



Civil Aviation Department Environmental Report 2007




香港民航處

Civil Aviation Department Hong Kong



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EXECUTIVE SUMMARY

Being the civil aviation authority of Hong Kong, Civil Aviation Department is committed to adopt a balanced approach on handling the aircraft noise problem in order to ensure that Hong Kong's environment will not be compromised.

In 2007, we met all but one of our noise abatement targets of which we will try our best to seek improvement in the future.

We will continue to work diligently to reduce the impact of aircraft noise such that our community can coexist with the aviation industry harmoniously.

For 2007, the self-regulatory green measures for CAD internal operations included energy conservation, paper conservation, recycling, and the proper disposal of environmentally hazardous waste. We remained on track with those initiatives, and achieved satisfactory results.

A 0.8% increase in daily average electricity consumption was recorded at CAD's premises. The increase in average ambient temperature in 2007 and also the additional air traffic equipment installed at the Air Traffic Control Tower and Complex (ATCX/TWR) had given rise to higher air conditioning and power demand, thus resulted in increased electricity consumption.

We welcome comments from readers so that we can continuously improve our performance. Feedbacks or comments on this report can be sent to CAD through e-mail: enquiry@cad.gov.hk or by mail to the address under "Contact Us" section.

FOREWORD

Air transport makes a unique and vital contribution to the sustainable development of Hong Kong. The connection for Hong Kong to the world it provides underpins Hong Kong's trade and tourism, sustains thousands of jobs and facilitates social and cultural exchanges. In 2007, the number of flights to and from Hong Kong rose to 295,342, a rise of 5.3% compared to 2006.

While striving to meet the growing demand, we remain constantly mindful to limit air transport's environmental impact. To this end, we continue to manage the aircraft noise problem using the "Balanced Approach" developed by the International Civil Aviation Organisation (ICAO). The goal is to address the problem in the most cost-effective manner through an exploration of the following:

- Reduction of noise at its source
- Keeping noise-sensitive receivers away from the airport by appropriate land use planning and management measures
- Noise abatement operational procedures for take-off and approach – including the preferred usage of runways and routes least likely to be heard by people in neighboring communities
- Aircraft operating restrictions

We fully understand the importance of communicating with local communities and concerned District Councils on matters relating to aircraft noise, and we are committed to maintaining dialogue with them. To this end, aircraft noise data and information on the performance of noise-mitigating measures are regularly uploaded to our web-page at http://www.cad.gov.hk/english/ac_noise.html.

In our daily operations, we also fully support green measures in saving resources and reducing waste. In particular, we continue to measure our electricity consumption and to implement measures that improve electricity efficiency at our operational centres and offices.

In this report, we have reviewed our performance in the year 2007 and outlined our targets for 2008. As always, readers are invited to offer their comments and feedback to help us improve further.

Director-General of Civil Aviation
Mr Norman Lo Shung-man, JP

CHAPTER 1 —

Welcome



CHAPTER 1 —

Welcome

This is the ninth annual Environmental Report issued by the Civil Aviation Department (CAD). In the following pages, you can learn more about our environmental performance in 2007, both in terms of our management of aircraft noise and our in-house 'green' management.

This report also includes a review of our performance compared to the previous calendar year, as well as our targets for the year ahead.

CHAPTER 2 —

About the Civil Aviation Department



CHAPTER 2 —

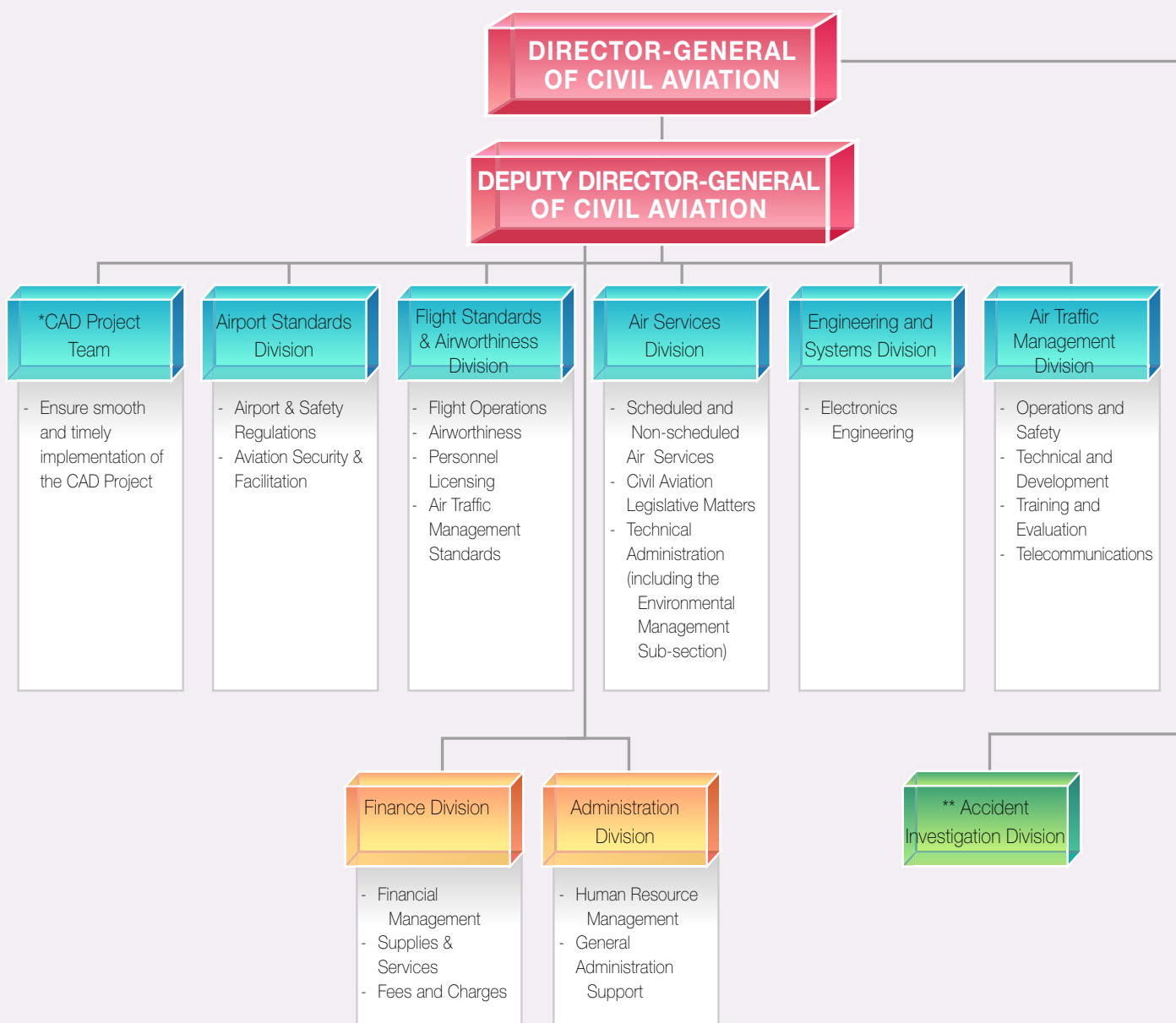
About the Civil Aviation Department

Being the civil aviation authority in Hong Kong, CAD is committed to a safe and efficient air transport system. We strive to accomplish the following missions in a professional manner: -

- Positioning Hong Kong as a leading centre of aviation
- Maintaining a safe, orderly and expeditious flow of air traffic
- Providing flight information service and alerting service within the Hong Kong Flight Information Region
- Coordinating search and rescue operations in the event of aircraft emergencies and accidents
- Setting and enforcing aerodrome safety and aviation security standards
- Ensuring compliance of established airworthiness and flight operations standards by Hong Kong registered aircraft and locally based airlines
- Ensuring Hong Kong approved aircraft maintenance organisations comply with international standards
- Ensuring Hong Kong licensed flight crew and aircraft maintenance engineers meet international standards
- Monitoring compliance by airlines with bi-lateral Air Services Agreements
- Developing workable measures to minimise the impact of aircraft noise on local communities

Our Organisation

Organization Chart as at 31 December, 2007.



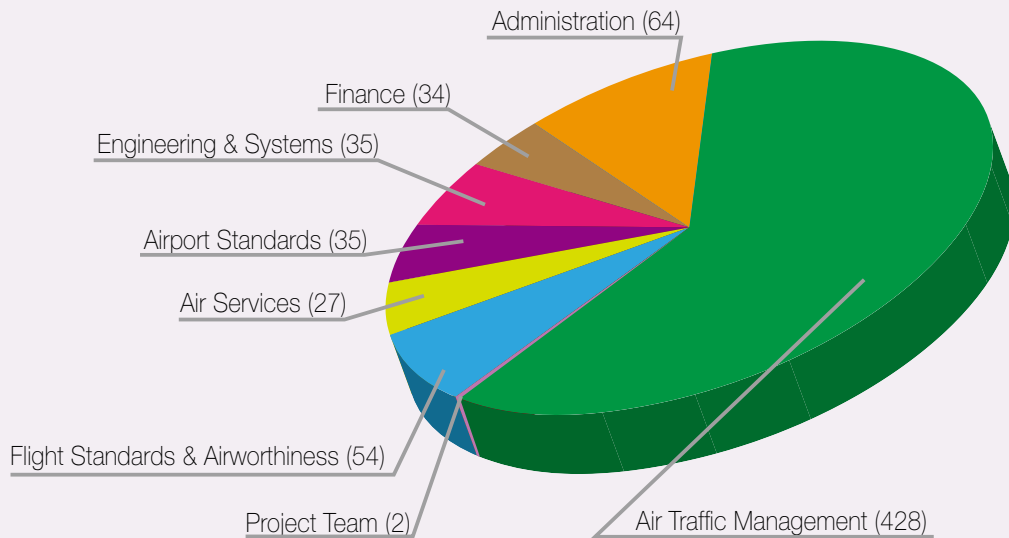
Note :

* The CAD Project Team was established in 2007 to ensure the smooth and timely implementation of the CAD Project which aims to replace the existing ATC system and to develop a new CAD Headquarters.

** The Accident Investigation Division is mobilised only when required by drawing specially trained staff from other Divisions.

Our Staff

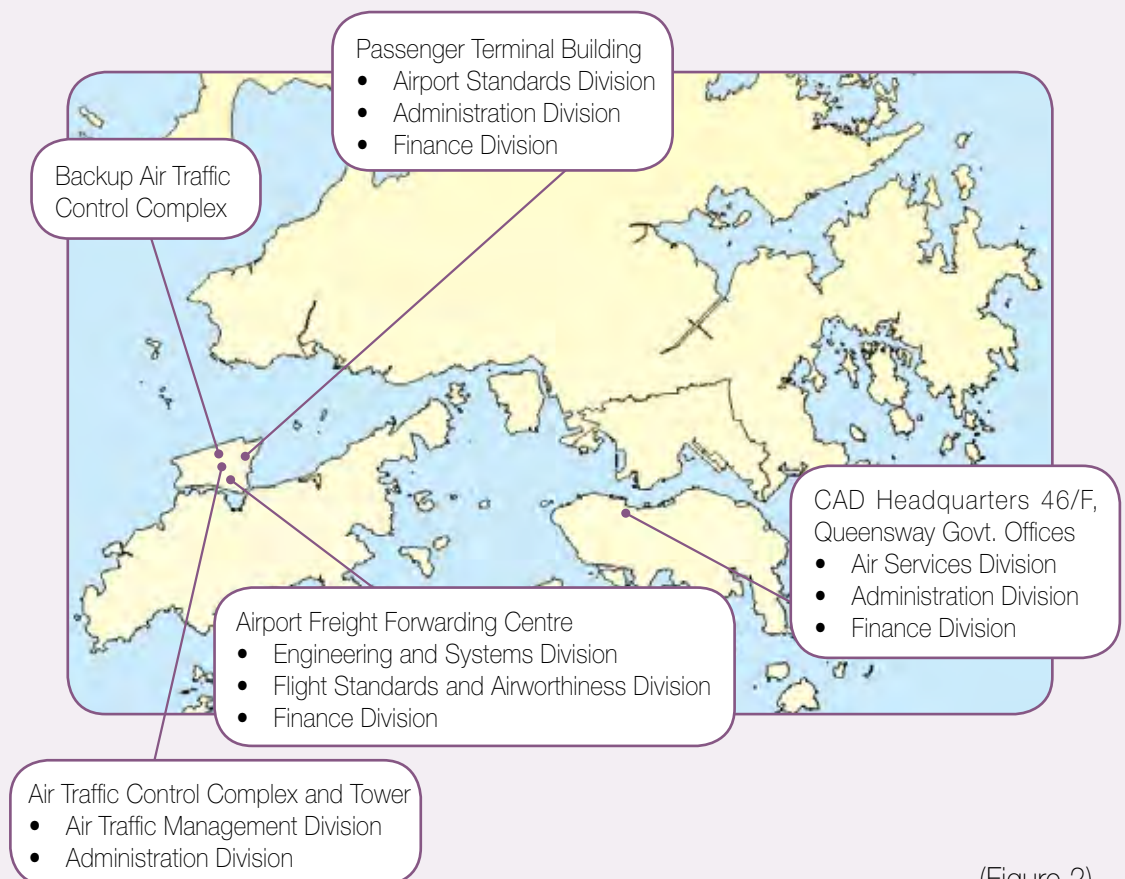
As the following chart shows, in 2007 the CAD employed 679 people in seven divisions and one Project Team, the largest of which was the Air Traffic Management Division (Figure 1).



(Figure 1)

Our Facilities

In 2007, we operated five offices to handle our wide-ranging workload (Figure 2).



(Figure 2)

CHAPTER 3 —

Protecting the Environment



CHAPTER 3 —

Protecting the Environment

Being an acclaimed hub for regional and international air traffic and freight, it is really important for us to maximize the compatibility between the growth of civil aviation and the quality of the environment. Thus as the air traffic increases, there is a pressing need to manage the aircraft noise impacts in order not to degrade Hong Kong people's environment or suffocate the aviation industry's own growth.

In order to conserve the Earth's limited resources, the CAD is also committed to environmentally responsible operations. We would apply measures to control our activities such that waste and pollution are minimized and that our Earth's precious resources could re-generate to cope with humanity's needs.

Our Commitments

We care for the environment in two aspects, namely minimising noise pollution and operating in an environmentally friendly manner.

Noise Policy for Civil Aviation Activities

- Maintain dialogue with local communities and citizens affected by aircraft noise and handle complaints
- Monitor aircraft noise
- Consult stakeholders on the feasibility of new noise mitigating measures
- Develop and implement measures to minimise the impact of aircraft noise on local communities

Complaints

Stakeholders:

affected households

Consultation

Stakeholders:

airlines & airport

Affected households

Other Stakeholders like:

Passengers, shippers, forwarders or employees of aviation industry.

Green Policy for CAD

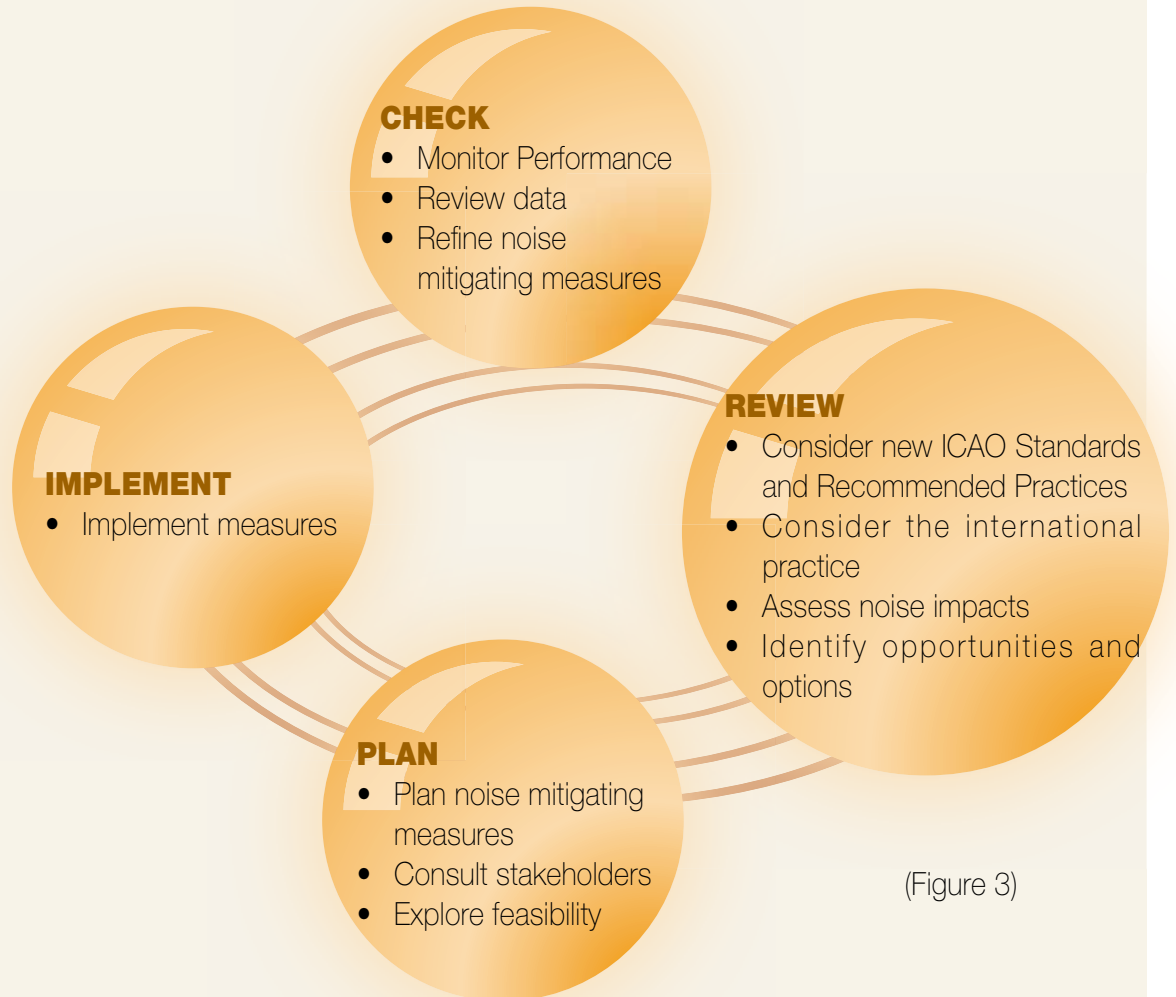
- Economise the use of energy and paper
- Apply the principles of sustainable development in our procurement process and in the planning and operation of our facilities
- Reduce, re-use and recycle if possible
- Comply with environmental regulations as a minimum standard of performance
- Promote staff awareness to ensure that environmentally related considerations are included in all our decision-making process.



Waste paper collection bags are provided to encourage paper recycling in the office.

Managing Aircraft Noise

To minimise noise impacts from aircraft, the CAD uses a continual Review-Plan-Implement-Check Cycle, as shown (Figure 3).

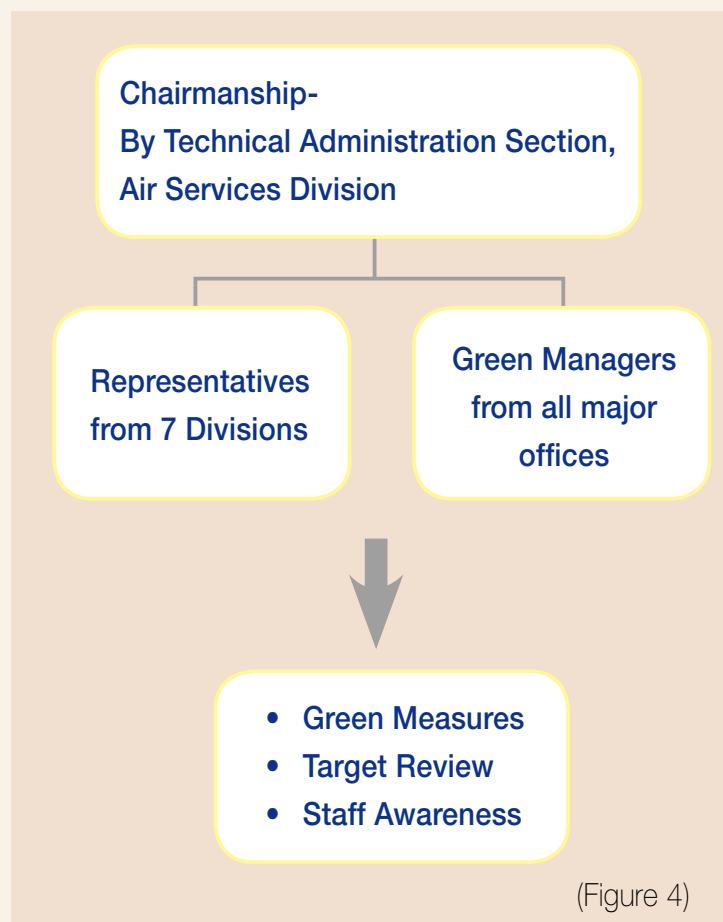


CAD keeps reviewing the present situation and assessing the present noise impacts. When planning new noise-mitigating measures, the CAD would consult different stakeholders including local communities, airlines and the airport to explore the feasibility.

In-house Operations

CAD has established the Environmental Management Committee to monitor the environmental friendliness of all CAD operations and to work out practical measures to implement our green policy. The committee would also set environmental targets for the year ahead, such as reducing electricity consumption and recycling waste. (Figure 4).

As in previous years, all CAD offices were monitored throughout 2007. We had also held regular staff briefing on eco-friendly practices to arouse staff's awareness on environmentally responsible operation in the offices.



(Figure 4)

CHAPTER 4 —

Managing Aircraft Noise



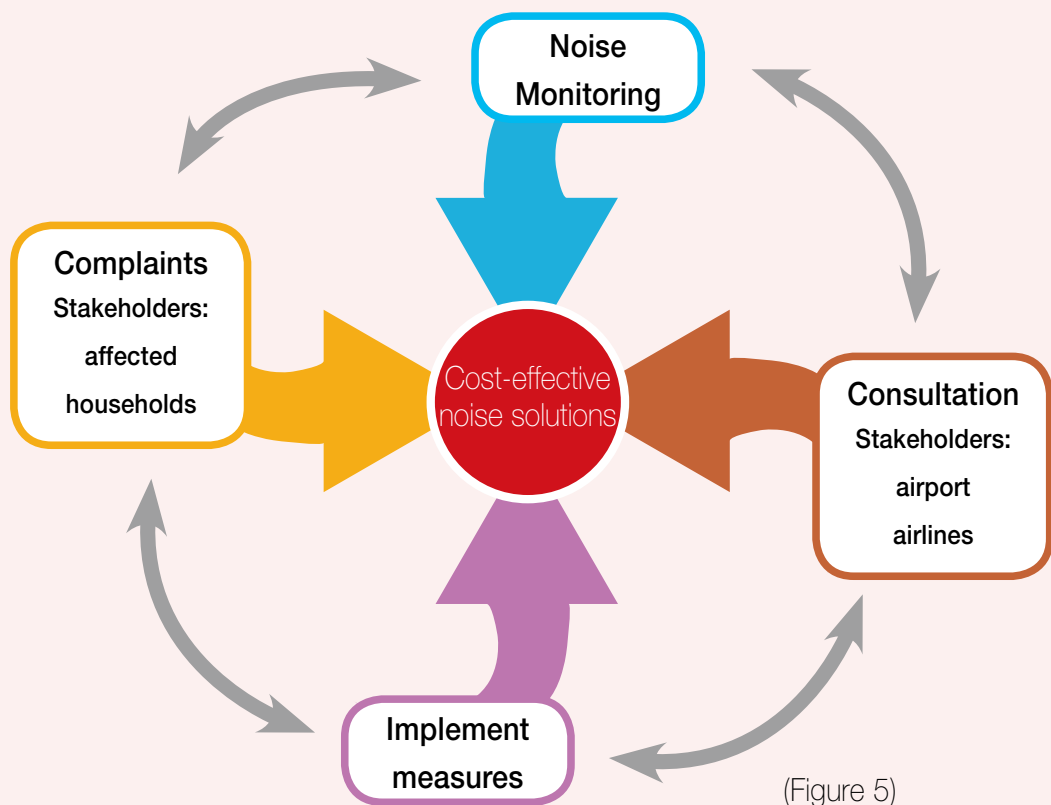
CHAPTER 4 —

Managing Aircraft Noise

When managing Aircraft Noise impacts, we balance the needs of various stakeholders, including affected households and the aviation industry. This process of liaison is illustrated in the diagram below (Figure 5).

As shown in the diagram, we would implement noise-mitigating measures wherever possible. We also closely monitor aircraft noise and handle the complaints from affected households. We strive to achieve cost-effective solutions to the aircraft noise problem with the consultation of the airport and different airlines.

In addition, we disseminate relevant noise data and keep an eye on the aviation technological developments with a view to introducing new practices on aircraft noise reduction.



Using Flight Paths Over Water to Minimise Noise

To keep aircraft noise impacts to populated areas to an absolute minimum in the night-time hours, so long as weather and flight conditions allow, we require arriving aircraft to approach the airport from the southwest, so that they approach over water, and depart via the West Lamma Channel.

In 2007, we targeted for 90% of all aircraft arriving between midnight and 7:00am to approach from the southwest.

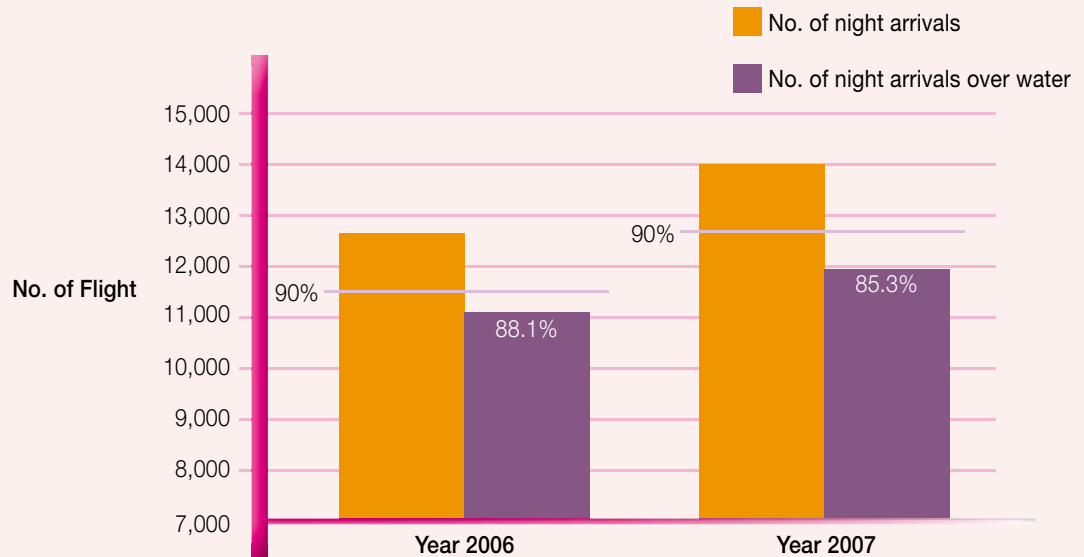


In the same period, we targeted for 95% of all aircraft taking-off between 11:00pm and 7:00am to depart via the West Lamma Channel.

These two arrangements ensure that during the overnight period, populated areas such as Sha Tin, Tsuen Wan, Kwai Chung, Tsing Yi, Sham Tseng and Tsing Lung Tau are not affected by noise from arriving aircraft, while districts like Kowloon, North Point, Shau Kei Wan and Chai Wan are not affected by noise from departing aircraft.

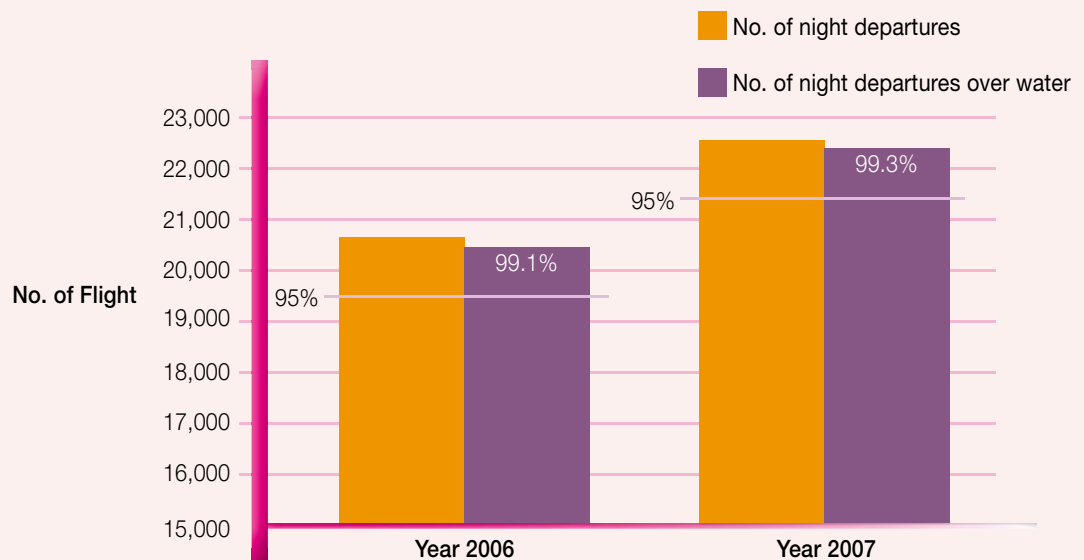
Our Performance in 2007

Statistical data shows that in 2007, 85.3%(2006, 88.1%) of all night arrivals were able to land from the southwest. (Figure 6)



(Figure 6)

We achieved more success with night departures. In 2007, 99.3% (2006, 99.1%) of all night departures were via the West Lamma Channel (Figure 7).



(Figure 7)

Target for 2008

In 2008, we will retain the aforementioned 90% and 95% targets respectively for night arrivals and departures over water.

Quieter Arrivals

When weather and flight conditions require night arrivals between 11:00pm and 7:00am to approach from the northeast, we encourage aircraft to adopt the Continuous Descent Approach (CDA). By this procedure, aircraft would fly higher, adopt a lower power and drag configuration as they begin their approach, thus minimising the night-time aircraft noise impacts on areas such as Sai Kung, Tseung Kwan O and Ma On Shan.

Our Performance in 2007

In 2007, 82.8 % of aircraft approaching from the northeast between 11:00pm and 7:00am attained CDA procedures.

Target for 2008

In 2008, we will continue to encourage the use of the CDA procedure.

Quieter Departures

All aircraft departing to the northeast are required to use Noise Abatement Departure Procedures (NADP) as long as safe flight operations permit.

Prescribed by the International Civil Aviation Organization (ICAO)*, these procedures require aircraft to commence engine power reduction in the initial phase of take-off at heights as low as 800 feet. This reduces the noise impact on affected households in the vicinity of the airport when aircraft are required to depart to the northeast.

Target for 2008

Airlines are to continue to adopt the NADP for departures to the northeast of the airport.

Note : * The International Civil Aviation Organization (ICAO) is a specialised agency of the United Nations. ICAO was created in 1944 to promote the safe and orderly development of international civil aviation throughout the world. It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. The Organization serves as the forum for cooperation in all fields of civil aviation among its 190 Contracting States.

Keeping Noisy Aircraft Out of Hong Kong

Since 1 July 2002, old and noisy "Chapter 2" (#1) aircraft types that create serious noise pollution have been banned from using Hong Kong International Airport. Only newer and quieter "Chapter 3" (#2) aircraft are allowed to land in Hong Kong.

Target for 2008

To protect residents from unnecessary aircraft noise, the ban on Chapter 2 aircraft will remain in place.

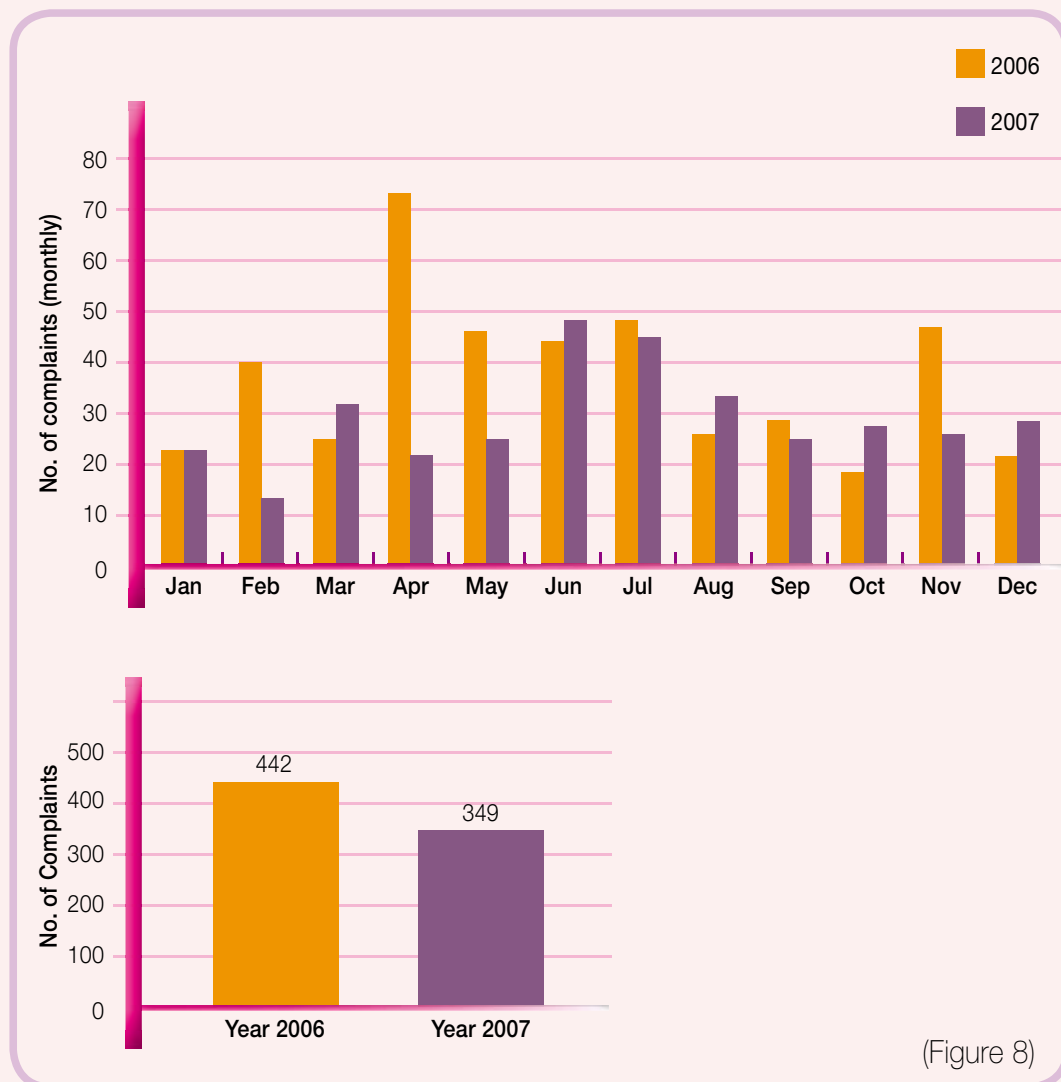
1 Note : "Chapter 2" aircraft are those aircraft which only comply with the noise standard stipulated in Chapter 2 of Annex 16, Volume 1, Part II to the Convention on International Civil Aviation.

2 Note : "Chapter 3" aircraft are those aircraft which comply with the more stringent noise standard stipulated in Chapter 3 of Annex 16, Volume 1, Part II to the Convention on International Civil Aviation.

Working with the Public

Complaint Hotline

In 2007, we received 349 complaints regarding aircraft noise (Figure 8), a 21% decrease compared to 2006.



(Figure 8)

Public and Government Liaison

In 2007, we attended a total of 4 committee meetings of the Tsuen Wan District Council, the Central and Western District Council, Tuen Mun District Council and the Eastern District Council and 1 meeting with local communities. During these meetings, we explained the noise-mitigating measures we had implemented.

Noise Data

We regularly uploaded new noise data to our website in 2007, enabling all members of the public to access our aircraft noise information.

Target for 2008

In 2008, we will continue maintaining contact with concerned parties on the subject, and continue serving the community with noise data and our complaint hotline.

Noise Monitoring

We continued to use a sophisticated computer-based Aircraft Noise and Flight Tracking Monitoring System (ANFTMS) to closely monitor aircraft noise in the vicinity of the flight paths in 2007. This system comprised 16 fixed noise monitors (Figure 9), which continually collect noise data on a real-time basis. All noise data were automatically correlated with the radar information on flight tracks, enabling us to compile accurate statistics on aircraft noise and more effectively investigate any noise complaints.



(Figure 9)

Improvement Works in 2007

In 2007, we procured 8 monitor equipment units for replacing some of the aged monitors and the replacement work had been started in end 2007.

Target for 2008

In 2008, we will continue our program of replacing aged noise monitoring terminals with units of new model to ensure the accuracy of the data. We will also continue to closely monitor aircraft noise and flight tracks around the clock using the ANFTMS.

CHAPTER 5 —

Our Green Performance



CHAPTER 5 —

Our Green Performance

Our in-house green policy emphasises energy conservation, paper conservation and recycling, proper disposal of environmentally hazardous waste, and promotion of environmental awareness among all staff.

Being Green

Energy Conservation

The Air Traffic Control Complex and Tower (ATCX/TWR) and the Back-up Air Traffic Control Complex (BATCX) are CAD's major premises. They have incorporated a number of energy-saving building services features according to relevant Electrical and Mechanical Services Department codes.

Air-conditioning

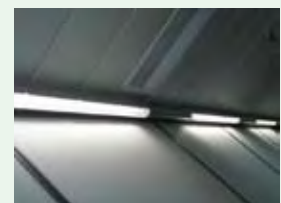
Air-conditioning accounts for the majority of the CAD's electricity consumption. In 2007, we implemented the following additional step to reduce the energy used by air-conditioning systems :

- Installation of sunblind with better light and heat insulating effect to selected offices in ATCX and BATCX.

Lighting systems

Using lights in a responsible manner is one of the quickest and easiest ways to help care for the environment. In 2007, we implemented the following measures:

- Completion of the installation of energy efficient LED exit signs at the ATCX/TWR and BATCX.
- Replacement of T8 fluorescent light tubes by energy efficient T5 tubes in the common area, staircases and plant rooms at ATCX.
- Replacement of outdoor architectural floodlight underneath ATCX/TWR by energy efficient LED light.



These new initiatives were in addition to existing measures from previous years, such as not using the architectural floodlights at BATCX and switching off all unnecessary corridor lights at ATCX/TWR and BATCX.

In 2008, we will implement the following measures to further save energy:

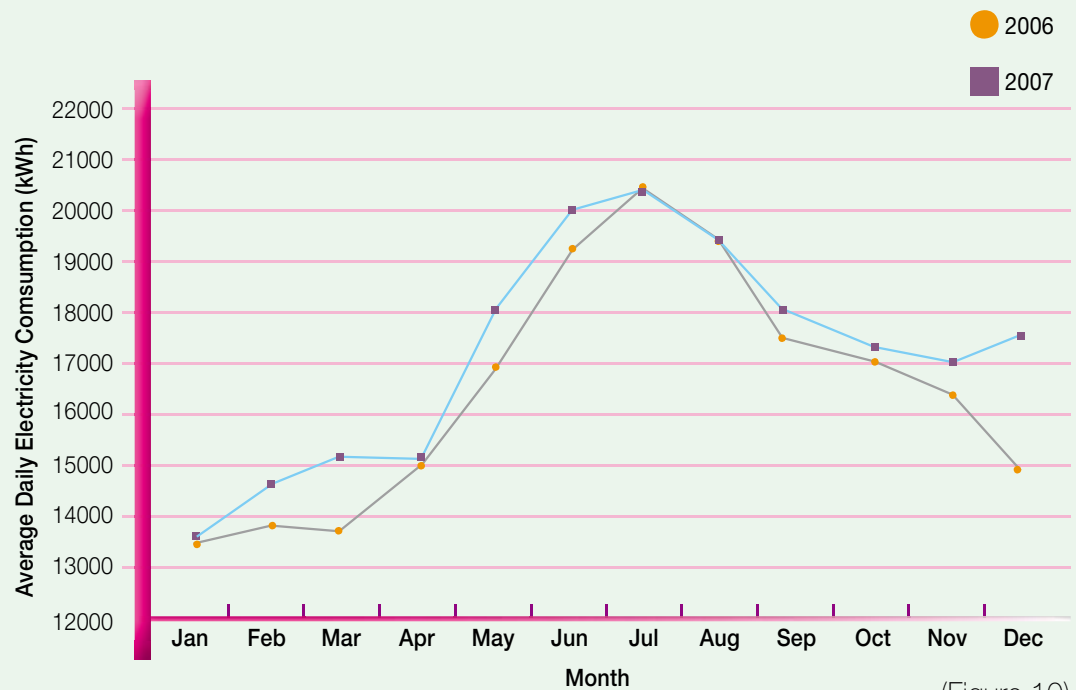
- Provision of wind curtain to the sliding door at the ATCX entrance.
- Suspension of chilled water supply for non-operational areas after office hours and during weekends.

Elevators

In 2007, we continued to reduce energy consumption by suspending one passenger elevator and one cargo elevator at ATCX during overnight periods.

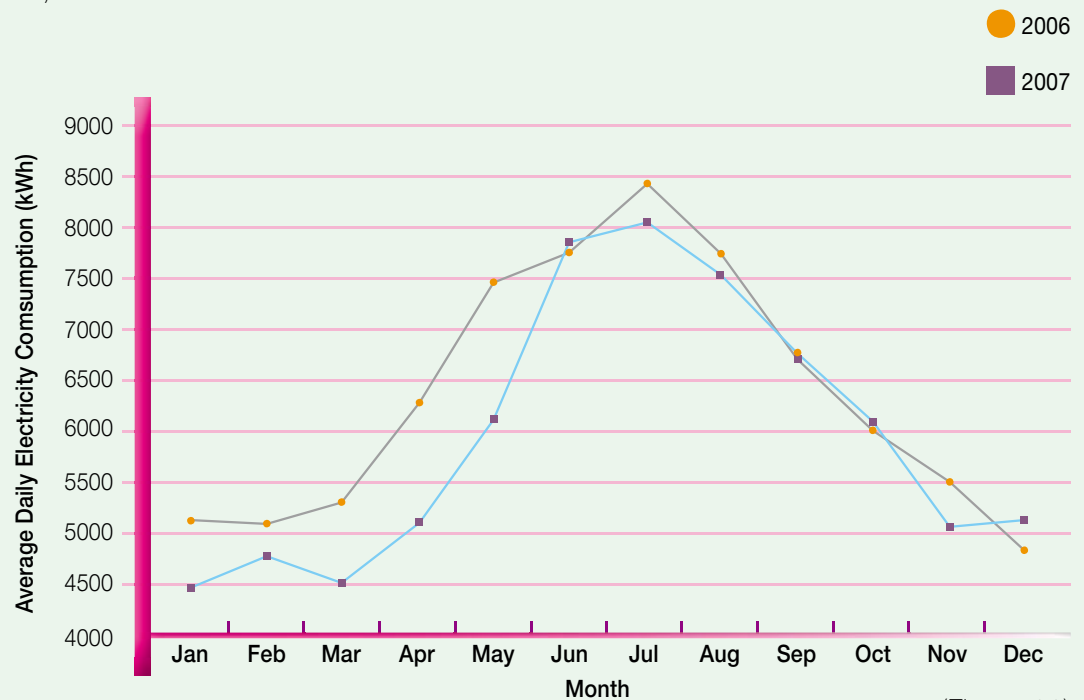
Results

In 2007, average daily electricity consumption at ATCX/TWR increased by 4.32% compared with 2006 (Figure 10). ATCX/TWR is the main operational area of CAD. In 2007, additional air traffic equipment had been installed giving rise to higher power and air conditioning demand, and resulted in increased electricity consumption.



(Figure 10)

Average daily electricity consumption at BATCX decreased by 6.35% in 2007 (Figure 11).



(Figure 11)

Third-party Property Managers

Besides CAD's own premises, we would also meet with the managers of non CAD-owned buildings regularly to discuss energy-saving initiatives if needed. For instance, at the Queensway Government Offices, the management authority now strictly controls the air-conditioning and limits the operating hours of its chiller plant, which significantly reduce energy wastage.

Our Performance in 2007

In 2007, CAD premises consumed a combined 30,731 kilowatt-hours on an average day. This was a 0.8% increase on 2006.

Target for 2008

In 2008, we will continue to adhere to our energy-saving policy.

Driving Green

Poor driving habit not only increases fuel consumption, but also causes more pollutants to be emitted. In view of this, we had arranged all CAD drivers to receive training on environmentally responsible driving practices. They are told to adhere to the policy of stop idling engines to reduce unnecessary exhaust emission. Besides, all CAD vehicles have undergone regular checks and maintenance to ensure that emissions are within an acceptable range.

Buying Green

Air Traffic Control Equipment

In addition to meeting key safety standards, all new air traffic control equipment that we purchase must also be energy-efficient. For instance, in 2007, we have completed the replacement of the Air Traffic Management Systems' standard cathode-ray-tube (CRT) displays with sophisticated, low-energy LCD displays.

Other Equipment

Environmental considerations are taken into account when procuring goods and services of any description. Wherever feasible, our tender specifications require operations that emphasise recycling and energy efficiency.

Target for 2008

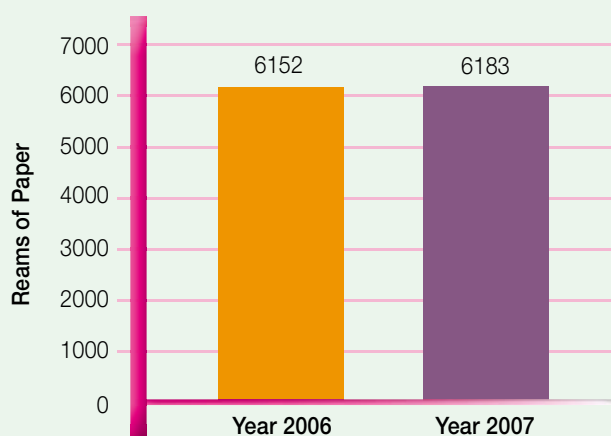
We will ensure environmentally responsible operation. In new equipment purchases and tenders in 2008, we will continue to demand the high levels of energy efficiency and environmentally responsible operations.

Paper Conservation

All staff are encouraged on a continuous basis to reduce their paper consumption wherever possible. In addition to double-sided printing and photocopying, our Document Management System enables many announcements and other important information to be disseminated electronically.

Our Performance in 2007

In 2007, we used 6,183 reams of paper (Figure 12), which was a 0.5% increase on 2006.



(Figure 12)

Target for 2008

In 2008, we will strive to reduce this figure by using electronic communication wherever possible and emphasising the use of recycled paper in any situations that require printed matter.

Recycling Initiatives

Our recycling programmes target at waste paper, used CDs and laser printer cartridges, all of which are forwarded to our suppliers or other designated parties for recycling. The following charts show the volume of materials sent for recycling in 2007 compared to 2006.



Recycle bins for aluminum cans and plastic bottles.

Waste Paper		
	2006	2007
Waste Paper Collection (Kg)	5,700	5,600

Used Compact Disc		
	2006	2007
Used Compact Disc Collection (g)	20,731	15,760

Laser Printer Cartridges		
	2006	2007
Laser Printer Cartridge recycled	362 units	436 units

Target for 2008

In the year ahead, all staff will be reminded to continue recycling waste paper, used CDs and laser printer cartridges. We'll also examine whether there are other areas where recycling initiatives are feasible or appropriate.

Environmentally Hazardous Waste Chemical Waste

We operate 13 outstations, all of which are essential to safe air traffic control. In the event that the mains electricity supply to these outstations is interrupted, they automatically switch to other power supplies, such as standby diesel generators or battery packs. However, both these alternative power supplies generate chemical waste, which may pose a possible risk to the environment that must be disposed of in a safe and appropriate way.

In 2007, our appointed contractor handled all wastes in accordance with statutory requirements.

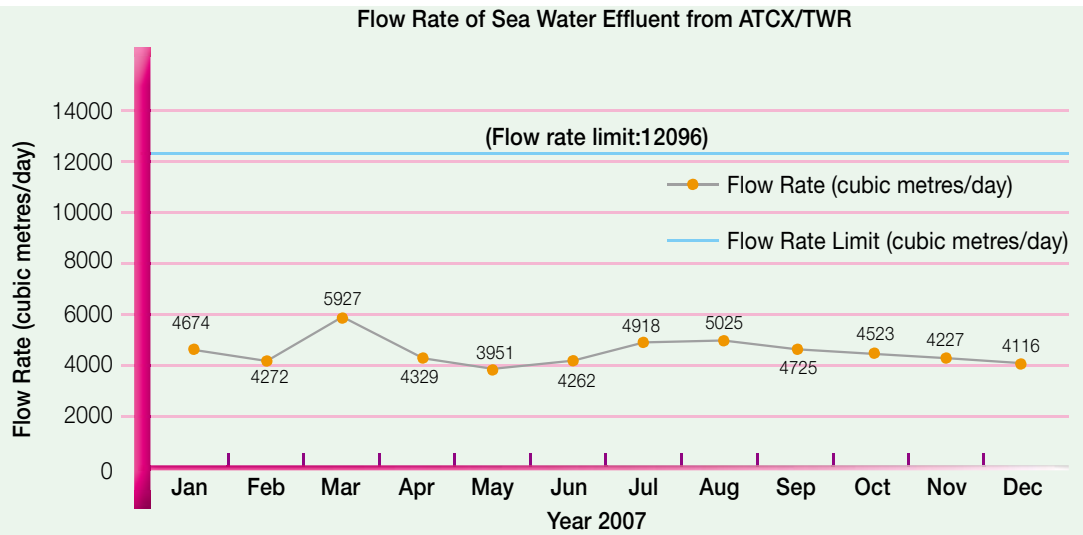
Target for 2008

In 2008, we will monitor our contractor to ensure continued statutory compliance.

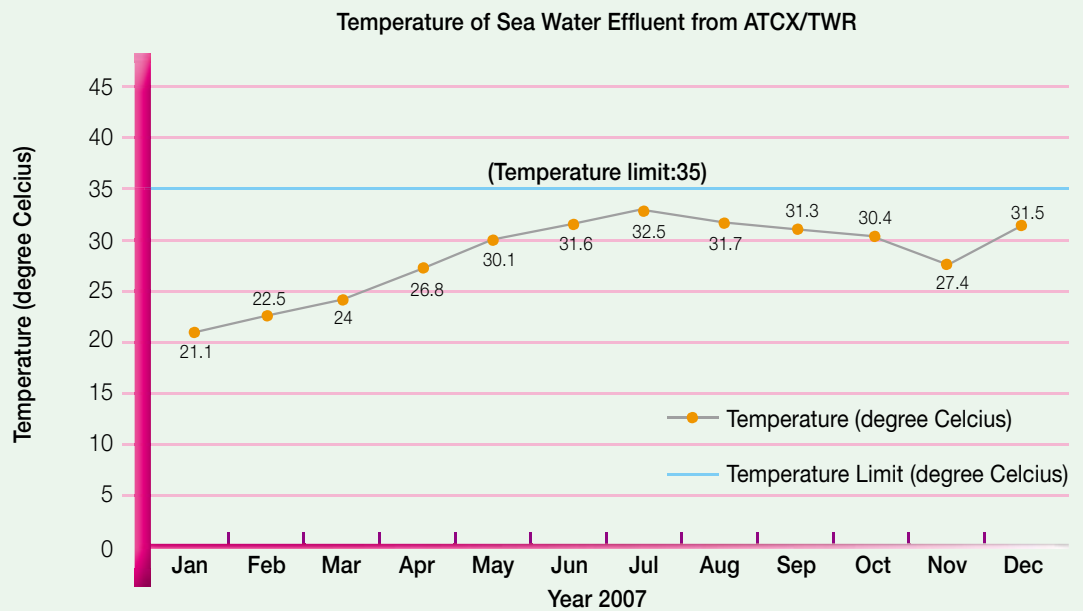
Sea Water

Both ATCX/TWR and BATCX use sea water for their cooling systems. To ensure minimum environmental impact from this process, all sea water discharges are monitored for flow rate, temperature, pH value and residual chlorine under standards set by the Water Pollution Control Ordinance.

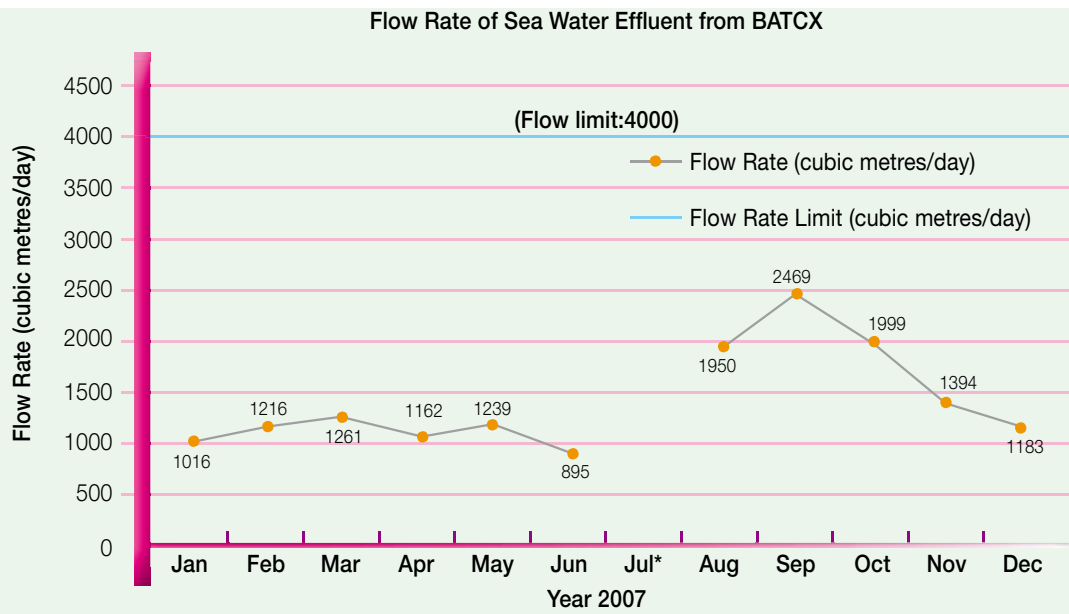
In 2007, we remained within the prescribed limits. Figures 13-16 show the flow rate and temperature of our discharges from ATCX/TWR and BATCX respectively.



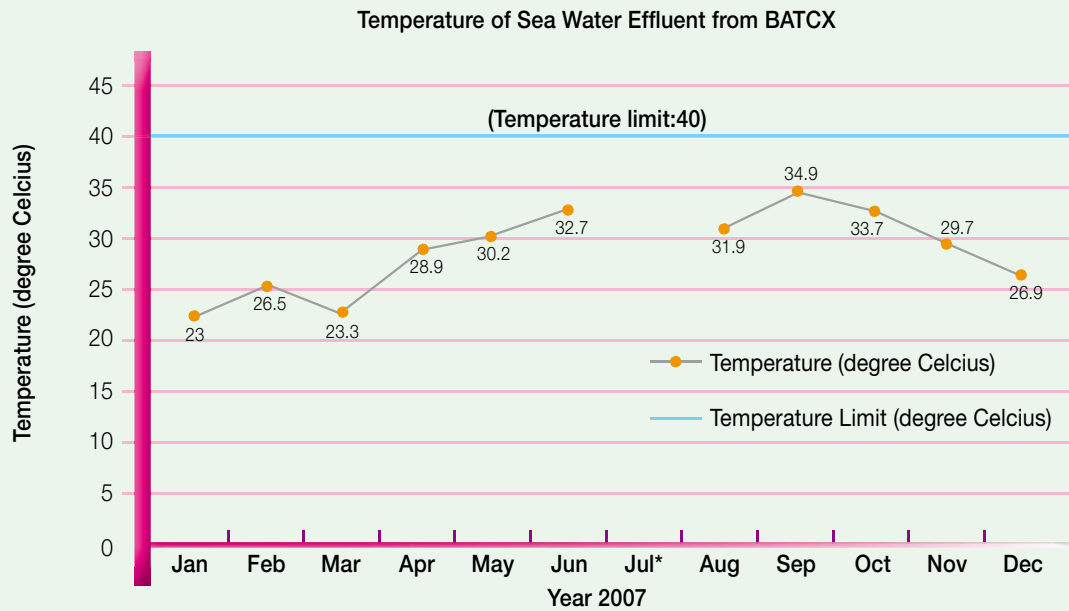
(Figure 13)



(Figure 14)



(Figure 15)



(Figure 16)

* Note: Air-cooled chiller was used from 1 July to 23 August 2007.

Target for 2008

In 2008, we will continue working hard to ensure that these discharges remain within the accepted limits.

Staff Training

In 2007, we worked hard to remind all staff of the importance of environmentally responsible operations, such as the need to reduce energy consumption and save paper.

In the year ahead, we'll continue to emphasise our green policies and play our part in helping to protect our planet's precious natural resources.

CHAPTER 6 —

Performance Summary



CHAPTER 6 —

Performance Summary Our Performance in 2007

In 2007, we achieved the following targets:

- We succeeded in ensuring at least 95% of departing aircraft took-off over water via the West Lamma Channel between 11:00pm and 7:00am.
- We facilitated the airlines to adopt the CDA procedure for nighttime approaches from the northeast.
- Noise Abatement Departure Procedures were used for departures to the northeast.
- Older, noisier 'Chapter 2' aircraft were prohibited from landing and taking-off in Hong Kong.
- We maintained dialogue with concerned District Councils, the media, other concerned parties and the general public, and provided aircraft noise information as necessary.
- We maintained dedicated webpages enabling easy public access to aircraft noise related information.
- We commenced the programme of replacing aged aircraft noise monitors.
- We ensured all new equipment purchased were scrutinised for energy-efficiency.
- We encouraged the use of electronic means for office communications to reduce the use of paper.
- We had recycled waste paper, used CDs and laser printer cartridges.
- We complied with all environmental regulations regarding the discharge of seawater and the disposal of chemical waste.

Our Environmental Targets for 2008

Here's an overview of our goals for the year ahead:

- To have at least 90% of arriving aircraft land over water from the southwest between midnight and 7:00am.
- To have at least 95% of departing aircraft take-off over water via the West Lamma Channel between 11:00pm and 7:00am.
- Continue to encourage and facilitate airlines to adopt the CDA procedure for nighttime approaches from the northeast.
- Continue to implement Noise Abatement Departure Procedures for departures to the northeast.
- Prohibit older, noisier 'Chapter 2' aircraft from landing and taking off in Hong Kong.

- Maintain dialogue with concerned District Councils, the media, other concerned parties and the general public, and provide them with aircraft noise information as necessary.
- Enable easy public access to aircraft noise and flight path information via the Internet to dedicated webpages.
- Continue the programme of replacing aged aircraft noise monitors.
- Reduce electricity consumption.
- Purchase energy-efficient equipment.
- Reduce unnecessary paper consumption.
- Encourage electronics communications.
- Continue recycling waste paper, used CDs and laser printer cartridges.
- Comply with environmental regulations regarding the discharge of seawater for cooling systems and the disposal of chemical waste.

Verification Statement

CAD's Environmental Management Committee has independently verified the information and data contained in this Environmental Report 2007, including a review of all source materials used in the report. The Committee hereby confirms that the data presented are authentic and consistent with the source documents, and that the methodology for the collection, maintenance and analysis of the data is appropriate. As such, I am confident that this report represents an accurate account of CAD's environmental action and performance in 2007.

Jeffrey Law
Chairman
Environmental Management Committee
Civil Aviation Department

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