香港民航處
Civil Aviation Department Hong Kong

# 二零零八至零九年度報告 Annual Report 2008-2009

## 我們的理想

致力於安全及有效率的航空系統

## 我們的使命

- 奠定香港作為國際及區域頂尖航空中心的地位
- 維持有效法律制度，以實施根據適用國際民航公約制訂的相關條文
- 借助先進航空導航系統科技，推動航空業發展
- 確保航空交通管理服務及系統建立高水平的安全標準，並能達到和維持相關標準
- 在香港飛行情報區內維持既安全、快捷又秩序井然的航空交通
- 在香港飛行情報區內提供航空資訊服務及警報服務
- 香港搜救區內飛機出現緊急情況和發生意外時，協調搜索和救援行動
- 制訂和貫徹執行機場安全及航空保安標準
- 確保香港註冊的飛機和以香港為基地的航空公司符合既定的適航及運作標準
- 確保香港認可的飛機維修機構符合國際標準
- 確保香港註冊的空勤人員和飛機維修工程師符合國際標準
- 制訂策略並積極採取措施，確保所有航機運作符合相關可承受的安全水平，盡量減低航空安全風險
- 監察航空公司有否遵守雙邊民用航空運輸協定
- 制訂有效措施以減少飛機噪音對社區的影響
- 以公正持平方式進行意外調查，確定肇事原因及實況，以保障人命安全和防止同類意外再次發生

## 我們的信念

- 安全至上
- 專業精神
- 講求效率
- 嚴守標準
- 誠信可靠

## Our Vision

**Committed to a Safe and Efficient Air Transport System**

## Our Mission

- Positioning Hong Kong as a leading centre of international and regional aviation
- Maintaining an effective legal system for the implementation of relevant provisions under applicable civil aviation related international conventions
- Facilitating the growth of aviation through the application of leading edge technology in Air Navigation Systems
- Ensuring that a high standard of safety in the provision of air traffic management services and systems is established, achieved and maintained
- Maintaining a safe, orderly and expeditious flow of air traffic within the Hong Kong Flight Information Region
- Providing aeronautical information service and alerting service within the Hong Kong Flight Information Region
- Coordinating search and rescue operation in the event of aircraft emergencies and accidents within the Hong Kong Search and Rescue Region
- Setting and enforcing aerodrome safety and aviation security standards
- Ensuring compliance with established airworthiness and flight operations standards by Hong Kong registered aircraft and locally based airlines
- Ensuring compliance with international standards by Hong Kong approved aircraft maintenance organisations
- Ensuring compliance with international standards by Hong Kong licensed flight crew and aircraft maintenance engineers
- Developing strategies and implementing proactive measures to minimise safety risks to aviation by ensuring that all operations are conducted in conformity with the respective acceptable levels of safety
- Monitoring compliance by airlines with bi-lateral Air Services Agreements
- Developing workable measures to minimise the impact of aircraft noise on local communities
- Conducting fair and impartial accident investigations to determine the circumstances and causes of accidents with a view to the preservation of life and avoidance of accidents in the future

## Our Values

- Utmost concern for safety
- Professionalism
- Efficiency and effectiveness
- Compliance with standards
- Integrity

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# 處長報告
# DIRECTOR-GENERAL'S REVIEW

自二零零四年四月本人出任民航處處長以來，這是第五份回顧民航處工作的年報。過去五年，航空業不論在飛機升降量、客貨量，以至營業中航空公司及航站數目，均穩健增長。民航處在協助業界應付日增的服務需求方面，亦取得長足進展。為進一步鞏固香港的航空領導地位，我們積極舉辦國際及區域會議，並與海外機關訂立合作安排。為未雨綢繆，配合航空交通持續增長，以及更妥善履行規管者及航空交通管制(空管)服務提供者的職責，我們正着手更換現有空管系統和興建民航處新總部，應付直到二零二五年及更長遠的航空交通需求。

二零零八/ 零九年度，受到金融海嘯及隨之而來的經濟不景氣影響，航空業承受沉重壓力。二零零八年九月全球金融危機發生後，增長情況全面逆轉。商務及觀光旅遊，特別是高檔市場繼續收縮。香港國際機場(機場)的飛機總升降量跌至296 183架次，較上一個財政年度下跌1.1%。客運量亦下跌2.3%至4 630萬人次。航空貨運量跌幅尤為顯著，大減10%，跌至340萬噸。情況最嚴峻時，每月貨運量更錄得高達29%的跌幅。

I am very pleased to report that this is the fifth annual review since my appointment as the Director-General of Civil Aviation in April 2004. Over the past five years, the aviation sector has enjoyed a very wholesome growth in terms of aircraft movements, passenger and cargo throughputs, number of operating airlines and destinations. The Department has achieved good progress in facilitating the industry to cope with the increasing service demand. To further strengthen Hong Kong's leading position in aviation, we have played a more active role in organising international and regional conferences and establishing co-operative arrangements with overseas authorities. To go one step ahead of the continuous traffic growth, and to better perform the roles both as a regulator and an air traffic control (ATC) service provider, actions are now in hand to replace the existing ATC system and develop a new CAD Headquarters which will cater for the demand up to at least the year 2025.

In 2008/09, the aviation industry was subject to tremendous pressure as a result of the financial tsunami and the subsequent economic downturn. The growth trend was utterly reversed following the global financial crisis in September 2008. Business and leisure travel, in particular the premium market, continued to shrink. The total number of aircraft movements at the Hong Kong International Airport (HKIA) dropped to 296 183, representing a decline of 1.1% over the last financial year. Passenger throughputs also dropped by 2.3% to 46.3 million. Contraction in air cargo volume was particularly prominent, with a significant decline of 10% to 3.4 million tonnes. During the most difficult time, a drop as much as 29% was recorded on monthly cargo throughputs.

Despite the weakening traffic demand, the Department was constantly looking for ways to improve efficiency and service standard. During the period under review, we have achieved a number of important milestones resulting in benefits to the aviation industry as a whole.

The most notable one was the amendment to the Air Navigation (Hong Kong) Order 1995 (AN(HK)O), which came into effect on January 1, 2009. Legislations relating to airworthiness, aircraft equipment, safety management, data preservation, personnel licensing, multi-crew pilot's licence and Article 83 bis of the Chicago Convention would be updated to keep abreast of the latest requirements of the International Civil Aviation Organization (ICAO) and best practices adopted by other major civil aviation authorities.

雖然空運需求放緩，本處人員從未鬆懈，依然設法提高效率及服務水平。本報告年度內，我們達到多項主要目標，令航空業整體受惠。

最值得留意的是，《1995年飛航(香港)(修訂)令》於二零零九年一月一日生效。有關適航、飛機設備、安全管理、數據保存、簽發航空人員執照、多機組飛行員執照，以及《芝加哥公約》第83分條的法例亦會更新，以配合國際民用航空組織(國際民航組織)最新規定，以及其他主要民航機關採用的最佳做法。

二零零八年四月，民航處成立新的航空交通工程及標準部，取代前工程及系統部，以便匯集空管、電子工程、資訊科技及監管航空交通管理的專家，進一步提升香港空管系統的協調及運作效率。

為確保航空公司善用獲配的機場升降時段，本處在二零零八年七月接辦航班協調員的工作，並根據《國際航空運輸協會全球航班協調指南》，採用中立、透明及公正的機制，協調航班。

民航處亦與業界緊密合作，推行安全管理系統，透過危險及風險管理，有系統地持續改善航空安全。《1995年飛航(香港)(修訂)令》加入這項國際民航組織的最新要求，規定香港所有航空公司及維修機構最遲在二零零九年一月一日設立安全管理系統。各相關機構都順利推行該系統，並得到本處認可。

二零零八年八月，民航處與新加坡民航局簽訂《航空維修技術安排》，延續雙方在二零零四年簽署的諒解備忘錄，把兩地互相確認航空維修機構的資格覆蓋範圍擴大，涵蓋所有飛機、引擎及組件的維修。香港至今已與中國內地、澳門特別行政區、加拿大及新加坡訂立相若的飛機維修機構互認安排。

Within the Department, a new Air Traffic Engineering and Standards Division was established in April 2008 to replace the former Engineering and Systems Division. It was an initiative to consolidate experts from ATC, electronic engineering, information technology, and air traffic management regulation with a view to further enhance co-ordination and operational efficiency in maintaining our ATC services.

To ensure efficient utilisation of slot allocation at the HKIA, the Department took over the role of Schedule Coordinator in July 2008 and has adopted a neutral, transparent and non-discriminatory schedule coordination mechanism in accordance with the International Air Transport Association (IATA) Worldwide Scheduling Guidelines.

The Department was also working closely with the industry to initiate the implementation of Safety Management System (SMS), which adopts a systematic way to continually improve aviation safety through hazard and risk management. This latest ICAO requirement was mandated under the amended AN(HK)O of which all Hong Kong airline operators and maintenance organisations must have in place their SMS by January 1, 2009. I am pleased to report that all the organisations involved had successfully implemented their SMS with CAD's acceptance.

In August 2008, the Department signed a Technical Arrangement on Aviation Maintenance with the Civil Aviation Authority of Singapore, an extension of the Memorandum of Understanding signed by both parties back in 2004. The scope of mutual recognition of approvals of maintenance organisations was expanded to cover all aircraft, engine and component maintenance. To date, Hong Kong has made similar mutual recognition arrangements on aircraft maintenance with Mainland China, Macao SAR, Canada and Singapore.

As regards ATC operations, Hong Kong introduced a new reduced longitudinal separation standard on Airways L642 and M771 in July 2008 to further enhance the capacity of the two air routes and increase the opportunities for flights to cruise at their optimum levels. The declared runway capacity at the HKIA was progressively increased to 56 movements per hour since October 2008 and 57 since March 2009.

# 處長報告
# DIRECTOR-GENERAL'S REVIEW

至於空管運作，二零零八年七月，我們縮小L642及M771航路的縱向間隔標準，進一步提高兩條航路的容量，並讓航班可在最佳高度層巡航。機場的跑道容量自二零零八年十月以來遞增至每小時56班，自二零零九年三月以來再增至每小時57班。

本處亦全力支持奧運會及殘疾人奧運會的馬術賽事，准許航機運載奧運會火炬，又於沙田、雙魚河比賽場地及奧運村設立飛行限制區，盡量減低賽事受到的干擾。

此外，二零零九年二月二十六日至三月六日，國際民航組織到港進行全球安全監察審查計劃，香港取得美滿成績，令人鼓舞。本港安全監察系統成效卓越，有賴民航處與業

The Department also gave full support to the Olympic and Paralympic Equestrian Events. An exemption was granted for the Olympic Game torch to be carried on board and restricted flying zones were imposed at the competition venues at Shatin and Beas River and the Olympic Village to minimise interruptions during Event periods.

It is also worth pointing out that Hong Kong achieved a very encouraging result in the Universal Safety Oversight Audit Programme conducted by ICAO from February 26 to March 6, 2009. With the concerted efforts of the Department and all industry partners to maintain a highly effective safety oversight system, Hong Kong achieved a remarkable score of 94.47% as compared to the global average of 57%. Nevertheless, the Department will continue

界伙伴群策群力。本港安全監察系統得分為94.47%，與全球平均得分57%相比，成績驕人。民航處會繼續與國際民航組織及業界伙伴緊密合作，維持並提升香港航空系統的安全標準。

本處現正推展更換空管系統和興建新總部大樓計劃。計劃對維持航空業的長遠發展，以及保持香港的競爭優勢，至為重要。新大樓採用「設計和建造」模式興建，計劃規模龐大複雜，但進展良好。

本署同仁多年來緊守崗位，敬業樂業，表現出色，謹此衷心致謝。香港能夠維持安全高效的航空運輸系統，全賴業界伙伴對本處一直鼎力支持，通力合作，在此深表謝忱。

本人深信民航處會一如既往，精益求精，並與業界攜手合作，致力維持香港作為國際及區域航空樞紐的地位。

民航處處長
**羅崇文太平紳士**

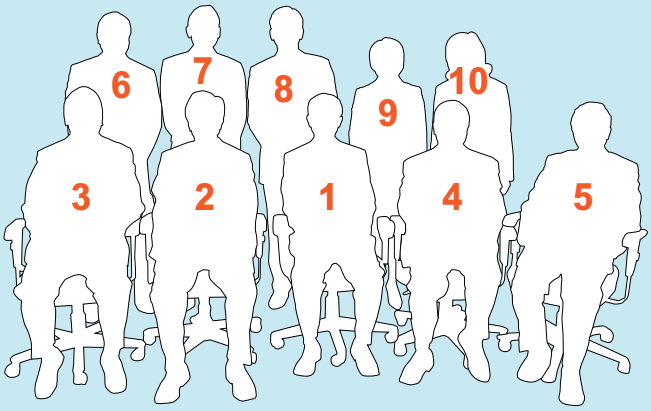
to work closely with ICAO and all industry partners to sustain and improve the safety standards of the Hong Kong aviation system.

The CAD Project to replace the ATC system and develop a new CAD Headquarters was already in the pipeline. This project is vital to sustain the long-term growth of the aviation industry and to keep Hong Kong at the cutting edge of the competition. A design-and-build (D&B) approach was adopted for construction of the new Headquarters. Despite its scale and complexity, the project was making steady progress.

Last but not least, I would like to express my heartfelt appreciation to all colleagues for their outstanding performance, professionalism and commitment shown over years. Many thanks also to our industry partners for their unfailing support and co-operation, which are essential to maintaining a safe and efficient air transport system in Hong Kong.

This concludes my fifth Director-General's review and I am confident the Department will continue to strive for excellence and work with the industry in maintaining Hong Kong's status as an international and regional aviation hub.

**Mr Norman Lo Shung-man, JP**
Director-General of Civil Aviation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# 組織圖
# ORGANISATION CHART

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Departmental Secretary
Mr Albert Chow Lai-keung

* 意外調查部
副總意外調查主任
* Accident Investigation Division
Deputy Chief Inspector of Accidents

意外調查
* 民航處處長亦是總意外調查主任。意外調查部只在有需要時才運作，屆時會從其他分部抽調經特別訓練人員作支援。

Accident Investigation
* The Director-General of Civil Aviation is also Chief Inspector of Accidents. The Accident Investigation Division is mobilised only when required by drawing specially trained staff from other Divisions.

# 大事紀要
# CALENDAR OF EVENTS

## 2008

### 二零零八年四月一日 April 1, 2008

航空交通工程及標準部成立。

The Air Traffic Engineering and Standards Division was established.

香港機場航班協調辦公室成立。

The Hong Kong Schedule Coordination Office was established.

### 二零零八年四月二十日 April 20, 2008

民航處的航空交通管制人員刷新香港國際機場航機升降架次的紀錄，處理了共971架次航機升降，令受熱帶氣旋浣熊所影響的航空交通得到疏導。

Air traffic control staff of the Civil Aviation Department handled a record high of 971 movements at Hong Kong International Airport to ease air traffic stranded by Tropical Cyclone Neoguri.

### 二零零八年四月三十日 April 30, 2008

民航處發出危險品豁免與中國國際航空公司，以便載運奧運火炬進出及飛越香港。

An exemption was granted for the Olympic Game torch to be carried onboard flights operated by Air China to, from or over Hong Kong from the general dangerous goods requirements.

### 二零零八年六月五日 June 5, 2008

飛前放行指示數據鏈路服務提升為雙向傳輸。

The new two-way Pre-Departure Clearance datalink service was launched.

### 二零零八年六月二十三日 June 23, 2008

鑑於甘泉香港航空有限公司已進行清盤，民航處撤銷該公所持有的航空運輸企業經營許可證。

CAD revoked the Air Operator's Certificate held by Oasis Hong Kong Airlines Limited which had gone into liquidation.

### 二零零八年七月二日 July 2, 2008

L642及M771航路實施縮小縱向間隔標準。

Application of Reduced Longitudinal Separation Standard on Airways L642 and M771.

## 二零零八年七月六日 July 6, 2008

民航處接任為香港國際機場的航班協調員。

CAD took over the role of Schedule Coordinator for the Hong Kong International Airport.

## 二零零八年七月十四至十六日 July 14-16, 2008

民航處主辦國際民航組織安全監督審計有關籌備、執行與報告的區域研討會。

CAD hosted the Regional Seminar on the Preparation, Conduct and Reporting of an ICAO Safety Oversight Audit.


## 二零零八年七月二十六至九月十四日 July 26 - September 14, 2008

民航處在沙田和雙魚河奧運及殘障奧運馬術比賽場地，及奧運選手村實施禁飛區。

CAD imposed restricted flying zones at the competition venues for the Olympic and Paralympic Equestrian Events at Shatin and Beas River and Olympic Village.

## 二零零八年八月二十九日 August 29, 2008

民航處與新加坡民航局在新加坡簽訂了航空器維修技術安排諒解備忘錄。

The CAD and the Civil Aviation Authority of Singapore signed a Memorandum of Understanding on "Technical Arrangement on Aviation Maintenance" in Singapore.


## 二零零八年九月二十六日 September 26, 2008

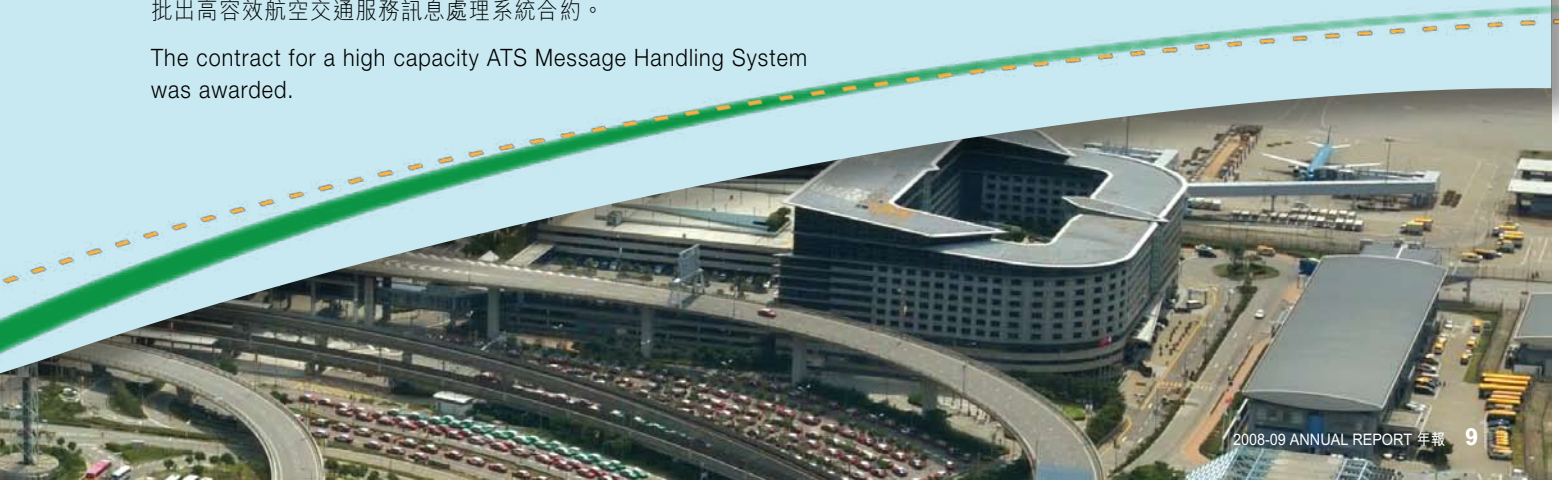
實施修訂的平行跑道運作程序，務求在抵港航機需求遠高於跑道容量時，盡量提高香港國際機場的抵港航機容量。

Revised parallel runway operating procedure was introduced to maximise the arrival capacity at Hong Kong International Airport when demand significantly exceeds the arrival runway capacity.

## 二零零八年十月十日 October 10, 2008

批出高容效航空交通服務訊息處理系統合約。

The contract for a high capacity ATS Message Handling System was awarded.



# 大事紀要
# CALENDAR OF EVENTS

### 二零零八年十月二十八至三十日　October 28-30, 2008

搜索及救援研討會及演習。

Search and Rescue Seminar and Exercise.


### 二零零八年十月　October 2008

香港國際機場雙跑道運作容量由每小時55班增至56班。

The declared runway capacity for dual runway operations increased from 55 to 56 movements per hour.

### 二零零八年十一月三日　November 3, 2008

民航處要求機場管理局實施一項新保安措施，在離境旅客進入離境檢查大堂的機場禁區前，核實旅客登機證及旅遊證件。

CAD required AAHK to implement an enhanced security measure whereby AAHK verified the boarding passes of passengers against their travel documents before they entered the restricted area.

### 二零零八年十一月二十一日　November 21, 2008

指定《危險品(航空托運)(安全)規例》訂明的貨運代理人最新培訓要求在二零零九年七月一日生效的公告刊憲。

The gazette notice was published for the commencement of a training regulation for forwarders under the Dangerous Goods (Consignment by Air) (Safety) Regulations on 1 July 2009.

### 二零零八年十二月一日 December 1, 2008

啟用新的航空交通管制雷達模擬系統，供人員培訓之用。

The new ATC Radar Simulator was commissioned and used for air traffic controller training.

### 二零零八年十二月三十日 December 30, 2008

珠三角空中交通管理規劃與實施專題工作組第五次會議在深圳舉行。

The 5th meeting of the "PRD Air Traffic Management Planning and Implementation Supervisory Group" was held in Shenzhen.

## 2009

### 二零零九年一月十三日 January 13, 2009

完成為期六個月的改進型地面活動引導和控制系統運作評估。

The 6-month operational evaluation of Advanced Surface Movement Guidance and Control System (A-SMGCS) was completed.

### 二零零九年二月二十六日至三月六日 February 26 - March 6, 2009

國際民航組織在香港進行全球安全監察審查。

ICAO conducted an audit in Hong Kong under the Universal Safety Oversight Audit Programme.

### 二零零九年三月十二日 March 12, 2009

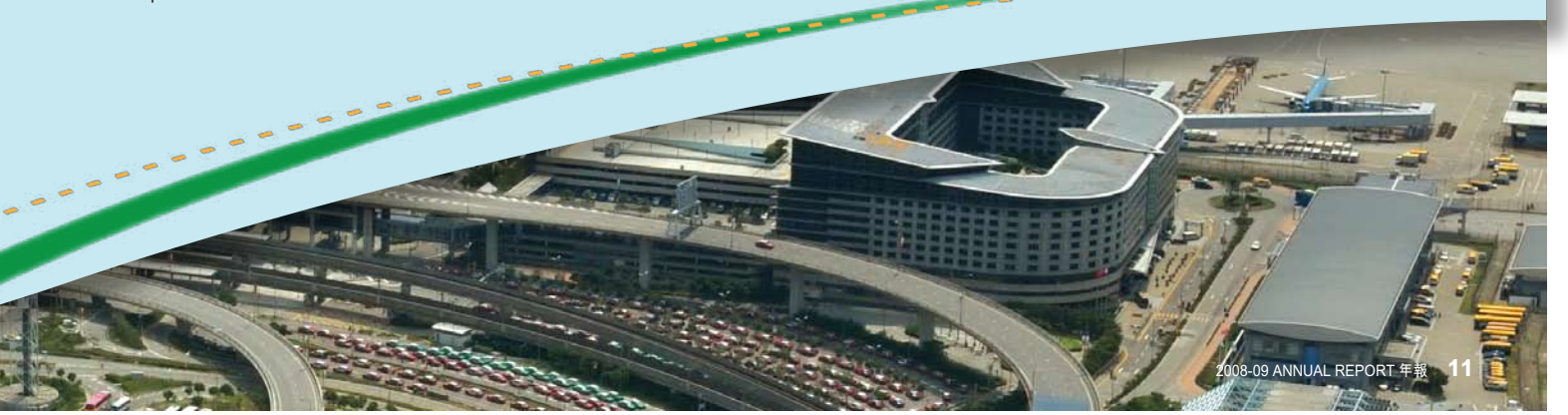
重置東面扇區的空中等候區，藉此提高着陸率。

The eastern airborne holding pattern was relocated to maximise the landing rate.

### 二零零九年三月 March 2009

香港國際機場雙跑道運作容量由每小時56班增至57班。

The declared runway capacity for dual runway operations increased from 56 to 57 movements per hour.



# 航空交通統計
# AIR TRAFFIC STATISTICS

## 過往五年國際民航交通概況
## Five-Year Civil International Air Traffic
*(二零零四年四月至二零零九年三月)(April 2004 – March 2009)*

| | 飛機升降次數 Aircraft Movement | | 乘客 Passenger | | 商業貨物 Commercial Cargo | |
|---|---|---|---|---|---|---|
| 財政年度 Fiscal Year | 升降次數 Movement | 升跌百分比 % Change | 人次 Number | 升跌百分比 % Change | 公噸 Tonnes | 升跌百分比 % Change |
| 2004-2005 | 242 421 | 27% | 37 431 980 | 39% | 3 142 751 | 15% |
| 2005-2006 | 270 069 | 11% | 40 607 239 | 9% | 3 473 456 | 11% |
| 2006-2007 | 282 953 | 5% | 43 864 612 | 8% | 3 575 482 | 3% |
| 2007-2008 | 299 617 | 6% | 47 433 535 | 8% | 3 809 177 | 7% |
| 2008-2009 | 296 183 | -1% | 46 328 005 | -2% | 3 426 614 | -10% |

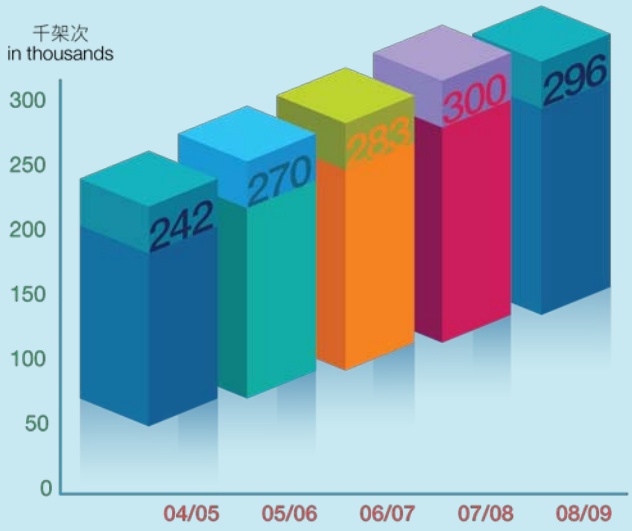
## 過往五年航空交通管理部處理的航班總數
## Five-Year Total Flights Handled by the Air Traffic Management Division
*(二零零四年四月至二零零九年三月)(April 2004 – March 2009)*

| 財政年度 Fiscal Year | 航班總數* Flights Handled* | 升跌百分比 % Change |
|---|---|---|
| 2004-2005 | 371 452 | 27% |
| 2005-2006 | 411 208 | 11% |
| 2006-2007 | 437 805 | 6% |
| 2007-2008 | 461 693 | 5% |
| 2008-2009 | 445 089 | -4% |

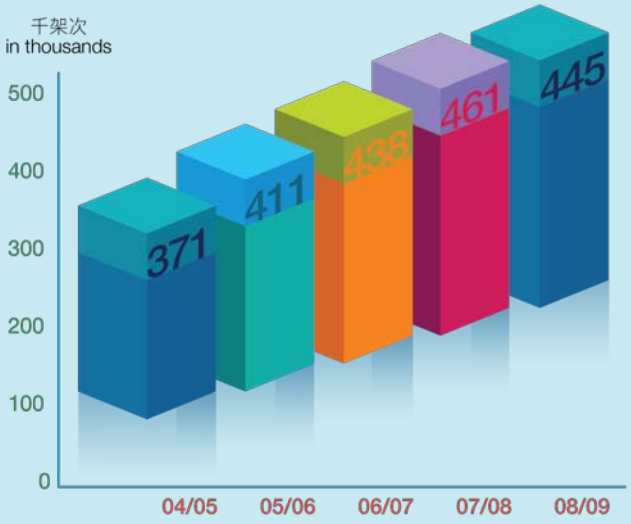
*註釋：「航班總數」包括在香港國際機場升降的國際及本地航班、飛越香港飛行情報區的航班及進出澳門國際機場的航班。以上航班皆由航空交通管理部處理。

Notes: "Flights Handled" include international and local aircraft movements at the Hong Kong International Airport, flights overflying the Hong Kong Flight Information Region and flights flying into and out of the Macau International Airport handled by the Air Traffic Management Division.

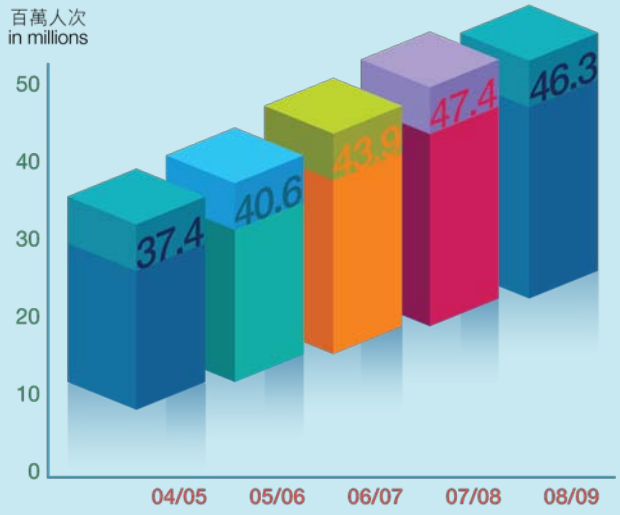
## 香港國際機場過往五年航機升降次數
## Five-Year Aircraft Movement at the Hong Kong International Airport



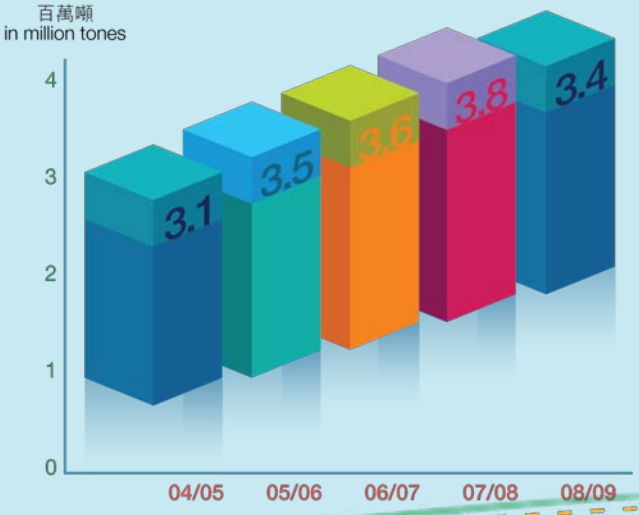

## 過往五年航空交通管理部處理的航班總數
## Five-Year Total Flights Handled by the Air Traffic Management Division




## 香港國際機場過往五年客運量
## Five-Year Passenger Traffic at the Hong Kong International Airport




## 香港國際機場過往五年貨運量
## Five-Year Cargo Traffic at the Hong Kong International Airport




# 航空交通管理
# AIR TRAFFIC MANAGEMENT

航空交通管理部負責在國際民用航空組織(國際民航組織)指定的香港飛行情報區內，提供航空交通管制(空管)、飛行情報及飛機事故警報服務。

The Air Traffic Management Division (ATMD) is responsible for the provision of air traffic control (ATC) service, flight information service and alerting service within the Hong Kong Flight Information Region (FIR) as assigned by the International Civil Aviation Organization (ICAO).

# 航空交通管理
# AIR TRAFFIC MANAGEMENT

## 航空交通運作

本財政年度內，本部共處理了297 516架次在香港國際機場升降的國際及本地航班，並為105 528架次飛越香港飛行情報區，以及42 045架次進出澳門國際機場的航班提供空管服務。與上一財政年度比較，由於二零零八年年中以後航空旅客及貨運量受全球金融海嘯影響而下降，在香港國際機場升降及飛越香港的航班分別減少1%和6.1%。

### *跑道升降容量*

隨著航空交通管理和空域管理不斷改善，香港國際機場雙跑道運作容量自二零零八年十月起遞增至每小時56班，在二零零九年三月進一步遞增至每小時57班。

*機場雙跑道運作容量自二零零九年三月遞增至每小時57班。*
*The declared runway capacity for dual runway operations was increased to 57 movements per hour since March 2009.*

### *空管主任執照考試和覆核*

為維持高水準的空管，本部的訓練及安全組每年安排航空交通管制主任(空管主任)的各類執照考試。就塔臺管制、進場管制和區域管制這三個組別進行的考試共有157次。

此外，本部向考核合格的人員頒發助理管制員證書、氣象觀察員證書、導師證書和搜索及拯救證書。

## AIR TRAFFIC OPERATIONS

During the financial year, the Division handled a total of 297 516 international and local aircraft movements at the Hong Kong International Airport (HKIA). In addition, the Division handled 105 528 flights overflying the Hong Kong FIR and 42 045 flights into and out of the Macao International Airport. Compared to the previous financial year, the number of aircraft movements at the HKIA and overflights decreased by 1 per cent and 6.1 per cent respectively. The overall decrease in movement was mainly due to the reduced demand for passenger and freight capacity as a result of the global financial tsunami from mid 2008.

### *Runway capacity*

With the continued enhancement to air traffic management and airspace management, the declared runway capacity was progressively increased to 56 movements per hour on dual runway operations since October 2008 and 57 movements per hour since March 2009.

### *Annual Examinations and Revalidations on ATCO Ratings*

To ensure a high standard in ATC operations, the Training and Safety Section of the Division carried out annual practical examinations on ratings held by Air Traffic Control Officers (ATCO). A total of 157 practical examinations were conducted in the three control streams - Aerodrome, Approach and Area Control.

In addition, the Division also issued Assistant Controller Certificates, Meteorological Observer Certificates, Instructor Certificates, Search and Rescue Certificates to officers who have attained their respective qualifications.

## 招聘及培訓航空交通管制人員

### *招聘見習航空交通管制主任*

為應付預期的交通增長及中長期的人事升遷需求，空管人員的招聘和培訓程式必須審慎管理。由於本地就業市場欠缺符合相關資歷的人才，一般而言，民航處會在本地招聘見習航空交通管制主任(見習空管主任)，經過專門培訓後，再晉升為空管主任。申請人須經過三個甄選步驟 — 首先是才能測驗的筆試，接著是面試，最後在評估中心進行一系列深入的認知能力及性格評估測試。

*空管人員在控制塔模擬器內接受訓練。*
*Air Traffic Control staff attending training in the Control Tower Simulator.*

見習航空交通管制主任由入職至可全面執行各項空管工作，須接受嚴格訓練，過程漫長。各階段的訓練單元需要周詳規劃，以令見習空管主任可達致表現進展基準。為符合簽發執照的條件，各訓練單元均會提供課堂理論講座，然後進行模擬器實習訓練，最後讓見習空管主任在導師的指導下，處理「實況」航空交通，直至通過所有評核考試為止。

為加深公眾和求職人士對空管行業的認識，民航處積極參與每年舉行的「教育及職業博覽」、在大學舉辦就業講座、並在年內定期安排學生參觀部門的空管設施。

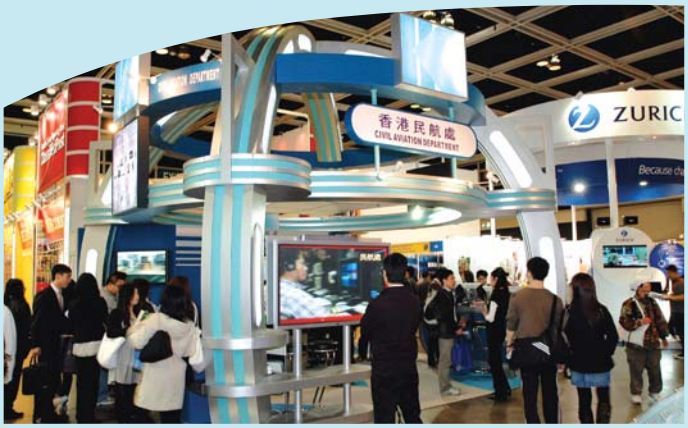
## RECRUITMENT AND TRAINING OF AIR TRAFFIC CONTROL STAFF

### *Recruitment of Student Air Traffic Control Officer*

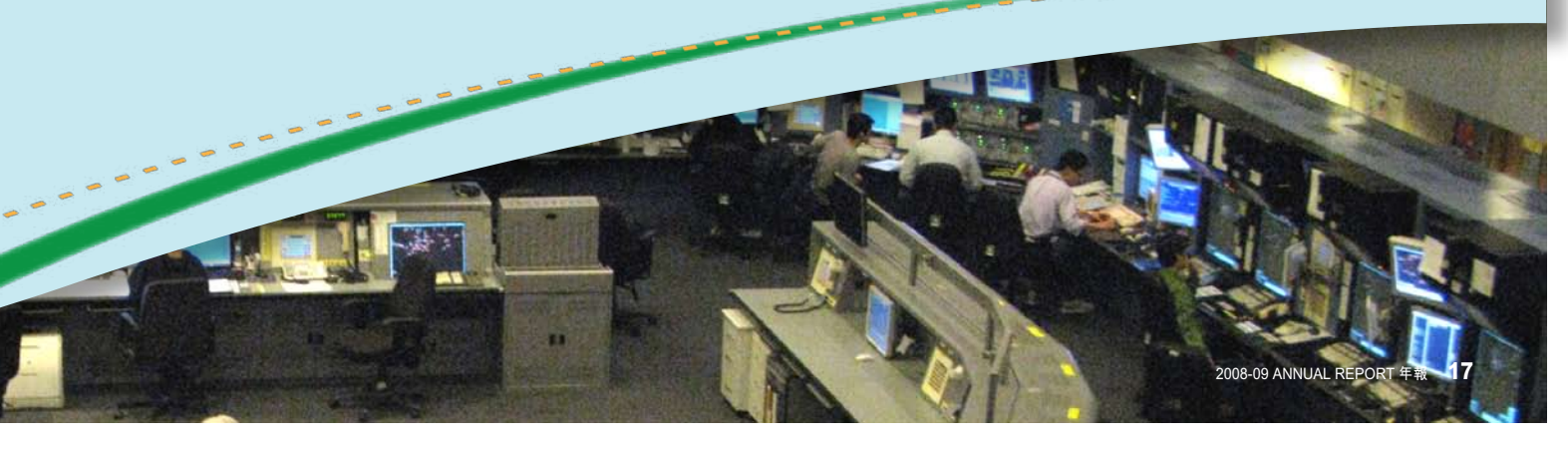
The recruitment and training of ATC staff have to be carefully managed to meet anticipated traffic growth and medium to long term manpower succession needs. Qualified human resources are not readily available in the local job market, and ATCOs are normally recruited locally as Student Air Traffic Control Officers (SATCOs) to receive the specialised training. Candidates will go through the following screening steps – an initial written aptitude test and interview. The short listed candidates will attend the "Assessment Centre", which is a series of in-depth assessment tests on cognitive ability and personality traits.

Student Air Traffic Controllers receive intensive training from entry until attaining full performance status. This is a lengthy process requiring carefully staged training modules to match the performance development benchmarks. To fulfil the licensing requirement, each module involves lectures in classrooms and then practice in the simulator before progressing to handling 'live' traffic under the guidance of an instructor until passing all validation check examinations.

With the objective of introducing the profession to the public and potential job applicants, CAD participated in the annual Education and Career Expo, held career talks in universities and conducted regular students visits to our ATC facilities throughout the year.




*民航處積極參與每年舉辦的教育及職業博覽。*
*The Department participated in the annual Education and Careers Expo.*



# 航空交通管理
# AIR TRAFFIC MANAGEMENT

截至二零零九年三月三十一日，在職的空管主任及航空交通事務員分別為252人及102人。

### *空管培訓*

職員培訓向來是本部的重點任務。年內，本部舉辦多項課程及在職訓練活動。除了已安排的內部空管培訓和有關飛機緊急事故的複訓課程外，本部與民航訓練中心合辦課程，以及為中國民用航空局(中國民航局)空中交通管理局人員舉辦技術交流計劃。

As of March 31, 2009, the strength of Air Traffic Control Officers and Air Traffic Flight Services Officer was 252 and 102 respectively.

### *ATC Training*

Staff development continued to be one of the major tasks for the Division. Courses of instruction and on-the-job training activities had been intensive all through the year. Apart from the programmed in-house ATC training and refresher courses on the handling of aircraft emergency situations, the Division also conducted courses in conjunction with the Civil Aviation Training Centre and offered attachment programme for Air Traffic Management Bureau officers of the Civil Aviation Administration of China (CAAC).

*培訓一名見習空管主任成為合資格的管制員，以擔任二級空管主任職位，通常大約需時五年。*
*Training of a SATCO to become a fully qualified controller at the rank of ATCO II normally takes around five years.*

培訓一名見習空管主任成為合資格的管制員，以擔任二級空管主任職位，通常大約需時五年。其間該名人員須取得多項不同範疇的空管資歷。此外，我們須為在職空管主任編排定期複訓，以確保他們一旦面對突發情況，如航機遇到惡劣天氣或其他緊急事故等，都能應付自如。年內，本處舉辦了25項專業範疇的空管培訓課程及兩項空管複訓課程，共有277名人員參加。受訓人員取得多項專業資格，及獲發44項空管執照。此外，九名見習空管主任接受基礎飛行訓練，14名參加海外航空交通管制課程，此類海外培訓活動可讓受訓人員增進航空知識，豐富有關空管運作的閱歷及有助在職發展。

年內，多名較資深的空管主任獲選接受進階搜救訓練，參與空管或飛機事故調查，以便承擔責任更重的職務。

### *其他培訓*

本部與民航訓練中心合辦「航空交通管理概論」課程。這課程舉辦多年，深受歡迎，學員包括航空相關界別的從業員及對航空有興趣的市民。

年內，本部亦為中國民航局東北空中交通管理局六名空管督導主任舉辦一項技術交流計劃。

## 新航空交通管制程式

### *L642及M771航路實施縮小縱向間隔標準*

二零零八年七月，香港在L642及M771航路實施縮小縱向間隔標準。同一巡航高度層航機之間的間距，由80海里減至50海里。實施新的縮小縱向間隔標準，不但可提升航道容量，更可讓航機有更多機會在最適當的高度層巡航。新程式在安全有效的情況下順利實施。

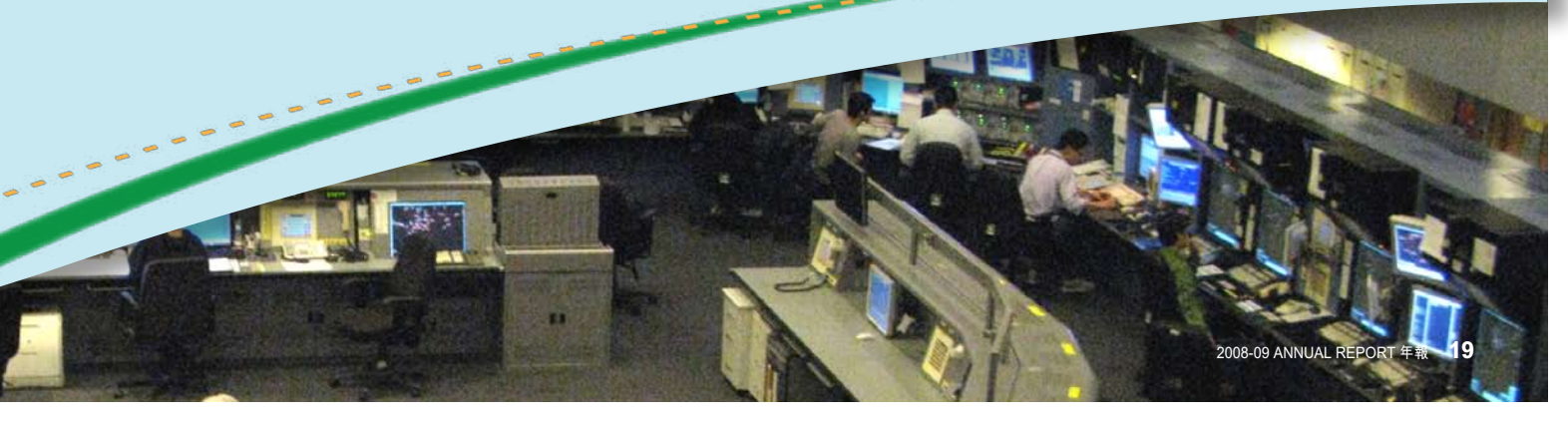
Training of a SATCO to become a fully qualified controller at the rank of ATCO II normally takes around five years where the individual would have to acquire qualifications in various ATC disciplines. In addition, periodic refresher training has to be arranged for qualified ATCOs to ensure that their competency in responding to unusual circumstances, such as poor weather operations and aircraft emergencies is maintained as a good standard. During the year, a total of 25 ATC training courses on various disciplines of the profession and two refresher training courses were conducted for 277 officers, leading to the issue of 44 ATC ratings and the attainment of other professional qualifications. As part of their career development, nine SATCOs were provided with General Flying Progress Test (GFPT) flying training and 14 SATCOs attended overseas courses on air traffic control. These overseas training activities enhanced their aviation knowledge and broadened their exposure to ATC operations.

More senior ATCOs were selected in the year to attend advanced training on Search and Rescue, ATC Incident Investigation and Aircraft Accident Investigation in order to undertake duties at a higher level.

### *Other Training Offered*

The Division has in conjunction with the Civil Aviation Training Centre conducted a course on “Introduction to Air Traffic Management”. The course is conducted regularly and has been well received by personnel engaged in the aviation-related industries and interested public.

The Division has also conducted an attachment programme in the year for six ATC supervisors from Northeast Air Traffic Management Bureau of CAAC.



# 航空交通管理
# AIR TRAFFIC MANAGEMENT

### *重置東面扇區的空中等候區*

二零零九年三月，民航處按照二零零八年進行的空域及跑道航機升降容量顧問研究的建議，把香港以東、用以應付航班延誤的空中等候區重置到較接近機場位置。採用新等候區後，空管人員可更有效地善用每個降落時段，藉此盡量提高抵港航班的著陸率。

## 安全管理系統

二零零八至二零零九年度，航空交通管理部繼續發展部內的安全管理系統。二零零八年四月，隨著航空交通工程及標準部的成立，本部根據航空導航服務機構的概念修訂了安全管理系統的適用範疇，以便同時涵蓋航空交通工程及標準部的安全管理。

年內，本部發出多份安全管理系統的重要文件，包括《航空導航服務手冊》和《航空導航服務安全管理系統手冊》。為加強安全水準，航空交通管理部亦發布安全通訊、經驗總結、運作提示等多份檔案，以及本地和外國航空安全期刊摘錄，提高前線人員的安全意識。

《航空導航服務安全管理系統手冊》載有國際民航組織國家安全綱領的重要元素，以符合該組織的安全管理系統的標準及建議守則。至於航空導航服務的安全目標，本部亦在二零零九年二月發布了空管服務安全表現指標和目標的可接受安全水準。

本部的持續安全管理措施，亦包括定期進行安全評估和調查。年內，本部進行了四次內部安全審計。

至於安全程式方面，本部制訂了「恢復正常運作計劃」，並自二零零九年二月起訂定「偏離預定軌道飛機和攔截民航飛機的程式」，以及「航空交通服務受重大干擾的應變計劃」。

## NEW AIR TRAFFIC CONTROL PROCEDURES

### *Application of Reduced Longitudinal Separation Standard on Airways L642 and M771*

Hong Kong applied reduced longitudinal separation on Airways L642 and M771 in July 2008. The revised separation between aircraft at same cruising level has been reduced from 80NM to 50NM. With the new reduced longitudinal separation standard, the capacity of the air routes can be enhanced and the opportunities for flights to cruise at their optimum level have also been increased. Transition to the new procedures was conducted in a safe and efficient manner.

### *Relocation of Airborne Holding Pattern in the East Sector*

As recommended by a Consultancy Study on Airspace and Runway Capacity in 2008, the holding pattern for absorbing airborne delays to the east of Hong Kong was relocated closer to Airport in March 2009. The new holding pattern position allows ATC to make the most effective use of each landing slot so as to maximise the arrival landing rate.

## SAFETY MANAGEMENT SYSTEM (SMS)

The ongoing development of SMS in ATMD was robust in 2008-09. The SMS framework in ATMD was modified to also cover the safety management aspects of the Air Traffic Engineering and Standards Division (AESD) under the air navigation services providers (ANSP) concept upon the establishment of the AESD in April 2008.

A number of important SMS documents, including the ANS Exposition and ANS Safety Management System Manual (SMSM) were issued during the report year. In promoting safety, ATMD had also promulgated a number of Safety Bulletins, Lessons Learnt, Operational Reminders and extracts from both local and foreign safety journals in order to raise the safety awareness of the frontline staff.

有關安全管理的培訓，本部在二零零九年一月訂定了有條理的安全管理系統培訓計劃。

## 國際民航組織搜索及救援(搜救)研討會及二零零八年香港搜救演習

二零零八年十月二十八至二十九日，香港民航處在國際民航組織的支持下，舉辦搜救研討會，並隨即在十月二十九至三十日舉行二零零八年搜救演習。

國際民航組織搜救研討會的目標，是協助參加者重新認識成員國在搜救方面的職責，以及向他們介紹最新的搜救技巧、措施和支援設施。研討會有124名來自13個國家的代表出席。本地方面，香港消防處、水警、海事處和政府飛行服務隊亦有相當數量的人員參加。

搜救演習定期舉行，旨在測試在香港飛行情報區進行搜救時所採取預警、協調和通訊程式的效率和成效。二零零八年搜救演習包括短程和長程搜救。

*政府飛行服務隊派出的超級美洲豹型直升機示範從消防船的甲板上吊起一名模擬生還者。*
*A Eurocopter Super Puma helicopter from the Government Flying Service demonstrating the deck winching of a "survivor" from a fireboat.*

The SMSM incorporates the important components and elements of the State Safety Programme (SSP), conforming to the ICAO SMS standards and recommended practices. In respect to Safety Objectives in the provision of air navigation services, an Acceptable Level of Safety (ALOS) in terms of Safety Performance Indicators and Safety Performance Targets were promulgated in February 2009.

As part of the on-going safety management initiatives, regular safety assessments and safety surveys were conducted; and a total of four internal audits were carried out during the report period.

In terms of safety procedures, the Normal Operations Resumption Plan was formulated; procedures for strayed aircraft and interception of civil aircraft, and a Contingency Plan for major disruption of ATS had also been put in place since February 2009.

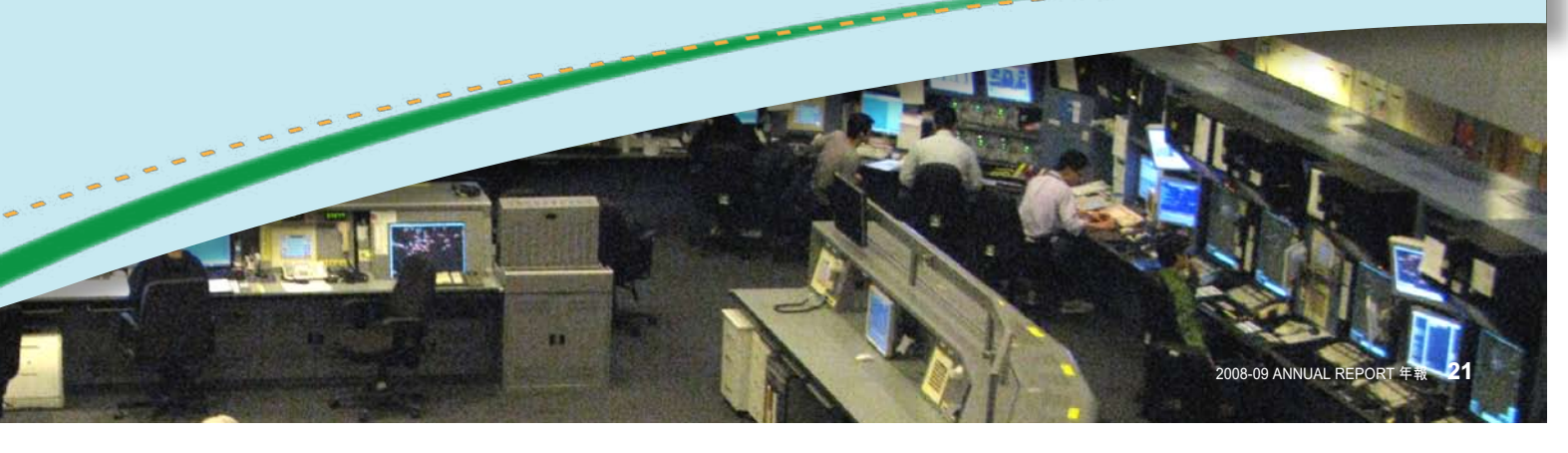
With respect to safety management training, a structured SMS training programme was put in place in January 2009.

## ICAO SEARCH AND RESCUE (SAR) SEMINAR AND HONG KONG SAR EXERCISE (SAREX) 2008

Hong Kong CAD hosted a Search and Rescue Seminar on October 28 to 29, 2008 under the auspices of the International Civil Aviation Organization (ICAO). SAREX 2008 commenced right after the Seminar from October 29 to 30, 2008.

The objectives of the ICAO SAR Seminar were to help participants to refresh their awareness of the state's responsibilities on SAR and to update them of the latest development in SAR techniques, practices and supporting infrastructure. A total of 124 participants from 13 countries attended the Seminar. A considerable number of local participants from Fire Services Department (FSD), Hong Kong Marine Police, Marine Department and Government Flying Service (GFS) also attended.

SAR exercise is conducted regularly with a view to testing the effectiveness and efficiency of the alerting, co-ordination and



# 航空交通管理
# AIR TRAFFIC MANAGEMENT

二零零八年十月二十九日，短程搜救演習在南丫島東澳灣進行，參與的還有中國人民解放軍駐香港部隊、中國海事局、中國交通部、水警、香港消防處、民眾安全服務隊和政府飛行服務隊。

長程搜救演習利用政府飛行服務隊的直升機和定翼機、美國空軍和美國海岸巡邏隊的飛機和船隻，在香港以南約50海里進行搜救行動。兩項演習順利完成。

搜救研討會和二零零八年搜救演習為期三天，提供寶貴機會，讓不同國家的搜救專家討論搜救技巧，並互相觀摩，朝著救傷扶危的共同目標不斷努力。

## 珠江三角洲(珠三角)地區航空交通管理計劃

香港民航處、中國民航局與澳門民航局組成的三方工作組於年內舉行了兩次會議，檢討工作進度和商討珠三角地區空中交通流量管理的要求。工作組同意制訂離場流量綜合管理系統，以便更全面地管理珠三角主要機場的航機離場次序。預計新系統長遠能大幅減低珠三角地區整體的離場延誤。

*珠三角空中交通管理規劃與實施專題工作組第五次會議二零零八年十二月在深圳舉行。*
*The 5th meeting of the "PRD Air Traffic Management Planning and Implementation Supervisory Group" held in Shenzhen in December 2008.*

communication procedures for the provision of search and rescue services in the Hong Kong FIR. SAREX 2008 consisted of both short-range and long-range exercises.

The short range SAREX was conducted at Tung O Wan of Lamma Island on October 29, 2008, participated also by the People's Liberation Army of the Hong Kong Garrison, China Maritime Safety Administration, China Ministry of Communications, Hong Kong Marine Police, FSD, Civil Aid Service and GFS.

In the long-range exercise, GFS helicopters and fixed-wing aircraft, United States Air Force and United States Coast Guard aircraft and vessels were deployed to perform the SAR mission at approximately 50 NM south of Hong Kong. The search exercise was successfully concluded.

The three-day SAR Seminar and SAREX 2008 provided excellent opportunities for SAR experts from various countries to discuss SAR techniques and to share their experience with each other for the common goal of saving lives.

## AIR TRAFFIC MANAGEMENT PLAN FOR THE PEARL RIVER DELTA (PRD) REGION

The Tripartite Working Group formed by the Hong Kong CAD, the Civil Aviation Administration of China and the Macao Civil Aviation Authority held two meetings within the year to review the work progress and discuss the requirements for air traffic flow management for the PRD region. The Group agreed to develop an integrated departure flow management system to manage the departure sequence of major PRD airports in a more holistic manner. It is envisaged that the new system can significantly reduce the overall departure delays within the PRD region in the long term.

## OVERSEAS ATC MEETINGS AND CONFERENCES

During the year, the Division continues to participating actively in overseas meetings and conferences on issues related to air traffic

## 海外空管會議和研討會

年內，本部繼續積極參與航空交通管理事務的海外會議和研討會，包括由國際民航組織、其他航空機關和民用航空導航服務組織主辦的會議和研討會。

## 電訊服務

關於固定航空通訊服務，航空通訊組年內處理的資訊達29 578 450個，較上一年度增加5.1%。

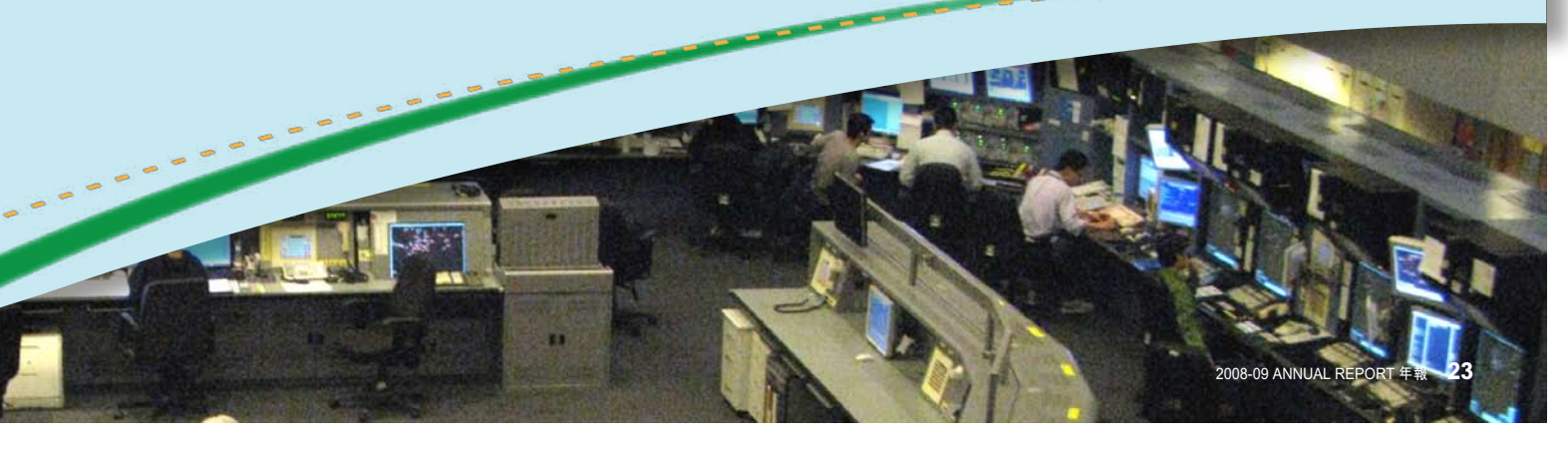
航空氣象廣播服務方面，航空通訊組年內為航機提供合共215 635次氣象報告，較上一年度微增1.5%。

management. These include meetings, seminars and conferences initiated by ICAO, other aviation authorities and the Civil Air Navigation Services Organisation (CANSO).

## TELECOMMUNICATIONS SERVICES

On Aeronautical Fixed Service, the number of messages handled by the Telecommunications Unit of the Division during the year reached a total of 29 578 450, representing a 5.1 per cent increase over last year.

On Aeronautical Broadcast Service, a total of 215 635 weather messages were provided to aircraft in flight during the year. The amount was slightly increased by 1.5 per cent as compared with the previous year.



# 航空交通工程及標準
# AIR TRAFFIC ENGINEERING AND STANDARDS

二零零八年四月一日，新的航空交通工程及標準部成立，以取代前工程及系統部。航空交通工程及標準部由不同範疇的專業人員組成，包括電子工程師、資訊科技專才、航空交通管制人員及航空交通管理監管人員，藉此進一步提升部門的運作效率和協同效益。本部負責設計、規劃、統籌和提供空管系統、雷達、導航儀器和通訊設備，並監管香港空中航行服務(包括進行航空事故調查)，簽發空管執照及相關級別。

On April 1, 2008, a new Air Traffic Engineering and Standards Division (AESD) was established to replace the former Engineering and Systems Division. It is an initiative to further enhance operation efficiency and create synergy within the Department by consolidating experts from various disciplines including electronics engineers, information technology professionals, air traffic control (ATC) operations officers, and the air traffic management regulators in the AESD. The Division is responsible for the design, planning, coordination, and provision of ATC systems, radar, navigational aids, and communication facilities for Hong Kong ATC operations, regulating Hong Kong air navigation services including incident investigation, issuing air traffic control licences and the associated air traffic control ratings.

# 航空交通工程及標準
# AIR TRAFFIC ENGINEERING AND STANDARDS

年內，本部繼續致力維持高水準服務及穩定可靠的空管系統，以支援各項空中交通服務。二零零七年五月十一日，立法會財務委員會通過撥款更換現有空管系統。新空管系統的整體設計、詳細運作要求、招標檔及招標等準備工作亦隨即展開，進度良好。

衞星通訊、導航及監察／航空交通管理系統的發展計劃現正穩步推展，六個系統構件已投入運作，另外七個正進行測試，以評估相關運作效益。為應付區內航空交通增長的需求，新的系統構件如改進型地面活動引導和控制系統、抵港航機排序系統、電子飛行進程單系統、廣播式自動相關監視系統和飛行計劃衝突提示系統等，現正進行測試，務求儘早採用。

本部亦繼續推行新的資訊科技應用系統，及提升電腦網絡的基建與設施，以配合本處電子化服務和數碼政府的目標。自二零零九年三月，民航處資訊科技管理組就建立資訊科技服務的品質管理系統展開工作，預計於二零一零年完成。

## 航空交通管制系統的發展

### *更換航空交通管制雷達模擬系統*

更換新空管雷達模擬系統的合約在二零零八年三月十四日批出後，新系統的詳細設計、生產、付運、安裝和驗收測試等工作在四月至十一月期間進行。新系統在早於原定計劃前的二零零八年十二月一日投入運作，供空管人員培訓之用。

During the year, the Division continued its efforts in maintaining a stable, reliable, and outstanding ATC system to support air traffic services. With funding approval received from the Finance Committee of the Legislative Council on May 11, 2007 for replacement of the existing ATC system, detailed design of the system architecture, refinement of operational requirements, preparation of tender documents, and tender invitation for new ATC system were progressing well.

Steady progress was made on the Satellite-based Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) Systems Project, with six system elements now in operational use and seven on trials to assess their operational benefits. To cope with the rapid air traffic growth in the region, trials and early implementation of new CNS/ATM system elements like Advanced Surface Movement Guidance and Control System, Arrival Manager System, Electronic Flight Strip System, Automatic Dependent Surveillance Broadcast (ADS-B), Flight Plan Conflict Advisory System etc, were being pursued.

The Division also continued to implement new IT applications and enhance the computer network and infrastructure in line with the departmental e-business development and e-government objectives. Starting from March 2009, the CAD Information Technology Management Unit took the initiative to establish a quality management system for IT services, which was scheduled for completion in 2010.

## AIR TRAFFIC CONTROL SYSTEMS DEVELOPMENT

### *Replacement of ATC Radar Simulator*

Following the contract award for provision of a replacement ATC radar simulator on March 14, 2008, detailed system design, system production, delivery, installation and acceptance testing activities were conducted between April and November 2008. The new simulator was commissioned for air traffic controller training commencing December 1, 2008, slightly ahead of schedule.

### *Replacement of Air Traffic Control System*

To cope with the projected air traffic growth and expansion of the aviation industry, and to maintain Hong Kong's position as an international and regional aviation hub, it was considered necessary to replace the existing ATC system with higher capacity

*空管人員正使用新空管雷達模擬系統以作培訓。*
*Training of air traffic controller using the new ATC Radar Simulator.*

## 更換航空交通管制系統

為應付預期中的航空交通增長需求、航空業的發展及保持香港作為國際及區內航空交通樞紐的地位，民航處有需要更換一套高效能及配備最新功能的空管系統，以加強香港飛行情報區內航空交通服務的效率。本處在二零零七年五月獲得撥款後，在年內進行了詳細系統設計及規劃、對海外的空管中心及指揮塔作實地考察、展開詳細的市場調查、並邀請有關系統供應商來港作示範。現時各主要空管系統制訂運作要求及系統規格的準備工作已大致完成。指揮塔模擬系統作為首個採購的項目，已在二零零八年十二月二十四日進行招標，其餘各系統的招標工作將會於二零一零年首季分期進行。

## 空管系統和重要屋宇設施的安全管理系統

為符合國際民航組織的安全管理要求，本部自二零零八年四月起積極就空管系統和重要屋宇設施制訂安全管理系統。年內制訂的安全管理系統文件共11份。此外，根據一個為期16個月的審核計劃，本部須定期進行內部審核，以確保日常運作得以持續改善。新一輪的審核在二零零八年十一月至二零一零年二月期間進行，整個周期為期16個月，審核範圍涵蓋本部八個主要職能範圍。為支援上述內部審核工作，本部已訓練及委任了12位人員擔當合資格的內部審查員。

and the latest functionalities so as to enhance the efficiency in the provision of air traffic services in the Hong Kong Flight Information Region (FIR). With funding approval given in May 2007, detailed system design and project planning, fact-finding visits to overseas ATC centres and towers, detailed market survey, and equipment demonstrations by potential suppliers were conducted during the year. Preparation of the operational requirements and system specifications for major ATC systems was mostly completed. Invitation of the first tender for Control Tower Simulator was mounted on December 24, 2008, with the remaining tenders to be rolled-out in phases up to the first quarter of 2010.

*本處人員到中國廣州空中交通管制中心考察，與中國民用航空局官員交流經驗。*
*Visit to Air Traffic Control Centre in Guangzhou, China for experience sharing with General Administration of Aviation of China.*

## Safety Management System (SMS) for Air Traffic Control (ATC) Systems and Critical Building Services Facilities

To meet the International Civil Aviation Organization (ICAO) SMS requirements, the Division has been taking an active role to implement SMS for ATC Systems and critical building services facilities since April 2008. During the year, a total of eleven SMS documents were developed. In addition, internal audits would be conducted in a regular basis to ensure continuous improvement in day-to-day operations under a 16-month audit programme. A 16-month audit cycle starting from November 2008 up to February 2010 has been developed to cover eight major AESD's functional areas. To support these internal audit activities, 12 officers from the Division were trained and appointed as qualified internal auditors.

# 航空交通工程及標準
# AIR TRAFFIC ENGINEERING AND STANDARDS

為確保空管系統和重要屋宇設施的運作和維修保養貫徹執行安全管理系統，本部維修保養服務承辦商亦須自行制訂所需文件和建立相若的安全管理系統。本部核實個別維修保養服務承辦商制訂的安全管理系統準備就緒和符合國際民航組織的要求後，在二零零八年十二月正式接納採用。

二零零八年四月七至十一日，民航處在本港舉辦安全管理系統進階課程，參加者包括本部和航空交通管理部的同事，以及維修保養服務承辦商。課程旨在提高相關人員的安全意識，加深他們對安全管理系統的專業知識。

*安全管理系統進階課程於二零零八年四月七至十一日舉行，民航處同事和維修保養服務承辦商人員踴躍參與。*

*An advanced SMS course was held on April 7-11, 2008 with overwhelming participation from CAD colleagues and maintenance service contractors.*

### *香港 — 西沙光纖通訊鏈路*

現有傳送西沙群島甚高頻和雷達訊號的衞星通訊鏈路，周期性地受到日凌現象和射頻干擾。香港與西沙在二零零八年十二月增設一條光纖鏈路，在順利完成設備測試後，新光纖鏈路在同年十二月十七日投入運作。西沙的雷達和甚高頻無線電訊號現可經陸上線路和衞星通訊鏈路傳送至香港，大幅提升這些訊號在香港飛行情報區南端空管運作的可用性。

To ensure SMS be implemented in operations and maintenance of the ATC systems and critical building services facilities, AESD's maintenance service contractors were also requested to develop necessary documentation and establish similar SMS in their own organisations. Having verified their readiness of SMS and compliance with the ICAO requirements, AESD formally accepted the SMS implementation by the respective maintenance service contractors in December 2008.

To promote safety awareness and equip staff with the specialised SMS knowledge, an advanced SMS course was organised on April 7-11, 2008 for AESD staff as well as colleagues from ATMD and the maintenance service contractors.

### *Hong Kong - Xisha Optical Fibre Communication Link*

The current satellite-based link to relay VHF and radar signals from Xisha Island was susceptible to periodic sun outages and radio frequency interference. To enhance the resilience of communication link between the ATC equipment at Hong Kong and Xisha Island, an additional optical fibre link between Hong Kong and Xisha was installed in December 2008. Upon satisfactory completion of equipment tests at both ends, the new optical fibre was successfully put into operational use on December 17, 2008. With implementation of this optical fibre link as path diversity, the Xisha radar and VHF radio communications signals could be relayed to Hong Kong through both landline and satellite communications links which greatly enhanced the signal availability for air traffic control over the southern tip of the Hong Kong FIR.

## SATELLITE-BASED COMMUNICATIONS, NAVIGATION AND SURVEILLANCE/AIR TRAFFIC MANAGEMENT (CNS/ATM) SYSTEMS

To comply with the Global and Regional Implementation Plans of the ICAO for the Satellite-based CNS/ATM systems, studies on the latest CNS/ATM development and detailed investigations on various elements of the CNS/ATM systems continued. Satisfactory progress was achieved on relevant technical and operational trials.

## 衞星通訊、導航及監察/航空交通管理系統

為配合國際民航組織就衞星通訊、導航及監察／航空交通管理系統所訂的全球和地區實施計劃，本處繼續研究系統的最新發展，並詳細測試系統各個構件。有關系統的技術和運作測試均取得良好進展。

技術成熟的系統構件，例如數據化自動航站情報服務、數據化遠航氣象情報服務、飛前放行指示數據鏈路服務、香港與曼谷之間的主幹航空電訊網，以及與三亞的空中交通服務設施間數據通訊，均已投入服務，透過發揮其系統的功能，提升和優化香港空管服務的水平。

### *飛前放行指示雙向數據鏈路服務*

二零零八年六月五日，飛前放行指示數據鏈路服務順利由單向提升為雙向傳輸，有助進一步減輕飛行員與空管員在使用話音通訊時無線電擠塞的情況。香港國際機場現時每日平均約有67%的離港航機(隸屬超過32間航空公司)使用新的雙向數據鏈路服務。

### *航空電訊網及航空交通服務訊息處理系統*

香港作為航空電訊網及航空交通服務訊息處理中樞，已配合國際民航組織亞太地區航空電訊網及航空交通服務訊息處理系統實施計劃，在二零零八年十月十日批出高容效航空交通服務訊息處理系統的合約。有關系統在二零零九年三月交付，並計劃在二零零九年七月驗收。由二零零九年年底開始，新系統會分階段與澳門、北京、台北、東京、馬尼拉和其他鄰近地區的航空交通電訊中心進行相容測試、試行和運作。

*設於航空交通管制大樓天臺的衞星天線。*
*Satellite antenna on the roof of Air Traffic Control Complex.*

Mature CNS/ATM system elements like Digital-Automatic Terminal Information Service (D-ATIS), Digital-Meteorological Information for Aircraft in Flight (D-VOLMET) service, Pre-Departure Clearance (PDC) datalink service, Aeronautical Telecommunication Network (ATN) connecting Hong Kong with Bangkok, and Air Traffic Services Inter-facility Data Communication (AIDC) with Sanya, have been put into operational use to reap the benefits of early CNS/ATM applications, which enhanced and upgraded the ATC service of Hong Kong.

### *Pre-Departure Clearance (PDC) Two-way Datalink Service*

The PDC datalink service was successfully upgraded from one-way to two-way datalink operation on June 5, 2008, which helped further reducing the radio congestion for voice communications between the pilots and air traffic controllers. On a daily average, about 67% departing aircraft at the Hong Kong International Airport (HKIA) from more than 32 airlines were using the new PDC two-way datalink service.

# 航空交通工程及標準
# AIR TRAFFIC ENGINEERING AND STANDARDS

*民航處人員測試新航空交通服務訊息處理系統。*
*Staff testing the new AMHS operator position.*

## *改進型地面活動引導和控制系統*

改進型地面活動引導和控制系統為期六個月的運作評估，已於二零零九年一月十三日順利完成。民航處根據評估結果，相應地調校系統性能，並在評估階段檢定「闖入跑道」的預警功能。待二零零九年三月完成空管及技術人員的培訓後，系統會在二零零九年四月一日投入運作。為著辨別機場範圍內行駛的車輛，民航處在二零零九年一月二十二日完成車輛應答機的運作評估，結果令人滿意。為進一步加強香港國際機場跑道的安全性，民航處會由二零零九年年底至二零一零年年底，分階段為需要進入或越過現用跑道的車輛裝設應答機。

*改進型地面活動引導和控制系統的車輛應答機。*
*Vehicle Locator for Advanced Surface Movement Guidance and Control System.*

## *Aeronautical Telecommunication Network and ATS Message Handling System*

In accordance with the ICAO Asia-Pacific Regional Aeronautical Telecommunication Network (ATN) and ATS Message Handling System (AMHS) Implementation Plan, together with Hong Kong being an ATN and AMHS backbone site, a contract for a high capacity AMHS was awarded on October 10, 2008. The system was delivered in March 2009 and planned for commissioning in July 2009. The new system will be used for interoperability tests, trials, and operations with Macao, Beijing, Taibei, Tokyo, Manila and other adjacent ATS authorities in stages commencing from end 2009.

## *Advanced Surface Movement Guidance and Control System*

The 6-month operational evaluation of Advanced Surface Movement Guidance and Control System (A-SMGCS) was completed on January 13, 2009. Based on results of operational evaluation, the system performance had been fine-tuned and runway incursion alert functions were validated during the operational evaluation period. A-SMGCS would be put into operational use on April 1, 2009 after completion of user and technical training in March 2009. The evaluation of vehicle locators for identifying vehicles moving in the airfield was also concluded on January 22, 2009 with positive results. To further enhance runway safety in the HKIA, installation of vehicle locators on vehicles entering or crossing active runways would be completed in phases, commencing from late 2009 until end 2010.

### 廣播式自動相關監視系統

民航處以大帽山的獨立接收器，對廣播式自動相關監視進行技術測試，效果理想，現正採購顯示系統，以便監察和評估訊號的覆蓋和位置的準確度。本處亦正與政府飛行服務隊共同策劃及利用裝有這項儀器的直升機協助測試，評估運用此技術於監察低飛飛機的成效。

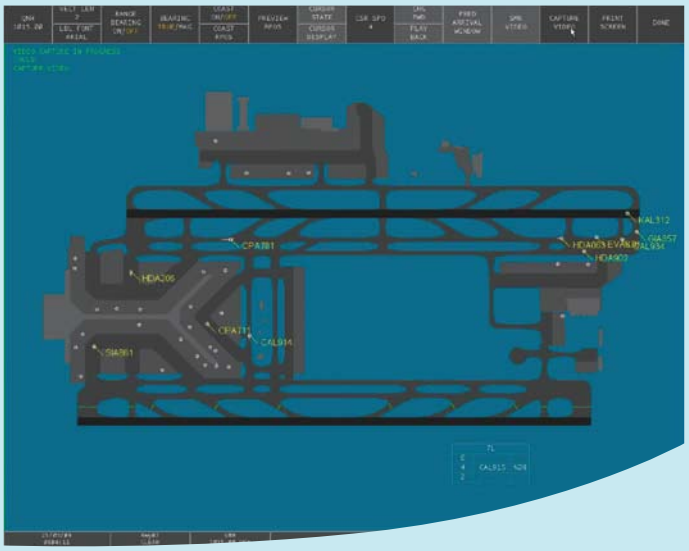
### 抵港航機排序系統

在抵港航機排序系統方面，為期六個月，運作評估在二零零八年一月四日展開，對系統進行各種性能測試，結果顯示系統能有效地向空管人員提供抵港航機序列提示，但系統尚需稍作優化。待完成人員培訓和系統優化後，預定在二零零九年六月使用系統作試行運作。系統將有助提高準時抵港的航機數目、更善用空域，以及為空管人員提供自動化服務。

*空管人員在評估抵港航機排序系統。*
*Evaluation of Arrival Manager System in the air traffic control centre.*

### 基於性能的導航

區域導航及非精密進場程式的運作評估，在二零零九年二月一日利用國泰航空的B777型飛機於北跑道展開，結果至今令人滿意。根據香港「基於性能的導航」發展路線圖，民航處將對於如何利用陸基增強系統，以支援飛機在香港國際機場精密進場和著陸，進行可行性研究。



*改進型地面活動引導和控制系統的顯示屏幕。*
*Snap shot of Advanced Surface Movement Guidance and Control System Screen.*

### Automatic Dependent Surveillance - Broadcast

With successful trial of Automatic Dependent Surveillance - Broadcast (ADS-B) using a standalone receiver at Tai Mo Shan, procurement of an ADS-B display system is underway to facilitate monitoring and evaluation of coverage and position accuracy of ADS-B received signals. Planning is underway for a joint trial with Government Flying Service using an ADS-B equipped helicopter to evaluate the effectiveness of using ADS-B technology for surveillance of low flying aircraft.

### Arrival Manager System

The 6-month operational evaluation of Arrival Manager (AMAN) System commenced on January 4, 2008. During the evaluation, the system had gone through various functional and performance tests which illustrated that the system was effective in providing sequencing advice to air traffic controllers, with some system enhancements to be made. Operational trial is scheduled for June 2009 after completion of staff training and system enhancements. The system will help enhancing on-time arrivals, efficient use of airspace and automated service to controllers.

# 航空交通工程及標準
# AIR TRAFFIC ENGINEERING AND STANDARDS

### 近似呼號提示系統

當出現呼號相近的飛機時，近似呼號提示系統能向空管人員作出提示。這個系統可減少因多架飛機呼號相近，引起混淆而產生的人為錯誤，從而加強空管安全。系統的研發工作在二零零八年十月二十四日完成，現正進行運作評估。


*近似呼號提示系統顯示屏。*
*Similar Callsigns Advisory System Display.*

### 飛行計劃衝突提示系統

飛行計劃衝突提示系統提醒管制人員，空域扇區內飛機可能出現的中期(五至二十分鐘)衝突。民航處現正發展此系統以測試其效用，評估工作預計於二零一零年年初完成。

### 電子飛行進程單系統

民航處計劃以電子飛行進程單系統這項先進技術，在航空交通管制指揮塔以無紙方式記錄飛行進程。系統的招標公告在二零零九年一月二十三日刊登憲報，並計劃於二零一零年年初批出合約。民航處會首先利用系統進行運作評估，所得經驗對協助空管中心及指揮塔改以電子方式運作有莫大的幫助。

## 航空交通管理標準組

航空交通管理標準組負責規管空中航行服務的安全。為確保本港空中航行服務維持最高安全水準，該組除了負責規管航空交通管理外，年內，工作更擴大至規管其他空中航行服務範疇。新增範疇包括：通訊、導航及監察系統；空中航行服務程式—航空器運行；航空情報服務；航圖；

### Performance Based Navigation

Operational evaluation of Area Navigation (RNAV) Non-Precision Approach (NPA) procedures using B777 aircraft from Cathay Pacific Airways on north runway commenced on February 1, 2009 with satisfactory results so far. Following the Hong Kong Performance Based Navigation (PBN) roadmap, CAD will conduct feasibility study of using Ground-based Augmentation System (GBAS) to support precision approach and landing at the HKIA.

### Similar Callsigns Advisory System

Similar Callsigns Advisory System (SCAS) provides advisories to controllers on presence of similar callsigns of aircraft. The system will enhance ATC safety in respect of reducing human errors on confusion of two or more aircraft with similar callsigns. The development of SCAS was completed on October 24, 2008 and the system is now under operational evaluation.

### Flight Plan Conflict Advisory System

Flight Plan Conflict Advisory System (FiPCAS) alerts controllers on presence of medium term (5 to 20 minutes) potential conflicts between aircraft particularly in the Area Sectors. The development of a FiPCAS for evaluation is underway and scheduled for completion in early 2010.

### Electronic Flight Strip System

A technology-based Electronic Flight Strip System (EFSS) was planned to support paperless flight strip operations in air traffic control tower. The EFSS tender was gazetted on January 23, 2009, and the contract will be awarded in early 2010. This system will initially be used for operational evaluation. The operational experience so gained will be useful for the transition to electronic flight strip environment for both ATC centre and tower operations.

航空氣象服務和搜索及救援(搜救)。隨著擴大規管職能，《CAD670》標題為《空中航行服務的安全要求》的文件，已修訂為《航空交通管理服務的安全要求》，以便有系統地規管空中航行服務。年內，該組繼續確保空中航行服務提供者，即民航處航空交通管理部及本部工程項目組和技術發展組，切實遵行《CAD670》檔所載的要求。

### *安全監督工作*

年內，航空交通管理標準組對空中航行服務和設施進行了52次檢查。服務方面包括航空交通服務、空中航行服務程式—航空器運行、通訊、導航及監察、航空氣象服務、航行情報服務和航圖，以及搜救；設施方面包括航空交通管制中心、控制塔臺、培訓組、航空情報中心、雷達模擬系統及控制塔臺模擬系統。此外，該組亦就空管等級考試進行定期覆檢，確保考試符合監管要求。

*安全監督工作確保空中航行服務安全。*
*Safety oversight ensures the safety of air navigation services.*

國際民航組織標準和相關規管航空交通管制員語言能力的規定，由二零零八年三月五日起生效。為遵從有關規定，航空交通管理部自二零零七年起推行語言能力標準要求計劃，以便挑選和訓練語言能力評核員、制訂評核方法和程式，以及安排和進行評核。航空交通管理標準組監察該計劃的推行和語言能力評核員的資格核證，工作如期順利執行。截至二零零八年十二月，共有190名空管主任接受語言能力評核小組測試，全部符合基本語言能力要求。事實上，他們大部分都超越最低運作水準，達到專業水準。

## AIR TRAFFIC MANAGEMENT STANDARDS OFFICE (ATMSO)

The ATMSO has the responsibility of performing safety regulation on the provision of air navigation services (ANS). To ensure that the safety of ANS in Hong Kong is maintained at the highest level possible, the regulatory role of ATMSO was extended during the year to cover other ANS domains, in addition to air traffic management. The additional domains included Communication, Navigation and Surveillance (CNS) systems, Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS), Aeronautical Information Services (AIS), Aeronautical Charts, Meteorological Services as well as Search and Rescue (SAR). With the extended regulatory role of ATMSO, document CAD 670, first issued in 2004 as "Air Traffic Management Services Safety Requirements", was expanded and re-issued as "Air Navigation Services Safety Requirements", providing a structured and rational basis for the safety regulation of ANS. Throughout the year, the ATMSO continued to focus on overseeing the implementation of CAD 670 and compliance with the requirements therein by the air navigation services provider (ANSP), namely the Air Traffic Management Division (ATMD) and the Projects and Technical Support Sections of the Division.

### *Safety Oversight Activities*

A total of 52 inspections on ANS provisions, including Air Traffic Services, PANS-OPS, CNS, Meteorological Services, AIS and Charting, SAR and the various facilities including the Air Traffic Control (ATC) Centre, Aerodrome Control Tower, the Training Unit, Aeronautical Information Centre, Radar Simulator and Control Tower Simulator were conducted in the year. In addition, the ATMSO also carried out regular oversight on ATC rating examinations to ensure that they were conducted in compliance with regulatory requirements.

To comply with ICAO standards and associated regulatory requirements in regard of language proficiency for air traffic controllers, which became effective on March 5, 2008, ATMD had implemented a Language Proficiency Requirement (LPR) programme since 2007 for selecting and training language proficiency assessors, formulating assessment methodologies and procedures as well as scheduling and conducting assessments.

# 航空交通工程及標準
# AIR TRAFFIC ENGINEERING AND STANDARDS

航空交通管理標準組根據《CAD636》文件所載調查航空交通事故指引，繼續監察以至參與航空交通事故調查。此外，該組亦負責監察事故後有關調查報告所提出安全建議的執行情況。為確保調查客觀和全面，航空交通安全評核委員會每半年召開會議，對調查報告中有關空管和飛行運作方面提供專業意見。該委員會成員包括航空交通管理標準組和航空交通管理部的代表，及本地主要航空公司和政府飛行服務隊的航空安全代表。

### *文件編制*

航空交通管理標準組定期檢討和更新管轄範疇內的檔案，確保內容準確、有效和符合現況。該組根據需要，發出《空中航行服務資料通告》(航空交通管理標準組擴大規管職能前，該通告名為《航空交通管理資料通告》)，提醒空中航行服務機構留意相關安全事項。年內，該組發出八份主要事項的通告，包括經修訂的多雷達目標融合跟蹤最小間隔、《飛航(香港)令》的修訂，以及經修訂的空管主任執照簽發程式。

### *空管主任執照*

航空交通管理標準組一項重要職責是根據國際民航組織《附件1》的標準，規管空管主任執照簽發制度。在本報告年度內，該組處理共10個簽發空管主任執照的申請、64個首次申領空管執照級別的申請、42個要求首發或續發合格證書的申請、四個續發空管認可考官證書的申請，以及10個英語能力證書的申請。

航空交通管理部舉辦各項空管培訓課程，都須接受規管。為加強空管方面人為因素的培訓，航空交通管理標準組已實施新要求，規定把威脅和錯誤管理的原理納入人為因素培訓課程。

The ATMSO monitored the implementation of the LPR programme and the certification of language proficiency assessors, which were smoothly executed as scheduled. By December 2008, 190 ATC officers underwent the assessment test conducted by a panel of language proficiency assessors; they all satisfied the minimum language proficiency level requirement. Moreover, a majority of them were rated at Expert Level, greatly exceeding the minimum Operational Level.

The ATMSO continued to participate in and monitor the investigations of all ATC incidents in accordance with established procedures of the Guidance for Air Traffic Incident Investigation (CAD 636). Furthermore, the ATMSO monitored the progress of post-incident follow-up actions on the recommendations put forward in the investigation reports. To ensure the objectivity and comprehensiveness of these investigations, the Air Traffic Safety Assessment Committee, which comprised representatives from the ATMSO, ATMD, flight safety personnel of major local airline operators and the Government Flying Service, met half-yearly to review the investigations of ATC incidents with inputs from the ATC and pilots' perspectives.

### *Documentations*

The ATMSO regularly reviews and updates documents under its ownership to ensure that they remain accurate, valid and up-to-date. Air Navigation Services Information Notices (ANSIN), formerly known as Air Traffic Management Information Notices (ATMIN) prior to the extension of the regulatory role of the ATMSO, are promulgated as required to draw the attention of the ANSP to relevant safety issues. During the report period the ATMSO issued eight such notices on major issues including revised Multi-Radar Tracking (MRT) Separation Minima, amendment of Air Navigation (Hong Kong) Order and revised ATC licensing procedures.

### *ATC Personnel Licensing*

One of the important functions of the ATMSO is to administer the ATC licensing scheme in accordance with the standards in ICAO Annex 1. During the report period, the Office processed 10 applications for the grant of ATC licences, 64 applications for the initial award of ATC ratings, 42 applications for the issue or renewal

## 國際民航組織全球安全監察審查計劃

二零零八年九月，民航處成立全球安全監察審查計劃籌備工作組，就國際民航組織在二零零九年二月二十六日至三月六日到香港實地審查，統籌所有準備工作。民航處全體人員群策群力，並與其他政府部門、航空業夥伴緊密合作，在二零零九年二月二十六日前已完成所有準備工作，包括內部審查。審查範圍包括審視民航處建立和維持的組織、程式和計劃，是否有助履行安全監察責任。國際民航組織審查小組組長在總結會議上，讚揚香港準備完善，而且維持非常有效的航空安全監察系統。國際民航組織將在

of Certificates of Competency, four applications for the renewal of ATC Approved Examiner (AE) Certificates and 10 applications for English Language Proficiency Certificates.

All training courses conducted by ATMD for acquiring ATC ratings are subject to a regulatory approval process. To strengthen human factors training in ATC, the ATMSO had implemented a new requirement to include the principles of threat and error management in ATC human factors training courses.

## ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME (USOAP)

In September 2008, an USOAP audit preparation task force was formed to coordinate all the preparation works for the ICAO safety


*國際民航組織在香港展開全球安全監察審查。*
*ICAO conducted USOAP audit in Hong Kong.*

# 航空交通工程及標準
# AIR TRAFFIC ENGINEERING AND STANDARDS


*民航處處長和各人員與國際民航組織審查小組於總結會議上合照。*
*DGCA and CAD staff pictured with the ICAO Audit Team at the audit closing meeting.*

二零零九年六月初把中期審查報告交給民航處。民航處會與國際民航組織和所有航空業夥伴繼續緊密合作，維持和改善香港航空系統的安全標準，並保持香港作為區域及國際主要航空樞紐的地位。

## 資訊科技管理

資訊科技支援服務對各分部的業務流暢運作，發揮重要的作用。年內，資訊科技管理組推行了下列兩項主要資訊科技應用系統：

(i) 利用歐洲協調中心意外及事故報告系統是國際民航組織的新措施，讓各成員收集和分析意外/事故資料，並經互聯網即時互相交流。二零零八年十一月，資訊科技管理組在意外調查部成功設置此系統的一個工作站，並正提升其功能，以支援其他分部用戶同時使用。

audit on Hong Kong from February 26 to March 6, 2009. With the good team work within CAD and close collaboration with other government departments, and aviation partners, all the preparation work including internal audits were completed well before February 26, 2009. The audit included the examination of the organisation, processes, procedures and programmes established and maintained by CAD to help fulfilling its safety oversight obligations. At the audit closing meeting, the ICAO audit team leader commended Hong Kong for the good preparation for the audit and Hong Kong maintained a highly effective safety oversight system for aviation. ICAO will send the interim audit report to CAD in early June 2009. Nevertheless, CAD will continue to work closely with ICAO and all aviation partners to sustain and improve the safety standards of the Hong Kong aviation system and to maintain Hong Kong as a leading regional and international aviation hub.

## IT Management

IT support services played a very important role to facilitate various divisional business operations. During the year, the Information Technology Management Unit (ITMU) had implemented the following two major IT applications –

(ii) 資訊科技管理組在二零零九年一月設置一個備有24小時資訊保安和支援功能的電子平臺，並已開發在互聯網上提交繫留氣球放飛申請的應用軟件。自二零零九年三月底起，公眾可經互聯網使用有關服務。網上提交申請的方式正逐步擴展至民航處其他的公共服務。

除了上述兩項主要應用系統外，資訊科技管理組進行的其他資訊科技措施包括：全球安全監察審查計劃資料庫、空中航行服務提供者內聯網和互聯網網頁、提升事故報告資料庫的搜尋功能，以及提升過境導航費發單系統。

在民航處的資訊科技保安方面，本部一直作出嚴密監控，以防止洩漏敏感資料。民航處電腦網絡亦設置非法軟件偵測及可移除式裝置的控制系統。二零零九年年初，民航處電腦網絡裝設了網絡流量控制系統，以監察和堵截未經許可的網絡通訊。二零零八年十二月，民航處資訊科技系統接受全政府資訊保安審查，並獲得令人滿意的結果。

資訊科技管理組為了更有系統地向民航處提供資訊科技服務，自二零零九年三月開始實施品質管理系統，預計相關工作將在二零一零年完成。

(i) The European Coordination Centre Accident Incident Reporting System is a new initiative of ICAO for States to collect and analyse accident/incident data which could be exchanged with other States through Internet. In November 2008, the ITMU set up the application in a standalone workstation in Accident Investigation Division. The system is being expanded to support multi-user access by other divisions concerned.

(ii) After a host platform with 24-hour security and support was set up in January 2009, the ITMU developed an application for on-line submission of Balloon Applications via Internet with the service launched for public use since end March 2009. The on-line submission is being extended to other public services in the Department.

Other IT initiatives undertaken by the ITMU included the USOAP database, Air Navigation Service Provider Intranet and Internet websites, upgrading of the searching facilities of Occurrence Report Database and enhancements of Aeronautical Charges Billing System.

The Division had been taking a close control monitoring IT security of the development to prevent leakage of sensitive information. Implementation of online illegal software detection and removable device control system on the departmental computer network (CADNET) was also in place. A Network Traffic Control System was implemented on CADNET in early 2009 for monitoring and blocking unauthorised network traffic. The Government-wide information security audit on CAD IT systems was conduced in December 2008 and the results were satisfactory.

To enable ITMU to adopt a systematic approach to deliver IT services to the Department, the ITMU has started to implement a quality management system in IT services to the Department since March 2009. It is anticipated that the whole process would be completed in 2010.

# 飛行標準及適航
# FLIGHT STANDARDS AND AIRWORTHINESS

飛行標準及適航部負責簽發航空營運許可證，以及在發出許可證後監察所有持證公司的運作，確保這些公司遵守國際民用航空組織（國際民航組織）所訂定的標準和建議措施。本部的其他職責包括簽發航空人員執照、監察在香港登記的飛機的適航標準和維修水平、監察輕型飛機和直升機運作，調查飛機意外和事故、以及分析安全數據。

The Flight Standards and Airworthiness Division is responsible for the issue of Air Operator's Certificate (AOC) and the subsequent monitoring of all AOC holders to ensure their compliance with the Standards and Recommended Practices of the International Civil Aviation Organization (ICAO). Other functions of the Division include personnel licensing, supervision of airworthiness and maintenance standards of aircraft registered in Hong Kong, supervision of light aircraft and helicopter operations, investigation of aircraft accidents and incidents, and safety data analysis.

# 飛行標準及適航
# FLIGHT STANDARDS AND AIRWORTHINESS

## 飛行標準組

### *簽發和續發航空營運許可證*

截至二零零九年三月三十一日，有八家航空公司持有香港航空營運許可證，它們為：

- 香港華民航空有限公司 (華民航空)
- 國泰航空有限公司 (國泰航空)
- 直升機服務(香港)有限公司
- 空中快線有限公司 (空中快線)
- 香港航空有限公司 (香港航空)
- 港龍航空有限公司 (港龍航空)
- 香港快運航空有限公司 (香港快運)
- 香港商用飛機有限公司 (香港商用飛機)

## FLIGHT STANDARDS OFFICE

### *Issue and Renewal of AOC*

As at March 31, 2009, there were eight Hong Kong AOC holders and they were:

- Air Hong Kong Limited (AHK)
- Cathay Pacific Airways Limited (CPA)
- Heliservices (Hong Kong) Limited (HEL)
- Sky Shuttle Helicopters Limited (SSH) (formerly known as Heli
- Express Limited (HEXP)
- Hong Kong Airlines Limited (HKA)
- Hong Kong Dragon Airlines Limited (HDA)
- Hong Kong Express Airways Limited (HKE)
- Metrojet Limited (Metrojet)


*民航處透過全面的巡查和審查計劃，繼續監察本地航空營運許可證的持證公司的安全表現和營運標準。*
*The safety performance and operating standards of Hong Kong AOC holders were monitored through a comprehensive programme of inspections and audits.*

年內，本部透過全面的巡查和審查計劃，繼續監察本地航空營運許可證的持證公司的安全表現和營運標準。當中，飛行標準組執行了93次飛行檢查，並對航空營運許可證的持證公司作出了合共310次的其他巡查(包括外站巡查和審批核准考核人員)。本部亦按照年檢程式，對本港航空公司所採用的35台飛行模擬器進行了評審、視察及重新簽發使用許可。此外，本部亦兼負監察政府飛行服務隊的直升機和定翼機運作的職責。而年內，為確保使用香港國際機場的外國航空公司均能符合國際標準，本部進行了個別的停機坪巡查。

During the year, the safety performance and operating standards of Hong Kong AOC holders were monitored through a comprehensive programme of inspections and audits. In addition to 93 flight operations inspections, the Flight Standards Office had conducted a total of 310 AOC inspections including station inspections, operational records inspections, training inspections and approval of authorised examiners. The 35 flight simulators used by these local airlines were evaluated, inspected and re-approved for use in accordance with the annual inspection procedures. The Division was also tasked with the responsibility of monitoring the helicopter and fixed-wing aircraft operations of the Government Flying Service (GFS). Furthermore, to ensure compliance with international standards by all airline operators at the Hong Kong International Airport (HKIA), the Division conducted separate ramp inspections on foreign airline operators during the year.

## 航空器移交

年內，合共有19架航空器被新增至香港民用航空器登記冊內，詳情如下：

## Delivery of Aircraft

A total of 19 aircraft were added to the Hong Kong Civil Aircraft Register in the period as follow:

| 航空公司 | 類型 | Airlines | Aircraft Type |
|---|---|---|---|
| 國泰航空 | 二架空中巴士A330、六架波音B747貨機和三架波音B777 | CPA | Two Airbus A330, six Boeing B747 freighter and three Boeing B777 |
| 直升機服務(香港)香港有限公司 | 一架Aerospatiale SA315B | Heliservices | One Aerospatiale SA315B |
| 香港快運 | 二架波音B737 | HKE | Two Boeing B737 |
| 香港商用飛機 | 二架灣流G200 | Metrojet | Two Gulfstream G200 |
| 個別私人 航空器營運者 | 一架Robinson R22、一架Robinson R44及一架龐巴迪 Global 5000 | Private aircraft operators | One Robinson R22 , one Robinson R44 and one Bombardier Global 5000 |

## 工作組

為確保有效施行國際民航組織的安全標準，本處負責領導飛行工作時間限制工作組、防止濫用精神科物質於航空業界工作組、宇宙輻射及航空委員會和風切變及湍流預報系統工作組的工作。當中、飛行工作時間限制工作組繼續與業界商討有關飛行工作之時間限制事宜，精神科物質工作組則繼續努力草擬防止濫用精神科物質之工作守則以便業界可以遵循，宇宙輻射及航空委員會則繼續透過監測計劃、監察機組人員所面對的宇宙輻射劑量，而風切變及湍流預報系統工作組則定期監察該系統的功能，藉以定立運作程序，優化系統的性能。

## 適航事務組

適航事務組繼續監察所有在香港登記飛機的維修和適航水準。由經驗豐富的適航主任所組成的適航事務組，工作範圍包括定期審查香港航空公司在本港、內地和海外的飛行站、定期審查認可的維修機構，以及在香港、內地、亞

## Working Groups

To ensure effective implementation of ICAO safety standards, the Flight Time Limitation Working Group (FTLWG), the Prevention on Problematic Use of Psychoactive Substances in Aviation Working Group, the Cosmic Radiation and Aviation Committee (CRAC) and Windshear and Turbulence Warning System Working Group (WTWSWG) are formed under the chairmanship of CAD. While the FTLWG continued to work with the industry on matters relating to flight time limitation, the psychoactive substances working group has been focusing in the development of the Codes of Practice for the industry regarding the prevention of the problematic use of psychoactive substances, the programme to monitor the exposure to cosmic radiation by crew members has been under constant review by CRAC, and the technical performance of the Windshear and Turbulence Warning System has been constantly monitored by the WTWSWG with a view to formulating operational procedures for maximising the capabilities of the system.

# 飛行標準及適航
# FLIGHT STANDARDS AND AIRWORTHINESS

洲、澳洲、歐洲和北美洲各地城市檢查飛機。上述工作之目的是為求適航事務組能履行航空營運許可證內的持續認可、維修機構的認可，以及為在香港登記的飛機簽發或續發適航證的有關職責。

*民航處人員進行航機檢查。*
*CAD officers conducting aircraft inspection.*

適航主任繼續接受適航事宜的相關技術培訓和吸取最新的監管策略資訊。此外，適航主任亦獲派出席國際研討會、會議和工作組會議，以擴闊適航主任的國際視野並瞭解適航標準的最新發展。報告年內，適航主任出席了空中巴士，波音飛機和ARJ21飛機的維修審查委員會工作組會議，國際民航組織基於性能的導航和意外調查的工作坊，以及飛機型號、人為因素和安全管理的課程。

### *飛機維修*

適航事務組透過機庫檢查、公司運作審查及產品審查，定期監察所有香港認可的飛機維修及飛機部件維修公司。截至二零零九年三月三十一日，共有25家公司獲發香港認可維修機構的資格。香港飛機工程有限公司、香港航空發動機維修服務有限公司及廈門太古飛機工程有限公司等主要維修公司，均受適航事務組監察、當中包括持續審查和定期視察。

## AIRWORTHINESS OFFICE

The Airworthiness Office monitored the maintenance and airworthiness standards of all Hong Kong registered aircraft. With a team of experienced Airworthiness Officers, the Office carried out routine AOC line station audits, approved maintenance organisation audits, and aircraft surveys locally in Hong Kong as well as other cities in the Mainland, Asia, Australia, Europe and North America, for the purpose of continual validation of AOC, approval of maintenance organisation, and the issue and renewal of Certificates of Airworthiness for Hong Kong registered aircraft.

Airworthiness Officers received technical training and regulatory update on airworthiness issues, and attended international seminars, conferences and working group meetings to widen their exposure and update their professional and technical knowledge on the latest development of the international airworthiness standards. In the report period, Airworthiness Officers had attended the Airbus, Boeing and ARJ 21 working group meetings on Certification, Flight Testing and Maintenance Review Board; the ICAO Performance Based Navigation and Accident Investigation Workshop as well as various aircraft type technical, human factors and safety management courses.

### *Aircraft Maintenance*

The Airworthiness Office continued to monitor all Hong Kong approved aircraft and aircraft component maintenance companies regularly through hangar surveys, company audits and product audits. As at March 31, 2009, there were 25 approved maintenance organisations holding Hong Kong approvals. Major maintenance companies, including Hong Kong Aircraft Engineering Company Limited (HAECO), Hong Kong Aero Engine Services Limited (HAESL), and Taikoo (Xiamen) Aircraft Engineering Company Limited (TAECO), are regulated through rolling audits and regular visits.

The Airworthiness Office also conducted maintenance related courses during the year. A two-week Hong Kong Airworthiness Course hosted by the Division in May 2008 with guest speakers from the Civil Aviation Administration of China (CAAC) and the United Kingdom Civil Aviation Authority (UKCAA), received overwhelming attendance from the industry, including maintenance engineers, technical services experts, maintenance controllers, managers, quality monitoring personnel, etc.

*截至二零零九年三月三十一日，共有25家公司獲發香港認可維修機構的資格。*
*As at March 31, 2009, there were 25 approved maintenance organisations holding Hong Kong approvals.*

年內，適航事務組亦有舉辦與飛機維修有關的課程。二零零八年五月，適航事務組舉辦為期兩星期的香港適航事務課程，並邀請中國民用航空局及英國民航局的客席講者作講解。上述課程獲業界熱烈參與，參加者包括維修工程師、技術服務專家、維修管制員、經理、品質監控人員等。

## *飛機維修訓練*

截至二零零九年三月三十一日，在本港和海外共有五家維修訓練機構獲發《香港航空要求—147》許可證。該五家機構均獲准舉辦跟維修在香港登記的飛機有關的基本訓練課程及飛機型號訓練課程。

## *Aircraft Maintenance Training*

As at March 31, 2009, there were a total of five HKAR-147 Aircraft Maintenance Training Organisations located in Hong Kong and overseas which were approved to provide basic and aircraft type training for the maintenance of Hong Kong registered aircraft.

# 飛行標準及適航
# FLIGHT STANDARDS AND AIRWORTHINESS

### *適航事務組統計數字*
*〈由二零零八年四月一日至二零零九年三月三十一日〉*

| | |
|---|---|
| 簽發適航證 | 19 |
| 續發適航證 | 226 |
| 審定重大改裝 | 11 |
| 認可飛機維修機構 | 25 |
| 認可飛機維修訓練機構 | 5 |
| 認可設計及製造機構 | 4 |
| 簽發飛機維修執照 | 1 395 |

### *Airworthiness Office Statistics*
*(between April 1, 2008 to March 31, 2009)*

| | |
|---|---|
| Certificate of Airworthiness Issued | 19 |
| Certificate of Airworthiness Renewed | 226 |
| Major Modification Approved | 11 |
| Approved Aircraft Maintenance Organisations | 25 |
| Approved Aircraft Maintenance Training Organisations | 5 |
| Approved Design and Manufacturing Organisations | 4 |
| Aircraft Maintenance Licence (AML) Issued | 1 395 |

## 航空人員執照事務組

### *飛行員執照*

執照事務組於二零零八至零九年度處理共2 680份有關簽發飛行員或機組人員執照、飛機型號和特殊批註的申領與及執行了3 105份飛行員執照考試。這些考試中，有2 393次考試在香港舉行，其餘的712次則是由本處人員前往位於澳洲的阿得雷德飛行學校，親自監考該校根據《CAD 509》批准檔所舉行的飛行員執照考試。執照事務組另共簽發了3 737份體檢合格證明書，並處理了221個以轉換海外執照形式申請簽發的香港執照。

### *飛機維修執照*

截至二零零九年三月三十一日，航空人員執照事務組簽發的有效執照共有1 521個。年內，航空人員執照事務組透過香港飛機工程有限公司位元元於將軍澳的電腦化考試系統，舉辦了合共6 923份試卷的考試。

## 協調本地空域使用者

為促進航空安全，香港分區飛行安全委員會繼續定期召開會議協調香港空域使用者之間的安全事宜。這些本地空域使用者包括定翼機機構和旋翼機機構(政府飛行服務隊、中國人民解放軍駐香港部隊(駐港部隊)、直升機服務（香港）有限公司、空中快線和香港飛行總會)、香港滑翔傘會以及個別私人航空器擁有人。

## PERSONNEL LICENSING OFFICE

### *Flight Crew Licensing*

During 2008-09, Personnel Licensing Office (PELO) processed 2 680 applications for initial licence issue or renewal, inclusion of ratings and addition or removal of endorsements in flight crew licences. A total of 3 105 CAD flight crew licensing written examinations were conducted with 2 393 held locally in Hong Kong while the remaining 712 were overseas examinations invigilated by CAD at Flight Training Adelaide in Australia under CAD 509 Approval. 3 737 Medical Certificates were issued to Hong Kong flight crew licence or air traffic controller's licence holders/applicants. PELO also processed during the year 221 applications for conversion of a foreign flight crew licence into a Hong Kong licence.

### *Aircraft Maintenance Licensing*

As at March 31, 2009, the number of valid AML issued was 1 521. During the report period, a total of 6 923 examinations were conducted at the delegated examination centre, using paperless computerised examination system, at HAECO in Tseung Kwan O.

## COORDINATION WITH LOCAL AIRSPACE USERS

To promote flight safety, the Hong Kong Sector Flight Safety Committee comprising local airspace users continued to meet regularly to discuss issues to enhance safety and coordination in the local airspace. These local airspace users include fixed-wing operators and rotary wing operators (GFS, the Hong Kong Garrison of the People's Liberation Army (PLA), HEL, SSH and the Hong Kong Aviation Club (HKAC)) as well as the Hong Kong Paragliding Association and private aircraft owners.

體諒到石崗機場是現時香港唯一可供輕型飛機運作之場地的原故，駐港部隊暫時批准香港飛行總會於週末繼續在該機場進行康樂性質的定翼機和旋翼機飛行活動和訓練。駐港部隊亦允許政府飛行服務隊在該機場進行直升機飛行員訓練。為確保飛行安全，所有使用石崗機場的機構均須與駐港部隊保持緊密聯繫和協調在該機場進行的活動。香港分區飛行安全委員會在有需要時會參與協調工作。

## 飛機登記

年內共有19架航空器被新增至香港民用航空器登記冊內，而同期亦有二架空中巴士A340型、一架龐巴迪CL604型、六架波音B737型、九架波音B747型、一架灣流G550型及一架Robinson R22飛機被取消有關登記。截至二零零九年三月三十一日，香港民用航空器登記冊內共有223架民用航空器。當中199架由香港航空營運許可證的持證公司和政府飛行服務隊所擁有，而它們的分類如下：

| 類型 | 數目 |
|---|---|
| 空中巴士A300型 | 8 |
| 空中巴士A320型 | 10 |
| 空中巴士A321型 | 6 |
| 空中巴士A330型 | 48 |
| 空中巴士A340型 | 16 |
| 波音B737型 | 8 |
| 波音B747型 | 52 |
| 波音B777型 | 27 |
| BAe4100型 | 2 |
| 灣流G200型 | 5 |
| 灣流G450型 | 1 |
| 灣流G550型 | 1 |
| 直升機 | 15 |

With Shek Kong airfield the only aerodrome available in Hong Kong for light aircraft operations, PLA continued to give temporary permission to HKAC to operate its recreational fixed-wing and rotary wing aircraft flying and training at the airfield during weekends. GFS was also allowed by PLA to conduct training for its helicopter pilots at the airfield. To ensure flight safety, all these Shek Kong airfield users maintained close liaison and coordination with PLA for their operations at the airfield. The Hong Kong Sector Flight Safety Committee assisted in the coordination if required.

## AIRCRAFT REGISTER

During the year, a total of 19 aircraft were put on the Hong Kong Civil Aircraft Register. In the same period, two Airbus A340, one Bombardier CL604, six Boeing B737, nine Boeing B747, one Gulfstream G550 and one Robinson R22 aircraft were removed from the Register. As at March 31, 2009, the total number of civil aircraft in the Hong Kong Civil Aircraft Register was 223. Of which 199 were registered under Hong Kong AOC holders and GFS as follows:

| Aircraft Type | Number |
|---|---|
| Airbus A300 | 8 |
| Airbus A320 | 10 |
| Airbus A321 | 6 |
| Airbus A330 | 48 |
| Airbus A340 | 16 |
| Boeing B737 | 8 |
| Boeing B747 | 52 |
| Boeing B777 | 27 |
| BAe4100 | 2 |
| Gulfstream G200 | 5 |
| Gulfstream G450 | 1 |
| Gulfstream G550 | 1 |
| Helicopters | 15 |

# 飛行標準及適航
# FLIGHT STANDARDS AND AIRWORTHINESS

*截至二零零九年三月三十一日，香港民用航空器登記冊內共有223架民用航空器。*
*As at March 31, 2009, the total number of civil aircraft in the Hong Kong Civil Aircraft Register was 223.*

## 安全數據分析

本部與各航空公司及維修機構保持緊密聯繫，跟進涉及在香港登記的飛機的事件。年內，本部詳盡地調查和分析了645宗個案。

## SAFETY DATA ANALYSIS

The Division maintained close liaison with airline operators and maintenance organisations regarding occurrences involving Hong Kong registered aircraft. During the year, 645 occurrences and incidents were investigated and analysed.

## 修訂《1995年飛航(香港)令》

由二零零九年一月一日起，本港航空法例 —《1995年飛航(香港)令》(《命令》)的修訂生效，以配合國際民用航空組織(國際民航組織)有關適航、航空器設備、安全管理、數據保存和人員執照的最新規定和建議措施，以及適用的國際慣例。《命令》亦訂定所需條文，以處理根據《芝加哥公約》第83分條作出職能及責任轉移而出現的情況。

## 安全管理系統

由二零零九年一月一日起，航空公司和飛機維修機構須推行安全管理系統，以配合中國香港的安全計劃。《命令》相關條文已修訂，以便在香港實施上述安全管理系統的規定。

為推廣安全管理概念，促進亞太區和業界推行安全管理系統，本部聯同國際民航組織，在二零零八年六月在香港舉辦國際民航組織安全管理系統課程，為期五天。課程備受歡迎，共有超過33名來自本地和國際航空界以及亞太區民航當局的航空專家和人員參加。

## AMENDMENTS TO THE AIR NAVIGATION (HONG KONG) ORDER 1995 (AN(HK)O)

From January 1, 2009, the amendments to the AN(HK)O, the local legislation on air navigation, became effective to keep abreast of the latest requirements and recommended practices of the International Civil Aviation Organization (ICAO) and applicable international practices relating to airworthiness, aircraft equipment, safety management, data preservation and personnel licensing and to provide for the necessary provisions to deal with the case where there is a transfer of the functions and duties under Article 83 bis of the Chicago Convention.

## SAFETY MANAGEMENT SYSTEM

From January 1, 2009, air operators and maintenance organisations were required, as part of Hong Kong, China's Safety Programme, to implement their Safety Management System (SMS). The relevant legislation in the AN(HK)(O) had been amended to bring such SMS requirements into legal effect in Hong Kong.

To promote the concept and to facilitate the SMS implementation throughout the region and industry, the Division jointly organised with ICAO to host a 5-day ICAO SMS Course in Hong Kong in June 2008. The course was well attended by over 33 civil aviation experts and personnel from both the local and international industry, and civil aviation authorities in the regions.

# 機場安全標準
# AIRPORT STANDARDS

機場安全標準部負責監管機場安全、航空保安、障礙物管制及空運危險品的工作。透過一個由本部執行的發牌程序，香港機場管理局獲授權營運香港國際機場。本部亦負責監察直升機場的安全及保安水平，並肩負協調機場簡化手續的任務。

The Airport Standards Division is responsible for the regulatory functions in respect of airport safety, aviation security, control of obstructions and the safe transport of dangerous goods by air. The Airport Authority Hong Kong (AAHK) is authorised to operate the Hong Kong International Airport (HKIA) through a licensing mechanism administered by the Division. The Division also monitors the safety and security of heliport operations and assumes the role in coordinating airport facilitation.

# 機場安全標準
# AIRPORT STANDARDS

*香港國際機場。*
*Hong Kong International Airport.*

## 機場安全

### *簽發機場牌照*

本部繼續執行對機場管理局的安全監督，以確保該局的表現符合《機場牌照發牌規定文件》的規定。本部根據國際民航組織的最新要求定期更新此規定，並在年內對該規定文件作了三次主要修改。為確保香港國際機場持續符合機場牌照發牌規定，本部經常巡察及審計機場地面狀況，目視助航設備，飛行區內飛機運作所需設施，及機場管理局與地勤服務公司為飛機提供的地勤運作。本部亦派員巡察機場飛行區內的臨時及定期維修工程，並監察飛行區內的改善及擴建工程項目，包括從規劃、設計直至工程完成的各個階段。

機場管理局在年度內進行了一系列的維修及提升工程，以加強機場運作的安全和效率。其中，南跑道刨鋪工程在二零零七年九月展開，至二零零八年四月完工。此外，機場管理局在維修停機坪加建一條滑行徑及兩個機位的工

## AIRPORT SAFETY

### *Aerodrome Licensing*

The Division continued to exercise safety oversight on the performance of the AAHK to ensure compliance with the aerodrome licensing requirements stipulated in the Aerodrome Licensing Requirements Document. The document was updated by the Division periodically to incorporate the latest International Civil Aviation Organization (ICAO) requirements and three amendments were made during the year for such purpose. To ensure the HKIA's continued compliance with these aerodrome licensing requirements, frequent inspections and audits on the conditions of airfield pavements, visual aids, airside facilities required for aircraft operations as well as aircraft ground operations provided by AAHK and relevant ground handling agents were conducted during the year. The Division also inspected ad hoc and scheduled airside maintenance works and monitored improvement and expansion works at the HKIA from their planning and design stages until their completion.

Upgrading works were undertaken by the AAHK to enhance the safety and efficiency of airport operations. The South Runway

程，於二零零七年中展開，至二零零八年十月完工。本部於審批該設施期間，與機場管理局覆核飛機在牽引車曳行下的安全運作，並與機場管理局緊密聯繫以確保新設施符合所有的安全規定。

為減少降落飛機佔用跑道時間，機場管理局於南跑道增建兩條快速出口滑行道，工程在二零零六年十二月至二零零八年七月進行。新的快速出口滑行道，完全符合國際民航組織對“Code F”類別飛機的操作要求。本部與機場管理局緊密合作，分階段把現時與南跑道相連的一些快速滑行道的編碼重新安排，確保加入這兩條新滑行道後，整體滑行道系統可順暢地運作。

其他在機場飛行區南面的主要發展是商用航空中心的停機坪擴建工程。此工程在二零零七年十一月展開，它包括新增可供國際民航組織“Code C”類別的飛機使用的停機位和有關的停機坪照明系統，及伸延停機坪內Z3滑行道，以便“Code C”類別的飛機在停機坪擴建後運作更暢順，有關工程已在二零零八年十二月完成。此外，本部和機場管理局緊密地與商用航空中心協調，更新該中心的運作程序，以配合其停機坪擴建後可供“Code A”及“Code B”類別的小型飛機直接從停機位滑行出滑行道的運作。

*檢視停機坪擴建後的地面標誌。*
*Inspection of the markings on the apron extension.*

was resurfaced between September 2007 and April 2008 while the Maintenance Apron was expanded by the addition of a new taxilane and two maintenance aircraft parking stands. Regarding the latter project, the expansion works commenced in mid 2007 and was completed in October 2008. The Division reviewed with the AAHK the safe operations of aircraft under tractor towing during the licensing phase and worked closely with AAHK to ensure that all safety requirements were met.

With a view to reducing the runway occupancy time of landing aircraft, the construction works for two additional rapid exit taxiways from the South Runway commenced in December 2006 and were completed in July 2008. These two new taxiways are compatible with ICAO Code F aircraft operation. During the transition and integration process, the Division worked closely with the AAHK in revising in phases the numbering of other adjacent taxiways associated with the South Runway for the smooth incorporation of these new taxiways into the system.

A major airport development on the south side of the airfield was the Business Aviation Centre (BAC) apron expansion. The expansion works included the provision of additional parking stands of up to the ICAO Code C standard, the associated high mast lightings, and extension of the taxilane Z3 designed to accommodate Code C aircraft to facilitate the circulation of ground movement of aircraft within the expanded apron. The expansion works commenced in November 2007 and was completed in December 2008. The Division worked closely with AAHK in their coordination with BAC in amending the Standard Operating Procedures for the BAC aprons. The expanded facilities allowed for direct taxi-out operations from designated stands for Code A and Code B aircraft.

On the eastern side of the airfield, the most important development was the new North Satellite Concourse. Construction works for the new Concourse, which involved the conversion of six remote stands that could accommodate up to B747 aircraft into a passenger terminal with 10 frontal aircraft stands for medium to small sized aircraft served by airbridges, was commenced in March 2007. Four of these 10 stands had already been approved to commence operation as remote stands without airbridges and refuelling facilities from March 2009 while the project was scheduled for

# 機場安全標準
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在飛行區東面最重要的發展是興建新的北衛星客運廊。該項工程在二零零七年三月展開，它將六個大型的B747飛機停機位改建成一個遠端客運樓及十個接連飛機橋的中小型飛機停機位。此十個新停機位之中，其中四個(不包括機橋及加油設備) 已於二零零九年三月完成並獲本部批准投入運作，而整體工程預計在二零零九年十二月完成。本部持續對工程緊密監察，除確保工程在進行時對機場運作的影響減至最低外，亦確保新設施在完工後完全符合機場牌照規定。

年內，機場管理局繼續改善飛行區地面燈號系統的工程。機場管理局根據早前的地面燈號系統研究報告，於二零零九年三月開始更換所有南跑道及相關滑行道之恆流調光器。本部於工程招標至施工各個階段與機場管理局進行多次會議，商議有關的進展和程序，確保該工程順利進行。

為提升南跑道航行燈號的專用監控網絡系統達至與北跑道相關系統一樣的高水平，本部與航空交通部嚴謹審閱由機場管理局提交於二零零九年三月施工的改善工程建議書。隨後機場管理局修改施工建議，並於二零零九年三月二十五日完成工程。本部往後仍密切監察新網絡系統的表現。

在機場的未來發展方面，本部聯同航空交通管理部參與了機場管理局主持的研討會及委員會，向機場管理局就機場中場發展、第三條跑道及二零三零年機場規劃大綱的研究等提出意見，以確保這些項目完成後，飛行區的運作繼續保持暢順。本部亦對機場管理局一些改善飛行區運作的新措施，如在停機位後方道路新增的道路及標示等，提出意見。

年內，本部對機場管理局進行了十四次審計及執行了一百三十一次巡察，範圍包括飛行區運作、機場改善工程、飛行區維修運作、機場員工的培訓、安全管理體系的實施及救援服務等。為確保香港國際機場在各層面運作皆符合機場牌照既定要求，本部參與了機場管理局對機場特許經營公司所作出的審計。本部亦監察機場管理局對飛機地面事

overall completion by December 2009. The Division will continue to closely monitor this project until its full commissioning to ensure that disruptions to normal airport operations during these works are kept to a minimum and, the new facility will be completed with full compliance to the licensing requirements.

Enhancement works on the Airfield Ground Lighting (AGL) System continued during the year. Based on the consultancy study on the AGL System, AAHK commenced replacement of the Constant Current Regulators (CCRs) for the South Runway and associated taxiways from March 2009. To monitor the smooth change over of the facilities, the Division participated in the coordination committee between CAD and AAHK and coordination meetings were held to discuss the progress and procedure for the CCRs replacement from the tender stage to the implementation stage.

For the purpose of upgrading the South Runway Dedicated Network (DN) to the same high standard as the North Runway DN, the Division together with Air Traffic Management Division (ATMD) critically evaluated the proposal from AAHK for the upgrading work in March 2009. Subsequently AAHK revised their method statement and finally completed the work on March 25, 2009. The Division closely monitored the performance of the new DN thereafter.

To facilitate close coordination with aviation industry stakeholders in the airport community and to ensure smooth aircraft operation for the future airport developments, the Division in collaboration with ATMD participated in various forum or committees convened by AAHK to provide comments on the future airfield infrastructure development at the mid-field area, the potential third runway for HKIA and the Airport Master Plan 2030 study. The Division also provided comments to the AAHK on their new initiatives to improve airfield operations such as the new ground markings on vehicular routes along the back-of-stand roads and the associated access roads.

During the year, the Division carried out 14 audits and 131 inspections covering AAHK's airfield operations, enhancement works related to aircraft operations, airside maintenance activities, staff training, implementation of Safety Management System (SMS), emergency planning and airport rescue and fire fighting (RFF) services. To ascertain compliance of the HKIA with the licensing requirements at all levels, the Division participated in the airfield franchisee audits convened by the AAHK. The Division also exercised oversight on the investigation of aircraft ground

故的調查工作，確保有關公司採取適當改善措施防止同類事故再發生。就監察香港國際機場在貫徹執行安全管理體系方面，本部持續與有關單位評核可接受的安全水平，並繼續監察及提升安全管理體系的執行。

二零零八年的飛機意外救援演習於同年的十二月十二日在香港國際機場西面進行。是次演習測試了各參與單位在同時間使用不同模式交通工具，包括直升機，救援船及救護車等運送受傷機員與乘客的協調工作。

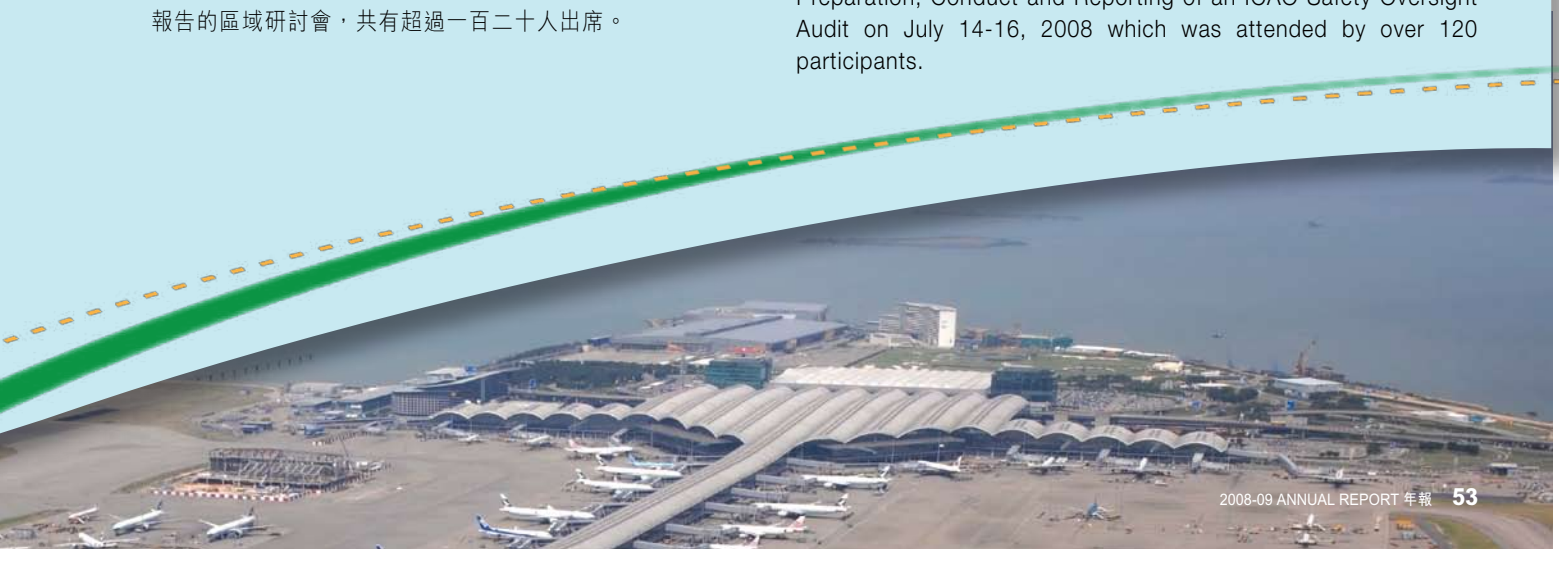
incidents conducted by the AAHK to ensure that appropriate remedial measures were taken to prevent recurrence. As part of the effort in monitoring the continuous implementation of the SMS at the HKIA, the Division continued to review the Acceptable Level of Safety with relevant parties and will continue to monitor the implementation and enhancement of the airport-wide SMS.

The annual aircraft crash exercise for 2008 was conducted on December 12, 2008 at the western airfield of the HKIA. The exercise tested the coordination of participating agencies in evacuating injured passengers and crew in multi-modal transport mode including helicopters, rescue boats and ambulances.

*飛機意外救援演習的分流站。*
*The triage point of the crash exercise.*

為預備國際民航組織根據普遍安全監督審計計劃對香港民航處進行的審核，本部於二零零八年七月十四至十六日，籌組了一次國際民航組織安全監督審計有關籌備、執行與報告的區域研討會，共有超過一百二十人出席。

To facilitate the Department in preparing for the ICAO audit on Hong Kong under the Universal Safety Oversight Audit Programme (USOAP), the Division organised a Regional Seminar on the Preparation, Conduct and Reporting of an ICAO Safety Oversight Audit on July 14-16, 2008 which was attended by over 120 participants.



# 機場安全標準
# AIRPORT STANDARDS

## 安全監察

### *直升機場的運作及發展*

本部繼續監察供本地航班使用的直升機場，包括半島酒店直升機場的運作，以及對供本地航班使用的直升機場及跨境直升機場的策劃與發展提出意見。

## SAFETY REGULATION

### *Heliport Operations and Development*

The Division continued to monitor the safety of domestic heliport operations including the Peninsula Hotel Heliport and to provide advice on the planning and development of domestic and cross-boundary heliports.


*機場安全標準部繼續監察供本地航班使用的直升機場的運作安全。*
*The Division continued to monitor the safety of domestic heliport operations.*

### *管制障礙物*

本部審核各建築和發展計劃及可行性研究並提供意見，確保項目符合機場高度限制及航空安全要求。經審核的主要項目包括港珠澳大橋香港口岸、港珠澳大橋香港接線、數碼地面電視計劃、屯門至赤鱲角連接路、青衣至大嶼山連接路、位於果洲群島海面及南丫島以西海面的風力發電場、十號貨櫃碼頭發展計劃及廣深港高速鐵路等。而在香港國際機場內的主要項目包括DHL中亞區樞紐中心擴

### *Control of Obstructions*

The Division assessed and provided inputs to various building and development projects and feasibility studies, etc. to ensure compliance with the Airport Height Restrictions (AHR) and other applicable aviation safety requirements. The major projects and studies outside the HKIA included the Hong Kong-Zhuhai-Macao Bridge – Boundary Crossing Facilities, Hong Kong-Zhuhai-Macao Bridge – Hong Kong Link Road, the Digital Terrestrial Television Project, the Tuen Mun-Chek Lap Kok Link, the Tsing Yi-Lantau Link,

建、香港飛機工程有限公司機庫擴建、中國飛機服務有限公司機庫車間、北衛星客運廊、天際萬豪酒店及國泰空運貨站等。

為確保航空安全不受影響，本部亦繼續監察本港不同地點舉行的各大小型雷射激光、探射燈及煙花表演，包括「幻彩詠香江」燈光匯演的新編排，國慶及新年煙花匯演，以及大廈外牆的燈光，尤其有照明的廣告招牌。

本部於年內共批准八十二宗機場高度限制臨時豁免的申請，以方便有關建築工程進行及在機場附近航行船隻之運作。

在海事處通力協助下，本部防止船隻駛進機場附近的海上限制區，以保障航機及無線電導航儀器的運作。年內，海事處共提出了十一宗非法闖入限制區的檢控。

### 一般飛行活動

本部繼續規管一般飛行活動，包括滑翔傘、氣球、風箏及模型飛機等活動，確保上述活動在符合飛行安全法例的情況下進行，並且不會影響飛機的運作。

一名涉及一宗發生於二零零八年一月之模型直升機意外的人士，於二零零九年二月五日被裁定觸犯《一九九五年飛航(香港)令》第四十八條，判處罰款五千元。其後，本處於二零零九年三月印製了一份名為「無線電控制模型飛機」的飛行安全指引，提醒模型飛機操作者要注意安全，包括如何選擇飛行地點及禁止放飛模型飛機地點等。本部分發這些安全指引至各區民政事務處、警署、及模型飛機飛行會，以供再發放予有興趣人士及一般市民。

the wind farms at Ninepins and waters west of Lamma Island, the Container Terminal 10 Development Project and the Guangzhou-Shenzhen-Hong Kong Express Rail Link. Major projects within the HKIA included the DHL Central Asia Hub expansion, the Hong Kong Aircraft Engineering Company Limited (HAECO) hangar expansion, the China Aircraft Services Ltd hangar-workshop, the North Satellite Concourse, the SkyCity Marriott Hotel and the Cathay Pacific Cargo Terminal.

To ensure that aviation safety would not be compromised, the Division also continued to monitor the use of lasers, search lights and fireworks displays at shows of different scales and at different venues, including new scenarios for the "Symphony of Lights" show, National Day and New Year Fireworks Displays and other lighting displays at building façades, especially illuminated advertisement signs.

During the year, the Division issued 82 temporary AHR exemptions to facilitate construction works in the territory and vessel operations in the vicinity of the airport island.

With the assistance of the Marine Department, the Division continued to ensure the integrity of the Marine Exclusion Zones (MEZs) established in the vicinity of the airport island to safeguard the operation of aircraft and radio navigational aids. During the year, 11 prosecutions against illegal entry into the MEZs were instituted by the Marine Department.

### General Aviation Activities

The Division continued to monitor the safety of general aviation activities, including paragliding, balloon flights, kite flying and model aircraft flying to ensure that these activities were conducted in compliance with applicable aviation safety regulations and that civil aircraft operations were not affected.

A person involved in a model helicopter accident in January 2008 was convicted of contravening Article 48 of Air Navigation (Hong Kong) Order 1995 and was sentenced to a fine of $5,000 on February 5, 2009. Subsequently, CAD produced a "Safety in Radio-controlled Model Aircraft Flying" leaflet in March 2009 to remind model aircraft flyers of the importance of flying model aircraft safely, including tips on choice of flying sites and places where

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### *飛行禁區*

為免香港迪士尼樂園受到飛機噪音及視覺滋擾，民航處根據《飛航(飛行禁制)令》訂立及實施飛行禁區。年內，本處共批出九宗豁免，讓必須於飛行禁區內進行的飛行活動，包括放飛可載人繫留氣球的慈善活動，以及直升機空中拍攝及空中吊重等得以進行。

### 運載危險物品

本部的危險品事務組繼續根據國際民航組織標準及本地法例的規定，監管空運危險品。航空公司必須符合該組訂定的安全標準，才能獲發許可證運載危險品進出或飛越香港。此外，該組繼續定期和突擊巡查空運貨站、貨運代理人及付運人，監察托運危險品的安全水平。年內，共有七間和五十間航空公司分別獲批新的空運危險品許可證和續期，至二零零九年三月底，共有六十一間航空公司獲准運載危險品進出或飛越香港。

### *發佈安全要求*

危險品事務組繼續透過教育和宣傳活動發佈安全要求，提高安全空運危險品的意識。年內共發出安全資料十一份，舉行十場簡報會和研討會。

民航處與航空公司、香港貨運物流業協會有限公司和香港付貨人委員會於二零零八年十二月十二日合辦研討會，發佈托運鋰電池的最新規定，共有超過二百人出席。


*民航處人員介紹托運鋰電池的最新規定。*
*A CAD officer giving a presentation on the new ICAO lithium battery requirements.*

model aircraft flying are forbidden. The leaflets were distributed to District Offices, police stations and model aircraft flying clubs for further dissemination to interested parties and the general public.


*無線電控制模型飛機的飛行安全指引單張。*
*Safety in Radio-controlled Model Aircraft Flying leaflet.*

### *Flight Prohibition Area*

For the purpose of avoiding aircraft noise and visual disturbance to the Hong Kong Disneyland, a Prohibition Area has been established under the Air Navigation (Flight Prohibition) Order. During the year, nine exemptions were granted to facilitate essential flying activities within the Prohibition Area such as passenger-carrying captive balloon flights for charity and helicopter flights for aerial filming and photography as well as for aerial lifting works to/from the area.

### CARRIAGE OF DANGEROUS GOODS

The Dangerous Goods Office of the Division continued to enforce the ICAO and legal requirements on the safe transport of dangerous goods by air. Through a dangerous goods permission system, airlines must satisfy all pertinent requirements before they can carry dangerous goods to, from or over Hong Kong. In addition, the Office continued to monitor the safety standards of dangerous goods operations at the air cargo terminals, air freight forwarders and air cargo shippers by regular and ad hoc inspections. During the year, seven new and 50 renewal applications for dangerous goods permissions were processed. At the end of March 2009, 61 airlines were permitted to carry dangerous goods onboard their aircraft flying to, from or over Hong Kong.

## 法例

國際民航組織於二零零九年一月更新有關危險品的規定。為使本地兩套相關法例與最新的國際標準一致，危險品事務組展開修訂法例程序，其中諮詢工作在年內完成。

危險品事務組於二零零八年十一月，為指定《危險品(航空托運)(安全)規例》訂明的貨運代理人最新培訓要求在二零零九年七月一日生效展開刊憲程序。年內，危險品事務組積極發佈規管資訊，利便業界遵從要求，包括向貨運代理人發出五次備忘函件、在二零零八年七月批核首套自學課程，以及審批十三間培訓機構的培訓課程。

## 協助業界運載危險物品

為配合政府在二零零八年五月的四川地震賑災行動，危險品事務組聯絡航空公司和空運貨站，加快付運緊急救援物資，並協助政府各部門根據規定的安全標準重新包裝部分救援物資。

危險品事務組應香港鐘表業總會(總會)的要求，與總會和航空公司在二零零八年九月十日舉行會議。是次會議不但促進航空業與鐘表業的合作，更方便各方討論如何提高空運鐘表的安全和效率。

## 與國際民航組織和外地航空當局聯繫

為瞭解危險品空運要求的最新發展，危險品事務組定期派員參加國際會議和工作坊，並與澳洲、加拿大、英國、美國及內地的民航局保持緊密聯絡。該組人員於二零零八年十一月以中國代表顧問身分到荷蘭參加國際民航組織危險品專家小組會議。

## Promulgation of Safety Requirements

The Dangerous Goods Office continued to promulgate safety requirements and promote the safe transport of dangerous goods by air through education and publicity. During the year, 11 pieces of safety information were issued and 10 briefings and seminars were given.

To promulgate the new requirements for lithium batteries, CAD co-hosted a seminar with the airlines, Hongkong Association of Freight Forwarding and Logistics Ltd. (HAFFA) and Hong Kong Shippers' Council. The seminar was held on December 12, 2008 and attended by over 200 participants.

## Legislation

The ICAO dangerous goods requirements were last updated in January 2009. To align the two sets of local legislations with the latest international standards, the Dangerous Goods Office had embarked on a legislative amendment exercise. A consultation exercise was completed during the year as part of this legislative amendment exercise.

To bring the new training requirements for freight forwarders under the Dangerous Goods (Consignment by Air) (Safety) Regulations into effect on July 1, 2009, the Dangerous Goods Office instigated the gazettal procedures in November 2008. During the year, the Office assumed an active role in promulgating regulatory information and facilitating compliance. The work completed included the issuance of five rounds of reminders to forwarder companies, the approval of the first self-study package in July 2008, and the vetting of training programmes of 13 training institutes.

## Facilitation to industry in the carriage of dangerous goods

To support the Government's Sichuan earthquake relief operations in May 2008, the Dangerous Goods Office liaised with airlines and air cargo terminals to expedite the emergency relief shipments and assisted various Government Departments to repack certain relief materials according to the required safety standards.

On request of the Federation of Hong Kong Watch Trades and Industries (FHKWTI), the Dangerous Goods Office arranged

# 機場安全標準
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### *危險品事故*

年內發生的危險品事故，有數宗涉及未經申報的危險品或危險品損毀。為免類似事件重演，危險品事務組對所有事故報告作出分析，並將有用的調查結果向本地空運業和其他航空當局發佈。此外，該組就一宗涉及航空托運未經申報化學品的事故提出檢控，一名托運人在二零零八年九月被定罪。

## 航空保安

### *加強香港國際機場保安措施*

為了配合各航空公司在香港國際機場推行自助及網上預辦登機手續，並保持機場禁區保安的完整性，自二零零八年十一月三日起，所有離境旅客進入機場禁區前，需要提交其登機證及旅行證件，以便核實他們的身分。民航處監察實行的情況，並與機場管理局和它的保安服務供應商緊密聯繫，確保有足夠設施及人手實行措施。

### *對香港國機場營運者的保安監察*

透過審計及檢查，本部確保機場管理局及其他在香港國際機場的營運者，包括租戶禁區營運者，航空公司及航膳公司，符合香港航空保安計劃的規定。

*一號客運大樓*
*Terminal 1*

a meeting between the FHKWTI and the airlines on September 10, 2008. The meeting facilitated the cooperation between the aviation industries and the watch industries and the discussion on enhancing safety and efficiency in respect of shipping watches by air.

### *Liaison with ICAO and Overseas Authorities*

To keep track of the international developments, the Dangerous Goods Office regularly participated in dangerous goods conferences and workshops. In November 2008, staff of the Dangerous Goods Office attended an ICAO Dangerous Goods Panel Working Group Meeting in Netherlands as advisors to China. The Office also maintained regular contacts with other civil aviation authorities in Australia, Canada, United Kingdom, United States of America and the Mainland.

### *Dangerous Goods Incidents*

Most of the incidents that occurred this year were related to undeclared or damaged dangerous goods. All incident reports were analysed with an aim to preventing recurrence of similar incidents. Useful findings were disseminated to local air cargo industry and other aviation authorities. An incident involving the offering of undeclared chemicals for air carriage was recommended for legal action and a consignor was subsequently convicted in September 2008.

## AVIATION SECURITY

### *Enhanced Security Measures at HKIA*

With a view to facilitate the implementation of self service and on-line check-in services for passengers by airlines at Hong Kong International Airport and at the same time maintaining security integrity of the airport security restricted area, with effect from November 3, 2008, all departing passengers are required to present their boarding passes and travel documents at the entry to the airport restricted area for identity verification. The Division monitored the implementation and worked with AAHK and its security service provider to ensure that the required facilities and personnel were available for implementation.

年內，本部根據航空保安條例審批了十二次禁區指定。這些禁區指定主要配合一號客運大樓離境檢查大堂的重新配置工程，飛行區擴建，延伸機場旅客捷運系統至預計於二零零九年底啟用的海天碼頭，新貨運站的興建及商務機中心停機坪的擴展。本部的人員在禁區生效前均作詳細檢查，確保營運人有足夠管制出入措施保護禁區。

### 空運貨物保安

自二零零零年三月，香港實行一套管制代理人制度，以符合國際民航組織的空運貨物保安標準。在此制度下，每一個向民航處登記為管制代理人的貨運代理，需要為空運貨物提供保安管制措施及檢查指定類別的貨物。本部持續檢查登記的管制代理人，確保他們遵守規定。管制代理人數目不斷增長，至二零零九年三月三十一日止，共有1 422管制代理人在本處登記冊內。

為完善管制代理人制度，本部與空運貨物業界組成工作小組，研究措施加強供應鏈的保安。

### 難受管束乘客

為針對在民航機上難受管束或擾亂秩序的乘客的行為，香港於二零零五年制訂航空保安〔修訂〕條例，為該等行為施加刑事制裁。在報告年內，於該修訂條例下有十一宗成功檢控個案。

### 二零零八年奧運馬術比賽及殘障奧運馬術比賽

本部積極參與民政事務局及馬術公司設立的不同委員會及工作小組，提供意見，以制訂措施方便參賽隊伍及馬匹進出香港國際機場及確保他們的安全。本部並與其他政府部門、機場管理局及馬術公司合作，制訂一個民航處馬術比賽應變計劃，應付因應馬術比賽可能發生的突發事件。

### Security Oversight of Operators at HKIA

The Division ensured that AAHK and the operators at the HKIA, including the tenant restricted area operators, aircraft operators and aircraft catering and stores supplies operators, complied with the requirements in the Hong Kong Aviation Security Programme, through audits and inspections.

During the year, the Division approved 12 designations of the restricted area under the Aviation Security Ordinance. The designations were made to accommodate the reconfiguration of the Departure Immigration Halls at Terminal 1, expansion of the airside area, extension of the Automated People Mover to the Skypier which is scheduled to be in operation in end 2009, construction of the new cargo terminal and expansion of the apron of the Business Aviation Centre. Officers of the Division conducted inspections prior to the commencement of the operations of the designations to ensure that sufficient protection was provided for controlling access to the restricted areas.

### Air Cargo Security

Hong Kong has implemented a Regulated Agent Regime (RAR) since March 2000 to comply with the ICAO cargo security standards. Under the RAR, a cargo agent registered as a Regulated Agent with the Department is required to provide security control measures on consignments of air cargo and apply screening on prescribed sources of air cargo. The Division continued to monitor the compliance of the Regulated Agents with the requirements of the RAR through inspections. The number of Regulated Agents has grown steadily, and as of March 31, 2009, there were 1 422 Regulated Agents registered with the Department.

With a view to enhancing the RAR, the Division set up a working group which comprised representatives from the air cargo industry to identify measures for securing the supply chain.

### Unruly Passengers

To fight against the unruly or disruptive behaviour committed on board civil aircraft by passengers, the Aviation Security (Amendment) Ordinance was enacted in 2005 to impose penalties on such offences. During the reporting period, there were 11 cases of successful prosecutions under the Ordinance.

# 機場安全標準
# AIRPORT STANDARDS

*運載奧運火炬的專機獲民航處發出危險品豁免進出及飛越香港。*
*An exemption was granted for the Olympic Game torch to be carried onboard a special charter flight to, from or over Hong Kong from the general dangerous goods requirements.*

為確保馬術比賽的參賽隊伍及馬匹的安全，並使比賽不受干擾，民航處於二零零八年七月二十六日至九月十四日期間，在沙田和雙魚河比賽場地，及奧運選手村實施禁飛區。本部人員於比賽期間密切監察香港國際機場和禁飛區的運作情況。

## *簡化手續*

透過參與機場簡化手續委員會，本部監察國際民用航空公約《附件九〔簡化手續〕》內的標準及建議措施在香港國際機場的實施情況。本部因應國際民航組織一項對《附件九》的修訂向有關政府部門、機場管理局及航空公司諮詢。

於本報告年內，本部發出了2 593張空勤人員證書予香港登記的航空公司的機組人員。

## *2008 Olympic and Paralympic Equestrian Events*

Through active participation as members in various Committees and Working Groups established by the Home Affairs Bureau and the Equestrian Company for the Olympic and Paralympic Equestrian Events held in Hong Kong in August and September 2008, the Division provided advice to them in developing arrangements to facilitate the handling of the athletes, participants and competition horses and ensure their safety and security in passing through the HKIA. In collaboration with other Government Departments, AAHK and the Equestrian Company, a CAD Departmental Contingency Plan specifically for the Equestrian Events was developed to deal with contingencies that might arise and affect the handling of the participants and competition horses.

To ensure the safety and security of the participants, horses and spectators, and to minimise interruptions to the competitions, the Department imposed restricted flying zones at the competition venues at Shatin and Beas River and the Olympic Village from July 26 to September 14, 2008. Officers of the Division monitored the operations at the HKIA and the restricted flying zones during Events periods.

## *Facilitation*

Through the participation in the Airport Facilitation Committee, the Division monitored the implementation of the Standards and Recommended Practices of the ICAO Annex 9 on Facilitation at the HKIA. The Division conducted a consultation with the relevant Government Departments, AAHK and the airlines on an amendment to the Annex 9 proposed by ICAO.

During the reporting period, 2 593 Crew Member Certificates were issued to the crew members of Hong Kong registered aircraft operators.

## 國際事務

### *國際民航組織亞洲太平洋區互助航空保安計劃*

香港自二零零四年參加國際民航組織亞洲太平洋區互助航空保安計劃。該計劃成立的目的是協助參與計劃成員符合國際民用航空公約《附件十七》及《附件九》內的航空保安標準及建議措施，並加強他們的航空保安能力。本部於二零零八年六月派出兩名人員往斐濟參加該計劃之第五次主導委員會會議。

### *亞太經濟合作組織*

本部自二零零零年代表“中國香港”參與亞太經濟合作組織運輸工作組航空保安小組，並於二零零五年起年擔任該組主席。本部的兩名人員於二零零八年五月出席在菲律賓馬尼拉舉行的會議，並將任滿的主席位置移交澳洲。

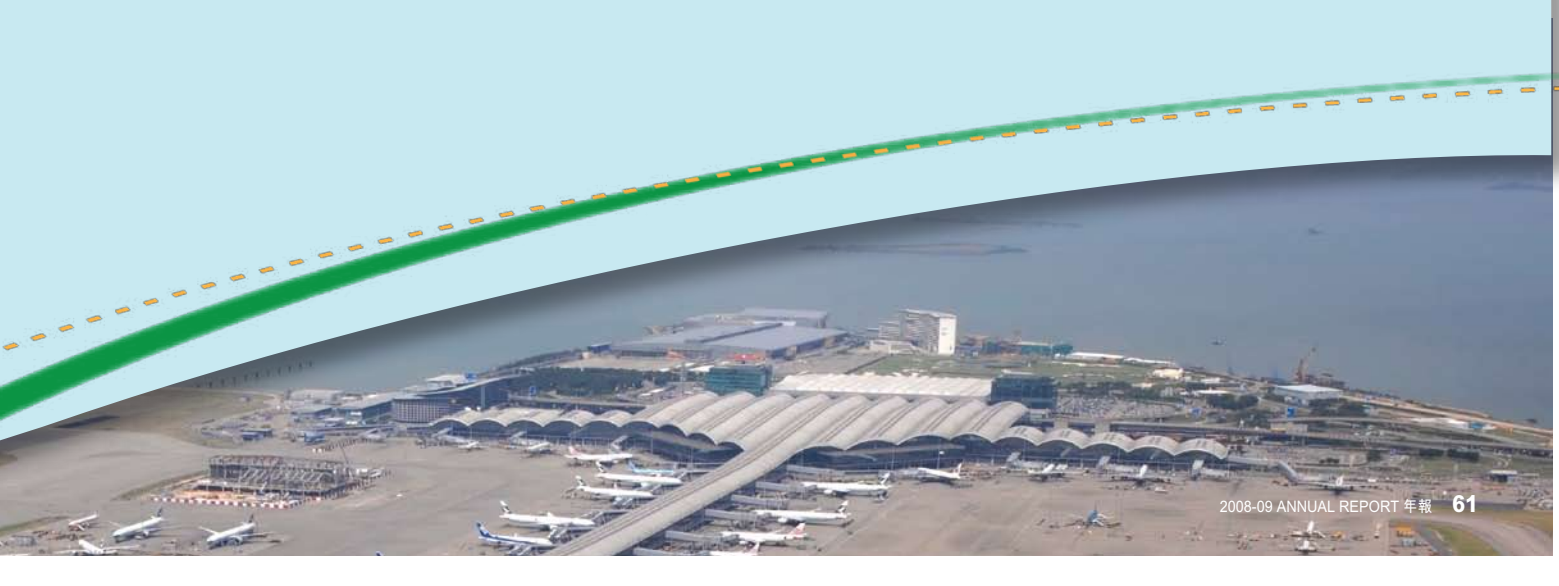
## INTERNATIONAL ACTIVITIES

### *ICAO Cooperative Aviation Security Programme – Asia Pacific (CASP-AP)*

Since 2004, Hong Kong has joined the ICAO CASP-AP which was established by ICAO. The ICAO CASP-AP aims at assisting states and administrations in the Asia Pacific Region to comply with the ICAO standards and recommended practices for aviation security in Annexes 9 and 17, and enhance their aviation security capabilities. Two officers from the Division attended the Fifth Steering Committee Meeting of the Programme in Fiji in June 2008.

### *Asia Pacific Economic Cooperation (APEC)*

Since 2000, the Division has represented Hong Kong, China to participate in the Aviation Security Sub-Group (ASG) of the APEC Transportation Working Group which was established with the objective of enhancing the security standards of member economies. Hong Kong, China acted as the Chair of the ASG since 2005. Two officers attended an ASG meeting in Manila, Philippines in April 2008 at which Hong Kong, China handed the Chair of ASG to Australia after completion of its term.



# 航班事務
# AIR SERVICES


航班事務部由兩個分組組成，分別是航班事務組和技術行政組。

The Air Services Division is composed of two Sections: the Air Services Section and the Technical Administration Section.


B-KBL

# 航班事務
# AIR SERVICES

航班事務組負責監察航空公司是否遵守規管定期航班服務的民用航空運輸安排及監管不定期航班服務。該組並為運輸及房屋局提供資料，在民用航空運輸談判時參考，以及供空運牌照局考慮本地航空公司的空運牌照申請之用。此外，該組負責檢討民航法例和提出修訂建議，以及與國際組織，特別是國際民用航空組織(國際民航組織)和亞太經濟合作組織商討航空事務和活動。

The Air Services Section monitors compliance by airlines with the air services arrangements which govern scheduled air services and regulates non-scheduled air services. It provides information to the Transport and Housing Bureau for air services negotiations and to the Air Transport Licensing Authority for consideration of licence applications by local airlines. It also reviews and proposes changes to civil aviation legislation and liaises with other international organisations, particularly the International Civil Aviation Organization (ICAO) and the Asia Pacific Economic Co-operation (APEC) on aviation related matters and activities.

*航班事務組負責監察航空公司是否遵守民用航空運輸安排。*
*The Air Services Section monitors compliance by airlines with the air services arrangements.*

技術行政組則負責制訂和實行噪音消減措施，並監察來往香港國際機場航機的噪音及飛行路線以減低飛機噪音對社區的影響，同時也負責提供航空交通的統計數字、統籌部門的工程項目、研究直升機服務需求、促進直升機場的發展，並調航班時間、分配飛機起降時段及監察航空公司航班起降的正點率。

## 航空服務

### *航空交通量*

環球金融風暴及經濟不明朗因素對航空交通需求造成不利的影響。自二零零八年八月開始，航空需求持續減少。因此，航空交通在二零零八/零九年度錄得負增長。香港國際機場的客量比去年同期減少2.3%，達4 630萬人次。貨運需求顯著減縮至340萬公噸，減幅達10%。當中以出口貨運往歐洲、台灣及東南亞的減縮最為顯著。

飛機升降量亦減少1.1%，達296 183架次。

### *本地航空公司的服務*

年內，國泰航空公司(國泰)調整運力，包括減少來往北美洲的客運航班班次，和以較大型客機運作部分來往歐洲的航班。該公司亦透過增加定期航班服務的班次，加強往返印度及澳洲的服務。國泰在二零零八年十二月停辦往返慕尼黑的定期貨運航班，但在二零零九年三月開辦往返休斯敦和邁亞美的定期貨運航班。

截至二零零九年三月底，國泰提供往返香港的定期航班服務遍及58個目的地。年內，該公司的機隊數目由115架增至125架，包括32架空中巴士A330-300型、15架空中巴士A340-300型、23架波音B747-400型、28架波音B777型客機(其中包括11架波音B777-300ER型長途客機)，以及三架波音B747-200型、24架波音B747-400型貨機。

The Technical Administration Section is responsible for developing and implementing noise mitigating measures and monitoring flight tracks of aircraft operating to and from the Hong Kong International Airport (HKIA) with a view to minimising the impact of aircraft noise on the local community. It also provides air traffic statistics, coordinates building projects for the Department, assesses the demand for helicopter services and facilitates the development of heliports. In addition, the Section coordinates airlines' schedules, allocates runway slots and monitor time-keeping performance of airlines.

## AIR SERVICES

### *Air Traffic*

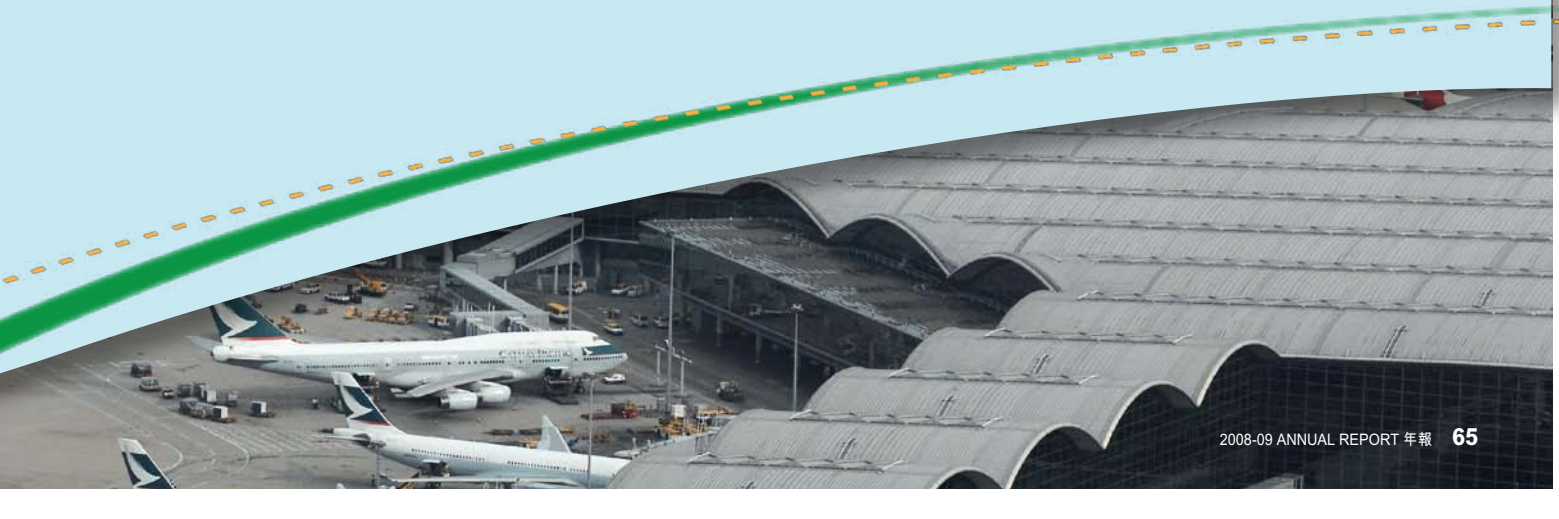
As a result of the global financial crisis and economic uncertainties, air traffic suffered a negative growth this year. There has been a decline in air traffic in both passenger and cargo traffic since August 2008 and the yearly air traffic at Hong Kong International Airport dropped in 2008/09. The passenger throughput dropped slightly by 2.3 per cent year-on-year. A total of 46.3 million passengers were handled.

The drop in freight demand was even more noticeable. The air cargo throughput was reduced by 10 per cent to 3.4 million tonnes. The reduction was mainly caused by a significant decrease of exports to Europe, Taiwan and South East Asia.

Aircraft movements also dropped by 1.1 per cent to a total of 296 183.

### *Services by Local Carriers*

During the year, Cathay Pacific Airways (CPA) adjusted its capacity by reducing the frequency of scheduled passenger services to North America and using bigger aircraft for some of its European flights. CPA also enhanced its regional services to India and Australia by increasing the frequency of services. During the year, CPA suspended its scheduled all-cargo services to Munich in December 2008 but commenced scheduled all-cargo services to Houston and Miami in March 2009.



# 航班事務
# AIR SERVICES


*Local carriers had made adjustments to the scheduled services.*
*本地航空公司調整了定期航班服務。*

港龍航空公司(港龍)先後在二零零八年七月、十月及十二月開辦往返班加羅爾、河內和馬尼拉的定期客運航班。然而，該公司在與其母公司國泰整合運作後，逐漸停辦定期貨運航班服務。

截至二零零九年三月底，港龍定期航班服務遍及30個目的地，包括18個內地城市。年內，該公司在刪減貨機隊後，機隊數目為30架，計有10架空中巴士A320-200型、六架空中巴士A321-200型和14架空中巴士A330-300型客機。

香港華民航空有限公司(華民)集中發展亞洲業務。截至二零零九年三月底，華民以八架空中巴士A300-600GF型貨機，經營往返亞洲11個目的地的定期航班服務。

At the end of March 2009, CPA operated scheduled services to 58 destinations. The fleet of CPA increased from 115 to 125 aircraft during the year, comprising 32 Airbus A330-300s, 15 Airbus A340-300s, 23 Boeing B747-400s, 28 Boeing B777s (including 11 long-haul Boeing 777-300ERs), three Boeing B747-200 freighters and 24 Boeing 747-400 freighters.

The Hong Kong Dragon Airlines Limited (HDA) launched scheduled passenger services to Bangalore, Hanoi and Manila in July, October and December 2008 respectively. However, the airline gradually suspended all its scheduled freighter services after reorganising its operations with CPA, its parent company.

At the end of March 2009, HDA operated scheduled services to 30 destinations, including 18 cities in the Mainland with a fleet of 30 passenger aircraft, comprising 10 Airbus A320-200s, six Airbus A321-200s, 14 Airbus A330-300s after disposing all of its freighter aircraft.

AHK Air Hong Kong Limited (AHK) focused on developing its services in Asia. By the end of the year, AHK operated scheduled services to 11 destinations in Asia with eight Airbus A300-600GF freighters.

Hong Kong Airlines Limited (CRK) disposed some of its aircraft and suspended services to Fuzhou, Hangzhou, Hefei, Ho Chi Minh City, Nanning, Qingdao and Tianjin during the year. At the end of March 2009, CRK operated scheduled passenger services to six destinations with two Boeing B737-800 aircraft.

Hong Kong Express Airways Limited (HKE) continued to develop regional scheduled passenger services and commenced services to Okinawa in April; Beijing and Shanghai in June; Denpasar, Manila, Harbin and Sapporo in September 2008, and to Sanya and Nanning in January 2009. However, it suspended services to Xi'an in May 2008; Chengdu in July 2008; and Kuala Lumpur in March 2009. At the end of March 2009, HKE operated scheduled services to 13 destinations with five Boeing B737-800 aircraft.

Oasis Hong Kong Airlines Limited (OHK) ceased operation in April 2008 due to commercial reasons.

Metrojet Limited expanded its fleet to five Gulfstream G200, one Gulfstream G450 and one Gulfstream G550 aircraft and operated non-scheduled passenger services to destinations in Asia.

年內，香港航空有限公司(香港航空) 刪減部分飛機，並先後停飛往返福州、杭州、合肥、胡志明市、南寧、青島和天津的定期客運航班服務。截至二零零九年三月底，香港航空的機隊包括兩架波音B737-800型飛機，經營往返六個目的地的定期航班服務。

香港快運航空有限公司(香港快運)繼續擴展區內的定期客運航班服務。該公司先後在二零零八年四月開辦往返沖繩、六月開辦往返北京和上海、和九月開辦往返登巴薩、馬尼拉、哈爾濱和札幌的定期客運航班。其後在二零零九年一月開辦往返三亞和南寧的定期客運航班服務。然而，該公司亦先後在二零零八年五月停辦往返西安、七月停辦往返成都、和二零零九年三月停辦往返吉隆坡的定期客運航班。截至二零零九年三月底，香港快運的機隊包括五架波音B737-800型飛機，定期航班服務遍及13個目的地。

基於商業原因，甘泉香港航空有限公司於二零零八年四月停止運作。

香港商用飛機有限公司的機隊於年內增加至五架灣流G200型、一架灣流G450型和一架灣流G550型飛機，該公司主要經營來往亞洲多個目的地的客運包機服務。空中快線直升機有限公司(前身為港聯直升機(香港)有限公司)以兩架西科斯基S76型直升機，提供來往香港與澳門之間的客運包機服務，以及在本地提供客運包機服務。直升機服務(香港)有限公司繼續以一架麥唐納道格拉斯MD500E型、一架歐洲直升機公司AS355N型及四架Aerospatiale SA315B型直升機，在本地提供客運包機及進行空中作業服務。

## *非本地航空公司的服務*

二零零八年四月，捷特航空開辦孟買、德里與香港之間的定期客運航班服務；亞洲航空公司和泰國亞洲航空公司先後在二零零八年五月及十月開辦吉隆坡與香港之間及曼谷與香港之間的服務。定期貨運航班服務方面，上海貨運航空公司於二零零八年五月替代上海航空公司接辦往返上海與香港之間的定期貨運航班服務；九月，東海航空開辦深圳、成都與香港的貨運航班服務；二零零九年三月銀河國際貨運航空公司開辦往返天津與香港航線。

Heli Express Limited changed its name to Sky Shuttle Helicopters Limited and continued to operate non-scheduled services between Hong Kong and Macau and local flights for passenger charters with two Sikorsky S76 helicopters.

Heliservices (Hong Kong) Limited continued to operate one McDonald Douglas MD500E, one Eurocopter AS355N and four Aerospatiale SA315B helicopters for local passenger charters and aerial works.

## *Services by Non-Hong Kong Carriers*

Jet Airways started scheduled passenger services between Mumbai, Delhi and Hong Kong in April 2008. Air Asia and its associate, Thai Air Asia, commenced scheduled passenger services between Kuala Lumpur and Hong Kong in May 2008 and between Bangkok and Hong Kong in October 2008 respectively. For scheduled all-cargo services, Shanghai Airlines Cargo took over the all-cargo operations between Shanghai and Hong Kong from Shanghai Airlines in May 2008. In September, Donghai Airlines launched its services between Shenzhen, Chengdu and Hong Kong. Grandstar Cargo International Airlines also launched its scheduled all-cargo services on the route Tianjin - Hong Kong in March 2009.

In the year, nine airlines suspended their scheduled services to and from Hong Kong. They are: Sichuan Airlines in May 2008; Continental Micronesia in July 2008; Siem Reap Airways International in August 2008; Shandong Airlines, Gemini Air Cargo and Thai Global Airlines in October 2008; Yangtze River Express Airlines and Alitalia in January 2009; and East Star Airlines in February 2009. Moreover, El Al Israel Airlines, Mandarin Airlines and Orient Thai Airlines suspended their scheduled all-cargo services to and from Hong Kong during the year but maintained their scheduled passenger services.

By the end of March 2009, the number of scheduled airlines serving Hong Kong decreased from 85 to 82 when compared with the same period in 2008. The total number of destinations served by scheduled services to and from Hong Kong remained at around 150. Details of the changes in these destinations are given in Appendix A.

During the year, the Department issued 131 operating permits to airlines for operation of scheduled services to Hong Kong and

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年內，有九家航空公司停辦往返香港的定期航班服務，計有：四川航空公司(二零零八年五月)；大陸密克羅尼西亞航空公司(二零零八年七月)；暹粒國際航空公司(二零零八年八月)；山東航空公司、吉米尼航空貨運公司和Thai Global Airlines(二零零八年十月)；揚子江快運航空公司和意大利航空公司(二零零九年一月)；和東星航空公司(二零零九年二月)。此外，以色列航空公司、華信航空公司和泰國東方航空公司先後停辦往返香港之間的貨運航班服務，但仍然維持定期客運航班服務。

截至二零零九年三月底，提供定期往來香港航班服務的航空公司，總數由2008年同期的85家減少至82家。往來香港定期航班服務的目的地的總數，則維持約150個。有關目的地的變動詳見附錄甲。

年內，本處合共簽發131 張經營許可證予航空公司，以供營辦往來香港的定期航班服務，並處理共1 978 宗更改定期航班服務的申請，以及簽發1 533張經營不定期來往香港航班服務的許可證。

## 運價

年內，本處共處理了1 291 宗涉及修訂來往香港客運和貨運定期航班服務的運價申請。客運票價雖有輕微調整，但大致保持穩定。

年內，本處批准航空公司繼續收取客運和貨運燃油附加費，以彌補部分因油價波動而增加的營運成本，並於本處的網頁內公佈所批准的燃油附加費。

## 國際民航組織的活動

為保持香港作為國際和區域航空中心的地位，以及方便履行國際民航組織區域航行服務所定的職責和遵行《基本

processed 1 978 applications for changes to the schedules. A total of 1 533 permits were also issued for the operation of non-scheduled services to and from Hong Kong.

## TARIFFS

In the year, the Department processed 1 291 tariff filings for carriage of passengers and cargo on scheduled services to and from Hong Kong. Notwithstanding some minor adjustments, the passenger fares remained steady over the period.


*民航處共處理了1 291宗涉及修訂來往香港客運和貨運定期航班服務的運價申請。*
*The Department processed 1 291 tariff filings for carriage of passengers and cargo on scheduled services to and from Hong Kong.*

surcharges to partially recover the increase in operational costs due to fluctuation in aviation fuel prices. The approved fuel surcharges were published in the Department's website.

## ACTIVITIES OF THE INTERNATIONAL CIVIL AVIATION ORGANIZATION

To maintain the status of Hong Kong as a centre of international and regional civil aviation and to facilitate the discharge of its responsibilities as prescribed under the regional air navigation services of ICAO as well as in accordance with the provisions in the Basic Law, the Department continued to participate actively in the activities of ICAO. During the year, representatives of the Department attended six ICAO meetings which were limited to States as part of the delegation of the People's Republic of

法》的規定，本處繼續積極參與國際民航組織的活動。年內，本處代表以中華人民共和國代表團成員的身分，出席六次只限國家參加的國際民航組織會議，並以「中國香港」的名義，參加30次非以國家為單位的國際民航組織會議。以上36次會議的詳情見附錄乙。本處亦與國際民航組織往來的函件共有333份，主要是就民航技術事宜提供意見及資料。

為了加強與國際民航組織的聯繫，本處自二零零五年五月開始借調一名人員到中國常駐國際民航組織理事會代表處工作。

*處長羅崇文率領民航處代表團，在馬來西亞吉隆坡舉行的第四十五屆亞太地區民航局局長議上，與國際民航組織理事會主席Mr Roberto Kobeh Gonzalez (中)及馬來西亞民航局局長Mr Dato' Azharuddin Abdul Rahman (左三)會面。*
*DG Norman Lo, led the CAD delegation to meet with Mr Roberto Kobeh Gonzalez (middle), President of the ICAO Council; and Mr Dato' Azharuddin Abdul Rahman, Director General of Civil Aviation Malaysia (third from the left), in the 45th Conference of Directors General of Civil Aviation, Asia and Pacific Regions in Kuala Lumpur, Malaysia.*

## 亞太經濟合作組織的活動

本處繼續以「中國香港」的名義參與亞太經濟合作組織的活動。年內，本處代表參加了二次該組織的會議，詳情見附錄丙。本處亦合共因應24項亞太經濟合作組織的要求，提供有關民航技術事宜的意見及資料。

China, and 30 ICAO meetings which were not so limited, using the name "Hong Kong, China". Details of the above 36 meetings are provided in Appendix B. The Department also exchanged 333 letters with ICAO. The majority of these letters involved comments and information on technical matters related to civil aviation.

To strengthen the liaison with ICAO, an arrangement has been made since May 2005 for an officer of the Department to be seconded to the Office of the Representative of China on the Council of ICAO.

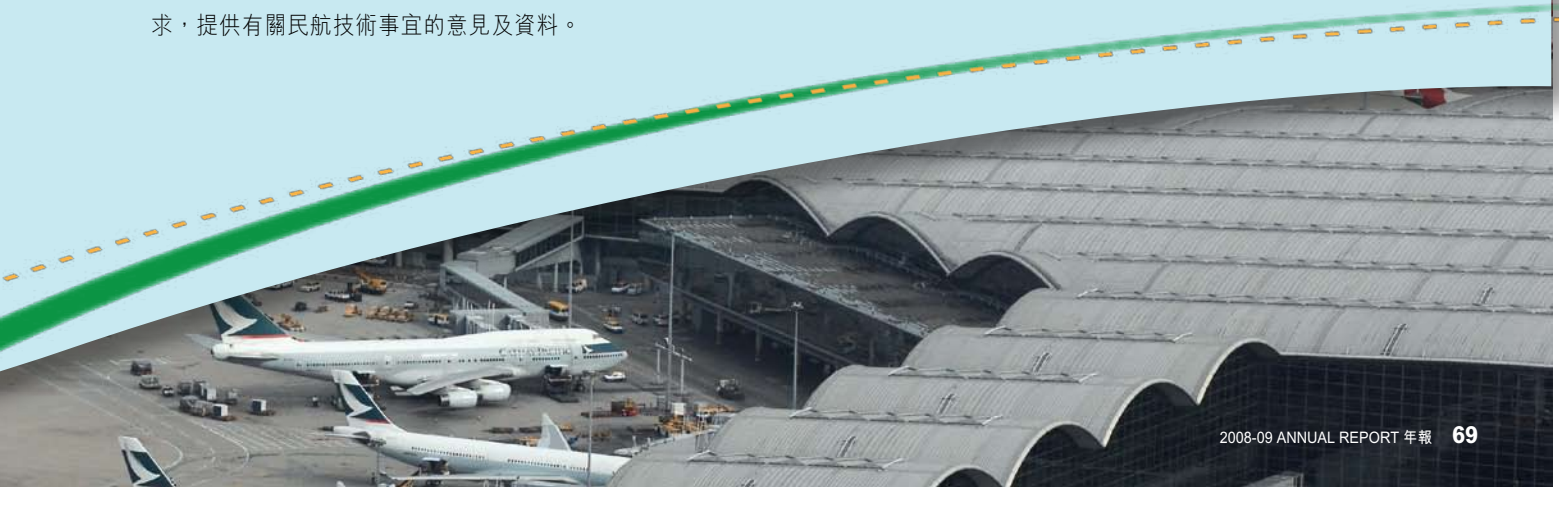
## ACTIVITIES OF ASIA PACIFIC ECONOMIC CO-OPERATION

The Department continued to participate in the activities of APEC using the name "Hong Kong, China". During the year, representatives of the Department attended two APEC meetings and details of these meetings are given in Appendix C. The Department also handled 24 requests relating to APEC, which involved provision of comments and information on technical matters related to civil aviation.

## AIRCRAFT NOISE MANAGEMENT

The Department has been mindful of the aircraft noise impact on residents living under or in the vicinity of the flight paths, and has continued its effort to alleviate the impact by means of a series of noise mitigating measures.

In order to minimise aircraft noise impact of arriving aircraft on densely populated areas such as Shatin, Tsuen Wan, Kwai Chung, Tsing Yi and Ma Wan, aircraft arriving at HKIA between midnight and 7 a.m. are required to land from the southwest over water, subject to acceptable operational and safety considerations. During the year, 88.4 per cent of arriving aircraft during this time period were able to comply with this requirement. In addition, in order to minimise the noise impact caused by departing aircraft on Kowloon and the northern Hong Kong Island, aircraft taking-off to the northeast between 11 p.m. and 7 a.m. are required to depart via the West Lamma Channel, subject to acceptable operational and safety considerations. During the year, this mitigating measure achieved a high compliance rate of 98.9 per cent.



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## 飛機噪音管理

本處一向十分關注飛機噪音對航道下及附近居民的影響。為此，本處致力執行一系列飛機噪音消減措施，以減少飛機噪音的影響。

為盡量減少抵港航機噪音對沙田、荃灣、葵涌、青衣和馬灣等人口稠密地區的影響，午夜十二時至早上七時期間抵港的航機，在符合飛行運作及安全的情況下，須由香港國際機場西南面經海上降落。年內，有88.4%在這段時間抵港的航機能夠實行這項措施。此外，為減少離港航機噪音對九龍和港島北等地區的影響，晚上十一時至早上七時向東北起飛的航機，在符合飛行運作及安全的情況下，須經西博寮海峽離港。年內，有高達98.9%在這段時間離港的航機，能夠實行這項措施。

Furthermore, aircraft arriving at the HKIA from the northeast between 11 p.m. and 7 a.m. are encouraged to adopt the Continuous Descent Approach (CDA) procedures. Under the procedures, aircraft would fly at higher altitudes and in a lower power and lower drag configuration during the initial stage of the approach. The CDA would reduce the noise impact on areas such as Sai Kung, Tseung Kwan O and Ma On Shan. During the year, 78.3 per cent of the arriving flights concerned were able to adopt the CDA procedures.

These noise mitigating measures and the noise impact in the vicinity of the flight paths are closely monitored with the aid of a computer-based Aircraft Noise and Flight Track Monitoring System (ANFTMS). The ANFTMS comprised 16 noise monitoring terminals installed near various landing and take off flight paths of the HKIA.

*民航處人員正在收集飛機噪音數據。*
*An officer collecting aircraft noise data.*

此外，本處鼓勵在晚上十一時至早上七時期間從東北方進場的航機，採用持續降落模式運作，由較高的高度開始下降，並在開始進場時，使用較低的動力和採用產生較少阻力的狀況飛行，以減少途經西貢、將軍澳和馬鞍山等地區時所產生的噪音。年內，有78.3%在這段時間由東北方降落的航機，能夠採用上述降落模式運作。

本處繼續利用一套飛機噪音及航跡監察電腦系統，密切監察上述飛機噪音消減措施的執行情況及航道附近的噪音影響。該監察系統由16個設於香港國際機場各條升降航道附近的噪音監察器所組成。

為了可直接向公眾介紹本處有關飛機噪音的工作，和促進雙方的了解，本處設有飛機噪音投訴熱線，與受影響的居民保持溝通。同時，本處也有把量度所得的噪音數據和噪音消減措施的執行情況上載本處網頁，供市民參閱。在有需要時，本處職員會出席討論飛機噪音問題的會議，向有關居民團體講解本處為減少飛機噪音所作出的努力。

年內，本處共接獲378宗飛機噪音投訴。本處以持平的態度處理所有投訴，並向投訴人詳細交代調查的結果。

## 航班協調

航班協調員的職責是根據國際航空運輸協會全球航班協調指南，以中立、高透明度及不偏袒的方式，分配航班時刻予所有在機場營運的本地及外地航空公司，務求有效率地運用機場有限的資源。本處過去任命國泰航空公司，出任香港國際機場的航班協調員。鑑於近年香港的航空業迅速發展，本處聯同本地航空業界對此安排作出檢討。根據檢討結果，本處於二零零八年四月成立了香港機場航班協調辦公室，並於二零零八年七月六日開始，在國泰航空公司任命完畢時，接任香港國際機場的航班協調員。國泰航空公司亦於本處接任後提供為期一年的過渡協助。

In order to introduce our work on aircraft noise issues to the public and to facilitate mutual understanding, the Department continued to communicate with residents affected by aircraft noise through a complaint hotline, and disseminate noise data and mitigating measures in the Department's website. When necessary, staff of the Department would also attend meetings with concerned resident groups to explain the Department's aircraft noise mitigation efforts.

During the year, the Department received 378 complaints against aircraft noise. All the complaints were investigated impartially, and the complainants were replied with detailed explanations.

## SCHEDULE COORDINATION

To comply with the International Air Transport Association (IATA) Worldwide Scheduling Guidelines (WSG) and to ensure the efficient utilisation of scare airport resources, Schedule Coordinators aim at allocating arrival and departure slots at an airport, to all local and overseas aircraft operators, in a neutral, transparent and non-discriminatory manner. The Department previously appointed Cathay Pacific Airways Limited (CPA) as the Schedule Coordinator for the Hong Kong International Airport (HKIA). In view of the rapid development of the aviation industry in Hong Kong, a review on the appointment was conducted in conjunction with the local aviation community. In accordance with the conclusion of the review, the Department established the Hong Kong Schedule Coordination Office (HKSCO) in April 2008 and took over the role of Schedule Coordinator for the HKIA on July 6, 2008 when the appointment of CPA expired, with back up support from the airline for one year after the take-over.

During the year, the HKSCO continued to adopt a neutral, transparent and non-discriminatory schedule coordination mechanism in accordance with the IATA WSG. In the future, the HKSCO will remain committed to maintaining and enhancing the transparency of the schedule coordination process.

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*民航處於於二零零八年七月六日開始接任香港國際機場的航班協調員角色。*
*The Department took over the role of Schedule Coordinator for the HKIA on July 6.*

年內，香港機場航班協調辦公室繼續根據國際航空運輸協會全球航班協調指南，採用公平、公開和公正的協調機制。展望未來，香港機場航班協調辦公室會致力維持及增加協調程序的透明度。

## 直升機場的發展

為促進香港跨境直升機服務的發展，本處通過公開招標，落實擴建港澳碼頭現有跨境直升機場的計劃。為期18年的直升機場發展及營運合約，已於二零零七年一月批予空中快線直升機有限公司。合約於二零零七年七月一日開展。第一期工程範圍包括興建新升降坪及其支援設施，工程已於二零零九年三月完成。第二期工程範圍包括更換舊有升降坪及建造升降坪連接道面。全部工程預期於二零零九年下半年內完成後，直升機場的容量將會增加80%，每年可以處理約55 200架次的直升機升降。為了跨境直升機服務的長遠發展，政府於啟德發展區已預留土地，以供發展另一跨境直升機場之用。

本地商業直升機服務方面，會議展覽中心附近的擬建政府直升機坪，將開放予本地商業直升機使用。該政府直升機坪的建造工程預期於二零零九年年底前開展。

## HELIPORT DEVELOPMENT

To facilitate the development of cross-boundary helicopter services in Hong Kong, the Department has been taking forward the project to expand the existing cross-boundary heliport at the Hong Kong - Macao Ferry Terminal through an open tender exercise. The tender was awarded to the Sky Shuttle Helicopters Limited in January 2007, and an 18-year Lease for the development and operation of the heliport commenced on July 1, 2007. The construction of a new helipad and its supporting facilities was completed in the Phase 1 Work in March 2009. The Phase 2 Work, which includes the replacement of the old helipad and the provision of helipad connecting links, is scheduled for completion within the second half of 2009. By that time, the capacity of the heliport would be increased by 80 per cent, accommodating about 55 200 helicopter movements every year. For the long-term development of cross-boundary helicopter services, land provision has been made within the Kai Tak Development Area for another cross-boundary heliport.

Regarding the domestic commercial helicopter services, the construction of the government helipad near the Hong Kong Convention and Exhibition Centre, which would be share-used by domestic commercial helicopter operations, is anticipated to commence by the end of 2009.

## 附錄甲

截至二零零九年三月來往香港的定期航班服務所遍及的目的地改變情況（與二零零八年三月比較）

## APPENDIX A

Changes in Destinations Served by Scheduled Services to and from Hong Kong as at March 2009 (compared with March 2008)

### *(甲) 新增航點*

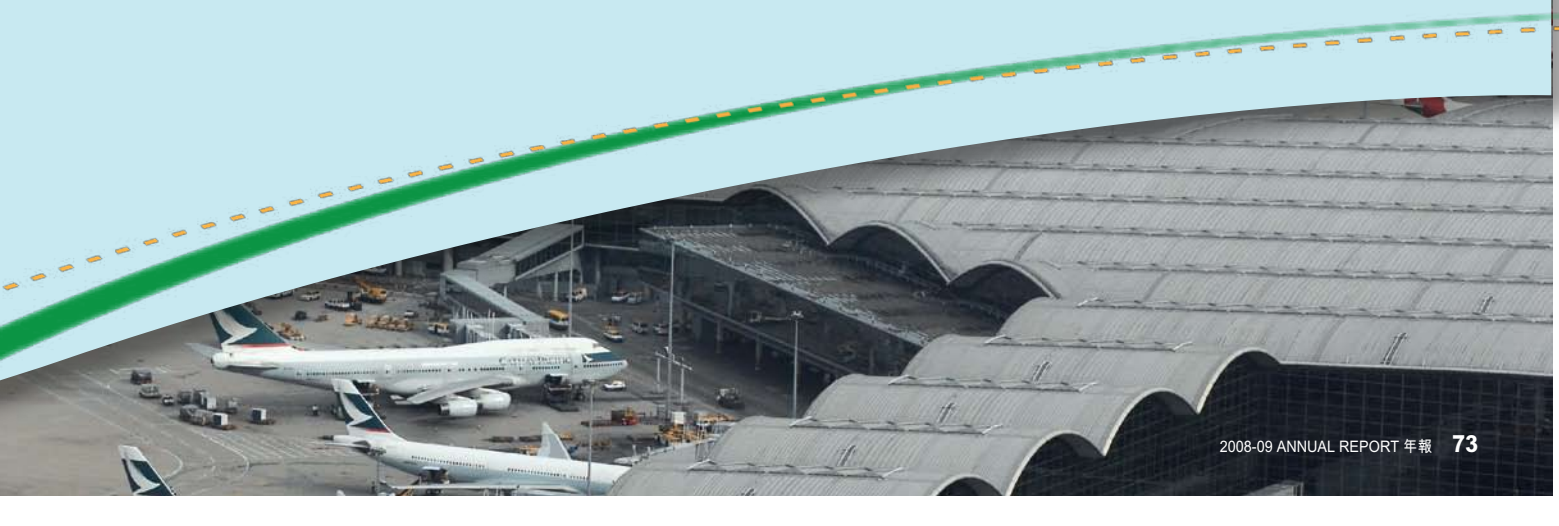
### *(a) Additions*

| 新航點 | New Points | 經營者 | Operated By |
|---|---|---|---|
| 1. 班加羅爾 | Bangalore | 港龍航空公司 | Hong Kong Dragon Airlines |
| 2. 達沃 | Davao | 宿霧太平洋航空公司 | Cebu Pacific Air |
| 3. 迪克斯堡 | Fort Dix | 聯邦快遞 | Federal Express |
| 4. 哈特福德 | Hartford | 聯合航空公司 | United Airlines |
| 5. 休斯敦 | Houston | 聯合航空公司 | United Airlines |
| 6. 小松 | Komatsu | 盧森堡國際貨運航空公司 | Cargolux Airlines International |
| 7. 拉合爾 | Lahore | 巴基斯坦航空公司 | Pakistan International Airlines |
| 8. 邁亞美 | Miami | 國泰航空公司 | Cathay Pacific Airways |
| 9. 沖繩 | Okinawa | 香港快運航空公司 | Hong Kong Express Airways |
| 10. 西雅圖 | Seattle | 西北航空公司 | Northwest Airlines |
| 11. 深圳 | Shenzhen | 東海航空 | Donghai Airlines |
| 12. 維也納 | Vienna | 盧森堡國際貨運航空公司 | Cargolux Airlines International |

### *(乙) 刪減航點*

### *(b) Deletions*

| 刪除航點 | Deleted Points | 前經營者 | Previously Operated By |
|---|---|---|---|
| 1. 阿斯塔納 | Astana | 漢莎貨運航空公司 | Lufthansa Cargo AG |
| 2. 貝魯特 | Beirut | 盧森堡國際貨運航空公司 | Cargolux Airlines International |
| 3. 清邁 | Chiang Mai | 香港快運航空公司 | Hong Kong Express Airways |
| 4. 關島 | Guam | 大陸密克羅尼西亞航空公司 | Continental Micronesia |
| 5. 新山 | Johor Bahru | 金鵬航空公司 | Transmile Air Services |
| 6. 加爾各答 | Kolkata | 漢莎貨運航空公司 | Lufthansa Cargo AG |
| 7. 新西伯利亞 | Novosibirsk | Aeroflot Cargo Airlines | Aeroflot Cargo Airlines |
| 8. 里佛塞德 | Riverside | 金鵬航空公司 | Transmile Air Services |
| 9. 仙台 | Sendai | 港龍航空公司 | Hong Kong Dragon Airlines |
| 10. 暹粒 | Siem Reap | 暹粒國際航空公司 | Siem Reap Airways International |
| 11. 仰光 | Yangon | 香港快運航空公司 | Hong Kong Express Airways |
| 12. 煙台 | Yantai | 山東航空公司 | Shandong Airlines |



## 附錄乙

民航處代表於二零零八年四月至二零零九年三月出席的國際民航組織會議

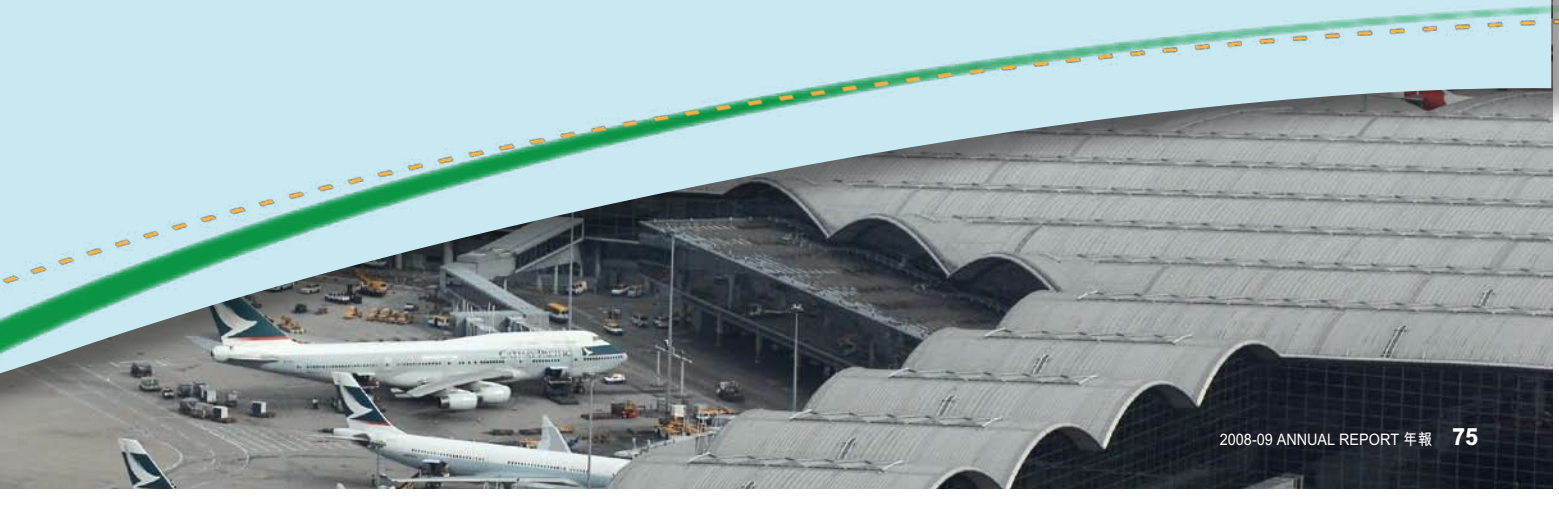
| 會議名稱 | 地點 | 日期 |
|---|---|---|
| 基於性能導航專責小組第二次會議 | 泰國曼谷 | 二零零八年四月一日至三日 |
| 廣播式自動相關監察系統研究及實施專責小組第七次會議及專題研討會 | 中國成都 | 二零零八年四月七日至十一日 |
| 縮小垂直間隔標準實施專責小組第33次會議 | 中國杭州 | 二零零八年四月九日至十一日 |
| 亞太地區航行規劃和實施小組轄下的航空電訊網實施協調小組保安工作小組第一次會議 | 泰國曼谷 | 二零零八年四月二十一日至二十三日 |
| 法律委員會第33屆會議 | 加拿大蒙特利爾 | 二零零八年四月二十一日至五月二日 |
| 機艙安全專題研討會 | 泰國曼谷 | 二零零八年四月二十二日至二十四日 |
| 互助發展運作安全和持續適航計劃北亞區主導委員會第八次會議 | 中國北京 | 二零零八年四月二十三日至二十五日 |
| 亞太地區航行規劃和實施小組轄下的航空電訊網實施協調小組第三次會議 | 斐濟納迪 | 二零零八年五月五日至九日 |
| 第八次東南亞未來航空導航系統實施小組、第15次東南亞航空交通管制協調小組聯合會議 | 泰國曼谷 | 二零零八年五月二十日至二十三日 |
| 航空保安專家組第19次會議 | 加拿大蒙特利爾 | 二零零八年五月二十六日至三十日 |
| 認可維修機構和空運經營人實施安全管理系統專題研討會 | 泰國曼谷 | 二零零八年六月三日至四日 |
| 所需導航性能東南亞區實施專責小組第三次會議 | 泰國曼谷 | 二零零八年六月四日至六日 |
| 東南亞區航空安全小組 - 維修第一次會議 | 泰國曼谷 | 二零零八年六月五日 |
| 航空情報服務實施專責小組第三次會議 | 泰國曼谷 | 二零零八年六月二十日至二十二日 |
| 亞太平洋地區航行規劃和實施小組轄下航空交通服務、航空情報服務和搜尋與援救分組第18次會議 | 泰國曼谷 | 二零零八年六月二十三日至二十七日 |
| 國際民航組織普遍安全監督審計計劃的準備、實施和報告亞太地區研討會 | 中國香港 | 二零零八年七月十四日至十六日 |
| 基於性能導航專責小組第三次會議 | 泰國曼谷 | 二零零八年七月十四日至十七日 |
| 亞太平洋地區航行規劃和實施小組轄下通訊、導航、監視及氣象分組第12次會議 | 泰國曼谷 | 二零零八年七月二十一日至二十五日 |
| 亞太平洋地區航行規劃和實施小組第19次會議 | 泰國曼谷 | 二零零八年九月一日至五日 |

| 會議名稱 | 地點 | 日期 |
|---|---|---|
| 機場和空中航行服務經濟會議和專題討論會 | 加拿大蒙特利爾 | 二零零八年九月十日至十九日 |
| 航空電訊網實施協調小組工作組第四次會議暨保安工作小組第二次會議 | 泰國曼谷 | 二零零八年九月二十二日至二十六日 |
| 亞太地區航空交通流量管理專題討論會 | 日本福岡 | 二零零八年十月七日至九日 |
| 2008年事故調查和預防專業會議 | 加拿大蒙特利爾 | 二零零八年十月十三日至十八日 |
| 西太平洋及南中國海縮小垂直間隔標準詳審工作小組第五次會議 | 泰國曼谷 | 二零零八年十月十四日至十七日 |
| 機場緊急事故計劃及演練專題討論會 | 新加坡 | 二零零八年十月二十日至二十二日 |
| 國際搜尋與援救專題討論會 | 中國香港 | 二零零八年十月二十八日至三十日 |
| 亞太區實施數據鏈飛行情報服務專題討論會 | 泰國曼谷 | 二零零八年十一月五日至七日 |
| 所需導航性能東南亞區實施專責小組第四次會議 | 新加坡 | 二零零八年十一月五日至七日 |
| 東南亞區航空安全小組第九次會議 | 泰國曼谷 | 二零零八年十一月十九日至二十一日 |
| 亞太地區民航局局長第45次會議 | 馬來西亞吉隆坡 | 二零零八年十一月二十四日至二十八日 |
| 縮小垂直間隔標準實施專責小組第34次會議 | 中國北京 | 二零零八年十二月一日至三日 |
| 航空情報服務自動化 / 電子地形與障礙物數據專題討論會 / 航空情報服務-航空情報管理實施專責小組第四次會議 | 日本東京 | 二零零九年二月二十三日至二十七日 |
| 基於性能導航專題討論會及基於性能導航專責小組第四次會議 | 日本大阪 | 二零零九年三月二日至六日 |
| 亞太地區飛行計劃與航空交通服務訊息實施專責小組第一次會議 | 泰國曼谷 | 二零零九年三月十七日至二十日 |
| 國際民航組織航空法律會議 | 韓國首爾 | 二零零九年三月三十日至四月二日 |
| 航空保安專家組第20次會議 | 加拿大蒙特利爾 | 二零零九年三月三十日至四月三日 |

## 附錄丙

民航處代表於二零零八年四月至二零零九年三月出席的亞太經濟合作組織會議

| 會議名稱 | 地點 | 日期 |
|---|---|---|
| 亞太經濟合作組織管制飛機排放物措施第二次專題討論會 | 馬來西亞吉隆坡 | 二零零八年四月三日至四日 |
| 運輸工作小組第30次會議 | 菲律賓馬尼拉 | 二零零八年四月十四日至十八日 |



## Appendix B

ICAO Conferences and Meetings Attended by Representatives from the Department between April 2008 and March 2009

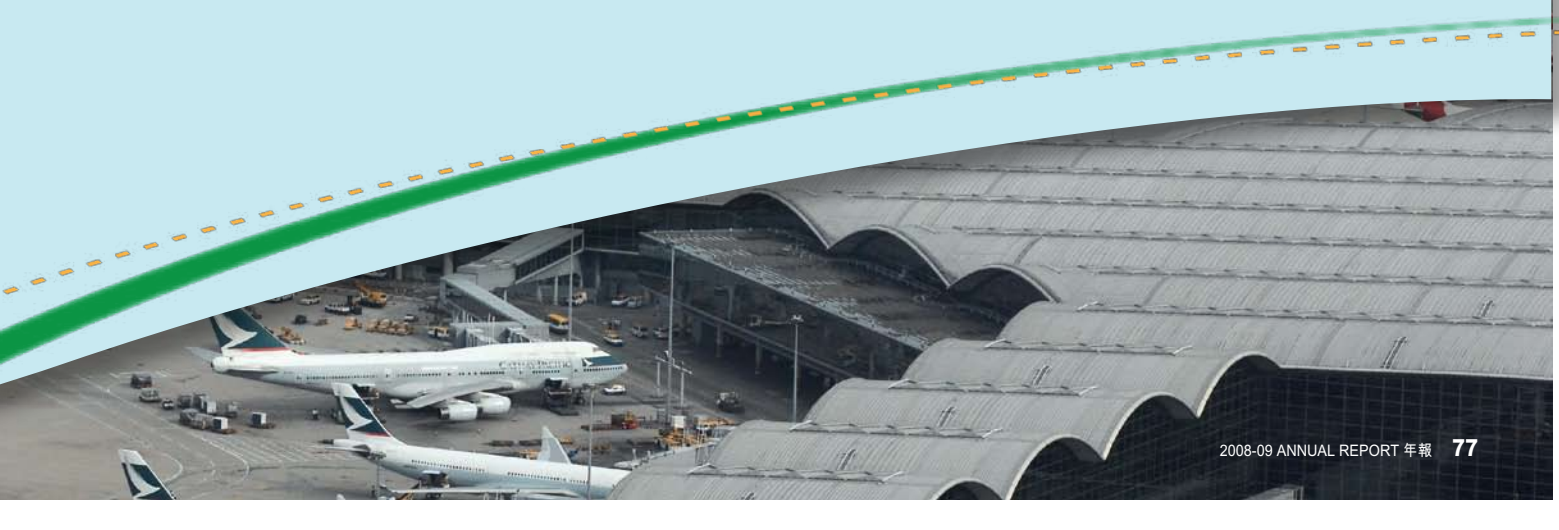
| Name of Conference or Meeting | Venue | Dates |
|---|---|---|
| 2nd Meeting of the Performance Based Navigation Task Force | Bangkok, Thailand | April 1 - 3, 2008 |
| 7th Meeting of Automatic Dependent Surveillance-Broadcast Study and Implementation Task Force and Seminar | Chengdu, China | April 7 - 11, 2008 |
| 33rd Meeting of the Reduced Vertical Separation Minima Implementation Task Force | Hangzhou, China | April 9 - 11, 2008 |
| 1st Meeting of Security Sub-Working Group of Aeronautical Telecommunication Network Implementation Coordination Group of the Asia/Pacific Air Navigation Planning and Implementation Regional Group | Bangkok, Thailand | April 21 - 23, 2008 |
| 33rd Session of the Legal Committee | Montréal, Canada | April 21 - May 2, 2008 |
| Cabin Safety Seminar | Bangkok, Thailand | April 22 - 24, 2008 |
| 8th Meeting of Cooperative Development of Operational Safety and Continuing Airworthiness Programme - North Asia Project Steering Committee | Beijing, China | April 23 - 25, 2008 |
| 3rd Meeting of Aeronautical Telecommunication Network Implementation Coordination Group of the Asia/Pacific Air Navigation Planning and Implementation Regional Group | Nadi, Fiji Islands | May 5 - 9, 2008 |
| Combined Meetings of 8th Future Air Navigation System Implementation Team - South-East Asia and 15th Meeting of the South-East Asia Air Traffic Services Coordination Group | Bangkok, Thailand | May 20 - 23, 2008 |
| 19th Meeting of Aviation Security Panel | Montréal, Canada | May 26 - 30, 2008 |
| Approved Maintenance Organisation and Air Operator Maintenance Organisation Safety Management System Implementation Seminar | Bangkok, Thailand | June 3 - 4, 2008 |
| 3rd Meeting of the Required Navigation Performance Implementation Task Force for South-East Asia | Bangkok, Thailand | June 4 - 6, 2008 |
| 1st Meeting of South-East Asia Regional Safety Team - Maintenance | Bangkok, Thailand | June 5, 2008 |
| 3rd Meeting of the Aeronautical Information Services Implementation Task Force | Bangkok, Thailand | June 20 - 22, 2008 |
| 18th Meeting of the Air Traffic Services, Aeronautical Information Services, Search and Rescue Sub-Group of the Asia/Pacific Air Navigation Planning and Implementation Regional Group | Bangkok, Thailand | June 23 - 27, 2008 |
| Regional Seminar on the Preparation, Conduct and Reporting of an ICAO Safety Oversight Audit | Hong Kong, China | July 14 - 16, 2008 |
| 3rd Meeting of the Performance Based Navigation Task Force | Bangkok, Thailand | July 14 - 17, 2008 |
| 12th Meeting of the Communications/Navigation/ Surveillance and Meteorology Sub-Group of the Asia/Pacific Air Navigation Planning and Implementation Regional Group | Bangkok, Thailand | July 21 - 25, 2008 |
| 19th Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group | Bangkok, Thailand | September 1 - 5, 2008 |

| Name of Conference or Meeting | Venue | Dates |
|---|---|---|
| Conference on the Economics of Airports and Air Navigation Services with a preceding Symposium | Montréal, Canada | September 10 - 19, 2008 |
| 4th Working Group Meeting and 2nd Meeting of Security Sub-Working Group of Aeronautical Telecommunication Network Implementation Coordination Group Working Group | Bangkok, Thailand | September 22 - 26, 2008 |
| Asia/Pacific Air Traffic Flow Management Seminar | Fukuoka, Japan | October 7 - 9, 2008 |
| Accident Investigation and Prevention Divisional Meeting 2008 | Montréal, Canada | October 13 - 18, 2008 |
| 5th Meeting of the Western Pacific / South China Sea Reduced Vertical Separation Minima Scrutiny Working Group | Bangkok, Thailand | October 14 - 17, 2008 |
| Seminar on Aerodrome Emergency Planning / Exercises | Singapore | October 20 - 22, 2008 |
| International Search and Rescue Seminar | Hong Kong, China | October 28 - 30, 2008 |
| Seminar on the Implementation of Data-link Flight Information Service in the Asia and Pacific Regions | Bangkok, Thailand | November 5 - 7, 2008 |
| 4th Meeting of the Required Navigation Performance Implementation Task Force for South-East Asia | Singapore | November 5 - 7, 2008 |
| 9th Meeting of South-East Asia Regional Safety Team | Bangkok, Thailand | November 19 - 21, 2008 |
| 45th Conference of Directors General of Civil Aviation, Asia and Pacific Regions | Kuala Lumpur, Malaysia | November 24 - 28, 2008 |
| 34th Meeting of the Reduced Vertical Separation Minima Implementation Task Force | Beijing, China | December 1 - 3, 2008 |
| Aeronautical Information Services Automation / electronic Terrain and Obstacles Data Seminar and 4th Meeting of Aeronautical Information Services / Aeronautical Information Management Implementation Task Force | Tokyo, Japan | February 23 - 27, 2009 |
| Performance Based Navigation Seminar and Fourth Meeting of the Performance Based Navigation Task Force | Osaka, Japan | March 2 - 6, 2009 |
| First Meeting of Asia / Pacific Flight Plan and Air Traffic Service Message Implementation Task Force | Bangkok, Thailand | March 17 - 20, 2009 |
| ICAO Legal Conference | Seoul, Republic of Korea | March 30 - April 2, 2009 |
| 20th Meeting of Aviation Security Panel | Montréal, Canada | March 30 - April 3, 2009 |

## Appendix C

APEC Conferences and Meetings attended by Representatives from the Department between April 2008 and March 2009

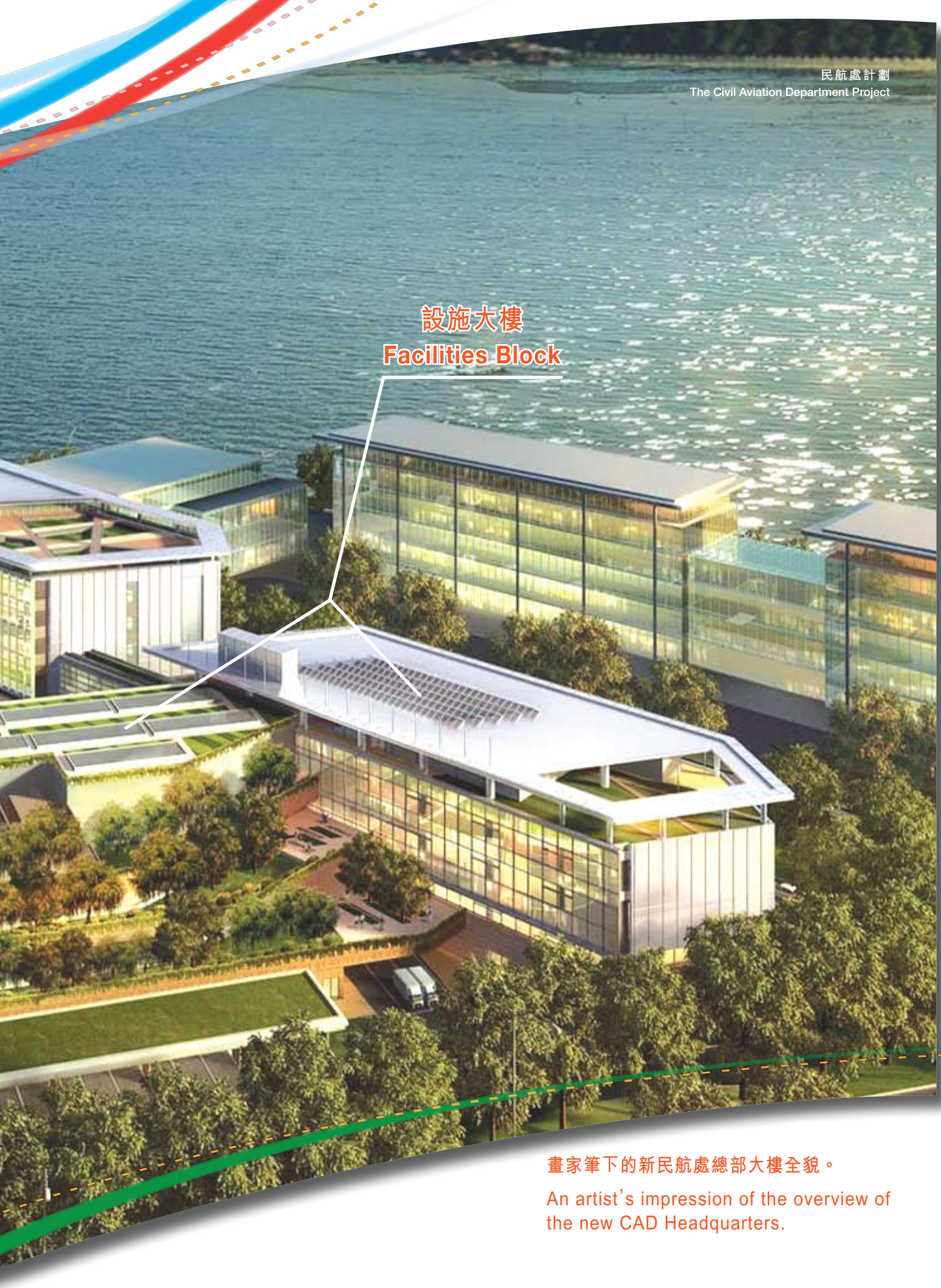
| Name of Conference or Meeting | Venue | Dates |
|---|---|---|
| 2nd APEC Seminar on Measures to Manage Aviation Emission | Kuala Lumpur, Malaysia | April 3 - 4, 2008 |
| 30th Transportation Working Group Meeting | Manila, Philippines | April 14 - 18, 2008 |



# 民航處計劃
# THE CIVIL AVIATION DEPARTMENT PROJECT


行政長官在二零零六/零七年度施政綱領中提出更換航空交通管制(空管)系統及在機場島上興建一座新民航處總部，以鞏固香港在地區性航空服務的領導地位，讓航空業得以持續發展。本處因應落實此項綱領，正式啟動了上述計劃。

In order to reinforce Hong Kong's leading position in regional aviation services and sustain long-term growth of the industry, the Chief Executive announced in the 2006-2007 Policy Agenda an initiative to replace the air traffic control (ATC) system and develop a new CAD Headquarters on the Airport Island. The Civil Aviation Department Project (the CAD Project) was initiated to implement the commitment.




畫家筆下的新民航處總部大樓全貌。

An artist's impression of the overview of the new CAD Headquarters.

# 民航處計劃
# THE CIVIL AVIATION DEPARTMENT PROJECT

計劃目標為更換現有空管系統以應付航空交通量的預計增長，和興建一座新民航處總部大樓以容納一所新空管中心和本處各功能分部於同一屋簷下，以便更有效地運用資源和提升效率。

The CAD Project aims to replace the existing ATC system in order to handle the projected growth in air traffic while at the same time develop a new CAD Headquarters building to accommodate the new ATC Centre and all CAD functional divisions under one roof to optimise resource utilisation and enhance efficiency.

*入選的投票商代表出席民航處計劃工作組舉行的簡介會。*
*Representatives of pre-qualified tenders of the new CAD Headquarters attended a briefing by CAD Project Team.*

## 民航處計劃工作組和民航處計劃督導委員會

為確保計劃可依時順利進行，本處成立了一個民航處新總部計劃工作組。該組由一位民航處助理處長領導，共有四十二名專責組員，包括一名由建築署借調的高級建築師。

為了監督計劃的執行及其進展，本處亦成立了一個由高層管理人員組成的民航處新總部計劃督導委員會，定期舉行會議聽取工作組的匯報。在督導委員會核下一共設立了十五個不同功能的專責小組，以制定計劃內各方面的策略和要求，這些小組包括：計劃協調；設計和基礎設施；環境和協同作用；保安和安全；資訊科技和先進技術的應用；空管的工作環境；空管系統和設施；空管培訓和人力資源計劃；會議，培訓設施和辦公地方；過渡和搬遷安排；行政和人員編制；空域管理和飛行程式；意外事故調查；資源分配；以及整合協調操作要求。督導委員會定期在會議上討論專責小組的建議，通過後便引入為新大樓設計要求。

## 計劃進展

雖然計劃的規模龐大及複雜，工作組在督導委員會領導下不斷努力並獲得整個部門和決策局全力支持，取得平穩的進展。

## CAD Project Team and the Steering Committee of the New CAD Headquarters Project (SCNCP)

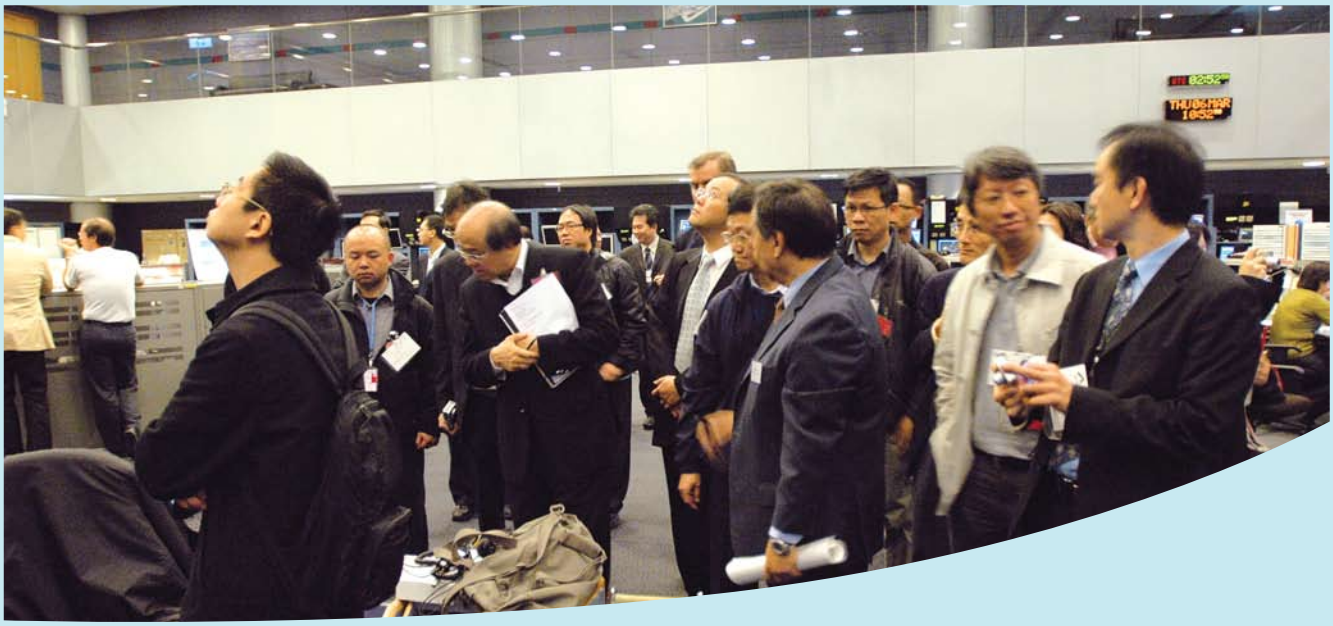
To ensure smooth and timely implementation of the project, a CAD Project Team with 42 officers, including a Senior Architect seconded from the Architectural Services Department, was established under the leadership of an Assistant Director-General of Civil Aviation.

A Steering Committee for the New CAD Headquarters Project (SCNCP), comprising representatives from senior management of CAD divisions, was formed to oversee the execution of project activities and its progress. Under the ambit of the SCNCP, 15 different functional task forces were established to formulate strategies and requirements for various aspects of the project. These task forces included project coordination; design and infrastructure; environment and synergy; security and safety; IT and application of advanced technology; ATC working environment; ATC system and facilities; ATC training and manpower plan; conference, training facilities and accommodation; transition and relocation arrangements; administration and staff establishment; airspace management and flight procedures; accident investigation; resource allocation; and last but not least, integration and coordination on operational requirements. The recommendations of the task forces were deliberated at regular meetings of the SCNCP and adopted as user requirements of the project.

## Project Progress

With full support from the entire department and the policy bureau, through the capable steer of the SCNCP and the concerted effort of the Project Team, the project has been making steady progress despite its scale and complexity.

# 民航處計劃
# THE CIVIL AVIATION DEPARTMENT PROJECT



*入選的投標商代表參觀航空交通管制中心。*
*Representatives of the pre-qualified tenderers visited the Air Traffic Control Centre.*

## 發展新民航處總部

機場管理局董事會已撥出一幅位於機場島東南，港龍/中航大廈以北，東輝路兩旁，佔地約共29 800平方米的土地，作為興建新民航處總部選址。

新總部大樓的建築樓面面積約為65 000平方米，淨作業樓面面積約為22 660平方米，其中約11 000平方米會用作新空管大樓及相關設施，3 300平方米用作行政及規管辦公室，8 400平方米用作其他設施，包括專設的飛機意外調查設施、多用途會議廳、圖書館暨資源中心、導賞室和教育徑。

新總部建築工程以「設計及建造」方式進行，優點在於初期地面工程和各階段的詳細內部設計工作可同步進行，從而加快工程進度。在立法會財務委員會通過撥款後，本處隨即在二零零八年二月就「設計及建造」合約進行第一次

## Development of the New CAD Headquarters

A site north of the Dragonair House/CNAC Building on both sides of Tung Fai Road with a combined site area of approximately 29 800m$^2$ was allocated by the Board of Directors of the Airport Authority Hong Kong (AAHK) for construction of the new CAD Headquarters. The new CAD Headquarters building will have a construction floor area in the order of 65 000m$^2$ providing a total net floor area of approximately 22 660m$^2$. Of the 22 660m$^2$, about 11 000m$^2$ will be assigned for the new ATCC and its associated facilities, 3 300m$^2$ for administration and regulatory offices and 8 400m$^2$ for other facilities including a dedicated aircraft accident facility, a multi-purpose auditorium, a library cum resource centre, a tour presentation room and an education path.

A design-and-build (D & B) approach is adopted for construction of the new CAD Headquarters. Such an approach will have a merit by overlapping initial ground works and detailed internal design stages, thus enhancing efficiency of the construction programme. The D & B contract was first tendered in February 2008, right after

招標。由於沒有投標者符合招標要求，合約在二零零八年九月重新招標，同年十二月收回標書，經過有民航處代表參與的評審委員會嚴格評審後，投標評審報告會提交予中央投標委員會進行審批。預期該合約可於二零零九年第二季度批出。


*民航處計劃工作組為入選的投標商代表舉行簡介會。*
*The CAD Project Team conducted a briefing to the representatives of the pre-qualified tenderers.*

## 更換航空交通管制系統

新空管系統共涉及十四個主要系統、三個訓練設施和各種輔助部件及支援系統。新系統將會是一個最先進的系統，安全功能和運作效率方面均有所提升。設計方面亦同時兼顧了系統擴展、互通能力、人類工程學、安全管理和環保因素等不同範疇。新系統將能夠處理預計至二零二五年在香港飛行情報區內的航班流量。

本處採取了最適當的採購策略，將不同系統分為數組招標項目，因而減低計劃風險和成本，同時更有效整合及管理各個系統。新指揮塔模擬器是首先於二零零八年十二月進行的招標採購，此項目正積極進行標書評審。新模擬器計劃在二零一零年六月投入服務，其餘各項目陸續於二零零九至一零年度分階段進行招標。

the funding approval from LegCo Finance Committee. Since none of the bidders met the tender requirements, the contract was re-tendered in September 2008 and the tender bids were returned in December 2008. The bids were thoroughly assessed by the tender assessment panel which CAD was represented. The tender assessment report was being prepared and would be submitted to the Central Tender Board (CTB) in due course. Subject to the approval of the CTB, it was expected that the D & B contract would be awarded in the second quarter of 2009.

## Replacement of ATC System

The replacement ATC system involves a total of 14 major systems, three training facilities and various ancillary components and sub-systems. When commissioned, the new system will be one of the most advanced systems with enhanced safety features and operational efficiency. System expandability, inter-operability, ergonomics, safety management and environmental issues were also taken into consideration in the design. It will be able to handle the projected traffic movements operating in the Hong Kong Flight Information Region up to year 2025.

In order to reduce project risks and costs, and allow for more efficient inter-system integration and management, an optimum procurement strategy was adopted by consolidating various systems into a number of tender groups. The first one being the tender for procurement of the new Tower Simulator in December 2008; tender award is in progress and the new simulator is scheduled for commissioning in June 2010. Preparations for the rest are on-going and the tenders will be rolled out in phases in 2009/2010.

# 財務
# FINANCE

## 本處收入與開支

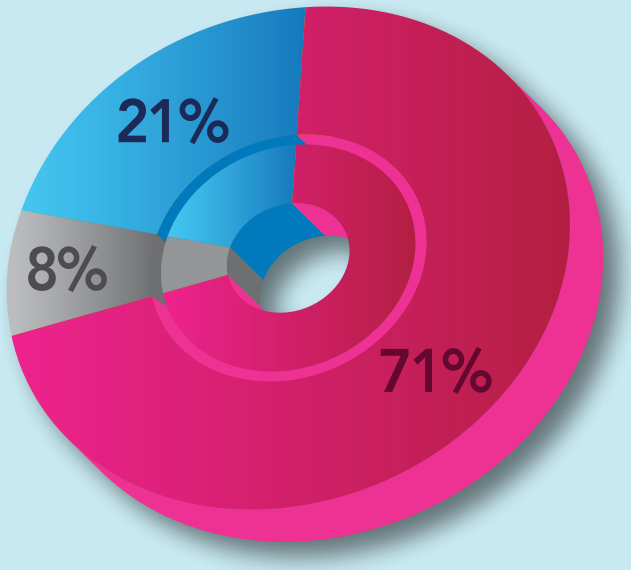
本處收入主要源自提供航空交通服務、過境導航服務及簽發牌照予本地航空公司、空勤人員、飛機維修機構、飛機工程師及香港國際機場。二零零八年至二零零九年度，本處的總收入達9.08億元，同期總經營支出包括政府其他部門提供服務的成本為9.77億元。年內資本開支達6 100萬元。主要項目包括擴充雷達數據處理及顯示系統、飛行數據處理系統及雷達模擬系統，以及衛星通訊、導航及監察/航空交通管理系統。本處向來謹慎理財及在精簡的架構下仍維持有效率的運作。

## DEPARTMENTAL REVENUE AND EXPENDITURE

The revenue of the Department is mainly derived from the provision of air traffic services, en-route navigation services and licensing of local airlines, aircrews, maintenance organisations, aeronautical engineers and the Hong Kong International Airport. Total revenue in 2008-2009 amounted to $908 million. Total operating expenditure including costs of services provided by other government departments for the same period amounted to $977 million. Capital expenditure during the year amounted to $61 million, major items included Expansion of Radar Data Processing and Display System, Flight Data Processing System and Radar Simulator System, and Satellite-based Communications, Navigation and Surveillance/Air Traffic Management Systems. The Department has been operating under prudent accounting principles and in a lean but efficient manner.

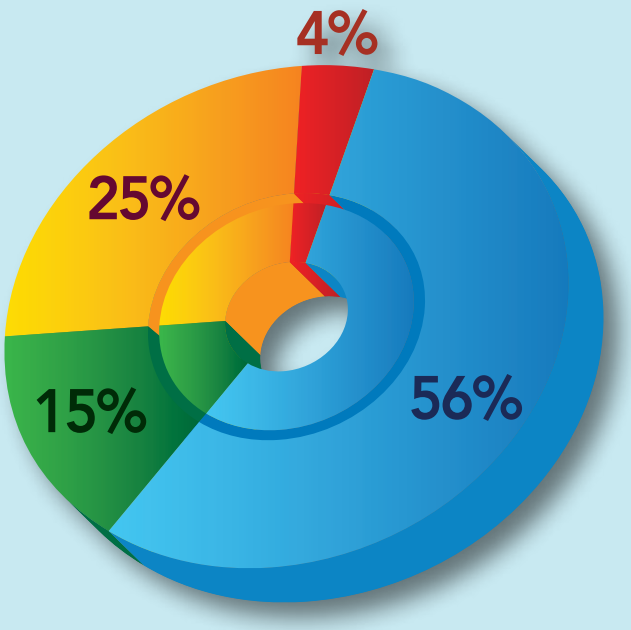
## 收入分析 ANALYSIS OF REVENUE (2008-2009)

| | 百萬元$(M) |
|---|---|
| 航空交通 Air Traffic Services | 640 |
| 過境導航 En-route Navigation Services | 192 |
| 其他 Licence and Other Fees | 76 |
| | 908 |



## 開支分析 ANALYSIS OF EXPENDITURE (2008-2009)

| | 百萬元$(M) |
|---|---|
| 員工支出 Staff | 547 |
| 經營及行政支出 General Expenses | 244 |
| 折舊 Depreciation | 143 |
| 維修 Maintenance | 43 |
| | 977 |

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