Securing the safety of our airport

CIVIL AVIATION DEPARTMENT

Safety and security are essential for the smooth operation of every airport. These two aspects continuously face new challenges arising from the rapid growth of the civil aviation industry.

In facing these new challenges, systematic aerodrome safety management is pivotal to the well-being of the civil aviation industry. The airport operator is therefore required to establish and implement a safety-management system at the airport.

Aviation security, in the wake of the September 11 terrorist attacks in the United States, instantly became a top priority. The threat of attack is now seen as a real and imminent danger in the aviation industry worldwide.

To ensure continuity of air traffic services, a Backup Air Traffic Control Complex is in place at the Hong Kong International Airport (HKIA). This serves to minimise any adverse impacts on air transport in the event of any unexpected circumstances that may render the main facility inaccessible.

Leading status in aviation recognised worldwide

Hong Kong's leading status in the global aviation arena is recognised with the unanimous elections of senior Hong Kong aviation officials to chair two significant international meetings respectively in seven months.

In September 2003, the former Director-General of Civil Aviation, Mr Albert Lam, was elected unanimously as the Chairman of the International Civil Aviation Organization (ICAO) 11th Air Navigation Conference by the 529 delegates from 112 countries who attended the conference in Montreal, Canada. It is the first time in half a century that such a significant international aviation conference has been chaired by a Chinese. Mr Lam was nominated by the United States as the Chairman and the nomination was seconded by Germany and Japan.

The Conference was of extreme importance in establishing a roadmap for future air traffic management (ATM). It aimed to discuss the development planning of the global ATM system in the coming 20 to 25 years, and will guide the development and implementation of an interoperable, seamless and global ATM system for the 21st century.

In March 2004, Hong Kong's leading position in the international aviation world was again recognised with the unanimous election of Chief Safety Officer (Security), Mr Simon Li, as the committee chairman of a major international meeting on airport facilitation at the 12th Session of the Facilitation Division Meeting of the ICAO in Cairo, Egypt.

Arrangement in place to handle emergencies

Two years ago, CAD initiated discussions with its Mainland counterparts with a view to establishing a co-operation arrangement and procedures with which resources in the Mainland can be mobilised in the event of aircraft emergencies.

Both parties recognise the importance of carrying out investigation and Search and Rescue (SAR) with the greatest diligence and with the full co-operation of the concerned parties.

In April 2004, the former Director-General of Civil Aviation, Mr Albert Lam signed a Co-operation Arrangement on Aircraft Accident Investigation and Search and Rescue with the Director-General, Office of Aviation Safety, the General Administration of Civil Aviation of China (CAAC), Mr Wang Sui-fa in Beijing.

The Co-operation Arrangement was signed to promote, develop and reinforce the co-operation of Hong Kong and the Mainland in carrying out investigation of aircraft accidents, serious incidents and SAR; and to facilitate mutual communications and exchange of technical information in this connection.

To further the co-operation of both sides, assistance from the Mainland will be sought for the purpose of SAR and salvage of the wreckage should an aircraft accident or serious incident occur in the Hong Kong Flight Information Region, which covers an area of 276,000 square kilometres extending over the South China Sea.

Both Hong Kong and the Mainland will also be responsible for ensuring that an investigation into the accident or serious incident is organised and shall act as a "Rescue Coordination Centre" according to the location of accident/serious incident and the aircraft state/place of registry as stated in the Co-operation Arrangement.

Systematic aerodrome safety management

Committed to a safe and efficient air transport system, CAD promulgated the requirement of an organised and systematic way to manage safety at an airport, the Safety Management System (SMS), as part of the aerodrome licensing requirements.

The stipulation of the requirement for an SMS in the Aerodrome Licensing Requirements Document (ALRD) in Hong Kong in 1996 was far ahead of an amendment to the Annex 14 to the Convention on International Civil Aviation – Aerodromes, which became applicable in November 2001. Through this amendment, the ICAO introduced a new requirement for states to have in operation an SMS at certified aerodromes.
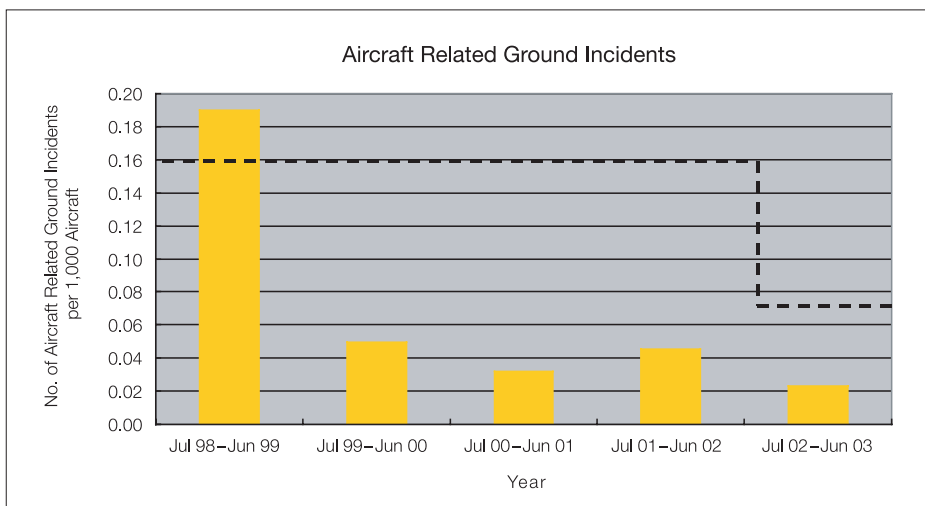
At the same time, the ICAO also recognised Hong Kong's requirements and framework for an SMS stipulated in the ALRD and made reference to it in the ICAO's Manual on Certification of Aerodromes, which provides guidance to aviation authorities on aerodrome certification procedures.

"The ICAO's recognition sends an important message to the global aviation community that Hong Kong is a world leader in aerodrome safety management," CAD Senior Operations Officer, Mr Edmund Wong said.

"Nurturing a culture of responsibility is very important. Operators are now more capable of managing various safety aspects in a systematic manner when performing airport operations," Mr Wong said.

"Our main concern is the safety of passengers and those in the line of duty."

Targets to determine the safety performance of the operational and maintenance activities at HKIA were established by the Airport Authority Hong Kong (AAHK). For example, in April 2000, it set the safety performance target for aircraft-related ground incidents by referring to the previous incident records at the airport and established a target of not more than 0.159 occurrences per 1,000 aircraft movements. With the continuous downward trend in the occurrence of these incidents and as a process of continuous improvement in safety management, in August 2002 the target of the number of occurrences per 1,000 aircraft movements was revised down to not more than 0.07.

Aircraft Related Ground Incidents

Year	No. of Aircraft Related Ground Incidents per 1,000 Aircraft
Jul 98–Jun 99	0.19
Jul 99–Jun 00	0.05
Jul 00–Jun 01	0.03
Jul 01–Jun 02	0.046
Jul 02–Jun 03	0.023

The Airport Authority's safety performance target for aircraft-related ground incidents was 0.159 from April 2000 to July 2002 and was revised down to 0.07 in August 2002.

September 11 terrorist attacks

The attacks on the World Trade Center in 2001 were a wake-up call for the civil aviation industry. In that year alone, 3,525 people were killed in reported acts of unlawful interference with civil aviation. To defend the industry against terrorists, the ICAO, with 188 contracting states, introduced more stringent baggage screening at airports, part of an immediate tightening of aviation security.

It was only after the events of September 11 that the ICAO decided to require airport authorities to achieve 100% hold baggage screening by the first day of 2006. Yet in Hong Kong, 100% baggage screening had been carried out since the 1990s when the former Kai Tak International Airport was in operation.

"Hong Kong has been applying 100% screening of baggage since our operations at the old airport at Kai Tak," the former Director-General of Civil Aviation, Mr Albert Lam, said. "This practice continued to be applied when we relocated to the new airport. The modus operandi were modified and more sophisticated equipment was deployed."

When the airport was relocated to Chek Lap Kok in 1998, the airport operations were transferred to the AAHK, but the department took on the role of regulator to ensure that the AAHK complied with the requirement.

"In 2002, HKIA handled 16.7 million departing and transfer passengers and screened more than 19 million pieces of baggage. Full screening of baggage will no doubt give the travelling public additional confidence in the security and safety of travel," Mr Lam said.

Leading expertise in baggage screening applauded

Recognising Hong Kong's foresight and pioneering expertise in the field, the Asia-Pacific Economic Co-operation (APEC) invited the CAD to host a three-day Transportation Working Group Symposium. The symposium, entitled "Promotion of Effective 100% Baggage Screening", was held in August 2003.

Over 100 representatives from 13 APEC member economies attended the symposium to share their knowledge and experiences. During the panel discussions and the following workshop, security experts introduced state-of-the-art technology and screening equipment, requirements in human resources in respect of recruitment, training and quality control in operating equipment, and airport design to cater for the various modes of screening. CAD staff joined one of the discussion sessions to share their expertise with other delegates.

Mr Lam said that following the introduction of additional security measures, both on the ground and in the air, air traffic in the Asia-Pacific region had regained momentum in the past two years.

High priority placed on screening

According to the ICAO statistics, 532 million people travelled by air on international services in 2001. The International Air Transport Association forecasts that the number of international passengers will grow to 656 million by 2006 and 800 million by 2011, with the China market having ample room for growth.

"Airlines have placed a high priority on safety and security in travel; so do the passengers when they choose which airlines to fly with. Screening of hold baggage is one of the most important security control measures in ensuring that no restricted articles that could be used for unlawful interference are carried on board," Mr Lam said.

A five-layered baggage-screening process ensures a high degree of security at Hong Kong International Airport.

To ensure high standards of security and efficiency, HKIA employs a state-of-the-art baggage-screening system, which screens over 52,000 pieces of baggage a day. Once a bag or suitcase is checked in, it goes through a backstage screening process of a maximum of five levels. Consisting of both manual and computerised operations, the screening process is accurate and reliable.

"Looking ahead, we are facing a growing challenge from an increasing number of travellers who bring with them more baggage in various sizes that we have to screen," Mr Lam said. "These passengers also demand greater efficiency, which puts pressure on the airports and airlines to process and screen the luggage faster.

"The introduction of very large aircraft such as the Airbus A380, which can carry more than 550 passengers, poses further challenges in completing the screening of luggage to cope with the passengers' requirements for speedy embarkation."

Innovative backup facilities available

To cater for unforeseen circumstances such as fire or other hazards which require the evacuation of the Air Traffic Control Centre and Aerodrome Tower, a backup Air Traffic Control Centre and Aerodrome Tower, which could handle a percentage of the normal traffic, was built and has since been maintained in a state of readiness at all times. The operations are independent to the main facilities such that failure of the equipment in one will not affect those in the other. It is located within walking distance from the main tower such that the time for switch over is minimal. The backup facility is not an international requirement and that is why only a few airports have twin control towers. In fact, HKIA is the only airport in the Asia-Pacific region that has a Backup Air Traffic Control Complex. This backup facility is also used for controller training and equipment development purposes.

One of the world's safest airports

Hong Kong is a major international and regional aviation centre. With dedicated staff and state-of-the-art technology operating under a comprehensive and systematic regulatory regime of safety and security, HKIA is among the best, busiest and, most importantly, safest airports in the world.

In April 2004, it was chosen as the world's best airport for the fourth consecutive year by the largest independent survey of air passengers of its kind conducted by Skytrax Research in London. In May 2003, it was named "Cargo Airport of the Year 2003" by the London-based air cargo trade publication, Air Cargo News, the second consecutive year.