

ITEM FOR ESTABLISHMENT SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 28 – CIVIL AVIATION DEPARTMENT Subhead 000 Operational expenses

Members are invited to recommend to Finance Committee the creation of the following two posts in the Civil Aviation Department, with immediate effect upon approval of Finance Committee –

- (a) creation of the following permanent post –
1 Chief Air Traffic Control Officer
(D1) (\$138,500 - \$151,550)

- (b) creation of the following supernumerary post up to 31 March 2025 –
1 Chief Air Traffic Control Officer
(D1) (\$138,500 - \$151,550)

PROBLEM

Given the robust growth of air traffic at the Hong Kong International Airport (HKIA) and within the region, coupled with the upsurge in air traffic demand brought about by the Three-Runway System (3RS) Project, there is an urgent operational need to reinforce directorate support in the Civil Aviation Department (CAD) on a long term basis to strengthen managerial oversight of daily air traffic control (ATC) operations to ensure the provision of safe, reliable and efficient ATC services.

2. Besides, the construction works of 3RS at HKIA are under full steam and the 3RS is targeted to be fully commissioned in end 2024. To prepare for the 3RS operations, CAD needs a dedicated directorate officer on a time-limited basis to orchestrate the timely completion of a huge number of tasks such as developing new arrival and departure procedures, refining existing procedures and producing detailed design of the control tower operations.

PROPOSAL

3. We propose to create the following directorate posts in the Air Traffic Management Division (ATMD) of CAD with immediate effect upon approval of Finance Committee (FC) to maintain flight safety and help take forward the 3RS Project within CAD –

- (a) one permanent Chief Air Traffic Control Officer (CATCO) (D1) post designated as Chief Air Traffic Control Officer (Operations and Personnel)²; and
- (b) one supernumerary CATCO (D1) post designated as Chief Air Traffic Control Officer (Three-Runway System) for about seven years up to 31 March 2025.

JUSTIFICATIONS

Robust Growth of Air Traffic

4. It is the Government's policy to maintain and strengthen Hong Kong's leading position as a regional and international aviation hub. To support the policy, CAD is committed to providing safe, reliable and efficient ATC services for flights arriving at or departing from HKIA and aircraft overflying the Hong Kong Flight Information Region (HKFIR), which covers a total area of 276 000 square kilometres. The HKFIR map is illustrated at Encl. 1 Enclosure 1. In view of the robust growth in air traffic and the expected upsurge in air traffic demand brought about by the 3RS Project, there is a strong need to strengthen directorate support in ATMD of CAD.

5. Due to the strong growth in regional air traffic demand and our unique geographic position, Hong Kong experienced a robust growth of air traffic in the past ten years from 2008 to 2017. During the period, the annual aircraft

/movements

movements at HKIA grew from 302 541 to 422 420, representing a cumulative increase of 39.6% or a compound annual growth rate of 3.39%. The annual overflight traffic¹ also increased from 154 728 to 325 200, representing a cumulative increase of 110% with a compound annual growth rate of 7.7%. As of 2017, in terms of major air routes defined by the International Civil Aviation Organization (ICAO), four² out of ten major air routes are passing through the HKFIR requiring ATC services provided by CAD. The rising trend is expected to continue in the coming years, especially with strong demand of air traffic within the Asia Pacific Region and the commissioning of the 3RS.

6. To meet the growing air traffic demand and maintain Hong Kong's competitiveness as an international aviation hub, the Executive Council endorsed in March 2015 the proposal of the Airport Authority Hong Kong (AAHK) to develop HKIA into a 3RS. According to AAHK, 3RS construction works which commenced in August 2016 will take around eight years to complete. The commissioning of the third runway is scheduled for 2022 after which the existing North Runway will be closed for reconfiguration. The full commissioning of the 3RS is targeted in end 2024.

7. Prior to the commissioning of the 3RS, the annual overflight traffic is expected to continue to rise (we have already seen an increase of about 15.6% in annual overflight traffic in 2017). 34 additional parking stands will also be targeted for commissioning from end-2018 until the completion of the 3RS to accommodate anticipated air traffic growth at HKIA. According to the HKIA Master Plan 2030, with the commissioning of the 3RS, the annual aircraft movements at HKIA are expected to further grow to 607 000 by 2030.

8. Phenomenal growth in air traffic had not only generated substantial increase in the workload of ATMD, but also greatly added to the level of work complexity, which requires many sophisticated and time-critical executive decisions to be made. For instance, the increase in air traffic transiting the HKFIR without landing and take-off at HKIA necessitates more stringent oversight of daily operations so as to ensure effective regulation of air traffic flow. It also

/requires

¹ This refers to aircraft operating within the HKFIR which do not land or take-off at HKIA. It also includes flights into and out of Macao International Airport, which are also handled by CAD of the HKSAR Government.

² The four major air routes passing through the HKFIR are AR1 - Between Europe and East Asia; AR3 - Between Southeast Asia and East Asia; AR7 - Between East Asia and North America; and AR8 - Between East Asia and Australia (Source: ANSP Air Navigation Plan Vol II 2017).

requires close collaboration among different parties, both internally and externally, to ensure seamless and safe transferral of ATC between Flight Information Regions (FIRs). As such, more high-level oversight is required in respect of the daily deployment of ATC operational personnel and associated human resources planning.

Management of ATC Operations

9. ATMD is the biggest division of CAD comprising around 480 posts at present. The Air Traffic Control Officers work on roster to provide 24 hours non-stop ATC services. There are four ATC units responsible for different stages of flights such as taxiing, departing and cruising, etc. The four units are located at the Air Traffic Control Centre (ATCC) within the CAD Headquarters and at the Aerodrome Control Tower situated in the airside of the airport. Currently, there is only one single Chief Air Traffic Control Officer, designated as Chief Air Traffic Control Officer (Operations and Personnel) (C(OP)) (D1), overseeing the entire ATC operations at the ATCC and Aerodrome Control Tower. C(OP) is responsible for overseeing the management and operations of ATC services, planning and administering the deployment of staff and associated human resources issues, planning and executing strategic and tactical air traffic flow management (ATFM) measures, overseeing the safety and effectiveness of ATC operating procedures, and liaising and co-ordinating with other ATC service providers in other FIRs. In light of increasing workload and complexity of air traffic management in the HKFIR, it is no longer practicable to rely on one single C(OP) to manage all these complex and time critical operational issues.

10. In order to maintain an effective oversight of ATC operations and to optimise the planning and utilisation of the human resources to handle the robust growth in air traffic, we consider it necessary to create one permanent post of CATCO (D1), to be designated as Chief Air Traffic Control Officer (Operations and Personnel) (2) (C(OP)2), to lead the operations of the Approach Control Unit and Aerodrome Control Unit³. The proposed C(OP)2 will also oversee the phased operational transition to the 3RS to ensure that frontline ATC staff are fully conversant with the new mode of ATC operations, the design of which would have incorporated their views.

/11.

³ The Approach Control Unit is responsible for air traffic approaching to and departing from HKIA at altitude of 25 000 feet or below. The Aerodrome Control Unit is responsible for aircraft operating at HKIA and in the vicinity of HKIA.

11. The existing C(OP), to be re-designated as C(OP)1, will oversee the Terminal Control Unit and En-route Control Unit⁴. Besides, C(OP)1 will be responsible for allocation of human resources in conjunction with the Training and Safety Section and overseeing the planning and implementation of regional ATFM. The respective areas of responsibilities of C(OP)1 and C(OP)2 are illustrated in the table at Enclosure 2. The job description of the proposed C(OP)2 and revised job description of C(OP)1 are at Enclosures 3 and 4 respectively.

Encl. 2
Encl. 3 & 4

3RS Project

12. To prepare for 3RS operations, ATMD needs to develop new arrival and departure procedures, refine existing procedures as well as draft technical detailed design of the control tower operations as the 3RS necessitates a new ATC tower⁵. Phased procedures and transitions have to be carefully designed well in advance to cater for both the commissioning of the third runway by 2022 and full commissioning of the 3RS by end 2024. In addition, various safety risk assessments in relation to the design of flight procedures and ATC procedures applicable to the 3RS operations in accordance with ICAO standards⁶ and requirements also need to be conducted. Significant amount of work with specific project milestones have to be completed in a timely manner to support the implementation of the 3RS operations. These are complex and substantial tasks which require effective oversight and guidance by a dedicated directorate officer with solid and rich experience in project management and strong expertise in ATC services.

13. Apart from ATMD, other divisions in CAD also play a crucial role to support the 3RS Project. These include, for example, vetting and approving the

/design

⁴ The Terminal Control Unit is mainly responsible for feeding air traffic inbound to HKIA from the designated airborne holding areas. The En-route Control Unit is responsible for air traffic operating within the HKFIR, which includes overflying traffic at high altitude, traffic coming into HKIA or leaving the HKFIR to adjacent FIR.

⁵ Due to the long distance between the existing ATC towers and the new third runway under the 3RS, some of the future new taxiways and parking stands are beyond the line of sight of the existing South ATC Tower. In this connection, a new ATC tower located at an appropriate location is required so that air traffic controllers could have clear and unobstructed views to monitor all aircraft and vehicle movements at HKIA and provide ATC services in accordance with the requirement of ICAO. Please refer to the discussion paper entitled “Resources Proposals Relating to the Government Facilities and Equipment to Support the Three-runway System at the Hong Kong International Airport”, LC Paper No. CB(4)1110/17-18(03), submitted for discussion at the Legislative Council Panel on Economic Development (ED Panel) on 28 May 2018 for details.

⁶ Hong Kong, being part of China which is one of the 192 Contracting States of ICAO, has an obligation to comply with standards set by ICAO.

design of the third runway, taxiways and the associated facilities, as well as the proposed Airport Height Restriction Plan; providing technical comments and inputs to consultancy studies and reports submitted by AAHK; and installing necessary air navigation services equipment for the 3RS. The enormous size and intricacy of tasks call for careful and comprehensive strategic planning and co-ordination so as to ensure their timely completion and smooth commissioning. To ensure an effective oversight and monitoring through regular and ad hoc reports, early identification of risks and problems as well as proactive actions to resolve critical issues are all of paramount importance. In addition, frequent liaison with stakeholders such as AAHK, relevant government departments and airlines is also expected. Dedicated manpower at directorate level is essential to ensure effective and timely co-ordination among all parties concerned.

14. In light of the above, we consider it pivotal to create one supernumerary post of CATCO, to be designated as Chief Air Traffic Control Officer (Three-Runway System) (C(3RS)). The officer will report to Assistant Director-General (Air Traffic Management) and be responsible for managing and overseeing within ATMD the necessary preparatory work in relation to ATC system and procedure for the 3RS, including preparatory work in relation to the enhancement of ATC system functionalities and parameters as well as updating the system database to support procedure evaluation and equipment testing, etc. The officer will also be responsible for co-ordinating with other divisions in CAD and act as the Project Manager of 3RS-related tasks in CAD to monitor the progress and ensure the timely completion of all critical milestones. In addition, the officer will be a member of the Project Steering Committee chaired by a Deputy Director-General of Civil Aviation.

15. The 3RS Project is highly complicated and will need to be completed under a very tight schedule. Being the Project Manager, C(3RS) will ensure all the 3RS critical milestones related to CAD will be completed in a safe, orderly and timely manner. Given the complexity and nature of the duties involved, it is considered necessary for a dedicated directorate officer to orchestrate different 3RS-related project tasks within CAD, and act as the focal point in liaison with AAHK and stakeholders concerned. The job description of C(3RS) is at Enclosure 5. To tie in with the anticipated commissioning of the 3RS by end 2024, the C(3RS) post is proposed to be created until 31 March 2025.

Encl. 5

/Non-directorate

Non-directorate Support

16. In 2018-19, 30 non-directorate new posts will be created, of which 20 are permanent posts consisting of ten in the Air Traffic Flight Services Officer (ATFSO) grade and ten in the ATCO grade, and the remaining ten are time-limited posts (from 2018-19 to 2025-26) in the ATCO grade to strengthen the frontline operational team for the provision of ATC services. They will render support to the proposed C(OP)2 and the re-designated C(OP)1 posts in the provision of daily ATC services.

17. Besides the 30 posts mentioned in paragraph 16 above to strengthen the frontline operational team for the provision of ATC services, another ten permanent posts, consisting of three posts in the ATCO grade, two posts in the ATFSO grade, four posts in the Operations Officer (OO) grade and one post in the Executive Officer (EO) grade will be created under ATMD in 2018-19. Together with one existing time-limited post in the ATCO grade⁷, they will form a dedicated team to provide professional and executive support for the proposed C(3RS) post. Upon the expiry of the proposed C(3RS) post, the permanent non-directorate posts will be re-deployed to other sections of ATMD to continue to provide professional support to the expanded air traffic operation.

18. Taking into account the above, it is anticipated that there will be a total of 524 posts under the Assistant Director-General of Civil Aviation (Air Traffic Management) in ATMD by 2018-19, which include 319 posts in the ATCO grade (including the two D1 posts proposed in this paper), 131 posts in the ATFSO grade, 65 posts in the Aeronautical Communications Officer grade, eight posts in the OO grade and one post in the EO grade. The proposed organisation chart of ATMD is at Enclosure 6.

Encl. 6

ALTERNATIVES CONSIDERED

19. Despite the significant growth in Hong Kong's air traffic over the years as mentioned in paragraph 5 above, the senior management of ATMD has remained thin with only one C(OP) in charge of all ATC operations. In the past ten years, CAD has endeavoured to make the best use of available resources to meet the significant increase in service needs without compromising safety, including streamlining ATC operating procedures and making use of latest technology to enhance ATC operational safety and efficiency. However, in view of the continuous increase in air traffic and the on-going 3RS Project, status quo is no longer sustainable.

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⁷ This post will lapse by the end of 2018-19.

20. We have critically examined whether the existing directorate staff in CAD have the spare capacity to absorb the duties of the two proposed D1 posts. Given the continuous growth of air traffic demand in the region, the three existing CATCOs (excluding C(OP) which has been explained in paragraph 9 above) are already fully committed to providing technical support to daily ATC operations and planning for the anticipated traffic growth to ensure flight safety. Specifically, Chief Air Traffic Control Officer (Procedures and Evaluation) is responsible for addressing the on-going need for designing and validating or fine-tuning the flight procedures applicable to the HKFIR as well as conducting consultations with stakeholders; Chief Air Traffic Control Officer (Technical and Development) is responsible for overseeing the on-going enhancement of the existing ATC systems and equipment; and Chief Air Traffic Control Officer (Training and Safety) is responsible for the overall development and management of ATMD's internal training, among their other duties. With the increase in air traffic mentioned in paragraph 5 and the increased number of posts of ATMD from 417 to 480 over the past ten years, their respective workloads have become much heavier and complex than before. All of them are already fully engaged under the current setup, and have no spare capacity to take up any part of the additional duties and responsibilities of the proposed C(OP)2 and C(3RS) posts. The key work portfolios of these three CATCOs are detailed at Enclosure 7.

Encl. 7

21. As the targeted commencement of the 3RS operations is in end 2024, CAD has also assessed if the two posts could be created at a later stage. However, taking into account the large number of inter-dependent tasks required to be completed in the coming six years including procedures and system evaluation and implementation, on-going recruitment and training of additional air traffic controllers, handling of ever-increasing day-to-day air traffic volume, planning for the ultimate transition to the 3RS operations and so forth, a very close collaboration amongst different sections in ATMD and different divisions within CAD are crucial and essential. The two dedicated directorate officers with solid background and expertise in handling ATC-related projects, overseeing ATC operations and transition of ATC operations are critical to strengthening the oversight of the daily ATC operations and the 3RS Project. Therefore, timely creation of the two new CATCOs is necessary for strengthening directorate support in CAD to formulate a holistic strategy for the migration to the 3RS operations in a safe, timely and orderly manner. The creation of the two posts is urgently needed.

/FINANCIAL

FINANCIAL IMPLICATIONS

22. The proposed creation of one permanent CATCO (D1) post and one supernumerary CATCO (D1) post in CAD will incur an additional notional annual salary cost at mid-point of \$3,530,400. The additional full annual average staff cost, including salaries and staff on-cost, is about \$4,848,000.

23. As regards the 40 additional non-directorate posts (paragraphs 16 and 17 refer), the notional annual salary cost at mid-point is \$24,102,900. The additional full annual average staff cost, including salaries and staff on-cost, is about \$36,280,000.

24. We have included sufficient provision in the 2018-19 Estimates to meet the cost of the proposal and will reflect the resources required in the Estimates of subsequent years.

PUBLIC CONSULTATION

25. We consulted the ED Panel on 28 May 2018 on the proposed creation of the two CATCO (D1) posts. Members generally supported the proposal, and a number of Members urged that the posts be created and filled as soon as practicable.

26. At the meeting, a Member moved a motion requesting CAD to provide details about the international standard in respect of notification mechanism of major incidents involving ATC or ATC-related systems. The motion was passed, and CAD's reply will be issued to the ED Panel shortly.

ESTABLISHMENT CHANGES

27. The establishment changes in CAD for the last two years are as follows –

/Establishment

Establishment (Note)	Number of posts			
	Existing (As at 1 June 2018)	As at 1 April 2018	As at 1 April 2017	As at 1 April 2016
A	21 + (1) [#]	21 + (1)	21 + (1)	21
B	348	348	335	331
C	400	400	380	378
Total	769 + (1)	769 + (1)	736 + (1)	730

Note:

A – ranks in the directorate pay scale or equivalent

B – non-directorate ranks, the maximum pay point of which is above MPS Point 33 or equivalent

C – non-directorate ranks, the maximum pay point of which is at or below MPS Point 33 or equivalent

() – number of supernumerary directorate posts

[#] – as at 1 June 2018, there was no unfilled directorate post in CAD

CIVIL SERVICE BUREAU COMMENTS

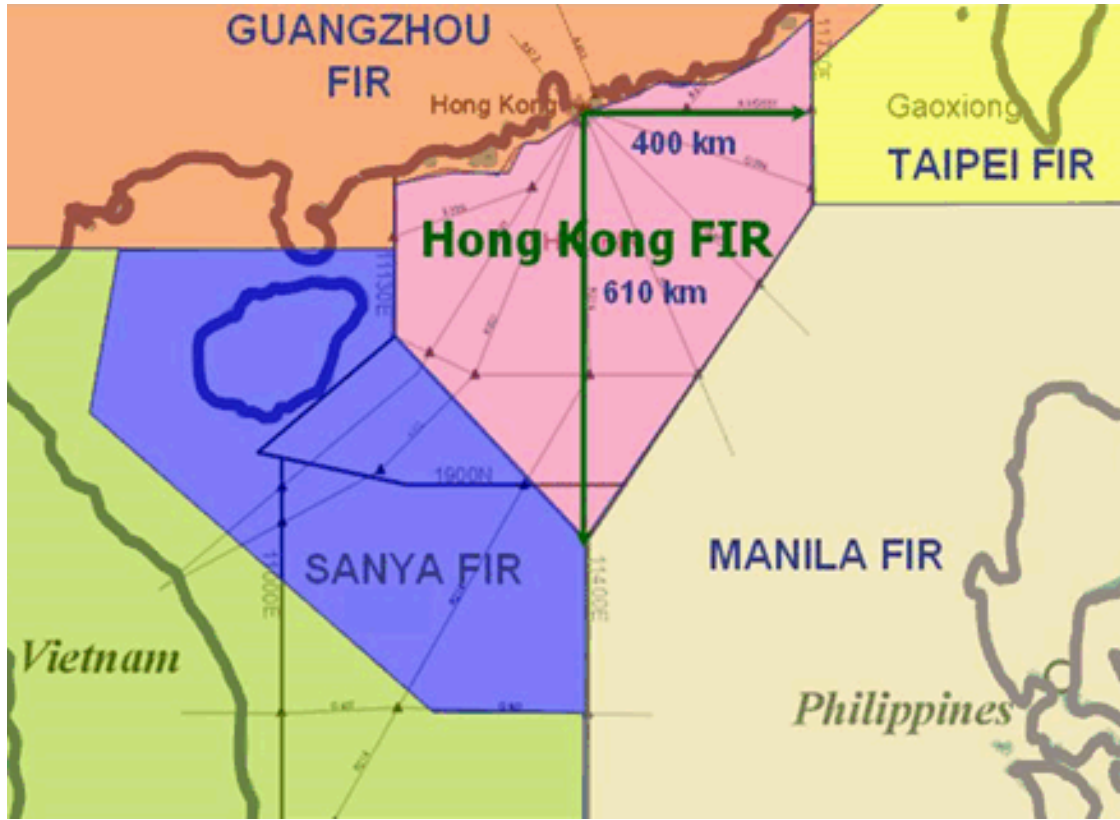
28. The Civil Service Bureau supports the proposed creation of a permanent and a supernumerary CATCO posts in CAD. The grading and ranking of the proposed posts are considered appropriate having regard to the level and scope of responsibilities and professional inputs required.

ADVICE OF THE STANDING COMMITTEE ON DIRECTORATE SALARIES AND CONDITIONS OF SERVICE

29. The Standing Committee on Directorate Salaries and Conditions of Service (Standing Committee) has advised that the grading proposed for the permanent directorate post is appropriate. Regarding the directorate post proposed to be created on a supernumerary basis, its creation, if approved by the FC, will be reported to the Standing Committee in accordance with the agreed procedure.

Transport and Housing Bureau
June 2018

The Map of Hong Kong Flight Information Region (FIR)



Source: ICAO FIR View <http://gis.icao.int/Flexviewer/>

The respective areas of responsibilities of Chief Air Traffic Control Officer (Operations and Personnel)1 (C(OP)1) and Chief Air Traffic Control Officer (Operations and Personnel)2 (C(OP)2)

C(OP)1	
Air Traffic Control (ATC) Units Supervised	Scope of Work
Terminal Control Unit	<ul style="list-style-type: none"> - Coverage of airspace: approximately between 40 Nautical Miles (NM) and 120 NM from Hong Kong International Airport (HKIA). - Responsible for the provision of air traffic services (ATS) to aircraft holding in the air while they are waiting for landing at HKIA. The ATS include allocation of altitude to aircraft in the holding area, and transferring of aircraft to Approach Control Unit based on the pre-determined expected arrival time. - The unit also provides approach and departure control services for aircraft landing at and departing from Macao Airport.
En-Route Control Unit	<ul style="list-style-type: none"> - Coverage of airspace: the entire Hong Kong Flight Information Region (HKFIR). - Responsible for the provision of ATS to aircraft operating within the HKFIR, which include aircraft arriving at and departing from HKIA. - The unit is also responsible for the co-ordination with neighboring ATS providers to ensure safe and smooth transfer of aircraft.

/C(OP)2

C(OP)2	
ATC Units Supervised	Scope of work
Approach Control Unit	<ul style="list-style-type: none">- Coverage of airspace: approximately 40 NM from HKIA.- Responsible for the provision of ATS to aircraft landing at and departing from HKIA to ensure the optimised air traffic flow at HKIA can be achieved.
Aerodrome Control Unit	<ul style="list-style-type: none">- Coverage of airspace: limited to the vicinity of HKIA- Responsible for the provision of ATS to aircraft operating at HKIA, which include all aircraft taxiing on ground and aircraft which are approaching to land and about to depart from HKIA to ensure the maximum runway capacity under the existing Two-Runway System can be maintained.

**Proposed Job Description for the Post of
Chief Air Traffic Control Officer (Operations and Personnel)2**

Rank : Chief Air Traffic Control Officer (D1)

Responsible to : Assistant Director-General of Civil Aviation (Air
Traffic Management)

Main Duties and Responsibilities –

1. Oversee the management and operations and ensure safety and effectiveness of the Approach Control Unit and Aerodrome Control Unit at the Air Traffic Control Centre and Aerodrome Control Tower respectively and closely co-ordinate with the Chief Air Traffic Control Officer (Operations and Personnel)1 (C(OP)1) to ensure the delivery of safe, orderly and efficient air traffic services.
2. Oversee the phased operational transition to Three-Runway System and ensure that frontline air traffic control (ATC) staff are fully conversant with the new mode of operations.
3. Oversee and/or participate in the liaison and co-ordination with neighbouring air traffic services providers for the co-operation/co-ordination related to Approach Control Unit and Aerodrome Control Unit operations.
4. Develop training programmes and activities including the promotion of safety culture in Air Traffic Management Division in conjunction with Chief (Training and Safety).
5. Oversee, in collaboration with C(OP)1, the co-ordination with other organisations such as Airport Authority Hong Kong, International Civil Aviation Organization and other stakeholders of the aviation industry in respect of planning and implementation of measures and procedures relating to ATC operations and special aviation activities.

**Revised Job Description of the Re-designated Post of
Chief Air Traffic Control Officer (Operations and Personnel)1**

Rank : Chief Air Traffic Control Officer (D1)

Responsible to : Assistant Director-General of Civil Aviation (Air
Traffic Management)

Main Duties and Responsibilities –

1. Oversee the management and operations and ensure safety and effectiveness of the Terminal Control Unit and En-route Control Unit at the Air Traffic Control Centre and closely co-ordinate with the Chief Air Traffic Control Officer (Operations and Personnel)2 (C(OP)2) to ensure the delivery of safe, orderly and efficient air traffic services (ATS).
2. Oversee and review the strategic planning and implementation of tactical Air Traffic Flow Management for air traffic within Hong Kong Flight Information Region.
3. Oversee and/or participate in the liaison and co-ordination with regional ATS providers for the co-operation/co-ordination in relation to operations of En-route Control Unit.
4. Develop training programmes and activities including the promotion of safety culture in Air Traffic Management Division in conjunction with Chief (Training and Safety).
5. Oversee, in collaboration with C(OP)2, the co-ordination with other organisations such as Airport Authority Hong Kong, International Civil Aviation Organization and other stakeholders of the aviation industry in respect of planning and implementation of measures and procedures relating to air traffic control operations and special aviation activities.

**Proposed Job Description of the Post of
Chief Air Traffic Control Officer (Three-Runway System)**

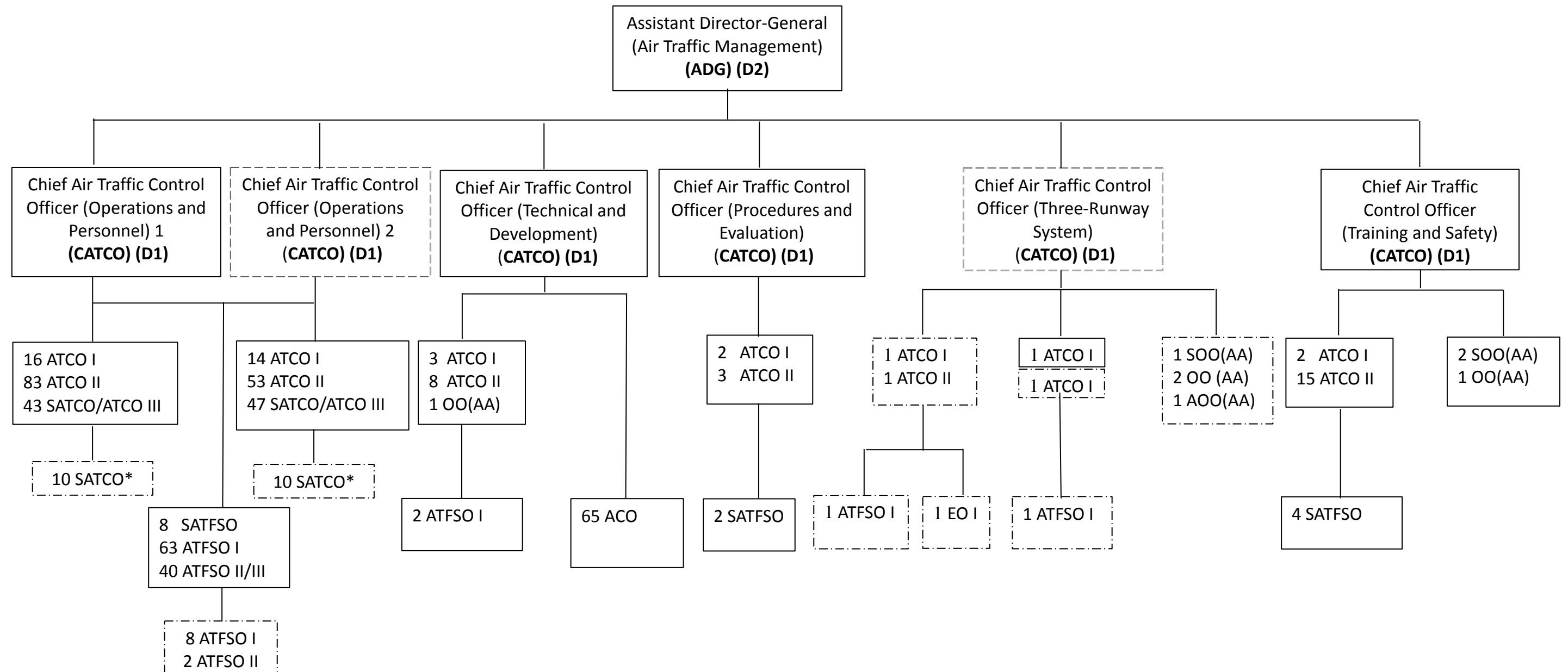
Rank : Chief Air Traffic Control Officer (D1)

Responsible to : Assistant Director-General of Civil Aviation (Air
Traffic Management)

Main Duties and Responsibilities –

1. Oversee and administer the planning and co-ordination work of the Three-Runway System (3RS) Project Team of the Civil Aviation Department (CAD) with reference to various stages of the Project and the respective mode of air traffic control operations along the 3RS Project timeline.
2. Oversee the progress of tasks handled by individual divisions and ensure the project milestones are achieved along the 3RS Project timeline and provide regular and ad hoc reports to the Project Steering Committee chaired by a Deputy Director-General of Civil Aviation in the capacity of a Project Steering Committee member.
3. Oversee and co-ordinate submissions of operational requirements for preparing tenders of systems and equipment related to the 3RS Project, and seek approval from the appropriate authorities.
4. Oversee safety risk assessments, planning and design of instrument flight procedures associated with the 3RS in accordance with International Civil Aviation Organization standards and regulatory requirements.
5. Oversee and monitor the Pearl River Delta airspace optimisation initiatives and supervise relevant technical developments to support the 3RS operations.
6. Oversee planning and organisation of media briefings and act as the focal point of CAD in liaison with relevant parties on 3RS-related matters.

Proposed Organisation Chart of the Air Traffic Management Division of the Civil Aviation Department



Legend

- ACO – Aeronautical Communications Officers
- ADG – Assistant Director-General of Civil Aviation
- AOO – Assistant Operations Officer (Aviation Administration)
- ATCO – Air Traffic Control Officer
- ATFSO – Air Traffic Flight Services Officer
- CATCO – Chief Air Traffic Control Officer
- EO – Executive Officer
- OO(AA) – Operations Officer (Aviation Administration)
- SATCO – Student Air Traffic Control Officer
- SATFSO – Senior Air Traffic Flight Services Officer
- SOO (AA) – Senior Operations Officer (Aviation Administration)

* Initial deployment of 20 SATCO which is tentative and subject to change

 Proposed directorate posts

 Non-directorate posts to be created in 2018-19.

**Key Work Portfolios of the Existing Three
Chief Air Traffic Control Officers in Civil Aviation Department**

Chief Air Traffic Control Officers (CATCOs) (D1) of Air Traffic Management Division (ATMD) are responsible to the Assistant Director-General (Air Traffic Management) (D2). Collectively, CATCOs are responsible for overseeing the provision of air navigation services at the Hong Kong International Airport (HKIA) and within the Hong Kong Flight Information Region (HKFIR). They oversee and ensure that the development and implementation of air traffic control (ATC) procedures as well as the provision of training to ATC controllers are in conformance with requirements of the Standards and Recommended Practices of the International Civil Aviation Organization (ICAO). Except for Chief Air Traffic Control Officer (Operations and Personnel), the work portfolios of the other three CATCOs in ATMD are set out in the paragraphs below.

2. Chief Air Traffic Control Officer (Procedures and Evaluation) (C(PE)) is responsible for addressing the on-going need for designing/fine-tuning and validating the flight procedures applicable to the HKFIR as well as conducting consultations with stakeholders. C(PE) is also responsible for maintaining close co-ordination with the Mainland civilian and military units on matters involving ATC operations in the Pearl River Delta area. Besides, the officer is also responsible for the design, evaluation and on-going review of the existing instrument flight procedures and air traffic flow management measures applicable to HKIA to ensure compliance with relevant ICAO standards. There are currently 40 sets of procedures which have to be reviewed and adjusted in accordance with the latest requirements of ICAO.

3. Chief Air Traffic Control Officer (Technical and Development) (C(TD)) is responsible for overseeing the on-going enhancement of the existing ATC systems and equipment. The C(TD)'s team is also responsible for collecting and analysing the comments and suggestions from frontline ATC staff related to system functionalities and Human-Machine Interface. It also works closely with the Air Traffic Engineering Services Division on technical studies, validation and implementation of new software versions. Regular system updates to individual operational systems used in the Air Traffic Control Centre and Tower have to be compatible with operations and carried out, after vigorous safety assessments, in an organised manner to ensure the safety requirements of system performance are met.

4. Chief Air Traffic Control Officer (Training and Safety) (C(TS)) is responsible for the overall development of ATMD's internal training. In addition to provision of ATC training, C(TS)'s team has to determine the strategy for recruiting Student Air Traffic Control Officers and Air Traffic Flight Services Officers. Apart from training, C(TS) is also the Head of Safety of ATMD, who has to ensure the standards and safety of ATC operations are upheld at all times. From time to time, ATC-related incidents may occur. C(TS) is responsible for overseeing the investigation of such incidents, which requires detailed analysis of each and every case with a view to identifying any system weaknesses, staff performance deficiency and any issue of concern. The objective is to recommend measures to mitigate the identified risks and prevent recurrence.

5. ICAO has been harmonising the global air traffic management systems by various improvement initiatives since the 1990's. Since then, the ICAO has, through a structured plan to upgrade the global aviation systems, introduced standards and recommended practices in implementing new air traffic management technologies and concepts, such as the Air Collision Avoidance Systems, Performance Based Navigation and Automatic Dependent Surveillance-Broadcast, based on which the relevant ATC procedures have been assessed and updated continuously. Each significant update requires detailed planning and design and is subject to stringent safety assessment. Since 2010, over 100 risk assessments and hazard identifications have been conducted. Fine-tuning of the ATC systems and training of ATC staff were usually entailed in every update and assessment, which required meticulous planning and close liaison between the CATCOs. It is a particularly challenging task to ensure safety while minimising disruption to the round-the-clock ATC service.

6. Over the past ten years, despite the growth of air traffic detailed in paragraph 5 of the main paper and the increase in number of posts in ATMD which grew from 417 to 480, the number of CATCOs in ATMD has remained unchanged. The increase in staff strength and technological advancements entail significant demand for training needs and high-level co-ordination and supervisory work. In light of the continuous growth of air traffic demand in the region, the existing three CATCOs are required to provide technical support to daily ATC operations and planning in their respective responsible areas for the anticipated traffic growth to ensure flight safety. C(PE), C(TD) and C(TS) are all fully committed under the current setup and have no spare capacity to take up any part of the additional duties and responsibilities of the two proposed CATCO posts.
