

## Head 168 — HONG KONG OBSERVATORY

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

**Estimate 2000–01** ..... **\$222.3m**

**Establishment ceiling 2000–01** (notional annual mid-point salary value) representing an estimated 329 non-directorate posts at 31 March 2000 rising by four posts to 333 posts at 31 March 2001 ..... **\$128.4m**

In addition there will be an estimated five directorate posts at 31 March 2000 and at 31 March 2001.

### Controlling Officer's Report

#### Programmes

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

#### Detail

##### Programme (1): Weather Services

	1998–99 (Actual)	1999–2000 (Approved)	1999–2000 (Revised)	2000–01 (Estimate)
Financial provision (\$m)	180.8	191.5 (+5.9%)	187.4 (–2.1%)	189.4 (+1.1%)

#### Aim

2 The aim is to provide weather forecasts and to 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 to minimise disruption to economic 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 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;
- disseminating weather information by a diversity of means;
- issuing warnings on hazardous weather such as tropical cyclones, storm surges, heavy 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.

In 1999, 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 an average score of 85% or more accurate forecasts. The weather radar on Tai Mo Shan became operational and provided invaluable information during the exceptionally active typhoon season. A supercomputer was installed, ready to run a high-resolution numerical weather prediction model for the 2000 rain season. A radar-based system to make short-range rainfall forecasts was put into operation. The hit rate of the Observatory homepage surged substantially. An additional website was set up to cope with peak traffic volumes while the range and the presentation of information were enhanced throughout the year. Meteorological facilities for the second runway were installed and put into operation when the second runway started to be used in May 1999. Additional meteorological facilities for the back-up air traffic control centre were installed at the end of 1999.

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

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### *Targets*

	Target	1998 (Actual)	1999 (Actual)	2000 (Plan)
% of forecast accuracy as perceived by the public .....	75	75	76	75
% of accurate public forecasts as verified by objective means .....	85	84	85	85
% of accurate forecasts as assessed by ship captains .....	over 90	97	93	95
% of accurate forecasts as assessed by airline operators.....	95	95	97	95

### *Indicators*

	1998 (Actual)	1999 (Actual)	2000 (Estimate)
no. of calls answered by Dial-a-Weather system .....	23 800 000	24 900 000	25 000 000
no. of telephone enquiries answered manually .....	6 400	8 700	10 000
no. of enquiries answered by computerised telephone system.....	524 000	1 245 000	1 200 000
no. of visits to Observatory homepages by the public .....	6 700 000	23 000 000	26 000 000
no. of companies and organisations subscribing to special weather and warning services.....	42	39	35
total revenue from above subscribers (\$m) .....	1.4	1.3	1.1
no. of media interviews and public lectures/talks on weather.	505	1 277	1 000
no. of meteorological documents for flights departing Hong Kong per day .....	241	246	250

### *Matters Requiring Special Attention in 2000–01*

5 During 2000–01, the department will:

- continue to keep the severe weather warning system under review to meet the changing needs of the public;
- continue to maintain the thrust on development work aimed at improving the forecasting of heavy rain;
- continue to enhance the contents and the delivery of weather services using current information technology;
- issue weather forecasts up to five days ahead;
- continue to make preparations for the reception of data from the next-generation geostationary meteorological satellite;
- continue to ensure the provision of satisfactory meteorological services at the new airport for both runways;
- acquire equipment to detect windshear and turbulence under fine weather condition; and
- evaluate the performance of the existing windshear and turbulence warning system.

### **Programme (2): Radiation Monitoring and Assessment**

	1998–99 (Actual)	1999–2000 (Approved)	1999–2000 (Revised)	2000–01 (Estimate)
Financial provision (\$m)	27.5	25.2 (–8.4%)	24.9 (–1.2%)	23.9 (–4.0%)

### *Aim*

6 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*

7 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 Hong Kong Observatory will provide notification and advice to Government on the possible consequences in Hong Kong and recommend protective action. The Hong Kong 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.

In 1999, all radiation monitoring and assessment work in this programme was carried out satisfactorily. All equipment was maintained in a state of readiness.

**8** 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 will 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 on protective action that may be necessary during nuclear emergencies.

***Matters Requiring Special Attention in 2000–01***

**9** During 2000–01, 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; and
- organise training on radiation monitoring and assessment.

**Programme (3): Time Standard and Geophysical Services**

	1998–99 (Actual)	1999–2000 (Approved)	1999–2000 (Revised)	<b>2000–01 (Estimate)</b>
Financial provision (\$m)	9.0	8.8 (–2.2%)	8.8 (0.0%)	<b>9.0 (+2.3%)</b>

***Aim***

**10** 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***

**11** The Hong Kong Observatory maintains the Hong Kong time standard and provides time signals for radio broadcasts. 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 effects and advises 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 and internet services;
- operating seismological, tide and water level monitoring networks and conducting data analyses;
- compiling climatological and other data; and
- providing updates on effects of El Nino and other longer term weather phenomena on Hong Kong.

In 1999, the objectives and targets of this programme were generally met.

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

***Targets***

	Target	1998 (Actual)	1999 (Actual)	<b>2000 (Plan)</b>
time standard accuracy (microseconds per day).....	0.1	0.1	0.1	<b>0.1</b>
geophysical, meteorological and oceanographical data capture rate(% ).....	95	95	95	<b>95</b>

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### *Indicators*

	1998 (Actual)	1999 (Actual)	2000 (Estimate)
no. of visits to the Observatory Internet time service.....	N.A.§	15 000 000	20 000 000
no. of requests for geophysical, climatological and oceanographical information and advice.....	1 220	1 310	1 300

§ Not applicable. The service was first introduced in March 1999.

### *Matters Requiring Special Attention in 2000–01*

**13** During 2000–01, the department will:

- continue to provide information and data to users efficiently and through user-friendly means; and
- keep abreast of earthquake risk assessment in the region.

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### ANALYSIS OF FINANCIAL PROVISION

Programme	1998–99 (Actual) (\$m)	1999–2000 (Approved) (\$m)	1999–2000 (Revised) (\$m)	2000–01 (Estimate) (\$m)
(1) Weather Services.....	180.8	191.5	187.4	189.4
(2) Radiation Monitoring and Assessment.....	27.5	25.2	24.9	23.9
(3) Time Standard and Geophysical Services ...	9.0	8.8	8.8	9.0
	<u>217.3</u>	<u>225.5</u> (+3.8%)	<u>221.1</u> (–2.0%)	<u>222.3</u> (+0.5%)

#### Analysis of Financial and Staffing Provision

##### Programme (1)

Provision for 2000–01 is \$2.0 million (1.1%) higher than the revised estimate for 1999–2000. This is mainly due to creation of four posts in 2000–01 to strengthen the department's administrative support, salary increments for existing staff, increased requirement for specialist equipment and light and power for a new sub-office, partly offset by the reduced requirement for overseas training and acting allowance.

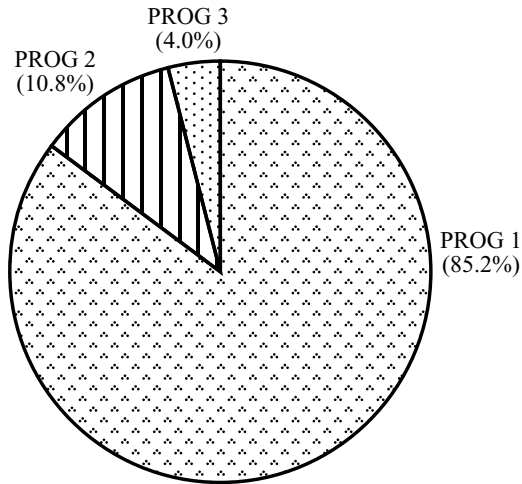
##### Programme (2)

Provision for 2000–01 is \$1.0 million (4.0%) lower than the revised estimate for 1999–2000. This is mainly due to the reduced requirement for plant and equipment, partly offset by increased expenditure on general departmental expenses.

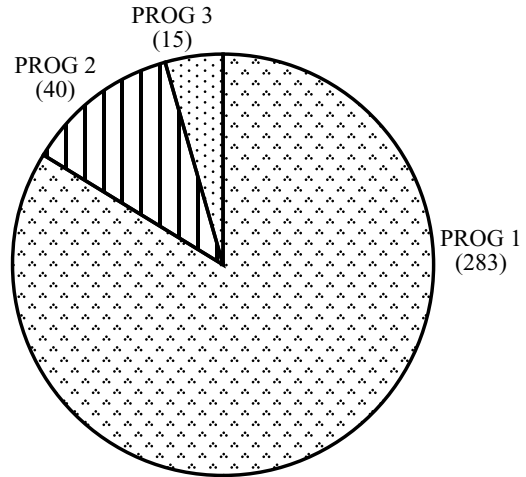
##### Programme (3)

Provision for 2000–01 is \$0.2 million (2.3%) higher than the revised estimate for 1999–2000. This is mainly due to increased expenditure on general departmental expenses.

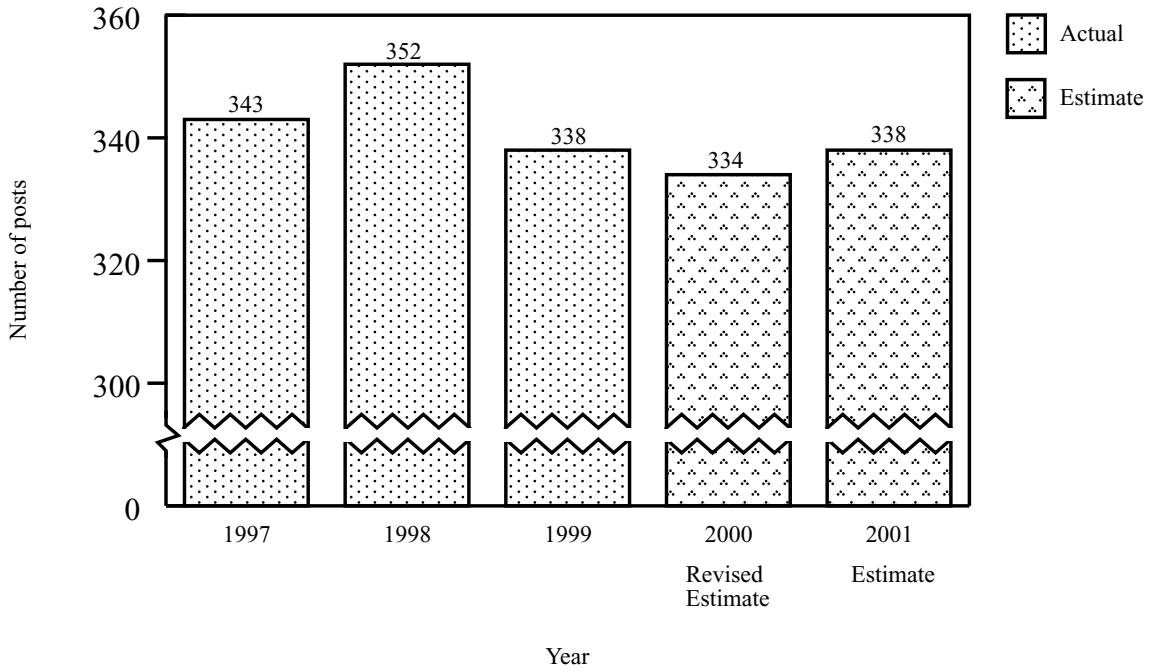
*Allocation of provision to programmes (2000-01)*



*Staff by programme (as at 31 March 2001)*



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



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Sub-head (Code)	Actual expenditure 1998-99	Approved estimate 1999-2000	Revised estimate 1999-2000	Estimate 2000-01	
	\$'000	\$'000	\$'000	\$'000	
<b>Recurrent Account</b>					
I — Personal Emoluments					
001	Salaries .....	135,028	136,660	136,660	<b>140,318</b>
002	Allowances .....	3,415	3,312	3,312	<b>2,971</b>
007	Job-related allowances .....	489	592	592	<b>629</b>
	Total, Personal Emoluments .....	<u>138,932</u>	<u>140,564</u>	<u>140,564</u>	<b><u>143,918</u></b>
III — Departmental Expenses					
102	Technical Services Agreement.....	10,607	10,886	9,740	<b>9,876</b>
149	General departmental expenses .....	62,643	68,963	65,673	<b>68,091</b>
	Total, Departmental Expenses .....	<u>73,250</u>	<u>79,849</u>	<u>75,413</u>	<b><u>77,967</u></b>
V — Subventions					
463	World Meteorological Organisation.....	65	84	84	<b>84</b>
	Total, Subventions .....	<u>65</u>	<u>84</u>	<u>84</u>	<b><u>84</u></b>
	Total, Recurrent Account.....	<u>212,247</u>	<u>220,497</u>	<u>216,061</u>	<b><u>221,969</u></b>
<b>Capital Account</b>					
I — Plant, Equipment and Works					
661	Minor plant, vehicles and equipment (block vote) .....	5,034	5,000	5,000	<b>300</b>
	Total, Plant, Equipment and Works .....	<u>5,034</u>	<u>5,000</u>	<u>5,000</u>	<b><u>300</u></b>
	Total, Capital Account .....	<u>5,034</u>	<u>5,000</u>	<u>5,000</u>	<b><u>300</u></b>
	Total Expenditure .....	<u><u>217,281</u></u>	<u><u>225,497</u></u>	<u><u>221,061</u></u>	<b><u><u>222,269</u></u></b>

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### Details of Expenditure by Subhead

The estimate of the amount required in 2000–01 for the salaries and expenses of the Hong Kong Observatory is \$222,269,000. This represents an increase of \$1,208,000 over the revised estimate for 1999–2000 and of \$4,988,000 on the actual expenditure in 1998–99.

#### *Recurrent Account*

##### Personal Emoluments

**2** Provision of \$143,918,000 for personal emoluments represents an increase of \$3,354,000 over the revised estimate for 1999–2000 and takes into account the full-year provision for posts created in 1999–2000 and posts to be created in 2000–01.

**3** The establishment at 31 March 2000 will be 333 permanent posts and one supernumerary post. It is expected that the supernumerary post will be made permanent and another four posts will be created in 2000–01.

**4** Subject to certain conditions, the controlling officer may under delegated powers create or delete non-directorate posts during 2000–01, but the notional annual mid-point salary value of all such posts must not exceed \$128,416,000.

**5** Provision of \$2,971,000 under *Subhead 002 Allowances* is for standard allowances. The decrease of \$341,000 (10.3%) against the revised estimate for 1999–2000 is mainly due to a decrease in requirement for acting appointments.

**6** Provision of \$629,000 under *Subhead 007 Job-related allowances* is for standard job-related allowances. The increase of \$37,000 (6.3%) over the revised estimate for 1999–2000 is mainly due to increased requirement for extraneous duty and on-call duty.

##### Departmental Expenses

**7** Provision of \$9,876,000 under *Subhead 102 Technical Services Agreement* is for payments to Cable and Wireless HKT for the provision of services under the Technical Services Agreement.

**8** Provision of \$68,091,000 under *Subhead 149 General departmental expenses* represents an increase of \$2,418,000 (3.7%) over the revised estimate for 1999–2000. This is mainly due to the additional provision for light and power for a new sub-office and increased requirement for specialist equipment and pool transport.

##### Subventions

**9** Provision of \$84,000 under *Subhead 463 World Meteorological Organisation* is to meet the annual contribution to the World Meteorological Organisation, based on an agreed share of the Organisation's running expenses. Through the membership of the Organisation, Hong Kong receives timely meteorological data and prognostic information essential for the forecasting operations and warning services of the Observatory. Other benefits are assistance on state-of-the-art techniques in operational weather forecasting, and publications regarding international standards in meteorological services and the latest scientific development.

#### *Capital Account*

##### Plant, Equipment and Works

**10** Provision of \$300,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* represents a decrease of \$4,700,000 (94.0%) against the revised estimate for 1999–2000. This is mainly due to the reduced requirement for minor plant and equipment.