Government Flying Service
The Government of the Hong Kong Special Administrative Region

Government Flying Service Environmental Report 2005

Foreword

This environmental report covers the environmental issues of the Government Flying Service (GFS) in 2005. In this report, we will focus on the key ways we work to help improve the environment and the direct environmental impact of our day-to-day departmental activities.

This report is primarily intended for Hong Kong citizens, our various business partners, other government departments, our own staff and other stakeholders. We understand that a single environmental report will probably not be capable of fully satisfying the information needs and interests of such a diverse group. If you feel there are specific areas that the report should include, please let us know and we will try to take into account your views in our future reports.

1. What we do

The Government Flying Service (GFS) is a disciplined services department of the Government of the Hong Kong Special Administrative Region and is located at the south-western edge of the Hong Kong International Airport.

We provide the community of Hong Kong with a wide range of flying services, including round-the-clock search and rescue coverage, casualty and medical evacuation, fire fighting and support to the law enforcement agencies and government departments. We also provide emergency services to the international air carriers within our Flight Information Region and international merchant ships using the shipping lanes within our Maritime Area of Responsibility.

The GFS has an establishment of 228 full–time civil servants as at 31 December 2005 responsible for operations, maintenance and administration. We operate a fleet of nine aircraft, namely two fixed-wing aeroplanes and seven helicopters to carry out the full range of flying services and support.

In 2005, the GFS flew a total of 5,818 hours. It assisted in 420 search and rescue operations, transported 1,379 patients to hospital by helicopter and flew 6,885 government officers and

official visitors. The recurrent expenditure of the GFS in 2005/06 is $142 million.

All the flying, engineering and administrative activities, including environmental management activities, are monitored by both internal and external quality and audit control organizations including our own Quality Section, the Civil Aviation Department, the Hong Kong Quality Assurance Agency and other world renowned aviation units such as the Royal Air Force.

2. Our specific job

Our major tasks are to:

- Carry out search and rescue both over land and sea;
- Conduct casualty evacuation;
- Support the Hong Kong Police Force and other law enforcement agencies of Hong Kong in carrying out their law enforcement duties;
- Assist in fire fighting and in responding to any other emergencies which constitute a threat to life or property;
- carry out photography for aerial surveys; and
- Assist the medical services.

3. Vision and Strategy on Green Management

The GFS will continue its efforts to minimize the impact of its activities on the environment and provide the community with excellent search, rescue and aviation support services in an environmentally friendly manner.

4. Environmental, Health & Safety Policy

The GFS is committed to conducting operations in compliance with all environmental, health and safety requirements and regulations. The management is entrusted to providing a safe workplace for all our employees and customers.

The managers and supervisors in the GFS have the responsibility to ensure that every employee fully understands the policies and procedures applicable to his/her work area. The responsibility for safety and environmental practices follow the chain of command and supervisors will be held accountable for a subordinate's actions. The supervisors should provide all necessary training and instructions for their staff to perform their duties in an environmentally sound and safe manner. Supervisors will have their own safety and environmental performance included in their performance reviews.

Each employee has the responsibility to comply with the GFS work rules, and follow safe work practices and procedures established to protect the environment and the employees. All

employees are asked to report to their supervisor all unsafe acts, hazardous conditions, and conditions which impact, or have the potential to impact the environment.

The Government Flying Service Environmental, Health and Safety Committee oversees the Government Flying Service environmental, health and safety policy and goals. It is also responsible for addressing certain topics, including but not limited to waste reduction, accident prevention and training programmes.

The Controller, GFS is personally committed to the continual improvement of our environmental, health and safety performance and will authorise actions necessary to achieve these objectives.

In 2005, the Committee continued to promote occupational safety and health as well as environmental protection. Examples of their works on environmental protection included making recommendations to the management to switch off unnecessary illumination lights at the corridor and install additional lighting facilities at the hangar with time switch for enhancing occupational safety while saving energy.

5. Green Personnel

In the GFS, we have the Green Manager to oversee the environmental issues of the department. He is assisted by the Green Task Force and Energy Wardens in implementing the goals set by the GFS Environmental, Health and Safety Committee on energy conservation.

Green Manager

The Senior Pilot (Aeroplane Standards) has been appointed as the Green Manager of the GFS with the following responsibilities:

(a) implementing a programme of green housekeeping within the department;

(b) introducing measures to increase staff awareness and involvement in relation to environmental issues; and

(c) publicising the commitment to protect the environment, formulating action plans and recording achievements.

He is the focal point whereby all initiatives related to the environment can be coordinated, sustained, reviewed and strengthened. He is assisted by the Assistant Departmental Secretary in carrying out these duties.

Green Task Force

The GFS set up a Green Task Force in February 2003 with the main focus on energy

conservation. Members of the Task Force are:

Aircraft Engineer (Electrical/Instrument)2

Assistant Manager (Operations)

Assistant Departmental Secretary

They are representatives of the Engineering, Operations and Administration Sections. They are responsible for liaising with staff members to explore possible options for saving energy without affecting the GFS operations and also discussing with the Electrical and Mechanical Services Department (EMSD) on how to make the proposals and ideas into effective measures.

Energy Wardens

Energy wardens from different sections have been appointed since January 2005. Their main duty is to inspect and ensure that the housekeeping measures for saving energy are complied with. For example, they assist in ensuring that the air-conditioning output at the corridor and lobby areas is always set at a “low cool” level in order to avoid unnecessary consumption of energy. They are also responsible for reminding colleagues to observe the energy saving measures.

6. Our Environmental Concerns and Initiatives

6.1 Aircraft Noise

We are very much concerned with the noise that is generated by our aircraft. Due to the nature of our flying services, such as casualty evacuation and support of law and order, it is not always possible to avoid flights where the noise may affect the public. Nevertheless, we have always been conscious of the need to conserve the environment and have taken various measures to protect the environment and minimize the noise nuisance caused to the public. Our measures include:

(a) Adopting a smooth landing approach for reducing noise and saving fuel

The conventional non-precision approach procedure adopted by fixed-wing aircraft involves several stair-step descents in order to minimize the descent altitude. Beginning from 2005, the GFS fixed-wing aircraft adopted a Continuous Descent Approach (CDA) procedure in all its non-precision approach to the North Runway (07L /25R) at the Hong Kong International Airport . In a CDA, our aircraft establish a continuous and gradual final descent on a constant

slope while maintaining an angle of descent of around 3 degrees and keeping the engine power changes to a minimum. This method can reduce noise nuisance and at the same time consume less fuel.

(b) Observing strictly to helicopter holding and transit routes

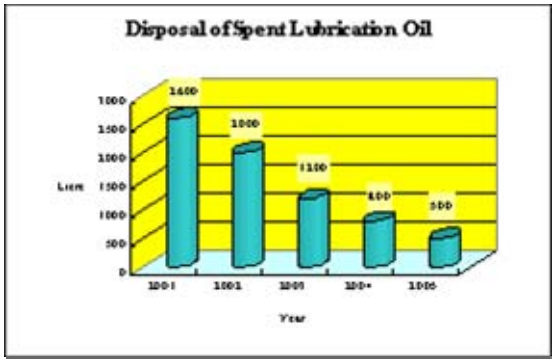
Our helicopters observe strictly the holding and transit routes in Tung Chung area in order to minimize the noise nuisance caused to the residents there. We now normally hold our helicopters in the area close to the Hong Kong International Airport Freight Centre which is closer to the GFS base and far away from the Tung Chung town. In so doing, we are able to reduce the noise nuisance and save fuel.

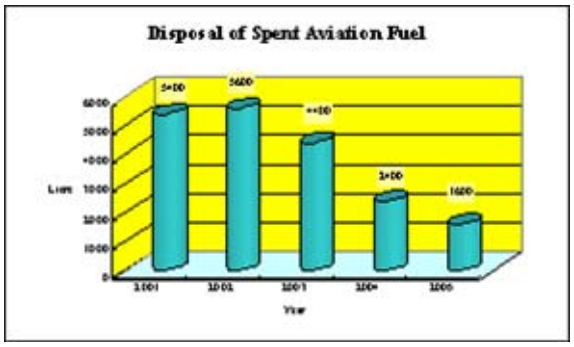
(c) Re-routing of aircraft for reducing noise nuisance

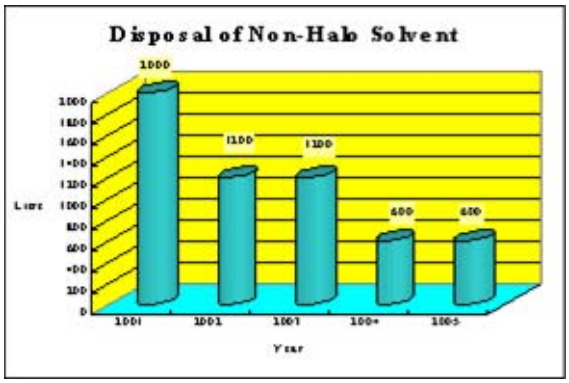
Through establishing a new routing for in/out of the Hong Kong International Airport at Toll Plaza , we have managed to reduce noise nuisance caused to the inhabitants of North Eastern Lantau.

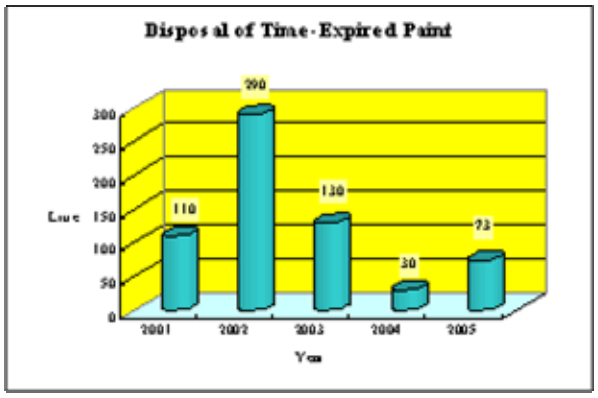
6.2 Chemical Substances

The common chemical substances used in the GFS for the maintenance of our fleet are cleaning solvent, aviation fuel (AVTUR), lubrication oil, grease and paints. These substances are used on a daily basis. The waste chemical substances are disposed of through Licensed Waste Collectors approved by the Environmental Protection Department. The amount of wastes disposed of in the past five years is as follows:









Note: The 290 litres of time-expired paint disposed of in 2002 include about 150 litres of paint accumulated over 3 years but were only disposed of in 2002. We had not disposed of it earlier because the Environmental Protection Department required that chemical waste could not be disposed of without the relevant material safety data sheet and we were only able to obtain such data sheet for the 150 litres of paint in 2002.

The amount of chemical wastes disposed of between 2001 and 2003 was relatively high because of the increase in the number of helicopters in operation between November 2001 and March 2003 when the old fleet was yet to be phased out completely and the new fleet has been brought into operation. The overlap of the old and new fleets during this period has resulted in an increase in the amount of aviation fuel used in the daily fuel sampling process and chemical and fluids in maintenance activities. The amount of chemical wastes has gone back to normal after the whole of the old fleet has retired.

For flight safety, the GFS conducts fuel sampling for each aircraft daily before the fuel is injected into the aircraft. In the past, the GFS disposed of these fuel samples. To reduce the amount of chemical wastes, the GFS now filters the fuel samples and re-uses it for other purposes. This has resulted in a significant reduction in the amount of spent aviation fuel. In addition, the GFS reminds its staff regularly the importance of the effective use of chemicals and solvents in maintenance activities so as to further reduce the amount of chemical wastes.

After years of effort of reducing chemical waste, the disposal of time-expired paint had stabilized at a lower level. Minor fluctuation was recorded in 2005 due to some procedure-related factors such as time consumed in securing the relevant material safety data sheet for disposal of time-expired paint.

6.3 Working with Other Government Departments in Environmental Protection

We work closely with other government departments in environmental protection. For example, our helicopters assist the Marine Department in conducting surveillance of floating

refuse and oil pollution in Hong Kong waters. We also help in spraying oil dispersant over the sea when required.

Our helicopters also assist the Agriculture, Fisheries and Conservation Department in conducting a “Sky-shout” exercise on hill fire prevention publicity. On Sunday, public holidays and particularly Chung Yeung Festival and Ching Ming Festival, our helicopters help to disseminate the message of preventing hill fire to the public by flying above the countryside and playing pre-recorded voice messages through the loudhailers.

Besides, our aircraft take officers of the Environmental Protection Department (EPD) to take aerial photographs of power stations and their surrounding environment for studies and analysis. We also assist EPD in conducting aerial inspections, surveys and monitoring of river catchments of Deep Bay and Mirs Bay on the spreading of wastewater plumes from major sewage outfalls. Our aircraft are also used to take aerial photographs for conducting site inspections and survey of existing waste facilities such as landfills and transfer stations as well as planning of special waste projects in the territories.

6.4 Energy Use and Energy Savings Measures

The ‘Green Personnel' of the GFS are constantly looking out for opportunities and the latest products that can bring about savings in energy or electricity consumption.

Installing Daylight Sensors

To protect the environment and reduce the consumption of electricity, GFS has identified a number of rooms for installation of daylight sensors. The sensors are mounted on the ceilings near the window areas and connected to the lighting system. The sensors detect the illumination of the rooms and adjust the artificial lighting level automatically. It is estimated that the daylight sensors can lower the consumption of electricity by 23,400 kWh per year.

Installing Occupancy Sensors

Occupancy sensor is a modern-day invention contributing to the saving of electricity. Through detecting movements within an area, it automatically controls the switching of the lighting in the room. It functions best in places that are not constantly occupied by people. In September 2004, the GFS conducted a pilot scheme by installing occupancy sensors in two washrooms at the GFS premises to try out their effectiveness. They have been proved to be effective in saving energy. As a result, GFS has extended the installation of occupancy sensors to other offices in the GFS building. (The installation work was completed in March 2006.) It is estimated that the occupancy sensors can bring about a reduction of electricity consumption of 15,600 kWh per year.

Replacing Conventional Exit Signs with LED Exit Signs

In 2005, GFS has replaced a total of 75 conventional exit signs with LED (Light Emitting Diode) exit signs which use only one-tenth of the amount of electricity consumed by the conventional signs. It is estimated that the LED exit signs can lower the electricity consumption of 19,000 kWh per year.

De-lamping of Fluorescent Lamps at the Corridor on the 1/F

To avoid unnecessary consumption of energy consumption, we have removed a total of 74 T5 fluorescent lamps along the corridor of the GFS premises. It is estimated that the annual saving of electricity consumption is 9,000 kWh.

Installing Sun Shade above the Light Well

The light well at the lobby of the GFS building allows the penetration of sunlight. This creates a warming effect to the area beneath the light well. As a result, the air-conditioning system needs to be turned up significantly, thus increasing the energy consumption.

In February 2005, GFS installed a retractable sun shade over the light well which blocked the sunlight partially. With the sun shade in place, the indoor temperature within this part of the building can be maintained at a comfortable condition without the need to turn up the air-conditioning. It is estimated that this device can result in a possible annual saving of 7,800 kWh of electricity consumption.

Using Fluorescent Lamps instead of High Bay Lights at Hangar Ceiling

In the past, two high bay lights at the hangar ceiling were switched on at night to maintain minimum illumination at the hangar. To save energy, a total of ten fluorescent lamps were installed at the exit of workshops inside the hangar so that it was not necessary to switch on the high bay lights which consumed more energy. It is estimated that the saving of electricity consumption is 1,300 kWh per year.

Constant Advocation of Energy Saving by the Management

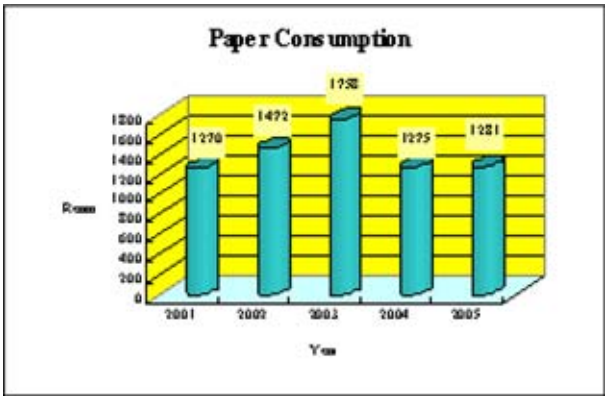
We understand that good practices and house keeping rules help towards energy conservation. From time to time, the GFS management will remind officers through emails or circulars of the importance of saving energy and also of the various means for achieving this. Although the units of energy saved through such means may not be significant, we strongly believe that instilling a sense of responsibility among staff is an important factor in any successful long-term energy conservation programme.

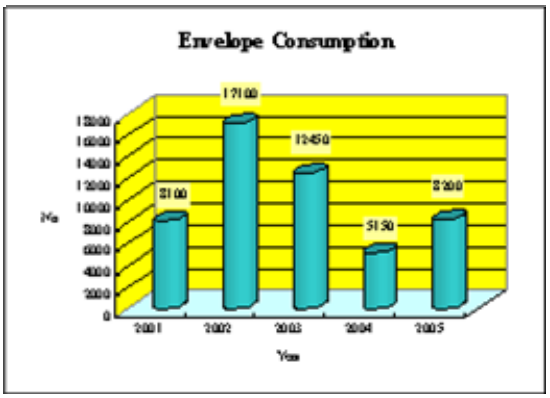
6.5 Office Resource Consumption

Paper and Envelope Consumption

The overall policy of the Government on paper consumption for departments is to reduce the consumption progressively by 2.5%, 5%, 7.5% and ultimately 10% over four years by

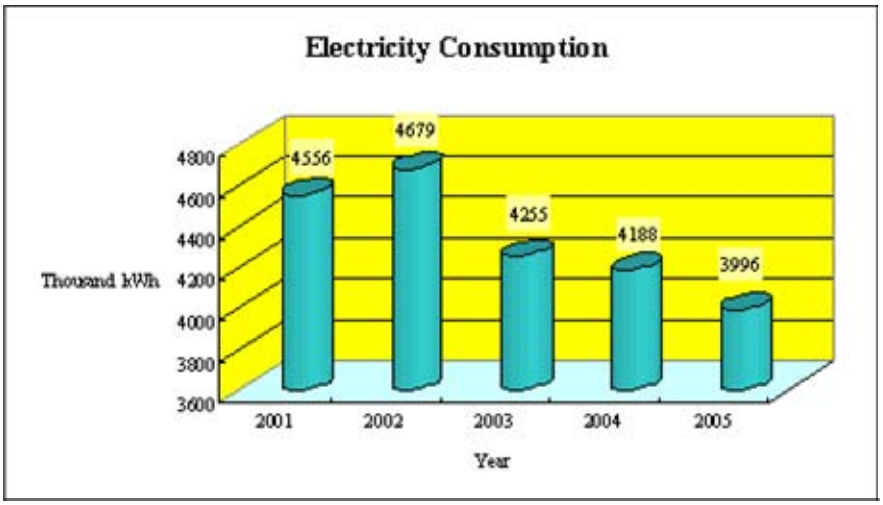
2006-07, using the Financial Year of 2002-03 as the base year. In 2005, the paper consumption has reduced by 13% and 27% when compared with that of 2002 and 2003 respectively. In view of our consumption pattern over the past three years and our continuous effort in promoting the use of electronic means in disseminating information, we are confident that the target of 10% reduction in paper consumption for 2006-07 can be met.





Electricity Consumption

It is the government's policy for each department to cut down the electricity consumption by 1.5%, 3%, 4.5% and 6% over four years by 2006-07, using the Financial Year of 2002-03 as the base year. The consumption graph below indicates that our electricity consumption drops progressively over the past three years.



In 2005, the electricity consumption has reduced by 15% and 6% when compared with that of 2002 and 2003 respectively. With our devotion to implementing energy saving measures and the assistance provided by the Electrical and Mechanical Services Department (EMSD) in identifying new energy saving opportunities, we strongly believe that we are able to meet the target of 6% reduction in electricity consumption in 2006-07.

6.6 Green Housekeeping Measures

The green housekeeping measures we have continued to implement in 2005 can be broadly grouped into the following categories:

- reducing paper and energy consumption;
- using environmentally friendly stationery, office equipment and lighting equipment;
- collecting recyclable material;
- implementing the smoke-free workplace policy;
- conducting regular indoor air quality checks; and
- encouraging staff to contribute ideas on green practices.

The Airport Authority organizes the Airport Environmental Best Practice Competition annually and the theme for 2004/05 was ‘Good Energy Management’. The GFS is the 1st runner-up of the competition and the winner of the ‘Best Energy Saving Award During Competition Period’ award. We shall continue our effort in conserving energy and protecting the environment for a better tomorrow.

We have also participated in a number of environmental protection activities organized by the Environmental Protection Department and other departments/organizations to promote the awareness of our staff in environmental protection such as ‘The Community Chest Green Day’.

In the effort of reducing paper consumption, we have developed an Integrated Application System which allows us to work towards a paperless office. For example, various forms of the Engineering and Operations Sections have been uploaded onto the network and are printed only when in demand. We have also uploaded the procedure manuals of these two Sections onto the network thus reducing the need to produce hard copies. The system has recently been launched.

7. Aims for 2006

We will continue to encourage and remind our staff to practise and implement the various measures/programmes initiated in 2005 to help protect the environment. Our targets are:

- to maintain the electricity consumption at current level despite the anticipated increase in the number of electrical and electronic equipment in the coming year;
- to work closely with the EMSD in implementing more energy-saving measures to reduce electricity consumption and identifying new source of renewable energy. EMSD is studying the feasibility of installing a solar energy power system at the GFS Headquarters with a view to converting the solar energy into alternating current; and
- to report environmental performance of year 2006 in the first quarter of 2007.

We will continue to monitor progress in the above areas.

8. Information and Suggestions

For further information required or any suggestions, you may contact the Departmental Secretary of the GFS through:

by letter:	Government Flying Service 18 South Perimeter Road Hong Kong International Airport, Lantau, Hong Kong
by fax:	2753 8438
by telephone:	2305 8203
by e-mail:	yupoyee@gfs.gov.hk