light	5.0 NM

6.2 To ensure an expeditious flow of traffic, aircraft on final approach to Hong Kong International Airport are at times vectored in trail with the minimum wake turbulence separation.

6.3 In the event that the wake turbulence separation between two aircraft on final approach is reduced or likely to be reduced to below the required minima, as an alternative to carrying out a missed approach, the pilot of the following aircraft will be offered the option of continuing the approach with the following warning :

"(Callsign), you are …….. miles behind a (aircraft type), caution wake turbulence."

7 System of SSR Code Assignment

7.1 Aircraft operating in the Hong Kong FIR can expect to be assigned SSR discrete codes within the following code blocks allocated to HK FIR:

Flight Status	SSR Codes
i) Departing traffic ii) Traffic diverting from Hong Kong	3301 - 3377 3501 - 3577 5101 - 5177 5301 - 5377 5701 - 5777
i) Arriving traffic if not already assigned a SSR code by previous ATC units; ii) Local/domestic traffic	5201 - 5277
Overflying traffic if not already assigned a SSR code by previous ATC units	3301 - 3377 3501 - 3577 5101 - 5177 5301 - 5377 5701 - 5777

8 Transponder Operating Procedures

8.1 Pilots of aircraft outbound from Hong Kong shall operate transponders in accordance with ATC instructions. In addition pilots shall also transpond on Mode C.

8.2 Pilots of aircraft inbound to Hong Kong shall, unless otherwise instructed by the appropriate ATS unit, operate transponders within the Hong Kong FIR to transpond on the SSR code last assigned to them by an ATS unit, or if no code has been previously assigned, to transpond on Code 2000, and to transpond on Mode C.

8.3 Pilots of aircraft inbound to Hong Kong are requested to comply with para. 8.2 above when they are within 300 NM of Hong Kong, although they may be outside Hong Kong FIR.

8.4 Except as stated in paras. 8.5, 8.6 and 8.7 below, pilots who have received specific instructions from ATC concerning the setting of the transponder should maintain that setting unless otherwise instructed.

8.5 To indicate that a state of emergency exists, the pilot of an aircraft shall set the transponder to Code 7700.

8.6 To indicate that a pilot has lost two-way communication, the pilot of an aircraft shall set the transponder to Code 7600.

8.7 Should an aircraft in flight be subjected to unlawful interference, the pilot shall endeavour to set the transponder to Code 7500 to give indication of the situation unless circumstances warrant the use of Code 7700. When a pilot has selected Code 7500 and is subsequently requested to confirm the code by ATC, the pilot shall, according to circumstances, either confirm this or not reply at all. (The absence of a reply from the pilot will be taken by ATC as an indication that the use of Code 7500 is not due to an inadvertent false code selection).

9 Radar Failure

9.1 In the event of a radar failure, the radar controller, in conjunction with the non-radar controller, shall provide non-radar separation as soon as possible and instruct aircraft to communicate with the appropriate non-radar controller for further instructions. Reduced vertical separation (e. g. 500 ft) may be employed temporarily if standard separation cannot be provided immediately.

10. Radio Communication Failure

10.1 In the event of an aircraft experiencing a two-way communication failure whilst receiving a radar service, the pilot shall comply with the standard radio communication failure procedures (see ENR 1.5).