

Head 168 — HONG KONG OBSERVATORY

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

Estimate 2009–10	\$220.5m
Establishment ceiling 2009–10 (notional annual mid-point salary value) representing an estimated 282 non-directorate posts as at 31 March 2009 rising by six posts to 288 non-directorate posts as at 31 March 2010.....	\$117.3m
In addition, there will be an estimated five directorate posts as at 31 March 2009 and as at 31 March 2010.	
Commitment balance	\$3.7m

Controlling Officer's Report

Programmes

Programme (1) Weather Services	This programme contributes to Policy Area 7: Public Safety (Secretary for Commerce and Economic Development)
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 Commerce and Economic Development)

Detail

Programme (1): Weather Services

	2007–08 (Actual)	2008–09 (Original)	2008–09 (Revised)	2009–10 (Estimate)
Financial provision (\$m)	164.1	170.1	175.1 (+2.9%)	186.7 (+6.6%)
				(or +9.8% on 2008–09 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 for, 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 2008, 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 per cent or more. Special weather services were provided to support the 2008 Olympic and Paralympic Equestrian Events in Hong Kong. Under the "One District One Station" initiative, automatic weather stations were set

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up in Kowloon City and Wanchai Districts and temperature readings there were made available through the mass media and the Internet. A new solar radiation station was set up at Kau Sai Chau. The Observatory's website was enhanced with regional temperature forecasts for various parts of Hong Kong, location-specific lightning information and short-range rainfall forecast for the Pearl River Delta region. Other enhancements included more weather information for Tai Mo Shan and King's Park, real-time weather image at Lau Fau Shan, satellite and radar imagery sequences for smartphones and Personal Digital Assistants. The ultraviolet (UV) index forecast service was further improved, particularly for high exposure conditions. The "Hong Kong Community Weather Information Network" inaugurated in 2007 in collaboration with the Hong Kong Polytechnic University and the Hong Kong Joint-school Meteorological Association saw further expansion in the number of community weather stations, as well as the addition of a community UV network, with relevant weather and UV data made available to the public via Internet. Seminars to promote public understanding of severe weather warnings and proper response actions were conducted for government bureaux/departments as well as for the education, transport and other sectors. Public weather lectures and courses were held, attracting over 1 600 members of the public. Satellite data reception was enhanced with the installation of a FengyunCast reception system to receive satellite images from the new Fengyun-2D geostationary meteorological satellite. The Observatory maintained a close surveillance of the weather at and around the Hong Kong International Airport (HKIA) and provided the aviation community with the weather information needed for operations. A specialised airport thunderstorm and lightning alerting system was set up for the HKIA.

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

Targets

	Target	2007 (Actual)	2008 (Actual)	2009 (Plan)
forecasts perceived as accurate by the public (%).....	78	77	76	78
accurate public forecasts as verified by objective means (%)	87	91	90	90
accurate forecasts as assessed by ship captains (%).....	95	97	96	96
accurate forecasts as assessed by airline operators (%)	95	99	98	98

Indicators

	2007 (Actual)	2008 (Actual)	2009 (Estimate)
calls answered by Dial-a-Weather system (million).....	22.0	23.2	23.5
telephone enquiries answered manually	48 000	48 600	49 000
visits to Observatory's website (million).....	1 071	1 397	1 500
companies and organisations subscribing to special weather and warning services.....	90	89	90
total revenue from above subscribers (\$m)	1.3	1.3	1.3
media interviews and public lectures/talks on weather.....	1 300	1 600§	1 500
meteorological documents for flights departing Hong Kong ..	148 000	152 000	152 000
visits to aviation weather information system (million)	15.2	18.0	18.5

§ The higher number of media interviews and public lectures/talks on weather was largely the result of more severe weather events affecting Hong Kong in 2008.

Matters Requiring Special Attention in 2009–10

6 During 2009–10, 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;
- install a High Performance Computing System and implement a suite of high resolution mesoscale models for weather prediction;
- continue to promote public awareness of, and preparedness for, natural disasters through various outreach activities and continuous development of educational resources;
- provide weather services to support the 2009 East Asian Games; and
- undertake preparatory work for replacing and upgrading the meteorological facilities of the Observatory in support of aviation weather services.

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Programme (2): Radiation Monitoring and Assessment

	2007–08 (Actual)	2008–09 (Original)	2008–09 (Revised)	2009–10 (Estimate)
Financial provision (\$m)	23.2	23.1	23.6 (+2.2%)	23.9 (+1.3%)
				(or +3.5% on 2008–09 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 notify and advise 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 2008, all radiation monitoring and assessment work in this programme was carried out satisfactorily. All equipment was maintained in a state of readiness. Inter-comparison between Hong Kong and Guangdong on radiological measurements continued. Training on radiation monitoring and assessment, as well as radiological protection, was conducted for relevant government departments and organisations involved in the contingency plan for nuclear emergencies.

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

Target

	Target	2007 (Actual)	2008 (Actual)	2009 (Plan)
data availability of radiation monitoring network (%).....	99.0	99.8	99.8	99.8

Indicators

	2007 (Actual)	2008 (Actual)	2009 (Estimate)
exercises and drills.....	14	21 [^]	18
visits to Observatory's webpage on radiation.....	807 000	943 000	1 000 000

[^] The higher number of exercises and drills in 2008 was due to re-scheduling of some exercises and drills from 2007 because of operational constraints.

Matters Requiring Special Attention in 2009–10

11 During 2009–10, the Department will:

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

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Programme (3): Time Standard and Geophysical Services

	2007–08 (Actual)	2008–09 (Original)	2008–09 (Revised)	2009–10 (Estimate)
Financial provision (\$m)	9.3	10.2	10.5 (+2.9%)	9.9 (–5.7%)
				(or –2.9% on 2008–09 Original)

Aim

12 The aim is to maintain the Hong Kong time standard and to provide geophysical, oceanographic, astronomical and climatological information to the public.

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, oceanographic and climatological information required for planning, engineering design and environmental impact assessments. It monitors earthquakes and sea-level and releases related information to the public, including tsunami alerts. It also keeps abreast of research and development on international issues such as global climate change and advises the public and government departments 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 related data;
- conducting studies related to climate change in Hong Kong and promoting public understanding; and
- providing updates on the effects of El Nino and other longer term atmospheric phenomena on Hong Kong.

14 In 2008, the objectives and targets of this programme were generally met. The replacement caesium-beam atomic clock arrived and was put under test. In response to the devastating Sichuan earthquake on 12 May 2008, the Observatory provided the public with information on the earthquake through media interviews and a special webpage. The Observatory co-ordinated the participation of government departments in the second Pacific-wide tsunami exercise which was organised by the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO). Research work on the projections of future climate change in Hong Kong based on the latest data of the Intergovernmental Panel on Climate Change was carried out. The Observatory had given over 70 talks on climate change to schools and the public.

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

Targets

	Target	2007 (Actual)	2008 (Actual)	2009 (Plan)
time standard accuracy (microseconds per day).....	0.1	0.1	0.1	0.1
geophysical, meteorological and oceanographic data capture rate (%)	97	99	100	99

Indicators

	2007 (Actual)	2008 (Actual)	2009 (Estimate)
visits to the Observatory's internet time service (million).....	453	603	700
requests for geophysical, climatological and oceanographic information and advice.....	1 046	1 368#	1 100

A higher number of requests was registered in 2008 as a result of the Sichuan earthquake in May 2008.

Matters Requiring Special Attention in 2009–10

16 During 2009–10, the Department will:

- continue to provide information and data to users efficiently and through user-friendly means;
- continue to study as well as to promote public understanding of climate change in Hong Kong;
- continue to keep abreast of earthquake risk assessment in the region; and
- install a broadband seismograph to improve the capability of determining the focal mechanism of local and regional earthquakes for tsunami forecasting.

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ANALYSIS OF FINANCIAL PROVISION

Programme	2007–08 (Actual) (\$m)	2008–09 (Original) (\$m)	2008–09 (Revised) (\$m)	2009–10 (Estimate) (\$m)
(1) Weather Services	164.1	170.1	175.1	186.7
(2) Radiation Monitoring and Assessment.....	23.2	23.1	23.6	23.9
(3) Time Standard and Geophysical Services	9.3	10.2	10.5	9.9
	<hr/>	<hr/>	<hr/>	<hr/>
	196.6	203.4	209.2 (+2.9%)	220.5 (+5.4%)
				(or +8.4% on 2008–09 Original)

Analysis of Financial and Staffing Provision

Programme (1)

Provision for 2009–10 is \$11.6 million (6.6%) higher than the revised estimate for 2008–09. This is mainly due to filling of vacancies, creation of six posts, increased maintenance expenditure for High Performance Computer System and increased requirement for capital expenditure.

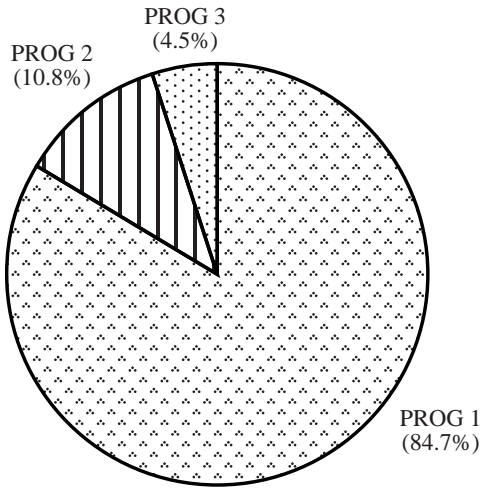
Programme (2)

Provision for 2009–10 is \$0.3 million (1.3%) higher than the revised estimate for 2008–09. This is mainly due to filling of vacancies.

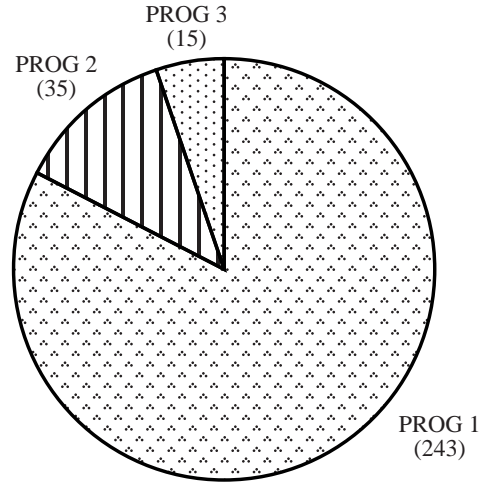
Programme (3)

Provision for 2009–10 is \$0.6 million (5.7%) lower than the revised estimate for 2008–09. This is mainly due to reduced requirement for capital expenditure.

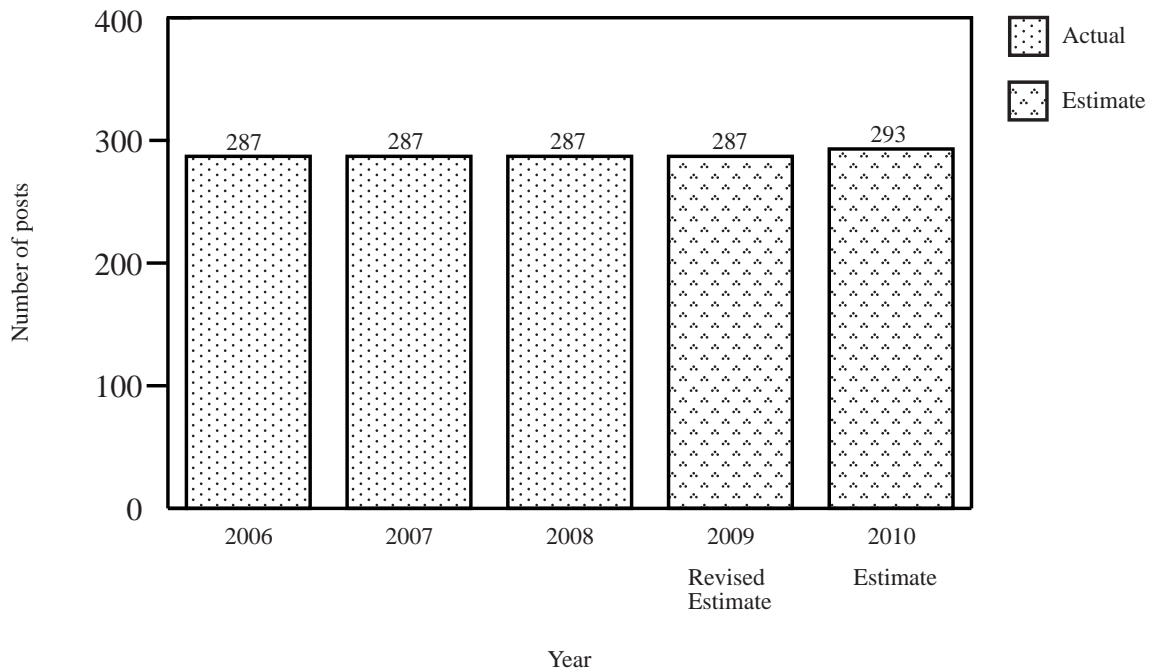
Allocation of provision to programmes (2009-10)



Staff by programme (as at 31 March 2010)



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



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Sub-head (Code)	Actual expenditure 2007–08	Approved estimate 2008–09	Revised estimate 2008–09	Estimate 2009–10	
	\$'000	\$'000	\$'000	\$'000	
Operating Account					
Recurrent					
000	Operational expenses	194,103	202,194	207,939	215,631
	Total, Recurrent	194,103	202,194	207,939	215,631
	Total, Operating Account	194,103	202,194	207,939	215,631
Capital Account					
Plant, Equipment and Works					
603	Plant, vehicles and equipment	—	—	—	3,712
661	Minor plant, vehicles and equipment (block vote)	2,457	1,222	1,222	1,148
	Total, Plant, Equipment and Works	2,457	1,222	1,222	4,860
	Total, Capital Account	2,457	1,222	1,222	4,860
	Total Expenditure	<u>196,560</u>	<u>203,416</u>	<u>209,161</u>	<u>220,491</u>

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Details of Expenditure by Subhead

The estimate of the amount required in 2009–10 for the salaries and expenses of the Hong Kong Observatory is \$220,491,000. This represents an increase of \$11,330,000 over the revised estimate for 2008–09 and of \$23,931,000 over actual expenditure in 2007–08.

Operating Account

Recurrent

2 Provision of \$215,631,000 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 2009 will be 287 permanent posts. It is expected that six posts will be created in 2009–10. Subject to certain conditions, the controlling officer may under delegated power create or delete non-directorate posts during 2009–10, but the notional annual mid-point salary value of all such posts must not exceed \$117,344,000.

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

	2007–08 (Actual) (\$'000)	2008–09 (Original) (\$'000)	2008–09 (Revised) (\$'000)	2009–10 (Estimate) (\$'000)
Personal Emoluments				
- Salaries	129,152	133,367	138,237	142,367
- Allowances	1,838	1,444	1,660	1,515
- Job-related allowances	137	137	796	146
Personnel Related Expenses				
- Mandatory Provident Fund contribution	99	120	114	257
- Civil Service Provident Fund contribution	187	394	400	344
Departmental Expenses				
- General departmental expenses	62,608	66,648	66,642	70,912
Other Charges				
- World Meteorological Organization	82	84	90	90
	194,103	202,194	207,939	215,631

Capital Account

Plant, Equipment and Works

5 Provision of \$1,148,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* is for procurement of equipment.

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Commitments

Sub-head (Code)	Item (Code)	Ambit	Approved commitment	Accumulated expenditure to 31.3.2008	Revised estimated expenditure for 2008–09	Balance
			\$'000	\$'000	\$'000	\$'000
Capital Account						
603		<i>Plant, vehicles and equipment</i>				
898		Replacement of the FM200 Fire Suppression Systems at the Hong Kong Observatory Headquarters.....	3,712	—	—	3,712
		Total	3,712	—	—	3,712