

Head 168 — HONG KONG OBSERVATORY

Controlling officer: the Director of the Hong Kong Observatory will account for expenditure under this Head.

Estimate 2005–06..... **\$196.0m**

Establishment ceiling 2005–06 (notional annual mid-point salary value) representing an estimated 284 non-directorate posts as at 31 March 2005 reducing by one post to 283 posts as at 31 March 2006 **\$100.2m**

In addition, there will be an estimated five directorate posts as at 31 March 2005 and as at 31 March 2006.

Controlling Officer's Report

Programmes

Programme (1) Weather Services	This programme contributes to Policy Area 7: Public Safety (Secretary for Economic Development and Labour).
Programme (2) Radiation Monitoring and Assessment	This programme contributes to Policy Area 9: Internal Security (Secretary for Security).
Programme (3) Time Standard and Geophysical Services	This programme contributes to Policy Area 7: Public Safety (Secretary for Economic Development and Labour).

Detail

Programme (1): Weather Services

	2003–04 (Actual)	2004–05 (Original)	2004–05 (Revised)	2005–06 (Estimate)
Financial provision (\$m)	182.4	176.4	170.2 (–3.5%)	164.9 (–3.1%)
				(or –6.5% on 2004–05 Original)

Aim

2 The aim is to provide weather forecasts and issue warnings to the public, special users, the shipping community, aircraft and aviation groups in order to reduce loss of life and damage to property, and minimise disruption to economic and social activities during hazardous weather.

Brief Description

3 The Hong Kong Observatory's Central Forecasting Office and Airport Meteorological Office are responsible for the preparation and issue of weather information, forecasts and various warnings on hazardous weather to the public, shipping community and aviation groups. The Hong Kong Observatory also promotes public awareness of, and community preparedness on, natural disasters. This work involves:

- operating a network of mostly automated weather stations;
- carrying out real-time exchange of data with meteorological centres in the world;
- receiving meteorological satellite imageries and operating weather radar systems;
- analysing meteorological data and computing the future weather by numerical modelling;
- disseminating weather information by a diversity of means;
- issuing warnings on hazardous weather such as tropical cyclones, storm surges, rainstorms, landslips, flooding, thunderstorms, windshear, fire danger and extreme hot and cold conditions; and
- conducting public talks, interviews and training courses as well as producing publicity material on hazardous weather phenomena.

4 In 2004, the Hong Kong Observatory fulfilled its performance pledge of issuing at least one bulletin every hour of the day, disseminating the bulletins within ten minutes after each hour, and maintaining, on average, a forecast accuracy score of 85% or more. Trial runs of the next generation of numerical model for weather prediction continued. The implementation of a network of lightning sensors covering the Pearl River Estuary to enhance the thunderstorm warning service was under way. The contents of 72-hour tropical cyclone forecasts were expanded to include forecast tropical cyclone intensity in addition to the forecast track. Other enhancements in tropical cyclone weather services included the

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introduction of the Chinese version of tropical cyclone warning for shipping and an increase in the update frequency of tropical cyclone forecast tracks from once every three hours to every hour during the passage of tropical cyclones. The Observatory's website provided uninterrupted service to the public even during the close passage of tropical cyclones, handling up to 6.5 million page hits in a single day. The website was enhanced to include Chinese calendar, weather information of airports around the world, and forecast weather maps generated by the Observatory's own numerical weather prediction model. A Personal Digital Assistant (PDA) website was launched to enable mobile users to obtain important weather information. A replacement upper-air sounding system capable of automatic balloon launching was installed in May 2004, enhancing operational efficiency and personnel safety. As a continuous effort to promote preparedness against hazardous weather, the Observatory conducted introductory meteorological courses for members of the public as well as staff of other government departments. Observatory officers also delivered talks at primary schools to educate students on hazardous weather, precautionary measures and the Observatory's weather forecasting service. An eight-episode TV documentary was also being produced to promote the public's awareness of and preparedness for natural disasters. The Observatory maintained a close surveillance of the weather at and around the Hong Kong International Airport (HKIA). Two additional weather buoys were installed over the seas off the two ends of the runway to help monitor the air flow around the HKIA. New products to meet user requirements were added to the Observatory's web-based aviation weather information system.

5 The key performance measures in respect of weather services are:

Targets

	Target	2003 (Actual)	2004 (Actual)	2005 (Plan)
forecasts perceived as accurate by the public (%).....	75	79	80	77
accurate public forecasts as verified by objective means (%).....	85	89	89	87
accurate forecasts as assessed by ship captains (%).....	90	96	97	95
accurate forecasts as assessed by airline operators (%).....	95	99	98	98

Indicators

	2003 (Actual)	2004 (Actual)	2005 (Estimate)
calls answered by Dial-a-Weather system#.....	22 000 000	21 000 000	23 000 000
enquiries answered by computerised telephone system#.....	780 000	710 000	—
telephone enquiries answered manually.....	25 000	23 000	25 000
visits to Observatory's website by the public.....	332 000 000	353 000 000	400 000 000
companies and organisations subscribing to special weather and warning services.....	44	57 α	65 α
total revenue from above subscribers (\$m).....	1.2	1.2	1.3
media interviews and public lectures/talks on weather.....	1 156	1 075	1 100
meteorological documents for flights departing Hong Kong ...	95 000	119 000	120 000
visits to the aviation weather information system.....	3 800 000	6 500 000	7 000 000

The functions of the computerised telephone enquiry system will be absorbed by the replacement Dial-a-Weather system as from 2005.

α The increase in the number of subscribers is mainly related to the launching of a new service on provision of weather information through an eXtensible Markup Language website.

Matters Requiring Special Attention in 2005–06

6 During 2005–06, the Department will:

- continue to enrich the contents of the Observatory's website in response to the evolving needs of the public and further develop the delivery of weather services through the Internet;
- put the network of lightning location sensors into operation, to enhance the thunderstorm warning service and to launch a lightning location information service for the public and special users;
- continue to develop the new generation of numerical weather prediction model, with an emphasis on very short-range forecasting of heavy rain, through integration with the operational nowcasting system;
- continue to promote public awareness and preparedness regarding natural disaster;
- continue to enhance the aviation weather service through the use of technology to meet user needs; and
- acquire a backup Light Detection and Ranging system for the HKIA to ensure uninterrupted availability of data for windshear detection.

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Programme (2): Radiation Monitoring and Assessment

	2003–04 (Actual)	2004–05 (Original)	2004–05 (Revised)	2005–06 (Estimate)
Financial provision (\$m)	23.3	23.0	23.0 (—)	22.4 (–2.6%)
				(or –2.6% on 2004–05 Original)

Aim

7 The aim is to provide information on environmental radiation levels in Hong Kong and advise government departments on the protective action that may be necessary during nuclear emergencies.

Brief Description

8 The Hong Kong Observatory monitors ambient radiation levels in Hong Kong and conducts radiological measurements on air, soil, water and food samples. In the event of a nuclear emergency, the Observatory will provide notification and advice to government departments on the possible consequences in Hong Kong and recommend protective action. The Observatory organises training and exercises on radiation monitoring for other government departments involved in the Hong Kong contingency plan for nuclear emergencies. The work involves:

- operating a network of radiation monitoring stations, an aerial monitoring system, a radiological survey vehicle, a radiation laboratory and an emergency radiation data management system;
- keeping abreast of the latest development on the methodology for nuclear accident consequence assessment; and
- planning and participating in exercises and drills in response to nuclear emergencies.

9 In 2004, all radiation monitoring and assessment work in this programme was carried out satisfactorily. All equipment was maintained in a state of readiness. In addition to courses on radiation monitoring, a training course on radiological protection was conducted for relevant government departments and organisations involved in the contingency plan for nuclear emergencies. The methodology for nuclear accident consequence assessment was improved through enhancement in both spatial and temporal resolution.

10 The key performance measures in respect of radiation monitoring and assessment are:

Target

	Target	2003 (Actual)	2004 (Actual)	2005 (Plan)
data availability of radiation monitoring network (%)@	99	98.7	99.8	99.8

@ New target as from 2005.

Indicators

	2003 (Actual)	2004 (Actual)	2005 (Estimate)
exercises and drillsπ.....	19	16	16
visits to the Observatory's webpage on radiationπ	230 000	340 000	340 000

π New indicators as from 2005.

Matters Requiring Special Attention in 2005–06

11 During 2005–06, the Department will continue to:

- implement the agreed arrangements between Hong Kong and Guangdong on radiation monitoring and assessment;
- conduct in conjunction with other government departments as well as the relevant Guangdong counterparts drills and exercises on emergency response; and
- organise training on radiation monitoring and assessment.

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Programme (3): Time Standard and Geophysical Services

	2003–04 (Actual)	2004–05 (Original)	2004–05 (Revised)	2005–06 (Estimate)
Financial provision (\$m)	9.2	8.7	8.7 (—)	8.7 (—)

(or same as
2004–05 Original)

Aim

12 The aim is to maintain the Hong Kong time standard and to provide geophysical, oceanographical, astronomical and climatological information to the user community.

Brief Description

13 The Hong Kong Observatory maintains the Hong Kong time standard and provides time signals for the public. It prepares, collates and provides geophysical, oceanographical and climatological information required for engineering planning, design and environmental impact assessments. It also keeps abreast of research and development on international issues such as global climate changes and advises the Government on likely implications. This work involves:

- maintaining a caesium beam clock as the Hong Kong time standard and providing time signals for radio broadcasts, automatic telephone answering service and synchronisation of clocks via Internet;
- operating seismological, tide and water level monitoring networks and conducting data analyses;
- compiling climatological and other data; and
- providing updates on the effects of El Nino and other longer term weather phenomena on Hong Kong.

14 In 2004, the objectives and targets of this programme were generally met. A high precision time transfer system was installed to enable the Observatory's caesium beam clock to be checked regularly against the Universal Co-ordinated Time maintained by the International Bureau for Weights and Measures in France, so that its accuracy could be maintained well within one microsecond. A study on the sea level changes in Hong Kong in the past 50 years was completed, and the results publicised. Another study on the projection of temperature changes in Hong Kong in the 21st century was also completed, with the results publicised.

15 The key performance measures in respect of time standard and geophysical services are:

Targets

	Target	2003 (Actual)	2004 (Actual)	2005 (Plan)
time standard accuracy (microseconds per day).....	0.1	0.1	0.1	0.1
geophysical, meteorological and oceanographical data capture rate (%)....	95	99	99	96

Indicators

	2003 (Actual)	2004 (Actual)	2005 (Estimate)
visits to the Observatory internet time service.....	270 000 000	290 000 000	320 000 000
requests for geophysical, climatological and oceanographical information and advice.....	1 034	856	800

Matters Requiring Special Attention in 2005–06

16 During 2005–06, the Department will:

- continue to provide information and data to users efficiently and through user-friendly means;
- continue to keep abreast of earthquake risk assessment in the region; and
- evaluate the potential changes in rainfall in Hong Kong due to global climate changes.

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ANALYSIS OF FINANCIAL PROVISION

Programme	2003-04 (Actual) (\$m)	2004-05 (Original) (\$m)	2004-05 (Revised) (\$m)	2005-06 (Estimate) (\$m)
(1) Weather Services.....	182.4	176.4	170.2	164.9
(2) Radiation Monitoring and Assessment.....	23.3	23.0	23.0	22.4
(3) Time Standard and Geophysical Services.....	9.2	8.7	8.7	8.7
	<u>214.9</u>	<u>208.1</u>	<u>201.9</u> (-3.0%)	<u>196.0</u> (-2.9%)
				(or -5.8% on 2004-05 Original)

Analysis of Financial and Staffing Provision

Programme (1)

Provision for 2005-06 is \$5.3 million (3.1%) lower than the revised estimate for 2004-05. This is mainly due to the reduction in salary requirement attributable to the departure of staff under the Second Voluntary Retirement Scheme, full-year effect of the 2005 civil service pay cut and deletion of one post in 2005-06.

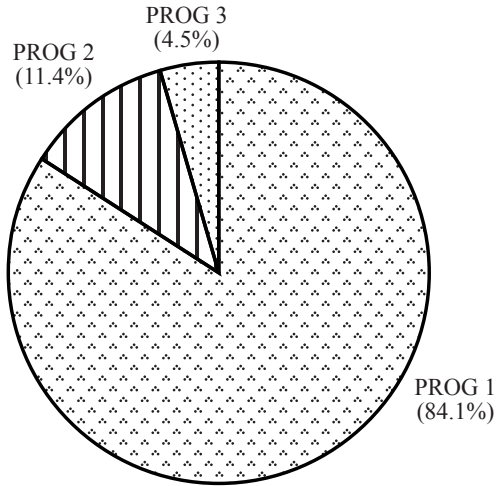
Programme (2)

Provision for 2005-06 is \$0.6 million (2.6%) lower than the revised estimate for 2004-05. This is mainly due to the reduction in salary requirement attributable to the departure of staff under the Second Voluntary Retirement Scheme and full-year effect of the 2005 civil service pay cut.

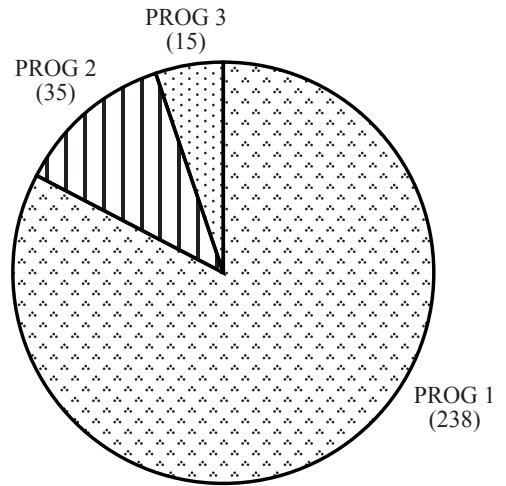
Programme (3)

Provision for 2005-06 is the same as the revised estimate for 2004-05.

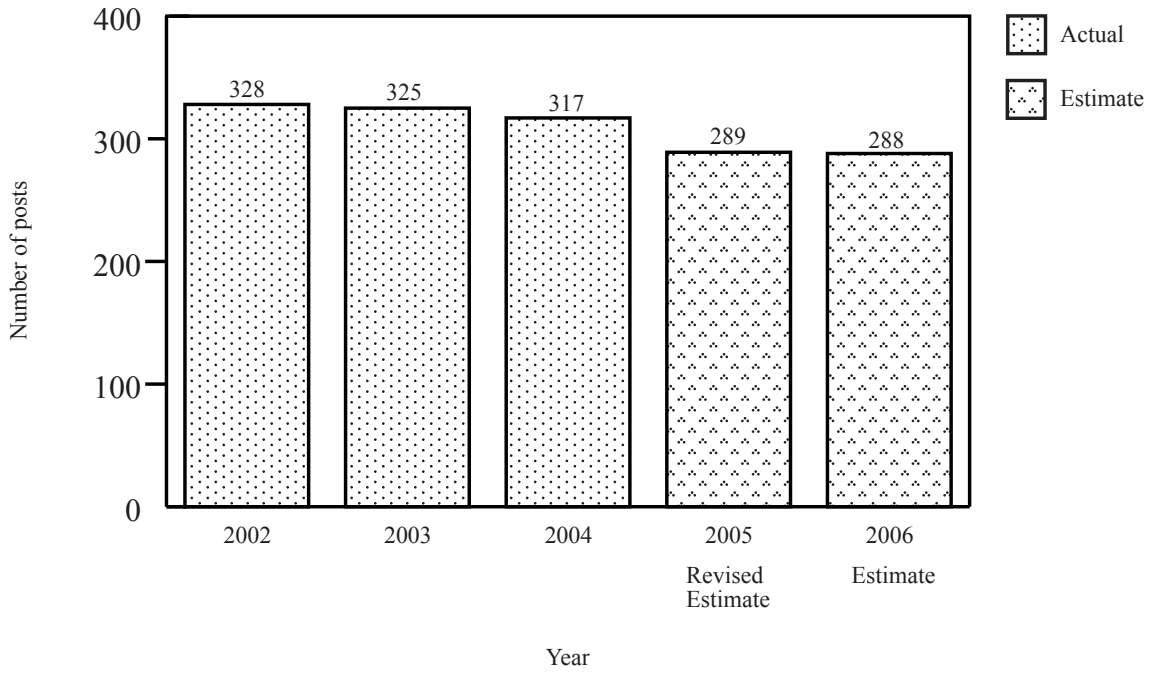
Allocation of provision to programmes (2005-06)



Staff by programme (as at 31 March 2006)



Changes in the size of the establishment (as at 31 March)



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Sub-head (Code)	Actual expenditure 2003–04	Approved estimate 2004–05	Revised estimate 2004–05	Estimate 2005–06	
	\$'000	\$'000	\$'000	\$'000	
Operating Account					
Recurrent					
000	Operational expenses	210,521	207,029	200,838	194,422
	Total, Recurrent	<u>210,521</u>	<u>207,029</u>	<u>200,838</u>	<u>194,422</u>
Non-Recurrent					
	General non-recurrent	650	—	—	—
	Total, Non-Recurrent	<u>650</u>	<u>—</u>	<u>—</u>	<u>—</u>
	Total, Operating Account	211,171	207,029	200,838	194,422
Capital Account					
Plant, Equipment and Works					
661	Minor plant, vehicles and equipment (block vote)	3,692	1,044	1,044	1,568
	Total, Plant, Equipment and Works	<u>3,692</u>	<u>1,044</u>	<u>1,044</u>	<u>1,568</u>
	Total, Capital Account	3,692	1,044	1,044	1,568
	 Total Expenditure	<u>214,863</u>	<u>208,073</u>	<u>201,882</u>	<u>195,990</u>

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Details of Expenditure by Subhead

The estimate of the amount required in 2005–06 for the salaries and expenses of the Hong Kong Observatory is \$195,990,000. This represents a decrease of \$5,892,000 against the revised estimate for 2004–05 and of \$18,873,000 against actual expenditure in 2003–04.

Operating Account

Recurrent

2 Provision of \$194,422,000 under *Subhead 000 Operational expenses* is for the salaries, allowances and other operating expenses of the Hong Kong Observatory.

3 The establishment as at 31 March 2005 will be 289 permanent posts. It is expected that one permanent post will be deleted in 2005–06. Subject to certain conditions, the controlling officer may under delegated power create or delete non-directorate posts during 2005–06, but the notional annual mid-point salary value of all such posts must not exceed \$100,217,000.

4 An analysis of the financial provision under *Subhead 000 Operational expenses* is as follows:

	2003–04 (Actual) (\$'000)	2004–05 (Original) (\$'000)	2004–05 (Revised) (\$'000)	2005–06 (Estimate) (\$'000)
Personal Emoluments				
- Salaries	142,626	136,330	132,258	126,364
- Allowances	2,069	2,133	1,995	1,936
- Job-related allowances	271	261	138	135
Personnel Related Expenses				
- Mandatory Provident Fund contribution ..	93	110	100	110
Departmental Expenses				
- Technical Services Agreement	2,880	3,200	2,700	2,700
- General departmental expenses	62,511	64,911	63,569	63,093
Other Charges				
- World Meteorological Organization#	71	84	78	84
	210,521	207,029	200,838	194,422

Prior to 2005–06, expenses under this item were classified as “Subventions”. Starting from 2005–06, the provision for this item will be re-classified as “Other Charges” to align with the classification for similar items involving payment of membership fees/subscriptions or miscellaneous contributions.

Capital Account

Plant, Equipment and Works

5 Provision of \$1,568,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* represents an increase of \$524,000 (50.2%) over the revised estimate for 2004–05. This is mainly due to the increased requirement for replacement of obsolete or worn-out equipment.