

WEATHER ON WINGS



Editorial Board : LEUNG Wing-mo LEE Kwok-lun WONG Mei-shing MA Lap-yin

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The Chief Executive visited Hong Kong Observatory

LEUNG Wing-mo

The Chief Executive, Mr Donald Tsang, visited the Hong Kong Observatory on 1 June to gain a better understanding of its work during the rain and typhoon season, and its other services.

While he was in the Central Forecasting Office, the Chief Executive watched through computer monitors a replay of the sequence of weather events during the approach of Typhoon Chanchu in May. Mr Tsang was impressed by the Observatory's ability to predict the 90-degree turn of Chanchu in the central part of the South China Sea, and the rapid improvement in the local weather after Chanchu's landfall. He said that it was important to predict accurately the movement of a tropical cyclone so that workers and students could plan their transport arrangements as early as possible. He also expressed his gratitude to all frontline staff working round-the-clock to serve the public during the approach of tropical cyclones.

The Director of the Observatory, Mr CY Lam, and a number of professional staff explained the work of the Observatory to the Chief Executive, in particular, the pivotal role of research and development in the provision of weather services. Mr Tsang was very interested in the "Nowcasting System" developed by the Observatory to support its rainstorm warning operation. This system is one of the most advanced systems of its kind in the world. It will support the specialised weather forecasting service for the 2008 Beijing Olympics.

To support the 2008 Olympic equestrian event in Hong Kong, the Observatory had developed a system to monitor the heat stress on horses, and will collect the necessary climatological data starting this summer. The



The Chief Executive listening to the briefing by the Director

system would also have potential applications in Hong Kong in studying heat stress on human in the future. Mr Tsang was very pleased that the Observatory would serve the country and Hong Kong by using advanced technologies to support the 2008 Olympics.

The Chief Executive then visited the Observatory's TV studio, and saw how a single professional meteorologist produced an entire TV weather programme. He said that TV weather programmes brought Observatory colleagues closer to members of the public. "It is the main channel of weather information for senior citizens. I appreciate the Observatory's effort to meet the needs of the community." Mr Tsang said.

Finally, Mr Tsang met and chatted with representatives of different grades of the Observatory and members of the "Happy Business" working group who organise activities for colleagues at the Observatory. Mr Tsang remarked smilingly, "Despite being a small department, the Hong Kong Observatory offered a broad spectrum of services related to natural phenomena from the Earth's core to deep space. While exploiting cutting-edge technology on one hand, you can also present weather reports and forecasts in layman terms." He added that the wide range of work brought challenges, opportunities and job satisfaction to the staff. "Your 'Happy Business' is very meaningful. To sustain the vitality and productivity of the department, it is very important that all staff maintain work-life balance," he said.



The Chief Executive talking to staff representatives

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Figure 2 : SWIRLS rainfall nowcasting product for B08FDP

Figure 1: Installation of the SWIRLS high performance computing blade cluster server and display workstations in BMB.

SWIRLS on the stage of Beijing Olympics

WONG Wai-kin

The first trial of the Beijing 2008 Olympic Forecast Demonstration Project (B08FDP), organized by the World Weather Research Programme of the World Meteorological Organization, was held in the Beijing Meteorological Bureau (BMB) this August. The participating nowcasting systems were tested on ingestion of local observations, and the operation of hardware and software components. The operating environment, data formats, data transmission, forecast products and their verification were also reviewed.

Nowcasting systems from Australia, Canada, and US, etc were set up at BMB during July and August. The Observatory's rainstorm nowcasting system "SWIRLS" was one of the first system successfully installed in early July. High performance computer blade cluster server and the SWIRLS graphical display workstations were shipped to Beijing during late June and were then successfully re-configured in BMB (Figure 1). After two weeks of installation and tuning, SWIRLS started routine operation to ingest

Beijing data and generate rainfall forecast products (Figure 2).

This was the first time SWIRLS provided nowcasting support service outside Hong Kong. Mr Chan Kin-yu, Experimental Officer and my partner of this trip, commented, "It was a challenging mission to ship all the software and computing hardware of the system to Beijing and successfully set them there. We were grateful to the support of colleagues in the Planning Office of Beijing Olympic Weather Service for the smooth installation and tuning of the system." SWIRLS now operates stably in Beijing, providing timely forecast products during the first trial. We can access the output of the system in real-time as well as monitoring and fine tuning the system from Hong Kong. Through this trial, we hope by gathering more observations from Beijing, we can enhance our understanding of the weather there in summer, improve the performance of SWIRLS and develop more tools, so as to be able to provide a high-quality meteorological support service during Beijing 2008 Olympics.

The Observatory developed Heat Stress Measurement System in-house

Ng Tim-hung

The design of the Heat Stress Measuring System for the 2008 Olympic Equestrian Event was inspired by the float of a toilet flush!

The 2008 Olympic Equestrian Event will take place in Hong Kong. To support the event, the Observatory has to design and install a Heat Stress Measurement System at the competition venues. One of the key parameters of heat stress is the Black Globe Temperature. It is the temperature measured inside a hollow brass sphere of 15 cm diameter with its outer surface painted in matt black to absorb solar radiation. Mr. Sin Kau-chuen, Chief Scientific Assistant, explained that the design was inspired by the float in a toilet flush. Such a brass sphere was acquired, painted black and integrated into the system.



Heat Stress Measuring System



The whole system was then subjected to extensive testing, with satisfactory results.

In Hong Kong, it is not uncommon for people to suffer from heat strokes. It is hopeful that Heat Stress Measurement System developed by the Observatory for the 2008 Olympic Equestrian Event can also be used in the provision of weather service to the public in future.

Official Opening of the automatic weather stations at Tsuen Wan and Hong Kong Wetland Park

KWOK Yuen-ha

The Tsuen Wan Automatic Weather Station, jointly built and operated by the Hong Kong Observatory and Ho Koon Nature Education cum Astronomical Centre of Sik Sik Yuen, was officially opened on 25 April 2006. Mr CY Lam, Director of the Hong Kong Observatory quoted 'Tao Te Ching' in his speech at the opening ceremony, 'It is important to understand nature, respect its law and conserve the natural environment.'

Another automatic weather station at the Hong Kong Wetland Park, jointly built by the Observatory and the Agriculture, Fisheries and Conservation Department, also entered into full operation on 19 May.

Both stations are equipped with instruments for measuring the temperature, relative humidity and rainfall. The Hong Kong Wetland Park Automatic Weather Station is also equipped with a network camera to capture real-time weather photos at the Park. The information is useful for members of the public and tourists to plan their activities according to the latest weather condition.



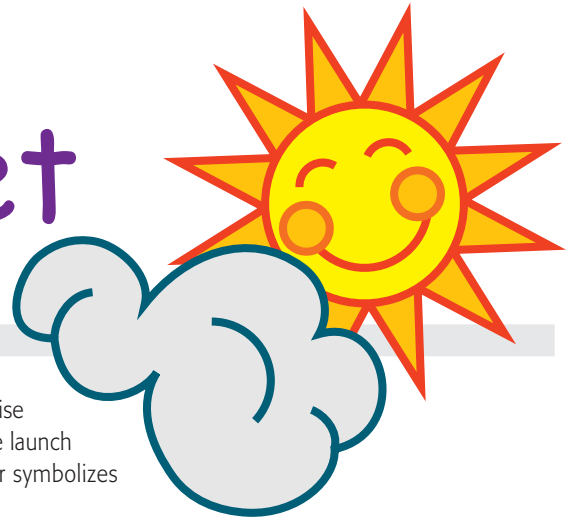
Director launched the Tsuen Wan Automatic Weather Station.

New member of the Weather Family -



Different cute images of Violet

Violet



POON Hoi-to, LEE Lap-shun

Still remember the lovely Violet introduced in our January issue? This moody but otherwise gentle cartoon character became one of the members of the Weather Family, right after the launch of Ultraviolet (UV) Index forecast service by the Observatory in May. Her erratic character symbolizes the variation of UV intensity in different weather conditions.

With a cute image, Violet shot to stardom soon after her debut. She now shows up frequently in television and radio to forecast the UV. One thing for sure - the Observatory souvenir featuring Violet would be a hot item!

"Science in the Public Service" Campaign

LAM Hok-yin



The seminar attracted more than 100 audience.

Various activities commenced after the launch of the "Science in the Public Service" campaign in mid-January. Over 460 people attended the Symposium held at the Hong Kong Science Museum on 27 April. The Symposium was co-organized with the Hong Kong Institution of Science, and was officiated by the Secretary for Commerce, Industry and Technology, Mr Joseph Wong Wing-ping. Fifteen colleagues from various government departments presented their scientific work. The audience was also enthusiastic in raising questions.

In addition, a series of popular scientific lectures was also organized under the "Science in the Public Service". Mr Lee Lap-shun, Scientific Officer of the Observatory, talked about the measurement and forecast of the UV index at the Hong Kong Science Museum on 15 July. Monthly lectures will be held at the Hong Kong Science Museum until the end of this year. Don't miss them.

From 16 April to 13 August, a programme called "A New Scientific Hong Kong" was on air every Sunday night from 8:30 to 9:00 on RTHK Radio 1. The programme consisted of over 10 episodes, with the scientific work of various departments introduced in the form of a drama. As colleagues in the civil service recounted personal stories in their scientific pursuit, the programme proved lively and easy to listen. You can review this radio programme in websites of the Radio Television Hong Kong (www.rthk.org.hk) or the "Science in the Public Service" Campaign. (www.science.gov.hk)

A one-stop-shop webpage for climatological information of Hong Kong

LEE Tsz-cheung

On 1 April 2006, the Hong Kong Observatory enhanced its website by launching a new Climatological Information Services webpage (http://www.weather.gov.hk/cis/climat_e.htm). This new webpage serves to provide the public, students, researchers, engineering professionals, the media, etc. with weather information and statistics of interest.

Through a user-friendly interface, people can easily access a wide range of climatological information, including averages and extreme values

of various weather elements, weather on any day dating back to the year 1884, regional weather information as recorded by the Observatory's automatic weather station network, climate information of world cities, dates and times of weather warnings and signals, statistics of very hot days, cold days, hot nights, reduced visibility and thunderstorm days, information related to climate change, etc. The new webpage also provides a facility for online request for weather data.

<http://worldweather.wmo.int>

World Weather Information Service
Official Observations. Official Forecasts.

World Meteorological Organization

Official Observations
* Cloudiness & Rain

Official Forecasts
Select WMO Region
* Africa
* Asia
* Europe
* N. & Central America
* S. America
* S.W. Pacific

What's New
* New domain name for WWIS
* WWIS includes city map and photo (beta version)

weather forecasts • climatology
climatology

ENGLISH عربي 中文 PORTUGUÉS

This global web site presents OFFICIAL weather observations, weather forecasts and climatological information for selected cities supplied by National Meteorological & Hydrological Services (NMHSs) worldwide. The NMHSs make official weather observations in their respective countries. Links to their official weather service web sites and tourism board/organization are also provided whenever available. Weather icons are shown alongside worded forecasts in this version to facilitate visual inspection.

The SWIC and WWIS websites use new domain names.

<http://severe.worldweather.wmo.int>

World Meteorological Organization
Severe Weather Information Centre
Official Observations. Official Warnings.

HOME
Severe Weather
Tropical Cyclones
Heavy Rain/Snow
Thunderstorms - Beta version
Official Observations
Cloudiness & Rain

What's New
New domain name for SWIC
Global distribution of thunderstorms - Beta version
Introductory Pamphlet
About this web site
Participating Members
Notes To Users

Last Updated at 2006-07-20 05:37 UTC
Past Positions

New addresses for the world weather websites

NG Ping-wing

Have you ever browsed the "World Weather Information Service" (WWIS) and "Severe Weather Information Centre" (SWIC) websites? These two websites have been developed and are operated by the Hong Kong Observatory on behalf of the World Meteorological Organization (WMO) of the United Nations to provide official weather information around the globe. The two websites began trial operation in 2001 and was declared operational in 2005.

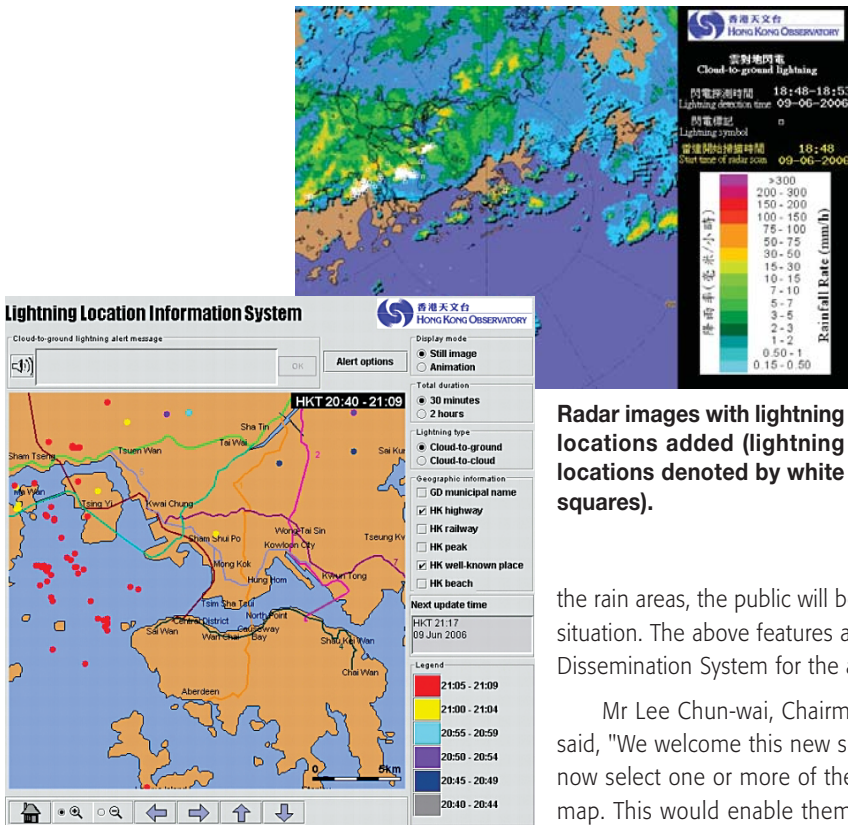
The WWIS website provides official forecasts and climatological data for cities around the world, while the SWIC website provides information on severe weather such as tropical cyclones and heavy rain. Arabic, Chinese and Portuguese versions of the WWIS have been developed in the past two years, while the French and Spanish versions are in the pipeline. The websites are very popular as

exemplified by the high hit rate of the WWIS with an average of more than 200,000 page visits per day during the past 2 years period.

With effect on 23 March 2006, the official domain names of the WWIS (English version) and SWIC websites were changed to "**worldweather.wmo.int**" and "**severe.worldweather.wmo.int**" respectively. These new domain names carry the tag ".wmo.int" which clearly identify themselves as the official websites of the World Meteorological Organization.

To ensure smooth operation, the old domain names viz. **www.worldweather.org** and **severe.worldweather.org** will be maintained for a certain period. Nonetheless, the Hong Kong Observatory encourages the public to use the new domain names to visit these websites.

Lightning location map enhanced with *geographical reference overlays*



POON Hoi-to, LEE Lap-shun

Since its launch in June last year, the lightning location information service has been well received by the public. To further improve the service, the Observatory gathered ideas from the think tank formed by the Friends of the Observatory and added a number of geographical reference overlays to the lightning location map in the Observatory's website (<http://www.weather.gov.hk/wxinfo/lis/index.htm>) in July this year. This enables members of the public to identify more easily the location of lightning. The new features include highways, railways, peaks, well-known places, Hong Kong beaches, and municipal names for Guangdong province. The Observatory also added a new webpage showing rain areas detected by the radar overlaid with lightning locations. From the distribution of lightning detected near the rain areas, the public will be able to gain a comprehensive appreciation of the weather situation. The above features are also available at the Aviation Meteorological Information Dissemination System for the airlines.

Radar images with lightning locations added (lightning locations denoted by white squares).

Mr Lee Chun-wai, Chairman of the Hong Kong Federation of Countryside Activities, said, "We welcome this new service provided by the Hong Kong Observatory. Hikers can now select one or more of the geographical reference overlays on the lightning location map. This would enable them to decide which a hiking trail to take, staying away from thunderstorms."

Lightning location map enhanced with geographical reference overlays.

Tsunami Education Booklet - "Tsunami - The Great Waves"

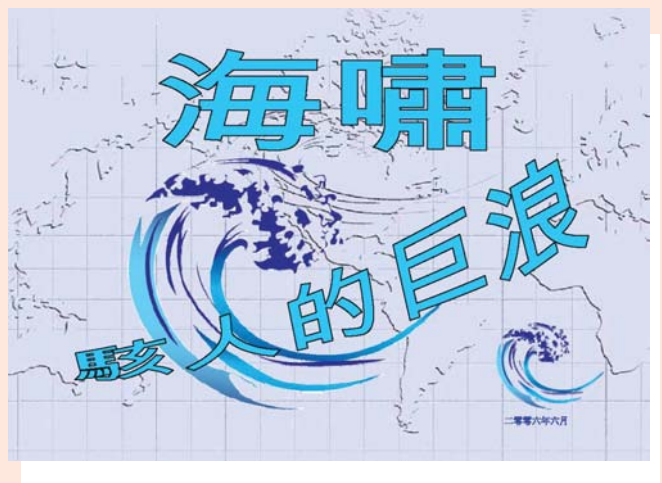
WONG Wing-tak

The Hong Kong Observatory has published the Chinese edition of the booklet "Tsunami - The Great Waves" which is available for free.

A great tsunami occurred in the Indian Ocean in December, 2004. Some people who knew about tsunamis made use of that knowledge to save their own lives and the lives of those nearby. It demonstrated that people's awareness can mitigate the damage caused by tsunamis.

The International Tsunami Information Centre (ITIC) under the Intergovernmental Oceanographic Commission (IOC) of UNESCO has published an English booklet "Tsunami - The Great Waves" to raise public awareness about tsunamis. The Hong Kong Observatory and the National Marine Environment Forecasting Centre (NMEFC) of the State Oceanic Administration of China co-operated to translate the booklet into Chinese and published the booklet in traditional and simplified Chinese respectively.

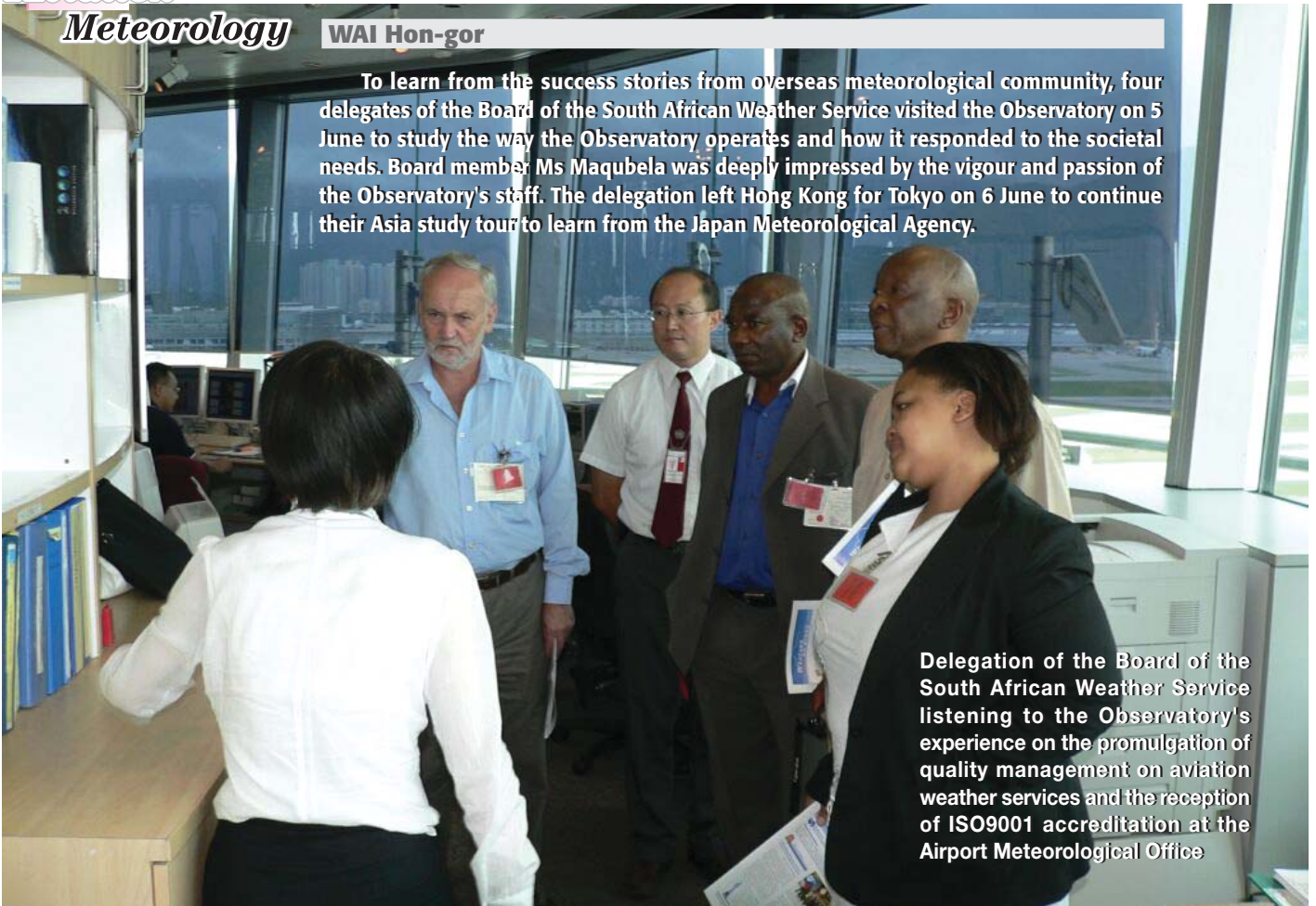
The booklet describes in simple terms the generation, characteristics and propagation of tsunamis, early warning systems and precautions to take during a tsunami. The Observatory hopes that the booklet can help popularise knowledge about tsunamis, promote public awareness and enhance the community's capability to mitigate the damage caused by tsunamis.



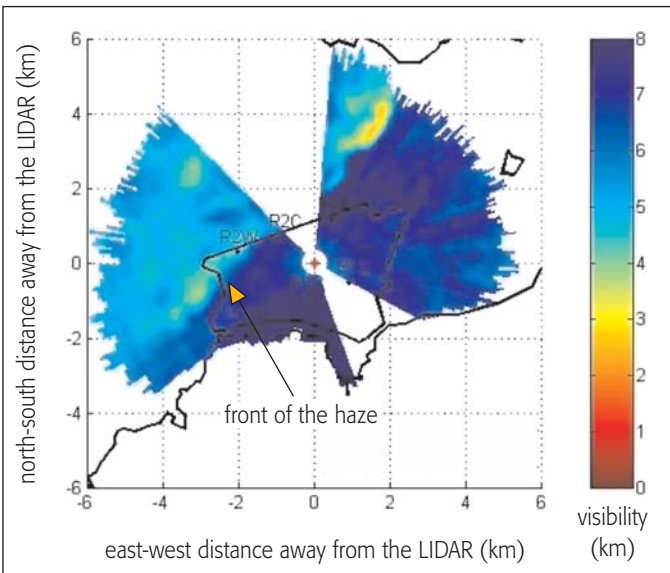
Journey to the east - Board of the South African Weather Service

WAI Hon-gor

To learn from the success stories from overseas meteorological community, four delegates of the Board of the South African Weather Service visited the Observatory on 5 June to study the way the Observatory operates and how it responded to the societal needs. Board member Ms Maqubela was deeply impressed by the vigour and passion of the Observatory's staff. The delegation left Hong Kong for Tokyo on 6 June to continue their Asia study tour to learn from the Japan Meteorological Agency.



Delegation of the Board of the South African Weather Service listening to the Observatory's experience on the promulgation of quality management on aviation weather services and the reception of ISO9001 accreditation at the Airport Meteorological Office



Visibility distribution near noon time of 19 January 2005 as measured by the LIDAR. It reveals that the northwestern part of the airport was affected by haze with a relatively low visibility of 3-5 km.

LIDAR Strengthens the Monitoring of Visibility

CHAN Pak-wai

Monitoring of low visibility is crucial in ensuring aviation safety. Apart from installing visibility sensors along the runways, the Observatory has collaborated with Dr. Andrew Cheng of the Department of Physics and Materials Science, City University of Hong Kong since 2004 to conduct research into using the LIDAR to measure the visibility around the airport.

The LIDAR does not only provide accurate wind measurements for windshear alerting, but also provides the reflected power (technically known as "backscattered" power) data that are related to visibility. In general, under dry weather conditions, stronger backscattered power implies the existence of more aerosols in the air and thus lower visibility. Using physical equations, visibility distribution could be deduced from the backscattered power data. Since the LIDAR has a measurement range up to 10 km and scans in 360 degrees, it provides a good overview of the visibility distribution around the airport, which is useful for the monitoring and forecasting of visibility.

Dr Cheng said : "I am delighted to contribute towards the assurance of aviation safety in Hong Kong. The research student has also broadened his horizon through the work and applied what he has learnt in the real world."

SIGMET map for the Asia/Pacific Region

LAU Sum-ye

The issuance and exchange of warning information concerning significant en-route weather (SIGMET) is very important for the safe operation of international air navigation. At the request of the International Civil Aviation Organization (ICAO) Asia/Pacific Region Operational Meteorological (OPMET) Task Force, the Hong Kong Observatory has developed a SIGMET web page for monitoring the issuance and exchange of SIGMETs.

Access to the web page would be provided to Regional OPMET Data Banks (RODBs), Regional OPMET Bulletin Exchange (ROBEX) Centres and Meteorological Watch Offices (MWOs).

This web page was originally developed for use by the aviation community in Hong Kong. It shows the SIGMETs currently in effect as well as advisories issued by Tropical Cyclone Advisory Centers (TCAC) and Volcanic Ash Advisory Centres (VAAC).

To ensure that all SIGMETs and advisories issued are available on this web page, special arrangement has been made by ICAO with issuing Centres to forward the SIGMETs and advisories to the Observatory. The web page not only facilitates the monitoring of SIGMET exchanges in the Asia/Pacific region, but also ensures that the aviation community in Hong Kong would receive the latest SIGMETs and advisories, killing two birds with one stone.



The Observatory developed a SIGMET web page for ICAO

Aviation Meteorological Course for Young People

CHOY Boon-leung

To encourage young talents to join the airline industry, Dragonair and the Hong Kong Air Cadet Corps jointly organized "The Dragonair Aviation Certificate Programme". On 24 June, the Observatory organized a special training course for the Programme, which aimed at elucidating the importance of weather on aviation safety and efficiency through better understanding the work of Aviation Forecaster and Observer. The course started with classroom lectures on basic meteorology, weather observation and aviation weather forecasting. The participants were then given a tour of various meteorological equipment in the aerodrome and the Airport Meteorological Office to understand the work of the Observers and Forecasters. Finally, they were given an opportunity to try to do some of the work of Observers and Forecasters such as making weather observations and preparing significant weather charts.

The participants of the Dragonair Aviation Certification Programme are elites of the Hong Kong Air Cadet Corps. Dragonair's Chief Pilot Marcus de Santis, who is in charge of the Programme, said "All participants were impressed by the equipment and work of the Observatory officers. I hope we can arrange with the Observatory similar courses in future".

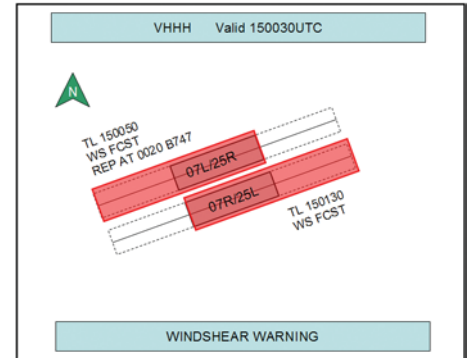


Picture of participants from the Hong Kong Air Cadet Corps, Dragonair Captain James Ashby (first on the left) and the author (second on the right).

Setting New Windshear Standards for the International Civil Aviation Organization

LI Ping-wah

The Hong Kong Observatory's windshear and turbulence alerting services is held in high regard by the international civil aviation community. The International Civil Aviation Organization (ICAO) has earlier adopted the Observatory's Windshear and Turbulence Warning System (WTWS) at the Hong Kong International Airport as the model system in its Manual on Low-level Wind Shear and Turbulence (ICAO Doc 9817). ICAO has also requested the Observatory to produce a set of graphical templates for uplinking windshear and turbulence alert information to the cockpit on civil aircraft. The Assistant Director of the Observatory, Mr HG Wai demonstrated the design of the templates (Fig.1) to the Meteorological Information Link Study Group (METLINK/SG) of ICAO at Montreal, Canada in July this year. The method of uplinking meteorological information to the cockpit is a hot topic in the aviation community. Currently, only textual messages can be uplinked while the provision of graphical information is still rather limited. One of the functions of the METLINK/SG is to formulate policies for promoting international cooperation in uplinking graphical information to the cockpit, with a view to enhance aircraft safety during landing and take-off.



Sample graphical template for uplinking "windshear and turbulence warning" information to aircraft designed by the Observatory for ICAO.

Experience in an Aviation Training Course

WONG Sau-ha

I attended the 13th World Meteorological Organization (WMO) Aviation Seminar organized by the UK Meteorological Office during 26 to 30 June 2006. The aim of the Seminar is to let participants gain a better understanding of the weather hazards in aviation and to introduce some of the aviation forecast products based on numerical weather prediction. Delegates came from different parts of the world, including Bosnia, Cameroon, China, Finland, Hungary and United Arab Emirates.

Windshear and turbulence are potential hazard to aircraft during landing and take-off. The booklet "Windshear and Turbulence in Hong Kong - Information for Pilots" which was jointly published by the International Federation of Air Line Pilots' Associations (IFALPA) and the Hong Kong Observatory was adopted as course material for explaining the causes and characteristics of windshear and turbulence. The Hong Kong International Airport was also used as an example to explain the provision of windshear and turbulence alerting services and latest developments.

I was delighted to have the opportunity to attend the training course, meet and exchange experience with aviation forecasters from different parts of the world. I was also delighted that our work on windshear and turbulence had been adopted as course material because our achievement in this field was well recognized.



Booklet of windshear and turbulence



Photograph of participants and trainers of the 13th WMO Aviation Seminar at the UK Meteorological Office (third from the right on the front row is Wong Sau-ha)

Windshear alerts directly uplinked to cockpit - First in the Asia/Pacific Region

SONG Man-kuen

The Observatory joined hands with Northwest Airlines (NWA) to conduct a trial to uplink alphanumeric microburst and windshear alerts of the Hong Kong terminal Doppler weather radar to NWA aircraft operating at the Hong Kong International Airport (HKIA). This is the first trial of the kind in the Asia/Pacific Region.

In the 2004 survey conducted by the Observatory to identify pilot requirements for uplinking weather information to the cockpit, windshear and turbulence alerts were identified as the most essential one to enhance flight safety. In consultation with the Hong Kong Civil Aviation Department (CAD), airlines and pilots, a Terminal Weather Information for Pilots (TWIP) system was developed using the latest communication technology and a trial was initiated to uplink windshear and turbulence alert to aircraft.

Uplink of the TWIP messages to the cockpit commenced in late April and had been successfully demonstrated. The trial will last for this rain and typhoon season. Pilot survey and evaluation will be conducted to identify areas of improvement and development opportunities.



Ms Sandy Song (middle) and Mr CM Shun (right) of the Observatory briefed NWA Captain on the trial during a kick-off meeting prior to the departure of flight.

"Cumulonimbus" spotted from all directions

"Anvil" taken by Captain Fred Woo from the cockpit at noon on 24 November 2003 at about 12 000 metres aloft to the west of the Philippines.



砧狀雲
Anvil

SHUN Chi-ming, CHOY Boon-leung

Whenever thunderstorms occur it is usually overcast and dull. Have you thought that the cumulonimbus clouds, which bring about the thunderstorms, has an extraordinary shape?

The first picture below was taken by Mr ST Chow, one of our weather observers, in the afternoon on 2 July this year at the Hong Kong International Airport towards the northwest direction. A mushroom shaped cloud can be seen to extend from the lower altitudes to the upper atmosphere with a relatively flat top. Shaped like the blacksmith's anvil, the top part of the cumulonimbus is also known as an "anvil".

An "anvil" is formed when the intense updraft within the cumulonimbus meets a very stable layer in the atmosphere at about 10 kilometres high. As the updraft is unable to rise further, it spreads out and forms the characteristic anvil shape. Usually the cumulonimbus is rather extensive in size. To have a full view of its appearance, apart from watching it in a place with an open view, it will be even better to watch it from aloft. The picture on the left was taken by Captain Fred Woo from the cockpit at about 12 000 metres aloft west of the Philippines. The "anvil" can be clearly seen.

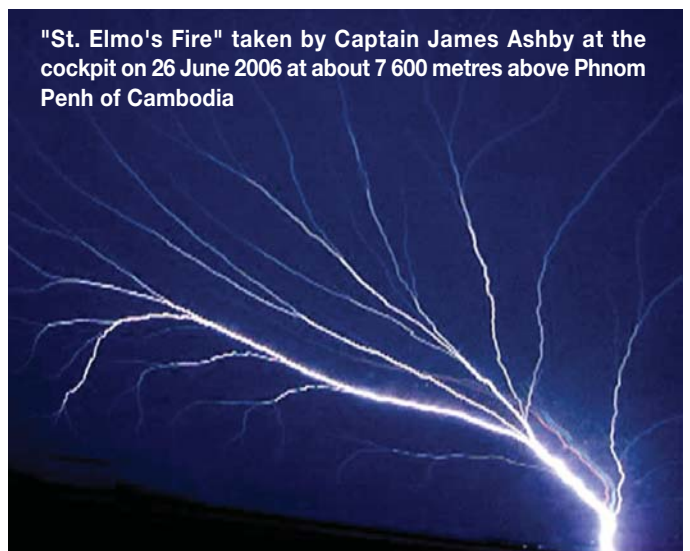
Apart from watching the cumulonimbus on an aircraft, if the plane gets close to or flies into a cumulonimbus, one could even feel the shock of the thunder! The third picture was taken by Captain James Ashby from the cockpit 7 600 metres high while descending to the Phnom Penh International Airport in Cambodia. A number of bright blue-white coloured light beams radiated from the outside of the cockpit. This is the rare "St. Elmo's Fire" caused by ionization of the air under the massive electric field of a thunderstorm. It usually occurs at the top of a mast, pointed tops of a building or an aircraft and is different from ordinary lightning.

"Anvil" taken by Mr ST Chow in the afternoon on 2 July 2006 at the Hong Kong International Airport.



砧狀雲
Anvil

"St. Elmo's Fire" taken by Captain James Ashby at the cockpit on 26 June 2006 at about 7 600 metres above Phnom Penh of Cambodia



Special Weather Event Log Book

WONG Tak-kan

Ap Lei Chau was under a siege of high winds at around 9 p.m. on 9 June 2006. About 20 trees were blown down and a rolling door of an empty shop was even swept away, hitting a lorry by the road. Fortunately, there was no casualty during this event. As there were speculations that a tornado or microburst had occurred there, the event was widely covered by the media.

The weather data of the Hong Kong Observatory revealed that a squall line oriented from southwest to northeast developed over the Pearl River Estuary and moved southeastward across Hong Kong at a speed of about 50 km per hour between 8:30 p.m. and 9:30 p.m. on that night. During its passage, peak gusts of 77 and 101 km per hour were recorded at Central and Shek Kwu Chau. During the passage of the squall line, no tornadoes or waterspouts were detected by the Doppler weather radars at Tai Mo Shan and Tate's Cairn. Initial analysis suggested that the high winds were probably just caused by the squall line.

To further investigate the event, colleagues of the Climatological Information Services section and I carried out an on-site inspection on 12 June 2006. At the site, we could see that the trees collapsed were of diameter ranging from 30 to 50 centimetres and the rolling door of the empty shop was severely twisted, showing that the wind speed on that night was really very high. Although most of the damages and fallen trees



Broken root of tree, together with its other broken parts, inclined to the same direction.

on scene have been tidied up, the falling pattern of the trees and the photos captured by the media soon after the event suggested that winds there blew in a uniform direction throughout the event.

The logo Hong Kong Observatory showing on our vehicle drew the attention of local residents. With their kind cooperation and assistance, we could easily locate several witnesses to recount the event. Mr Wong, one of the witnesses working in a car service centre nearby, clearly remembered that the high winds blew from a uniform direction and lasted for about 5 to 7 minutes. A big tree fell just next to him and the sea sprays generated by the winds were about 2 metres high. Mr Wong said that he did not see any funnel cloud or any objects being swept up to the sky. He stated in a professional tone, "Surely not a tornado!"

According to the information collected on site, there was no evidence to support the existence of a tornado, waterspout or microburst at Ap Lei Chau on that night. It was believed that the high winds were caused by the descending colder air behind the squall line which spread forward on hitting the ground.



Mr Wong recalled the event.

24 Solar Terms - Great Heat

CHOW Tak-hing

After a brief introduction on Solar Terms in the previous issue of Weather on Wings, let us talk about a summer Solar Term - "Great Heat" in this issue.

"Great Heat" refers to the 22nd or 23rd of July when the sun reaches 120 degrees of the ecliptic. This is usually the hottest time in a year in most parts of China, especially in the mid and lower region of the Chang Jiang (Yangtze River) where the sub-tropical ridge dominates and brings sunny, light wind and humid conditions, making the hot weather intolerable.

In Hong Kong, according to the record of the Hong Kong Observatory from 1971 to 2000, instead of the "Great Heat", the day with highest mean temperature in a year is on the 10th of July which is one to two days after the "Moderate Heat". The mean temperature of "Great Heat" days in Hong Kong during the 30-year period is 28.6 degrees, while the mean temperature on 10th July is 29.2 degrees. This discrepancy is due mainly to the fact that Hong Kong is located in the south China coast where summer usually sets in earlier than the Chang Jiang and Yellow River region. Whether the hottest day in Hong Kong is on "Great Heat" or not, when engaged in outdoor work or activities, we should drink plenty of water and avoid over exertion. Moreover, we should avoid prolonged exposure under sunlight to reduce the chance of sunburn by ultraviolet radiation.

A milestone in meteorological telecommunications

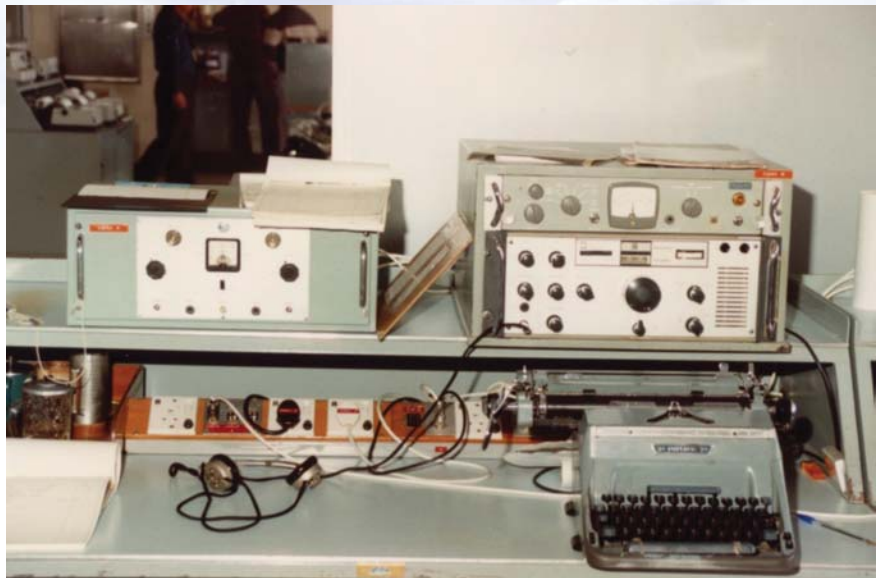
MA Wai-man, CHENG Yuen-chung

For the preparation of weather forecasts, the Observatory has a high demand for real-time meteorological data for many years. With the rapid advancement in information technology recently, nearly all real-time meteorological data are received automatically by computer systems. However, for nearly half a century before now, reception of real-time data was handled manually by a team of highly skillful professionals from the former Cable & Wireless Ltd.

The authors were delighted to have a chance to talk with some of them during a tea gathering. Many of you probably do not know that the predecessor of Meteorological Telecommunication Centre was established in the Observatory in the 1950s and was staffed by the Cable & Wireless Limited. They handled routine reception of meteorological messages in Morse code transmitted through short radio waves from ships and Dongsha Dao. Since Dongsha Dao is about 319 kilometres southeast of Hong Kong in the South China Sea, tropical cyclones from the western North Pacific often skirt across Dongsha Dao before reaching Hong Kong. In the years before meteorological satellite imageries were available, Dongsha Dao was an important outpost for the monitoring of tropical cyclones.

A retired staff of Cable & Wireless Limited, Mr Chan Siu-kui, said, "I remember that once during the approach of a tropical cyclone, Mr Gordon Bell, the late Director of the Observatory, was standing right behind me to wait for the decoded meteorological report from Dongsha Dao. As soon as Mr Bell knew that winds had veered from northwest to northeast there, he issued a higher tropical cyclone signal."

With the reception of meteorological data being automated, Morse code has no longer been in use for a period of time. Commencing 1 October 2006, the operation of the Meteorological Telecommunication Centre will be handed back to the staff of the Observatory. We would like to express our gratitude to those who had worked in the Meteorological Telecommunication Centre for their valuable contributions over the years. In the future, the Observatory will continue to utilize various communication means to receive weather data, with a view to minimize the impact of hazardous weather to Hong Kong.



Morse Code receiving device used in 1980s



Retired staff from Meteorological Telecommunication Centre visited the Observatory.

Mr Lai Tung-kwok visited the Observatory and delivered a talk in Management Forum

Hung Fan-yiu

Mr Lai Tung-kwok, Director of Immigration, visited the Observatory on 18 May 2006. He toured the Hong Kong Meteorological Centre and the TV Studio, and delivered a talk at the department's Management Forum.

His talk, entitled "The Indispensable Role of Information Technology in Contemporary Management", was delivered to a packed audience that day. For the first time, the forum was webcast live to our colleagues at outstations enabling more colleagues to share the experience. Mr Lai gave a comprehensive overview of the work of the Immigration Department, described the development of their state-of-the-art IT systems and talked about how they tackled the challenges arising from workload increases, resources constraints and ever rising public demand.

The Observatory is a professional department that employs advanced technologies. Mr Lai's experience in using advanced technologies to enhance effectiveness in management is an inspiration to us in our use of technology in process re-engineering.



Mr Lai Tung-kwok, Director of Immigration, shared his management experience with Observatory colleagues.

Think and Act in Green

LEUNG Yin-kong



Hong Kong Observatory's Scientific Officer, John YK Leung, officiated at the "No Air-Conditioning Day" organized by the Green Group "Footprint".

In recent years, global warming and other associated climate changes have not only become hot media topics, but have also gone beyond problem recognition to actions. The Government has encouraged people to set the temperature of air-conditioned offices to 25.5°C and at the same time, encouraged civil servants to dress in casual wear in summer. These are good examples of energy conservation to reduce climate change and to improve air quality.

The Observatory often gives talks to enhance the public's awareness on climate change at the invitation of schools, professional bodies and green groups such as "Friends of the Earth", "Green Peace", "Conservancy Association", "Footprint" and "Green Sense". The Observatory also participates in campaigns to encourage the public to "act in green" and to have a simple green living. Recently, I was invited by "Footprint" to officiate at the "No Air-conditioning Day" Campaign. The campaign gained the support of 209 schools and 150,000 teachers and students, indicating the determination of the education sector and the younger generation to conserve energy.

Global warming inducing ecological changes, frequent droughts and floods, increase in famines, diseases and plagues, perhaps serve as a warning from Mother Nature to our culture of wastage. Under the same blue sky, how can we turn a blind eye to global warming? Actually, everyone can contribute in his own way to conserve energy and reduce its wastage. Small though an individual contribution may seem, it may produce a "Butterfly Effect" and result in a massive and flaring change!

Connecting with the General Aviation Community

SONG Man-kuen

Each year, the Hong Kong Observatory organises a liaison group meeting with the general aviation community to review the services provided by the Observatory in the previous year and to explore ways to improve services in the future. The key presentation in this year's liaison group meeting was newly introduced weather services such as the "Local Aviation Forecast" web page with its expanded weather information and regional weather photos to help aviators to appreciate the latest weather situation when preparing of their flights.



Staff of the Observatory visited the Hong Kong Aviation Club



Staff of the Observatory visited the Government Flying Services

The Observatory also proactively visits members of the general aviation community like the Government Flying Services, the Hong Kong Aviation Club and helicopter companies to learn more about their operations and their requirements on weather services.

Through regular meetings with users, the Observatory is able to target research and development on services required by general aviation users.

Hong Kong Federation of Insurers visited the Observatory

TAM Cheuk-ming

A delegation of 11 from the Hong Kong Federation of Insurers paid a familiarization visit to the Hong Kong Observatory on 30 June. The insurance sector has good reasons to be concerned about the weather because the loss of lives and properties in storms and floods often resulted in substantial claims. The visitors thought highly of the Observatory for our accurate forecasts and timely warnings. For example, in mid May 2006, when Typhoon Chanchu was still tracking westwards across the central part of South China Sea, the Observatory was already forecasting it to turn 90 degrees towards the South China coast a few days later. Timely tropical cyclone warnings helps to safeguard lives and properties.



Senior scientific officer Dr CM Tam explained the science behind weather forecasting to delegates of the Hong Kong Federation of Insurers

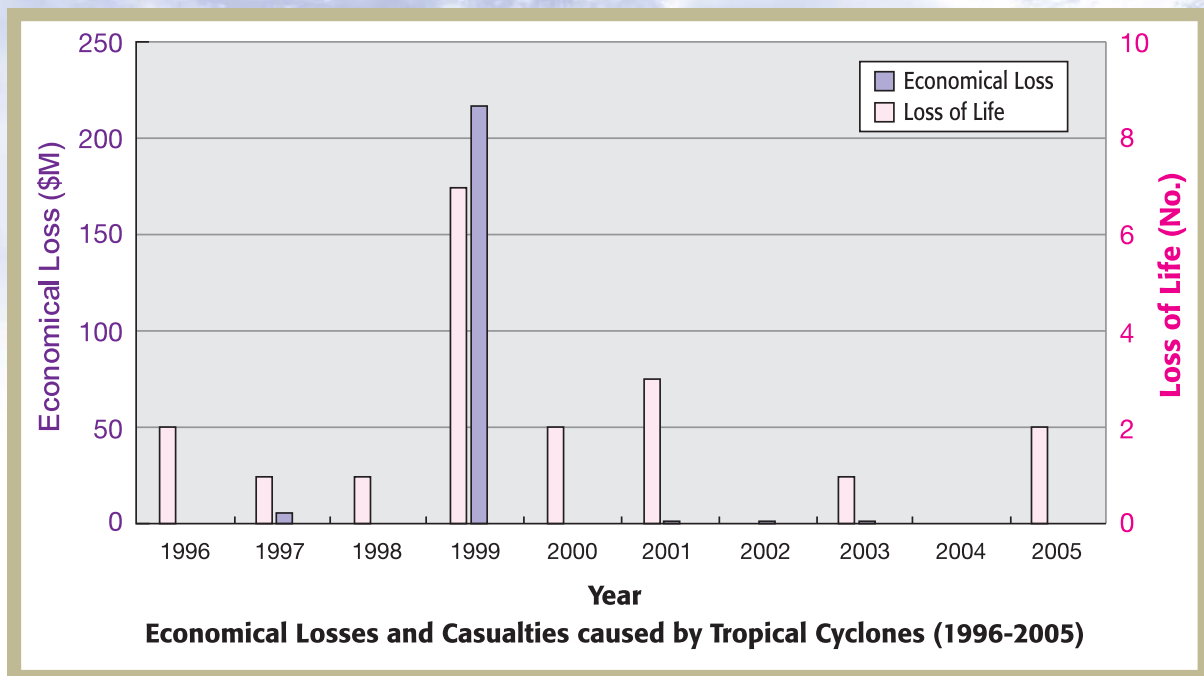
Weather and insurance

TAM Cheuk-ming

Natural disasters can cause heavy loss of lives and properties. During the last decade (1996 - 2005), tropical cyclones alone took 19 lives and caused over \$220 million damages in Hong Kong. These figures clearly show the impact of hazardous weather on the insurance industry.

For effective disaster management, meteorological services around the world deploy the latest technology to monitor the weather and improve forecast accuracy. They strive to issue timely warnings to the public so that they can take early precautions against inclement weather, reducing the loss of lives and properties. On the other hand, the insurance industry can also contribute to disaster mitigation by implementing a community insurance programme so that monetary compensation can be used on post-disaster rebuilding work to reduce the undesirable socio-economical impact.

A close relationship between meteorological service and insurance has therefore always existed. Through co-operation and partnership, particularly in raising the level of public awareness in disaster preparedness and reduction, the impact of weather hazards to the community can be greatly reduced.



The 5th Conference on Catastrophe Insurance in Asia

TAM Cheuk-ming

Mr KH Yeung, Acting Director of the Hong Kong Observatory and Dr MC Wong, Assistant Director of the Hong Kong Observatory attended the 5th Conference on Catastrophe Insurance in Asia held in Hong Kong on 20-21 June 2006. At the conference, Mr Yeung delivered a key-note speech titled "Issues related to global warming - myths, realities and warnings" while Dr Wong also presented a key-note speech on behalf of the Secretary General of the World Meteorological Organization (WMO) on "WMO's contributions to catastrophe insurance industry".

Mr KH Yeung, Acting Director of the Hong Kong Observatory, delivered a speech in the conference.



On behalf of the Secretary General of the World Meteorological Organization, Dr MC Wong (middle), Assistant Director of the Hong Kong Observatory, attended the conference.

Exchange with the aviation community

CHOY Boon-leung

Maintaining good communication with business partners and understanding their business operations are essential to the provision of quality services. When training new Aviation Forecasters, the Observatory invites some of its clients, like Jardine Aviation Services and Civil Aviation Department, to talk about their mode of operations and how inclement weather affects them so as to keep the trainees abreast of the clients' needs. At the same time, the Observatory also provides a number of concise meteorological courses to its clients including air traffic services, airlines, pilots and the Airport Authority. For example, a briefing on predominant weather conditions in Hong Kong and their effects on the airport was given to the student Air Traffic Control Officers of the Civil Aviation Department. Through these kinds of exchanges, Aviation Forecasters are better equipped for the provision of appropriate and timely services for the safety and efficiency of international air navigation.



Mr Law of Jardine Aviation Services (first on the left) briefed the Observatory's Aviation Forecasters the company operations

Lectures on "Weather and Outdoor Work"

CHIU Chiu-ye, HUI Tai-wai



The Observatory organized lectures on "Weather and Outdoor Work" for the New Territory North Regional Headquarters of Hong Kong Police Force on 11 and 18 August. The lectures were attended by more than 100 participants coming from Quick Reaction Force and Police Tactical Unit. They covered the basics in meteorology, weather observation, common natural disasters, a demonstration of how portable communication device could be used to obtain real-time weather information from the Observatory's website, and the practical application of these data. The lectures were well received and participants hoped similar trainings would be organized in the future.

Tsunami Exercise

LI Kin-wai

On 17 May 2006, the Pacific Tsunami Warning and Mitigation System conducted for the first time a Pacific-wide tsunami exercise with codename "Exercise Pacific Wave 06". The objective of the exercise was to test whether countries could disseminate tsunami warnings to their frontline emergency units within a reasonable time. On the day of the exercise, Typhoon Chanchu was posing a threat to Hong Kong necessitating the issuance of the first tropical cyclone warning signal of the year. The

inclement weather associated with the typhoon did not affect the conduct of the exercise in Hong Kong. The communication between the Observatory and the Pacific Tsunami Warning Centre (PTWC) in Hawaii and that between the Observatory and other local emergency agencies was demonstrated to be effective and reliable. The reception of tsunami messages from PTWC and dissemination of local tsunami warnings by the Observatory were completed in good time.





Drawing up Strategy and Action Plan for Department of Meteorology, Sri Lanka

Leung wing-mo

At the invitation of the World Meteorology Organization, Assistant Director of the Hong Kong Observatory Mr KH Yeung visited the Department of Meteorology of Sri Lanka on 8-12 May 2006 to draw up a strategy and action plan for the development of the department in 2006-2010. This visit followed the one made by the Director Mr CY Lam in January this year to help draw up a master plan for development to enhance the capability of the Sri Lankan Department of Meteorology to cope with disasters in the future. The plan drafted by Mr Yeung describes in details the technical strategies and the series of actions required to establish the meteorological facilities and human resource stipulated in the master plan.



Mr KH Yeung (left) discussed the draft strategy and action plan with a senior officer of the Sri Lanka Department of Meteorology.

Observatory Staff Receiving Praise

Staff of the Observatory receiving words of thank and commendation from the public during the period May - August 2006 :



Ms LAM Ching-chi	Scientific Officer
Mr LEUNG Yin-kong	Scientific Officer
Mr HO Kwong-ming	Radar Specialist Mechanic
Mr WONG Mei-shing	Experimental Officer

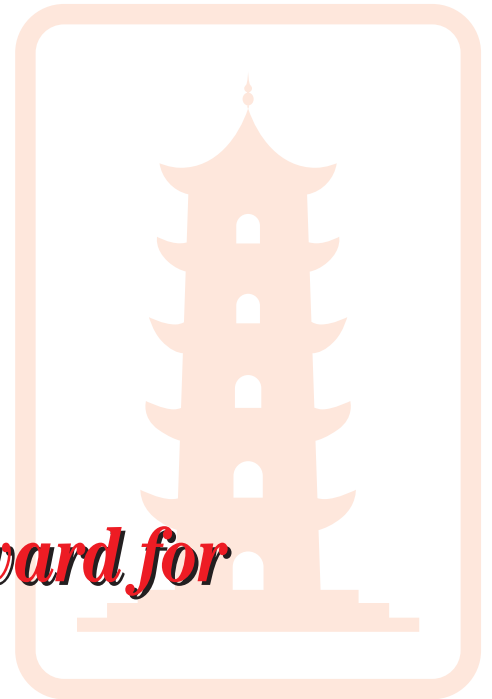
Public Weather Service Award Winners, 1st Quarter, 2006

Best TV Weather Programme Presenter :  Mr YEUNG Hon-yin

Best Radio Weather Programme Presenter :  Mr TSANG Moon-tong



The Highest Per Capita Contribution Award Trophy



Winning Community Chest Award for four consecutive years

WONG Mei-shing

The Hong Kong Observatory has won the Highest Per Capita Contribution Award, Civil Service Category of the Community Chest Community Assistance Raised by Employees (CARE) Scheme of the Corporate and Employee Contribution Programme 2005/06. This is

the fourth consecutive year that the Observatory has won the award. It testifies not only the strong commitment of Observatory staff in caring for the needy through charitable activities, but also their enthusiasm in serving the public.

Report on 3rd International Conference on Early Warning (EWC III)

TAM Cheuk-ming

Dr MC Wong, Assistant Director of the Hong Kong Observatory attended the 3rd Conference on Early Warning (EWC III) in Bonn, Germany on 27-29 March 2006. The Conference took stock of the development of early warning systems for disaster risk reduction and acted as a platform for exchange of experience and networking. Over 1,400 participants from international organizations, experienced disaster managers, meteorological and seismological experts attended.

The Conference was held with the slogan "From Concept to Action" against the backdrop of the Indian Ocean tsunami, Hurricane Katrina, the Pakistan earthquake and other dramatic natural events causing disasters in many parts of the world. The opportunity was used to encourage countries to implement disaster management techniques in their countries and foster regional cooperation.

UN Special Envoy for Tsunami Recovery, former United States President Bill Clinton spoke at the Conference and pointed out that

an early warning system was the key to effective disaster prevention and urged all governments to employ such system immediately as well as to enhance public awareness by including such knowledge into school curricula and community education.

The conference was conducted in two parallel sessions : the Priorities and Projects Forum which took stock of all early warning project proposals and debated the main policies and, the Scientific and Technical Symposium which concentrated on the technical aspects of early warning systems. Mr M Jarraud, Secretary-General of the World Meteorological Organization presented the opening speech at the Conference Symposium. He stressed the need for disaster prevention and reduction particularly in developing countries. He further encouraged international co-operation and experience sharing in this aspect.

Dr Wong gave a presentation on the natural disaster contingency plan in Hong Kong which was complimented by the session chairman.

Flash Flood Forecasting Workshop in Costa Rica

LAI Sau-tak

With a tendency to strike with little or no warning and a capacity to trigger massive landslides, flash floods are among the most destructive types of natural disasters. The first international workshop to address the threat of flash flood, jointly organized by the World Meteorological Organization (WMO) and the US National Oceanic and Atmospheric Administration (NOAA) in partnership with the US Agency for International Development (USAID), was held in the Costa Rican capital city of San José on 13 - 17 March 2006, bringing together around 100 experts from some 50 countries.

The key objectives of the Workshop were to : (i) provide an overview of flash flood prediction capabilities; (ii) identify weak links in establishing operational flash flood warning systems and the ways to fill these gaps; (iii) showcase best practices and case studies; (iv) share knowledge, tools and technology; (v) present project briefs for establishing or improving flash flood forecasting services; and (vi) open dialogue with donor and finance organizations.

I gave an invited lecture on "Applications of NWP (Numerical Weather Prediction) and Radar-based QPF (Quantitative Precipitation Forecast) Techniques for Flash Flood and Landslip Warnings in Hong Kong" in the session on "emerging technology" on the first day of the Workshop. Reflecting on my long trip to the other side of

the globe, I remarked, "Apart from the opportunity to share with other scientists and professionals how purposely designed forecasting systems can be utilized for effective decision-making in the operation of warning services in Hong Kong, it has been a great experience to take part in an initiative that brings together meteorologists, hydrologists, emergency response managers and donor organizations personnel from all corners of the world. For major river systems that often run through several countries, such occasions provide a forum to resolve problems scientifically, politically and financially, allowing much needed monitoring and forecasting technology to be meaningfully applied at an early date for the benefit of the communities at risk."



Group Photo of the First International Workshop on Flash Flood Forecasting taken at Ramada Plaza Herradura, San José, Costa Rica on 13 March 2006

The 4th International Conference on Experience with Automatic Weather Stations

KWOK Yuen-ha



Mr Edwin Ginn delivering a keynote speech at the 4th International Conference on Experiences with Automatic Weather Stations

Mr Edwin Ginn, Senior Scientific Officer of the Hong Kong Observatory, was invited to deliver a keynote speech at the 4th International Conference on Experience with Automatic Weather Station held between 22 and 24 May 2006 in Lisbon, Portugal, on the subject "The future trend of a multi-functional Automatic Weather Station (AWS) Network in an urban setting like Hong Kong".

The Observatory has been a pioneer in operating AWSs in this region for some twenty years. In addition to expanding the coverage of the stations

within the territory, the Observatory also recently designed a one-stop quality assurance system to enhance data reliability.

The use of renewable energy is an important strategy in the Observatory's AWS development programme. The Observatory has been using solar energy to operate AWSs in remote areas since 1980s and has implemented wind energy as a supplement in the past few years. The use of renewable energy was extended recently to AWSs in urban areas to further conserve the environment.

Promotion

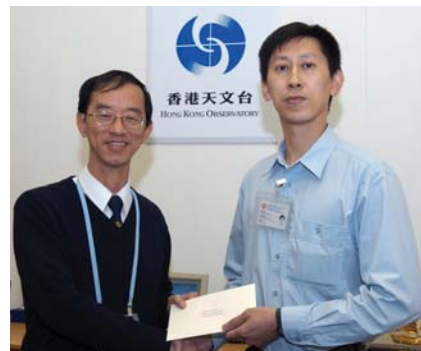
In the past few months, colleagues SONG Man-kuen, HONG Chi-yuen and CHAN Siu-yung got promotion. Congratulations !!!



Senior scientific assistant **CHAN Siu-yung**



Senior scientific officer **SONG Man-kuen**



Chief experimental officer **HONG Chi-yuen**

Key organizer of the Observatory Open Day retired

MA Lap-yin

Chief Experimental Officer Mr NG Cho-hing began his pre-retirement leave in July this year after serving the Hong Kong Observatory for nearly forty years. I am glad to go through his dribs and drabs of memory in reminiscence.

"My service in the Observatory started in the retirement year of the Hong Kong Governor Sir David Trench. He visited the Observatory just before he left Hong Kong and I was fortunate to shake hand with him when I just started my 38-year civil service. Since I was often on shift-duty, I could use the swimming pool and gymnasium facilities near my home in daytime when there was few users. My neighbours might guess how this guy earned a living when they often saw me wandering during normal office hours! My most exciting experience was the strike of Typhoon Ellen in 1983. At that time, I was on duty at the Kai Tak Airport Meteorological Office. Wearing a helmet in the midst of heavy showers and squalls, I waited for the office jeep to take me to office in the heavy downpour. I managed to arrive at the office safely in a breathtaking journey.

At one stage of my career, I was responsible for establishing the automatic rain gauge station network. In order to find suitable locations of the rain gauges, I had to liaise with people from different walks of life, including those from remote villages and tiny village schools. On one occasion, I took a flight on a rapid-deployment helicopter of the then Royal Hong Kong Auxiliary Air Force

to search for suitable sites. I sat behind the pilot with my hands gripping the seat belt as the side door of the helicopter was open in flight! When the helicopter was flying over Lantau Island, I could feel a drop of air temperature of a few degrees! My wife got startled when she heard my experience.

I helped organize the annual Observatory Open Day in the past few years. This event attracts around 17,000 citizens in two days. While the flow of visitors has to be regulated well, we have to come up with attractions like 'Weather Archive' and 'The Observatory Guided Eco-tour'. This task is full of challenge. Thanks to the joint effort of the colleagues, we received compliments from visitors on each Open Day."

We wish Mr NG a pleasant retirement life.



Acting Director, Mr KH Yeung (third from left) presented a souvenir to Chief Experimental Officer, Mr CH Ng (fourth from left)

Observatory colleagues with the cake to celebrate the 10th anniversary of the HKO website



Happy birthday to HKO website

NG Ping-wing

Things change in a decade and Internet websites are no exception. I hope that the HKO website remains young and fresh forever and the development team stays ever more energetic. This was the first thought that came to my mind when I attended the celebration party of the 10th anniversary of the HKO website. There were only three hundred web pages when we uploaded the first batch of content to the server of the Internet Service Provider. Quite beyond my expectation, the total number of web pages has risen to over thirty thousands now and the website becomes a treasure of weather information. Comparing "now" and "then", "now" is so much better! Let's take stock of our achievement today and strive to do better in the days to come. Look at the smiling faces in the photos; I look forward to seeing the HKO website in even better shape at its 20th anniversary!

Promoting Environmental Protection from a Human Perspective

LEUNG Yin-kong

Our staff is an important asset of the Hong Kong Observatory (HKO). The HKO Staff Association, in response to the HKO's humanity-based vision, supports actively the "Happy Business" and promotes environmental protection. With energetic office bearers, the Staff Association has organized many healthy activities for its members. These activities cover a wide range of interests to suit the diversified requirement of our colleagues, including relatively static Tai-chi class, dance class and seminar on photography taking as well as sportive and team-building activities such as various inter-Branch ball games. Besides, the Staff Association also invited staff members who have extensive traveling experience, namely, our Director, Mr Lam Chiu-ying, and Senior Scientific Officer, Mr Poon Hoi-to, to share with us their exciting traveling experiences in Tibet, Bhutan, Croatian and the southern part of Thailand. The talks have broadened our views on these countries which are seldom threaded by travelers.

To promote environmental protection, the Staff Association organized a Used-book Charity Sale to raise funds for the HKO Voluntary Team and the response was tremendous. We thanked here the generosity of our Director, Mr Lam Chiu-ying, Assistant Director, Mr Wai Hon-goi and Senior Scientific Officer, Dr Chang Wen-lam. The Staff Association also organizes excursions regularly. We have plans for a group outing to Wetland Park and for bird-watching in Mai Po to let our colleagues and their families to get close to Nature. In response to the call of the Green Group "Friends of the Earth", the Staff Association will also arrange to order moon cakes in simple packing for its members so that we can all have a meaningful "green" Mid-Autumn Festival.



Mr Lam Chiu-ying, Director of the Hong Kong Observatory, presented the trophy to the overall champion of the Director's Cup Badminton Competition - Development, Research and Administration Branch.

Visit of the Automatic Weather Station and Radiation Monitoring Station

Yeung Siu-wai

The Observatory's automatic monitoring stations are worth visiting. In April, I arranged a visit to the 'Tsak Yue Wu Automatic Weather Station' and 'Yuen Ng Fan Radiation Monitoring Station' for colleagues and their families, to enhance their understanding of the Observatory's services in the areas of meteorological observation and radiation monitoring.

The cool weather on that day was perfect for outdoor activities. I invited the colleague responsible for the network of meteorological observation and radiation monitoring to explain the station operation to the visitors. We were told that the screen box housing the thermometers was painted in white colour to reflect the radiation from the Sun and the surrounding. The door of the screen box should face north so that the sunlight would not shine directly on the thermometers when the box was opened. The tipping bucket rain gauge that operated like a "seesaw" was another attraction. The buckets at both ends filled and discharged water in turn and rainfall was measured by the number of "tips". It sounded very simple but the underlying working principle, in fact, was very intelligent. Why was rainwater collection required for radiation monitoring? It was because rainfall would wash down radioactive materials from the air onto the ground, thus increasing the radiation level.

We also took the opportunity while we were in Sai Kung to visit the High Island Reservoir nearby. The scenery of the east dam was very impressive, in particular the anchor-shaped breakwater. We all had a good time. I will introduce to you the very enjoyable working environment of the Observatory on another occasion.



Colleagues and families taking a group photo with an important equipment 'the thermometer screen' of the Tsak Yue Wu Automatic Weather Station.

Activity Sidelights



Observatory colleagues watching a demonstration of restoration work during their visit to the Central Conservation Section of the Leisure and Cultural Services Department.



Colleague posing as TV weather presenter in our TV studio.



Colleagues and their families participating in the Observatory's Tree Planting Day to show their support for environmental protection.