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衛星通訊鏈路，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衛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。
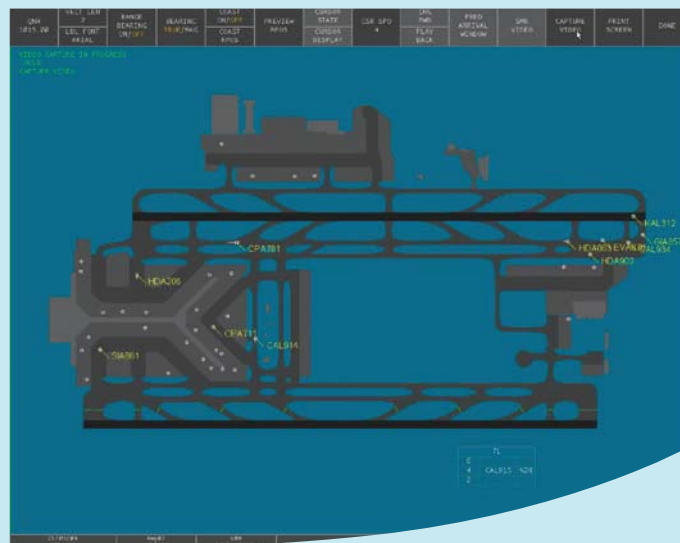
改進型地面活動引導和控制系統的顯示屏幕。
Snap shot of Advanced Surface Movement Guidance and Control System Screen.

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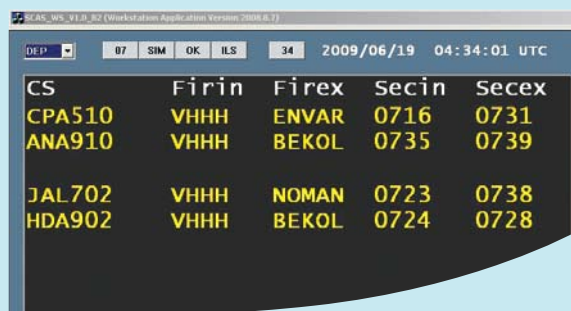
航空交通工程及標準
AIR TRAFFIC ENGINEERING AND STANDARDS

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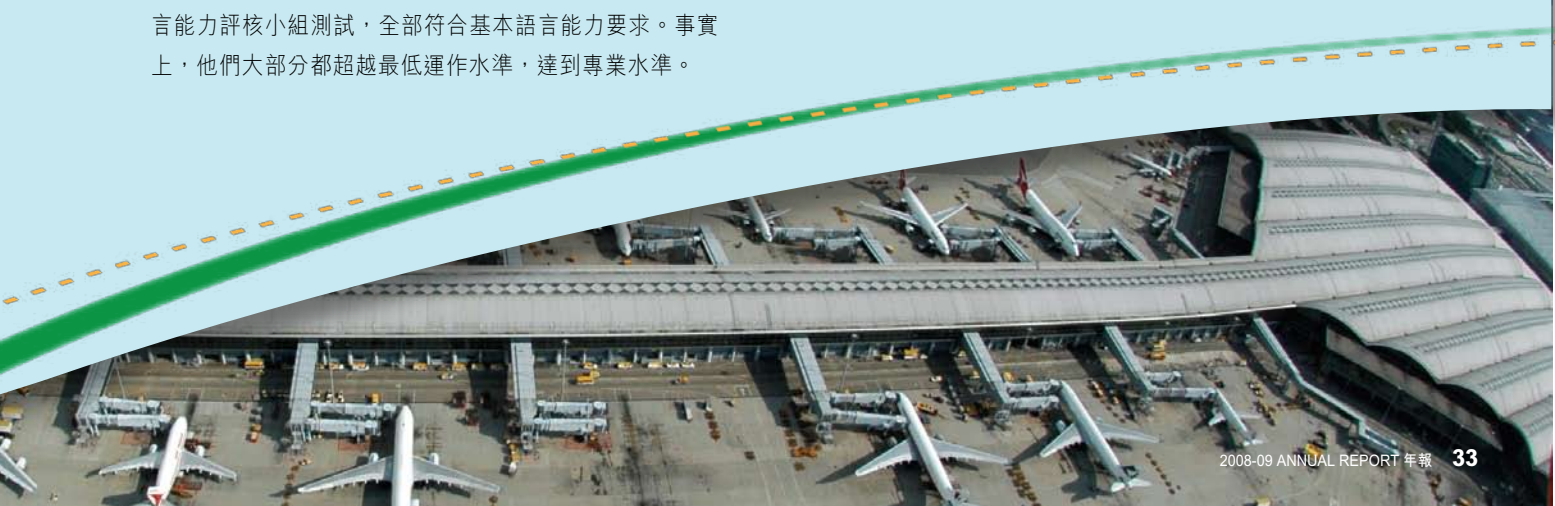
航空交通工程及標準
AIR TRAFFIC ENGINEERING AND STANDARDS

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.

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.