Public Accounts Committee
Consideration of Chapter 4 of the Director of Audit's Report No. 63
Administration of the air traffic control and related services

The following information was provided to facilitate the Committee's consideration of Chapter 4 of the Director of Audit's Report No. 63.

Management of the new Air Traffic Control (ATC) System project

(a) ***the basis on which the CAD states that the original schedule for the procurement and testing of the new ATC system might be "a bit too ambitious"***

2. After detailed study, the Civil Aviation Department decided to group the 18 ATC systems and facilities as proposed in the funding paper approved by the Finance Committee of the Legislative Council (LegCo FC) in May 2007 into eight major system contracts. At present, seven out of eight system projects have been substantially completed as scheduled. The CAD is making an all-out effort to work with the system contractor in testing the remaining one, which is the Air Traffic Management System (ATMS).

3. The ATMS is a highly complicated and sophisticated system. It has taken a longer time than expected for CAD to complete the tender exercise, for the contractor to conduct detailed design, rectify the higher-than-expected number of outstanding issues arising from the Factory Acceptance Test (FAT), and for conducting scenario-based test as agreed between CAD and the contractor with a view to ensuring that the new ATMS fully met the relevant contractual and safety requirements before operation. The delay of implementing the ATMS has led to the overall delay of the implementation of the ATC system project.

4. According to the overseas experience, it normally takes more than two and a half years (the target completion time according to the current contract) from contract award to completion for similar large-scale ATC system replacement. For instance, it took 6 years for Singapore to replace their ATC centre, with 3 years' delay incurred. Likewise, the Swanwick ATC centre in

the UK, which is responsible for the southern airspace covering the Heathrow airport, took about 11 years to replace their ATC centre and suffered about 6 years' delay. With hindsight, CAD considers that it would be more desirable if some buffer periods had been included in the original implementation plan of the ATC system project to cater for the additional time required to resolve any possible unforeseen issues that may arise during the implementation of such sophisticated and complicated system, and will draw lessons from this case.

Management of the precision runway monitor (PRM) project

(b) and (c) based on what information and reasons CAD considered that there might be advancement in technology to permit independent mixed mode of operation and the processes which led to the decision on the procurement of the PRM radar

5. Notwithstanding the terrain constraints identified by the consultants in 1990 and 1994 for adopting independent operations (i.e. landings and departures on both runways) for the Hong Kong International Airport (HKIA), the consultant in 1990 considered that by the time the HKIA commenced operation (i.e. in 1998), new technology or procedures of the International Civil Aviation Organization (ICAO) would be available to permit independent operations.

6. The consultancy study in 1994 concerning the Airspace Design Study of the new HKIA was not able to identify a viable solution to overcome the terrain constraints. Yet, CAD at that time had not ruled out the possibility that new technological advancement and ICAO procedures would happen in the future for independent operations. In addition, CAD had taken into account the advice of the Airspace Design Consultancy Working Group which comprised aviation industry representatives, such as the International Air Transport Association, International Federation of Airline Pilots' Association, Government Flying Service, etc, in 1995, that advancement in aviation technology, namely the satellite navigation systems, might provide solutions for the independent mode of operations at Chek Lap Kok in future. CAD had therefore considered that the PRM would be needed for monitoring the flight track of aircraft in both fully independent mode and segregated mode of operations at the HKIA.

7. Due to the long time lapse and scattered handling offices of the PRM project, the CAD is unable to produce full records of the processes which led to the procurement decision.

(d) whether consideration will be given to review the standby mode or disposal of the PRM

8. CAD will conduct a review to determine the cost-benefit of maintaining the PRM on standby mode and consideration will be given to reselling it or disposal.

(e) the tower for PRM and Back up ATC Facilities

9. The PRM Tower was not dedicated to housing the PRM radar. As set out in paragraph 3(g) and 6 of the Administration's Paper to the Public Works Subcommittee for the meeting on 12 June 1996, the 56-metre high PRM Tower would function as the ancillary ATC tower and provide space for offices and equipment rooms for CAD and the Hong Kong Observatory, as well as observation / radio communication rooms for the Customs and Excise Department, and a radio equipment room with antenna for the Hong Kong Police Force. Such ancillary system and equipment were required to cover the second runway and support the ancillary ATC systems so that the essential functions could be maintained in case of any emergency affecting the normal operation of the ATC Tower and Complex constructed in the first phase of the new airport.

<u>Administration of ATC services related charges</u>

(f) the progress in exploring the feasibility of demanding a security deposit or banker's guarantee for all operators on a case-by-case basis having regard to the operator's payment records (Paragraph 4.17 (c)(i) and 4.18)

10. The CAD is exploring on the criteria and details for implementation of demanding a one-month security deposit or banker's guarantee from specific airline operators using the CAD's navigation services on a case-by-case basis having regard to their payment records. The CAD is at present working out

proposals and will consult the Department of Justice on whether the proposals are legally in order for implementation.

Administration of the mandatory occurrence reporting (MOR) scheme

(g) whether consideration would be given to writing off long outstanding MOR cases which required no further follow-up actions (paragraph 5.21)

11. In respect of each MOR report, CAD will review and take follow-up actions based on the circumstances and causes of each individual case, in accordance with the established procedures as stipulated in the CAD MOR guidelines. Only when all the required actions have been taken and adequately followed up by the organizations concerned would the MOR case be closed.

12. CAD has conducted a detailed review of those cases identified as long outstanding. It was noted that the investigations of all of them had been completed by the respective organisations and subsequently accepted by CAD. However, the database was not updated timely to reflect the situation when the Audit Commission conducted the audit on CAD. All those long outstanding cases are now closed.

(h) measures that CAD would take to ensure that follow-up actions on long outstanding cases are taken and the MOR database updated in a timely manner (paragraph 5.21)

13. CAD has introduced periodic MOR review meetings since November 2014 to ensure that each MOR case has been adequately followed up by the organisations concerned and actions taken by respective CAD officers are captured in the database in a timely manner.

(i) with reference to the experience gained on the MOR Scheme since the relevant guidelines were issued in 1999, the measures that CAD would take to improve the collation of the information for the MOR database, and subsequent analysis and follow-up actions with a view to improving air traffic safety

14. It is CAD's long standing pledge and commitment to sustain and improve the aviation safety standards of Hong Kong. With experience gained

from operating the MOR Scheme and in line with the latest global aviation developments, CAD has taken a number of measures in recent years, to improve the collation and usage of the information for the MOR database with the aim of achieving continuous improvement in aviation safety.

15. Apart from the efforts made by CAD in the monitoring and follow up of the individual MORs by taking immediate actions as necessary, CAD has in recent years, made positive use of the information from the MOR database for safety education and promotion purposes.

16. Through monitoring and analysis of the trends and follow-up actions, safety information is developed from the MOR database and it is disseminated to the aviation services providers and industry partners to promote knowledge of these occurrences so that others and the industry at large may learn from them. Specific advice, notices and safety publications are issued to provide the industry with relevant safety guidelines, recommendations and/or instructions. A few examples of such notices and publications are as follows :

(i) Flight Operations Notices (FONs) for airline operators in Hong Kong;
(ii) Airworthiness Notices (ANs) for airline operators and maintenance organizations in Hong Kong;
(iii) Air Navigation Service Provider (ANSP) Safety Newsletters for ANSPs in Hong Kong; and
(iv) Aeronautical Information Circulars (AICs) for the aviation community in general.

17. In addition, since 2013, CAD has established a holistic safety data review and analysis mechanism based on the available safety information, including the MOR data, in line with the latest global aviation developments. A safety committee comprising senior officers of different regulatory divisions of CAD was also established to regularly review and address any potential safety concerns and determine the actions required.

18. In conclusion, CAD agrees with the Commission on the need to strengthen the management of the MOR database and to improve the collation of the information for the MOR database so that it can provide accurate and up-to-date information to support MOR case management and trend analysis of

significant aviation safety issues. It is CAD's aim to continue to improve the MOR scheme and database with the ultimate objective of achieving continuous improvement in aviation safety.

Civil Aviation Department
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