香港民航處
Civil Aviation Department Hong Kong

Civil Aviation Department

Environmental Report 2008

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Executive Summary

Being the civil aviation authority of Hong Kong, Civil Aviation Department (CAD) strives to balance the interests of various parties by adopting a balanced approach in handling the aircraft noise problem. The ultimate aim of CAD's work in this aspect is to ensure that Hong Kong's environment will not be compromised.

In 2008, we met all but one of our noise abatement targets and we will strive to improve our performance and aim at meeting all identified targets in the future.

We will continue to work diligently to reduce the impact of aircraft noise such that our community and aviation activities can coexist in harmony.

In our workplace, our green measures included energy conservation, paper conservation, recycling, and the proper disposal of environmentally hazardous waste. We remained on track with these initiatives and achieved satisfactory results in 2008.

A decrease of 0.63% in daily average electricity consumption was recorded at CAD's premises. We will strive to further reduce energy consumption in the year ahead.

We welcome comments from readers so that we can continuously improve our performance. Feedback or comments on this report can be sent to CAD through e-mail: enquiry@cad.gov.hk or by mail to the address: 46/F Queensway Government Offices, 66 Queensway, Hong Kong.

Foreword

Air transport has become one of the major pillars of Hong Kong's economy. While we strive to maintain a safe, orderly and expeditious flow of air traffic, we are mindful of the environmental impact of air transport. We continue to manage the aircraft noise problem using the "Balanced Approach" developed by the International Civil Aviation Organization (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 as far as possible.
- 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 are fully aware of the importance of communicating with local communities and concerned District Councils on matters relating to aircraft noise, and are committed to maintaining dialogue with them. To provide the public with more information, 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.

We also fully support any green measures in our daily operations by saving resources and reducing waste. In particular, we watch out our electricity consumption regularly and implement measures that improve electricity efficiency at our operational centres and offices.

In this report, we have reviewed our performance in the year 2008 and outlined our targets for 2009. 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

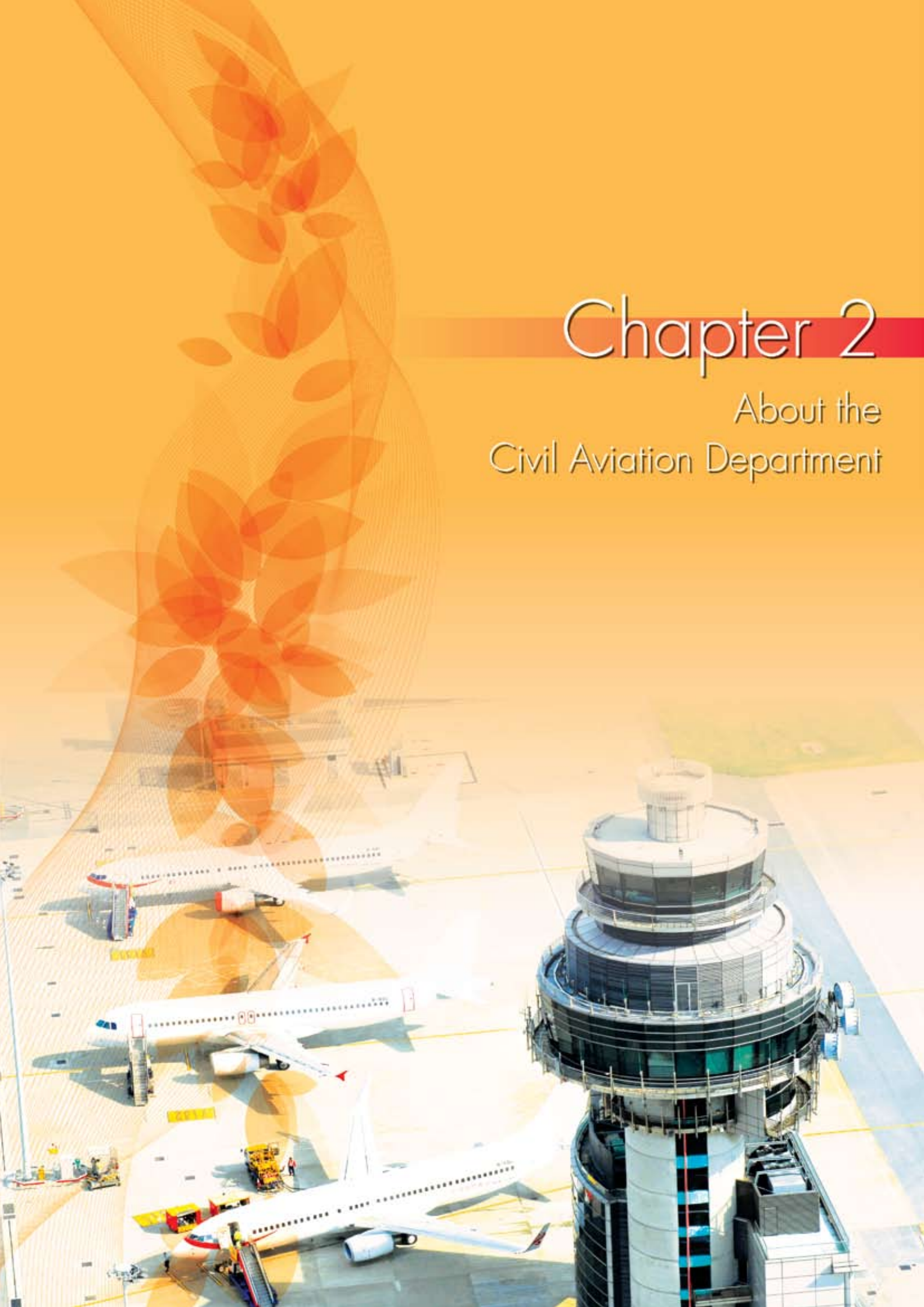
Welcome

This is the tenth annual Environmental Report issued by the Civil Aviation Department (CAD). In this report, you will learn about our environmental performance in 2008, 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 with the previous calendar year, as well as our targets for the year ahead.

Chapter 2

About the Civil Aviation Department



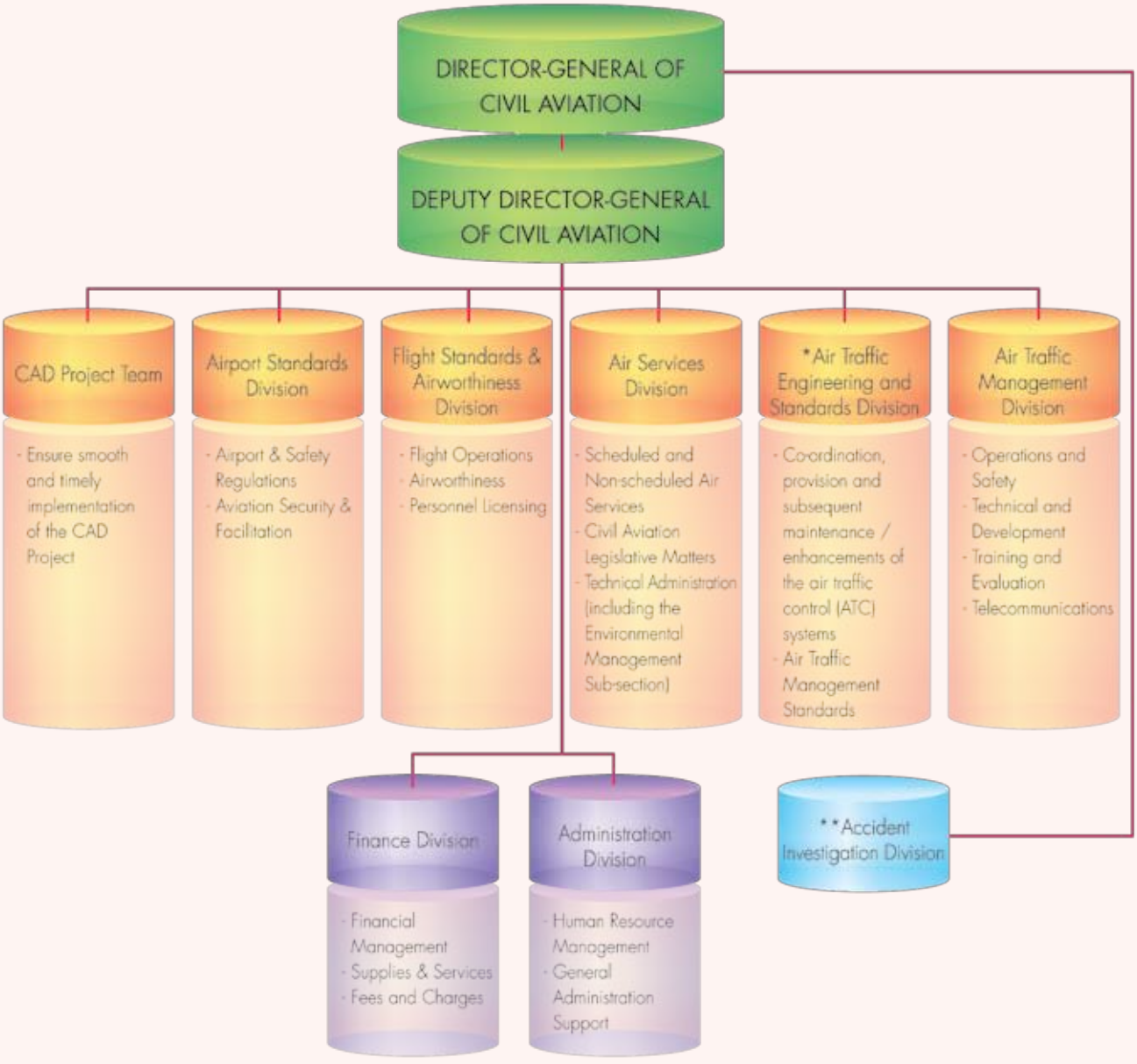
About the Civil Aviation Department

Being the civil aviation authority of 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

Organisation Chart as at 31 December, 2008:



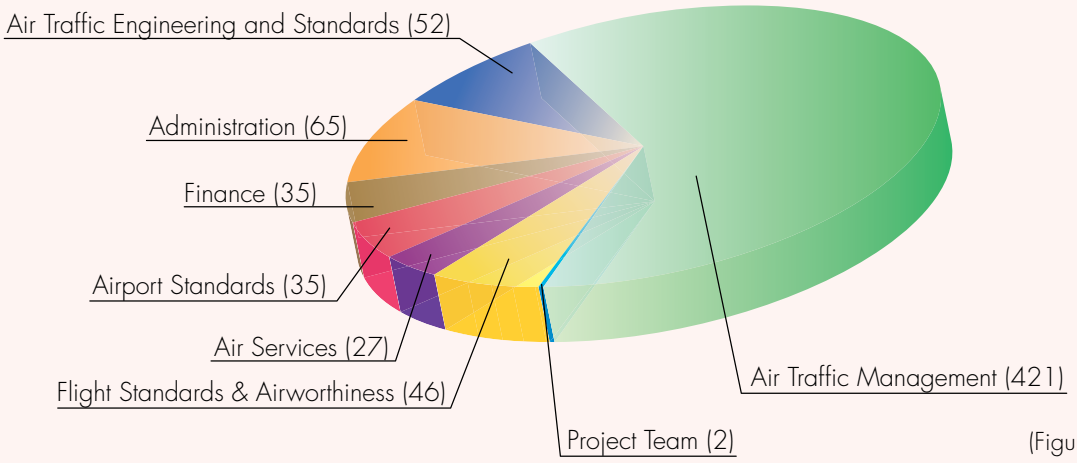
Note :

* The Engineering and Systems Division was renamed as Air Traffic Engineering and Standards Division in April 2008. At the same time, it took over the function of overseeing the air traffic management standards from the Flight Standards & Airworthiness Division.

** 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 2008 CAD employed 683 people in seven divisions and the Project Team, the largest of which was the Air Traffic Management Division (Figure 1).

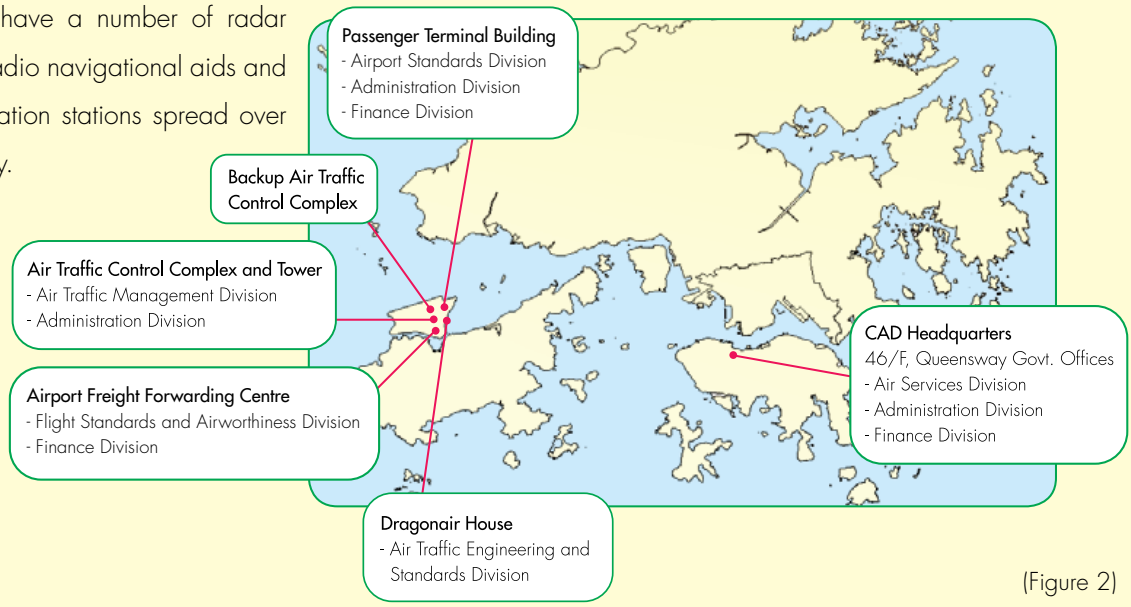


(Figure 1)

Our Facilities

In 2008, we operated six offices to handle our wide-ranging workload (Figure 2).

We also have a number of radar stations, radio navigational aids and communication stations spread over the territory.



(Figure 2)

Chapter 3

Protecting the Environment

Protecting the Environment

Hong Kong has long been an acclaimed hub for international air traffic and freight. CAD strives to minimise the adverse effect that the development of the aviation industry may cause to our quality of life and the environment.

For better conservation of the Earth's limited resources, CAD is also committed to the application of environmentally responsible measures in our operations such that waste and pollution could be minimised and that our Earth's precious resources could be regenerated to cope with humanity's needs.

Our Commitments

We care for the environment in two aspects, namely minimising noise pollution by aircraft 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 & the airport
Affected households

Other Stakeholders like:
Passengers, shippers, forwarders or employees of the aviation industry

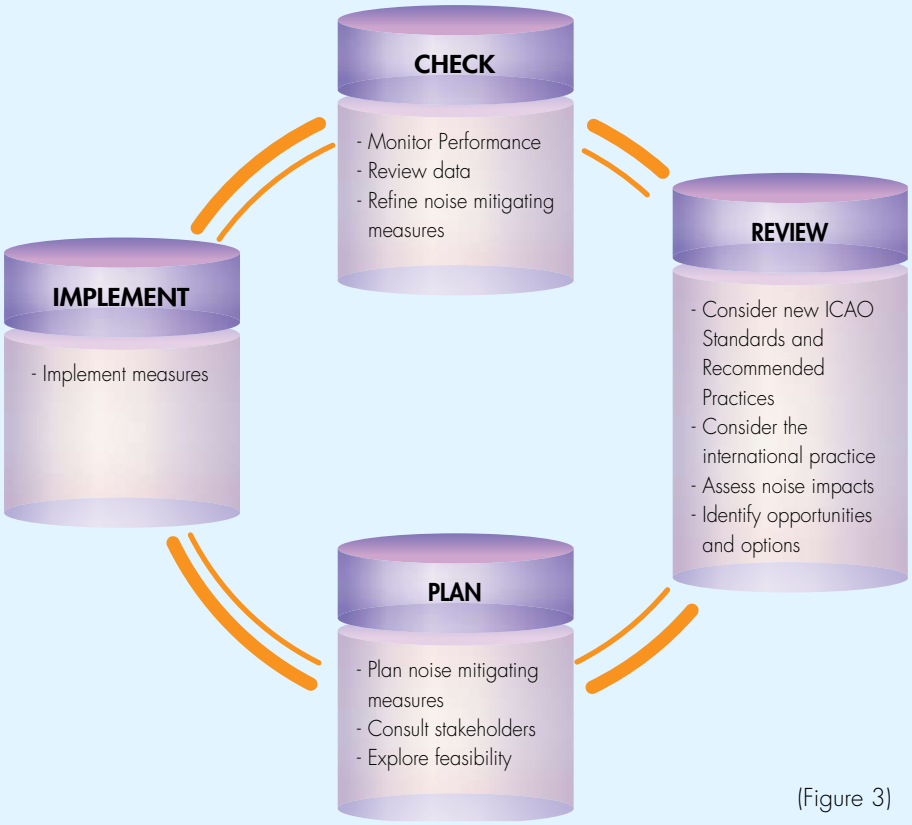
Green Policy for CAD

- Economise the use of energy and paper
- Apply the principles of sustainable development to our purchase of equipment and tender process and in the planning and operation of our facilities
- Reduce, reuse 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

Collection points of waste paper for recycling within the office.

Managing Aircraft Noise

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



(Figure 3)

CAD keeps on reviewing the present situation and assessing the present noise impacts. When planning new noise-mitigating measures, 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 (Figure 4) 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.

As in previous years, all CAD offices were monitored throughout 2008. We had also regularly reminded staff on environmentally responsible operations in the offices.

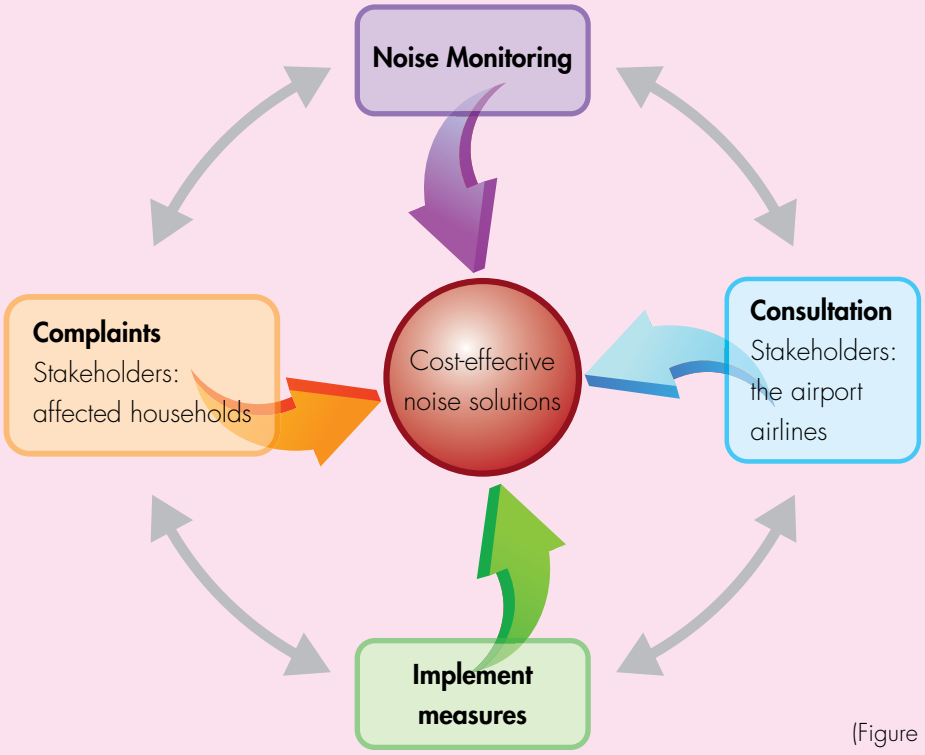
(Figure 4)

Chapter 4

Managing Aircraft Noise

Managing Aircraft Noise

We balance the needs of various stakeholders, including affected households and the aviation industry, in our work to manage the impact of aircraft noise. This aircraft noise management process is illustrated in the figure below (Figure 5).



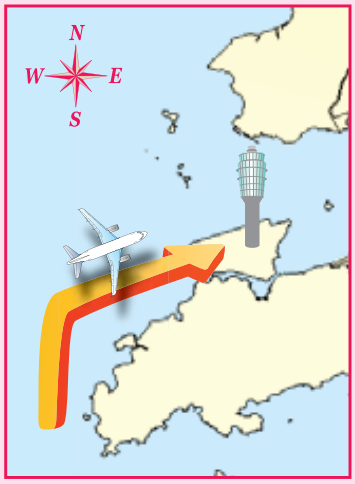
(Figure 5)

As shown in the figure, we continued to implement noise mitigating measures wherever possible and closely monitor aircraft noise and handle the complaints from affected households in 2008. We strived to achieve cost-effective solutions to the aircraft noise problem in consultation with the airport and the airlines.

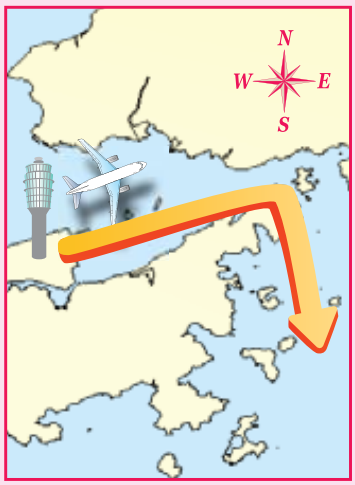
In addition, we compiled relevant noise data and watched out for aviation technology developments with a view to help enhancing measures and introducing new practices on aircraft noise reduction.

Using Flight Paths Over Water to Minimise Noise

To keep aircraft noise impacts on 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 their flight paths are over water and aircraft taking-off to the northeast to depart via the West Lamma Channel.



In 2008, we targeted for 90% of all aircraft arriving between midnight and 7:00am to approach from the southwest.

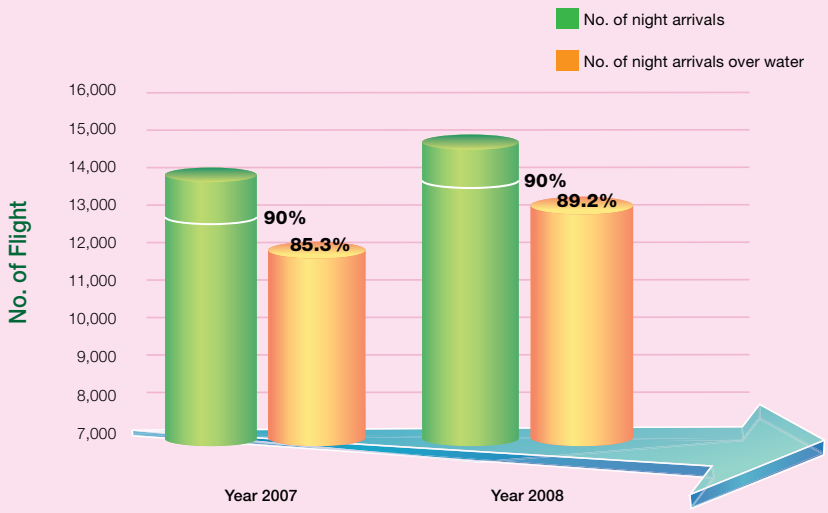


In the same period, we targeted for 95% of all aircraft taking-off to the northeast between 11:00pm and 7:00am to depart via the West Lamma Channel.

These two arrangements would help ensure that during the overnight period, populated districts 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.

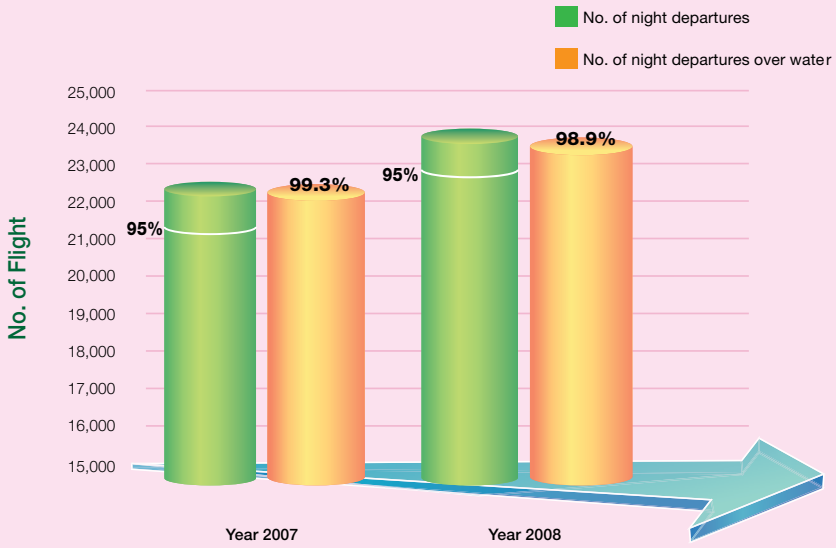
Our Performance in 2008

Statistical data shows that in 2008, 89.2% (2007, 85.3%) of all night arrivals were able to land from the southwest. (Figure 6)



(Figure 6)

In 2008, 98.9% (2007, 99.3%) of all night departures to the northeast were via the West Lamma Channel (Figure 7).



(Figure 7)

Target for 2009

In 2009, we will retain the target that 95% of all night departures to the northeast will depart via the West Lamma Channel. We will continue to require night arrivals to approach from the southwest as far as possible.

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). With this procedure, aircraft would fly higher, and 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 2008

In 2008, 77.6% (2007, 82.8%) of aircraft approaching from the northeast between 11:00pm and 7:00am adapted CDA procedures.

Target for 2009

In 2009, we will continue to encourage the use of the CDA procedure.

Quieter Departures

To reduce the noise impact in the vicinity of the airport, all aircraft departing to the northeast are to adopt the Noise Abatement Departure Procedures (NADP) developed by the International Civil Aviation Organization (ICAO)* as long as safe flight operations permit.

Target for 2009

In 2009, we will continue to implement the Noise Abatement Departure Procedures for departures to the northeast.

Note : * The International Civil Aviation Organization (ICAO) is a specialised agency of the United Nations. ICAO was established in 1944 to promote the safe and orderly development of international civil aviation. 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"* aircraft types that create serious noise pollution have been banned from using the Hong Kong International Airport. Only newer and quieter "Chapter 3"** aircraft are allowed to land in Hong Kong.

Target for 2009

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

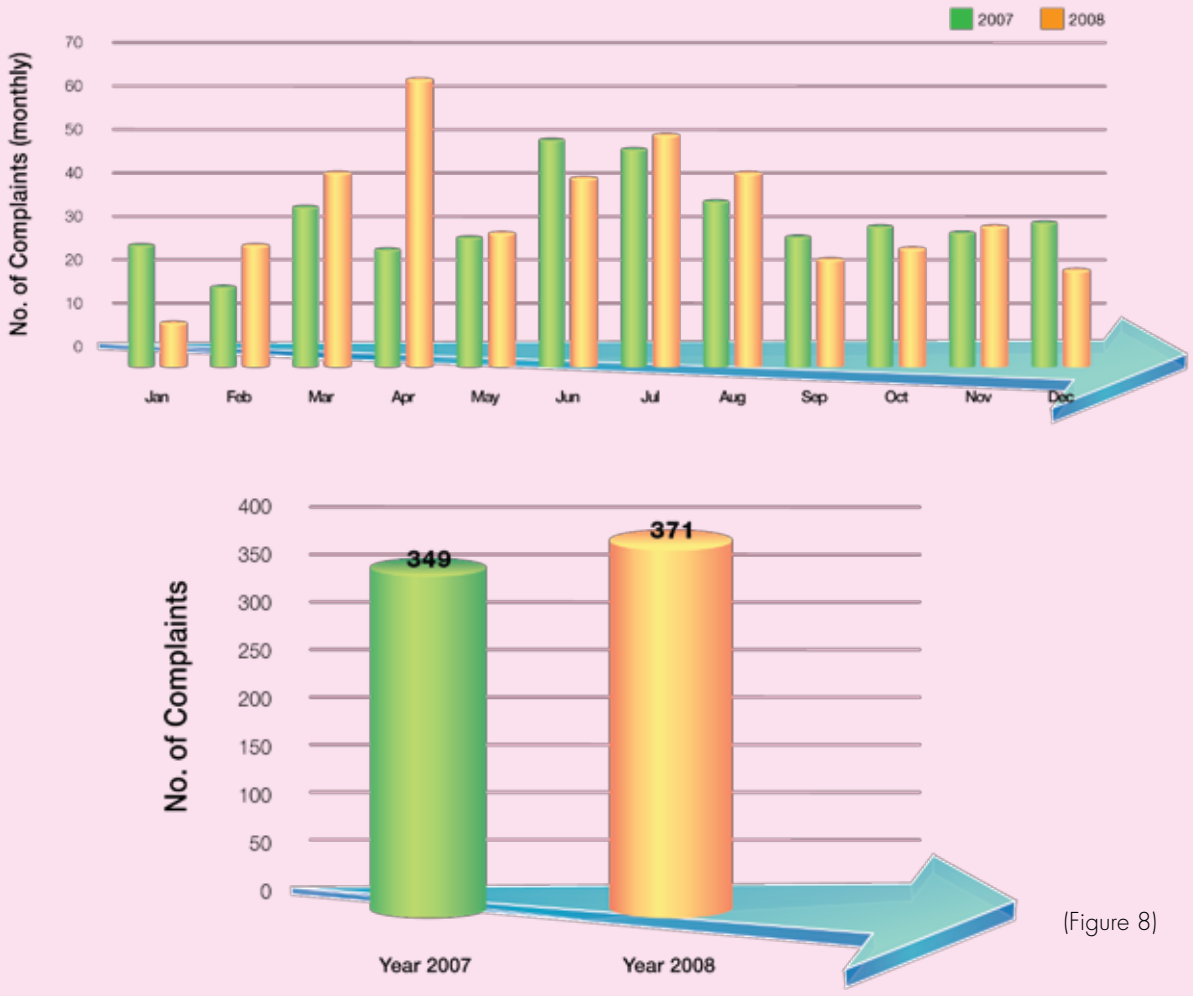
Note : * "Chapter 2" aircraft are those aircraft which only comply with the noise standard stipulated in Chapter 2 of Annex 16, Volume 1, Part II to the Convention on International Civil Aviation.

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 Handling

In 2008, we handled 371 aircraft noise complaints (Figure 8) which represented a 6.3% increase compared with 2007.



(Figure 8)

Public and Government Liaison

In 2008, we attended a committee meeting of the Tsuen Wan District Council, two meetings with Legislative Council members and a meeting organised by a local community. During these meetings, we explained the noise mitigating measures we had implemented.

Noise Data

We regularly uploaded new noise data to our website in 2008 so that members of the public may access our aircraft noise information.

Target for 2009

In 2009, we will continue maintaining dialogue with concerned parties on the subject, and continue serving the community with the provision of noise data and our complaint hotline.

Staff was verifying noise data at a noise monitoring station.

Noise Monitoring

We continued to use the Aircraft Noise and Flight Tracking Monitoring System (ANFTMS) to closely monitor aircraft noise in the vicinity of the flight paths in 2008. 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 2008

In 2008, we completed the replacement work of eight aged noise monitoring terminals.

Target for 2009

We will continue to closely monitor aircraft noise and flight tracks around the clock using the ANFTMS. We will also explore relocating the Tung Chung noise monitoring terminal to a residential estate closer to the flight paths.

Chapter 5

Our Green Performance

Our Green Performance

The green policy of CAD emphasises energy conservation, paper conservation, 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 2008, we continued to install sunblinds of better light and heat insulation effect in various rooms of ATCX/TWR 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 2008, we:

- completed the replacement of T8 fluorescent light tubes by energy efficient T5 tubes in all common corridors and staircase at ATCX.
- completed the replacement of outdoor architectural floodlight underneath ATCX/TWR by LED light which is more energy efficient.

In addition to the initiatives mentioned above, the long standing measures such as not using the architectural floodlights at BATCX and switching off all unnecessary corridor lights at ATCX/TWR and BATCX were continued to be implemented.

In 2009, we will implement the following measures to further save energy:

- Installation of an occupancy sensor system at common areas and corridors in ATCX, which would reduce energy consumption by turning off lights automatically in unoccupied space.

Third-party Property Managers

Besides CAD's own premises, we would also meet with the managers of non CAD-owned buildings 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 2008

In 2008, CAD premises consumed a combined amount of 30,537 kilowatt-hours of electricity on an average day. This was a 0.63% decrease compared with 2007.

Target for 2009

In 2009, we will continue to adhere to our energy-saving policy.

Driving Green

All CAD drivers are required to strictly follow the policy of switching off engine while waiting to avoid idling emissions and achieve fuel saving. In 2008, CAD replaced two obsolete shuttle buses with one Euro IV E-Friendly 28-seaters bus and one Euro V E-Friendly 49-seaters bus. Besides, all CAD vehicles had undergone regular checks and maintenance to ensure that their emissions are within acceptable range.

The new E-friendly shuttle bus introduced in 2008.

Buying Green

Air Traffic Control Equipment

In addition to meeting key safety standards, all new air traffic control (ATC) equipment that we purchase must also be energy-efficient. Measures had been taken to enable share-use of display monitors by multiple ATC applications. Examples of share-use of monitors included Advanced Surface Movement Guidance & Control System sharing with Surface Movement Radar, and Flight Plan Conflict Advisory System sharing with Similar Callsign Advisory System.

Other Equipment

Wherever feasible, our tender specifications require operations that emphasise recycling and energy efficiency.

Target for 2009

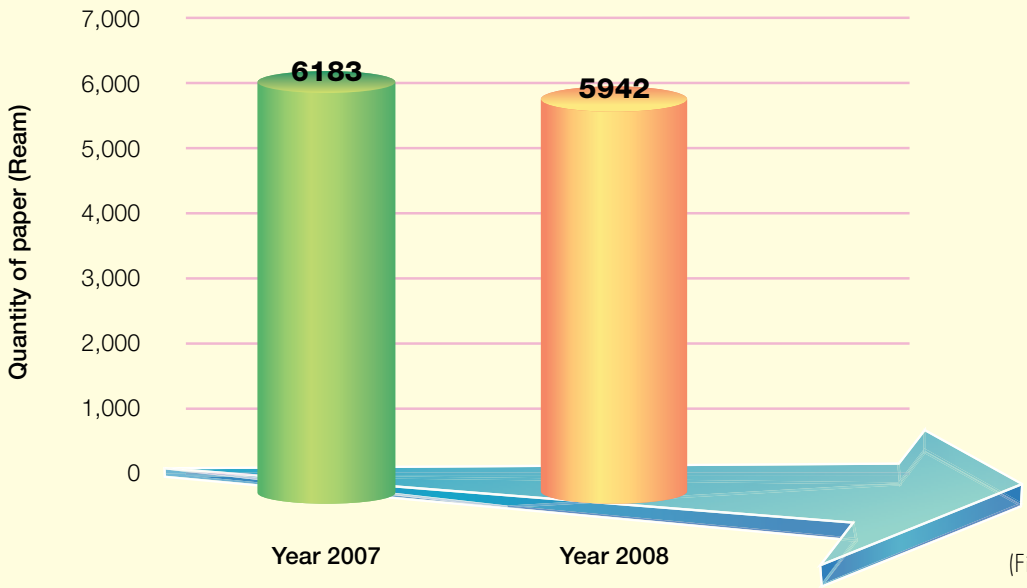
In new equipment purchases and tenders in 2009, we will continue to demand a high level of energy efficiency and environmentally responsible operations.

Paper Conservation

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

Our Performance in 2008

In 2008, we used 5,942 reams of paper (Figure 10), which was a 3.9% reduction compared with 2007.



(Figure 10)

Target for 2009

In 2009, we will strive to keep this figure at low level by using electronic communication wherever possible and emphasising the use of recycled paper in situations that require printed matter.

Recycling Initiatives

Our recycling programmes target at waste paper, used CDs and laser printer cartridges. All these materials were forwarded to our suppliers or other designated parties for recycling. The following charts show the volume of materials sent for recycling in 2008 compared with 2007.

Recycle bins are placed in the office to encourage recycling.

	Year 2007	Year 2008
Waste Paper Collection (kg)	5,600	4,470
Used Compact Disc Collection (g)	15,760	13,694
Laser Printer Cartridge recycled (units)	436	467

Target for 2009

In the year ahead, all staff will be reminded to continue recycling waste paper, used CDs and laser printer cartridges. We will 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 2008, our appointed contractor handled all wastes in accordance with statutory requirements.

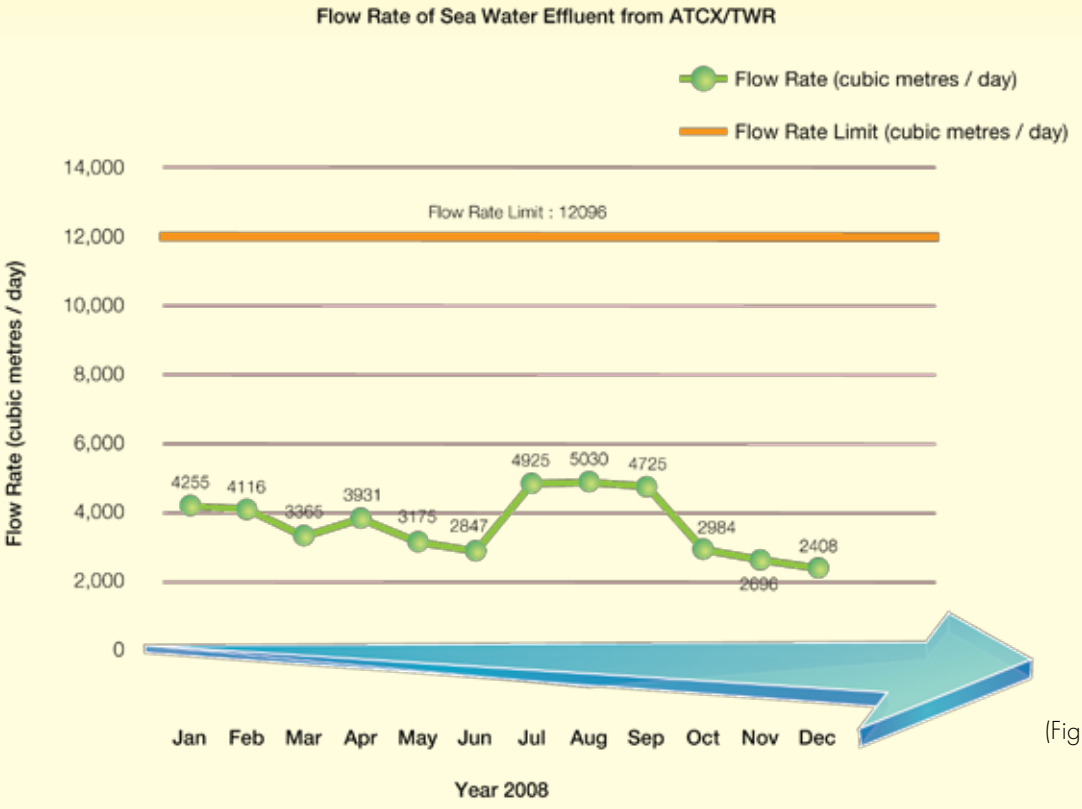
Target for 2009

In 2009, we will monitor our contractor to ensure continued statutory compliance.

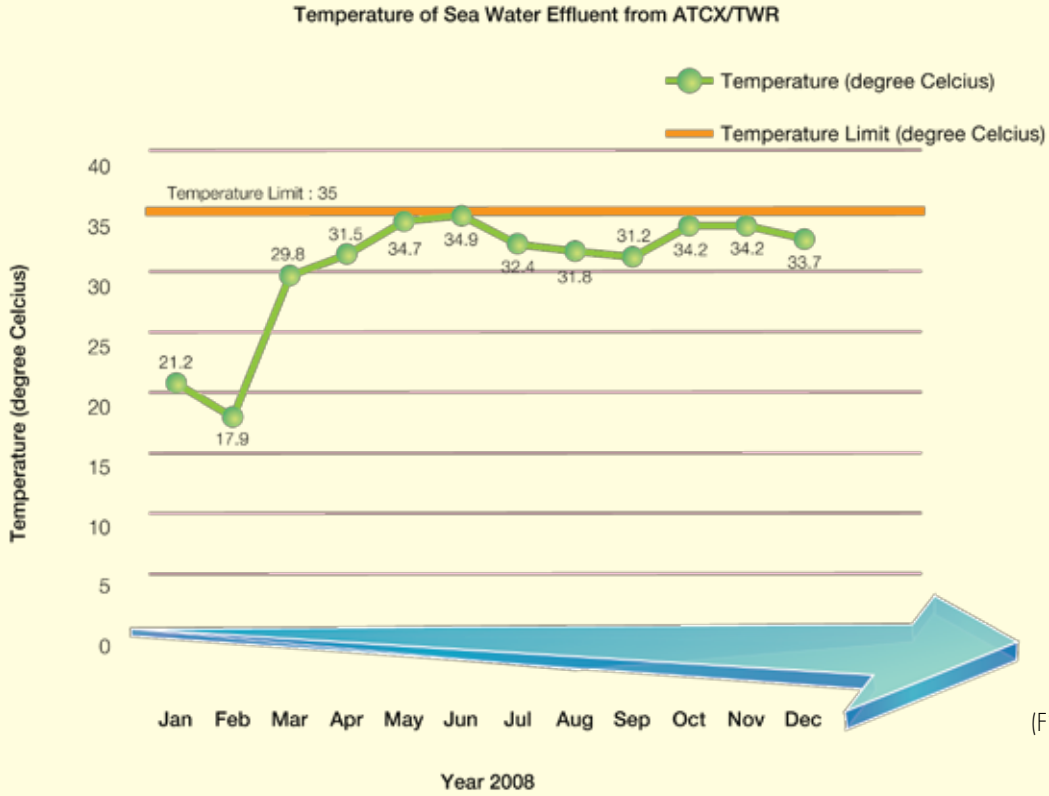
Sea Water

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.

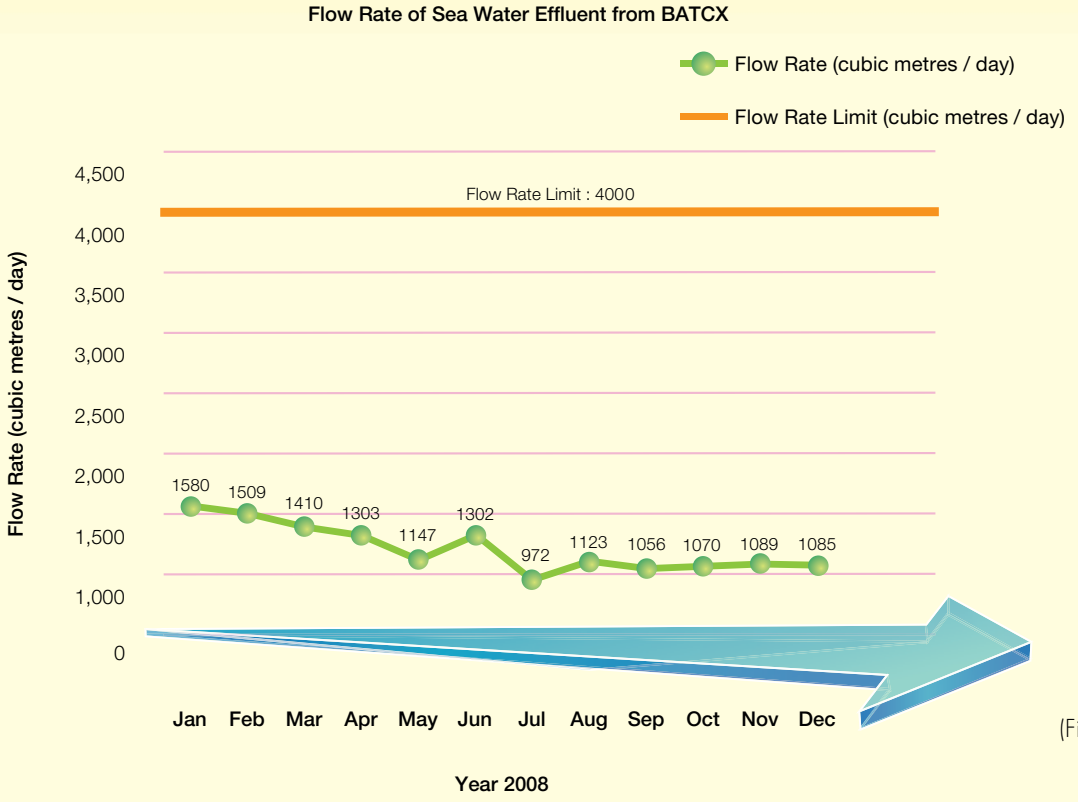
In 2008, we remained within the prescribed limits. Figures 11-14 show the flow rate and temperature of our discharges from ATCX/TWR and BATCX respectively.



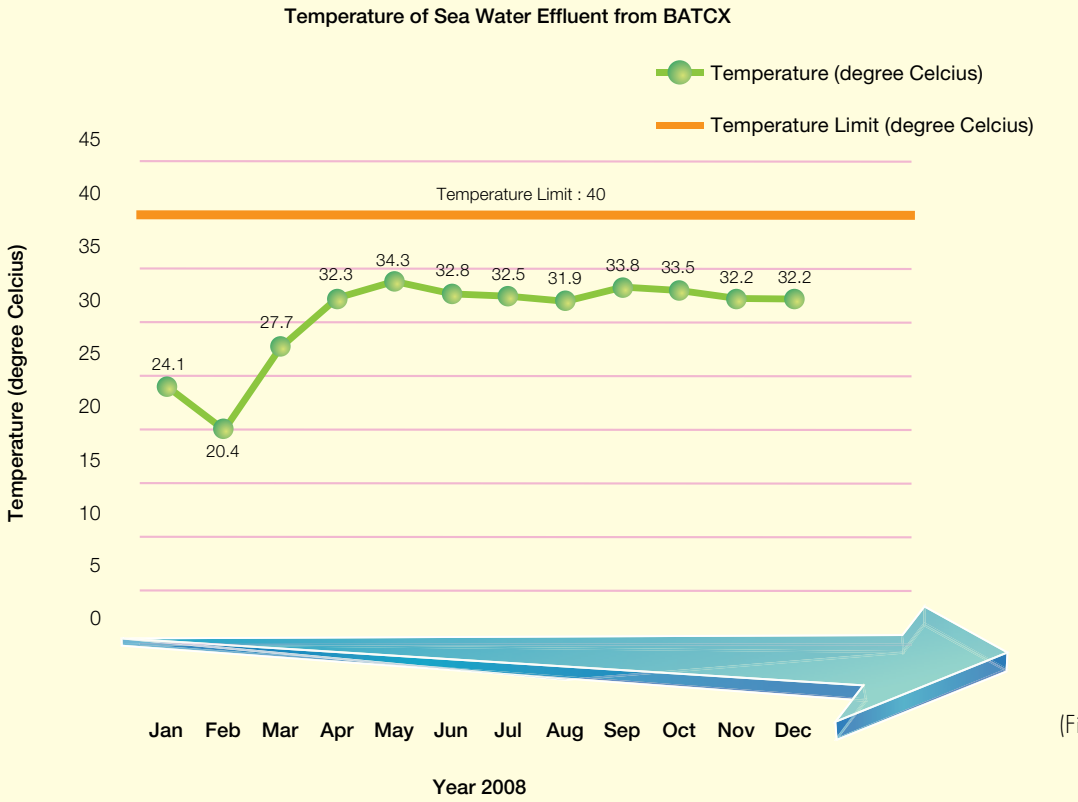
(Figure 11)



(Figure 12)



(Figure 13)



(Figure 14)

Target for 2009

In 2009, we will continue to ensure that these discharges remain within limits.

Staff Training

In 2008, 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 will continue to promote our green policies.

Chapter 6

Performance Summary

Performance Summary

Our Performance in 2008

In 2008, we achieved the following targets:

- We succeeded in ensuring at least 95% of aircraft departing to the northeast took-off over water via the West Lamma Channel between 11:00pm and 7:00am.
- We encouraged the airlines to adopt the Continuous Descent Approach 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 completed the replacement work of eight aged noise monitoring terminals.
- We reduced electricity consumption.
- We reduced paper consumption.
- 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 sea water for cooling systems and the disposal of chemical waste.

Our Environmental Targets for 2009

Here is an overview of our goals for the year ahead:

- To have at least 95% of aircraft departing to the northeast take-off over water via the West Lamma Channel between 11:00pm and 7:00am.
- Continue to encourage and facilitate airlines to adopt the Continuous Descent Approach procedure for nighttime approaches from the northeast.
- Continue to implement the 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 by maintaining dedicated webpages.
- Explore relocating the Tung Chung noise monitoring terminal to a residential estate closer to the flight paths.
- 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 sea water 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 2008, 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 2008.

Jeffrey Law
Chairman
Environmental Management Committee
Civil Aviation Department

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