

ESCAP / WMO TYPHOON COMMITTEE NEWSLETTER

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Contents

- Thirty-third ESCAP/WMO Typhoon Committee Session in Macao, China
- Third RAV Conference in Manila
- Macao Meteorological and Geophysical Bureau wins 2000 Typhoon Committee Natural Disaster Prevention Award
- TC Members news
- TC Changes

Thirty Third Session of the Typhoon Committee

Macao, China (28 Nov. – 4 Dec. 2000)



Officials of National Weather Services in Asia-Pacific gathered at the session hall of the UNESCO Center in Macao for the thirty-third session of the Typhoon Committee.

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Officials of national weather services in Asia and the Pacific met in Macao, China, for the 33rd annual session of the ESCAP/WMO Typhoon Committee, from 28 November to 4 December 2000. Macao, a Special Administrative Region of China, played host for the second time for representatives from 11 Members of TC including the United States. They were joined by the observers from the Federal Republic of Germany and WMO Commission on Atmospheric Sciences (CAS), as well as representatives from WMO, ESCAP and TCS.

Macao's Transport and Public Works acknowledged the good opportunity the session offered to the members of TC in the promotion and coordination of joint efforts to minimize typhoon damage in the region to better protect the economic and social well-being of its peoples. "Besides modern

technologies, good management and qualified human resources, collaboration among the members of TC is a key factor in achieving better weather and environmental services," said Ao Man long, Transport secretary, at the session's opening.

Fong Soi Kun, Director of Macao Meteorological and Geophysical Bureau, welcomed the participants as he cited Macao's long tradition in dealing with typhoons which started in 1861, almost a hundred years before the Bureau's establishment in 1952. He added that, currently, the Bureau is giving importance to activities which harmonize meteorological observation data set for analysis and study the climate variation in this century.

In his address, Eisa Al-Majed of the WMO Secretariat, noted the importance of strengthening further interaction between the National Meteorological and Hydrological

Thirty Third Session... From page 1

Services (NMHSs) and national agencies concerned with disaster and preparedness in order to increase the effectiveness of warning system and prevent disaster. He noted that the NMHSs were required to undertake modernization on a continued and often costly basis that cooperation in regional initiatives and in projects that could attract appropriate financial support was a vital management strategy to complement national efforts.

Le Huu Ti, representative of ESCAP, in a message, cited the findings of a recent ESCAP regional survey on the achievements of the IDNDR recognizing TC as one of the most successful subregional networks in the region. He said that, based on another ESCAP study, these achievements had been realized through the excellent spirit of cooperation that prevailed among TC members and related international organizations.

Ti added that ESCAP had especially noted the increased importance attached by TC to training activities, in particular, the establishment of the Typhoon Committee Research Fellowship Scheme, with emphasis on the exchange program among the members of TC.

At the session, the Committee approved the establishment of a centralized website for WMO from which the public can access the latest information on tropical cyclones issued by the National Meteorological Services and Regional Centers. In coordinating with other activities of the WMO Tropical Cyclone Programme, the Committee noted that Hong Kong, China, at the request of CBS, would develop and host a demonstration website serving as a WMO centralized portal site for tropical cyclone warnings in the Western North Pacific and South China Sea for the international media, a prototype website of which was demonstrated at the session. The Committee was informed that this prototype would be further developed in close consultation with WMO and TC members concerned, to be launched possibly before the next tropical cyclone season.

The CAS representative reported that the first missions of Aerosonde occurred with satellite communications testing in Shimoji Jima, Japan in September 2000 and current flights are out of Guam for convective monitoring. The initial typhoon missions are expected to be undertaken in 2001, with Japan, Republic of Korea, the Philippines and Guam interested to be involved or support the programme.

The Committee invited the support of the scientific community for the urgent execution of the research project on landfalling tropical cyclones under the World Weather Research Programme. The research project, established by the CAS Working Group on Tropical Meteorology Research, is expected to have positive impact on current tropical cyclone landfalling operational and forecasting capabilities.

The Committee noted that one of the initial outcomes of

the Systematic Approach to tropical cyclone track forecasting is the critical need for the predicted sea level pressure and selected wind fields to apply conceptual models that will assist the forecaster in detecting likely erroneous dynamical model track forecasts. Only a few centers make the required digital fields available. The Committee was invited to further consider at its next session endorsing a request that all forecast centers that have skillful tropical cyclone track forecasts also provide the predicted fields in at least a limited domain around the tropical cyclone. These track forecasts and forecast fields will be collected at a central location and made available to all forecast centers via the Internet.

The session stressed the need for an official statement on the potential impacts of Global Warming on the frequency/intensity of tropical cyclones in the Northwest Pacific and South China Sea even as it noted that a statement on this subject would be considered by CAS in its next session in February 2002. The Committee hoped that CAS could finalize the draft statement in time for the 34th TC session to consider recommending its use by its Members in answering queries regarding the impact of global warming on tropical cyclones



TC Chairman Fong Soi Kun with (from left) TCS Coordinator Roman L. Kintanar, ESCAP representative Le Huu Ti, WMO representative Eisa Al-Majed and TCP Chief Katsuhiro Abe.

in the Committee's area of responsibility.

On recommendations from the hydrologists' pre-session meeting, the Committee agreed to undertake a comprehensive review of achievements and to identify future direction for more effective cooperation in the operations of the hydrological and disaster preparedness and prevention components. The meeting laid down a two-pronged approach to undertake the review: 1) a survey by questionnaire including analysis, and 2) a field expert mission for consultation with the members. For the survey, ESCAP, in consultation with TCS and interested members, to prepare the questionnaire, conduct the survey, analyze the information and report

findings to the members. These findings will then be used by the field expert mission for detailed consultation. In order to maintain continuity of planning, the Committee may consider to establish a working group to be responsible for the planning and implementation of this activity.

Also, the Committee strongly felt the need to upgrade the current Job Description of the hydrologist post so as to be in line with programme approach as well as strategic planning and management concept of the planned review of the hydrological component. The revised Job Description are as follows:

- Under the overall supervision of the coordinator of TCS, the hydrologist will be responsible for the formulation, coordination and monitoring of the implementation of the hydrological programme of TC;
- To report to TC the progress and achievements of the implementation of the hydrological programme, including regular evaluation and necessary revision to improve the effectiveness of cooperation in the hydrological component;
- To formulate project proposals related to the work of TC under the hydrological component and to seek funding from members and donors;
- To formulate detailed activities for the hydrological component for consideration of TC for approval of allocation from the Trust Fund;
- To coordinate the implementation of projects and activities related to the hydrological component and to prepare final reports or proceedings for dissemination;
- To cooperate with the hydrologists of TC members for evaluation of the available capabilities and identification of assistance needs;
- To provide advisory services to members on request and if possible, under TCDC or TCTF;
- To coordinate with ESCAP and WMO and whenever possible participate in their regional activities; and
- To take part and assist in the annual TC session.

A 4-day workshop for TC hydrologists on Evaluation and Improvement of Operational Flood Forecasting Models in the Typhoon Committee Area is set in Thailand in July or August 2001. The workshop, to be organized by TCS, aims to promote greater information exchange and technology transfer among TC hydrologists.

The Committee reviewed the activities of the Regional Cooperation Programme Implementation Plan (RCPIP) related to hydrological component and disaster prevention and preparedness.

RCPIP hydrological activities are grouped in two

categories: flood forecasting and warning, and comprehensive flood loss prevention and management. TC members offered several opportunities to further strengthen cooperation among them which included activities such as, the completion of websites for sharing of hydrological data and information, including real-time data; development of hydrological framework and plan for cooperation among the riparian countries of international rivers; and development of standards on hydrological information and flood forecasting modelling including quality-assurance for data monitoring, manual practices on flood management, especially for urban storm water management and landslide warnings.

Activities of RCPIP on disaster prevention and preparedness, are listed in two categories, public awareness and disaster management.

On its programme for 2001 and beyond, the Committee re-established the Working Group on the structure of RCPIP to be chaired by USA with experts from China, Hong Kong-China, Japan, Republic of Korea, Malaysia and Viet Nam. The Working Group is guided by the WMO Long Term Plan as related to Tropical Cyclones, Strategic Plan for the Enhancement of National Meteorological Services in RA II, the project-proposal on Integrated System for the Mitigation of Typhoon, Floods and Environmental Disasters in the Western North Pacific Area, the Strategic Action Plan for Development of NMSs in the Pacific Region as prepared by the South Pacific Regional Environmental Programme (SPREP), and other relevant documents. The members will present their recommendations for a vision statement and broad action plan at the 34th TC session for its consideration.

The Committee also re-established the Typhoon Research Coordinating Group (TRCG) with Dr. Woo-Jin Lee of Republic of Korea as Chairman. All members of TC were to nominate their respective representatives to take part in its work. Under the TRCG Typhoon Committee Research Fellowship Scheme, three fellowships have been awarded while other research fellows were being considered.

A workshop on Typhoon Forecasting Research was supported by the Committee to be conducted by the Korea Meteorological Administration in Seoul, from 25-28 September 2001, with financial support from WMO.

The RSMC Tokyo-Typhoon Center announced it would extend the forecast period of tropical cyclone intensity from the current 24 hours to 48 hours on 1 June 2001. The 48-hour intensity forecast (10-minute average maximum sustained wind and central pressure of a tropical cyclone) will be provided in the RSMC Tropical Cyclone Advisory (WTPQ20-25 RJTD) in addition to its current contents.

The extended service is based on the upgrade of the Typhoon Model (TYM), which was performed in conjunction with the renewal of the JMA computer system on 1 March

2001, and the development of a simple guidance scheme for modification of TYM's predictions. Higher accuracy (smaller errors) of tropical cyclone intensity forecasts is expected in the coming 2001 season with the new TYM and the guidance scheme. RSMC Tokyo noted, though, that errors are generally larger in 48-hour forecasts than 24-hour and that forecasts will sometimes fail on occasions where an abrupt change in tropical cyclone intensity occurs.

China reported that its polar-orbiting FY-1C Meteorological Satellite is operating smoothly while its Geostationary Meteorological Satellite FY-2B will be operational starting 1 January 2001. Images from these satellites can be used in weather, flood and environmental monitoring. China invited other countries and regions to receive and use the images, adding it would host WMO training courses on how to use format distributed to receive the images in the near future.

Some changes on the list of typhoon names assigned by the Committee in the region were discussed. Thailand acceded to replace the Thai name Hanuman after India objected to its use, and the USA said it intended to change Kodo under its list. In a related development, the names Morakot and Aere were chosen as replacement for Hanuman and Kodo, respectively, after consultations with members of TC were made through TCS.

Earlier, at the session's opening, the Typhoon Committee Natural Disaster Prevention Award for 2000 was presented to the Macao Meteorological and Geophysical Bureau. Director Fong Soi Kun, who was elected Chairman of TC, accepted the award on the Bureau's behalf.

The thirty-fourth session of the Typhoon Committee will be hosted by the Government of the United States, in Honolulu, Hawaii, from 28 November to 4 December 2001.

Macao Meteorological and Geophysical Bureau receives Typhoon Committee Natural Disaster Prevention Award for 2000

The Macao Meteorological and Geophysical Bureau (MMGB) won the 2000 Typhoon Committee Natural Disaster Prevention Award. The Macao Bureau was presented the TC Award in a short ceremony held during the opening of the 33rd session of the Typhoon Committee on 28 November 2001 at the World Trade Center in Macao, China.

The MMGB, established in 1952, was selected by the Macao SAR Government in recognition of the its distinguished efforts and contribution to the prevention of human and economic losses caused by destructive tropical cyclones and other natural disasters in Macao.

The annual TC Award is being given by the Typhoon Committee Foundation, Inc. (TCFI) comprising of a plaque of recognition and modest cash prize. The Award honors outstanding achievements in disaster prevention and mitigation in the countries in Asia and Pacific region, considered the most disaster-prone region in the world.



(Top and above) MMGB Director Fong Soi Kun accepts the TC Award Plaque of Recognition from TCFI Chairman R. Kintanar on behalf of the Bureau.

T Changes

Qin succeeds Wen



Dr. Qin Dahe

Dr. Qin Dahe was named new administrator of the China Meteorological Administration (CMA) succeeding Mr. Wen Kegang effective on 10 February 2001. Prior to his appointment, Dr. Qin was the director-general of the Bureau of Science and Technology for Resources and Environment of the Chinese Academy of Sciences.

Dr. Qin, 54 holds a Bachelor's degree in Physical Geography, Master's degree in Glacier and Environmental Change and Doctor's degree in Antarctic Glaciology and Climate Change from Lanzhou University.

Dr. Qin is a scientist in glaciology and climatology. His major research fields include Glacier (including Antarctic ice sheet) and ice core studies relating to paleo-climate and paleo-environment; present process of the current environmental and climatic variation; and climatic, environmental evaluation, and glacier change relating to global change. He has written various scientific evaluations covering a wide range of topics in the fields of glaciology, climatology and environmental science.

Dr. Qin participated in a series of field expeditions including the Sino-US and Sino-Norway Glaciology Expeditions of Mt. Everest and Northern Slope of Himalayas, China, in 1997 and 1993, respectively; the International Trans-Antarctic Expedition for Glaciology in 1989; and the field research expeditions at the Chinese Antarctic Great Wall Station (October 1987 to February 1989) and the Casey Station of the Australia National Antarctic Research Expedition (1984-1985).

Dr. Qin has served in many international and national academic posts. He was a member of the Scientific Steering Group of CLIC, WCRP; Vice Chairman of the International Commission of Science and Snow and Ice (ICSI of ICSU); Vice Chairman of the Quaternary Research Committee on Antarctic Research (SCAR); Vice Chair of the China National Committee of the IGBP; and Director of the Laboratory of Ice Core and Cold Region Environment, Lanzhou Institute of Glaciology and Geocryology. Dr. Qin also worked as lead author of IPCC Working Group I and review editor of IPCC Working Group II.

Dr. Qin has received many awards for his valuable contributions to scientific research.

Yamamoto is new JMA director - general



Koji Yamamoto

Koji Yamamoto has been appointed director-general of the Japan Meteorological Agency (JMA) succeeding Yuso Takigawa. Yamamoto was the director-general of the JMA Forecast Department prior to his appointment. He also served as director-general of the Sendai District Meteorological Observatory (1994-96) and the Seismological and Volcanological Department (1996-98).

Yamamoto, 60, holds a BSc in Faculty of Science from the University of Hokkaido. He started his career as a weatherman at the Hakodate Marine Observatory in 1963.

Yamamoto has played a leading role in the modernization of Japan's weather forecasting system and worked in the establishment of the Integrated Data Collection and Processing System for Earthquake, and the development of Information Networks for Disaster Prevention, and Aviation Meteorology.

Yamamoto is a member of the Geodesy Council of Japan and Tokyo Environment Council as well as Councilor of the Meteorological Society of Japan. Yamamoto was a participant in the Expert Meeting on Enhancement of NMHSs in Region II (November 1999) and the First Session of the EC Working Group on Long-Term Planning (March 2000).

Yamamoto has written the publications Services of JMA and New Media (Journal of Observation, JMA Vol.53) and Recent Operation of Geostationary Meteorological Satellite (Himawari Kisho, Vol. 359, 1987). He also co-authored the following: Effect of the partial cloudiness within FOV on IR (10.5-12.5 μ m) radiation data (Journal of Meteorological Research VI, 28-No.5, 1976), The effect of emissivity on the determination of cloud top height from satellite infrared radiation data (Tenki, Vol. 24-No. 9, 1977), Determination of sea surface temperature from the Geostationary Meteorological Satellite "Himawari" infrared radiation data (Tenki, Vol. 26-No. 9, 1979), and Sea Surface Temperature (Meteorological Satellite Center Technical Note (Vol. 2-No.2, 1979).

Ahn heads KMA



Myung-Hwan Ahn

Myung-Hwan Ahn succeed the late Dr. Sung-Eui Moon as administrator of the Korea Meteorological Administration (KMA). Ahn was director-general of Climate Bureau before his appointment as administrator on 29 December 2000.

Ahn, 56, holds in Physics from Kangnung National University. He is credited with the Completion of Bureau Directors Programme at the Central Officials Training Institute.

Ahn left the military service to become department director at the Kangnung Regional Meteorological Office from 1968 to 1996. He was director of the Forecast Management Department of KMA (1996-97) before his appointment as director of the Kangnung Regional Meteorological Office (1997-99).

Ahn worked as lecturer at the Department of Atmospheric Science of Kangnung National University from 1990 to 1999. He is a member of the Korean Meteorological Society.

Moon passes away



Dr. Sung-Eui Moon
(1943-2001)

Dr. Sung-Eui Moon, former administrator of the Korea Meteorological Administration (KMA) passed away on January 9, 2001. He was 57. Dr. Moon resigned from the service in late December when he fell seriously ill.

Dr. Moon, a former professor, served as administrator of KMA from 1997 to 1999. He worked for the establishment of the Meteorological College of KMA. Dr. Moon wrote various research papers and educational publications in the field of meteorology and environment. He won an academic award from the Korean Environmental Sciences Society in 1997.

For his outstanding services as administrator of KMA, Dr. Moon was honored with the Typhoon Committee Natural Disaster Prevention Award in 1999. He will be a great loss to Korea and the international meteorological community.

China

IOC team visits Beijing met center

In February, an 8-member Olympic inspection team visited China's National Meteorological Center. The team, headed by Hein Verbruggen, was met by Dr. Qin Dahe and Li Huang, Administrator and Deputy Administrator of China Meteorological Administration, respectively.

A statement on meteorological services in support of the 2008 Beijing Olympics was read by Chen Lianshou consisting of three parts, Weather and Climate in Beijing favorable to the 2008 Olympic Games, Meteorological Facilities and Services, and Meteorological Services and Supports for the 2008 Beijing Olympics. Chen answered questions regarding meteorological support system, artificial rain dissipation technology, rainfall during the Games and the threat of typhoons.

In July, the International Olympic Committee awarded Beijing the right to host the 2008 Summer Games.



Members of the Olympic inspection team listen to an NMC officer during visit at the weather forecast room.

Open day at NMC

Some 2000 visitors, mostly students, flocked to NMC's weather forecast discussion room and TV weather studio and the China Meteorology Exhibition Hall which were opened to the public on March 24 during the fifth annual Open Day activity conducted by NMC.

The visitors, acknowledging weather information as an interesting part of life, thanked the NMC staff for organizing the affair. A student, Zhou Ying, wrote in the visitor's book, "It must be exciting to work here with all the advanced facilities and nice environment."

Also, Dr. Qin Dahe, Administrator of CMA, answered questions from some 20 members of the media during the open day activity.



Li Huang, CMA deputy administrator, talks to visitors on WMD affair.

SWEMNPS put into operation

The SW supercomputer medium-range ensemble numerical prediction system (SWEMNPS), developed by NMC, was put into operation on March 1 after being under transactional trial for a year.

The SWEMNPS is highly automated and easy to operate. The comprehensive system includes running maintenance policy, running maintenance handbook, breakdown countermeasure and contraction methods. The system will be used to promote the accuracy of medium-range prediction, to extend the forecast validation period, to develop fixed position, fixed time, fixed quantity forecast, and to accelerate the development of advance numerical prediction technology in China.

NMC sets up sandstorm monitoring system

After a year's preparation, the NMC, under the arrangement of CMA, has established a complete sandstorm monitoring with multiple monitoring methods such as meteorological satellite and radar, or warning system. Sandstorm is a frequent occurrence in some regions in China in recent years.

The system can perform real-time monitoring of sandstorm nationwide and makes it possible to provide real-time forecast using digital computer system. The NMC has sporadically announced monitoring results of dust and forecast/warning of sandstorm since 1 March 2001. Yao Xuexiang, Vice Director of NMC also gave details on the system in a news briefing for reporters from CCTV, China Broadcast, BTV, China Daily, Beijing Evening Post and Japan Fuji Broadcast, among others.

DPRK research fellows in Shanghai

Two experts from the State Hydrometeorological Administration (SHMA) of the DPR of Korea, Dr. Kang Bom Jin and Kim Tae Jin, successfully completed their 2-month research work at the Shanghai Typhoon Institute under the Typhoon Committee Research Fellowship Scheme, from 1 February to 30 March 2001.

The joint research focused on two subjects: 1) improvement of statistical typhoon track forecast model (made operational in China in 1996) which needed some amendments to lessen its forecast errors and make it more convenient in operation. 2) typhoon bogusing technique which is intended to improve the track forecast skills of a numerical model.

Cooperation between the two countries' experts are going very well and some encouraging results have been achieved. The project provided a good opportunity to promote friendship and cooperation between China and DPRK which will be beneficial for both countries in typhoon damage prevention and mitigation.

Hong Kong, China

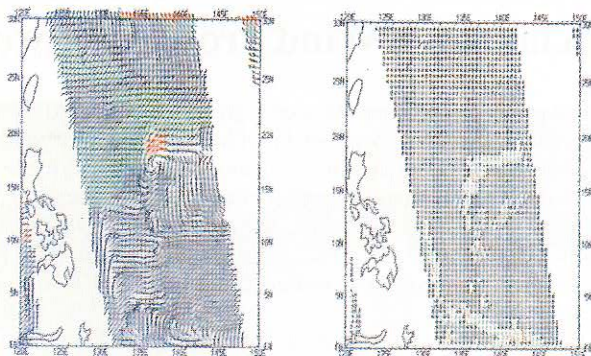
QuikSCAT data for nowcasting and NWP development

The SeaWinds instrument on QuikSCAT (NASA Quick Scatterometer) satellite is a specialized microwave radar that transmits microwave pulses and receives backscattered power from the ocean surface. Based on the principle that radar backscattered cross-section and power vary under various wind conditions, wind speed and direction over the ocean surface can be derived through co-located and near-simultaneous multiple measurements from several directions.

At the Hong Kong Observatory, QuikSCAT data was made available through NESDIS (National Environmental Satellite and Data Information Services) of NOAA and decoded locally since late 2000. Algorithms to automatically identify the circulation center and wind structure of tropical cyclones over ocean areas were developed. After mapping the satellite-observed winds onto regular grids using multiple-step Cressman analysis, vorticity fields were computed and circulation centers identified by locating the vorticity maxima. This approach was found to be particularly useful when the low-level circulation of a tropical cyclone was relatively weak and obscured by cloudiness.

Tropical cyclone parameters extracted from QuikSCAT data will be compared with those obtained from synoptic, DVORAK, RAOB or other radar-based analyses. If the results are found to be reliable, QuikSCAT winds would be ingested into limited area NWP models through bogussing techniques for impact studies on tropical cyclone forecasts.

In the meantime, apart from location of tropical cyclone center, the gridded QuikSCAT wind fields will also be displayed for forecasters' reference in extracting information such as the radius of maximum winds as well as circulation structure and asymmetry.



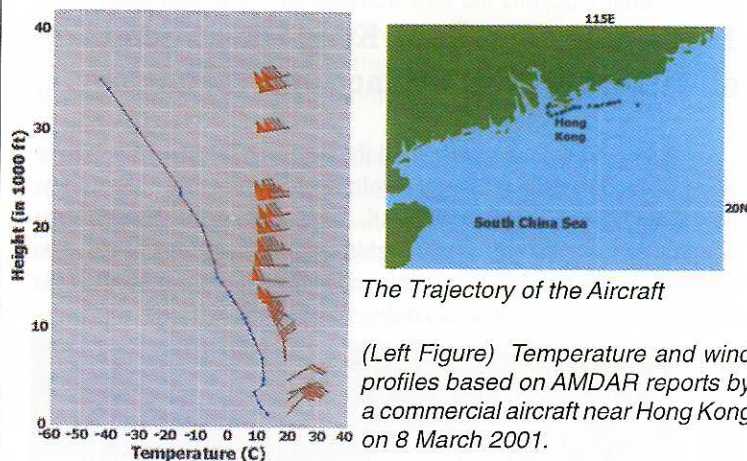
(Left Figure). The low-level circulation centre of Typhoon Sulik over the Western North Pacific on 3 Jan 2001 as analyzed by the gridded QuikSCAT winds.

(Right Figure). Setting all winds to an arbitrary uniform speed, vorticity values are computed. Based on the vorticity maximum, the centre of Sulik was estimated to be near 17°N, 137°E.

HKO receives AMDAR data

In February 2001, the Hong Kong Observatory started receiving AMDAR (Aircraft Meteorological Data Relay) data over the South China Sea, considered a data-sparse area for many years. AMDAR data enables modern commercial aircraft with the appropriate software on-board to automatically transmit weather reports using commercial air-ground data link.

As of mid-2001, HKO has received about 4,000 AMDAR reports a day which came within the area covered by the Observatory's numerical weather prediction models. These reports, made either during ascent or descent at the Hong Kong International Airport, have proved to be of value in monitoring and detecting low-altitude windshear and turbulence. HKO is discussing with local airlines with a view to enlisting their participation in the program.



The Trajectory of the Aircraft

(Left Figure) Temperature and wind profiles based on AMDAR reports by a commercial aircraft near Hong Kong on 8 March 2001.

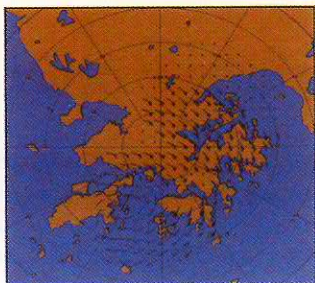
HK's first midget tropical depression

On the evening of 18 June 2000, for the first time since records began in 1884, a midget tropical depression was observed by radar from its formation stage to its passage over Hong Kong.

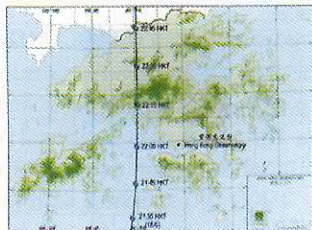
The tropical depression, about 100 km in diameter, formed over the waters to the south of Hong Kong at around 9 in the evening that day. The minimum pressure near its center was about 1000 hpa, and the maximum (10-minute mean) winds were about 68 km/h. Doppler radar observations showed that the circulation of the midget depression was well organized.

Following genesis, the midget depression swept across Hong Kong from south to north at about 30 km/h. The speed of formation and movement necessitated the hoisting of Strong Wind Signal No. 3 before the Standby Signal No. 1 was hoisted first as would normally be the case. This happened only once before - during the passage of Tropical Storm Nora in September 1959.

Any public apprehension that might have been aroused by this very rare event was successfully allayed by a strategy of keeping the community quickly and fully apprised of the development, strength, movement, and expected impact of the tropical depression. The information was disseminated through press briefings, HKO's dial-a-weather service and the internet homepage.



Dual Doppler wind fields at a height of 1.5 km captured at around 21:30 Hong Kong Time on 18 June 2000. Winds were derived from a Doppler radar at Tai Mo Shan and another at Tate's Cairn.



Track of the mid-level tropical depression over Hong Kong. The letters HKT marked along the track stand for local time which is 8 hours ahead of UTC.

15th Guangdong-Hong Kong-Macao Seminar on Meteorological Science and Technology

Some 40 delegates attended the fifteenth Guangdong - Hong Kong - Macao Seminar on Meteorological Science and Technology, held at the HKO Headquarters on 14-15 February 2001. The seminar was another occasion for the neighboring meteorological services to share their knowledge, techniques and experiences in all areas related to severe weather and delivery of services.



(Top) Directors Li Mingjing (left) of Guangdong Meteorological Bureau, Dr. Lam Hung Kwan (middle) of Hong Kong Observatory and Dr. Fong Soi Kun of MMGB at the opening of the 15th Guangdong-Hong Kong-Macao Seminar on Meteorological Science and Technology and the 6th Guangdong-HK-Macao Meeting on Cooperation in Meteorological Services. (Above) The participants in the 15th Guangdong -HK-Macao Seminar on Meteorological Science and Technology.

Wind shear and Internet meteorological services were discussed for the first in the 2-day seminar. Also presented were matters relating to the maintenance of the observational networks set up through cooperative efforts as well as the exchange of data and products.

Japan

GMS-5 operation rescheduled

The Japan Meteorological Agency (JMA) said it has cut off its Geostationary Meteorological Satellite (GMS)- 5 observation for the southernmost latitudes on June 5, 2000. The action was taken after a problem surfaced in June when the torque of the motor of the VISSR scan mirror unit increased and reached the criterion for the operation change at the mirror position for scanning the southernmost portion of the observation area.

The motor torque around the south end of the picturing increased steadily even after the cut-off and has recently reached the said criterion again. With the GMS-5 required to continue its operation until the takeover of the Multi-functional Transport Agency-1R (MTSAT-1R) in summer of 2003, JMA has decided to introduce further reduction of the VISSR observation of the GMS-5.

Starting 4 July 2001, the observation area will be reduced further in the south end latitudes and the observation frequency for the southern hemisphere will be also decreased as follows:

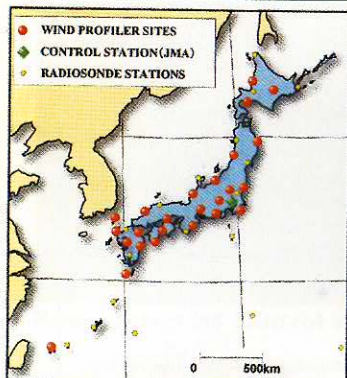
- a) Full disk picturing;
 - * sixteen times at 0000, 0300, 0500, 0530, 0600, 0900, 1100, 1130, 1200, 1500, 1700, 1730, 1800, 2100, 2300, 2330 UTC.
 - * the south end of the observation area is around 49°S.
- B) Northern Hemisphere picturing;
 - * twelve times at 0100, 0200, 0400, 0700, 0800, 1000, 1300, 1400, 1600, 1900, 2000, 2200 UTC.

With the reduction in observation, JMA hoped GMS-5 will successfully function without interruption until the operation of MTSAT-1R.

JMA launches Wind Profiler Network

In April 2001, the Japan Meteorological Agency (JMA) started to operate a nationwide network of wind profilers. The network consists of 25 sets of profilers which make high resolution measurements of the vertical profile of winds to enhance upper-air observations together with existing 18 balloon-based stations in Japan. The network is under the control of the Profiler Operation Center (POC) at the JMA headquarters in Tokyo, which also carries out collection and quality management of the profiler data.

The wind profilers operate at the frequency of 1357.5MHz with the peak power of 2KW and provide wind speed/direction at altitudes of 200m up to 3-4km in winter or 6-7km in summer, depending on the atmospheric condition, with height resolutions of 200-300m every 10 minutes. The additional upper-air data from the wind profilers is expected to make substantial improvements to the performances of the newly established Numerical Analysis and Prediction System (NAPS) of JMA, particularly the Meso-Scale Model (MSM) which requires observational data of higher resolution in both time and space.



Wind Profiler Network and radiosonde stations.



Aerosol Profiler

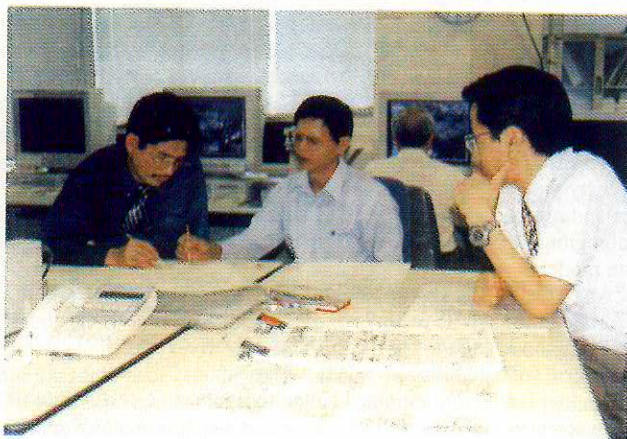


Wind Profiler at Oita Station

On-the-job training at RSMC Tokyo-Typhoon Center

Two forecasters from Viet Nam and Cambodia stayed at the RSMC Tokyo-Typhoon Center from 2 to 13 July 2001 for the on-the-job training for typhoon operation. The training program was inaugurated with the support of the Typhoon Committee and WMO in response to the proposal presented at the 33rd session of the Typhoon Committee.

During the training, the two forecasters tackled STS UTOR (0104) and TS TRAMI (0105) in real time in reference to the operational procedures of the Center. The program will be conducted yearly during the typhoon season.



Le Van Thao and Samoeun Sonara training at the Center

Macao, China

World Meteorological Day 2001

Macao, China joined the members of WMO worldwide in celebrating World Meteorological Day (WMD) 2001 which promoted this year's theme - Volunteer for Weather, Climate and Water. On this occasion, the Macao Meteorological and Geophysical Bureau saluted Professor Vong Chau Son, the volunteer who has been working in the field of meteorology for over 50 years. Prof. Vong was awarded a medal for his contribution in education and other work relative to geography, weather and climate. He has also published several geographical atlas such as An Album of Chinese Maps, The World Atlas, Geografia de Macau, Viagem a Portugal, and Atlas of the Macao Special Administrative Region.

Highlight of the celebration was the Bureau's launching of four new public weather services, as follows:

- * **Thunderstorm Warning.** To warn the people of thunderstorms and heavy rain through lightning detector and doppler weather radar.

- * **Ultra-Violet Index Dissemination.** To measure the intensity of solar UV radiation and calculate UV index in accordance with the UV index recommended by WMO through the use of broadband UV sensor. This information will be published to the public every hour through the Bureau's web page, while daily maximum and daily average values are disseminated through media.

- * **Fourth Air Quality Station.** Air quality index (AQI) including monitoring of PM10, SO₂, NO_x, CO, and O₃, from the automatic monitoring network had been launched since WMD 1999. The network includes ambient station, high residential area and roadside station. To strengthen air quality monitoring services and owing to the rapid development in Taipa Island, the fourth monitoring station was built and has started operation in central Taipa.

- * **Air Quality Forecast.** To provide early warning to public especially during high episode day and for those with heart conditions, the daily AQI forecast was launched. The subjective analysis forecast is made after analysis of MM5 products such as prognostic weather charts, planetary boundary layer, trajectory of air parcel around the area, and also with reference to the output results from two AQI forecast model.

A dinner reception wrapped up the WMD activities where an award was given for long-term service (20 years) and for two members of the Youth Amateur Meteorological Association for their active participation.



Director Fong Soi Kun speaks during WMD celebration.

Malaysia

Effect of Tropical Storm RUMBIA on Monsoon Rainfall of Peninsular Malaysia

by: Phang Kun Liong, Malaysian Meteorological Service

During the months of November and December, cold surges from China will result in the strengthening of low-level winds over the South China Sea. The resulting strong winds in combination with other synoptic conditions cause heavy rain to occur over the east coast of Peninsular Malaysia and the South China Sea adjacent to it.

Tropical Storm Rumbia formed over the Western Pacific Ocean, east of Mindanao, on 28 November 2000. It moved northwestward towards South China Sea and was positioned over Palawan Island on 2 December. In response to this, the cyclonic vortex over the southern South China Sea, between Peninsular Malaysia and Sarawak, weakened to form a trough linking to Tropical Storm Rumbia. From 2 to 4 December, the intensification of pressure gradient between southern China and South China Sea (Figure 1) led to a cold surge as indicated by the strengthened low-level winds over South China Sea, between Indochina and Tropical Storm Rumbia (Figure 2). On 4 December, the tropical storm weakened and dissipated due to increasing cold air entrainment from the lower level and increasing vertical shear. However, it reintensified rapidly on 5 December and moved slowly towards the southern coast of Viet Nam before dissipating on 8 December.

From 4 to 8 December, the near equatorial trough was located to the north of Peninsular Malaysia while the strong northeasterlies resulting from the cold surge were drawn into Tropical Storm Rumbia. As a result, the east coast of Peninsular Malaysia was not affected by the strong winds and it experienced a period of dry weather (Figure 3).

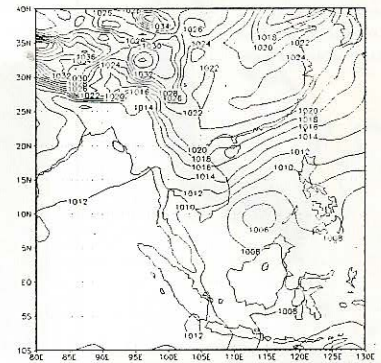


Figure 1: Mean Sea Level Pressure on 4 December 2000 at 0000 TC.

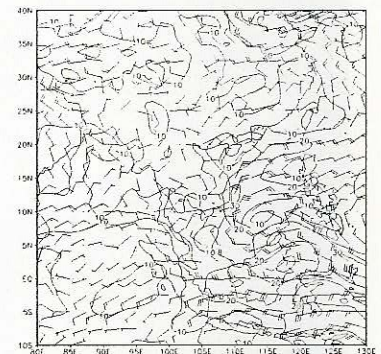


Figure 2: 850 hPa Winds on 4 December 2000 at 0000 UTC. (Data for Fig. 1 & 2: Japan Meteorological Agency)

Figure 3: Daily Rainfalls (in mm) recorded by three east coast stations in Peninsular Malaysia from 4 - 9 December 2000. (Data: Climatology Division, Malaysian Meteorological Service)

Stations	Date					
	4 Dec	5 Dec	6 Dec	7 Dec	8 Dec	9 Dec
Kota Bharu	0	0	0	0	0	0.5
Kuala Trengganu	0	0	0	0	0	Trace
Kuantan	Trace	0.6	Trace	Trace	0	0

Philippines

Third RA V conference held in Manila

The Philippine Department of Science and Technology (DOST) underscored the importance of global nature of meteorology and international cooperation for the provision of better services in light of the changing requirements of users for more precise and reliable information - the focus of the third technical conference on Management of Meteorology and Hydrological Services in Regional Association V (South-West Pacific) held successfully in Manila, Philippines, from 23 to 27 April 2001.

"Rapid development of science and technologies offers opportunities to cope with users requirements and future challenges, and it is necessary that the National Meteorological Services have the resources to meet these challenges," said Dr. Estrella Alabastro, secretary of DOST, in her message to some 22 participating countries including 4 non-members of WMO from the small island developing States of Kiribati, Marshall Islands, Nauru and Tuvalu.

Top officials at the WMO conference, which had the theme "NMHSs

in the New Millennium: Provision of Better Services," included M.J.P. Jarraud, Deputy Secretary-General of WMO; R. Sri Diharjo, acting President of RA V; Eisa H. Al-Majed (WMO); J. W. Zillman (Australia) and Leoncio Amadore, Director of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA).

The conference called on the NMHSs and the rest of the scientific community to work together and generate policy options for meeting the impacts of climate change in different sectors of the economy, in light of new challenges which influence their development and operations, such as globalization, the introduction of market-led economies, and rapid advances in science and technology.

While substantial progress has been made in understanding the Earth's climate system as well as the prediction of climate change and its impact on sustainable development, the meeting said further efforts should be made by the NMSs on improved data availability, particularly, over the oceans and remote regions; improved climate predictions at the regional and subregional levels; and the refinements of methods including enhanced climate models.

Also, the NMSs should develop appropriate strategies taking into consideration the specific features of the regional and individual countries, its socio-economic situation and cultural perspectives and values to ensure the long-term sustainability of NMSs. They should lead and take initiatives in matters related to climate change to make sure availability of appropriate scientific information to policy and decision makers in order to assist the countries in the region to develop suitable policies and participate in addressing climate change issues.



Participants in the Third RA V Technical Conference

On planning and management including capacity building of NMSs, the conference reiterated that the Services should be the single official national voice in tropical cyclone warnings and allied situations as well as an authoritative scientific voice in relevant issues including aeronautical and marine meteorology, climate change, natural disaster mitigation and international data exchange. The NMSs should establish close working arrangements and promote strategic alliances with relevant institutions within their respective countries.

On the status of the NMSs of the four non-members of WMO in the Pacific Region, the conference said WMO should provide justification for the benefit of their joining the Organization, as well as the appropriate mechanism in providing training needed by these developing countries. It urged the Members and concerned institutions in the region to give their support to enable these countries to establish or strengthen their meteorological observing networks and services.

The conference welcome the development by Members of the Strategic Action Plan for the Development of Meteorology in the Pacific Region (SDPM) - 2000-2009. It requested WMO to assist Members, particularly, the Pacific Island countries to promote, secure resources and implement the SDPM (2000-2009) and the proposed projects resulting from the needs analysis. The Pacific Region NMSs must in turn seek support and approval of the proposed projects from their national authorities and include them as part of national development program.

The conference urged Members to make use of the Internet and regional Intranet, web sites and television presentations for the distribution of data and information to users and the general public. The NMSs should also inform WMO of their experiences in the area of alternative services delivery of meteorological services which could be brought to the attention of the EC Working Group on the Role and Operations of NMHSs.

Finally, the Manila conference reviewed the recommendations made at the Second RA V Conference held in Nadi, Fiji, on 14-18 November 1998. It called for appropriate measures to monitor the progress in their implementation and for the Members to submit to WMO information on the actions undertaken.

2nd Multilateral Symposium Working Group Seminar on Disaster Response and Humanitarian Assistance

Some 19 countries attended the 2nd Multilateral Symposium Working Group on Disaster Response and Humanitarian Assistance held in Makati, Philippines, from 23-27 October 2000. The 5-day multilateral symposium focused in strategies for strengthening and improving disaster response. Topics presented included *Early Warning System, Decision and Planning Processes, and Mitigation*.

Among the international organizations represented at the symposium included the Center of Excellence in Disaster Management and Humanitarian Assistance (USA), Cranfield Disaster Management Center (UK), Emergency Management of Australia and the Asia Pacific Disaster Management Center (Philippines). Dr. Roman L. Kintanar of WMO Typhoon Committee Secretariat spoke on the topic *Typhoon Mitigation Strategies*.

Republic of Korea

KMA installs multicube system

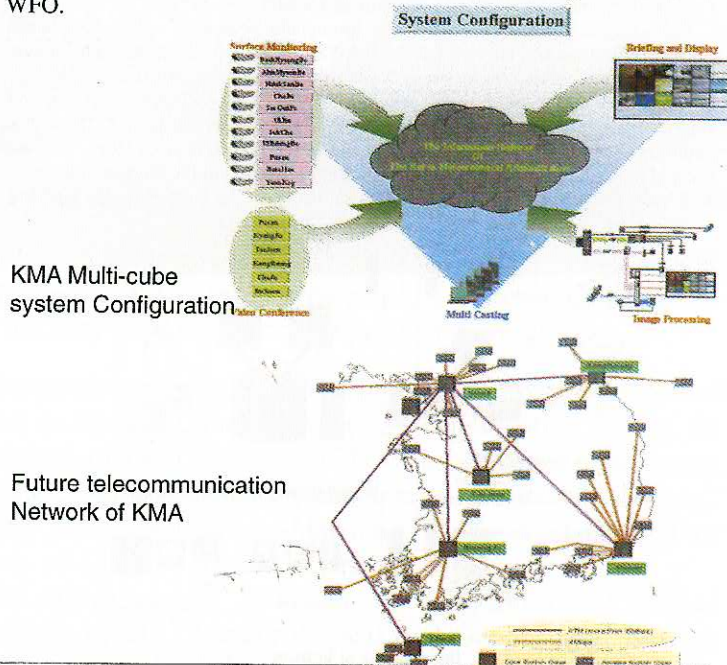
KMA has installed a multicube system in its forecast room to improve the efficiency of its forecasting work in the monitoring of sea surface conditions and aviation forecasts. The system consists of CCTVs (closed circuit televisions) at eleven weather forecasting offices (WFOs) along the coast of the Korean Peninsula.

Observed sea surface conditions, forecasting opinions and local area forecasts are displayed directly onto screens of the multicube system, through the video conference network of KMA. The multicube system, consisting of 18 45-inch monitor, integrated an existing video conference system and a sea surface monitoring system.

With the installation of the real-time system, all KMA-held video conferences and marine observation data can be seen on personal computers installed in any KMA branch office.

The telecommunications network that is the basis of the multicube system consists of a main backbone network between the KMA headquarters and Regional Meteorological Offices (RMOs), and of a minor backbone network between RMO and its subsidiary WFOs. The throughput of the main backbone network was upgraded from E1(2.048Mbps) to ATM (Asynchronous Transfer Mode: 6Mbps) in 2000.

KMA plans to upgrade the minor backbone network from the current E1(2.048Mbps) to ATM 4Mbps in 2001. When completed, all charts, images and other observation data are expected to be exchanged at a very high speed among the five RMOs and the 35 WFOs, including the Aviation WFO.



New Combined Meteorology Information System established

The New Combined Meteorology Information System (NCOMIS) was established by KMA in 2000 to replace the Combined Meteorology Information System of 1996. The new system uses highly advanced telecommunications technology, information technology (IT) and computer hardware.

KMA focused on five major goals in establishing NCOMIS, as follows:

- * To build a systemic meteorological information infrastructure
- * To build the best cybernetics through client-oriented Internet services
- * To build an efficient and advanced administrative infrastructure

- KMA Groupware Home page

Top officials at the opening of the conference (from left) Q. Chaudhry of Technical Support Unit of PTC, K. Abe of TCP (WMO), W. Sarathulthap, Director-General of Thai Meterological Department, C. Ertuna of ESCAP and B. Kintanar of TCS.