

Head 168 — HONG KONG OBSERVATORY

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

Estimate 2003–04 **\$223.3m**

Establishment ceiling 2003–04 (notional annual mid-point salary value) representing an estimated 320 non-directorate posts as at 31 March 2003 and as at 31 March 2004 **\$122.2m**

In addition there will be an estimated five directorate posts as at 31 March 2003 and as at 31 March 2004.

Capital Account commitment balance **\$0.6m**

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

	2001–02 (Actual)	2002–03 (Approved)	2002–03 (Revised)	2003–04 (Estimate)
Financial provision (\$m)	187.5	193.2 (+3.0%)	183.2 (–5.2%)	189.4 (+3.4%)

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 and interviews and producing publicity material on hazardous weather phenomena.

4 In 2002, 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 commenced. The weather service to government departments was enhanced using the Internet. The Observatory website provided uninterrupted service to the public even during the close passage of typhoons, handling up to 4.3 million page hits in a single day. The simplified Chinese version of the website started operation in March 2002. The web pages on world weather were expanded to cover more than 300 cities in December 2002. High-resolution cloud pictures received from polar-orbiting satellites were added to the Observatory website. The Observatory also hosted on behalf of the World Meteorological Organisation a website on official weather information of the world. A six-part television series was

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produced and screened to promote public preparedness for natural disasters. Aviation meteorological documents for departing flights were disseminated at least two hours before take-off. 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. A Light Detection and Ranging (LIDAR) system for detecting windshear and turbulence under fine weather was installed. For pilots' information, a booklet on windshear and turbulence in Hong Kong was published in co-operation with the International Federation of Air Line Pilots' Associations (IFALPA). ISO certification for the Observatory's aviation weather service was received in November 2002.

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

Targets

	Target	2001 (Actual)	2002 (Actual)	2003 (Plan)
% of forecast accuracy as perceived by the public.....	75	77	77	75
% of accurate public forecasts as verified by objective means.....	85	85	87	85
% of accurate forecasts as assessed by ship captains.....	over 90	93	94	over 90
% of accurate forecasts as assessed by airline operators.....	over 95	98	98	over 95

Indicators

	2001 (Actual)	2002 (Actual)	2003 (Estimate)
no. of calls answered by Dial-a-Weather system.....	23 000 000	20 000 000 [^]	20 000 000
no. of telephone enquiries answered manually.....	55 000	30 000 [^]	30 000
no. of enquiries answered by computerised telephone system.....	981 000	820 000 [^]	800 000
no. of visits to Observatory website by the public.....	113 000 000	182 000 000 [^]	220 000 000
no. of companies and organisations subscribing to special weather and warning services.....	43	49	49
total revenue from above subscribers (\$m).....	1.4	1.3 [†]	1.3
no. of media interviews and public lectures/talks on weather..	1 063	993	1 000
no. of meteorological documents for flights departing Hong Kong.....	102 229	105 850	106 000
no. of visits to the aviation weather information system.....	3 200 000	4 000 000	4 400 000

[^] 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 total revenue was mainly due to a reduction in the charges for the services.

Matters Requiring Special Attention in 2003–04

6 During 2003–04, 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;
- pursue the development of the next generation of numerical weather prediction model with emphasis on forecasting heavy rain;
- continue to promote public awareness and preparedness regarding natural disasters;
- initiate acquisition of equipment to receive weather information from the Japanese MTSAT satellite which is scheduled for re-launch in 2003;
- 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

	2001–02 (Actual)	2002–03 (Approved)	2002–03 (Revised)	2003–04 (Estimate)
Financial provision (\$m)	24.2	24.9 (+2.9%)	24.7 (–0.8%)	24.7 (0.0%)

Aim

7 The aim is to provide information on environmental radiation levels in Hong Kong and advise Government 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 on the possible consequences in Hong Kong and recommend protective action. The Observatory also organises training and exercises on radiation monitoring for other government departments involved in the Hong Kong contingency plan for nuclear emergencies. This 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 2002, all radiation monitoring and assessment work in this programme was carried out satisfactorily. All equipment was maintained in a state of readiness.

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 the Government on protective action that may be necessary during nuclear emergencies.

Matters Requiring Special Attention in 2003–04

11 During 2003–04, 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 drills and exercises on emergency response;
- organise training on radiation monitoring and assessment; and
- promote public awareness and preparedness regarding nuclear emergencies.

Programme (3): Time Standard and Geophysical Services

	2001–02 (Actual)	2002–03 (Approved)	2002–03 (Revised)	2003–04 (Estimate)
Financial provision (\$m)	9.6	9.2 (-4.2%)	9.2 (0.0%)	9.2 (0.0%)

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 synchronization of clocks via Internet;
- operating seismological, tide and water level monitoring networks and conducting data analyses;

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- 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 2002, the objectives and targets of this programme were generally met. A pilot study on short range climate forecasting was completed, demonstrating that skills in the forecasting of the annual tropical cyclone activity and rainfall in Hong Kong existed. The Observatory website was enhanced to provide monthly climatological information of key weather stations in the world for travel planning.

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

Targets

	Target	2001 (Actual)	2002 (Actual)	2003 (Plan)
time standard accuracy (microseconds per day)	0.1	0.1	0.1	0.1
geophysical, meteorological and oceanographical data capture rate (%) ...	95	98	99	95

Indicators

	2001 (Actual)	2002 (Actual)	2003 (Estimate)
no. of visits to the Observatory internet time service	127 000 000	155 000 000	150 000 000
no. of requests for geophysical, climatological and oceanographical information and advice	1 181	996	1 000

Matters Requiring Special Attention in 2003–04

16 During 2003–04, 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
- start issuing short range climate forecasts on tropical cyclone activity and rainfall in Hong Kong.

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ANALYSIS OF FINANCIAL PROVISION

Programme	2001-02 (Actual) (\$m)	2002-03 (Approved) (\$m)	2002-03 (Revised) (\$m)	2003-04 (Estimate) (\$m)
(1) Weather Services	187.5	193.2	183.2	189.4
(2) Radiation Monitoring and Assessment	24.2	24.9	24.7	24.7
(3) Time Standard and Geophysical Services...	9.6	9.2	9.2	9.2
	<u>221.3</u>	<u>227.3</u> (+2.7%)	<u>217.1</u> (-4.5%)	<u>223.3</u> (+2.9%)

Analysis of Financial and Staffing Provision

Programme (1)

Provision for 2003-04 is \$6.2 million (3.4%) higher than the revised estimate for 2002-03. This is mainly due to increased requirements for spares and maintenance services for existing and new meteorological facilities.

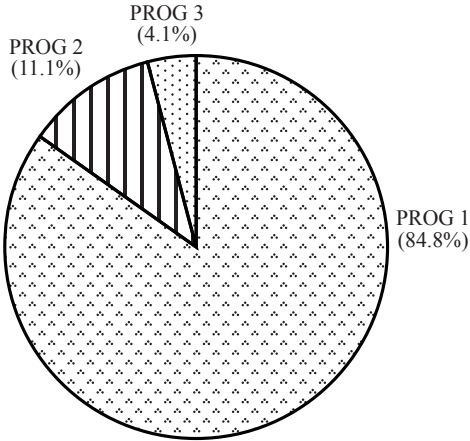
Programme (2)

Provision for 2003-04 is same as the revised estimate for 2002-03.

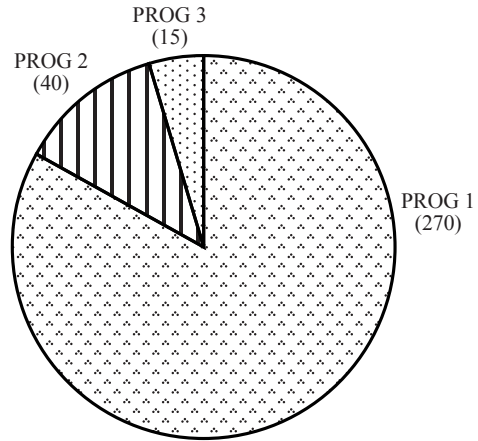
Programme (3)

Provision for 2003-04 is same as the revised estimate for 2002-03.

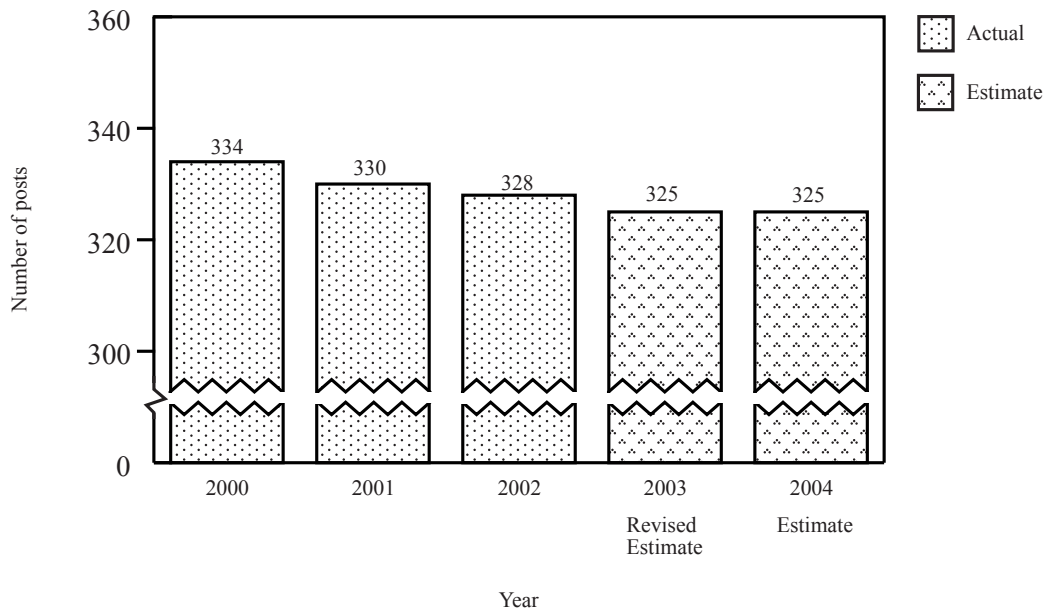
Allocation of provision to programmes (2003-04)



Staff by programme (as at 31 March 2004)



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



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Sub-head (Code)	Actual expenditure 2001-02	Approved estimate 2002-03	Revised estimate 2002-03	Estimate 2003-04
	\$'000	\$'000	\$'000	\$'000
Recurrent Account				
000	Operational expenses.....	—	—	222,736
	Salaries	149,135	151,326	—
	Allowances	1,836	2,323	—
	Job-related allowances	498	530	—
	Technical Services Agreement	2,647	3,000	—
	General departmental expenses	62,367	68,798	—
	World Meteorological Organisation.....	57	84	—
	Total, Recurrent Account	216,540	226,061	222,736
Capital Account				
I — Plant, Equipment and Works				
	Minor plant, vehicles and equipment (block vote)	3,265	—	—
	Total, Plant, Equipment and Works	3,265	—	—
II — Other Non-Recurrent				
700	General other non-recurrent	1,491	1,280	560
	Total, Other Non-Recurrent	1,491	1,280	560
	Total, Capital Account	4,756	1,280	560
	Total Expenditure.....	221,296	227,341	223,296

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Details of Expenditure by Subhead

The estimate of the amount required in 2003–04 for the salaries and expenses of the Hong Kong Observatory is \$223,296,000. This represents an increase of \$6,163,000 over the revised estimate for 2002–03 and of \$2,000,000 over actual expenditure in 2001–02.

Recurrent Account

2 Provision of \$222,736,000 under *Subhead 000 Operational expenses* is for the salaries and allowances of staff of the Hong Kong Observatory and its other operating expenses.

3 The establishment as at 31 March 2003 will be 325 permanent posts. No change in establishment is expected in 2003–04. Subject to certain conditions, the controlling officer may under delegated powers create or delete non-directorate posts during 2003–04, but the notional annual mid-point salary value of all such posts must not exceed \$122,189,000.

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

	2001–02 (Actual) (\$'000)	2002–03 (Original Estimate) (\$'000)	2002–03 (Revised Estimate) (\$'000)	2003–04 (Estimate) (\$'000)
Personal Emoluments				
- Salaries.....	149,135	151,326	147,522	147,500
- Allowances.....	1,836	2,323	1,690	2,055
- Job-related allowances	498	530	534	475
Personnel Related Expenses				
- Mandatory Provident Fund contribution.....	—	—	—	99
Departmental Expenses				
- Technical Services Agreement.....	2,647	3,000	2,700	2,700
- General departmental expenses.....	62,367	68,798	63,900	69,823
Subventions				
- World Meteorological Organisation	57	84	67	84
	216,540	226,061	216,413	222,736

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Capital Account

Commitments

Sub-head (Code)	Item (Code)	Ambit	Approved commitment	Accumulated expenditure to 31.3.2002	Revised estimated expenditure for 2002-03	Balance
			\$'000	\$'000	\$'000	\$'000
700		<i>General other non-recurrent</i>				
	249	Production of a bilingual book to commemorate the 120th Anniversary of the Hong Kong Observatory.....	1,090	300	230	560
		Total.....	<u>1,090</u>	<u>300</u>	<u>230</u>	<u>560</u>