

Head 168 — HONG KONG OBSERVATORY

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

Estimate 2004–05 **\$208.1m**

Establishment ceiling 2004–05 (notional annual mid-point salary value) representing an estimated 312 non-directorate posts as at 31 March 2004 reducing by 28 posts to 284 posts as at 31 March 2005..... **\$116.2m**

In addition there will be an estimated five directorate posts as at 31 March 2004 and as at 31 March 2005.

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

	2002–03 (Actual)	2003–04 (Original)	2003–04 (Revised)	2004–05 (Estimate)
Financial provision (\$m)	185.5	189.4	183.8 (–3.0%)	176.4 (–4.0%)
				(or –6.9% on 2003–04 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 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 2003, 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 a next-generation numerical model for weather prediction continued. To take advantage of advances in weather forecasting technology, the 48-hour tropical cyclone track forecast was extended to a 72-hour forecast and the 5-day weather forecast to a 7-day forecast during the year. The Observatory website provided uninterrupted service to the public even during the close passage of tropical cyclones, handling up to 9.6 million page

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hits in a single day. A new service to provide weather bulletins in eXtensible Markup Language (XML) was introduced in November 2003 to facilitate further processing by users. The Observatory website was enhanced to include weather information for popular local tourist spots, radar pictures and high-resolution cloud pictures received from polar-orbiting satellites. The Observatory conducted introductory meteorological courses for staff of other government departments to help them interpret weather information. As a public education initiative, the same courses were conducted for members of the public. Announcements of Public Interest (API) to promote public awareness of the appropriate actions to take during the passage of tropical cyclones were produced for television and radio. Observatory officers delivered talks at primary schools to educate students on hazardous weather, precautionary measures and the Observatory's weather forecasting service. The Observatory maintained a close surveillance of the weather at and around the airport. An additional weather buoy was installed over the waters east of the runway, and a wind profiler at Cheung Chau to monitor the airflow around the airport. New products to meet user requirements were added to the Observatory's web-based aviation weather information system. The windshear and turbulence alerting service was further improved using data from the newly installed Light Detection and Ranging system.

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

Targets

	Target	2002 (Actual)	2003 (Actual)	2004 (Plan)
% of forecasts perceived as accurate by the public.....	75	77	79	77
% of accurate public forecasts as verified by objective means.....	85	87	89	87
% of accurate forecasts as assessed by ship captains.....	over 90	94	96	94
% of accurate forecasts as assessed by airline operators.....	over 95	98	99	98

Indicators

	2002 (Actual)	2003 (Actual)	2004 (Estimate)
no. of calls answered by Dial-a-Weather system.....	20 000 000	22 000 000	22 000 000
no. of telephone enquiries answered manually.....	30 000	25 000 [^]	21 000
no. of enquiries answered by computerised telephone system.....	820 000	780 000 [^]	770 000
no. of visits to Observatory website by the public.....	182 000 000	332 000 000 [^]	450 000 000
no. of companies and organisations subscribing to special weather and warning services.....	49	44 [†]	46
total revenue from above subscribers (\$m).....	1.3	1.2 [†]	1.3
no. of media interviews and public lectures/talks on weather..	993	1 156	1 050
no. of meteorological documents for flights departing Hong Kong.....	105 850	95 000	110 000
no. of visits to the aviation weather information system.....	4 000 000	3 800 000	4 000 000

[^] The decrease in the number of telephone enquiries may be attributable to increased use of the Observatory website by the public for weather information.

[†] The decrease in the number of subscribers to special weather and warning services and the reduction in revenue from such subscribers may also be attributable to the increased use of the Observatory website which contains an extensive range of weather information.

Matters Requiring Special Attention in 2004–05

6 During 2004–05, the department will:

- enrich the contents of the Observatory website in response to the evolving needs of the public and further develop the delivery of weather services through the Internet;
- replace and combine the existing Dial-a-Weather System and the computerised Telephone Information Enquiry System into one integrated system;
- continue to develop the next generation of numerical weather prediction model with emphasis on forecasting heavy rain;
- set up a network of lightning sensors to enhance the thunderstorm warning service;
- install a replacement upper-air sounding system with automatic balloon launching capability;
- continue to promote public awareness and preparedness regarding natural disaster;

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- continue to enhance the aviation weather service through the use of technology to meet user needs; and
- promulgate the latest information on the aviation weather service to the user community.

Programme (2): Radiation Monitoring and Assessment

	2002–03 (Actual)	2003–04 (Original)	2003–04 (Revised)	2004–05 (Estimate)
Financial provision (\$m)	24.7	24.7	23.5 (–4.9%)	23.0 (–2.1%)
				(or –6.9% on 2003–04 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 2003, all radiation monitoring and assessment work in this programme was carried out satisfactorily. All equipment was maintained in a state of readiness. The Observatory conducted a review of the results of radiation monitoring in the period 1987 to 2002 and confirmed that there were no significant differences in the environmental radiation levels in Hong Kong before and after the operation of the nuclear power stations at Daya Bay, Guangdong. To promote public awareness and preparedness, the Observatory launched a webpage and produced a video on radiation in the Hong Kong context.

10 Key indicators of performance are:

- the ability to maintain round-the-clock operation of a network of radiation monitoring stations in order to give an early indication of abnormal radiation increase that may affect Hong Kong;
- the ability to maintain readiness of all radiation monitoring equipment of the department for timely response to nuclear emergencies;
- the training of a sufficient number of staff ready for immediate deployment in the event of nuclear emergencies; and
- the ability to provide professional advice to government departments on protective action that may be necessary during nuclear emergencies.

Matters Requiring Special Attention in 2004–05

11 During 2004–05, the department will continue to:

- implement the agreed arrangements between Hong Kong and Guangdong on radiation monitoring and assessment;
- conduct in conjunction with other departments as well as the relevant Guangdong counterparts drills and exercises on emergency response;
- organise training on radiation monitoring and assessment; and
- improve the methodology for nuclear accident consequence assessment through enhancement in both spatial and temporal resolution.

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Programme (3): Time Standard and Geophysical Services

	2002–03 (Actual)	2003–04 (Original)	2003–04 (Revised)	2004–05 (Estimate)
Financial provision (\$m)	9.1	9.2	9.3 (+1.1%)	8.7 (–6.5%)
				(or –5.4% on 2003–04 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 change 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 2003, the objectives and targets of this programme were generally met. A study on the climate change in Hong Kong in the past 120 years was completed, and the results publicised.

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

Targets

	Target	2002 (Actual)	2003 (Actual)	2004 (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

	2002 (Actual)	2003 (Actual)	2004 (Estimate)
no. of visits to the Observatory internet time service	155 000 000	270 000 000	270 000 000
no. of requests for geophysical, climatological and oceanographical information and advice	996	1 034	1 000

Matters Requiring Special Attention in 2004–05

16 During 2004–05, the department will:

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

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ANALYSIS OF FINANCIAL PROVISION

Programme	2002-03 (Actual) (\$m)	2003-04 (Original) (\$m)	2003-04 (Revised) (\$m)	2004-05 (Estimate) (\$m)
(1) Weather Services	185.5	189.4	183.8	176.4
(2) Radiation Monitoring and Assessment.....	24.7	24.7	23.5	23.0
(3) Time Standard and Geophysical Services.....	9.1	9.2	9.3	8.7
	<u>219.3</u>	<u>223.3</u>	<u>216.6</u> (-3.0%)	<u>208.1</u> (-3.9%)
				(or -6.8% on 2003-04 Original)

Analysis of Financial and Staffing Provision

Programme (1)

Provision for 2004-05 is \$7.4 million (4.0%) lower than the revised estimate for 2003-04. This is mainly due to the reduction in salary requirement attributable to the departure of staff under the Second Voluntary Retirement Scheme and the effect of the 2004 and 2005 civil service pay cut, as well as the reduction in capital expenditure.

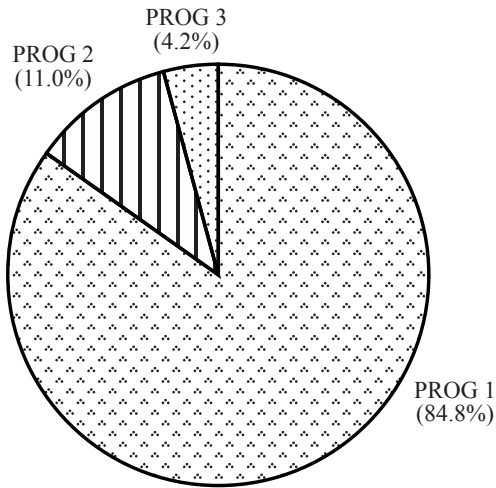
Programme (2)

Provision for 2004-05 is \$0.5 million (2.1%) lower than the revised estimate for 2003-04. This is mainly due to the effect of the 2004 and 2005 civil service pay cut.

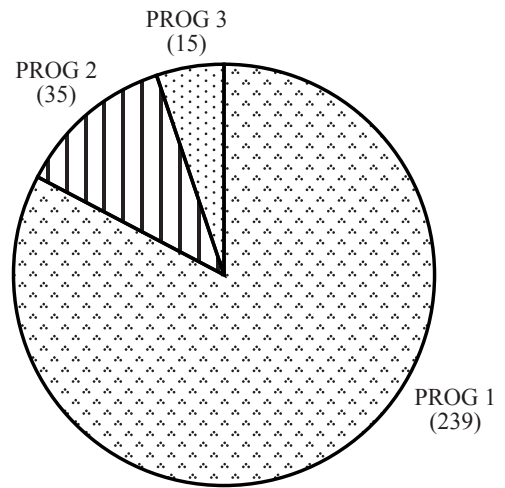
Programme (3)

Provision for 2004-05 is \$0.6 million (6.5%) lower than the revised estimate for 2003-04. This is mainly due to the reduction in capital expenditure.

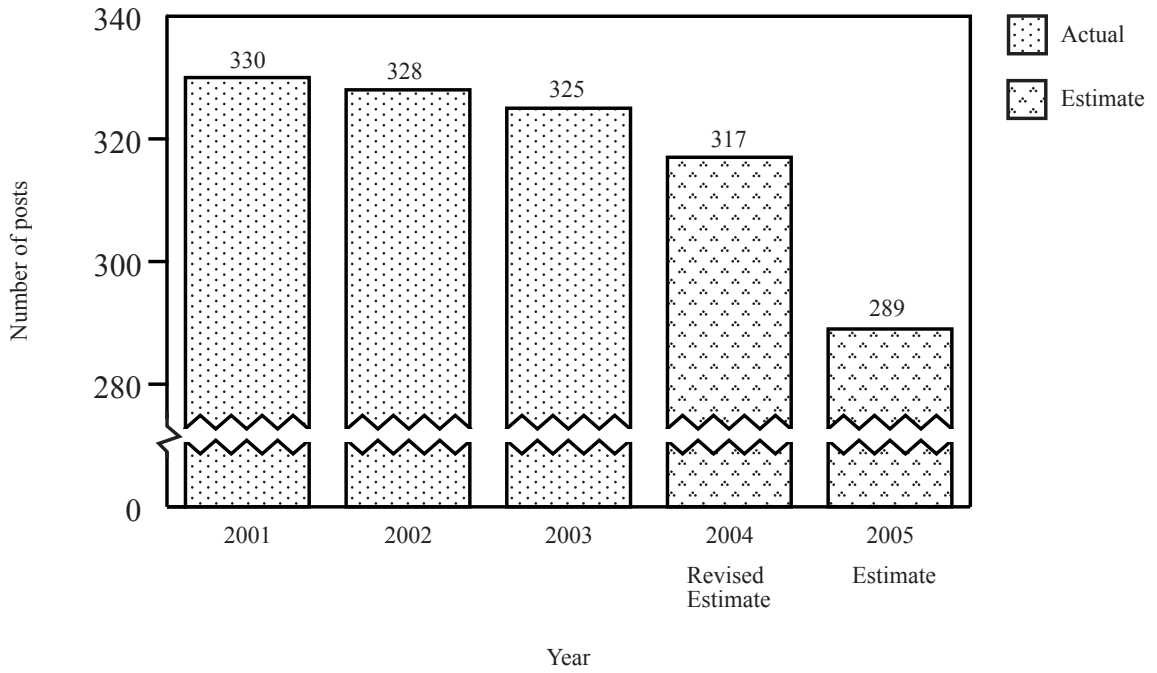
Allocation of provision to programmes (2004-05)



Staff by programme (as at 31 March 2005)



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



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Sub-head (Code)	Actual expenditure 2002-03	Approved estimate 2003-04	Revised estimate 2003-04	Estimate 2004-05	
	\$'000	\$'000	\$'000	\$'000	
Operating Account					
Recurrent					
000	Operational expenses.....	—	222,736	212,134	207,029
	Salaries	146,698	—	—	—
	Allowances	1,397	—	—	—
	Job-related allowances	515	—	—	—
	Technical Services Agreement	2,563	—	—	—
	General departmental expenses	67,430	—	—	—
	World Meteorological Organisation.....	66	—	—	—
	Total, Recurrent	218,669	222,736	212,134	207,029
Non-Recurrent					
	General non-recurrent.....	667	560	760	—
	Total, Non-Recurrent	667	560	760	—
	Total, Operating Account.....	219,336	223,296	212,894	207,029
Capital Account					
Plant, Equipment and Works					
661	Minor plant, vehicles and equipment (block vote).....	—	—	3,690	1,044
	Total, Plant, Equipment and Works	—	—	3,690	1,044
	Total, Capital Account	—	—	3,690	1,044
	Total Expenditure.....	219,336	223,296	216,584	208,073

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Details of Expenditure by Subhead

The estimate of the amount required in 2004–05 for the salaries and expenses of the Hong Kong Observatory is \$208,073,000. This represents a decrease of \$8,511,000 against the revised estimate for 2003–04 and of \$11,263,000 against actual expenditure in 2002–03.

Operating Account

Recurrent

2 Provision of \$207,029,000 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 2004 will be 317 permanent posts. It is expected that there will be a net deletion of 28 posts in 2004–05. Subject to certain conditions, the controlling officer may under delegated power create or delete non-directorate posts during 2004–05, but the notional annual mid-point salary value of all such posts must not exceed \$116,224,000.

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

	2002–03 (Actual) (\$'000)	2003–04 (Original) (\$'000)	2003–04 (Revised) (\$'000)	2004–05 (Estimate) (\$'000)
Personal Emoluments				
- Salaries.....	146,698	147,500	142,970	136,330
- Allowances.....	1,397	2,055	2,215	2,133
- Job-related allowances	515	475	271	261
Personnel Related Expenses				
- Mandatory Provident Fund contribution.....	—	99	108	110
Departmental Expenses				
- Technical Services Agreement.....	2,563	2,700	2,910	3,200
- General departmental expenses.....	67,430	69,823	63,589	64,911
Subventions				
- World Meteorological Organisation	66	84	71	84
	218,669	222,736	212,134	207,029

Capital Account

Plant, Equipment and Works

5 Provision of \$1,044,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* represents a decrease of \$2,646,000 (71.7%) against the revised estimate for 2003–04. This is mainly due to reduced requirement for replacement and new equipment.