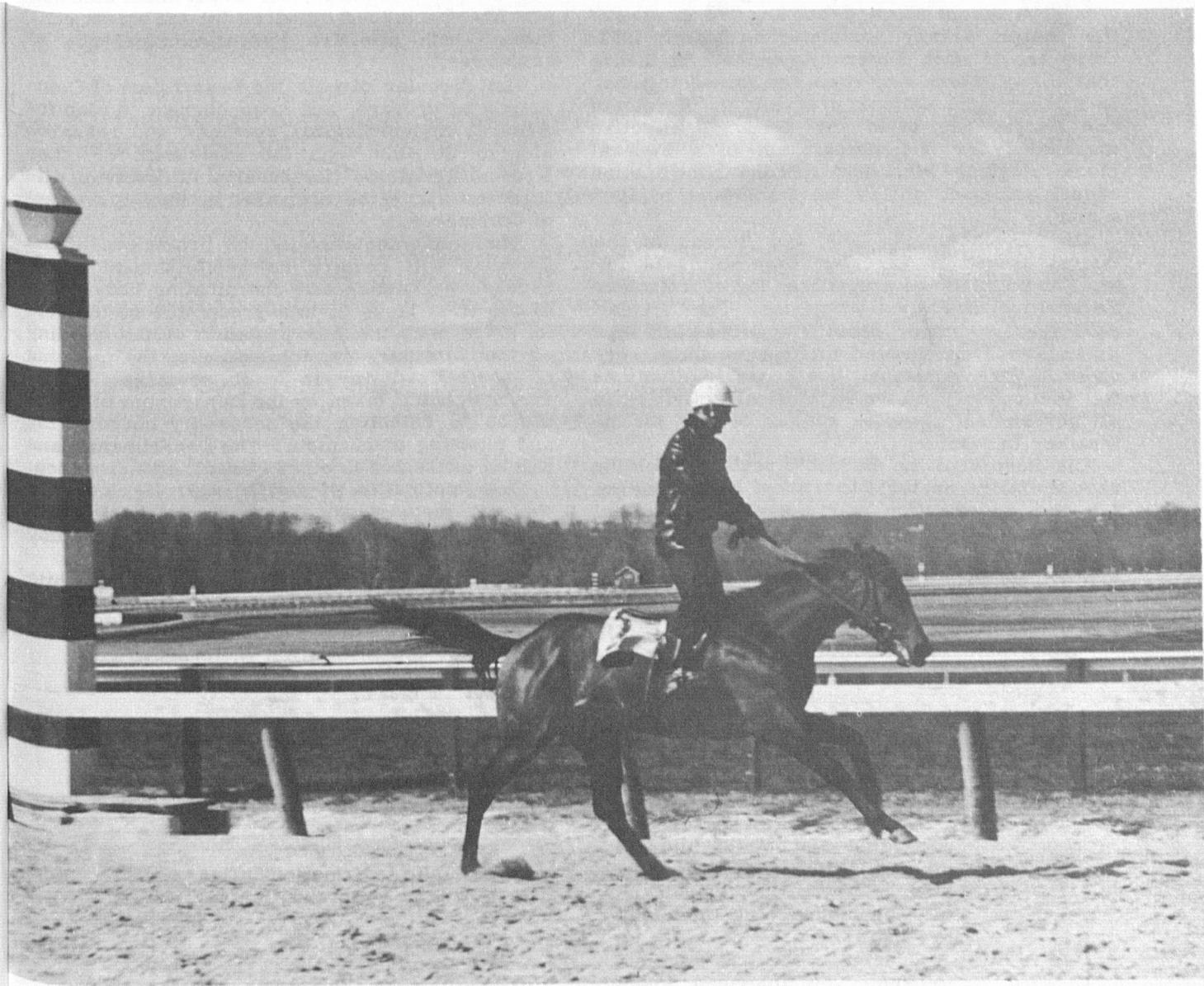


Weather Bureau
TOPICS

U. S. Weather Bureau
JANUARY 1964 VOL. 23 NO. 1



UNITED STATES DEPARTMENT OF COMMERCE • WEATHER BUREAU

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Bureau of the Budget Circular Summary

Since weather affects nearly all of man's activities, it is natural that many different organizations engage in meteorological activities.

In government alone, according to a Bureau of the Budget survey completed in March 1962, there are 15 such Federal Agencies. To insure that all of these activities are joined together in a meaningful national program, the Bureau of the Budget has cited the need for effective mechanics for the preparation of a Federal Meteorological Plan and for the coordination of all activities within the framework of such a plan.

On November 13, 1963, the Bureau of the Budget issued a Circular (see pp. 12-14 for text) on policies and procedures for coordinating Federal meteorological programs. The Circular covers only weather service activities and supporting research needed to improve those services. This document has broad implications for the conduct of meteorological activities in all government agencies and, of course, for the Weather Bureau.

The Bureau of the Budget Circular places the responsibility on the Department of Commerce for the coordination and planning of national meteorological programs. The Circular draws a distinction between basic and specialized weather services. The Department of Commerce

will provide basic weather services required by the public and by other agencies. Under normal circumstances, the Department also will provide specialized services "to the extent consistent with effective and economical use of resources."

The Circular directs the Department of Commerce to prepare, and keep current, a plan for Federal meteorological services and research and to do this with the assistance of other Federal Agencies. Leadership in resolving differences should be exercised by the Department of Commerce.

The implementation of the provisions of the Circular will require the establishment of the necessary planning and coordinating body. One of the first tasks of this group will be to come to grips with the interpretation of the wording of the Circular, as, for example, the meaning of specialized versus basic services. Steps are now being taken by the Department of Commerce to establish the necessary coordinating and planning mechanism. The Department plans will be presented to other Federal Agencies soon.

One implication of the Circular is clear. In Federal meteorological programs, the Department of Commerce has been given the leading role.

Robert M. White

What's Going On Out There?

In recent months, we have received very few articles or news items from field stations.

Don't you have any special programs that would interest other TOPICS readers? Any strange, humorous, coincidental, or astonishing incidents to report?

Of course, we will continue to keep you informed about Bureau-wide policies and goals, programs and progress. And we can't carry such personal news as marriages, births, and broken legs. Still, we would like to tell others about your

station's significant accomplishments.

Write down the details and send to:

TOPICS Editor
Public Information Office
Weather Bureau Central
Office
Washington, D.C.

A note about deadlines

Deadline for submission of material for TOPICS is the 8th of the month preceding the date of issue. For example, material for March TOPICS must be received no later than February 8.

Topigrams

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1964

Washington, D. C.
January 1964

Dr. George P. Cressman, Director of the National Meteorological Center, has been appointed to the WMO Advisory Committee, which will assist the Organization in planning the world weather watch and in solving problems arising from UN Resolution 1721. The other U.S. member of the 12-man Advisory Committee is Dr. Walter Orr Roberts of the National Center for Atmospheric Research.

In early December, Dr. White visited the Pacific Supervisory Office at Honolulu and Bureau offices at San Francisco and Los Angeles. During his stay in Honolulu, he attended a conference of Meteorologists in Charge of Weather Bureau stations in an area extending from the Hawaiian Islands to the western Pacific. This was the first Pacific MIC conference ever held.

Harold R. McBirney, Acting Chief of the Instrumental Engineering Division, recently spent three weeks in Guinea directing the installation of meteorological equipment at Conakry International Airport. The government of Guinea had asked the Agency for International Development (AID) for assistance in improving the accuracy of weather observations at the airport, which is used by several major airlines. Mr. McBirney was selected by AID to survey facilities and supervise installation of equipment purchased by AID.

San Francisco, Anchorage, Honolulu, and John F. Kennedy (Idlewild) International Airports are now transmitting selected pilot reports received from sparse-data ocean areas to the National Meteorological Center on a regular basis. At NMC, the reports are machine processed for use in computer analyses and forecasts.

Beginning this month, automatic data-processing methods are being used to determine maintenance requirements of all Weather Bureau equipment serviced by electronic technicians.

Construction of six Weather Bureau housing units at American Samoa has begun. The Government of American Samoa is building these units and will also construct a Weather Bureau office and inflation shelter.

On the cover...

Leon Rothenberg's "Riding High" took third prize in the Action class in the annual Department of Commerce photographic contest. Mr. Rothenberg is a Forecast Development Analyst in the Office of Forecast Development. We regret that November TOPICS, containing the announcement of the contest, reached field stations too late for entries to be submitted.

National Oceanic and Atmospheric Administration Weather Bureau Topics and Personnel

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Briefs from the CO Staff Conferences

The staff discussed the statements of President Johnson with respect to economy in Government. Dr. White indicated that the Bureau must begin reviewing its programs in anticipation of directives to curtail expenditures further. A memo transmitting the President's directive and Secretary Hodges' memorandum on this subject has gone to all offices requesting a critical review of possible economies by mid-January. Mr. Gleiter stated that, in view of administration aims, budget and manpower allowances for Fiscal Year 1965 are being reviewed to identify areas where retrenchments can be made.

Mr. Grubb announced that no employees are to be added to the payroll without Department of Commerce approval. This action became effective in mid-December.

On December 2, Dr. White conferred informally with some members of the AMS Committee on Industrial Meteorology. The discussion covered the need for private meteorologists to broaden their activities to include research and development; the possibility of "clinics," in which Government representatives would keep private meteorologists informed of future agency requirements that could be met by contracts to private and industrial meteorologists; and the desirability of a pilot project to study the weather sensitivity of a particular industry.

The staff discussed Weather Bureau plans for implementation of Bureau of the Budget Circular A-62 dealing with coordination of Federal meteorological programs.

Dr. White pointed out that, in planning prior to Fiscal Year 1966 budget estimates, present services and new services should be identified as well as the research and development needed to improve these services. The estimates should be organized to conform with the Bureau of the Budget Circular. Responsible program leaders will develop technical plans in their service areas. These plans will be integrated by the Office of Planning and reviewed by the Resources Office. The overall plan will then be reviewed by a plans review board, chaired by the Chief of the Bureau.

Dr. White commented on his trip to Boulder, Colorado, where he attended a meeting of the Interdepartmental Committee on Atmospheric Sciences and visited the National Center for Atmospheric Research and the National Bureau of Standards' Central Radio Propagation Laboratory. He was favorably impressed by the excellent facilities of NCAR and CRPL. The Central Radio Propagation Laboratory has several programs of interest to the Weather Bureau, including clear air turbulence, infrared, and solar weather.

WEATHER and the FUTURE



Our new President, Lyndon B. Johnson, brings to office an exceptional knowledge of the space sciences.

As Senator and Vice President, he demonstrated a keen interest in all aspects of space technology. Under President Kennedy, he was Chairman of the National Aeronautics and Space Council, and he has indicated that he will continue to hold this office.

In April 1963, the following message from Lyndon Johnson appeared in a special issue of *Astronautics and Aerospace Engineering*.

WEATHER AND THE FUTURE

As satellites extend man's vision into new dimensions, weather forecasting will make major advances as a science, until we see reliable predictions a season ahead. This will have far-reaching economic benefits for all. Following are some estimates of cost-savings, assuming that we can predict weather accurately only five days in advance:

- *\$2 1/2 billion a year in agriculture
- *\$45 million in the lumber industry

- *\$100 million in surface transportation
- *\$75 million in retail marketing
- *\$3 billion in water-resources management

These estimates of savings are for just the United States. Worldwide benefits would be many times as great.

Continued scientific research aimed at understanding the underlying processes that produce weather and determine climate may lead us in the next decade to control weather and modify climate.

This exciting prospect poses a profound challenge to our scientists to gain a thorough understanding of the consequences of any man-made interferences to insure that they are beneficial. For the atmosphere represents an international resource of fundamental importance to all mankind. To use it intelligently, we must understand its workings, predict its behavior, and learn how to modify some of its excesses, as we fulfill our destiny in mastering the space environment.

(signed) Lyndon B. Johnson

TIROS VIII Orbits With APT Aboard, Satellite Provides 'Instant Photos'

The eighth weather satellite in the highly successful TIROS series was launched by the National Aeronautics and Space Administration from Cape Kennedy on December 21, 1963.

A Thor-Delta rocket placed TIROS VIII into almost exactly the orbit planned—altitude from 436 to 468 miles; inclination to Equator, 58.5 degrees; orbital period, 99 minutes.

TIROS VIII carries automatic picture transmission (APT) equipment enabling it to take meteorological photographs and send them immediately to relatively simple ground stations around the world for local weather analysis.

The testing of APT equipment and techniques within the satellite and at associated ground receiving stations is a primary mission of TIROS VIII. This satellite also carries a standard TIROS TV camera, and will augment TIROS VII in regular surveillance duties.

Standard TV and spacecraft data are being acquired by the regular command and data-acquisition (CDA) stations at

Wallops Island, Virginia; Point Mugu, California; and the new satellite station at Gilmore Creek, Alaska.

The APT system is providing 41 special ground stations with photographs directly from TIROS VIII. These stations are maintained by the Army, Navy, Air Force, NASA, and Weather Bureau. The APT system transmits pictures continuously and ground stations receive them whenever the spacecraft is within radio range. With optimum elevation angles, each station can receive an average of three photos during each satellite orbit around the earth. Photographs of the earth and its cloud cover approximately 820 miles on a side are being taken by the satellite's slow-scan TV, producing a complete picture in about 200 seconds.

Meteorologists at APT ground stations can make immediate use of the cloud pictures for locating clouds and associated frontal systems and as a valuable supplementary observation and analysis tool.

U.S., Mexico Establish Three Upper-Air Stations

Three new upper-air stations in northern Mexico are being established in a cooperative program with the Mexican Meteorological Service. Sites for the stations are Empalme (Guaymas), Monterrey, and Chihuahua, where radiosonde observations will be taken twice a day.

These stations will fill a gap in the weather-reporting network, allowing improvement in forecasts and warnings of severe storms in the southwestern United States and northern Mexico. The upper-

air measurements also will provide data for international aviation interests and for research on global circulation of the atmosphere.

The U.S. Weather Bureau will furnish balloon inflation buildings, electronic tracking equipment and a maintenance technician, and expendable flight equipment. Mexico will provide land for the stations, office buildings, and operating personnel.

It is hoped that all three stations can be in operation by mid-1964.

Chief of Canadian Weather Services Resigns Position

The Director of the Canadian Meteorological Service, Dr. Patrick D. McTaggart-Cowan, resigned January 1 to accept the presidency of a new university, the Simon-Fraser University, British Columbia. Since his appointment to the Directorship in 1959, he continued the close cooperation between the U.S. and Canadian meteorological services.

Dr. McTaggart-Cowan also resigned his position as president of Regional Association IV of the World Meteorological Organization. He is succeeded by vice president Elliott Coen of Costa Rica.

Born in Edinburgh, Scotland, Dr. McTaggart-Cowan came to Canada with his parents. He graduated from the University of British Columbia in 1933 with first-class honors and was awarded a Rhodes Scholarship to attend Oxford University, where he graduated from Corpus Christi College with an Honors degree in natural sciences.

Before joining the Canadian Meteorological Service in 1936, Dr. McTaggart-Cowan was assigned to the British Meteorological Office at London Airport and later to Newfoundland, where he organized a forecasting service for experimental commercial trans-Atlantic flights. This service was of great importance to wartime flights from North America to Europe.

A past president of the Canadian Branch of the Royal Meteorological Society, Dr. McTaggart-Cowan received the prized Robert M. Losey Award from the Institute of Aeronautical Sciences in 1959. He was elected president of WMO Region IV in April 1963.

Committee Studies Federal Scientific Research Programs

Profile...

GUY H. DORSEY

The Interdepartmental Committee on Atmospheric Sciences, which is headed by Dr. J. Herbert Hollomon, Assistant Secretary of Commerce for Science and Technology, is conducting a study of Federal research programs in the atmospheric sciences and their potential contribution to national objectives.

Every agency with substantial interests in the atmospheric sciences is participating in the study. Within the Department of Commerce, the National Bureau of Standards will analyze research and development designed to facilitate electromagnetic propagation through the atmosphere. The Weather Bureau will conduct an analysis of research and development to improve the means of describing and predicting the weather for social and economic purposes.

A steering committee, composed of distinguished scientists and economists from government, industry, and universities, has been appointed to guide the Weather Bureau's study and to review findings and recommendations. Members of the steering committee are: Dr. Edward Ackerman, Carnegie Institution; Dr. Michael Ference, Ford Motor Co.; Professor Aaron Fleischer, MIT; Robert Garbarini, NASA; Professor Tjalling Koopmans, Yale University; Professor John Muth, Carnegie Institute of Technology; Professor Henry Raiffa, Harvard University; Dr. Randal Robertson, National Science Foundation; and Dr. Chalmers Sherwin, Department of Defense. Dr. Robert M. White, Chief of the Bureau, will

(continued on page 9)

Guy H. Dorsey, new Chief of Personnel Management Division, may be new to the Weather Bureau, but he's no stranger to the complexities of Department of Commerce personnel procedures. Mr. Dorsey has served continuously in the Department since 1935 (with the exception of a hitch in the Navy from 1943-1946) and most of his activities have been in the field of personnel.

Mr. Dorsey came to the Bureau from the Office of the Secretary of Commerce, where he was Chief, Employment Division. He was also Appointing Officer for the Office of the Secretary, Office of Business Economics, and the U.S. Travel Service. His work there included the responsibility for providing guidance in employment matters to all Bureaus throughout the Department as well as official representation of the Department of Commerce in a wide variety of areas in the personnel field.

In 1962, Mr. Dorsey was awarded the Department of Commerce Meritorious Service Award (Silver Medal) by Secretary of Commerce Hodges for "sustained outstanding performance and demonstrated ability in a position of great responsibility in the Department's personnel program."

During 1957 he served on the Pay and Turnover Subgroups of the Committee on Scientists and Engineers for Federal Government Programs. The Committee's report was submitted to the President and covered many areas of study pertinent to the improvement of personnel management of scientists and engineers in the Federal service.

Prior to his assignment to the Office of the Secretary in 1956, Mr. Dorsey served with the former Bureau of Air Commerce (later Civil Aeronautics

Administration) in a variety of personnel assignments in Newark, New Jersey; New York City; and Washington, D.C. His



Guy H. Dorsey

last position with the CAA was that of Deputy Personnel Officer.

In 1952-1953 Mr. Dorsey served briefly with the National Production Authority, first as a representative of the Department of Commerce on detail, and later as Chief, Employment Branch.

From 1942 to 1946 he served in the U.S. Naval Reserve. He was discharged a Lieutenant designated as Industrial Relations Officer, U.S. Naval Air Test Center, Patuxent River, Maryland.

Born in Riverside, New Jersey in 1915, Mr. Dorsey married Betty May Brown in 1947. They have two children.

Mr. Dorsey holds a B.A. degree in Business Administration from George Washington University and has participated in a number of specialized activities relating to executive development, utilization of the handicapped, incentive awards, and personnel management. He is a member of the Society for Personnel Management.

Advisory Committee on Climatology Holds Two-Day December Meeting

The Advisory Committee on Climatology met at Suitland, Maryland, on December 12 and 13.

The Committee was addressed by Dr. Landsberg, Director of Climatology, and heard talks by members of the Office of Climatology on such subjects as the field program of state and area climatologists, machine development and processing, marine program, National Atlas, and reports on research in climatology (arctic, aviation, climatic change).

Current members of the Committee are Dr. Douglas B. Carter, of Syracuse University; Professor A. Vaughn Havens (Chairman), of Rutgers University; Dr. John R. Mather, President of C.W. Thornth-

waite Associates; Dr. David H. Miller, of the Pacific Southwest Forest and Range Experiment Station; Dr. Reid A. Bryson, of the University of Wisconsin; and Dr. Kenneth R. Knoerr, of Duke University.

Established in 1955, the Committee advises on progress in climatology and evaluates independently the climatological program of the Bureau.

Satellite Center Holds 'Embassy Days' For Foreign Naval, Scientific Attaches

Naval and scientific attaches from 34 embassies attended a special program conducted at the National Weather Satellite Center during the last four months.

A Telephone Tip

"This is Mr. Smith calling long-distance from New York for Mr. Brown."

Telephone calls from field stations to Central Office sections and divisions can be handled more rapidly when the answering secretary is aware that the call is long-distance. Such identification is necessary especially with FTS (Federal Telecommunications System) calls which bypass the Weather Bureau switchboard.

Called "Embassy Days," the program was designed to inform the worldwide community of the economic and scientific benefits derived from the use of satellites. The attaches invited represent scientific, technical, and agricultural interests in their nations.

The "Embassy Days" presentation consisted of introductory remarks by the Director, short talks by staff scientists from the Synoptic, Planetary, and Physical Meteorology Branches, and a tour of the NWSC and National Meteorological Center.

The tour included the Automatic Picture Transmission (APT) ground station, the NWSC Photo Lab and Documentation Section, the new Data Processing and Analysis Facility, and the facilities of the National Meteorological Center.

Attaches attending represented Canada, China, Brazil, Netherlands, Iraq, South Africa, Poland, Somaliland, France, Denmark, Yugoslavia, Indonesia, Chile, Germany, Thailand, and Cyprus.

Also participating in the program were Italy, Iran, India, Hungary, Pakistan, Sweden, U.A.R., Switzerland, Mexico, Dahomey (West Africa), Great Britain, Belgium, Columbia, Australia, U.S.S.R., Portugal, and the Philippines.



Members of the Advisory Committee on Climatology who met at Suitland on December 12 and 13 are: (left to right) Dr. Miller, Dr. Mather, Prof. Havens, Dr. Knoerr, Mr. Bailey, and Dr. Carter. At the far right is Dr. Landsberg, Director of Climatology. Dr. Bryson of the University of Wisconsin was unable to attend this meeting.

Landgren Is Named New Knoxville MIC

Perry M. Landgren has been appointed the new Meteorologist in Charge at WBAS Knoxville, Tennessee. He replaces Mr. E.M. Rampey who is retiring this month. Mr. Landgren has been Principal Assistant at WBAS El Paso, Texas, since June of 1962.

Mr. Landgren joined the Weather Bureau as a Junior Observer at Duluth, Minnesota, in 1941. He remained there until 1946 (except for a tour of duty with the Navy) when he transferred to Juneau, Alaska, as an Airway Forecaster. In 1950 he was assigned FAWS Supervisor at Albuquerque, New Mexico. He became Principal Assistant at El Paso, Texas, in 1952 and transferred to WBAS Miami in 1959 as Leading Aviation Forecaster. In 1961, he accepted an assignment as Meteorologist with the OCDM Office at Everett, Washington. From there he returned to his last assignment in El Paso.

Mr. Landgren served in the Navy from 1942 to 1946 and did forecasting at the Navy Weather Center in Kodiak, Alaska, and the Naval Air Facility at Columbus, Ohio.

ICAS (continued)

act as chairman of the committee.

The Weather Bureau's analysis will be conducted by a working group headed by Donald H. Pack, Chief of the Environmental Research Project. Robert E. Helbush, of the Office of Planning, is also working on the study.

Much of the analysis--especially of the economic impact of weather and weather decisions on users of meteorological information--will be performed by the RAND Corporation under a Weather Bureau contract.

The study is scheduled for completion in April 1964.

Marshall Islanders

Majuro Observers Commended

The entire staff of the Weather Bureau Airport Station at Majuro (Marshall Islands) has received a group award for superior performance. The award cited Majuro's excellent observations, commendable station maintenance, and fine attendance record.

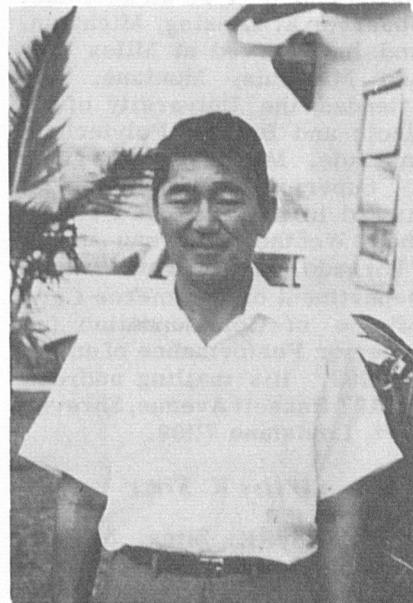
Eight Micronesian staff employees were given \$40 each, and the Observer in Charge, Chester Kainuma, received \$300 for his outstanding leadership.

For 1962, the station was first in raob heights among Weather Bureau stations using 75 percent 600-gram balloons, in spite of the station's location, which makes attainment of good raob heights difficult. Also, the station ranked first in the Pacific on the January-February 1963 rawinsonde error list, while continued surface observations contained no errors.

Visitors have noted the excellent appearance of the Majuro station and its grounds. In addition, the attendance record is outstanding, with not even one case of absenteeism

or tardiness by the Micronesian staff in the past two years.

Micronesian staff members



Chester Kainuma

receiving the Award were Antonio Mamis, Yehelu Dismas, Oscar Milne, Kotan E. Airam, Amram L. Karben, Atran A. Lakabung, Paul Peter, and Hamilton Labil.

Two New York City Bureau Men Attend

Conference on Air Pollution Control

Gerald L. Shak (Principal Assistant) and Abraham S. Kussman, both of the New York Weather Bureau Office, participated in a conference on air pollution control held at Pace College on October 28.

Senator Edmund S. Muskie, of Maine, spoke of the need for federal legislation on air pollution control.

Mr. Kussman discussed the Bureau's forecasts of high air pollution potential and the channels through which these forecasts are distributed in the New York area.

Mr. Kussman's recent appointment as air pollution mete-

orologist at the New York office is an indication of the important role of air pollution in the problems of metropolitan areas. His function is to develop a procedure for forecasting local pollution episodes; to act as coordinator, consultant, and distributor of these forecasts in the New York area; and to take part in a mathematical model diffusion project as well as other research programs. Mr. Kussman has a master's degree in meteorology from New York University and has had extensive forecast and research experience in the New York area.

RETIREMENTS

Berne P. Hughes

Berne P. Hughes, MIC at Shreveport, Louisiana, retired December 20. He entered the Bureau in 1924 as an assistant observer at Lansing, Michigan, and has served at Miles City and Missoula, Montana. He attended the University of Illinois and Bradley Polytechnic Institute. Mr. Hughes was given a Superior Accomplishment Award in 1957 for his work on the Weather Bureau movie "Tornado," and was presented a Department of Commerce Certificate of Commendation for Superior Performance of duties in 1962. His mailing address is 1427 Hassett Avenue, Shreveport, Louisiana 71109.

Wiley K. Sims

Wiley K. Sims, MIC at Winston-Salem, North Carolina, retired October 25, after completing 35 years of Government service. He began as a junior observer at Nashville and served at Atlanta and Greensboro, North Carolina, before opening Winston-Salem's first Weather Bureau station in 1944. Mr. Sims attended the University of Alabama and received his B.A. degree from the University of Tennessee. In 1959, he was given the Department of Commerce Silver Medal for Meritorious Service to the public. His address is 622 South Broad Street, Winston-Salem, North Carolina.

John V. Foreman

John V. Foreman, Voucher Examiner in the Fiscal Section, Central Office, retired November 29. During his 26-year Government career in Washington, Mr. Foreman also worked for the Census Bureau, the Departments of Navy, War, and Treasury, and the Smithsonian Institution. His address is 5843 28th Avenue, S.E., Washington, D.C. 20031.

Parley A. Lucas

Parley A. Lucas, Meteorological Technician at the Weather Bureau Airport Station at Fort Wayne, Indiana, retired December 21, after serving more than 38 years. He also worked at Cincinnati and Indianapolis. Mr. Lucas' address is R.R. 1, Roanoke, Indiana.

Louise S. Engel

Louise S. Engel, Editorial Clerk in the Forecasts and Synoptic Reports Division of the Central Office, retired December 20, after Government service of 20 years. She entered the Weather Bureau at Pittsburgh in 1943 and transferred to Washington in 1945. In recent years, Mrs. Engel has coordinated preparation of feature articles for the back of the daily weather map. Her address is 2007 O Street, N.W., Washington 6, D.C.

Fred Doloresco

Fred Doloresco, a Meteorological Technician at the District Meteorological Office in Kansas City, Missouri, retired December 5. He joined the Bureau at Washington, D.C., as a Meteorological Aid (Chartman) in 1948 and was transferred to Kansas City in 1951. Mr. Doloresco attended the University of Miami. His address is 5052 N. Euclid Street, Kansas City.

Cecil E. Mahaffey

Cecil E. Mahaffey, MIC at Pensacola, Florida, retired December 20, after nearly 45 years in the Weather Bureau. Beginning his service as a messenger at Greenville, South Carolina, Mr. Mahaffey worked during his career at Key West; Little Rock; Charlotte, North Carolina; New Orleans; Port Arthur and Fort Worth, Texas. His address is 1009 E. Tunis Street, Pensacola, Florida.

John R. Swartz

John R. Swartz, Meteorological Aid at the Suitland, Maryland, Office of Climatology, retired December 24. Mr. Swartz entered on duty at Reading, Pennsylvania, in 1917, and has worked since at Cape Henry, Virginia; Chicago; New York; Boston; Philadelphia; Erie, Pennsylvania; Iowa City; Topeka, Kansas; New Orleans; Fort Worth; and Washington, D.C. His address is Apt. 7, Building 23, Clifton Park Manor, Wilmington, Delaware.

Ernest M. Rampey

Ernest M. Rampey, MIC at the Weather Bureau Airport Station at Knoxville, Tennessee, retired December 21, after a Government career of 36 years. Mr. Rampey began working for the Bureau at Due West, South Carolina, in 1927, as a junior observer. He has served since at the Central Office, Spartanburg, Memphis, Kansas City, and Washington National Airport, and became chief meteorologist at Knoxville in 1960. He attended Erskine College, the University of Iowa, and the University of Tennessee. His address is 2609 Rahn Avenue, Maryville, Tennessee 37801.

Marjory Bristow

Marjorie Bristow, Budget Analyst at the Weather Bureau Regional Office in Anchorage, Alaska, retired December 18, after serving the Government for 25 years. She entered the Bureau as a clerk-typist in Iowa City and has worked at Chicago and Washington, D.C., and was appointed Fiscal Supervisor in 1946 at Fort Worth, Texas. She served as Budget Analyst since 1961. Miss Bristow attended Ohio Wesleyan University, Northwestern University, and Texas Christian University. Her mailing address is Elliott, Iowa 51532.

DEATHS

Clarence J. Root

Clarence J. Root, former head of the Weather Bureau station at Detroit, died November 25. Mr. Root entered the Bureau in 1900 and was section director of climatology at Springfield, Illinois, for 21 years, before moving to Detroit as MIC in 1932. He retired in 1945. Mr. Root is survived by his wife, Frances R. Root, 193 Moss Avenue, Highland Park, Michigan, and two daughters and three grandchildren.

Henry G. Favrot

Henry G. Favrot, Hydraulic Engineer at the Kansas City, Missouri, River Forecast Center, died November 5 in Topeka. He entered the Hydrologic Services Division in Washington, D.C., in April 1961 and was transferred to Kansas City in December 1961. He is survived by his parents, Mr. and Mrs. H. Richmond Favrot, 1448 Nashville Avenue, New Orleans, Louisiana.



Mrs. Amante at the CO Reception Desk

You are popular. When you are visiting the Central Office, many people ask the receptionist how to get in touch with you. Sometimes she doesn't even know you're in town.

Why don't you stop at the desk the next time you are in

Washington and tell Mrs. Amante your name, the length of your visit, and where you are staying? You will be glad you did, because she can help you make appointments, obtain hotel reservations, and arrange local transportation.

Transfers

| | | |
|------------------------|----------------------|----------------------------|
| Bryte, Stanley R. | FROM Boise, Idaho | TO Pt. Arguello, Calif. |
| Clemms, Donald P. | Burrwood, La. | Miami, Fla. |
| Coleman, Harold L. | Kansas City, Mo. | Boston |
| Daniels, Robert E. | Anchorage | Richmond |
| DeMarrais, Gerard A. | Los Angeles | Cincinnati, Ohio |
| Eaton, E. Lamarr | El Paso | Fort Worth |
| Falt, Eric R. | Las Vegas | Tatoosh I., Wash. |
| Fugate, George M. | El Paso | Sacramento |
| Hardy, William E. | Kansas City, Mo. | Washington, D.C. |
| Harmon, Edward L. | Spokane, Wash. | Pt. Arguello, Calif. |
| Holmes, Thomas J. | Las Vegas | Boston |
| Landgren, Perry M. | El Paso | Knoxville |
| Lathrop, Charles L. | Alert, NWT | Mould Bay, NWT |
| Leopold, Henry L. | Washington, D.C. | Antarctica |
| Martell, Leroy E. | Kotzebue, Alaska | Fort Huachuca |
| McDonald, Richard F. | Central Office | San Juan |
| Nelson, Dan H. | Yakutat, Alaska | King Salmon |
| Newell, John E. | New York | Washington, D.C. |
| Nichol, Charles L. | Ft. Worth | Davisville, R.I. |
| Nicholson, Phillip B. | San Francisco | Oakland, Calif. |
| Olkiewicz, David W. | Sioux Falls, S. Dak. | Marcus Island |
| Peters, Norman L. | Billings, Mont. | Pomona, Calif. |
| Reeves, Hobart G. | Indianapolis | Flint, Mich. |
| Richardson, Kenneth W. | El Paso | San Antonio |
| Sands, William C. | Mould Bay | Alert, NWT |
| Schlatter, Ernest E. | Atlantic City | Central Office |
| Scholten, Calvin C. | Los Angeles | Sacramento |
| Semancik, Donald A. | Milwaukee | Columbia, Mo. |
| Smith, Harold | Kingston, Jamaica | St. Louis |
| Swain, Phillip W. | Point Mugu | Yakutat, Alaska |
| Taylor, Glenn R. | Seattle | Pt. Arguello, Calif. |

| | | |
|----------------------|---------------------------|------------------------|
| Therkelsen, Timmy J. | FROM Barter I., Alaska | TO Cold Bay, Alaska |
| Thomas, Charles F. | El Paso | San Antonio |
| Thomas, Nils K. | Huron, S. Dak. | Yakutat, Alaska |
| Thomas, Norman C. | Central Office | Wake Island |
| Wade, Paul J. | Eniwetok | Albuquerque |
| Williams, Jack A. | Austin | Amarillo |
| Williams, James T. | Honolulu | Central Office |

Welcome to the Bureau

Ainsworth, James H., Meteorologist, Gilmore Creek, Alaska
 Allen, Bernard L., Operating Accountant, Washington, D.C.
 Anderson, Grace M., Clerk-Typist, Washington, D.C.
 Baughman, Richard V., Supervisory General Engineer, Ft. Worth
 Brown, Paul L., Electronic Technician, Sterling, Va.
 Chamberlin, Arthur L., Electronic Technician, King Salmon, Ala.
 Charbonneau, Helen C., Meteorological Technician, Asheville, N.C.
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Bureau of the Budget Circular No. A-62

November 13, 1963

CIRCULAR NO. A-62

TO THE HEADS OF EXECUTIVE DEPARTMENTS
AND ESTABLISHMENTS

SUBJECT: Policies and procedures for the coordination of Federal meteorological services

1. Purpose and coverage. This Circular prescribes policy guidelines and procedures for planning and conducting Federal meteorological services and applied research and development to improve such services.

The guidelines are designed to improve organizational arrangements and procedures for the planning and conduct of Federal meteorological programs with the objective of meeting essential user requirements most effectively and economically. The guidelines (a) reaffirm the central role of the Department of Commerce with respect to basic meteorological services; (b) clarify the respective responsibilities of the Department of Commerce and the user agencies for basic and specialized meteorological services; (c) establish procedures to facilitate coordination and the timely resolution of outstanding issues; (d) provide for evaluating user requirements within the context of a balanced and integrated Federal plan; and (e) fix responsibility for continuing and systematic review of meteorological services and supporting research.

Policies and procedures with respect to basic research in meteorology are not within the purview of this Circular because such research is only indirectly related to improvement of weather services and often has other objectives. The Federal Council for Science and Technology will continue to have cognizance over basic research in the atmospheric sciences, which includes meteorology. This also includes the supporting applied meteorological research, as defined herein, in terms of its dependence upon and contribution to the atmospheric sciences.

2. Statement of meteorological services and requirements. For purposes of this Circular:

a. "Basic meteorological services" includes all activities, that are possible within the given state of meteorological science, required to produce or complete a description in time and space of the atmosphere. In general the products of this process are meteorological in nature and are not necessarily useful in such form for the operational needs of users. These services also include those activities required

to derive from raw data the products needed by the general public in their normal everyday activities and for the protection of their lives and property.

The general functions involved in providing basic meteorological services include:

(1) Measurement of the meteorological characteristics of the atmosphere, made with sufficient density and frequency to meet the needs of the general public and the common needs of all users.

(2) Collection of these measurements for processing.

(3) Analyses and prognoses of meteorological variables, including estimates of their probable error distribution, and interpretation of the analyses and prognoses for meeting the needs of the general public.

(4) Distribution of these meteorological analyses and prognoses to outlets for subsequent interpretation for the operational needs of all users, and the distribution and display of operational products to meet the needs of the general public.

b. "Specialized meteorological services" include those activities, derived generally from the output of the basic meteorological services, which produce those products needed to serve the operational needs of particular user groups. These user groups include, among others: aviation, agriculture, business, commerce, and industry.

The general functions involved in providing these services include:

(1) Establishment of parameters needed to serve solely a particular operational purpose.

(2) Collection of data from specialized measurements which conform with the established parameters.

(3) Analysis of the data obtained from specialized measurements.

(4) Interpretation of the analyzed data and the making of prognoses to meet the operational needs of users.

(5) Distribution and display of these

(continued on page 13)

Circular A-62 (continued)

specialized products to meet the needs of individual users or groups.

c. "Supporting research" includes those applied research and development activities whose immediate objective is the improvement of the basic and specialized meteorological services as defined herein.

d. "User agency" is an agency whose mission requires meteorological services either for its internal operations or as part of its direct services to a clientele group. "Mission requirements" include those requirements directly related to the primary mission of the agency. When such mission involves direct service to a clientele group requiring the provision of meteorological services it is included within the terms of this definition. Also, when the agency has no such clientele relationships but its internal operations require the provision of meteorological services, its mission is included within the terms of this definition.

e. "Common requirements of other agencies" include the needs for basic meteorological services necessary to support their specialized meteorological services. Such requirements also include those needs for specialized meteorological services common to two or more agencies.

3. Coordination of meteorological services.

a. The Department of Commerce, with the advice and assistance of other agencies concerned, will establish procedures designed to facilitate a systematic and continuing review of basic and specialized meteorological requirements, services and closely related supporting research. The Department will undertake such reviews with the objectives of (1) establishing, and revising as appropriate, needed basic services, and (2) advising other agencies on the need for and organization of specialized services. The objectives of these continuing reviews are to assure a timely identification of need for new or revised services and to develop those services, either basic or specialized, that most efficiently meet the need.

b. The Department of Commerce, to the maximum extent practicable and permitted by law, will provide those basic meteorological services and supporting research needed to meet the requirements of the general public or the common requirements of other agencies. The Department of Commerce will arrange for the conduct of such services by the Department, by other agencies, or by non-Federal organizations,

depending upon the most effective and economical arrangements.

c. User agencies will arrange for specialized meteorological services and supporting research when their mission requirements cannot be effectively accommodated through the basic services and supporting research. Before supporting specialized meteorological services and research, the user agency should obtain the views of the Department of Commerce as to whether its requirements can be met satisfactorily through the basic meteorological services and supporting research, including appropriate adjustments therein. The Department of Commerce will, to the extent consistent with effective and economical use of resources, conduct the specialized services that support the mission requirements of user agencies.

d. The above provisions will not apply to (1) the division of responsibilities between the Department of Commerce and the National Aeronautics and Space Administration for development of meteorological satellites; and (2) meteorological activities involving special military security considerations. Arrangements with respect to the foregoing activities will be set forth in separate determinations.

4. Development of a Federal plan.

a. The Department of Commerce will prepare and keep current a plan, and obtain periodic information on its implementation, for the efficient utilization of meteorological services and supporting research. The purpose of such planning is to achieve the maximum integration of current and future services and research consistent with the effective and economical accomplishment of mission requirements. The plan should include: (1) all civilian meteorological services and supporting research, and (2) those meteorological services (basic and specialized) and supporting research programs of the military which are significantly affected by, or which affect, civilian meteorological services and supporting research. The plan will be directed towards relating such meteorological services and research to requirements, as established by user agencies. It will also serve to develop the coordinating arrangements needed for the optimal use of the basic and related specialized meteorological services and supporting research in an efficient overall system.

b. Planning should be directed towards the establishment of both long-range and intermediate agency objectives and the development of programs related to both sets of objectives. The Department of Commerce should assure that the

(continued on page 14)

Circular A-62 (continued)

plan, relating proposed programs to fiscal year and longer range objectives, is available for the annual preview of the various agencies' budgets for Fiscal Year 1966 and thereafter. The plan should clearly identify planning assumptions, any unresolved interagency issues, and the views of the agencies concerned with respect thereto.

c. In preparing and revising the plan, the Department of Commerce will obtain the advice and assistance of the principal agencies providing or utilizing meteorological services. To this end the Department should establish appropriate arrangements for obtaining continuing advice from the principal agencies concerned. The Department should exercise leadership in assuring that differences of opinion are resolved

expeditiously. The division of responsibilities among agencies for provision of meteorological services and supporting research will, insofar as practicable and permitted by law, conform with the guidelines set forth under section 3 above.

5. Overall review procedures.

When major differences among agencies cannot be resolved through consultation, the head of any agency concerned may refer the matter to the appropriate agency within the Executive Office of the President for consideration. The Presidential staff agencies will keep each other currently informed of meteorological issues and will cooperate in achieving their timely resolution.

KERMIT GORDON
Director

Length of Service Awards

40-Year Award

Hood, Frank C.
WBAS Baton Rouge, La.

35-Year Awards

Lavin, John J.
WBAS Providence, R.I.
Lunt, John O.
WBAS Portland, Me.

McDaniel, Wayne A.
WBAS Peoria, Ill.
Shepherd, C. Eugene
WBAS Reno, Nev.

30-Year Award

McGurrin, Martin
WBAS San Francisco

25-Year Awards

Asp, M. Oliver
RAO Kansas City, Mo.
Bacon, Guardello R.
WBAS Salt Lake City
Clark, Raymond J., Jr.
WBAS Fort Worth
Clayton, Cecil D.
WBAS Salt Lake City
Crubaugh, Joseph J.
WBAS Denver, Colo.
Gee, Ivan L.
WBAS Lander, Wyo.
Hallusha, William J.
WBAS Minneapolis
Harden, Joseph T.
WBAS Richmond
Johnson, Earl H.
WBAS Jacksonville, Fla.
Moeller, John R.
WBAS St. Louis
Moore, John G.
WBAS Fort Worth
Morgan, Jacob W.
WBFC Chicago

Morrison, Emile A.
WBAS Jackson, Miss.

Rhoten, Rex R.
WBAS Jacksonville
Rich, Elven C.
RAO New York

Root, Halbert E.
WBAS San Francisco
Sabre, William B.
WBAS Newark
Schroeter, Walter A.
DMO Kansas City

Simpson, Ralph R.
WBO Pomona
Stanley, Meyer
IED, CO

Tanne, George
WBAS Salt Lake City
Trabits, William A.
WBAS Evansville, Ind.
Wagner, S. Clifton
WBAS New York

Wright, Janet
IED, CO

20-Year Awards

Bradley, James K. F.
WBRS Las Vegas
Brown, Alfred R.
WBAS Columbia, Mo.
Gonzales, Pedro D.
WBAS Colorado Springs
Gray, Damon M., Jr.
WBO Cape Hatteras, N.C.
Gribble, William A.
AWP Norfolk
Grimes, Sarah M.
WBAS Miami
Gudyka, Herbert J.
WBO Seattle

Hicks, James C.

WBAS Memphis
Hinton, Lyle J.
WBAS Greenville, S.C.
Holcomb, Addie E.
WBAS Tulsa
Hopkins, Liggett W.
RAO Salt Lake City
Horton, James A.
WBAS Shreveport
Hosey, James N.
WBAS Raleigh
McKain, Barbara J.
WBAS N. Platte, Nebr.
Muzzioli, Joseph J.
WBAS Boston
Pagnozzi, Arthur J.
WBO New York
Schneitter, Maud M.
RAO Salt Lake City
Spector, Martha C.
DMO Miami, Fla.
Stone, Dayton B.
WBAS Raleigh, N.C.
Swenson, Harry, Jr.
DMO, SSU, Kansas City
Vandecar, Leland F.
Detroit, Ypsilanti, Mich.
Weddle, Donald E.
WBO Cape Hatteras, N.C.

15-Year Awards

Brostrom, Donald E.
WBAS Havre
Kuhn, Peter M.
Univ. of Wisc.
Madison, Wisc.
Spuhler, Walter S.
St. Clim., Brookings, S. Dak.
Williams, Jack A.
WBAS Amarillo, Tex.



Meteorological Readings

Assignment LXVII: "Environmental and Thunderstorm Structures as Shown by National Severe Storms Project Observations in Spring 1960 and 1961," Monthly Weather Review, June 1963, Vol. 91, no. 6, pp. 271 to 291.

About the assignment: This article presents typical structures and the small-scale environment of large thunderstorms in the Oklahoma-Texas-Kansas region.

QUESTIONNAIRE

Col. 61 The data-gathering planes' traverses of the moisture discontinuity line (as shown in figure 4) revealed that:

1. localized heat sources and orographic rises were a major factor in the distribution of temperature both horizontally and vertically

2. the cellular structure shown in figure 6 changes rapidly with time

3. windspeed variations along the axis of the moisture discontinuity are greater than across it

4. none of the above

Col. 62 Mark all true statements. Regarding the low-level jet:

1. it is generally stronger and organized better during night hours than during daylight hours

2. there appears to be no direct relationship between it and the occurrence of thunderstorms

3. there is no evident relationship between the height of the level of maximum wind and the heights of stable layers above the surface

4. it can usually be recognized and its strength estimated from the wind observations at the 850-mb isobaric level

Col. 63 The small-scale High (or Highs) that sometimes follows in the wake of a squall line:

1. is believed to be caused

by evaporative cooling in lower layers

2. is indicative of a small-scale geostrophically-controlled circulation

3. is never associated with small-scale Lows

4. generally comes in pairs, or couplets

Col. 64 The isothermal pattern shown in figure 2:

1. is commonplace in the Great Plains, especially just ahead of a cold front

2. is unusual as such strong gradients always act to stabilize the air

3. is characteristic of lower levels in the vicinity of a low-level jet

4. is a direct result of the convergence in the surface wind field

Col. 65 "Project Rough Rider" was initiated in order to:

1. help explain the role of the low-level jet in tornadoes

2. secure data that would help give a comprehensive physical description of thunderstorms and their surroundings

3. prove that ordinary networks can provide enough data to forecast thunderstorms if properly used

4. test the feasibility of gathering research data by aircraft

Col. 66 Which of the following statements about figure 20 are correct:

1. Some storms moved well to the right of the 500-mb flow.

2. The movements of all of the echoes were in accordance with the results of the Thunderstorm Project.

3. A simple relationship existed between the wind field and storms' movements.

4. The translation of echo "B" from position 3 to position 5 resulted from development and dissipation of discrete storms.

Col. 67 From the information presented in this article one can surmise that the "echo-free notch" or "chimney" is:

1. an area of subsiding warm air

2. related to the gravitational settling of cloud elements

3. an area of updrafts probably of a magnitude of more than 8 meters per second

4. an area of strong vertical convergence

Col. 68 Aircraft penetrations of cumulonimbus clouds showed:

1. wind velocity differences that were indicative of channeling of air through rather than around cloud turrets

2. the non-randomized nature of lateral components of gust velocity

3. large quantities of liquid water in the tops of cumulonimbus clouds with measured in-cloud temperatures as low as -52°C

4. none of the above

Col. 69 Mark all correct answers. Significant precipitation is likely to be absent in the close proximity to a tornado. This common observation is supported by:

1. Donaldson's "chimneys"

2. Browning and Ludlam's "echo-free notch"

3. Ward's strongly decreasing reflectivity with elevation on the south side of the "mother" storm

4. Hirschfeld's "plume"

Col. 70 Different storms within a relatively small region are observed to have widely varying movements. The reason for this:

1. is the interaction of varying convergence and divergence patterns within the region of the storms

2. is attributed to non-geostrophic effects

3. has not been established according to this article

4. is strong wind shear with height so that storms in different phases of development are under the influence of differing steering currents.

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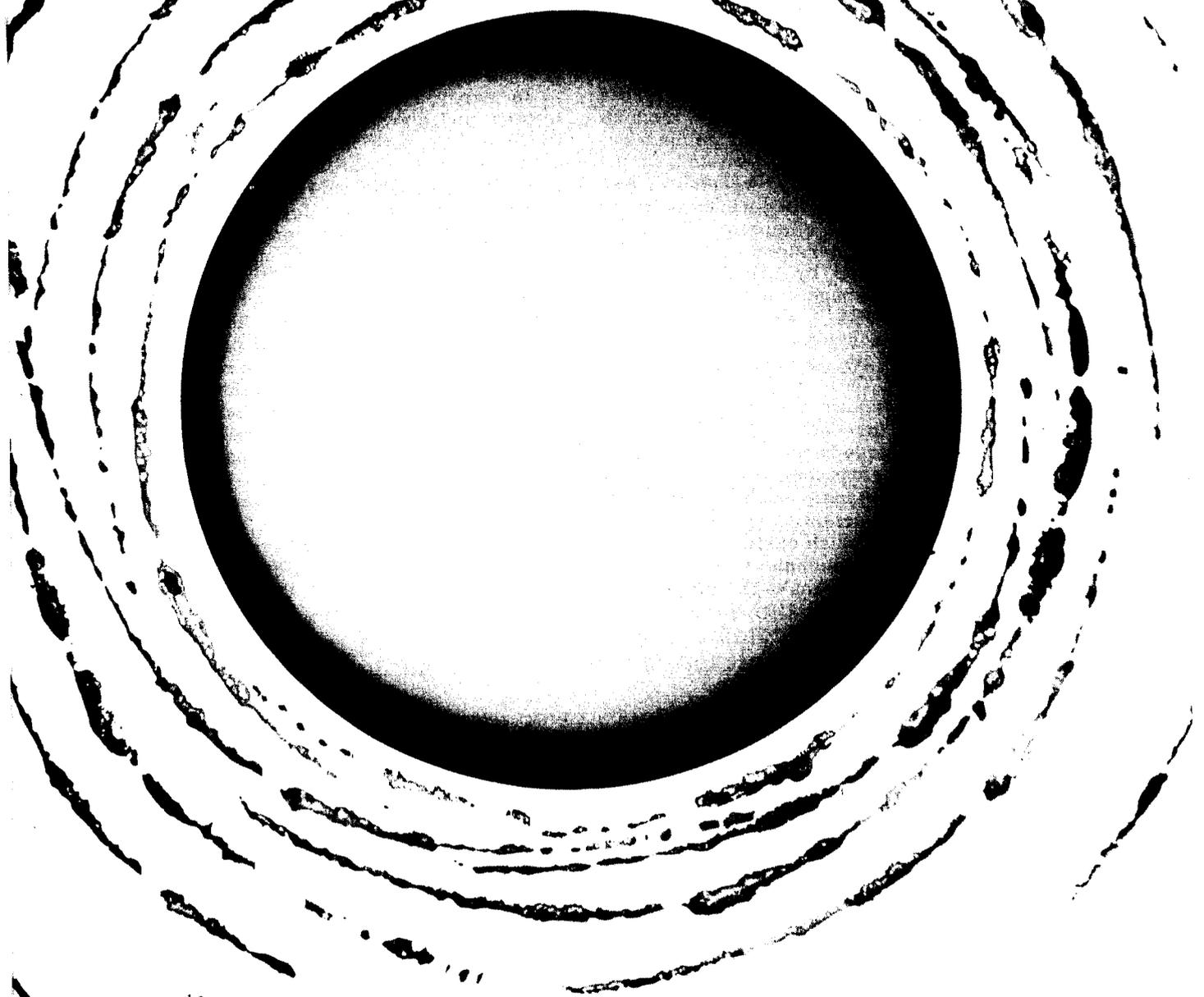
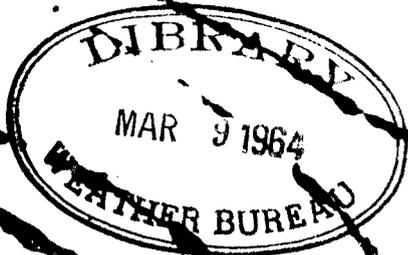
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WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through which ideas and views may be exchanged to promote efficiency and teamwork in attaining our common goals. While the contents, unless otherwise specified, reflect the Central Office viewpoint, they are not instructions but are presented for information. Opinions, discussions or comments by readers are invited; they should be marked for the attention of the Editor, TOPICS. WEATHER BUREAU TOPICS is distributed for official use only.

TOPICS

FEBRUARY 1964

VOL. 23 NO. 2



UNITED STATES DEPARTMENT OF COMMERCE • WEATHER BUREAU

Editorial

Are We Communicating With the Public?

The public forecasts and warnings of the Weather Bureau are the end products of a long, costly, and complex sequence of scientific and technological procedures. If our messages are not clear because they are cloaked in the jargon of science, if they are not credible because we have failed to alert the public to the limitations and uncertainties of our science and our forecasts--we fail to provide effective services. Our great investments for observational networks, modern communication systems, high-speed computers, and other expensive equipment are wasted.

To serve the public properly, we must communicate effectively. We must begin to focus more attention on the art of better communication. We must make sure we are understood by the housewife and the farmer and by all the users of weather information, through simple, clear, and descriptive language.

As meteorologists, we are aware of the limitations of our science. We do not expect that our forecasts will be 100 percent accurate. The average citizen also knows this as a result of experience with our forecasts. It is time our communications technique began to reflect these uncertainties about the weather. I believe that most citizens would welcome such an approach.

It is not easy for the scientist to communicate with the layman. It is much easier to resort to the familiar shorthand of technical terminology. We must not be unwilling to make the effort. We

must communicate to explain, not to impress.

In the Weather Bureau, the scientist faces the public communication problem daily and in a real and meaningful way. There are no "middlemen" to interpret the scientific results. It must be done by the scientist. This is a burden and an opportunity that our staff at field stations must bear and grasp.

In every contact with the public--in talks, letters, and, above all, in forecasts and warnings--we must be sure that we are using terms that have meaning to our audience. If we must use scientific language, we should be careful to explain it simply. The housewife and the farmer are not meteorologists. If we confuse them, we are not serving them. If they do not understand us, we will have failed them.

Dr. L. J. Haworth, Director of the National Science Foundation, recently had some pertinent comments which we might all ponder. "Scientists have a great and often irksome responsibility," he said, "to interpret science to the layman, through simple articles and talks, through sympathetic and careful help to the journalists and others who reach the public through newspapers, magazines, radio, and television. By helping in this way, scientists not only serve society as a whole, they also serve themselves. For an informed citizenry will be far more sympathetic and helpful to the aims and aspirations of science for its own sake."

R. M. W.

On the cover...

The International Years of the Quiet Sun got under way last month as scientists throughout the world began programs of intensified research. At a near minimum of activity, the sun shown on this month's cover was taken with a 40-foot photoheliograph at the Naval Observatory in Washington, D.C.

Topigrams

Washington, D.C.
February 1964

Dr. Franklin A. Gifford has been appointed Acting Director of the Office of Meteorological Research. Dr. Gifford is Meteorologist in Charge of the Weather Bureau Research Station at Oak Ridge, Tennessee (see TOPICS, March 1963, p. 43), and will divide his time between Oak Ridge and the Central Office until late spring, when he will move to Washington on a full-time basis. Dr. Lester Machta, who has served as Acting Director for the past few months, will now devote full time to his duties as Chief of the Meteorological Research Projects Branch.

On February 1, upper-air observations at Tatoosh Island were increased to four per day, while those at Olympia, Washington, were discontinued. The change will save \$87,000 annually, in addition to \$25,000 that would have been needed for construction of a new inflation building at Olympia. In another economy measure, aviation forecasting responsibilities of the WBAS at Detroit's Metropolitan Airport will be transferred to the Chicago Forecast Center about April 15. The personnel affected by the actions at Detroit and Olympia will be reassigned to positions acceptable to them for which they are qualified.

Walter A. Hahn will become Chief of the Office of Planning sometime in the spring when he completes his assignment on the National Aviation Weather Systems Study. Jack C. Thompson is now Special Assistant to the Chief for Meteorological Systems. He will continue to direct the work of the Office of Planning until Mr. Hahn is able to assume these duties.

The last WB-50 aircraft of the 53rd Weather Reconnaissance Squadron, known as the USAF Hurricane Hunters, left Kindley Field, Bermuda on January 2. The squadron now operates from Hunter Air Force Base, Georgia, using six-jet WB-47 Stratojets.

Dr. White has been named to fill the vacancy left on the WMO Executive Committee by the retirement of Dr. Reichelderfer. Dr. White plans to take part in the Committee's 16th Session this May.

At the request of the Italian government, the Extended Forecast Branch prepared long-range predictions for the Mediterranean Sea during the latter half of December, to assist with the towing of Italy's space platform from Taranto to the Suez Canal.

The October-December issue of the Monthly Weather Review, honoring the late Dr. Harry Wexler, contains 30 articles contributed by his Weather Bureau colleagues. Copies of the 282-page issue are available from the Superintendent of Documents for \$2.00 each.

Briefs from the CO Staff Conferences

Mr. Gleiter reviewed past manpower control programs and discussed position and employment controls requested by the present administration. (See story on page 25.)

The staff was informed of plans for the establishment of a Meteorological Systems Group, responsible for the design of the National Meteorological Service System and for the management of systems activities now scattered throughout the Bureau. The Systems Group is being staffed with a nucleus from the Office of the Director of Aviation Weather Services.

A Civil Service Commission investigating team will visit the Weather Bureau in February. The team will pay particular attention to the role of supervisors, use of manpower, employment of women, and equal employment opportunity.

A proposal for streamlining Senior Personnel Advisory Committee procedures was presented and approved. The Committee will consist of the Deputy Chief of Bureau, Assistant Chiefs, and Directors. It will review proposed personnel actions at the GS-13 level for MIC's and all other actions at the GS-14 and higher levels. Actions involving grades 11 through 13 will be reviewed by smaller boards made up of program representatives at the Assistant Chief and Division Chief levels. All field actions at grade 11 or lower, except MIC's, will continue to be handled in the field. Central Office actions at grade 10 or below will be reviewed, as before, by the Division Chief involved and by top Personnel Management Division officials. The revised procedures will strengthen the supervisory role in promotion actions, as well as reduce time delays and manpower costs of reviewing proposed actions.

Mr. Dorsey, Chief of the Personnel Management Division, reviewed the Salary Reform Act's provisions for regular increases based on performance and for quality increases. A system will be developed to identify employees who should be considered for quality increases and for other purposes.

In further discussion of personnel practices, Dr. White commented on the small number of Weather Bureau people being trained at the university level. It would be desirable, he said, for a much larger number of employees to work toward advanced degrees each year. The Training Section is planning a management career development program in which selected individuals would receive varied experience in all facets of Bureau work.

Stratospheric Warming Alerts Will Be Issued To IQSY Meteorologists Throughout the World

Of special interest to meteorologists during the 1964-1965 International Years of the Quiet Sun will be stratospheric warmings in the higher latitudes.

The most dramatic changes in wind velocity, air pressure, and temperature in the 25-50 kilometer belt of the upper stratosphere occur during these sudden and rapid warmings. At such times there are also large changes in the vertical distribution of ozone and radiative flux in the lower stratosphere.

During these rapid warming periods, meteorologists expect to carry out a concentrated program in which special instruments will be carried aloft by

rockets and balloons.

During the IQSY, alerts and information on the inception and progress of winter stratospheric warming will be issued and circulated to IQSY stations. The general concept has appeared in the outline of the IQSY meteorological program (IQSY NOTES No. 3, page 13) and in the plan for World Days (IQSY Manual No. 1, page 10 and page 13). In addition to meteorologists, the existence of winter stratospheric warmings will be of interest to some participants in several other IQSY programs, including Aeronomy, Space Research, and Ionosphere.

An IQSY STRATWARM (Stratospheric Warming) Agency will maintain day-by-day watch on all available stratospheric data (for example, rawinsonde, rocketsonde, and transsonde) for incipient centers of warming of more than local extent. The IQSY STRATWARM Agency for the 1963-1964 season is the U.S. Weather Bureau's Stratospheric Meteorology Research Project in Washington, D.C. It will use data and advice from any Regional STRATWARM Centers that may be established (e.g., Moscow, Tokyo, et al), or from groups that regularly prepare stratospheric analyses (such as the Free University of Berlin).

A GEOALERT STRATWARM message will be issued when a center of warming of major proportions has been detected and appears likely, in the course of time, to affect conditions over much of the Northern Hemisphere. The message will state in plain language that a warming center exists and give its approximate location, motion, and intensity. The IQSY STRATWARM Agency will deliver such messages to the IQSY World Warning Agency, which is located at Fort Belvoir, Virginia, for distribution on a worldwide basis.

On receipt of a STRATALERT message, some balloon and rocket sounding stations may make special observations. Also, rawinsonde operators will know that unusually high temperatures or strong and variable winds in the stratosphere should not be classified as doubtful or missing data.

As a result of the increased amount of high-level data thus collected locally and over extensive regions, an amplified program of research into the stratospheric warming phenomenon will be possible.

International Years of the Quiet Sun Bring Intensified Atmospheric Research

An intense scientific study of the sun and its effects on the earth's atmosphere got under way January 1 as the International Years of the Quiet Sun (IQSY) began.

"Quiet Sun" refers to the expected minimum sun spot and flare activity taking place during the 24-month investigation.

Scientists from more than 60 nations are studying problems of the upper atmosphere, the interplanetary medium, solar-terrestrial relations, and solar physics.

The combined efforts of these nations should result in better understanding of weather processes, communications, and means of predicting safe periods for manned interplanetary travel.

At least once each week simultaneous intensified measurements are being made by the participating countries on

"World Days." Information is being relayed to 12 world data centers for analysis.

Meteorologists have formed a global balloon and rocket network which is collecting information on the earth's heat budget, general atmospheric circulation, and high-altitude weather disturbances. Among other fields of study during the IQSY are geomagnetism, aeronomy, the aurora, and the ionosphere.

In the United States, the Weather Bureau, the National Science Foundation, the National Bureau of Standards, and the National Aeronautics and Space Administration are carrying out special observational and experimental programs during the IQSY.

Several articles relating to the Weather Bureau's participation in the International Years of the Quiet Sun appear in this issue of TOPICS.

Bureau's Antarctic Research To Include Studies for IQSY

Expanded experiments to coincide with the International Years of the Quiet Sun studies highlight the Weather Bureau's Antarctic research program, now in its ninth year of operation.

Both surface and upper-air measurements of radiation and ozone will be increased during the approaching dark or winter season. At three land stations, radiometersonde observations will be taken every day during this season. Surface ozone concentration will be measured continuously, and total ozone measurement will be taken at scheduled intervals by Dobson spectrophotometer. These experiments are particularly important, since ozone may be a direct link between solar activity and atmospheric circulation and is also valuable as a tracer of atmospheric circulation. Special measurements of atmospheric electricity will be taken at Eights Station.

Weather Bureau representatives at the Antarctic stations (Byrd, Eights, Hallett, and South Pole) gather surface and high-altitude information on temperature, pressure, radiation, wind direction and speed, while surface measurements are made of carbon dioxide concentration, wind chill, and snow chemistry.

Meteorologists on board the USNS *Eltanin* continue their research program, taking surface and upper-air measurements of temperature, dewpoint, radiation, and wind speed and direction.

Warren K. Wilhelm remains as Weather Bureau representative at the International Antarctic Analysis Center at Melbourne, Australia, which makes daily analyses of current meteorological charts for the entire Southern Hemisphere south of the 30th parallel. These data are made available for research to all interested nations.

Weather Bureau employees at Byrd Station especially for the summer season are John A. Shelton and Edward Landry, while remaining for the winter are Raymond D. Erven, Benjamin F. Groves, Ronald R. Stephen, and Henry Leopold.

Hallett Station personnel from the Bureau for the current season are Douglas Johnson, Robert L. Melrose, Larry R. Shute, and Gene Levi.

South Pole Station summer personnel are Simon Roman and Kent Wyckoff, in addition to the following who are part of the winter team: Harold Gatlin, Robert Grass, Robert Judd, and Henry Schroeder.

Eights Station meteorological experiments are handled by Wesley Morris.

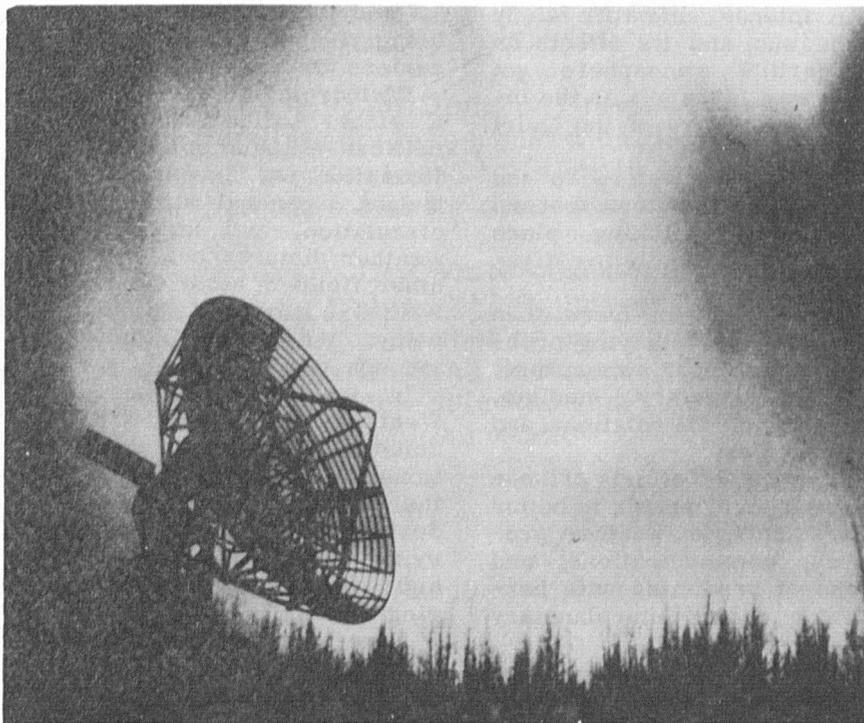
Weather Bureau men on board the *Eltanin* are Reginald C. Baum, Keith J. Blessum, Ernest S. Ethridge, and William H. Everard.

Bureau Personnel Loft Ozonesondes For IQSY Studies

During the IQSY three Weather Bureau stations will aid world scientists in their study of the upper atmosphere by taking weekly ozonesonde observations.

Bureau personnel at Canton Island; Hilo, Hawaii; and Fairbanks, Alaska, are scheduled to send up the ozonesondes (modified radiosondes) in lieu of regular radiosondes for the scheduled observations.

The ozonesondes will be taken once a week on Wednesdays (designated Regular World Days) during 1964 and 1965; plus one extra observation on each Tuesday and Thursday of the second and third weeks in January, April, July, and October 1964, and January, March, June, September, and December 1965. These weeks of increased observations are referred to as World Geophysical Intervals.



Aurora borealis . . . under scientific scrutiny during IQSY

Research Flight Facility Completes Trip to Rejoin Indian Ocean Expedition

Aircraft and Weather Bureau personnel of the Research Flight Facility are participating in another phase of the International Indian Ocean Expedition.

Two DC-6's of the RFF took off from Miami on January 20. They arrived in Bombay on January 28, where they will be based for approximately six weeks. They are scheduled to arrive back in Miami on March 21. A Navy DC-4 supplied by the Woods Hole Oceanographic Institution left Cape Cod on January 23 and arrived at Bombay on January 28. It will return to the U.S. in the middle of March.

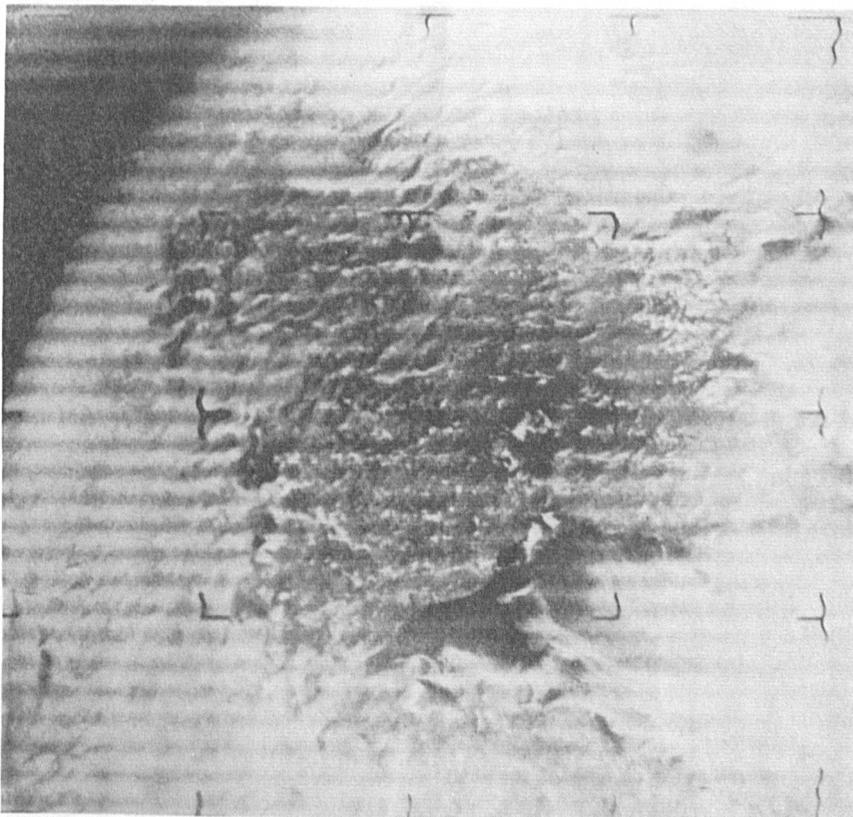
In conjunction with the University of Washington, the Bureau will conduct an experiment with an instrumented raft. The raft will be towed into a stationary position off the coast of India for several two-week periods. RFF flights will be made over the area of the raft, taking measurements to be compared with data collected by the raft. These data will be used to determine air-sea energy exchange.

In another series of experiments designed to study general circulation patterns relating to monsoons, flights will be made from Bombay to such places as Gan Island; Cocos Islands; Darwin, Australia; Singapore; and Madras.

Another project involves a study of the seabreeze effect by Dr. Colin Ramage, Scientific Director for Meteorology of the Indian Ocean Expedition.

Correction

December TOPICS, page 147, listed 13 Weather Bureau stations which prepare newspaper weather maps. C.E. Lamoureux, MIC at Des Moines, tells us that his station also prepares a weather map for the local newspaper.



The scalloped distortion of photographs being received from TIROS VIII's Automatic Picture Transmission (APT) camera can be seen in this picture. The dark section at the lower center is Lake Superior.

APT System Photos Distorted But Produce Some Useful Data

Photographs received from the APT camera system in TIROS VIII have a scalloped, "venetian blind" appearance, caused by the effect of the earth's magnetic field on the vidicon beam. Landmarks and some major cloud formations can be distinguished in the pictures, and several stations have extracted enough meteorologically useful data to modify analyses and improve forecasts.

The National Weather Satellite Center is developing a technique for eliminating the scalloped effect while the pictures from TIROS VIII are being recorded. However, field installations will not be modified, since subsequent APT camera systems will be improved in

order to remove the scallop and provide more useful meteorological information.

About 43 APT ground stations have been installed in the United States and overseas by Federal agencies. Equipment manufactured in the United States has been installed at Lannion by the French meteorological service and at Bombay by the International Indian Ocean Expedition. At Melbourne, Australia; Ottawa and Montreal, Canada; Copenhagen, Denmark; Malvern, England; and Hong Kong, existing equipment has been modified or new equipment constructed to receive APT photographs. Most stations have reported satisfactory equipment operation.



Breaking ground for the University of Miami Computing Center are (left to right) Capt. Max Eaton, chief of the Navy Forecast Facility; Dr. Werner A. Baum, representing the university; Gordon Dunn, Chief District Meteorologist for the Bureau; and Dr. R. Cecil Gentry, Director of the NHRP. (UM Photo Center)

Computing Center Under Construction

Construction has begun on the new Computing Center on the University of Miami campus, which will house a consolidated Weather Bureau facility.

Scheduled for completion by the end of 1964, the Center will contain both research and forecasting functions of the Bureau, including the National Hurricane Research Project and weather units of the U. S. Navy and Air Force. An observing unit will remain at Miami International Airport.

Among the high-speed computers employed at the Center will be an IBM 7040, which will be used to analyze the nature and paths of tropical cyclones in the work of NHRP.

The Navy Forecast Facility to be located at the Center distributes weather information to U.S. fleets and Navy aircraft in the tropical and subtropical Atlantic. The Air Force disseminates hurricane information to military aviation interests.

Bureau Representatives

Attend WMO Meetings

Weather Bureau representatives are attending the Meteorology/Operations Divisional Meeting of the ICAO, which is scheduled simultaneously with the third session of the Commission for Aeronautical Meteorology of the World Meteorological Organization, at Paris, January 20-February 17.

N.A. Lieurance, Director of the Bureau's Aviation Weather Services, is chairman of the U.S. delegation to the WMO session and vice chairman of the ICAO divisional meeting. P.H. Peridier, R.P. James, and R.E. Wyett are delegates from the Weather Bureau to the joint meeting.

The general purpose of the joint meeting is the determination of operational meteorological requirements for worldwide civil aviation and necessary meteorological procedures to meet these requirements.

Other WMO meetings during January included two conferences at Geneva. M.A. Kohler, the Bureau's Chief Research Hydrologist, was chairman of the Working Group on Guide to Hydrometeorology of the WMO Commission for Hydrometeorology. Dr. G.P. Cressman, Director of the National Meteorological Center, attended the first meeting of the WMO Advisory Committee.

College Course Streamlined

As the result of a suggestion by Donald Gregg of WBAS, Dodge City, Kansas, Pennsylvania State University has agreed that employees who have either military or Weather Bureau experience in plotting surface and upper-air weather charts may obtain a waiver of the prerequisite requirement, Meteorology 430-Introduction to Synoptic Meteorology Laboratory, when enrolling in Meteorology 431, Synoptic Meteorology Laboratory I.

Weather Bureau Appropriations for FY 1964

Appropriations passed by the 88th Congress and signed by President Johnson on December 30, 1963, provide \$79,977,100 for the Weather Bureau for the year ending June 30, 1964. Funds brought forward from prior years made it unnecessary to appropriate additional money in FY 1964 for Meteorological Satellite Operations. Consequently, the total appropriated for the Weather Bureau is substantially less than in FY 1963.

Salaries and Expenses. The amount provided for the Bureau's operations totals \$64,527,100; or \$3,792,100 more than was appropriated for FY 1963. The increase provides for the following items:

(a) The pay increases which became effective January 1, 1964, and annualization of the increases given to Civil Service employees in the prior year will require \$1,730,000.

(b) Transfer of funding for the six fixed ocean vessel upper-air stations from the Navy to the Weather Bureau will cost \$1,144,100. This addition to the Weather Bureau budget does not constitute an increase in overall Federal spending, since it is offset by a decrease in the Navy budget.

(c) New or expanded programs authorized by Congress total \$545,900 and include:

Operation of three new upper-air stations in Mexico (in cooperation with the Mexican Meteorological Service);

Establishment of twelve positions for operation and maintenance of new instrumental facilities;

Establishment of new airport stations at Houghton Lake, Mich., and Aberdeen, S. Dak.;

Extension of operation to 24 hours daily and improvement of service at Asheville, N.C., Lincoln, Nebr., and Kalispell, Mont.;

Extension of Fruit-Frost Service in California and Arizona; Implementation of the third step in improving the National Fire Weather Service;

Establishment of Agricultural Weather Service in the Texas Panhandle area.

Research and Development. The Bill provides \$10,400,000, or \$718,750 less than was appropriated for 1963 and \$3,100,000 less than the President's Budget. After deducting the cost of aircraft purchases and other non-recurring items in FY 1963, and allowing for pay adjustments, the Bill provides an increase of \$900,000 for research activities. The entire amount is for continuing aviation weather research work formerly conducted by the FAA. This involves studies designed to improve forecasts of both terminal and enroute weather conditions (including clear air turbulence) and to develop improved instrumentation for measuring atmospheric visibility and other weather elements important to aviation.

Research and Development (Foreign Currency). The Bill also provides \$250,000 for research and development work to be done abroad, utilizing foreign currencies credited to the United States from the sale of surplus commodities. Research and data gathering projects are planned in India, Israel, and the United Arab Republic.

Establishment of Meteorological Facilities. An amount of \$4,800,000 is included to continue the Bureau's program of modernizing field facilities and instrumentation. Six additional long-range radars and two microwave links are planned under this appropriation. Additional ceiling, visibility, wind and other surface weather measuring equipment will be provided. Snow removal and maintenance equipment will be procured for the Arctic stations. Some 180 units of river gaging, precipitation, and related hydrologic equipment will be purchased. Improved facsimile facilities for relay of avia-

(continued on page 29)

Government Employment Ceilings Set

As part of President Johnson's economy effort, all Government departments and agencies have been given June 30, 1964, maximum employment figures.

In a memorandum sent on December 24 to all agency and department heads, the President said:

"The Budget which I will send to the Congress next month will not only halt the growth in Federal employment, but will actually make a small reduction from this year's level.

"Even though nothing like this has happened in the last decade, I am still unconvinced that we are getting the maximum possible output per employee. I believe we can do better.

"The Budget Director will

shortly notify you of the year-end maximum employment levels which result from my final budget decisions for both fiscal years 1964 and 1965.

"Let me make it clear that these end-of-year figures are ceilings, not goals."

The President's budget for fiscal year 1965 requests fewer Weather Bureau positions than were authorized for 1964. In line with this, the Bureau has been directed to have no more than 6705 full-time employees by the end of this fiscal year and 6664 by June 30, 1965.

The Weather Bureau expects to meet these ceilings largely through normal attrition resulting from retirements, resignations, and deaths.



William R. Chassee is the winner of the Bureau's 1962 Practice Forecast Program. Over 300 Bureau forecasters competed.

1962 Program

Ten Practice Forecast Winners Named

William R. Chassee was the winner among over 300 participants competing in the Bureau's 1962 Practice Forecast Program.

Stationed at Grand Rapids for the past 17 years, Mr. Chassee has participated in the Practice Forecast Program since 1958. He finished in the first ten percent during 1960 and 1961, and was the winner for 1962. Although he did not finish in the first five places for any of the three practice forecast zones, he was 8th in the East, 7th in the Middle West, and 9th in the West. Mr. Chassee's consistency in forecasting for each zone was the major factor in his achieving the top position.

During 1962, Mr. Chassee's

predictions had an average temperature error of as little as 1.7 degrees for 12-hour periods and 2.9 degrees for 36-hour periods. In precipitation forecasting, Mr. Chassee was accurate 87 percent within 12 hours and 89 percent within 24 hours.

Other participants finishing in the top ten were, in order, David I. Wise, Santa Maria, Calif.; William T. Barch, Allentown, Pa.; Donn M. Frederick, O'Hare Field, Chicago; John L. Costello, Allentown; Richard L. Crisci, St. Louis; George A. Cowdright, Philadelphia; Donald T. Rowland, Port Arthur, Texas; Marvin E. Miller, WBRB Cincinnati; John H. Selmsler, San Francisco.

Health Benefits Subscribers Overlook Provisions Affecting Medical Expenses

Many people in the Health Benefits program are not taking full advantage of the provisions of their plans. Both Blue Cross and Aetna provide reimbursement for daily medical expenses.

To be eligible for these benefits, the member must add up medical bills for each member of his family. This time and effort may result in a reimbursement check from the plan.

The Service Benefit Plan (Blue Cross-Blue Shield) will reimburse for physicians' services, including surgery, home calls, office visits, and consultations. The plan also provides for physical therapy, rental of wheel chairs, prescription drugs and medicines, and many other services.

These services are subject to a deductible of \$100 per person for high option holders and \$150 per person for low option holders. This means that any member of the family must accumulate medical expenses totaling \$100 or \$150 (depending on the option) before he can file a claim. The plan will pay 80 percent or 75 percent (high and low options, respectively) of all expenses over the deductible amounts.

The Indemnity Benefit Plan provides similar benefits. Covered services are listed on pages 11 and 12 of the brochure describing this plan. The deductible amount is \$50 per person, and the plan reimburses at the rate of 80 percent for high option, 75 percent for low option. The lower deductible results from the Indemnity Benefit Plan's requirement that all expenses for physicians' services be subject to the deductible. The Service Benefit Plan has no deductible when a member is hospitalized.

DEATHS

Charles W. Rohrer

Charles W. Rohrer, former assistant to the Chief of Personnel Management at the Central Office, died January 18. Mr. Rohrer served the Weather Bureau for more than 49 years and was located at the Central Office from 1903 until his retirement in 1948. He is survived by a son, Carl Rohrer of 5407 Old Dominion Drive, McLean, Virginia; and two daughters, Mrs. John B. Buckman, 312 Dolley Madison Boulevard, McLean, Virginia; and Mrs. Louis DeOlden of Downey, California.

Orlin R. Rogers

Orlin R. Rogers, former Meteorologist in Charge at Columbia, Missouri, died December 17, 1963. Entering the Bureau in 1910, Mr. Rogers worked at San Francisco, and Birmingham, before transferring to Columbia in 1915, where he remained until his retirement in 1944. He is survived by his wife, Mrs. O.R. Rogers, Columbia, Missouri.

Sallie R. Stout

Sallie R. Stout, former employee in the Procurement and Supply Section of the Central Office, died in July 1963. Miss Stout retired in 1954, after more than 36 years of Weather Bureau service. She worked in the Central Office during her entire Government career.

Blood Donor Honored

James I. Elliott of the Communications and Editing unit (F&SR) at Suitland, Maryland, has donated eight gallons of blood to the American Red Cross since 1952.

This is approximately four times the amount of blood in a human's circulatory system at any given time.

In recognition of his services, the Red Cross has given Mr. Elliott a certificate and a gold pin in the shape of a drop of blood.

Profile...

JOHN H. EBERLY

As Executive Officer, first to Dr. Reichelderfer and now to Dr. White, John H. Eberly's principal duties are staff assistance, coordination of staff activities, and congressional liaison.

Because of the nature of his work, only top Weather Bureau officials have been aware of the scope of Mr. Eberly's activities. Recently, in his travels with Dr. White, he has become better known to Weather Bureau employees.

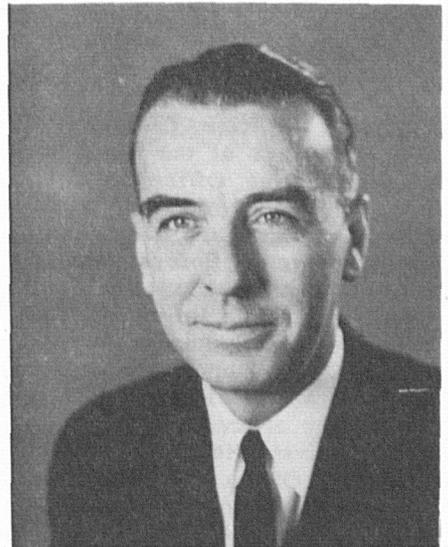
Mr. Eberly is staff adviser to the Chief on Weather Bureau problems, plans, and proposals, including many of a highly classified nature, which require close relations with other government agencies and the Congress. Broad powers have been delegated to him to develop the Bureau's position and act as its representative at high-level conferences.

He works closely with the Standing Group Meteorological Committee of the North Atlantic Treaty Organization, the Joint Meteorological Group of the Joint Chiefs of Staff, and the National Coordinating Committee for Aviation Meteorology.

Born in Gardner, Massachusetts, John Eberly attended the local schools before entering Holy Cross College as a chemistry major. He graduated with a B.S. in 1937 and was awarded a fellowship to study for the master's degree, which he received in 1938. For the next two years, he worked as a biochemist with the New England Medical Center in Boston.

Enlisting in the Air Force in 1940, Mr. Eberly was sent to New York University for the "A" course in meteorology. After serving briefly at Mitchell Field, Long Island, he became officer in charge of the Air Force weather station at Craig Air Force Base, Selma, Alabama. In 1944, he advanced to

Assistant Regional Control Officer at Atlanta, Georgia. At the end of World War II, he was Regional Control Officer of the 22nd Weather Region at Natal, Brazil, supervising the operation of 15 to 20 weather stations which provided weather service for flights across the South Atlantic and to points in South America and the Caribbean. When he left the Air Force to enter the Weather Bureau, he held the rank of Lieutenant Colonel.



John H. Eberly

Mr. Eberly's first Bureau assignment was in the Station Operations Division. In late 1946, he became Special Assistant to the Assistant Chief for Technical Services. He participated in the establishment and maintenance of several overseas meteorological projects, including Philippine rehabilitation and the Hypo Project.

In 1947, Mr. Eberly was made Special Assistant to the Chief of Bureau, giving staff support to the Chief and representing him at interdepartmental conferences.

(continued on page 29)

Welcome to the Bureau

Buckner, Almira C., Clerk-Typist, Asheville, N.C.
 Clemons, Gerald H., Meteorological Technician, Miami
 Craddock, Harold M., Meteorologist, Asheville, N.C.
 Earnest, Charles L., Meteorological Technician, CO
 Eckhoff, Albert E., Meteorological Technician, Cordova, Alaska
 Fox, Arthur M., Meteorological Technician, San Francisco
 Hetrick, Thelma J., Clerk-Typist, CO
 McQuiddy, Mary E., Accounting & Fiscal Clerk, CO
 Newman, Lawrence W., Meteorological Technician, Anchorage
 Roshinski, Francis L., Meteorological Technician, Miami
 Ruth, James M., Meteorological Technician, Blue Canyon, Calif.
 Shigeishi, Hisao, Meteorological Technician, Marcus Island
 Smith, Jerome A., Teletypist, Kansas City
 Stephens, James L., Meteorological Technician, Fairbanks
 Thobe, Ralph D., Meteorological Technician, Miami
 Vasquez, Carmen M., Clerk-Stenographer, New York
 Vetere, Martin, Electronic Maintenance Technician, New York
 Willcox, James L., Meteorological Technician, Las Vegas
 Young, Robert F., Electronic Maintenance Technician, Nantucket

RETIREMENTS

Evelyn M. Rice

Evelyn M. Rice, Chief Personnel Officer at the Regional Administrative Office in New York, retired January 31, after more than 25 years in Government service. Before coming to the Weather Bureau, Mrs. Rice worked briefly for the U.S. Customs Agency Service and the War Department. She worked at the Bureau's New York City office before transferring to the Regional Administrative Office. She has attended New York University. Her address is 40 Metropolitan Oval, New York, N.Y. 10462.

Wilbur W. Oak

Wilbur W. Oak, Meteorologist in Charge of the Weather Bureau Station at Detroit's Metropolitan Airport, retired January 31, concluding Weather Bureau service of more than 33 years. Joining the Bureau at Cheyenne in 1930, he worked at Cleveland, Atlanta, New Orleans, and Washington, D.C., before coming to Detroit in 1945. He was awarded a silver medal for meritorious service in 1957. A veteran, Mr. Oak attended Missouri State Teachers College. His address is 16718 Bramell Street, Detroit, Michigan 48219.

James J. Cassidy

James J. Cassidy, Chief Airport Meteorologist at Albany, New York, retired January 31, completing more than 46 years of Government service. First appointed as a messenger at Albany, Mr. Cassidy also worked at Newark, New Jersey, and served as an officer in World War II. He has B.A. and M.A. degrees from New York State College for Teachers. His address is 565 Albany Shaker Road, Albany 11, New York.

Transfers

| | <u>From</u> | <u>To</u> |
|----------------------|----------------------|--------------------|
| Allen, Bobby D. | Mobile | Daytona Beach |
| Bakeman, Davis F. | Winslow, Ariz. | Olympia, Wash. |
| Ballard, John C. | Seoul, Korea | CO |
| Chambers, Jesse M. | Antarctica | Jacksonville, Fla. |
| Filion, Joseph J. | Charleston, W. Va. | Atlantic City |
| Gunther, Emil B. | Fresno, Calif. | Salt Lake City |
| Hetts, Earl R. | Eniwetok | Wallops Island |
| Melton, Leslie D. | Stockton, Calif. | Sacramento |
| Mooney, Henry A. | Mobile | Midland, Tex. |
| Robinson, Gerald L. | Stampede Pass, Wash. | Las Vegas |
| Rossini, Robert L. | Minneapolis | Gilmore Creek |
| Seal, Kenneth B. | Sacramento | Great Falls, Mont. |
| Sharpe, John M., Jr. | El Paso | Albuquerque |
| Smith, Harold | Kingston, Jamaica | St. Louis |
| Surface, Ronald K. | Seattle-Tacoma | Olympia, Wash. |
| Taylor, Vasco R. | Ely, Nevada | Portland, Ore. |
| Teague, Jack L. | Kansas City, Mo. | Norman, Okla. |
| Thomas, Clyde P. | Charleston, W. Va. | Wilmington, N.C. |
| Watson, Mary T. | Miami | Honolulu |
| Wendlick, Rolland F. | Marquette, Mich. | Des Moines |
| Yates, Lascellis W. | Portland, Ore. | Seattle-Tacoma |

Ocean Station Ships Get Service Award For Air Safety Role

Personnel of ocean station vessels received the 1963 Distinguished Service Award of the Flight Safety Foundation, for services of "immense benefit to the safety of over-ocean transportation."

The award noted the outstanding record of the Ocean Station Floating Network in providing meteorological data, search and rescue services, communications relays, and navigational aids to aircraft flying between Europe and North America.

Of the total of nine ocean station vessels located in the North Atlantic, four belong to the United States and include aboard 49 representatives of the Weather Bureau.

Meteorological observations made on shipboard each day include eight surface weather, four upper wind, and four radiosonde observations. To meet requirements of jet trans-Atlantic flights, all ocean station ships now take radiosonde observations up to at least 59,000 feet.

Bureau Takes Part In Historic Survey Near Russian Coast

N.E. Carroll, of the Pacific Weather Project, participated in a meteorological program aboard the U.S. Coast Guard icebreaker Northwind from August through November. Going as far as 77° N, the ship conducted an oceanographic survey in the Chukchi, East Siberian, and Laptev Sea areas. This survey along the north coast of Russia was the first in history conducted by a U.S. vessel. The meteorological program consisted of upper-air soundings, surface observations, and 24-hour forecasts.

Profile... (continued)

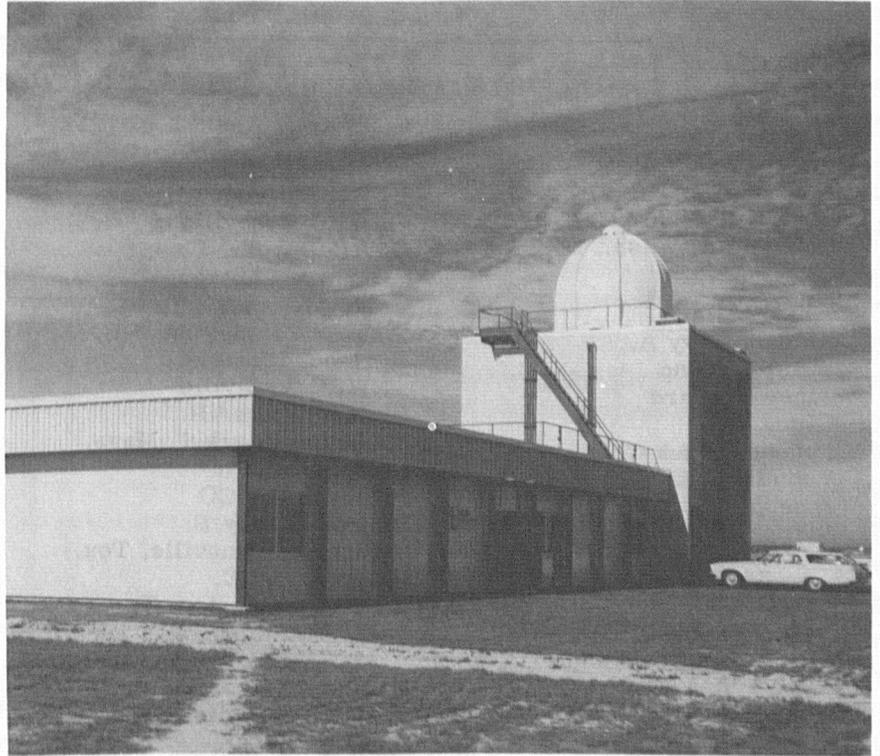
He moved to the Office of the Assistant Chief for Program Planning in 1953. Here, he served as liaison with the military services to ensure coordination of meteorological programs. During this period, he became the Bureau's representative to the Standing Group Meteorological Committee of the North Atlantic Treaty Organization, a position he still holds. He participated in the Advanced Study Group in the fall of 1957.

Mr. Eberly was appointed Executive Officer in 1959. In February 1963, he was given the Department of Commerce Silver Medal for "carrying out highly important Weather Bureau assignments for more than 17 years."

Mr. Eberly is a member of the American Meteorological Society and the American Geophysical Union. He and his wife, Mary, live in suburban Maryland. They have one son, Jack, who is a senior at the University of Notre Dame.

Appropriations (continued)

tion and satellite chart materials to the field forecast centers are planned. New office and/or inflation buildings are planned for five locations.



(NASA Photo)

NASA Funded

New WBO at Wallops Island

The Wallops Island Weather Bureau Office has moved into new quarters built for it by the National Aeronautics and Space Administration. The station is operated by the Weather Bureau with funds provided by NASA.

At one end of this modern building are two balloon inflation areas. One is for inflating large balloons; the other has a sliding roof to permit quick release of several smaller, previously inflated balloons.

Another new addition is a multi-purpose radar for Weather Bureau use. This radar contains all circuitry for tracking chaff balloons and rockets. With modifications now underway, the radar will provide excellent weather surveillance. When the installation is completed, radar meteorologists on the main base seven miles away will be able to operate it.

A second meteorological tower, 300 feet high, has been built on the north end of Wallops Island. This, with the 250-foot tower on the south end of the island, will provide adequate low-level wind data for all launchings pads.

From Wallops Island, Bermuda, and the U.S.S. Range Recoverer, Weather Bureau personnel assigned to the Wallops Island Station fired 203 meteorological rockets in 1963. The rockets carried several types of payload, both passive and telemetering. Passive payloads included many sizes and types of radar reflective chaff, inflatable radar reflective spheres, and parachutes. Telemetering payloads were either of the 403- or 1680-mc. type, suspended from metalized parachutes. Except for radar tracking, all operations connected with the launchings were performed by Bureau personnel.

Length of Service Awards

40-Year Award

Schmidt, Reinhart C.
DMO-WNA, Wash., D.C.

35-Year Awards

Lothman, Arvy A.
WBAS Fresno
Sumner, Howard
Clim., CO
Thompson, Jack C.
Planning, CO
Wagner, Arthur C.
NWRC Asheville

30-Year Awards

Beers, Frances D.
WBAS, F-W, Portland
Lacy, Faye
Adm. Oprs., CO
Rigby, Malcolm
Met. Research, CO

25-Year Awards

Chambers, Samuel W.
WBAS Dodge City, Kans.
Copeland, Edward V.
AP Miami
Haley, Raymond
Hydro., CO
Lorimer, Elza
O&SF, CO
Miller, William H.
WBAS Macon, Ga.
Nelson, Frank J.
WBAS Los Angeles
Norris, Mary
Adm. Oprs., CO
Ohligschlager, James K.
WBAS Las Vegas
Rice, Kenneth A.
WBAS Boise
Simmernacher, Richard E.
WBAS Scranton, Pa.
Sprague, Carlton E.
WBAS Wake Island
Winner, John P.
DMO-WNA, Wash., D.C.
Young, Leo E.
RAO Ft. Worth
Young, Byron A.
RAO Salt Lake City

20-Year Awards

Bergstrom, Mildred
WBO Portland

Bilton, Thaddeus H.
NWRC Asheville
Davis, Dorothy L.
O'Hare, Chicago
Gale, Annie L.
WBAS Charleston, S.C.
Garland, Floyd M.
NWRC Asheville
Geddes, Alfred H.
WBAS Nantucket, Mass.
Guimes, Victor
Adm. Ops., CO
Hagood, Leroy B.
WBAS Brownsville, Tex.
Hall, Arthur C.
WBAS Lexington, Ky.
Hall, Walter R.
WBO New Orleans
Harmon, James H., Jr.
WBAS Ft. Smith, Ark.
Hays, Frank J.
WBR Las Vegas
Hodge, William T.
NWRC Asheville
Hopson, George R.
WBAS San Angelo, Tex.
Hullinger, Robert W.
RFC Portland
Johnson, Ida M.
WBRAS Salt Lake City
Keith, Hubert
NMC, CO
Lee, Jean T.
WBO Kansas City
Lewis, Wilbur J.
WBO Point Arguello
Lloyd, Merle G.
WBAS San Francisco
Loseke, Alvin E.
WBAS Boise
Malach, Albert
WBAS Fresno
McCarson, Mildred I.
NWRC Asheville
McGuire, James K.
Area Clim. Office, N.Y.
Miller, Alfred D.
AEO Kansas City
Mondschein, Herman F.
RFC Kansas City
Moore, Paul S., Sr.
WBO Point Arguello
Neuman, Sanford
DMO Miami
Orr, Welcome B.
WBAS Dodge City, Kans.

Osborne, Grace Y.
NWRC Asheville
Pause, Harry J.
WBAS Providence, R.I.
Perez, Ruben
WBAS San Juan
Peterson, Arthur
F&SR, CO
Pohl, Harry
RFF, Miami
Ritchie, Earl M.
NWRC Asheville
Sarnowski, Edward J.
WBAS Buffalo
Schultz, Ruben
WBAS Seattle (Boeing)
Staats, Wayne
Instr., CO
Taylor, Laura C.
WBAS Daytona Beach
Tomer, Lillian
Instr. Civ., CO
Wilson, Samuel A.
WBAS Des Moines

15-Year Awards

Barger, Jackie S.
NWRC Asheville
Bartlett, Helen F.
NWRC Asheville
Bartlett, William D.
NWRC Asheville
Bottorff, Arby Scott
RAO Fort Worth
Buckner, Troy O.
NWRC Asheville
Caporaso, Andrew
MR, CO
Clark, Marjorie
Library, CO
Collins, John E.
WBO Point Arguello
Compton, Willard
Instr. Div., CO
Hall, Henry G.
NWRC Asheville
Ogle, Leo E.
WBAS Seattle-Tacoma
Rammer, William
NMC, CO
Schwab, John A.
WBAS Denver
Whitehead, Lorimer
NMC, CO
Wolfington, Edward E.
WBAS Indianapolis



Assignment LXVIII: First six questions - "The January Warm Spell and Associated Large-Scale Circulation Changes," Monthly Weather Review, Vol. 91, No. 2 (February 1963), pp. 47-60. Last four questions - "An Incipient Hurricane near the West African Coast," same MWR issue, pp. 61-68.

QUESTIONNAIRE

Col. 61 Mark all correct answers. Figure 7 shows:

1. Easton, Maryland's, January warm spells correlate negatively with the large scale North-South temperature gradient

2. when the Azores High is displaced north the amplitude of the January warm spell is increased

3. good correlation between range of mean North Atlantic pressure and the intensity of warm spells

4. support for low zonal index being favorable for the January thaw.

Col. 62 From figure 6 one may conclude:

1. a "warm spell" in the eastern U.S. in January is a fiction

2. an interruption of winter by a "warm spell" at Easton, Maryland, may range over a couple of weeks

3. Easton, Maryland, is not a good station for study of the January "warm spell"

4. ten-year means are useless for studying the January "warm spell."

Col. 63 From the analyses of correlation coefficients as depicted in figure 3 the author concludes:

1. Marvin's earlier data gave erroneous results

2. the larger correlation coefficients of Marvin's data result from insignificant random effects

3. the wintertime orientation of the correlation coefficient axis is due to northeastern moving storms from the Gulf

4. the summertime orientation of the correlation coefficient axis is due to the low latitude origin of warm temperatures in that season.

Col. 64 The following best depicts the author's judgement concerning the invoking of "change of phase" argument to explain the absence of postulated periodicities:

1. The author is in agreement with most meteorologists on this.

2. The author feels that unexplained "change of phase" arguments may occasionally be beneficially invoked.

3. The author feels that periodicities may be ill-explained without the intelligent invoking of a "change of phase" argument.

4. The author feels that the invoking of a "change of phase" argument is just not scientific.

Col. 65 Mark all true statements. The mean January 8 map shown in figure 9 is to be interpreted:

1. as explaining the abrupt shift in westerlies shown in figure 8

2. as being dependent upon the prior state of the planetary circulation

3. as the mean pattern to be expected for this date in any particular 16-year interval

4. as being the mean pattern (without time or space adjustments) that explain the winter pattern of figure 3

Col. 66 Mark all correct answers. The January warm spell appears to be a natural consequence of one or more of the following factors which are related to each other:

1. The potential energy in the atmosphere over North America and vicinity is at a maximum.

2. The Aleutian Lows weaken because the "peak" of winter is past.

3. Gulf Coast cyclones move northeastward along the Appalachians.

4. There is a period of adjustment of long wave circulation from an early winter pat-

tern to a late winter pattern.

Last four questions from same MWR issue, pp. 61-68

Col. 67 In figure 7, page 65, the upper-air temperatures are plotted as:

1. deviations from mean tropical atmosphere

2. deviations from the mean of the 46-day period at Dakar

3. deviations from the mean of the 46-day period at standard levels over the northern hemisphere

4. actually observed.

Col. 68 One might conclude that some hurricanes that appear to originate near the Cape Verde islands:

1. actually developed as hurricanes over Africa

2. developed from weak migratory extra-tropical storms from central Africa

3. actually developed to the west of the islands

4. have their origin in a disturbance that comes out of Africa, already possessing some ingredients necessary for rapid deepening.

Col. 69 Analyses of 700-mb charts over west tropical Africa (between 10 and 20 degrees North) apparently show that the winds:

1. are definitely non-geostrophic

2. follow wave-like patterns but never have closed circulations

3. are near the geostrophic in direction, but tend to be subgeostrophic

4. are nearly the same as the surface winds, typical of hurricanes in the formative stage.

Col. 70 The cyclonic wind shift at and over Bamako between Sept. 3 and 4 (See figure 6, page 64.) is significant:

1. because it is typical of easterly waves

2. because it is greater in vertical extent than that which is usual in an easterly wave

3. because it proves the presence of a closed circulation to the south

4. only because it verifies the presence of vorticity.

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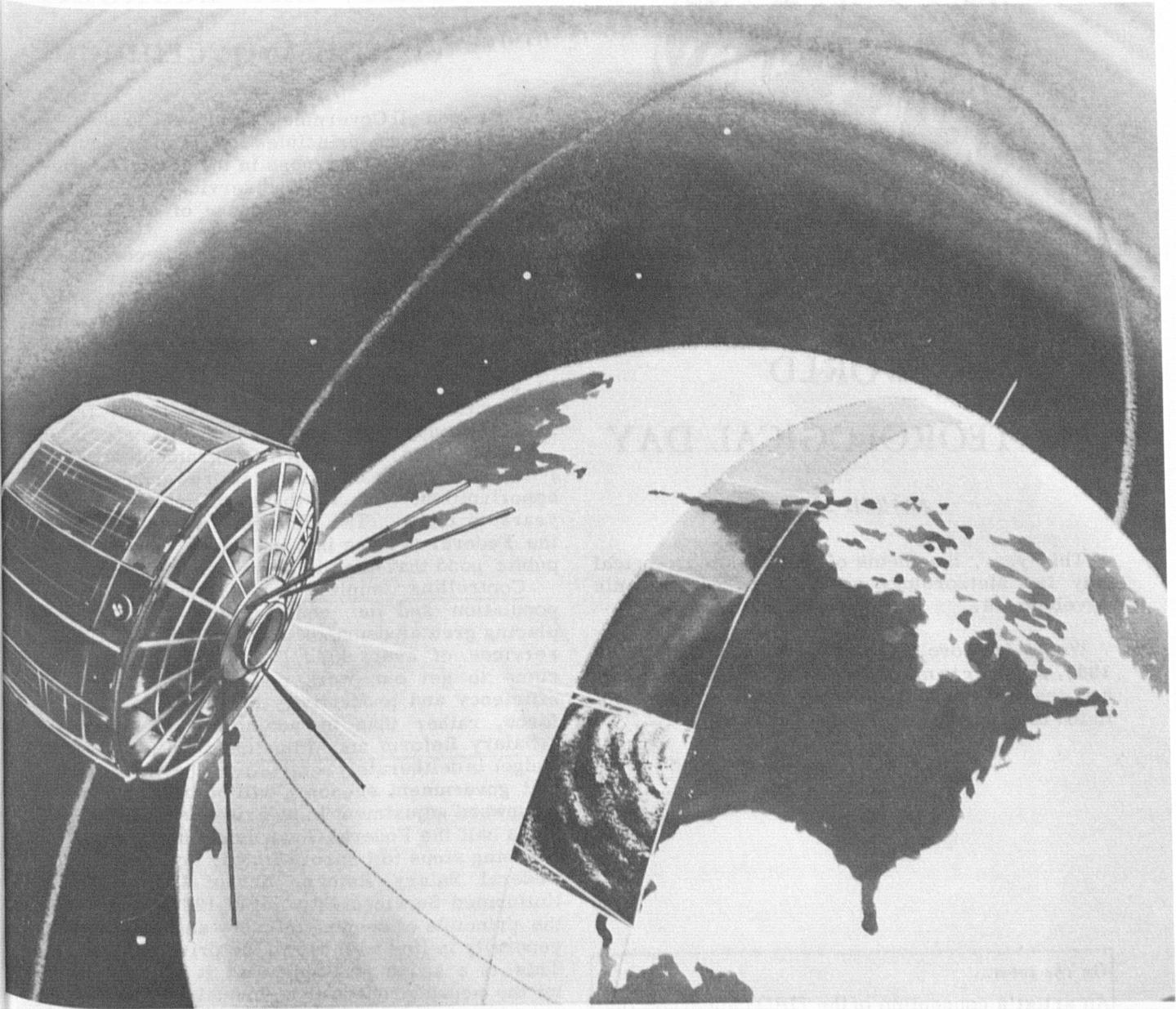
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WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through which ideas and views may be exchanged to promote efficiency and teamwork in attaining our common goals. While the contents, unless otherwise specified, reflect the Central Office viewpoint, they are not instructions but are presented for information. Opinions, discussions or comments by readers are invited; they should be marked for the attention of the Editor, TOPICS. **WEATHER BUREAU TOPICS** is distributed for official use only.

TOPICS

MARCH 1964
VOL. 23 NO. 3

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...the story on page 57. As the satellite orbits in orbit, two cameras on opposite sides photograph the earth.

C. 2



WORLD METEOROLOGICAL DAY

MARCH 23, 1964

This year, the theme of World Meteorological Day is "Meteorology as a factor of economic development."

World Meteorological Day was established in 1960, in order to make the services of meteorology and the work of the WMO better known to people in all nations.

On the cover...

An artist's conception of the TIROS wheel configuration. (See story on page 37.) As the satellite rotates in orbit, two cameras on opposite sides alternately photograph the earth.

RCA picture

President Johnson

Efficiency and Economy in Government

I call upon all Government employees to observe three paramount principles of public service:

First, complete fairness in the administration of governmental powers and services;

Second, scrupulous avoidance of conflicts of interest; and

Third, a passion for efficiency and economy in every aspect of Government operations.

For its part, the Federal Government must be a good employer. It must offer challenging opportunities to its employees. It must be prompt to recognize and reward initiative. It must pay well to attract and keep its share of dedicated and resourceful workers. It must welcome fresh ideas, new approaches, and responsible criticism.

For 33 years I have been in Government service. I have known its challenge, its rewards, and its opportunities. But all these will multiply in the years to come. The time is at hand to develop the Federal service into the finest instrument of public good that our will and ingenuity can forge.

Controlling employment--Although both our population and our economy are growing and placing greater demands upon the Government for services of every kind, I believe the time has come to get our work done by improving the efficiency and productivity of our Federal work force, rather than by adding to its numbers.

Salary Reform and Adjustment--Although this budget is deliberately restrictive, I have concluded that government economy will be best served by an upward adjustment in salaries. In the last year and a half the Federal Government has taken far-reaching steps to improve its pay practices. The Federal Salary Reform Act of 1962 and the Uniformed Services Pay Act of 1963 established the principle of keeping military and civilian pay generally in line with pay in the private economy. This is a sound principle, and it is reinforced by the sound procedure of annual review. This principle is fair to the taxpayer, to Government employees, and to the Government as an employer.

-- Excerpts from President's
Budget Message of January
21, 1964

Topigrams

Washington, D.C.
March 1964

Dr. S. Fred Singer, Director of the National Weather Satellite Center since its establishment in 1962, has resigned to become Dean of the new School of Environmental and Planetary Sciences at the University of Miami. Dr. Singer will remain with the Bureau as a Special Assistant to Dr. White until July 1. David S. Johnson, Deputy Director of the Center, has been appointed to succeed Dr. Singer.

Meteorological information now flows between New York and Offenbach, Germany, on a cable circuit. The new cable replaces the radioteletypewriter circuit formerly used for exchange of weather information between North America and Europe. The cable's cost is shared by the United States and the Federal Republic of Germany.

Dr. George P. Cressman, Director of the NMC, was elected Chairman of the WMO Scientific Advisory Committee at its first meeting in Geneva.

Parts of the isotope-powered automatic weather station, which operated in the Arctic for two years, have been brought to the Instrumental Engineering Division for maintenance and repair. After successful performance during its design life-time of two years, difficulties developed in the station's electronic switching mechanism. The meteorological and electronic components will be reinstalled during next summer's Arctic resupply mission.

Dr. Thomas G. How is the new Director of the Canadian Meteorological Service. Dr. How, formerly regional director of air services at Vancouver, succeeds Dr. P.D. McTaggart-Cowan, who resigned in January to accept the presidency of Simon-Fraser University, British Columbia.

The first nuclear-powered marine automatic weather station began operating in the Gulf of Mexico in February. The new station, developed for the Atomic Energy Commission and the Navy, replaces the conventional automatic device--which transmitted the first reports of Hurricane Ethel in 1960--and is anchored at the same spot, 25° North, 90° West.

A two-day Weather Bureau R & D conference, the first of its kind, was held on February 17 and 18 at Airlie House near Warrenton, Va. Key Bureau research personnel reached agreement on a number of problems related to acceleration of research and development programs.

At the end of the first three quarters of 1963, the five highest participants in the Practice Forecast Program were, in order of rank: Donald T. Rowland, WBAS, Port Arthur; William R. Chassee, WBAS, Grand Rapids; John C. Marscher, WBAS, Washington, D.C.; James M. Yates, WBAS, Des Moines; and David L. Bjorem, WBAS, Yakima.

Beginning on March 15, the Washington Daily Weather Map will be prepared by the National Meteorological Center. In the past, the map has been prepared by the Daily Map Unit at 24th and M Streets. Printing and distribution procedures will not be changed.

Briefs from the CO Staff Conferences

A further announcement was made on the formation of a National Meteorological System Design Group. The systems design and management function will be established within the Office of Planning. Jack C. Thompson will supervise both the systems and planning activities of the Office of Planning until Walter A. Hahn assumes full responsibility for the Office of Planning about April 1. At that time Mr. Thompson will become head of the systems design and development group.

Mr. Hiatt reported that work is under way for a computer summary of country-wide river information. He also said that the Committee on Water Resources Research (CWRR) of the Federal Council on Science and Technology has prepared progress reports on Federal funding for FY 1964 and funds planned for FY 1965. The Chairman of CWRR presented a paper which emphasized that perhaps the greatest deficiency in water resource development was not research but a fuller utilization of existing knowledge.

Based on recommendations from the joint FAA/USWB National Aviation Weather Systems Study (NAVWESS), the FAA has announced the remoting or consolidation of 42 of its Flight Service Stations. In each case, the Bureau found alternative means for providing the required observations and other weather services, resulting in a net savings to the Government. Future efforts of the study group include (1) determination of 'hard core' FSS and Bureau stations, expected to remain in existence through 1970; (2) recommendations concerning the feasibility of combining selected WBAS's and FSS's at the approximately 100 locations where both activities are at the same airport; (3) recommendations of possible aeronautical services that could be added to the functions of the existing 128 WBAS's where there are no FSS's in the immediate area. The study is scheduled for completion around April 1. Several activities originally planned for NAVWESS will now fall in the area of responsibility of the Aviation Subcommittee of the Interdepartmental Committee for Meteorological Services. (See story on page 38.)

Plans for the Bureau's FY 1966 program, including estimates of cost, are now being developed for presentation to the Department of Commerce in April. This year's "preview" will include cost estimates and plans covering a five-year period.

Development of Meteorological Satellite System Forwarded by NASA-Weather Bureau Agreement

Secretary of Commerce Luther H. Hodges and NASA Administrator James Webb signed an agreement on January 30, defining the roles of the two agencies in the conduct and development of the National Operational Meteorological Satellite System (NOMSS).

An operational satellite system--based on TIROS technology--is expected to begin operation in 1965, providing global weather information.

Announcing the agreement, Secretary Hodges said that the new system will enable the Department of Commerce to reduce its requests for funds for satellite programs by an estimated \$ 125 million over the next five years. This figure

was based on a comparison of costs between the new plan and an earlier plan for the use of the Nimbus weather satellite in an operational system. The reduced costs are due mainly to differences in the costs of spacecraft and launch vehicles.

Under the terms of the new Commerce-NASA agreement, the Weather Bureau will operate the satellite system as part of the National Meteorological Service. NASA will develop spacecraft for the system, to meet specifications and requirements established by the Weather Bureau.

The two agencies have already begun work on the development of the Operational Weather Satellite System. The system is

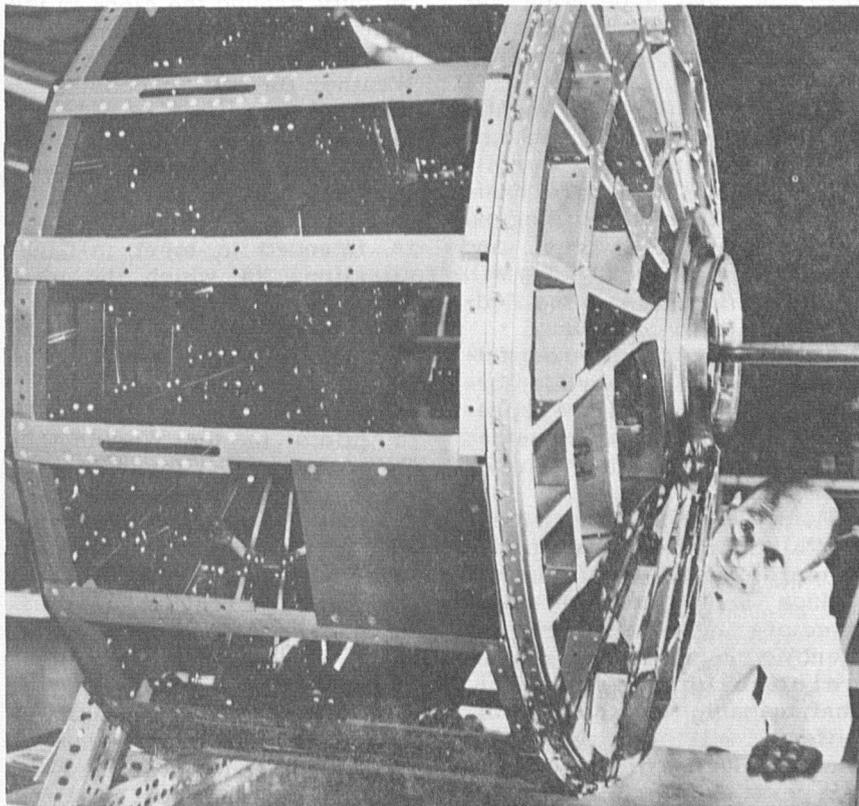
being designed to meet the United States' present needs, both military and civilian, for weather satellite observations.

The Weather Bureau will determine the schedule of launches and the information to be gathered by the satellite instruments. Once NASA has placed the satellite in orbit, the Weather Bureau will operate and control the system and will analyze, process, and distribute the data.

Under reimbursable order from the Weather Bureau, the National Aeronautics and Space Administration will design, procure, test, launch, and track the weather satellites.

Until more advanced satellites are ready, an operational observing system, based on TIROS, will be established. The next TIROS vehicles will be placed in near-polar orbits and will be modified into a so-called cartwheel configuration. Although it will have the same basic shape as the earlier TIROS vehicles, its cameras will point outward from the rim, instead of along the spin axis of the cylinder. The satellite will spin in orbit like a wheel and will take pictures only when a camera is pointed downward. Thus, distortion resulting from a camera looking at the earth from various angles, as is now the case with TIROS, should be largely eliminated.

The National Aeronautics and Space Administration will continue its research and development on new satellite technology to permit improvement and eventual replacement of this first operational system. The ultimate goal continues to be a relatively heavy, versatile weather satellite that can be used for many types of observation and data collection, reliable enough to have a five-year average life.



RCA photograph

Engineer checks the basic TIROS structure. In the wheel configuration, the satellite will be oriented in this position.

New Office to Coordinate Federal Weather Programs

Several important steps have been taken to carry out the instructions contained in the Bureau of the Budget Circular. (See text in January TOPICS.) These steps include the creation of a new office and three new committees.

The newly established Office of the Federal Coordinator for Meteorology is organized as part of the Office of the Assistant Secretary of Commerce for Science and Technology. Dr. White is the Federal Coordinator for Meteorology, and his Deputy Coordinator is Colonel Donald F. Moore.

A Federal Committee for Meteorological Services and Supporting Research has been established to provide high-level policy guidance to the Federal Coordinator, review proposed Government meteorological plans, and resolve problems in the coordination of Federal meteorological activities. The nine Government agencies to be represented on this committee are: the Departments of Commerce, Defense, Agriculture, Treasury, and Health, Education, and Welfare; the Federal Aviation Agency; National Aeronautics and Space Administration; National Science Foundation; and Atomic Energy Commission. Its chairman will be Dr. J. Herbert Hollomon, Assistant Secretary of Commerce for Science and Technology.

The Deputy Federal Coordinator for Meteorology, Colonel Moore, heads a permanent full-time staff that already occupies quarters at 1666 Connecticut Avenue, N.W., in Washington. To augment the office's permanent staff, agencies involved in Federal meteorological programs will be asked to designate high-level personnel to work on detail in staff positions.

The Office of the Federal Coordinator contains three main subdivisions--the Opera-

tions Evaluation Group, the Operating Program Division, and the Supporting Research Division.

The Operations Evaluation Group will perform special studies for the Federal Coordinator. It will analyze Federal meteorological activities, assess the economic consequences of proposed programs, and analyze overlapping activities of various agencies.

The Operating Program and Supporting Research divisions will work closely with two newly formed interdepartmental committees (the Interdepartmental Committee for Meteorological Services and the Interdepartmental Committee for Applied Meteorological Research) to coordinate and review Federal meteorological requirements, services, and supporting research, and in the compilation of the Federal Meteorological Plan.

The two interdepartmental committees and their subcommittees will make systematic and continuous reviews of basic and specialized meteorological requirements, services, and supporting research. They will prepare and maintain the Federal Meteorological Plan.

Members of the Interdepartmental Committee for Meteorological Services will be representatives of military weather services, the Weather Bureau, and user agencies.

Members of the Interdepartmental Committee for Applied Meteorological Research will include senior managers and directors of departmental or agency programs of applied meteorological research. Chairmanship of these committees will be vested in Weather Bureau employees.

Several existing meteorological coordinating groups will be considered for absorption into appropriate portions of the new coordinating structure.

Flight Service Stations In Kansas City Area Added to PTF Service

A network of five Flight Service Stations has been added to the Kansas City, Mo., direct pilot-to-forecaster weather service, making it available to all radio-equipped aircraft operating in the expanded Kansas City area.

Airborne pilots can now directly contact a Weather Bureau forecaster in Kansas City through Flight Service Stations at Salina, Kansas; Des Moines; and the Kansas City, Columbia, and Joplin stations in Missouri.

The hookup between the five stations and the forecaster is made via phone patch landlines. Pilots may use standard Flight Service Station radio frequencies to reach the forecaster.

One aviation meteorologist is on duty around the clock in the Kansas City Pilot-to-Forecaster Service Unit at the Weather Bureau Forecast Center. He can talk to only one pilot at a time so that some delay may be encountered by pilots in reaching him.

Pilot-to-forecaster service is intended to meet in-flight situations in which the pilot encounters critical or rapidly changing weather requiring direct advice from a meteorologist.

The same service is available to pilots in the Washington, D.C. area. The forecaster is located at the Air Route Traffic Control Center in Leesburg, Va. Pilots operating within VHF radio range of Elkins, W. Va.; Richmond, Front Royal, and Roanoke, Va.; or Rocky Mount, N.C., may obtain direct pilot-to-forecaster service.

An evaluation of the service is being conducted by a private firm under contract to the Federal Aviation Agency. The results of this evaluation will be used to determine whether the service should be established at additional locations.

SILVER MEDALS GO TO NINE BUREAU MEN

Nine Weather Bureau employees have received Department of Commerce Silver Medals for Meritorious Service. The Silver Medal winners were announced by Secretary of Commerce Luther H. Hodges at the Sixteenth Annual Awards Program at the Department of Commerce auditorium in Washington, D.C., on February 28.

The award winning Bureau personnel are:

Albert W. Cook, MIC, WBAS, Denver, Colorado, "for extremely competent performance in a variety of progressively responsible assignments...including important contributions to the public service as Meteorologist in Charge at Denver Weather Bureau Airport Station for the past 13 years."

Mr. Cook was born in Sterling, North Dakota, in 1900. A World War I veteran, he graduated from the University of North Dakota in 1923. He received a Master's degree from that college in 1924. He joined the Weather Bureau as a Junior Observer at Madison, Wisconsin, in 1924. He was assigned to WBAS, Denver, in 1937, and was appointed MIC there in 1950.

Ralph P. James, Assistant Chief of the Aviation Section, F&SR, "for extremely competent performance of official duties for more than ten years with particular reference to outstanding performance in connection with the development of high altitude meteorological services for domestic and international aircraft operations."

Mr. James was born in Philadelphia in 1921. He graduated from Wheaton College in Illinois in 1943. He joined the Weather Bureau in 1944. That same year he joined the Navy. After his discharge in 1946, he re-joined the Bureau.

Ray E. Johnson, Hydrologist in Charge, RFC, Kansas City,

"for extremely competent performance in carrying out important assignments and for significant contributions to the advancement of the Weather Bureau's hydrologic program."

Mr. Johnson was born in Sibley, Missouri, in 1910. He graduated from Kansas University in 1932. From 1942 to 1945 he served in the Army. In 1946 he joined the Weather Bureau as a Hydrologist in Kansas City. He became HIC at the River Forecast Center there in 1951--the same year he was awarded an Exceptional Service Award for the part he played in accurately forecasting the Kaw River Flood in the Kansas City area.

Howard S. Kenny, MIC, WBAS, Columbus, Ohio, "for sustained efficiency and devotion to duty for over thirty-five years, including outstanding service as MIC at Columbus since 1955."

Mr. Kenny was born in 1909 in Schaffer, Michigan. He joined the Weather Bureau in 1928 as a Minor Observer at Escanaba, Michigan. In 1938 he transferred to the airport station in Chicago. He also served at the Chicago Forecast Center. In 1951 he moved to Columbus to

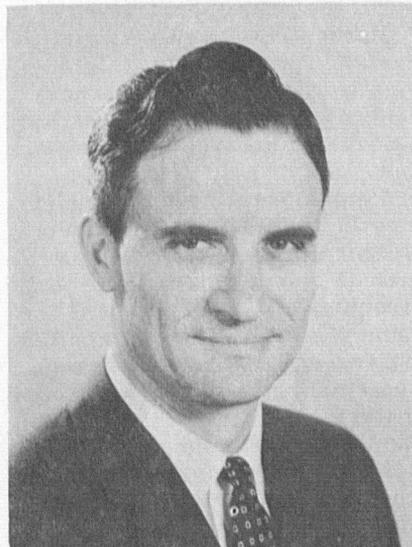
become a Supervisory Forecaster at the WBAS there.

William H. Klein, Chief of the Developing and Testing Section in the Extended Forecast Branch, "for valuable contributions to science through original research and distinguished authorship in the fields of extended forecasting and dynamic climatology."

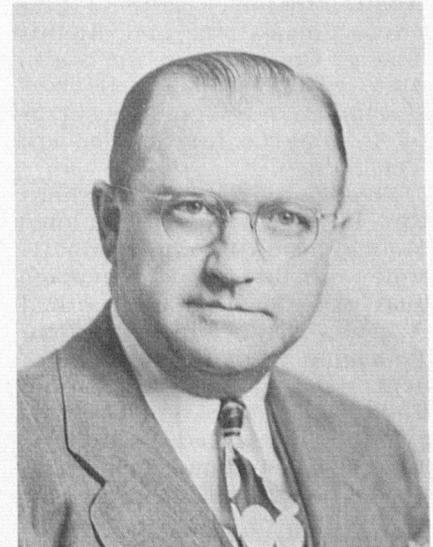
Mr. Klein was born in New York City in 1919. He attended City College of New York and graduated in 1938. He received a Master's degree in meteorology from Massachusetts Institute of Technology in 1944. Mr. Klein joined the Bureau in Washington, D.C., as a Meteorologist in 1946. He became Chief of the Developing and Testing Section in 1959.

Arthur R. Long, MIC, WBAS, Montgomery, Alabama, "for sustained efficiency and devotion to duty for over forty-four years in a series of assignments including fourteen years as MIC at Montgomery."

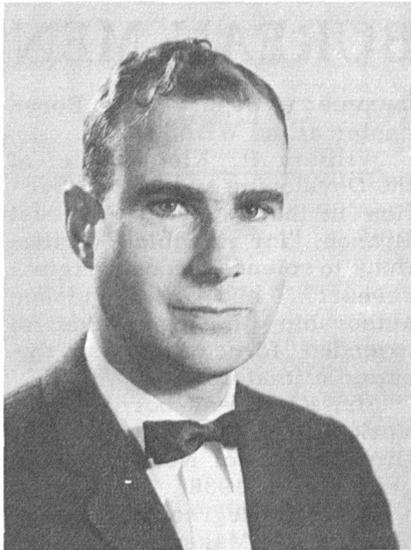
Mr. Long was born in Leesburg, Georgia, in 1901. He joined the Weather Bureau in 1918 and served in Memphis, Tenn.; Meridian, Miss.; Atlanta, Ga.; and Albuquerque,



RALPH P. JAMES



ALBERT W. COOK



J. MURRAY MITCHELL

N.M., before becoming MIC at Montgomery in 1948. He holds degrees from Memphis State College and Huntingdon College in Montgomery.

J. Murray Mitchell, a Research Meteorologist with the Bureau's Office of Climatology in Washington, D.C., "for a very valuable contribution to science through meritorious authorship in the field of climatic stability and change."

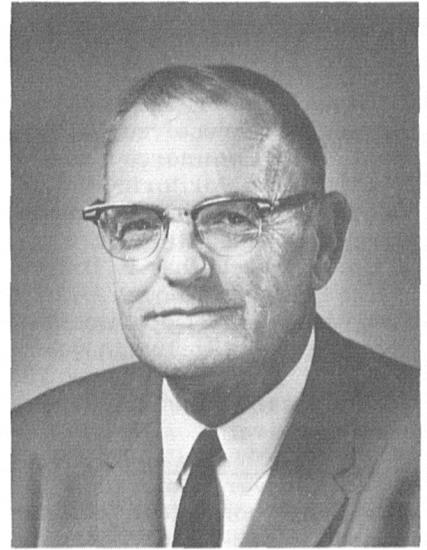
Born in New York City in 1928, Dr. Mitchell is a graduate of Massachusetts Institute of



MONTE F. POINDEXTER

Technology. He received his doctorate from Pennsylvania State University. He served in the Air Force from 1952 to 1955, where he was a meteorologist with the Air Weather Service. In 1955, Dr. Mitchell joined the Bureau as a Meteorologist with the Climatological Investigations Branch in Suitland, Md. To date he has had 37 significant papers published in a variety of scientific journals.

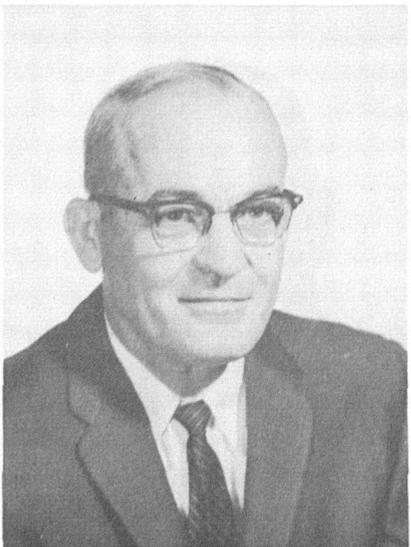
Monte F. Poindexter, a Meteorologist in the Instrumental Engineering Division in Wash-



ARTHUR R. LONG

ington, D.C., "for outstanding resourcefulness and initiative in assisting with the operation of an important meteorological program at Byrd Station, Antarctica, under extremely adverse conditions."

Mr. Poindexter was born in Amarillo, Texas, in 1934. He received his first meteorological training during his tour of duty with the Army from 1954 to 1956. After his discharge, Mr. Poindexter served with the Weather Bureau in the North-
(continued on page 41)



HOWARD S. KENNY



RAY E. JOHNSON



WILLIAM H. KLEIN

President Asks \$96.6 Million for Bureau

The budget which President Johnson submitted to Congress for the year beginning July 1, 1964, includes \$96.6 million for the Weather Bureau.

This amounts to \$16.6 million more than was appropriated for the current year. Meteorological Satellite Operations, for which no appropriation was made this year because of the carry-over of prior year funds and the decision to reorient the program to a considerable extent, is scheduled for \$11.5 million in the FY 1965 request.

The increase requested for Salaries and Expenses includes the full-year cost of the pay increase which went into effect in January 1964. The Bureau's assumption of the upper-air program at Marcus Island, which the Air Force formerly supported, operation and maintenance of new instrumental equipment, and improvements in weather measurements and forecasts programs are also

covered in the budget request. Other Salaries and Expenses increases are slated for the expansion of Hydrologic Services' computer program, the Office of Climatology's systematization of records and processing and summarization of marine weather records, and the improvement of administrative systems and procedures in all areas.

The Research and Development appropriation increases include intensified radar weather studies at the new National Severe Storms Laboratory at Norman, Oklahoma, general circulation studies, aviation weather research, systems analysis and design, equipment development, and similar activities. The R&D increases also cover increased hydrologic investigations and a number of climatic research contracts.

The Special Foreign Currency program will use surplus foreign currencies to supplement present Bureau research and development and to encourage greater cooperation in international meteorology and allied sciences. The surplus currencies requested will be

used for a study of the uses of satellite data in numerical weather prediction, improvement of upper-air observation in Pakistan, meteorological instrumental development, and a variety of research investigation dealing with the climatology and hydrologic cycle of arid regions.

Due to changing needs for equipment, the Bureau is reprogramming a portion of the available prior-year Establishment of Meteorological Facilities appropriation to meet a portion of the FY 1965 requirements. The cost of operating and maintaining equipment installed under this appropriation is covered by the Salaries and Expenses appropriation.

The Bureau's Meteorological Satellite Operations appropriations have undergone a major reprogramming as a result of the decision not to use the Nimbus satellite as the basis of the operational weather satellite program. The requested amount covers spacecraft and launching; command and data acquisition; data processing, analysis, and archiving; and technical management.

Silver Medals (continued)

west Territory at Mould Bay, Alert, and Isachsen. From 1961 to 1963 he served at Byrd Station, Antarctica.

John R. Swartz, a Meteorological Technician in the Office of Climatology before his retirement in December 1963, "for extremely competent performance of official duties for more than thirty-six years."

Mr. Swartz was born in Reading, Pa., in 1900. His first Bureau service was as a Messenger Boy in 1917. During his career he served at Cape Henry, Va.; Chicago; New Erie, Pa.; Iowa City; Topeka, Kansas; New Orleans; Fort Worth; and Washington, D.C. From 1942 to 1945 he was with the Army in Anglo-Egyptian Sudan, Egypt, and British West Africa.

| APPROPRIATION | Actual | Budget | CHANGE |
|--|---------------------------|--------------------|--------|
| | Appropriations FY 1964 | Request FY 1965 | |
| | (in millions) | | |
| Salaries and Expenses | 64.5 | 68.8 | + 4.3 |
| Research and Development | 10.4 | 14.1 | + 3.7 |
| Research and Development (Foreign Currencies) | .3 | .5 | + .2 |
| Establishment of Meteorological Facilities | 4.8 | 1.7 | - 3.1 |
| Meteorological Satellite Operations | 0 | 11.5 | +11.5 |
| TOTAL ALL | 80.0 | 96.6 | +16.6 |



Dr. White and Pacific supervisors at the Honolulu meeting.

Dr. White Addresses First Meeting Of Pacific Installation Supervisors

Supervisors from the Bureau's Pacific installations held their first meeting at Honolulu in December. Some representatives traveled more than 8,000 miles round-trip from their stations to attend the conference.

A highlight of this conference was an address by Dr. White, who later presented a certificate of training to each of the 15 participants. The meeting agenda emphasized techniques of effective management.

Supervisors attending the meeting were: Neil Bouray,

Lihue, Kauai; Hubert Boyd, Kwajalein Island; Raymond Busniewski, Hilo, Hawaii; James Cobb, Marcus Island; Warren Fitzgibbons, Eniwetok; Herbert Hirata, Honolulu; Chester Kainuma, Majuro, TT; Jack Pales, Mauna Loa Observatory.

Also attending the conference were: Carl Peterson, Kahului; Elvyn Pye, Barking Sands; Ben Robbins, Johnston Island; Norman Thomas, Wake Island; Kiyoji Tomita, Canton Island; Joseph Vederman, Honolulu; Paul Woolard, Guam.

Newspapers Feature Weather Articles

Three weather articles, written by Bureau employees and distributed through the Department of Commerce Sunday Feature Service, have appeared in newspapers throughout the nation during the past year.

Herbert S. Lieb of the Public Information Office authored an article on hurricanes and another on tornadoes. The most recent Weather Bureau

feature--"Can Man Tame Hurricanes?"--was written by Ann K. Cook of Public Information.

The Department's Sunday Feature Service regularly sends illustrated articles prepared in Commerce agencies to more than 100 newspapers. Weather features have proved to be very popular, and each has been used by 30 to 50 newspapers.

WMO Group Discusses Communications Net

Plans for the World Meteorological Organization's Southern Hemisphere radioteletypewriter network moved ahead last month as members of the WMO Commission for Synoptic Meteorology (CSM) Working Group on Telecommunications met in Australia.

At the meeting held in Melbourne from February 17 to 27, representatives from Australia, India, Brazil, and Kenya submitted detailed accounts of terminal equipment requirements and costs. These figures will be turned over to CSM President S.N. Sen of India for approval and subsequent incorporation in a comprehensive plan for the network to be submitted to the 16th Session of the WMO's Executive Committee.

The point-to-point radioteletypewriter network, with centers at Melbourne, Australia; Brazilia, Brazil; and Nairobi, Kenya, will have facsimile capabilities. On completion it will be linked to the Northern Hemisphere network to form a world-wide telecommunications system.

Attending the Melbourne meeting were Mr. S.R. Barbagallo (Chairman), Weather Bureau Forecasts and Synoptic Reports Division; Mr. C. Ramaswamy, India; Mr. B.W. Thompson, Kenya; Mr. F. Alves, Brazil; and Dr. G. Weiss (WMO Telecommunications Officer) and Mr. A.C. Duffy (WMO communications expert).

RETIREMENT

Mrs. Helen B. Stein, secretary in the Bureau's office at New York International Airport, Jamaica, retired January 24, completing over 21 years of Government service. Before working for the Weather Bureau, Mrs. Stein was employed by the Selective Service in New York City. Her mailing address is 3100 Ocean Parkway, Brooklyn 35, New York.

NSSP and Radar Lab Are Consolidated

The National Severe Storms Laboratory has been established at Norman, Oklahoma, on the campus of the University of Oklahoma. This new Laboratory represents a re-organization and consolidation of the National Severe Storms Project with the Weather Radar Laboratory.

Under the direction of Dr. Edwin Kessler, the Laboratory's projected program will emphasize the development of indirect probes, in association with direct measurements by aircraft and surface instruments, for investigating severe local storms. As part of this research, associations will be sought between turbulence, hail, heavy rain and tornadoes, and the depictions of quantitative radar and other remote sensing devices. Ultimately, the results of these investigations will be applied to operational problems, such as the forecasting of strong winds and hail, and quantitative analysis of heavy rains for timely flood warnings. Also, the program will attempt to develop physical and numerical models of severe local storms.

The approaching spring data-gathering period for research will extend from the last week of April to the end of May. The Air Force Cambridge Research Laboratories will provide a C-130 and B-47 aircraft, plus new Doppler radar equipment. Aircraft for penetration of thunderstorm towers will be provided by the Air Force Aeronautical Systems Division, while the Federal Aviation Agency will furnish air traffic control support. The Litton industries will cooperate in sferics observations.

The Research Flight Facility F-11A aircraft, completely instrumented and including a statoscope system installed by NASA, also will be used to gather data.

Profile...

EDWIN KESSLER

Dr. Edwin Kessler, head of the National Severe Storms Laboratory in Norman, Oklahoma, has had a strong inclination towards science and technology for most of his 35 years.

Dr. Kessler's early scientific leanings resulted in a science medal from his New York City grade school and, during high school in Corpus Christi, Texas, a citation from the Westinghouse Science Talent Search for an essay on cold fronts. He also won a Bausch and Lomb Science Medal in high school.

He entered Columbia College, New York, in 1945. After one year he enlisted in the Army for an 18-month tour of duty.

"I had infantry basic training," he recalls a bit wistfully, "but said 'yes' one day when asked if I could type, and spent most of the Army time as a clerk."

He returned to Columbia College after his discharge and graduated in 1950.

The same year he married Lottie Catherine Menger and moved to Massachusetts, where he enrolled at M.I.T. to study meteorology. In 1952 he received his master's degree.

In 1954, Dr. Kessler joined the staff of the Air Force Cambridge Research Laboratories to help develop the applications of radar to meteorology. In 1957 he received his doctorate in meteorology from M.I.T. with a minor in astronomy from Harvard. (He and his wife still use a six-inch reflecting telescope they built during his Harvard studies.)

In 1961, he went to work for Travelers Research Center in Hartford, Conn. He was Director of the Atmospheric Physics Division there when he left to join the Weather Bureau this year.

Dr. Kessler is a past president of the Greater Boston

Branch of the American Meteorological Society. He is presently a member of the Society's Committee on Weath-



Dr. Edwin Kessler

er Radar and Committee on Tropical Meteorology and Hurricanes. He is also a Certified Consulting Meteorologist and a foreign member of England's Royal Meteorological Society.

Dr. Kessler and his wife live at 2641 Butler Drive in Norman with their sons Thomas Russell, 5, and Austin Rainier, 10 (who was so named, says Dr. Kessler in a whimsical vein, because "he was born during a very rainy period and his initials spell ARK, which implied the hope any parent has for his child.")

300,000 Radiosondes

The 300,000th radiosonde was repaired at the Bureau's Radiosonde Reconditioning Center at Joliet, Illinois, this January. The Center, which began operation in 1945, reached the 100,000 mark in 1954 and the 200,000 mark in 1959. Approximately one-fifth of the radiosondes required for Bureau rawinsonde programs are provided by the Center.

AMS Meets in Los Angeles

The American Meteorological Society held its 44th annual meeting in Los Angeles, January 29-31, on the UCLA campus.

Weather Bureau employees gave papers at the various scheduled sessions. Edward Vernon was chairman of the meeting on the use of numerical forecasts, and papers were read by D.M. Hanson, V.J. Oliver, Philip Williams, Jr., and Donald L. Gilman. Glenn Brier was chairman of the symposium on forecast verification, for which R.A. Allen prepared a paper on the nature of weather forecasts.

Other sessions including papers by Bureau employees were those on hurricanes (Robert Simpson), radiative transfer (a joint paper by S. Twomey and D.Q. Wark), mesoscale circulations (two papers - James Angell and Donald H. Pack), and air pollution (R.A. McCormick). Dr. Helmut Landsberg prepared a paper on the roots of modern climatology.

Officers Elected

Two Weather Bureau employees were elected Councilors of the American Meteorological Society at the annual business meeting.

Dr. Lester Machta, Chief of the Meteorological Research Projects Branch, and Vincent J. Oliver, Chief of the Requirements and Applications Branch, National Weather Satellite Center, were among the five men chosen for a three-year term.

Elected President of the AMS for a two-year term of office was Dr. Philip D. Thompson, National Center for Atmospheric Research, Boulder, Colorado. Professor Phil E. Church, of the University of Washington at Seattle, was elected Vice President, while Professor James E. Miller (New York University) and Henry DeC. Ward (Eaton and Howard, Inc., Boston) were re-elected secretary and treasurer

respectively.

Retiring Vice President of the AMS is Dr. Helmut Landsberg, Director of Climatology, while Dr. Gerald Barger, Director of the National Weather Records Center, completed his term on the Council.

Awards Presented

Dr. F.W. Reichelderfer, former Chief of the Bureau, and Dr. Helmut Landsberg, Director of the Office of Climatology, received special awards from the American Meteorological Society at its recent annual meeting.

Dr. Reichelderfer received the Cleveland Abbe Award for Distinguished Service to Atmospheric Sciences. The award citation noted Dr. Reichelderfer's "wisdom, statesmanship, and foresight" during his leadership of the Weather Bureau for over 24 years. He served as president of the AMS in 1940-41 and was made an honorary member on his retirement last fall.

Dr. Landsberg was given an award for Outstanding Achievement in Bioclimatology. He was especially recognized for his work to increase "understanding of the normal human environment and its effect on our lives and activities."

A special citation was presented to Dean Blake, retired Bureau employee who was Meteorologist in Charge at San Diego, California, for 30 years. A charter member of the AMS, Mr. Blake was recognized especially for his studies of the temperature inversion over the California coast and his courses in meteorology at San Diego State College.

Father Adelhelm Hess, of Conception, Missouri, also received a special citation, "in recognition of his long and devoted service as a cooperative weather observer" for the Bureau. He has made observations for over 60 years.

DEATHS

Palmer W. Reynolds

Palmer W. Reynolds, former Meteorological Technician at Amarillo, Texas, who retired last November, died January 12. Mr. Reynolds worked for the Bureau since 1938, serving at Mobile, Alabama, and El Paso, Texas, before his most recent position.

William D. Cooper

William D. Cooper, former Meteorological Aid at Trenton, New Jersey, who retired in 1954, died January 13. Mr. Cooper spent his entire 33-year Bureau career at the Trenton Office, where he entered on duty as a messenger in 1920. He served in the U.S. Air Force during World War II.

Mirce P. Moore

Mrs. Miree Post Moore, Meteorological Technician at the National Hurricane Research Project at Miami, Florida, died January 27. She also worked at the National Weather Records Center at Asheville, North Carolina, and at Bureau offices at Bethel, Alaska; New Orleans; and Mobile, Alabama. During World War II, she worked for the War Department in Alabama. Mrs. Moore attended the State Teachers College at Troy, Alabama. She is survived by her husband, William H. Moore, 3901 Lakewood Road, Lake Worth, Florida, and two daughters.

Thomas H. Sheret

Thomas H. Sheret, Supply Requirements and Distribution Officer, Procurement and Supply Section, at the Central Office, died January 14. Until recently, Mr. Sheret worked with the Polar Operations Project at Central Office and at Davisville, Rhode Island, and Boston, Mass. Also, during his Bureau service he was stationed at Thule, Greenland; and Resolute Bay and Eureka Sound, NWT, Canada. He served with the U.S. Navy in World War II.

Edward L. Wells

Edward L. Wells, retired MIC at Portland, Oregon, died January 12. Mr. Wells worked for the Bureau for almost 50 years, beginning his service at Huron, South Dakota, and working at Cairo, Illinois, and Boise, Idaho, before assuming his duties at Portland in 1918. He retired in 1945. Mr. Wells is survived by a son and four daughters, including Mrs. Jack Grondahl of Pendleton, Oregon.

Oren E. Edrington

Oren E. Edrington, Meteorologist in Charge at San Antonio, died January 23. He was MIC at Brownsville, Texas, before transferring to San Antonio in 1949. Entering the Bureau in 1930, he also worked at Miami; Lake Charles, Louisiana; Washington, D.C.; Omaha, Nebraska; Milwaukee; and Indianapolis. Mr. Edrington had a B.A. degree from Franklin College, Franklin, Indiana. Survivors include his wife, Mrs. Prudence J. Edrington, and a daughter. They live at 151 Weizmann Street, San Antonio, Texas.

Carl T. Prochnow

Carl T. Prochnow, Flight Advisory Weather Service Supervisor at WBO, New Orleans, died February 6. Entering the Bureau in 1936, he worked at Memphis; Chicago; Houston; Newark, New Jersey; Bear Mountain, New York; and Fargo, North Dakota. He attended the Universities of Minnesota, Houston, and Chicago. Mr. Prochnow is survived by his wife, Mrs. Belle T. Prochnow, and a son and daughter of 6337 Dover Place, New Orleans, Louisiana.

Correction

Mrs. Louise S. Engel, whose address was given as 2007 O Street, N.W., Washington 6, D.C., in the January 1964 issue "Retirements" column, is actually living at 730 24th Street, N.W. (Apt. 211), Washington 37, D.C.



Seated, left to right: Frost, Erickson, Wade, Elford; standing: Stralka, Ranney, Moeller, Shields, Williams, Parry, Woerner.

Aviation Forecasting Courses Are Valuable Advanced Training

The Aviation Forecasting Course, initiated about a year ago, continues as a successful program for training in advanced forecast techniques.

Participants in these classes are meteorologists with considerable experience in aviation forecasting. Upon recommendation by their MIC's, about 12 men are selected for each seven-week course. At present, the program is given twice a year, in January and September, at the Central Office.

Currently, the course emphasizes numerical forecasting techniques. While theory is explained briefly, the classes stress working knowledge of the processes. Subjects are introduced by lecture and are followed up by laboratory experience, including practice in preparing surface pressure and weather prognostic charts, and regional aviation forecasts--all based on numerical weather products from the

National Meteorological Center.

The course design and most of the instruction are provided by the staff of the Office of Forecast Development, including Donald Hanson, Carlos Dunn, Gerald Petersen, and Leon Rothenberg. In addition, experts in various meteorological fields from the Washington area give special lectures.

Meteorologists attending the recent course, which began January 13, were Carroll Elford, Chicago; Kenneth Erickson, Seattle; Albert Frost, Denver; John Moeller, St. Louis; Louis Ranney, Salt Lake City; Nicholas Ropar, Jr., Albuquerque; Gordon Shields, Los Angeles; Walter Wade, Kansas City; Raymond Williams, San Francisco; John Parry, Minneapolis; Norris Woerner, Great Falls, Montana; and Raymond Stralka and James Ellis of the National Meteorological Center, Suitland, Maryland.

RETIREMENTS

Harold D. Lindquist

Francisco A. Colon

Martha J. Cummings

Martha J. Cummings, a secretary in the Aviation Section, Forecasts and Synoptic Reports Division, retired January 16, after 17 years of Government service. She also worked at the Bureau of Indian Affairs, Oklahoma City, and the U.S. Post Office and Farm Security Administration at Chickasha, Oklahoma. Her mailing address is 2424 Pennsylvania Avenue, N.W., Washington, D.C.

Harold D. Lindquist, Supervising Fire Weather Forecaster at Seattle-Tacoma Airport, Seattle, Washington, retired February 29, completing over 35 years of Government service. During his Bureau career, Mr. Lindquist also worked at Pomona, California; Salt Lake City; and Portland, Oregon. He has a B.A. degree from Gustavus Adolphus College (St. Peter, Minnesota). His mailing address is 12220 Military Road, Seattle, Washington 98168.

Francisco A. Colon, Staff Assistant in the Office of International Meteorological Plans, retired February 29, after more than 33 years of Government service. Before joining the Bureau, Mr. Colon worked for the State Department. Mr. Colon attended the University of Puerto Rico and has a law degree from the National University Law School (Washington, D.C.). His mailing address is 4711 Chesapeake Street, N.W., in Washington, D.C.

Welcome to the Bureau

Aitken, Aimee M., Secretary (Stenography), CO
 Bates, Kathleen S., Clerk-Typist, CO
 Buckner, Almira C., Clerk-Typist, Asheville
 Callahan, Cornelius J., Systems Management Engineer, CO
 Hull, Lois V., Clerk-Typist, CO
 Hume, Bobette A., Clerk-Stenographer, R.A.O. New York
 Husser, Andrew, Supervisory Classification Specialist, CO
 Josey, Edith J., Clerk-Typist, CO
 Losee, Robert A., Clerk (Typing), Las Vegas
 McKenny, Clarence D., Meteorological Technician, Winslow, Ariz.
 Mills, Donald E., Meteorological Technician, CO
 Mirabito, John A., Meteorologist, CO
 Nichols, Norman W., Voucher Examiner, CO
 Pharo, James A., Meteorologist, Asheville
 Propst, Glenn, Teletypist, Kansas City
 Runyon, Geraldine, Clerk-Stenographer, CO
 Smylie, Ira D., Meteorological Technician, Stampede Pass, Wyo.
 Tilton, Evelyn L., Clerk-Typist, Davisville, R.I.
 Vandeck, James S., Accounts Maintenance Clerk, CO
 Wise, James W., Electronic Maintenance Technician, CO

Transfers

| | FROM | TO |
|---------------------------|--------------------|----------------------|
| Ahrens, Merlin R. | CO | Miami |
| Bernstein, Abram B. | Melbourne | CO |
| Burdwell, Gerald B. | Knoxville, Tenn. | Corpus Christi, Tex. |
| Caporaso, Andrew | Atlantic City | CO |
| Chalfant, Robert E. | CO | Cincinnati |
| Clarkson, Omer, Jr. | Corpus Christi | Fort Huachuca |
| Crawford, William R. | Marcus Island | Guam |
| Croft, David L. | CO | Barrow, Alaska |
| Datley, Paul W., Jr. | Chicago | Fort Wayne, Ind. |
| Draws, Berwick A. | CO | Anchorage |
| Fedrick, Hubert R. | Victoria, Tex. | Del Rio, Tex. |
| Fitzgibbons, Warren J. | Goodland, Kansas | Eniwetok |
| Hobart, Howard D. | Seattle | CO |
| Hoehn, John F. | Chicago | Johnston Island |
| Hoyt, Manley E. | CO | Atlantic City |
| Hyatt, Franklin L. | CO | Asheville |
| Jannelly, Patrick E., Jr. | Salt Lake City | Johnston Island |
| Jetty, Thomas L. | Knoxville | Montgomery, Ala. |
| Lynde, Robert E. | Providence, R.I. | Boston |
| MacFarlane, David A. | Nome, Alaska | San Francisco |
| Malkin, William | CO | New Orleans |
| Marcum, Gary L. | Boise, Idaho | CO |
| Moller, Rolf E. | Olympia, Wash. | Seattle |
| Morrell, Joseph R. | Eniwetok Island | Las Vegas |
| Moses, Ernest R. | Roswell, N.M. | Victoria, Tex. |
| Nichol, Charles L. | Ft. Worth | Davisville, R.I. |
| O'Quinn, George W. | Texarkana, Ark. | Ft. Worth |
| Postma, Earl R. | Sheridan, Wyo. | Denver, Colo. |
| Preston, Harold A. | Wake Island | Los Angeles |
| Reynolds, Ross L. | CO | Asheville |
| Richard, Clement A. | Lake Charles, La. | Port Arthur, Tex. |
| Ryan, Robert F. | San Juan | CO |
| Schlatter, Ernest E. | CO | Atlantic City |
| Schonberger, Abram | Charleston, W. Va. | Huntington, W. Va. |

Length of Service Awards

35-Year Awards

Bartlett, Wayne
 NMC, CO
 Drapier, William C.
 WBAS Knoxville
 Moser, Frederick T.
 WBAS (City Airport) Detroit
 Taylor, Alfred W.
 WBAS Savannah, Ga.

30-Year Awards

Beall, Gerald T.
 WBAS Minneapolis
 Kerr, Samuel K.
 WBAS Grand Junction
 Moehlman, Vivian M.
 RFC Cincinnati

25-Year Awards

Bailey, Gordon L.
 WBAS Daytona Beach
 Bonham, Floy M.
 RAO Ft. Worth
 Dye, Lucius
 Climat., CO

Ernst, Frank W.
 WBAS Los Angeles

Hurst, Henry
 WBAS Des Moines

Schlieski, Joseph A.
 WBAS Salem

Templeman, William
 NMC, CO

Worland, M. Vea
 WBAS St. Louis

Alexander, Vernon
 NMC, CO

Ayer, Harold S.
 WBAS Portland

Baker, Harold G.
 WBAS Houston

Berridge, Helen L.
 AEO Kansas City

Bredeman, Paul L.
 DMO Kansas City

Brown, William Wells
 WBAS Greensboro

Crandall, Roy E.
 RRC Joliet

Harris, Charles E.
 WBAS Wichita

Houghton, Harry
 WBAS Binghamton, N.Y.

James, Ralph
 F&SR, CO

Lincoln, Zelda J.
 WBAS Youngstown

Mansfield, Harry

WBAS Pocatello

McMahon, Francis J.

WBAS Ypsilanti, Mich.

Mirisola, Joseph A.

WBAS New York (Kennedy)

Moreland, Robert H.

WBAS Norfolk, Nebr.

Nagler, Kenneth

NWSC, CO

Nelson, Dorothy J.

RAO Salt Lake City

Ohmart, Mack

WBAS Lynchburg, Va.

O'Neill, Marie

Instr., CO

Posay, Julian

NMC, CO

Rugg, Bernard A.

WBAS Burlington, Vt.

Snider, Charles R.

WBFC, Chicago

15-Year Awards

Bally, Lorne E.

WBAS Denver

Bearce, Harold D.

RAO Kansas City

Eason, Richard W.

WBAS Shreveport, La.

English, Wade

WBO Mt. Shasta

Fazekas, Stephen

NHRP Miami

Greening, Richard

Hydro., CO

Hadler, Robert A.

PWP San Francisco

Hamlin, Walter E.

WBAS Dodge City

Janak, Peter Steve

WBAS Denver

Mallory, Robert E.

WBAS Philadelphia

Martell, Leroy E.

WBAS Fort Huachuca

Nahmmacher, Arthur C.

PWP, San Francisco

Oxmann, Anne M.

WBAS St. Louis

Stewart, Durwood F.

RAO Kansas City

White, Elizabeth

F&SR, CO

Wood, Ernest

POP, CO

Wycoff, Robert J.

WBAS Denver



Meteorological Readings

Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information, see TOPICS, May 1957. When submitting answer cards, please mark envelope in lower left corner: "Meteorological Readings".

Assignment LXIX: "Specification of Precipitation from the 700 millibar Circulation" Monthly Weather Review, October-November 1963, Vol. 91, No. 10-12, pp. 527-536.

About the assignment: This article deals with the synoptic climatology of a 5-day precipitation as related to various meteorological parameters, particularly the 700-mb height field.

QUESTIONNAIRE

Col. 61 The basic precipitation data used in this study:

1. was made a continuous element by smoothing processes
2. was the average 5-day precipitation in inches over circles 230 miles in diameter
3. was first screened for "no precipitation" cases
4. was none of the above.

Col. 62 Figure 5 can be interpreted to show that winter precipitation in the Panhandle area of Texas is related to:

1. anomalous low-level flow from the Gulf of Mexico
2. 700-mb flow from the Gulf of Mexico
3. departure from normal 700-mb flow from the Northwest
4. above normal heights over James Bay more so than below normal heights over Mexico.

Col. 63 Concerning the specification of heavy rainfall in both Kentucky and Oklahoma in regard to 700-mb conditions:

1. curvature of flow predominates

2. anomalous flow originates in the Atlantic

3. below normal heights predominate

4. none of the above are true.

Col. 64 Regarding precipitation specification unshielded from a nearby moisture source figure 7 suggests:

1. cyclonic curvature is most important

2. a strong anomalous flow from the moisture source is most important

3. above normal heights are most important

4. nearby below normal heights are most important.

Col. 65 In actual test with independent data the human forecaster did better than the objective forecast using the Specification Equations. This was so because:

1. the equations try to take too many factors into account

2. strict objectivity will never work

3. the equations are too sensitive to small inaccuracies in the 700-mb 5-day mean analysis

4. the human forecaster can make good use of other tools (charts of other levels, etc.) in predicting precipitation.

Col. 66 Over most of the country the heaviest precipitation comes with:

1. negative correlations of the 700-mb height anomaly and cyclonic flow

2. positive 700-mb height correlations just southwest of most stations

3. air masses predominantly of Gulf origin

4. moist, warm tongues that are unrelated to the 700-mb flow.

Col. 67 The precipitation is directly related to a center of negative correlation which:

1. is always well to the west of the reference circle

2. is in most cases to the west of the reference circle but never more than 1,000 miles away

3. is in most cases west of

the reference circle with distances varying from near zero to 1,400 miles away

4. is either west or east of the reference circle, depending on latitude and season.

Col. 68 Mark all true statements:

1. It has been proved that on the average the 700-mb height anomaly is a better predictor of precipitation than either pressure or thickness.

2. Skill scores based on tests on dependent data showed this objective technique to be as good as subjective methods used by skilled synoptic meteorologists.

3. Basic data for this experiment were smoothed so as to eliminate skewing.

4. Heights used for the 700-mb chart were taken at standard intersections of latitude and longitude 5 degrees apart.

Col. 69 This study shows that in most of the eastern half of the U.S. heavy precipitation is most likely with the occurrence of:

1. a trough directly aloft at 700-mb

2. southwesterly flow about half-way between ridge and trough at 700-mb

3. high negative correlations of the 5-day mean at 700-mb heights

4. air of Atlantic origin at 700-mb.

Col. 70 The specification equations developed in the test:

1. give the precipitation indices as a function of the simultaneous 5-day mean 700-mb actual heights at specific points

2. make use of a screening process which automatically filters out data that do not fit the situations

3. on the average, explain only about 38 percent of the variance of precipitation (dependent data)

4. give actual precipitation in terms of the daily mean 700-mb height anomalies.

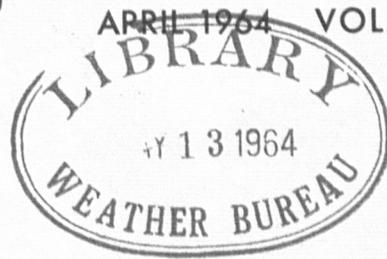
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WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through which ideas and views may be exchanged to promote efficiency and teamwork in attaining our common goals. While the contents, unless otherwise specified, reflect the Central Office viewpoint, they are not instructions but are presented for information. Opinions, discussions or comments by readers are invited; they should be marked for the attention of the Editor, TOPICS. WEATHER BUREAU TOPICS is distributed for official use only.

TOPICS

APRIL 1964 VOL. 23 NO. 4



**SPECIAL
ISSUE**

the

NEW BUREAU

Organization





Dr. White

Editorial

In my first message to you on this page, I spoke of the need for continuous review of the way in which we do things, the manner in which we render services, and the extent to which we are making use of the capabilities of modern technology.

The Weather Bureau is and always has been a scientific service organization. Our operations extend to the very grass roots of the Nation. On the local level, we deal every day with the man in the street and enter almost every home by way of radio, television, and newspapers. The information we impart affects every citizen's daily life, from carrying an umbrella to ordering a shipment of lemons. On the basis of our forecasts, businessmen and farmers make countless economic decisions.

The success of the Weather Bureau, then, is measured by the effectiveness of these services. Our organizational structure, our operational programs, and our research and development activities must be geared to provide the Nation with the best possible weather services.

With this philosophy in mind, we have, for the past several months, been conducting a review of Bureau activities. As a result of our studies, we have recommended certain changes in the Weather Bureau's organization. These changes, contained in Department of Commerce Order 91 (revised), emphasize the key roles of the regional and field offices in providing weather services. By establishing a direct line of authority and responsibility, they are designed to make it easier to carry on our vital functions.

We are doing our utmost to keep all personnel informed of the changes, and we will continue to do so. On April 13, I described the new organizational structure, its purposes and effects, to a gathering of all employees in the Washington area. Later this month, I will visit Regional Offices to conduct a series of conferences with MIC's for the same purpose. A memorandum has been sent to all employees, and another--with the Department Order attached--has gone to all field offices, regional offices, and Central Office divisions. In this issue of TOPICS, we are attempting to interpret the changes in as much detail as possible at this time.

The coming months will be a period of gradual transition from the old to the new. I know that problems will arise. There may be false starts and a certain amount of confusion. At periodic intervals, we will review the functioning of the organizational structure to determine whether we are achieving our objectives.

I am convinced that the changes will be healthy for the Weather Bureau and, therefore, for Weather Bureau employees. In this period of adjustment, we will make every effort to ensure that no one suffers in salary or in grade. The new organizational alignment, when completed, will offer unprecedented career opportunities.

The talent and dedication of Weather Bureau personnel are impressive and deserve recognition. It is my intention that we adopt and put into practice the most modern and effective management techniques, that we have an organization with a broad base of highly trained scientists and technicians using the most advanced technology to render the finest possible weather services, and that our technical and scientific services be supported by a research and development program whose depth and scope will be fully adequate to meet the needs for improvement in our services, and to remove scientific limitations on them.

R.M.W.

The New Weather Bureau Organization

A revision of Department Order No. 91, changing the organization of the Weather Bureau, has been approved by the Department of Commerce. The new Department Order was effective April 15, 1964.

The reorganization was recommended to the Department by the Weather Bureau after careful consideration of many possible ways of improving services to the public.

In announcing the changes, Dr. White emphasized that the lines of authority, responsibility, and accountability will now be clearly delineated

and that the new organizational structure confirms many practices already in effect within the Bureau.

An Office of National Meteorological Services has been established to provide executive direction of Bureau field services. Dr. George P. Cressman has been named Director of this office.

The Director of National Meteorological Services will have two deputies. Paul H. Kutschenreuter will serve as Deputy Director for Service Programs, and Dr. Robert H. Simpson will assume the responsibilities of Deputy Director for Operations.

Under the new organizational concept, increased responsibility for technical and administrative services is delegated to the regions. The Regional Administrative Offices now are called Regional Offices. An additional Regional Office has been established for Hawaii, bringing the total number of Bureau regions to six. Necessary strengthening of staff at the regional level opens new career opportunities for Weather Bureau employees.

Indicative of the Regional Offices' important role is the appointment of James W. Osmun, formerly Deputy Chief of Bureau, as Director of the new Region VI. Mr. Osmun will become Regional Director on July 1. Nels Johnson, the former Pacific Supervisory Officer, will act as Regional Director in the interim and will then assume a responsible position in the new Office of Policy Planning, headed by Walter A. Hahn, Jr.

The organizational structure for the field services also recognizes the technological changes which permit centralization of forecast production through the use of high-speed communication nets. To meet this objective, the National Meteorological Center and the Systems Development Office will report to the Director, National Meteorological Services.

Dr. Frederick G. Shuman will serve as Director of the National Meteorological Center, which will continue to prepare analyses and forecasts required by the entire service.

The new Systems Development Office will be responsible for the design and development of the National Meteorological Service system as required to ensure that the most advanced technology is applied in the interest of achieving the most effective services at lowest cost. Jack C. Thompson will serve as head of this office.

The establishment of an Office of Hydrology is a significant change in the Weather Bureau structure and recognizes the increased importance of the Bureau's hydrologic functions in the management of the Nation's water resources.

Another new position is that of Chief Scientist. It is expected that this advisory post will be filled for periods of one or two years by leading scientists from universities or private industry.

Department Order 91 (revised)

Date of Issuance: April 8, 1964

Effective Date: April 15, 1964

SECTION 1. PURPOSE:

The purpose of this order is to delegate authority to the Chief of the Weather Bureau and to describe the general functions of the Weather Bureau.

SECTION 2. GENERAL:

.01 The Weather Bureau, established by the Act of October 1, 1890 (26 Stat. 653; 15 U.S.C. 311), is hereby continued as a primary organization unit of the Department of Commerce. The Bureau shall be headed by a Chief of the Weather Bureau appointed by the President with the advice and consent of the Senate. The Chief shall report and be responsible to the Assistant Secretary of Commerce for Science and Technology.

.02 The Director, Office of National Meteorological Services shall perform the functions of the Chief of Bureau in the latter's absence.

SECTION 3. DELEGATION OF AUTHORITY:

.01 Pursuant to the authority vested in the Secretary of Commerce by law and subject to such policies and directives as the Secretary of Commerce or the Assistant Secretary for Science and Technology may prescribe, the Chief of the Weather Bureau is hereby authorized to perform the functions vested in the Secretary of Commerce under:

1. Title 15, Chapter 9, U.S. Code (The Weather Bureau);
2. 49 U.S.C. 1463 (Weather Service for Civil Aviation);

(continued on page 63)

Goals for the National Meteorological Services

by Dr. George P. Cressman

Our principal goal in establishing a new organizational form for the Weather Bureau is to render improved services. A second goal--necessary for achieving the first--is to conduct our internal operations with greater effectiveness and efficiency. We can improve our services by developing better methods of disseminating information to the users, by putting our products in a form more relevant to users' needs, and by giving the users a more accurate product, especially forecasts.

The Weather Bureau's principal contact with members of the public is obtained through our daily forecasts or through our specialized forecast services for such segments of the economy as agriculture or aviation. If our forecasts are somewhat less than perfect, it is because we are dealing with a problem which has been called the second most difficult known to man--the first being that of human behavior.

We are now in the midst of a very exciting period. Our growing knowledge of atmospheric dynamics, and our increasing ability to apply this knowledge through the use of electronic computers, have brought significant improvement in the quality of forecasts during the last decade. Although it is not easy to document, this improvement appears wherever systematic and continuous records exist of the same type of forecast verification. It appears in forecasts of wind and other parameters for aviation, and it appears in the forecasts of rain or shine, warmer or colder, which go to the general public.

Our new organizational form takes account of the scientific revolution which is occurring. Through the National Meteorological Center and the Systems Development Office, we achieve an increased capability for taking advantage of future improvements in our understanding of atmospheric processes and in our ability to apply this understanding to the problems of prediction.

A second important change has occurred during the last decade--a revolution in our ability to communicate information from one place to another at higher speeds and lower costs. The production of central forecasts is effective only to the extent that these forecasts can be communicated to the field stations and thence to the users.

The Systems Development Office (see page 61) will have as one of its principal tasks the study of improved means of disseminating the necessary information through the forecast structure of the Weather Bureau in time to be of maximum use to its ultimate users. Through close collaboration between the National Meteorological Center and the Systems Development Office, we will take advantage of improvements in the state of the

art, both in prediction and in communications, to increase the overall effectiveness of our services.

The establishment of a more systematic and effective method of producing and disseminating forecasts and other information should be facilitated by the new role of the Regional Offices. These offices, which were the Regional Administrative Offices, are assuming responsibility for technical operation of the field stations, in addition to the administrative responsibility. In exercising these responsibilities, the Regional Director will be working within the framework of policy established by the Office of National Meteorological Services. We intend to create, as rapidly as orderly procedures permit, a scientific services capability within each Regional Office. It is evident that the establishment of a technical function in the Regional Office, together with the greater importance given to the position of Regional Director, will increase the career development possibilities available to those in the field services.

The roles of the two Deputies to the Director of the National Meteorological Services are of considerable importance. The Deputy for Service Programs (see page 57) will represent the Weather Bureau to the users and the users to the Weather Bureau. He and his staff will be responsible for liaison at a national level with all types of users of Weather Bureau information, to assure that we achieve maximum effectiveness in meeting user requirements and in explaining our capabilities to them. The Deputy for Operations (see page 55) will act for the Director of the National Meteorological Services in operational matters and will be assisted in his work by the Data Acquisition, Communications, Weather Analysis and Prediction, and Systems Control divisions. The Regional Directors will report to the Director of National Meteorological Services but will work through the appropriate deputy.

The Systems Control Division is a new one, with the principal function of quality control of many Weather Bureau operations. The division will have a small inspection staff and also will use the electronic data-processing facilities of the National Meteorological Center to monitor currently, on a day-by-day basis, the performance of the observation and communications systems of the Weather Bureau. When a malfunction appears in the operational system, the Systems Control Division will bring this malfunction to the attention of those responsible for correcting it.

Clearly, the goals I have outlined here are essentially the same goals the Bureau has had for a number of years. The reorganization

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Dr. George P. Cressman

*Director of the
Office of National Meteorological Services*

Dr. George P. Cressman fills the major post created by the Weather Bureau's reorganization. As Director of the Office of National Meteorological Services, Dr. Cressman will provide policy guidance and direction to all field offices of the Weather Bureau, except those responsible to the Office of Meteorological Research and certain other specialized units such as the

National Weather Records Center.

In announcing Dr. Cressman's selection for this central role in the Bureau's structure, Dr. White said: "We are extremely fortunate in having available to us within the Bureau a truly outstanding individual to assume the vital task of Director of the National Meteorological Services. Dr. George P. Cressman...possesses the wide technical and administrative background and experience that I feel are required of the individual who will occupy the position...."

Dr. Cressman came to the Weather Bureau in 1958 as Director of the newly formed National Meteorological Center. During his six years at NMC, he has coordinated the operations and directed the research and development of the Center's branches. At the same time, he has published many articles on numerical weather prediction.

For his outstanding accomplishments, his distinguished authorship, and his leadership of the National Meteorological Center, he received the Department of Commerce Gold Medal in 1961.

A United States member of the World Meteorological Organization's Scientific Advisory Committee, Dr. Cressman was recently chosen by the Committee to serve as its first chairman. Since 1961, he has been President of the WMO Commission for Aerology.

Born in West Chester, Pennsylvania, on October 7, 1919, Dr. Cressman received his bachelor's degree from Pennsylvania State College in 1941, his master's degree from New York University in 1942, and his doctorate from the University of Chicago in 1949.

He served in the U.S. Army from 1941 to 1946, first studying meteorology at New York University and later teaching meteorology at New York University and the University of Chicago. From 1943 to 1946, he operated weather stations for the Army and, in late 1945 and early 1946, he was an instructor at the Institute of Tropical Meteorology at the University of Puerto Rico.

After leaving the Army, Dr. Cressman served for three years as a research assistant in the Department of Meteorology at the University of Chicago. In 1949, he became a civilian research meteorologist with the Air Weather Service at Andrews Air Force Base in Washington, D.C.

Dr. Cressman was among the first to recognize the potential value of electronic computing equipment to meteorology and has been one of the most aggressive proponents of numerical weather prediction using high-speed electronic computing systems. His initiative and persuasiveness played an important part in the decision to establish the Joint Numerical Weather Prediction Unit, which was organized in 1954. Under his guidance, this special forecast unit, sponsored jointly by the Weather Bureau, Air Force, and the Navy,

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Dr. Robert H. Simpson

Deputy Director for Operations

After nine years devoted to Bureau research programs, Dr. Robert H. Simpson will now serve as Deputy Director for Operations of the Office of National Meteorological Services, guiding the day-to-day operations of the field service.

Since 1960, Dr. Simpson has been Assistant Director of Research (Severe Storms), and his area of responsibility has included the hurricane and severe storms projects, as well as the Research Flight Facility. Previously, he was Director of the National Hurricane Research Project.

In recognition of his outstanding contributions to the study of hurricanes, Dr. Simpson received the Department of Commerce Gold Medal for Exceptional Service in 1962.

Born in Corpus Christi in 1912, Dr. Simpson was educated in Texas schools, graduating with a Bachelor of Science degree from Southwestern University in 1933. He later earned his Master of Science degree in physics at Emory University and did graduate work in meteorology at the University of Chicago in 1943-44 and 1959-60.

He received his doctor's degree in the geophysical sciences from the University of Chicago in 1962. The following year, Southwestern University awarded him an honorary doctorate in science.

After teaching science and music courses in Texas schools Dr. Simpson entered the Weather Bureau in 1940. He has served at Brownsville, Swan Island, New Orleans, Miami, Washington, D.C., West Palm Beach, and Honolulu.

His first experience with hurricane forecasting was at the New Orleans Forecast Center. During his first tour of duty in Washington, he took part in a series of special hurricane research flights through and over the great hurricane of September 1947, which swept over Florida and Louisiana. As a result of these and later flights, Dr. Simpson became interested in using aircraft for a more detailed study of hurricanes.

During his Washington assignment from 1946 to 1948, he directed the professional intern training classes for men entering the Bureau from the armed forces. While Meteorologist in Charge at Honolulu, he was a Weather Bureau member of Joint Meteorological Committees for the Central Pacific and Far East, serving in this capacity on the staffs of CINCPAC and CINCFE.

From 1952 to 1955, he was Special Assistant to the Assistant Chief of Bureau for Operations. At that time, he was a member of the WMO Commission for Synoptic Meteorology and of the Technical Committee on the Antarctic.

A member of the American Meteorological Society, American Geophysical Union, Royal Meteorological Society, and the Washington Academy of Science, Dr. Simpson is married and has two children.

Among his technical articles, published in meteorological journals, are: "Some Aspects of Tropical Cyclone Structure," Proceedings Tropical Cyclone Symposium, 1956; "Hurricanes," Scientific American, 1954; "Evolution of the Kona Storm, a Subtropical Cyclone," Journal of Meteorology, 1952; "Exploring the Eye of Typhoon Marge," Bulletin American Meteorological Society, 1952; and "On the Movement of Tropical Cyclones," Transactions American Geophysical Union, 1946. His Ph.D. dissertation was on the dynamics of a disturbance in the stratosphere.

Goals (continued)

represents our response to changed external conditions. It is intended to enable us to work toward our goals as effectively as possible within the framework of the recent revolutions in knowledge, in communications, and in data processing. The new structure represents a new way to reach our goals, a way which would not necessarily have been desirable or feasible ten or fifteen years ago. Today, it appears to be a logical and effective method of procedure.

The Role of the Deputy Director for Operations

by Dr. Robert H. Simpson

Assisting the Director of the National Meteorological Services in developing and managing field service programs, the Deputy Director for Operations will represent the Central Office to the regions, and the regions to the Central Office, on all service and administrative support functions. The staff of the Deputy Director for Operations will include the divisions for Data Acquisition, Weather Analysis and Prediction, Communications, and Systems Control, through which policies and operating standards for field services will be evolved.

During the coming months, the Office of the Deputy Director for Operations will be working with Regional Offices and with the Office of Systems Development to effect an orderly transition in service program procedures and management. Specific changes in field service systems will take place gradually and only after the impact of these changes has been carefully reviewed and evaluated with field personnel. I look forward eagerly to the opportunity of working with field personnel in carrying out this important task smoothly and effectively.

In future, the affairs of each region will be

Dr. Cressman (continued)

pioneered in the field of operational forecasting procedures by numerical weather prediction techniques. He received the Air Force's Exceptional Civilian Service Award in 1955 for his work in organizing the Joint Numerical Weather Prediction Unit.

A member of the Washington Academy of Sciences, the Association for Computing Machinery, and the American Meteorological Society, Dr. Cressman has served the AMS as Councilor and chairman of its Publication Committee.

He is married to the former Nelia Hazard and has four children.

Among his more recent publications are: "An Experiment in Objective Analysis," *Tellus*, November 1954 (with B. Gilchrist); "Barotropic Divergence and Very Long Atmospheric Waves," *Monthly Weather Review*, August 1958; "An Operational Objective Analysis System," *Monthly Weather Review*, October 1959; "Improved Terrain Effects in Barotropic Forecasts," *Monthly Weather Review*, September-December 1960; "A Diagnostic Study of Mid-Tropospheric Development," *Monthly Weather Review*, March 1961; and "Hemispheric Non-Divergent Barotropic Forecasting," *The Atmosphere and the Sea in Motion, Rossby Memorial Volume*, 1959.

administered by a team consisting of a Regional Director and a Deputy Director. At least one of these positions will be filled by a person with a broad academic background and extensive experience in one or more of the geophysical sciences.

Each Regional Office will have scientific capability, to assist the Regional Director in the implementation, management, and review of service programs. After making staff studies, it will progressively modify the field service to increase use of guidance materials from NMC. It will analyze regional service requirements and institute scientific procedures for service offices to use in deriving and tailoring weather predictions and warnings which meet the needs of the local consumer.

I believe that the new Weather Bureau organization plan offers both opportunity and challenge. This is especially evident in the plan to transfer line responsibility for technical service programs to the Regional Offices. Let's consider a few of the reasons for this.

The most tangible return to the taxpayer from Weather Bureau programs comes from warnings and special advices of severe or extreme weather--hurricanes, tornadoes, blizzards and heavy snows, hail, frost, river and coastal flooding, special hazards to aviation, and marine shipping. While a few of these require some attention in every region, the warning problem varies greatly from region to region--in the type of weather hazard that predominates and in the tailoring that warnings must have to serve the user effectively.

The great opportunity offered by the new organization is that of focusing and tailoring service programs in each region to the specific user needs in that region. The Regional Director, with his new responsibilities for scientific and technical programs, can marshal all the resources of his region to concentrate on the service problems which are paramount there. In each service office, he can develop the programs that best meet the local user needs.

The challenge that accompanies this opportunity is to expand, improve, and make fuller use of guidance materials prepared at NMC, reduce the amount of data processing at field stations, and apply the available manpower directly to the task of deriving weather prediction and warning information tailored to the area and local needs. We must make the change without interruption of services or initial loss of effectiveness. Finally, care must be taken to ensure consistency of advices and of service functions which have interregional applications or implications.

Questions and Answers

- Q. What are the major changes in the Weather Bureau organization?
- A. First, we now have a single chain of responsibility for field services, from the Office of the Chief of Bureau through the Office of National Meteorological Services to the Regional Offices and ultimately to the field stations. Second, the Regional Offices have full responsibility for technical and administrative activities within their respective areas and will be enlarged and strengthened to carry out these new responsibilities.
- Q. Are these changes in effect now?
- A. The Department Order was effective on April 15. Certain implementing instructions were included with covering memoranda which forwarded the Order to field offices. It is expected that many additional changes will be made during the coming year. These will be included in specific instructions issued from time to time by the Central Office and the Regional Offices. Dr. White has asked all employees to continue doing their jobs as before, until new instructions are passed down through their supervisors.
- Q. To what office do the field stations direct their inquiries and correspondence concerning program and operating matters?
- A. Field station officials will deal directly with Regional Offices on all matters. The Regional Offices will be responsible for directing and coordinating program and operations, as well as for providing the necessary support services.
- Q. Will field stations get faster action on their problems now?
- A. With the Regional Offices having increased responsibilities for program matters, the responses to the needs and problems of stations should be more rapid.
- Q. Up to what grade level will promotions, transfers, and other personnel matters be handled by the Regional Offices?
- A. This remains to be determined. However, the Regional Offices' authority and responsibility for personnel actions will probably be increased in the future.

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Paul H. Kutschenreuter

Deputy Director

For Service Programs

The new Bureau structure holds a new title for Paul H. Kutschenreuter, who in the past has been a Regional Director, Assistant to the Chief, and Assistant Chief of Bureau (Technical Services).

Now "Mr. K" will serve as Deputy Director for Service Programs of the Office of National Meteorological Services. His function is to see that service programs satisfy the needs of the various users of weather information.

Mr. Kutschenreuter's experience since 1956--first as Assistant to the Chief of Bureau for Forecasting Services and as Assistant Chief for the past four years--has all been in leading and coordinating work related to field services.

He has represented the United States at many meetings of the World Meteorological Organization and from 1958 to 1962 was President of its Commission for Synoptic Meteorology. Also, he was Head of the United States Delegation to the meeting of the Commission for Maritime Meteorology held in Utrecht, Holland, in August 1960.

A native of San Antonio, Texas, Mr. Kutschenreuter joined the Weather Bureau in 1926 at Houston. He has served the Bureau at Montgomery, Alabama; Washington, D.C.; again at Houston as MIC; Fort Worth, Texas; Billings, Montana; and Miami, Florida, as MIC; and was in charge of the Bureau organization in Boston, Massachusetts. From 1950 to 1955, he was Director of Region One.

Mr. Kutschenreuter has acquired his formal education during his years in the Bureau, attending Houston Junior College, Rice Institute, Massachusetts Institute of Technology, George Washington University, Rutgers University, and U.S. Department of Agriculture Graduate School, and the Weather Bureau's Air Mass Class. He received his master's degree in meteorology from Rutgers University in 1960.

His best-known publications are "A Study of the Effect of Weather on Mortality," Transactions of the New York Academy of Sciences, December 1959, and "A Study of Weather and Mortality in New York City," Rutgers University, January 1960.

Mr. Kutschenreuter is a professional member of the American Meteorological Society and a former member of the Board of Overseers of Harvard University. He is married to the former Sally Adams of Houston, and they have three sons.

The Role of Deputy Director, Service Programs

by Paul H. Kutschenreuter

The Office of Deputy Director for Service Programs will bring together at one focal point all elements of "user" service. It will represent the user to the Bureau, and the Bureau's program to the user, in much the same manner as "customer service" does in any large manufacturing or sales organization.

Heretofore, user representation has been spread rather thinly throughout many segments of the Bureau's organization. Consequently, some areas have received more attention than others. A major role of the Service Programs Office will be to achieve a proper balance between program areas.

As stated in Department Order No. 91 (Rev.), the "Deputy Director for Service Programs, through continued liaison with user groups, receives requests from any user group for change in Weather Bureau services; recommends action on such requests in light of related programs and probable effect on all services; and evaluates effectiveness, for the user, of weather services."

The Bureau's "customers" fall into six broad categories--the general public, aviation, agriculture, fire-weather, marine, and military. Included on the Deputy Director's staff will be meteorologists who are expert in one or more of these categories and dedicated to the improvement and fullest exploitation of weather service in these particular fields of specialty.

The Deputy and his staff will meet with groups representing the various user categories. They will listen to and evaluate complaints, identify requirements, determine the adequacy of communications, evaluate the weather product from the standpoint of utility and of terminology appropriate to the user group's requirements, acquaint the user with state-of-the-art limitations in meteorology, assist him in making the fullest use of available information, and work with him in determining additional weather requirements.

This user liaison will culminate in recommendations and suggestions designed to assist the Director of the National Meteorological Services in developing the best user-oriented weather services possible with available funds.

Working together with the Systems Development and Planning Groups, the staff of the Deputy Director for Service Programs will participate in critical examination of current operations and programs with the purpose of developing and continually up-dating operations and plans to meet changing requirements and keep pace with technological developments.

One area of immediate concern is service to maritime interests ranging from the weekend pleasure boat skipper through off-shore commercial fishermen to operators of large ocean freighters and passenger liners. Our first objective will be to find a competent meteorologist with considerable maritime experience, as well as the capability and stature to become "Mr. Marine Meteorology" for the Bureau. Working with user groups, he will identify the improvements which can be effected by re-programming present resources and those which require longer term plans to meet increasing service demands and changing requirements.

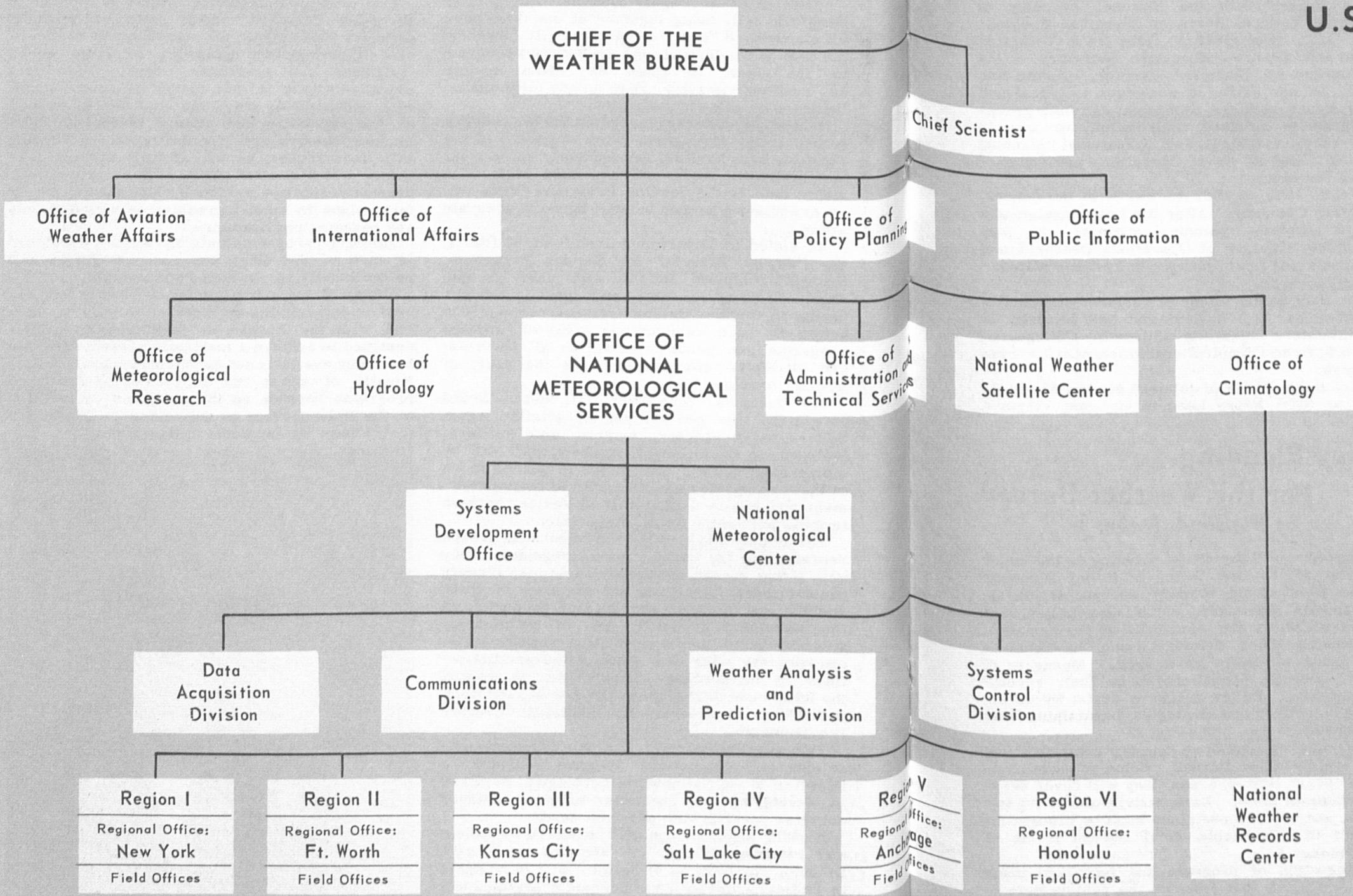
Similarly, programs and plans already developed in each of the other five user categories will be continually re-evaluated and updated.

Simply stated, our objective is to work with the user in determining the weather service he needs and with the Bureau in developing programs designed to achieve a maximum of needed service for every available and justifiable program dollar. Finally, of course, the success of the developed programs depends on the continued cooperation of the field service in delivering the goods. On that, I know we can count to the fullest.



Mr. Kutschenreuter

U.S. Department of Commerce
WEATHER BUREAU



April 15, 1964

Walter A. Hahn, Jr.

Director of Policy Planning

Walter A. Hahn, Jr., is the Weather Bureau's new Director of Policy Planning. In this capacity, he leads the Bureau's Office of Policy Planning in its three major functions--operational research studies, strategic planning, and organizational planning. Mr. Hahn recently assumed his duties as Director after a number of months on assignment with the joint Weather Bureau/FAA National Aviation Weather Systems Study.

Before joining the Weather Bureau as a Consultant to the Director of Aviation Weather Services late last year, Mr. Hahn was the Director of Management Analysis of the National Aeronautics and Space Administration.

Born in Locust Valley, New York, in 1921, Mr. Hahn received a B.S. degree in physics in 1949 from New York University and an M.A. in Public Administration from American University in Washington, D.C., in 1954. He has completed the work on his doctorate in management science at Syracuse University.

From 1942 to 1946, he served in the Naval Reserve, first as an enlisted man and then as an officer in both Atlantic and Pacific theaters of operation. A specialist in sonar and anti-submarine tactics and maintenance, he also

gained experience with submarines, underwater swimming, oceanography, and underwater communications.

In 1946, Mr. Hahn joined the Office of Naval Research in New York as a physicist and research contract administrator.

He worked with the National Academy of Sciences-National Research Council in Washington, D.C., from 1949 to 1954 as a Technical Aide and later as Executive Secretary of the Committee on Undersea Warfare. During this time, he was active in numerous technical and operational meetings, symposia, and study groups designed to produce information for use in long-range technical and operational planning by the Chief of Naval Operations and Chief of Naval Research.

From 1954 to 1962 he was with the General Electric Company. After his initial assignment as a systems planning engineer, he was appointed Manager of Operations Research and Synthesis and later Manager of Systems Management Research.

Mr. Hahn is the author of a number of technical publications in his field and has lectured at Northwestern University, University College, and the U.S. Army Comptrollership School at Syracuse College.

Mr. Hahn, his wife Joy, and his two daughters live at 5905 Espey Lane in McLean, Virginia.



Mr. Hahn

Policy Planning

For the Weather Bureau

by Walter A. Hahn, Jr.

Strategic or long-range planning is the major activity of the new Office of Policy Planning.

The Chief of the Weather Bureau, of course, determines objectives, establishes policy, and approves plans and standards of performance. In making these determinations, he receives two kinds of direct assistance. Managers of major Bureau operations make their recommendations. Policy planners assist by developing objectives and strategies for attaining these objectives.

Planning will continue in every component--at all levels--in the Bureau. Some of these plans will concern limited areas; they will cover varying spans of time. Each activity needs its own plans, but all of these plans must be brought together in a workable, total Bureau frame of reference.

Integration of program and functional plans into a scheme that ensures the achievement of Weather Bureau goals is the function of policy planning. The policy planners assemble, analyze,

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Systems Development Office

by Jack Thompson

The new Systems Development Office has been created to ensure that the Bureau makes maximum use of the "state of the art" in scientific techniques, equipment, and instrumentation. The office will be concerned with the development of new instruments and equipment and with the improvement of field station operations.

As we progress toward these goals, automation will remove or alleviate much of the drudgery now required of people in carrying out Bureau operations. Scarce human talents will be freed, and skills and capabilities will be used most effectively.

When machines perform routine tasks, the meteorological service system will be able to expand its capabilities. This expansion will include efforts to increase our understanding of the atmosphere, as well as activities aimed at improving services to our customers. Thus, the trend to provide specialized services to such groups as aviation, agriculture, and the like may be expanded to other areas.

Transition from manual techniques to automation requires large capital investments in equipment and facilities. Such investments can be justified only if they are part of a total system that significantly improves the weather services themselves. Furthermore, the system itself must be compatible with other activities and systems that it serves, and on which it depends.

The Systems Development Office will consist of two primary activities. One of these will be a systems design team, composed of experts in the fields of data acquisition, data processing, communications, and display and presentation. This team will be concerned with the ultimate design of the entire meteorological system.

Supporting this effort will be a series of laboratories devoted to developing improved meteorological, hydrologic, and climatological techniques and equipment. Before new techniques or equipment are approved for inclusion in the operating system, they will be checked by a test and evaluation laboratory.

The work of the Systems Office will be facilitated by the long-range planning for meteorological services that has taken place in recent years.

The Weather Bureau has prepared coordinated, but quasi-independent, plans concerning specific technical subjects. These have been published as Technical Planning Studies. At the same time, other Federal agencies have developed long-range plans for specialized services to aviation, for conservation of national water resources, for oceanographic surveys, and other similar activi-

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Dr. Frederick G. Shuman

Director of the NMC

Acting as the new Director of the National Meteorological Center under the reorganization is Dr. Frederick G. Shuman.

Dr. Shuman, former Chief of NMC's Development Branch, will lead the Center in its mission to provide analyses of current weather conditions over the Northern Hemisphere and furnish maps and charts depicting the current and future state of the atmosphere for general national and international uses. NMC also conducts development programs in numerical weather prediction and provides for the gradual and orderly extension of objective techniques to all phases of the Bureau's hemispheric synoptic analysis, prognostic guidance, and long-range forecast programs.

A graduate of Ball State Teachers College in Indiana in 1941, Dr. Shuman served with the Weather Bureau in Indianapolis for a short time before he entered the Army Air Corps where he served as a weather officer throughout World War II.

After discharge from the service, he rejoined the Bureau at Detroit for a brief period, then took leave to attend Massachusetts Institute of Technology where he received his M.S. and Sc.D.

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Q. and A. (continued)

- Q. How will liaison between regions be carried out?
- A. It is the function of the Central Office to establish policy and procedures and to ensure that these are uniformly carried out in the regions. However, the Regional Directors and technical and administrative leaders from each region will meet in the Central Office from time to time, as they have in the past.
- Q. How will the Central Office ensure uniformity of field services?
- A. Several divisions of the Office of National Meteorological Services will have responsibility for this function in their special fields of activity.
- Q. Since forecast activities at field stations will be supervised by the Regional Offices, will forecast areas or districts be changed to fit regional boundaries?
- A. Not at the present time. After adequate studies have been completed, some changes will probably be made.

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Policy Planning (continued)

and display the many forms of planning information in a way that permits effective and prompt decisions by the Chief of Bureau. They put the projected programs into a common language, classification scheme, and format, so that the operation and direction of Bureau activities can be clearly understood. Leadership of long-range planning processes throughout the Bureau is a continuing responsibility of the new office.

The Office of Policy Planning is concerned with Weather Bureau operations as a whole and especially with the Bureau's relationship to its social, economic, and physical environments. Studies will be made of these external environments in which the Weather Bureau operates and of the effects on the Bureau of possible changes in them.

One field of policy planning activity is operations analysis and synthesis, including cost/benefit analyses. In cooperation with other technical components of the Weather Bureau, policy planning will initiate technical forecasting studies and analyses of long-range user requirements.

Organizational planning is another phase of policy planning activity. In this area, which includes long-range resource allocation and organization of Bureau operations, the new office will work closely with the specialists in the Office of

Dr. Shuman (continued)

degrees. He has done graduate work at the University of Chicago, was assigned to a special project studying numerical weather prediction at the Institute for Advanced Study in Princeton, New Jersey, and was a visiting professor at New York University in 1961.

Among Dr. Shuman's more important publications in the meteorological field are "Predictive Consequences of Certain Physical Inconsistencies in the Geostrophic Barotropic Model," which appeared in the Monthly Weather Review of October 1957, and a two-part paper entitled "Numerical Methods in Weather Prediction"; the first, subtitled "The Balance Equation," and the second, "Smoothing and Filtering," appeared consecutively in October and November of 1957 in the Monthly Weather Review.

Dr. Shuman has been at the Central Office since 1951. He was named Chief of the Development Branch in 1957.

In 1957, Dr. Shuman received the Department of Commerce Silver Medal "for outstanding contributions in the development of numerical weather prediction techniques."

Systems Development (continued)

ties. In all of these efforts, the relatively new disciplines of operations research and systems engineering have been used to provide an organized methodology for attacking the complex problems which are encountered.

Preliminary plans which have been developed in meteorology provide a broad framework and some specific suggestions for future improvement in the efficiency of weather services for both the United States and the world community of nations.

Administration and Technical Services who carry on the operational organization and management activities.

Still another concern of policy planning is management development. With the cooperation of personnel, management, and organization functions, policy planning will endeavor to develop programs for keeping managers up to date on modern philosophies of managing technology-based activities. The office also will play a leading role in designing and developing an integrated management information system for the Bureau.

Building on the excellent work of its predecessor, the new Office of Policy Planning will have on its staff many of the key members of the former Office of Plans. The staff will be small, with perhaps a dozen professionals skilled in meteorology, hydrology, climatology, and other Bureau operations, as well as in such specialties as operations research, economics, and behavioral and management sciences.

Department Order No. 91 (continued)

3. Provisions relating to weather in Title 49, Chapter 15, U.S. Code (International Aviation Facilities); and

4. Any other existing or subsequent legislation with respect to meteorology, climatology, hydrology, or related activities within the special competence of the Weather Bureau.

.02 The Chief of the Weather Bureau may redelegate his authority to any employee of the Weather Bureau subject to such conditions in the exercise of such authority as he may prescribe.

SECTION 4. GENERAL FUNCTIONS:

.01 The Weather Bureau shall provide meteorological service to the Nation, including:

1. Preparation and distribution of forecasts and warnings of general weather conditions and of severe storms and floods for agriculture, aviation, commerce, and other elements of the economy;

2. Collection and dissemination of weather information;

3. Development of improved applications of meteorological data; and

4. The conduct of research directed toward a better understanding of the atmosphere.

.02 In providing the foregoing services the Bureau shall:

1. Make observations and measurements of atmospheric phenomena as required for meteorological services and research;

2. Develop and distribute forecasts of weather conditions and warnings of severe storms and other adverse weather conditions for protection of life and property;

3. Collect, tabulate, analyze, and publish records of temperature, rainfall, and other climatic elements for the United States, the oceans, and certain foreign areas;

4. Maintain continuous watch over river stages and those weather conditions which produce floods; provide warnings of impending floods; furnish regular forecasts of river stages for navigation and of seasonal water supply; and participate with other Federal agencies in hydro-meteorological investigations for overall planning and development of water resources;

5. Participate in international meteorological activities including: development and operation of a basic reporting network; maintenance of observational standards; coordination of exchanges of meteorological data; and promotion and development of meteorological science; and

6. Conduct research on the physical processes in the atmosphere, circulation patterns, interaction of the oceans and atmosphere, improved techniques in weather forecasting, and other aspects of the meteorological science.

SECTION 5. EFFECT ON OTHER ORDERS:

.01 This order supersedes Department Order No. 91 (Revised) of May 23, 1963.

.02 All rules, regulations, orders, certificates, and delegations of authority issued by or relating to the Weather Bureau or any official thereof shall remain in effect until specifically revoked or amended by proper authority.

Organization and Function Supplement (Revised) to Department Order No. 91 (Revised)

SECTION 1. PURPOSE:

The purpose of this Organization and Function Supplement is to prescribe the organization and to assign functions within the Weather Bureau.

SECTION 2. ORGANIZATION:

.01 The Weather Bureau shall consist of the following organization units:

1. Office of Chief of Bureau
 - Chief of Bureau
 - Chief Scientist
 - Office of Aviation Weather Affairs
 - Office of International Affairs
 - Office of Policy Planning
 - Office of Public Information
2. Office of National Meteorological Services
 - Director, Office of National Meteorological Services
 - Systems Development Office
 - National Meteorological Center
 - Data Acquisition Division
 - Communications Division
 - Weather Analysis and Prediction Division
 - Systems Control Division
3. Office of Meteorological Research
4. Office of Hydrology
5. Office of Climatology
6. National Weather Satellite Center
7. Office of Administration and Technical Services
 - Director, Administration and Technical Services
 - Administrative Operations Division
 - Budget and Accounting Division
 - Facilities and Maintenance Division
 - Management and Organization Division
 - Personnel Division
 - Scientific Documentation Division
8. Field Organization
 - Regions
 - Regional Offices
 - Field Offices
 - Specialized Offices in the Field

(Comments marked with asterisks are explanations or interpretations of the preceding paragraph of the Department Order.)

SECTION 3. OFFICE OF CHIEF OF BUREAU:

.01 The Chief of Bureau develops the objectives of the Bureau, formulates policies and programs for achieving those objectives, and directs execution of these programs.

***No change

.02 The Chief Scientist reviews the content and adequacy of the Weather Bureau's scientific programs for meeting objectives and advises the Chief of Bureau thereon.

***This new post is advisory in nature, providing guidance to the Chief of Bureau and to the Director of the Office of Meteorological Research on research matters. It is planned that the position will be filled for periods of one or two years by leading scientists from universities and private industry. The first incumbent has not been announced.

.03 The Office of Aviation Weather Affairs provides staff assistance to the Chief of Bureau on all aviation weather service matters; coordinates all Bureau activities in aviation meteorology; and represents the Bureau on matters affecting aviation user groups.

***In the new structure this office, headed by N.A. Lieurance, has been elevated to a staff level and will be advisory to the Chief of Bureau and the Director, National Meteorological Services, on aviation matters.

.04 The Office of International Affairs advises the Chief of Bureau on international meteorological matters; develops plans for furthering U.S. objectives in atmospheric sciences internationally; coordinates the program activities of the Bureau to insure that U.S. commitments under international arrangements are properly discharged; and coordinates development of U.S. technical position on international meteorological proposals; and provides Bureau representation before international meteorological organizations.

***Essentially no change from the Office of International Meteorological Plans. G.D. Cartwright is serving as head of this office.

.05 The Office of Policy Planning establishes program requirements; prepares, maintains, and keeps current the annual and long range technical and operating plans of the Bureau; conducts special analyses and studies of Weather Bureau operations to provide bases for management decisions relating to cost effectiveness; coordinates Bureau-wide management of computer facilities and provides leadership in planning

optimum utilization of computer equipment; and provides staff support to the Chief of Bureau in the development of program policy and in long range organizational planning and resource allocation.

***In the former Bureau organization, all planning was the responsibility of the Office of Planning. The new structure provides for an Office of Policy Planning under the Chief of Bureau, as well as a Systems Development Office reporting to the Office of National Meteorological Services. For an explanation of the functions of the Office of Policy Planning, see page 60. The head of this office is Walter A. Hahn, Jr. (see page 60).

.06 The Office of Public Information provides information on Weather Bureau activities to news media; coordinates matters pertaining to public and press relations; and handles special material and other data for purposes of publication or release to the public.

***No change. James M. Beall is serving as head of this office.

SECTION 4. OFFICE OF NATIONAL METEOROLOGICAL SERVICES:

.01 The Office of National Meteorological Services includes all services related to the fields of meteorology, hydrology and climatology. This Office directs these services and develops policy and procedures necessary to meet user requirements in these disciplines.

***All field activities, with a few exceptions, will report through the Regional Offices to the Office of National Meteorological Services. This office also assumes the functions formerly performed by the Deputy Chief of Bureau.

.02 The Director directs the Office of National Meteorological Services and exercises supervision over the regional structure of the Weather Bureau which consists of Regional Offices and Field Offices thereunder. The Director is assisted by a Deputy Director for Operations and a Deputy Director for Service Programs. The Deputy Director for Operations oversees and manages the furnishing of weather services by the Bureau. The Deputy Director for Service Programs, through continuous liaison with user groups, receives requests from any user group for change in Weather Bureau services; recommends action on such requests in light of related programs and probable effect on all services; and evaluates effectiveness, for the user, of weather services.

***Dr. George P. Cressman will serve as Director (see page 53), Paul H. Kutschenreuter as Deputy Director for Service Programs (see page 56), and Dr. Robert H. Simpson as Deputy Director for Operations (see page 54).

.03 The Systems Development Office manages and directs all activities involved in the planning, design and development of a system to meet all meteorological service requirements; undertakes all development activities in the fields of weather analysis and forecasting, observing equipment, communications and display facilities; and conducts tests and evaluation of techniques and equipment. The Office is responsible for the integration of all sub-components and sub-systems developed for the improvement of the national system; and is responsible for translating research results into operational practices.

***The Systems Development Office is responsible for the design and development of the National Meteorological Service System (see page 61). The present Office of Forecast Development and the Instrumental Engineering Division will be incorporated into the Systems Development Office. Jack C. Thompson is serving as head of this office.

.04 The National Meteorological Center provides analyses of current weather conditions over the Northern Hemisphere and furnishes maps and charts depicting the current and anticipated state of the atmosphere for general national and international uses; conducts development programs in numerical weather prediction; and provides leadership in the gradual and orderly extension of objective techniques to all phases of the Bureau's hemispheric synoptic analysis, prognostic guidance and long-range forecast programs.

***No change in function. Dr. Frederick G. Shuman, formerly Chief of NMC's Development Branch, is serving as Director of the National Meteorological Center (see page 61).

.05 The Data Acquisition Division develops plans and policies and establishes procedures for the measurement, observation and reporting of weather conditions by field offices; coordinates the observational programs of the several regions; and prepares the necessary instructions and manuals for field offices.

***This new division replaces the Observations and Station Facilities Division. The Data Acquisition Division develops policies and procedures, while implementation is the responsibility of the Regional Offices. A.K. Showalter is serving as division chief.

.06 The Communications Division establishes plans and policies as they affect the communication of raw and processed weather data; establishes communication procedures and schedules as required for the collection and dissemination of weather intelligence necessary for the proper operation of the field service; develops plans and procedures for the display, presentation, and interpretation of weather data and forecasts for all users; and coordinates the communications,

display, and presentation activities of the several regions.

***The nucleus for this division is the former Synoptic Section of the Forecasts and Synoptic Reports Division. E.M. Vernon is serving as division chief.

.07 The Weather Analysis and Prediction Division develops plans and policies for the analysis and prediction of weather conditions by the field offices; establishes analysis and forecast procedures and coordinates the scheduling and issuance of forecasts of storm and flood warnings in the several regions to meet user requirements.

***The former Forecasts and Synoptic Reports Division, excluding the Synoptic Section, becomes the Weather Analysis and Prediction Division. Policies, procedures, and schedules will be developed in this division, with Regional Offices assuming responsibility for operations. E.M. Vernon is serving as division chief.

.08 The Systems Control Division inspects and maintains quality control of the National Meteorological Service System to insure adherence to standards.

***This division will be implemented at a later date.

SECTION 5. OFFICE OF METEOROLOGICAL RESEARCH:

The Office of Meteorological Research conducts those studies and investigations of atmospheric processes as may be required to gain a sufficient understanding of phenomena necessary for the improvement of Bureau forecast services and coordinates the total research program of the Weather Bureau.

***Essentially as before but with added responsibility for coordinating the total research program of the Bureau. Plans are to set up a series of research laboratories, organized around certain atmospheric science problems the resolution of which will lead to improved service programs. The Office of Meteorological Research is also responsible for policy guidance and direction of the National Hurricane Research Project, the Research Flight Facility, the Weather Radar Laboratory, the General Circulation Research Laboratory, and the Physical Science Laboratory. Dr. Frank Gifford is Acting Director of the office.

SECTION 6. HYDROLOGY:

The Office of Hydrology establishes plans, policies and procedures for observing, collecting and processing hydrologic data for river and flood forecasts and warnings and water supply forecasts; establishes and conducts research and development programs for improving field services; and provides staff assistance to the Director, National Meteorological Services for

(Comments marked with asterisks are explanations or interpretations of the preceding paragraph of the Department Order.)

coordinating activities of the river and flood forecasting field services.

***The organizational position of the office, formerly the Hydrologic Services Division, reflects the growing importance of the Bureau's role in managing the Nation's water resources. W.E. Hiatt is serving as director of the Office of Hydrology.

SECTION 7. OFFICE OF CLIMATOLOGY:

The Office of Climatology establishes plans, policies and procedures for the collection of climatological data from field offices of the Weather Bureau and foreign countries; provides for the analysis, storage, summarization and utilization of these data; formulates and conducts climatological research and development programs to improve climatological service; and provides staff assistance to the Director, National Meteorological Services in the direction of the field climatological services.

***No essential change. Dr. H.E. Landsberg is serving as Director of the Office of Climatology.

SECTION 8. NATIONAL WEATHER SATELLITE CENTER:

The National Weather Satellite Center directs the establishment and operation of a meteorological satellite system for the continuous observation of world-wide meteorological conditions; conducts research and development in the field of meteorological satellites; coordinates the overall Bureau effort in the satellite field; coordinates user requirements for meteorological satellite data; and represents the Bureau in negotiations concerning satellite and space programs.

***No change. David S. Johnson is serving as Director of the National Weather Satellite Center.

SECTION 9. OFFICE OF ADMINISTRATION AND TECHNICAL SERVICES:

.01 The Office of Administration and Technical Services establishes policies, standards, and basic procedures for administrative and technical services which include budget, fiscal, personnel, procurement and supply, management and organization, administrative services, safety, scientific documentation, library, and installation and maintenance of field instruments and equipment; exercises technical supervision over these services in the field; and provides all of the foregoing services (other than installation and maintenance of field instruments and equipment) to the headquarters organization. The Office of

the Director, Office of Administration and Technical Services, includes an Internal Audit Staff which conducts independent appraisal of the effectiveness and efficiency of the Bureau's operations.

***An important change has been the addition of technical support functions to this office. These involve the areas of Scientific Documentation and Facilities and Maintenance. R.C. Grubb is serving as Director of the Office of Administration and Technical Services.

.02 The functions of each of the divisions reporting to the Director, Office of Administration and Technical Services are:

1. The Administrative Operations Division administers and controls procurement and supply activities supporting Bureau-wide operations, and is responsible for the management and administration of printing, distribution of printed and reproduced material, drafting, safety, security, records management, and general administrative services; directs the development, application, and revision of standard administrative service policies throughout the Bureau; and serves as the focal point for all civil defense activities of the Bureau except those of a technical service program nature.

***Fiscal Section will move to Budget and Accounting Division. No other changes.

2. The Budget and Accounting Division administers the budget and accounting functions including budget preparation; allocates funds for authorized activities; establishes and maintains budgetary controls; and provides fiscal and accounting services.

***This division will be composed of the former Fiscal Section and the budget units of the former Budget and Management Division.

3. The Facilities and Maintenance Division provides facilities support and installs and maintains equipment required for Bureau activities.

***Organization of this division is under way.

4. The Management and Organization Division is responsible for coordinating manpower utilization activities, management improvement practices, organizational planning, preparation of required administrative reports and internal reports control.

***This division will perform the functions of management and organization formerly assigned in part to the Management Section of the Budget and Management Division.

5. The Personnel Division administers the personnel functions, including personnel management with specific emphasis on position classification, wage administration, recruitment, placement, health services, employee awards, grievances, disciplinary actions, employer-employee relationships, and executive, administrative, and technical training programs.

***No change.

6. The Scientific Documentation Division edits all technical and scientific publications; documents the total research effort in the field of meteorology; and operates the National Meteorological Library.

***This new division will be formed from the Editorial Office, the Library, and the Research and Development Catalog Project, all formerly under the Office of Meteorological Research.

SECTION 10. FIELD ORGANIZATION:

.01 Regions: The main structure of the field organization of the Weather Bureau consists of six regions, each headed by a regional office, as specified below (**not listed here):

***Hawaii becomes Region VI. Nels Johnson will serve as Acting Director of Region VI until July 1. On that date, James W. Osmun will become Regional Director of Region VI, and Mr. Johnson will take an important position in the Office of Policy Planning.

.02 Regional Office: In each region a Regional Director, who is under the direction of the Director, Office of National Meteorological Services, directs all activities of the region. Under the direction of the Regional Director, the Regional Office:

1. Supervises and directs all activities of field offices of the region;
2. Manages resources in the fields of meteorology, climatology, and hydrology to assure optimum fulfillment of user needs;
3. Coordinates interaction among field office activities; and
4. Conducts liaison with Federal, State, and local officials.

***The major change in the Weather Bureau organization is the shift of complete responsibility for technical and administrative activities in the field to the Regional Offices. All field stations,

Q. and A. (continued)

Q. Are jobs in the Bureau likely to change?

A. Yes. They have changed in the past, and they must change in the future to meet new demands and to take advantage of modern technological improvements. These changes will be fairly gradual, and our academic and career development programs will be intensified. Many professional meteorologists will wish to expand their training into such specialties as aviation meteorology, agricultural meteorology, marine meteorology, and similar activities. Meteorological technicians will no longer be confined to such tasks as map plotting and routine weather observing, but will find opportunities in the fields of elec-

except those specifically designated, will report to the Regional Offices.

.03 Field offices, performing a variety of functions, are established by the Chief of Bureau. The number, types, and location of field offices in each region are determined by the weather characteristics and needs of the region. Functions vary among field offices in light of size, location, or specific missions of a particular office. The principal functions of the field offices are:

1. Take, record, and transmit on a daily, six-hourly, or hourly basis observations of surface and upper-air meteorological elements;
2. On a regular basis, prepare and disseminate weather forecasts of a general and specialized nature;
3. Issue advice or special warnings of expected severe weather conditions, when indicated; and
4. Prepare and disseminate river forecasts and regional weather forecasts.

.04 The National Weather Records Center, Asheville, North Carolina, is continued as a specialized office of the Weather Bureau. That Office, which is directly responsible to the Director, Office of Climatology, processes, analyzes, publishes, and stores climatic data and serves as the central repository for weather records.

.05 Additional specialized offices in the field may be established by the Chief of Bureau. Each such office shall be under the direction of an Office Director at the headquarters of the Weather Bureau or the Director of a Regional Office as assigned by the Chief of Bureau.

SECTION 11. EFFECT ON OTHER ORDERS:

This Organization and Function Supplement supersedes the Organization and Function Supplement of May 23, 1963 to Department Order No. 91 (Revised).

tronics, computer programming, field maintenance, and activities involving diverse technical skills.

Q. What career advantages does this new organizational structure offer the individual employee?

A. The increased responsibilities of the Regional Offices create new career ladders. With added program and management positions in the Regional Offices, those field employees interested in and suitable for top positions will have greater opportunity for advancement, without necessarily having to go to Washington. In addition, there probably will be more exchange of personnel between the Regional Offices and the Central Office.

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WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through which ideas and views may be exchanged to promote efficiency and teamwork in attaining our common goals. While the contents, unless otherwise specified, reflect the Central Office viewpoint, they are not instructions but are presented for information. Opinions, discussions or comments by readers are invited; they should be marked for the attention of the Editor, TOPICS. **WEATHER BUREAU TOPICS** is distributed for official use only.

An Exchange of Views on Weather Broadcasts

A problem of concern to private groups is discussed in the following exchange of letters between a private meteorologist and the Chief of Bureau.

Dr. Robert M. White, Chief
United States Weather Bureau
Washington 25, D.C.

Dear Bob:

Thanks so much for your letter of a couple of months ago, clarifying the position of the Weather Bureau with respect to the provision of specialized type long-range forecasts to specific commercial and industrial firms. Needless to say, I'm pleased that the rumor to the contrary is in error.

Not quite so clear is the Weather Bureau policy on direct radio broadcasting. Of course, we realize that the provision of extensive weather information for dissemination to the general public over radio channels is one of the broad and necessary functions of the Bureau. However, we would question the actual broadcasting by Weather Bureau personnel, who, in effect, are acting in the capacity of "talent" for the radio stations involved. It is my understanding from your letter that your office will be trying to establish a policy regarding this phase of Weather Bureau work in the near future. We are, naturally, hopeful that under your administration the Bureau will actually withdraw from some of the areas which could be handled quite adequately by the private meteorologist.

As mentioned in my last letter, we have been busily promoting the radio industry, primarily with a view towards providing direct broadcasts, but in many cases, in providing more comprehensive weather coverage via written scripts and teletyped messages. Through the introduction of brief but interesting weather events over the country, we have attempted to add interest and a "change of pace" to the ordinary type of information transmitted over the air. We find that, in some cases, after considerable expense in promoting such services, discussing them personally with the client involved, and then preparing a proposal of service for specific stations and listening areas, the station will attempt to procure similar information from the local Weather Bureau office. In fact, in recent dealings with one of the large stations in _____, they advise, in rejecting our proposal, that, as an alternative, they will "attempt new and aggressive methods with our local Weather Bureau to improve our broadcasting of weather information." Naturally, we are very

hopeful that the broadcast format we proposed, and samples we prepared, are not to be given the Weather Bureau in the hope that it would be duplicated. Even more so, however, we hope that Bureau policy itself will not permit the local office to duplicate a service proposed by a private organization.

Of course, Bob, we neither expect, nor can we hope to expect, that the Weather Bureau should assume any responsibility for the actions of a private radio station. This is clearly outside the realm of your domain or ours. However, we do feel that duplication by any Weather Bureau office of a service proposed by us, which is different than present Weather Bureau presentation of weather information, would be harmful to the entire field of meteorology as well as to ourselves, and therefore, quite unethical. While, to our knowledge, such has not already taken place, we would hope to hear from you that such is contrary to Weather Bureau policy, so that we ourselves may be clear with regard to further expenditures in this important field.

I would certainly appreciate your comments.

Best regards.

Sincerely yours,
Private Meteorologist

Dear _____:

Thank you very much for your letter of February 7. In general, I am quite sympathetic to your views that the marketing of weather information to radio stations is a proper area for the private meteorologist. However, I also believe that the Weather Bureau must have direct access to all mass communications media. Our direct broadcasts are now limited in most areas where we provide them to a minimum number per day. It is my intention that such broadcasts not be exploited for commercial purposes.

In connection with the particular case at _____, I have asked Mr. James Beall, to whom I have assigned the function of liaison with private meteorology, to look into the problem. He tells me that there are no direct broadcasts of weather information originating in the Weather Bureau office in _____, nor has there been a recent request from any radio station to institute this kind of program. In _____, our public service loops serve all but two radio stations and they

(continued on page 82)

Topigrams

Washington, D.C.
May 1964

The Weather Bureau's participation in the International Years of the Quiet Sun (see TOPICS, February 1964, pp. 20 and 21) will be expanded under a new grant from the National Science Foundation. The Foundation grant will support ozonesonde, radiometersonde, and surface radiation observations at Fairbanks, Alaska; Hilo, Hawaii; Canton Island; and one or two locations in South America. In addition, the funds will permit the Bureau to participate in joint radiation programs with the Air Force.

On January 13, during near-blizzard conditions, 494,872 calls were handled by the New York City WE-1212 installation, establishing a new record high for the number of calls in one day. The previous record--447,148--was set in Washington, D.C., on January 26, 1961.

The 14th automatic telephone weather service in the United States began operation in Richmond, Virginia, on April 5. WE-1212 was inaugurated in Norfolk, Virginia, last December. In both cities, the telephone service is provided by the Chesapeake and Potomac Telephone Company of Virginia.

On April 22, Larry E. Moyer, a contract pilot for the Research Flight Facility, was killed in a ground accident at Miami International Airport. While Mr. Moyer was preparing to flight test a U.S. Air Force B-57A, the pilot's ejection system fired accidentally, throwing him from the plane. Mr. Moyer was the pilot of the Bureau's B-57 and F-11A.

The Aviation Services Subcommittee of the Interdepartmental Committee for Meteorological Services now coordinates plans and operational procedures for services to aviation. This subcommittee has superseded and assumed many of the functions of the National Coordinating Committee for Aviation Meteorology (NACCAM).

The storm that blanketed New York City with 16 inches of snow on February 19 was first detected in a photograph taken by the automatic picture transmission system in TIROS VIII. The picture, taken on February 17 when the storm was in the Gulf of Mexico, was received at Kennedy Airport and other east coast points and was used in improving forecasts. The APT camera system is still functioning, although the picture quality has deteriorated steadily.

In connection with the projected move of the Weather Bureau Central Office facilities to the National Bureau of Standards site, plans are being developed for a new building at the same location to house all computer-oriented activities.

On the cover...

On March 27, an awesome earthquake jarred Alaska. At Anchorage International Airport the control tower fell killing an FAA employee. All Weather Bureau personnel at the WBAS in the terminal building escaped injury, and the next morning work to restore weather services to Alaska began. (See pages 74 and 75.)

Briefs from the CO Staff Conferences

Dr. White and the staff discussed organizational concepts and the status of reorganization plans.

The appointment of Paul Laskin as Special Assistant for Legislative Planning was announced.

Dr. White visited Asheville, Miami, Mexico, and Costa Rica in early March. He was favorably impressed with the work at Asheville and Miami. In Costa Rica, he met with Ing. Elliott Coen, Director of the Costa Rica Meteorological Service and Acting President of WMO Region IV, to discuss regional plans and the coming WMO Executive Committee meeting in Geneva. Meeting with officials in Mexico City, Dr. White discussed the development of cooperative weather programs.

A widespread impression that the Weather Bureau is not hiring has created a serious recruitment problem, especially at the university level. It should be emphasized that the Weather Bureau is in the market for topnotch students at the graduate level.

B.F. Loveless, Chief of Procurement and Supply, outlined Weather Bureau procurement practices in accordance with the P&S mission to: supply what is needed, when it is needed, and where it is needed, and in the manner which will be to the best economic advantage of the Government; offer all segments of industry an equal opportunity to participate in procurement programs of the Bureau within its legal, operational, and administrative requirements; and relieve technical personnel to the greatest possible extent of administrative procedures involved in the procurement function.

H.R. McBirney, Acting Chief of the former Instrumental Engineering Division, discussed the mission of the division and covered several important project areas and major current jobs. These include airport instrumentation, upper-air soundings, radar, hydrology, climatology, sensors, AMOS, and field maintenance.

Singer To Be Dean Of University's Graduate School

Dr. S. Fred Singer, Director of the Bureau's National Weather Satellite Center since its establishment in 1962, will leave the Weather Bureau on July 1 to become Dean of the University of Miami's newly formed School of Environmental and Planetary Sciences. Until he takes over his new job at Miami, Dr. Singer will remain with the Bureau as a Special Assistant to Dr. White. Presently detailed to act as Director of NWSC and scheduled to take over as Director in July is David S. Johnson, former Deputy Director of the Center.

In announcing the change, Dr. White cited Dr. Singer for his important contributions to the development of the Bureau's satellite program. "He has brought a fresh outlook to systems analysis and design, increasing the usefulness of weather satellites," Dr. White said. "With his characteristic energy and drive, Dr. Singer has played a major role in the establishment and future improvement of the National Operational Meteorological Satellite System."

The University of Miami's School of Environmental and Planetary Sciences, the first of its kind, will open in September. The school will have four cooperating research and graduate institutes which, according to University of Miami President Henry King Stanford, will be dedicated to "space-age research and to graduate education of the scientists who will participate in the inevitable scientific exploration of our planet and its neighbors." The School's four divisions are the Institute of Marine Science, the Institute of Planetary Bioscience, the Institute of Atmospheric Science, and the Institute of Space Physics.

David Johnson Slated To Head Satellite Center Early in July

David S. Johnson will become Director of the National Weather Satellite Center in Suitland, Maryland, on July 1. He will replace Dr. S. Fred Singer who is resigning to become Dean of the University of Miami's new School of Environmental and Planetary Sciences. Mr. Johnson has been Deputy Director of the Center for nearly two years.

As NWSC Director, Mr. Johnson will head the Bureau's space program, including the establishment of the operational weather satellite system expected to begin in 1965.

Mr. Johnson, Dr. Sigmund Fritz, and the late Dr. Harry Wexler pioneered the Meteorological Satellite Laboratory— forerunner of NWSC. Mr. Johnson served as Chief of the Laboratory from 1960 until 1962, when he became Deputy Director of the newly formed Satellite Center.

Mr. Johnson has been engaged in research, development, and technical management of meteorological satellites and rockets since 1958. He is chairman of the Joint Meteorological Rocket Steering Committee and

serves as the Department of Commerce representative on the Joint Meteorological Satellite Advisory Committee.



David S. Johnson

He has represented the United States at a number of international meetings, is a member of the Working Group for the International Years of the Quiet Sun, and serves as Correspondent for Meteorological Rockets of the International Council of Scientific Unions' Committee on Space Research. Mr. Johnson was a member of the U.S. team that negotiated a cooperative weather satellite program with the U.S.S.R. and a member of the WMO's Panel of Experts on Meteorological Satellites.

A professional member of the American Geophysical Union and the American Meteorological Society, Mr. Johnson is a Councilor of the latter organization, as well as a member of its Committee on Atmospheric Measurements.

Mr. Johnson holds bachelor's and master's degrees in meteorology from the University of California at Los Angeles.



S. Fred Singer



Rubble litters the floor of the Communications and Observing Section after the March 27th quake.



In the Terminal Building's South Concourse the earthquake's violence left this scene of confusion.

Weather Bureau Staff Makes Quick Recovery

From Crippling Earthquake in Southern Alaska

On the evening of March 27 all communications with Anchorage, Alaska, came to a halt as one of the worst earthquakes in modern times rocked the state.

At 5:36 p.m. the first shock hit the Terminal Building at Anchorage International Airport where some 20 Weather Bureau employees were performing their duties. The control tower fell, killing one FAA employee. At the Weather Bureau Airport Station, equipment and records were strewn about the office as personnel groped their way from the building. All made their way from the damaged terminal unharmed.

At the Regional Office, furnishings, office equipment, and machines were thrown about in wild confusion and piled in the middle of the floor. Here, too, there were no injuries.

In downtown Anchorage, State Climatologist Clarence E. Watson clung desperately to a parking meter--unable to reach his car only six feet away--as the ground heaved beneath him. He watched helplessly as people streamed from the department store he had been about to enter. Glass shattered and a large crack appeared in the wall of the store. When the first shock was over, the wall had dropped 10 feet. Later the whole structure collapsed. Mr. Watson escaped injury.

None of the Weather Bureau employees in Alaska were seriously injured, nor were any of their dependents.

Anchorage and southern Alaska had received a stunning blow, but the next morning Bureau personnel were back on the job retrieving equipment and records. There was still no water, heat, or electricity.

All communications and services at Anchorage were out for about 48 hours. On Easter Sun-

day--the second day after the earthquake -- surface and upper air observations were resumed at the airport station, using a portable generator for power. National facsimile transmissions were received and retransmitted over Intra-Alaska Facsimile circuits. Relocation of the WBAS to a small warehouse at Point Campbell began. Two electronic technicians from the airport station worked almost around the clock to establish communication links to the temporary quarters. Other staff members also did yeoman work in rehabilitation.

Domestic aviation forecasts were issued from the Weather Bureau Airport Station at Fairbanks and marine forecasts from Juneau until the Anchorage forecast staff resumed operations on March 30 at Elmendorf Air Force Base.

The Regional Office began a general cleanup when telephone service and power were restored on March 31. Operations were resumed with a skeleton staff. The building was still without heat and water.

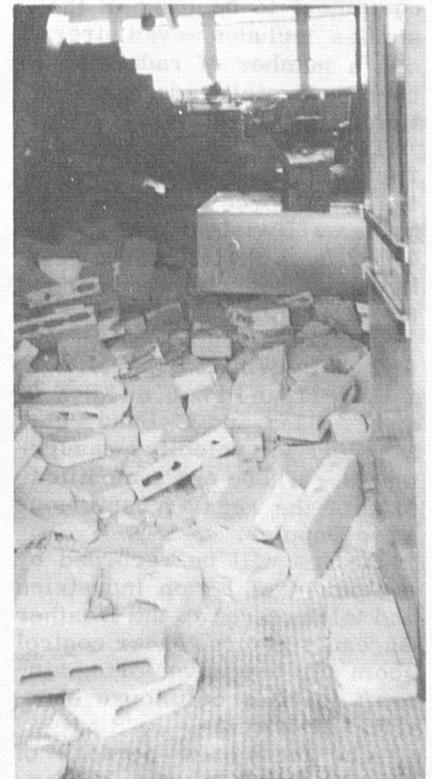
By April 2, the complete Forecast Center, Communications Section, and Observational Unit had been shifted to Point Campbell, and full operations were resumed.

In the first days after the disaster, communication links between Washington, D.C., and the Weather Bureau Satellite Station at Gilmore Creek were used to transmit information to and from Alaska. Satellite station personnel with experience in aviation forecasting assisted at the Fairbanks airport station.

Direct TIROS VII photographs of Alaska were supplied to the Army to support rescue operations at a time when little weather information was available from the southern part of the state. The few conventional

weather reports from that area indicated that clouds would be closing mountain passes for flight operations. TIROS pictures showed large cloud-free areas, with most of the clouds along the mountains to the north.

Forecasting activities of the Anchorage Weather Bureau Airport Station have now been relocated in larger quarters about a mile and a half from the airport. Surface and upper-air observations are being made at the airport. A new terminal building is planned for completion in 18 months.



Down this hall, stunned Weather Bureau personnel made their way from the Observing Section (background) to relative safety outside the wrecked Terminal Building. This photograph and the ones on page 74 were taken by Al Comiskey of WBAS Anchorage.

Severe Storm Data Gathering Program Under Way

The Weather Bureau's annual spring program of severe storm investigations got under way last month.

The National Severe Storms Laboratory at Norman, Oklahoma is once again the center of meteorological activity as specially instrumented aircraft, radar, sferics recording devices, and conventional equipment all come into play in a concerted study of storm physics and severe weather flying safety.

Under close study during the spring data-gathering period will be the fields of atmospheric electricity, turbulence and hail, and air circulations. Major equipment to be used in these studies includes seven aircraft and a number of radars to be used separately and in combination for observation.

The aircraft include: a T-33, two F-100's, and a B-47 of the Air Force's Aeronautical Systems Division; a C-130 and a U-2 from the Air Force Cambridge Research Laboratories; and a Weather Bureau F-11A.

Radar instrumentation will include a WSR-57, an MPS-4, a TPQ-11, an FPS-6, an MPX-7, and X-Band and C-Band Pulse Dopplers for velocity measurements. These are a modification of the regular continuous wave Doppler.

Sferics will be recorded by equipment of Litton Industries and telemetered to the Weather Bureau's central radar control room for use in vectoring aircraft to sites of intense electrical activity.

The mesoscale network of surface observing stations, formerly known as the Beta network, is being expanded by six stations this year. Forty-seven stations spaced at 10 to 15 mile intervals will continuously record temperature, humidity, wind, pressure, and rainfall elements over an area of about 7,000 square miles. In addition, detailed rainfall rate data will

be recorded by the 181 rain gages maintained by the Department of Agriculture's Agricultural Research Service over 1,200 square miles in the Washita River Watershed.

In addition to the regular radiosondes taken from the Oklahoma City area special observations will be made from Fort Sill and Will Rogers Field, Oklahoma. As part of a pilot study of small-scale convective wind systems, balloons equipped with transponders (or aluminum foil targets adequate for fair weather operations) may be released in clusters and tracked by radar and sight.

Operations in the three major fields of study include:

Atmospheric electricity-- Guided by ground-based sferics and radar instrumentation, the C-130, extensively equipped for monitoring atmospheric electricity, will fly near suspected electrical centers. The F-100 will penetrate the electrical centers in an effort to learn causes of lightning discharges and electrical damage to aircraft.

Turbulence and hail-- Vectored by ground based radar, an F-100, flying at 25,000 feet with a T-33 acting as a chase aircraft will enter the cores of areas of suspected turbulence and hail activity. Information gathered will be used to improve applications of weather radar and sferics information to air traffic control.

Air circulations-- On occasion the B-47 will be radar-guided to the vicinity of large storm systems. Chaff (strips of foil or other reflective material readily discernible on radar) will be dropped in a predetermined pattern on the fringes of the storm. Analysis of data gathered in this manner may show features of the air circulation near storms which are a guide to storm development. The data should also establish

whether this technique, applied on a larger scale, would be practical for observing air circulations in detail.

A related experiment will be performed by the smoke generator-equipped F-100. A ring of smoke will be dispensed around a growing cloud and photographed repeatedly from the U-2 at a great altitude. The magnitude and distribution of entrainment processes should be indicated by the relative motion of the smoke and the cloud.

Intensive investigations will be undertaken at the National Severe Storms Laboratory headquarters and elsewhere after the spring observation period is ended. The results should lead to a clearer understanding of storm development and provide an improved basis for broad generalization of empirical findings.

Maintenance Training Center Consolidates Two Facilities

Electronic maintenance training centers at Sterling, Virginia, and Kansas City are being consolidated into the National Meteorological Maintenance Training Center at Kansas City. It is planned for operation by June.

This consolidation is expected to increase the effectiveness of the training program and result in operation economies. The training curriculum will be divided into four areas of specialization: radar, microwave, and communication systems; upper-air systems; surface systems; data loggers and computer systems.

The teaching staff will include Lawrence Eide, instructor-in-charge; Robert McCann, William Barth, and David Hughes, senior electronic maintenance instructors; and Claude Carpenter, assistant electronic maintenance instructor.

Two RFF Aircraft Return From Indian Ocean Study

The two DC-6's of the Research Flight Facility are back in Miami after participating in Phase II of the International Indian Ocean Expedition during February and early March.

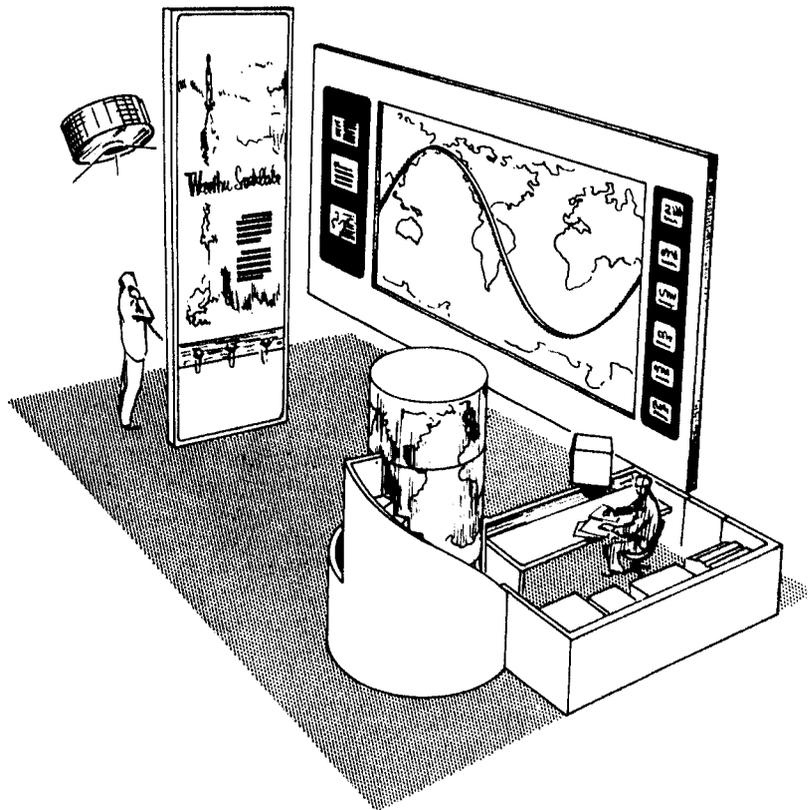
During their six-week stay in India, the aircraft flew more than 300 hours and more than 100,000 miles, collecting almost one million automatic and manually recorded observations. Data loss due to malfunction of meteorological recording systems or probes was less than 1.2 percent.

A highlight of the recent expedition was an 11-day mission which investigated the South Indian Ocean and included ports-of-call at Gan Island, Mauritius, Cocos Island, Darwin, and Singapore.

Three research missions were flown during the trip back to Miami, one to measure the general circulation across the Arabian Sea (as far as Aden) and another to obtain wind, temperature, and pressure data across the Central African continent. The aircraft left Accra, Ghana, and flew across the South Atlantic to Recife, Brazil, and then to Miami, gathering information on the transport of heat across the Equator in advance of the Atlantic hurricane season.

The director of the Expedition's meteorological program was Dr. Colin Ramage. The aircraft group was led by Howard J. Mason, Jr., Deputy Chief of the RFF, and Colonel William S. Callahan (Ret.), Operations Officer.

The Research Flight Facility is now prepared to fly research missions for the National Hurricane Project and for other atmospheric research projects.



An artist's conception of the Weather Bureau's exhibit now open at the New York World's Fair.

New York World's Fair Exhibits Show Weather Bureau Activities

The New York World's Fair opened late last month and visitors found the Weather Bureau featured prominently in several pavilions. The Weather Bureau has an exhibit in the Federal Pavilion. Several industry displays--including those of IBM, Kodak, and RCA--are featuring Weather Bureau activities.

The Bureau's display contains an operational "weather central," with Bureau employees providing public service. Another feature of the exhibit is a mercator map printed on a revolving cylinder about 12 feet high. The latest weather observations are plotted on this map, and flashing lights indicate the position of hurricanes when they occur.

The background for the exhibit is a large mercator projection

of the world, showing the track of the weather satellite and its actual position as it circles the earth. Current satellite information is displayed on a screen. Important weather bulletins and weather satellite pictures appear on two other screens. Several clocks on the mercator map show local time around the world. A full-scale TIROS weather satellite is prominently displayed.

DEATH

Thomas M. Fleming, Meteorological Technician at Tallahassee, Florida, died March 3. Entering the Bureau in 1945, he received a superior performance award in 1959. Survivors include his wife, Mrs. Evelyn H. Fleming, and a son, of 2213 Woodbine Drive, Tallahassee, Florida.

First Volume of Manual of Barometry

Is Distributed to Bureau Field Stations

Volume I of the new "Manual of Barometry (WBAN) has been distributed to Bureau stations and is on public sale.

The publication is a definitive reference book in the field of barometry. Its purpose is to instruct those concerned with various operational practices involving pressure and altimeter data and to present related scientific and technical information. Thus, it will be invaluable to meteorologists, particularly those engaged as observers, observer-briefers, meteorological analysts, and forecasters.

An entire chapter of the Manual is devoted to altimetry, including such matters as the clearance of mountains on the basis of altimeter readings; hence, the publication should be useful to personnel of the Federal Aviation Agency, the military, and other organizations concerned with air navigation problems that depend upon such data.

The Manual also will aid other professional groups, such as engineers, chemists, and physicists, who have occasion to make pressure and manometric observations.

Other subjects covered in the published chapters (1 through 8, and 12 through 14) include gravity and temperature corrections for mercury barometers, standardization of

barometric instruments, and techniques for reducing pressure to sea level. The last three chapters contain appendixes, tables, and sample forms. One appendix traces the history of the invention of the barometer.

The Manual embodies the latest recommendations laid down by the World Meteorological Organization with regard to the determination of gravity corrections for mercury barometers and the procedures to be used in the standardization of those instruments.

The chapters (9 through 11) scheduled for Volume II will be based on the results of new investigations, including new methods of reducing pressure to sea level and the effects of mountains on pressure distributions, which should be of special interest to weather analysts and forecasters.

The Manual of Barometry was written by L.P. Harrison, Chief, Technical Investigations Section, Observations and Station Facilities Division. Mr. Harrison was assisted by Willis A. Wood, Leslie D. Sanders, Albert P. H. Heck, and Margaret A. Dalton. Parts of the manuscript were reviewed by the U.S. Air Force and the U.S. Navy.

An interesting by-product of the Manual's preparation was a circular slide rule which facilitates the reduction of pressure to sea level and the computation of altimeter settings. The "Pressure Reduction Computers" have been manufactured and distributed to field stations.

The Manual was sent to each Bureau station in March. It also can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., at a price of \$5.50.

AMS Holds Conference On Aerospace Problems

Atmospheric problems of aerospace vehicles was the subject of the Fifth Conference on Applied Meteorology, of the American Meteorological Society, held at Atlantic City, March 2-6.

Dr. White was chairman of a session on upper winds and turbulence, and Newton Lieurance, Director of Aviation Weather Services, was chairman of a program on supersonic aircraft.

Among Bureau personnel presenting papers at the meeting were Benjamin Ratner (Office of Climatology), who presented climatological data on wind and temperature variations at supersonic transport cruise altitudes; DeVer Colson (Meteorological Research Projects Branch), who summarized the results of a special high-level turbulence data collection program; and Kenneth Nagler (National Weather Satellite Center), who discussed weather support for manned spaceflights, including the Mercury flights. Peter M. Kuhn (Bureau member currently at the University of Wisconsin) spoke on determining cloud heights from radiosonde adjusted satellite infrared observations.

Also participating was George P. Casely (MRPB), who discussed automatic airways weather data reduction, while August F. Korte (MRPB), described automatic control of approach and runway airport lights based on visibility criteria. Matthew Lefkowitz (WBRS Atlantic City) outlined a series of studies on approach visibility measurements, instrumentation, and application to weather conditions in the approach zone, conducted at the National Aviation Facilities Experimental Center, Atlantic City. Donald Gales (MRPB) described the Washington, D.C., mesometeorological network for short-range aviation terminal forecast research.

Daylight Saving Time

When telephoning the Central Office, employees in the field should remember that Washington, D.C., is on Eastern Daylight Saving Time from April 26 through October 25, and time their calls accordingly.

Seagoing Meteorological Observing Stations Will Automatically Report Oceanic Weather

The Weather Bureau's first Marine Automatic Meteorological Observing Station (MAMOS), an unmanned raft designed to carry weather equipment and be anchored in ocean areas, has recently undergone a 30-day test. A companion station is on order.

When in position MAMOS will automatically report weather conditions to shore stations on a regular schedule and alert forecasters to storm conditions which might endanger populated areas or ships at sea. A device similar to MAMOS, the Navy operated NOMAD which was positioned in the Gulf of Mexico in 1958, gave the Gulf Coast mainland 24 hours warning of hurricane Ethel in 1960.

Reports from MAMOS will include wind speed and direction, air temperature, barometric pressure, and seawater temperature. This information will be relayed to forecast centers for use in preparing area weather forecasts. MAMOS will radio a meteorological message ashore every six hours unless the wind has been blowing 25 miles per hour or more. When the wind speed is this high, reports will be sent every hour. These more frequent reports will allow forecasters to keep abreast of possible storm conditions.

MAMOS is essentially an aluminum boat hull 20 feet long and about 10 feet wide, which contains necessary power equipment and supports several sensing elements and navigational warning equipment. Four watertight wells extending below the deck hold electronic equipment. Eight additional watertight wells hold the station's power-providing storage batteries. Wind powered alternators are used to charge the batteries. (See "windmills" in accompanying photograph.)

The several meteorological sensors aboard the raft are commercially available units adapted for use with MAMOS. For example, a thermistor for measuring air temperature is mounted on the instrument mast and it is thermally insulated from the raft--a water temperature thermistor is mounted in a float that drifts a slight distance from the raft itself. Wind speed is measured by means of a conventional type anemometer that has been designed to withstand the severe stresses encountered in the ocean.

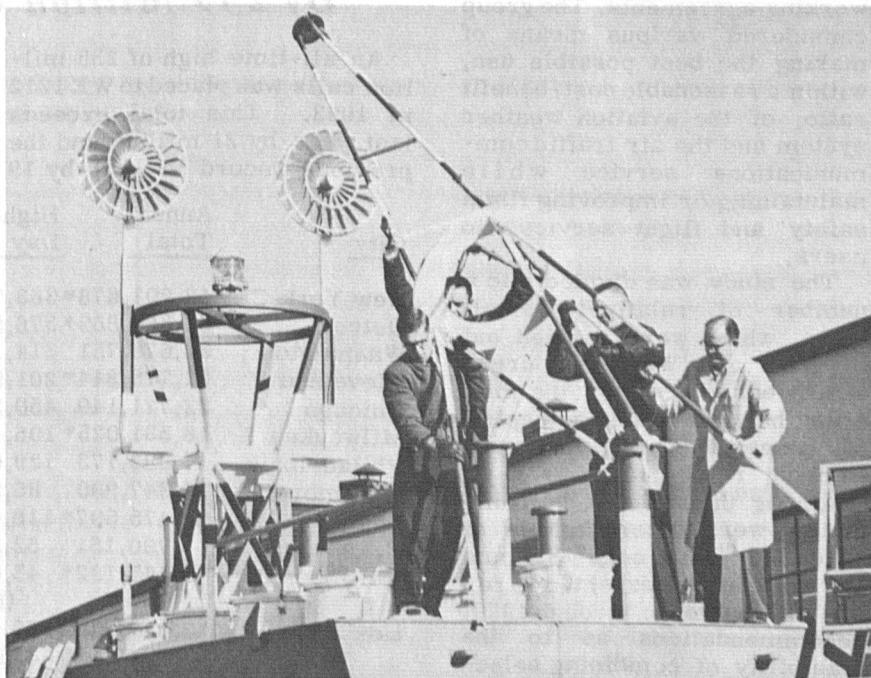
As MAMOS units will be floated over depths of from 12,000 to 18,000 feet, a special anchoring system had to be devised. Conventional anchor lines in this length would weigh so much that they would sink the raft. A compound line of strong, self-supporting buoyant materials will be used.

Present long-range plans are to procure approximately 45

MAMOS units for placement in oceanic areas that lack adequate coverage by merchant ships. As the network becomes more extensive, increased communications with the shore will be required. The current model uses a clock mechanism for radioing information ashore, but future units may include interrogation capabilities for use from land stations, aircraft, and satellites.

The two MAMOS units to be stationed this summer will be located in the Gulf of Mexico. One will be stationed in the northeast Gulf about 150 miles SSE of Galveston and 180 miles ENE of Brownsville. The second will report weather from the Campeche area off Tampico or about 460 miles south of Galveston and 310 miles southeast of Brownsville.

The Coast Guard will handle the placement of the rafts and will be responsible for the maintenance of their hulls.



Engineers and technicians install antenna mast on the aft deck of the Weather Bureau MAMOS.

Aviation Weather Systems Study Increases WB-FAA Cooperation

The Federal Aviation Agency has announced plans to remote or consolidate 42 Flight Service Stations, with flight services to be provided by adjacent stations by means of radio, land line, and telephone facilities. The Weather Bureau will arrange for needed observations and weather services at these locations, resulting in an overall savings to the Federal Government.

This action was taken as a result of the National Aviation Weather Systems Study (NAVWESS), conducted jointly by the Federal Aviation Agency and the Weather Bureau. The study, which began in the fall of 1963, was scheduled for completion in April.

Under the chairmanship of Walter A. Hahn, the NAVWESS working group has studied and analyzed the current operational aviation weather system, including Weather Bureau-FAA working agreements. The group considered various means of making the best possible use, within a reasonable cost/benefit ratio, of the aviation weather system and the air traffic communications service while maintaining or improving flight safety and flight services to users.

The study was divided into a number of relatively small tasks, which were carried out by FAA and Weather Bureau employees. Already, the joint effort has developed a new spirit of cooperation and improved working relationships.

Among the tasks to be completed were determination of so-called "hard core" FSS and Bureau stations expected to remain in existence through 1970; recommendations as to the feasibility of combining selected aviation weather functions of WBAS's and FSS's where both are at the same airport;

and consideration of possible aeronautical services which might be provided by WBAS's in the absence of nearby FSS's.

Recommendations will be presented to a policy committee, for submission to the Administrator of FAA and to the Chief of the Weather Bureau. Its findings are for use by officials of both agencies in making policy and operating decisions.

NAVWESS personnel have assisted in initiating a new detailed case study of aviation weather services in the Washington, D.C., area. This new survey, called the "Metroplex Study," will continue beyond the completion of NAVWESS and will be conducted jointly by operating and research and development personnel of the Weather Bureau and FAA.

Robert Wassall Appointed New MIC at Hartford

Robert B. Wassall has been selected Meteorologist in Charge at WBAS Hartford, Connecticut. Prior to this appointment, he was Principal Assistant and Supervisory Meteorologist at WBAS Baltimore, Maryland, since 1960.

He entered the Bureau at Washington, D.C., and served as a forecaster at Cleveland, Columbus, and New York City, before going to Baltimore.

Before joining the Bureau, Mr. Wassall directed the meteorology program at the Goodyear Aircraft Corporation's Airship Base at Akron, Ohio. During 1952-53, he served with the U.S. Air Force as a Weather Officer.

Mr. Wassall holds a B.S. degree in meteorology from Pennsylvania State University, and also attended Carnegie Institute of Technology.

New Record Set for Telephone Forecasts By 235 Million Calls to WEather 1212

An all-time high of 235 million calls was placed to WE 1212 in 1963. This total exceeds last year by 21 million and the previous record in 1961 by 19

million telephone calls.

The new installation at Los Angeles handled nearly four million calls, and six other cities hit new high totals.

| City | Annual Total | Highest Day | Highest Date | Monthly Average | Daily Average |
|---------------|--------------|-------------|--------------|-----------------|---------------|
| New York City | 42,201,678* | 363,770 | Feb. 8 | 3,516,807 | 115,621 |
| Detroit | 39,366,852* | 376,947 | Jan. 24 | 3,280,571 | 107,854 |
| Washington | 32,679,751 | 314,141 | Dec. 23 | 2,723,313 | 89,534 |
| Cleveland | 31,775,844* | 291,993* | Jan. 23 | 2,647,987 | 87,043 |
| Chicago | 22,771,149 | 450,298* | Jan. 23 | 1,897,596 | 62,387 |
| Milwaukee | 16,531,025* | 196,496* | Jan. 23 | 1,377,585 | 45,290 |
| Philadelphia | 14,082,173 | 129,610 | Feb. 19 | 1,173,514 | 38,581 |
| Baltimore | 10,347,990 | 86,578 | Dec. 23 | 862,333 | 28,351 |
| Boston | 8,475,597* | 118,443 | Dec. 23 | 706,300 | 23,221 |
| Pittsburgh | 7,790,151 | 52,314 | Dec. 23 | 649,179 | 21,343 |
| San Francisco | 5,467,192* | 45,031 | Nov. 5 | 455,599 | 14,979 |
| Los Angeles | 3,867,732* | 68,949 | --- | 322,311 | 10,597 |
| TOTAL | 235,357,134 | | | AVERAGE..... | 53,718 |

*New record for the individual city

Two New Stations Opened by Bureau In Month of April

HOUGHTON LAKE, MICH.

A new Weather Bureau Airport Station at Roscommon County Airport, Houghton Lake, Michigan, opened April 20.

WBAS Houghton Lake will operate eight hours a day until the beginning of June, at which time operations will be extended to sixteen hours and its aviation observational program will begin. Also beginning in June will be the station's fire weather forecasts for the forest areas of Lower Michigan.

Meteorologist in Charge of the new station is Ernest B. Williams, formerly a forecaster at Detroit. Mr. Williams joined the Bureau in 1936. Among other places, he has served in Atlanta, Georgia; Stephenville, Newfoundland; Jacksonville, Florida; and Washington, D.C. During several recent springs and summers, he also served as a fruit-frost forecaster for the Bureau in the fruit-growing region of southwestern Michigan. Mr. Williams is a graduate of Hillsdale College in Michigan and is married with three children.

LINCOLN, NEB.

On April 15 the new WBAS in Lincoln, Nebraska, was opened on a 16-hour-a-day schedule. The station will provide weather services for Lancaster County and surrounding areas.

WBAS Lincoln's new MIC is Gordon Lippert, a forecaster from Detroit. Mr. Lippert has been with the Weather Bureau since 1949 and has served in Billings, Montana, and at Wake Island.

Mr. Lippert received special training in meteorology from the Massachusetts Institute of Technology. An Air Force veteran, Mr. Lippert is married and has two children.



Dr. James Tilton

Bureau Marks 150th Anniversary Of Weather Observing Network

May 2, 1964, was the 150th anniversary of the United States' weather observing network. In 1814, Dr. James Tilton, the Surgeon General of the United States Army, ordered every Army hospital surgeon to keep a diary of the weather. With this act, Dr. Tilton initiated the first organized and official weather observations in this country. The network started by Dr. Tilton is now the oldest national weather observing network in the world.

Dr. Tilton's order could not be carried out immediately, because the War of 1812 was in progress. The first meteorological journal submitted was for July 1816 and came from Dr. Benjamin Waterhouse, hospital surgeon at Cambridge, Mass.

The number of stations operated by the Army grew slowly.

In 1838, daily observations were being taken at 13 forts, mainly in the midwest. By 1890, when the Weather Bureau was transferred from the Signal Corps to the Department of Agriculture, weather observations had been taken at 311 Army medical stations at various times. These stations, together with those of the U.S. Signal Corps, the Smithsonian Institution, and volunteer observers, formed a readymade network of observing stations, many of which are still in existence today.

The observing network started by Dr. Tilton in 1814 has continued to expand and now numbers more than 13,000 stations, providing records of climate for industry, commerce, agriculture, and the general public.

Agnes M. Walters

Agnes M. Walters, a Time, Leave, and Pay Roll Clerk at the Regional Administrative Office, New York, retired April 24. She had worked for the Government for 22 years. Mrs. Walters joined the Weather Bureau in 1949 as a Clerk-Typist after serving with the Quartermaster General in Washington, D.C., and the Department of the Army in New York. Her address is 131-38 135th Street, South Ozone Park, New York 11420.

George H. Winthrop

George H. Winthrop, a Visual Information Specialist in the Office of Public Information, retired on April 10 after 24 years of Government service. Mr. Winthrop joined the Bureau in 1941 as an Engineering Draftsman. He served in the Drafting Section and Forecasts and Synoptic Reports Division at the Central Office before joining the Office of Public Information in 1959. His address is 1600-16th Street, N.W., Washington, D.C. 20009.

Views Exchanged *(continued)*

are given the latest forecasts and temperature information over the telephone upon request. We cannot, as you realize, assume responsibility for statements or intentions expressed to you by private groups.

I would certainly not condone the direct copying by a Weather Bureau group of a format devised by a private meteorology company. Certainly, if the intent were to compete with private industry, I would be quick to take action.

I think we should realize that the problem is not that simple. The use of words, phrases, broadcast style, and even format cannot be readily restricted. I certainly would not want Weather Bureau forecasters put in a position of having to use their present format from now to eternity in order to preclude any possibility of duplication of a privately developed format. The fact is that I am seriously concerned with the manner in which the Weather Bureau communicates its weather information to the general public. I have just written an editorial on this matter in the magazine

RETIREMENTS

Olive M. Long

Olive M. Long, Assistant Chief of Fiscal Section at the Central Office, retired March 31, after more than 46 years of Government service. She transferred to the Bureau from the War Department in 1922 and worked at the Central Office from that time. She received a Superior Accomplishment Award in 1955. Miss Long attended the American University. Her address is 300 Rittenhouse Street, N.W., Washington 11, D.C.

Edward H. Chappell

Edward H. Chappell, Meteorologist at WBAS San Francisco, retired February 29, after more than 34 years of Government service. Entering the Bureau in 1929, he worked at Chattanooga, Shreveport, Memphis, Arlington (Va.), Anchorage, and Honolulu. He has been at San Francisco since 1943. Mr. Chappell attended West Tennessee State College. His address is 45 Ellenwood Avenue, Los Gatos, California.

John P. Kurtzweil

John P. Kurtzweil, Meteorologist in Charge at Roswell, New Mexico, retired March 18, completing more than 33 years of Government service. He joined the Bureau at Abilene, Texas, and worked at Key West, Chicago; Akron, Ohio; Albuquerque; Wichita Falls, Texas; Burrwood, Louisiana; Pampa and Fort Worth, Texas. Also, he was MIC at Key West. Mr. Kurtzweil attended Iowa State College. His address is 500 First Avenue North, Altoona, Iowa.

Daniel J. Maguire

Daniel J. Maguire, Meteorologist in Charge at WBAS Springfield, Missouri, retired March 28, concluding more than 34 years of Government service. During his Bureau career, Mr. Maguire worked at St. Louis; Minneapolis; Brady, Texas; St. Joseph, Missouri; Bismarck, North Dakota; and Omaha, Nebraska. He attended Bismarck Junior College and Washington University. His address is 1553 Kimbrough Street, Springfield, Missouri.

TOPICS pointing out the need to improve our communications to the public. I would hope that our present formats do change. I can assure you, however, that we will never consciously duplicate or adopt a format proposed by a private meteorological company with the intent to compete. I know that you will appreciate that the Weather Bureau cannot stand still. We have an obligation to the public for continuously attempting to improve our weather services. In doing this, we will continue our policy of not providing exclusive service to any given radio or television station in a multi-station market.

I am enclosing Circular Letter No. 2-64, which I have just prepared and sent out to all of our field offices last month. This Circular Letter is for guidance of our field offices in connection with our relations with industrial meteorology groups.

Best regards.

Sincerely,
Robert M. White
Chief of Bureau



MIC Hosick (right) "On Stage"

MIC Dramatizes Briefing Procedures

MIC's encounter wide variety in their duties, but not many include acting as a regular thing. Arthur H. Hosick, Meteorologist in Charge at WBAS Cheyenne and State Aviation Liaison Officer for Wyoming, has been logging considerable acting experience of late.

In cooperation with the Wyoming Aeronautics Commission and the FAA, Mr. Hosick has been presenting a skit to aviation audiences throughout Wyoming. The skit dramatically presents proper techniques in operational procedures for pilots. It demonstrates how to use the aviation service system, from preflight weather briefing through landing and closing a flight plan, and includes the transmission of PIREPS. Mr. Hosick reports that audience reaction to the presentation has been very favorable.

DEATH

George Bellino, Meteorological Technician at WBSS Point Mugu, California, died March 15. Entering the Bureau in 1962, he was assigned only to Point Mugu. Survivors include his wife, Mrs. Grace Bellino, and five children, of 3101 South K Street, Oxnard, California.

Bureau Men Tell CAB Hearing Of Weather's Role in Jet Crash

The Weather Bureau played a major role in the investigation of the crash of Pan American Airlines' Boeing 707 at Elkton, Md., last December.

On the evening of December 8, PAA Clipper 214 was en route from San Juan to Philadelphia. The plane stopped at Baltimore and then proceeded to a holding pattern at 5,000 feet, within radar range of Philadelphia. After a pronounced lightning discharge, the aircraft spiralled to the ground, killing all 81 persons aboard.

The Weather Bureau was designated a "Party to the Investigation," as were the Federal Aviation Agency, Pan American Airlines, Boeing Aircraft, the Air Line Pilots Association, and the Air Line Dispatchers Association.

S.V. Wyatt, Chief of the Flight Services Quality Control Section, was Weather Bureau representative/spokesman at the pre-hearing conference and at the public hearing which was held in Philadelphia from February 24 to 26. He was assisted

by J.S. Blain, of the FSQC Section, and by Marvin N. Hunter, FAWS Supervisor at Washington National Airport. Weather Bureau witnesses at the hearing were Dr. Gilbert D. Kinzer, Director of the Physical Science Laboratory, and Joseph Hudson, duty forecaster at Washington.

Dr. Kinzer was a key witness at the hearing and testified for more than two hours. His statement covered the general characteristics of lightning, the effects of lightning strikes on aircraft, and typical evidence of lightning strikes on aircraft. Dr. Kinzer definitely identified evidence of recent lightning strikes on pieces of the wreckage, but offered no conclusions as to the specific cause of the accident.

Joseph Hudson, the duty forecaster, gave testimony on the aviation forecasts related to the flight. Other witnesses covered dispatching procedures, air traffic control, maintenance, structures, power plants, fuels, and aircraft certification.

Bureau's Agricultural Weather Service To Be Initiated in Texas High Plains

The Bureau's special agricultural weather service will be initiated in the Texas High Plains area on May 15.

This program requires the addition of three agricultural weather forecasters to the Bureau office at Lubbock, Texas, and the establishment of a joint Weather Bureau-Experiment Station office at Lubbock as headquarters for the Advisory Agricultural Meteorologist, Oliver H. Newton.

A network of 15 agricultural weather observation stations will be established to provide

daily farm weather reports during the crop season, and a fully instrumented micrometeorological station will be set up to assist in research in crop-weather relationship studies.

Additional facilities will include an agricultural and public weather teletypewriter circuit with three communicators and send-receive connections at Bureau facilities at Lubbock, Midland, and Amarillo. This circuit will be available to mass dissemination outlets in the area and to interested individuals and groups.

Length of Service Awards

35-Year Awards

Coleman, Don E.
WBAS Toledo
Gregory, William C.
WBAS Meridian, Miss.
Main, Merl S.
WBAS Salem, Ore.
Miller, David W.
WBAS Atlanta
Serguis, Leo A.
WBAS Los Angeles
Wilson, Howard D.
RAO Kansas City

30-Year Awards

Bingham, Everett
RAO Salt Lake City
Fauntleroy, Frederick
Instr. Div., CO
Rea, John
Instr. Div., CO

25-Year Awards

Buchanan, John C., Jr.
WBAS Lake Charles, La.
Curtis, Howard W.
WBAS Burlington, Iowa
Downes, Clyde H.
WBAS Fort Wayne, Ind.
Glenn, Chester L.
WBAS Denver
Heck, Albert
O&SF, CO
Meyer, Reginald B.
WBAS Los Angeles
Mucklow, Francis A.
WBO Reading, Pa.
Rea, Andrew J.
WBAS Honolulu
Rosenbloom, Abe
NMC, CO

20-Year Awards

Brown, Harry
NMC, CO
Burns, John P.
WBAS Sea-Tac, Seattle
Busniewski, Raymond G.
WBAS Hilo, Hawaii
Caldwell, Warren C.
WBAS Des Moines
Cournoyer, Martha
Pers., CO
Crosby, Marion A.
WBO New Orleans
Foster, Harrie E., Jr.
DMO Kansas City

Gouldie, Charles D.
WBAS Austin, Tex.
Guarcello, Dominic
WBAS New York City
Heinly, Alma
Adm. Oprs., CO
Johnson, August E.
WBAS Caribou, Maine
Kuykendall, Marvin G.
WBAS Portland
Lester, Juanita W.
WBAS Rome, Ga.
Lyons, William
NWSC, CO
Metivier, William H.
WBO Cristobal, C.Z.
Morgan, James E.
WBAS Roanoke, Va.
Polensky, George W.
WBFC Chicago
Rudisill, Anna
F&SR, CO
Shaw, Gladys P.
WBO Denver
Stry, Paul E.
WBAS Waterloo, Ia.
Thompson, John
NHRP Miami
Wark, David
NWSC, CO
Yakubovsky, Gemo
WBAS Los Angeles

15-Year Awards

Bartman, Richard B.
WBSS Wallops Island
Freeman, Elinor
NWSC, CO
Hagemeyer, Richard
O&SF, CO
Hartwig, Clark D.
WBAS Lansing
Jenkins, James W.
WBO Asheville
Kraencke, Herbert G.
WBAS San Francisco
Mielke, Cameron G.
WBAS Great Falls, Mont.
Ortgessen, Mary M.
WBO Chicago
Roman, Simon
POP Antarctica
Sjoberg, Edward T.
WBAS St. Louis
Young, Raymond P.
WBAS Boston
Zimmer, Mark
WBAS San Juan

DEATHS

Jerome A. P. Smith

Jerome A. P. Smith, Teletypist at DMO Kansas City, Missouri, died March 5. He joined the Bureau in 1963. He is survived by his wife, Mrs. Shirley Smith, 1523 Euclid Avenue, Kansas City, Missouri.

Richard L. Johnson

Richard L. Johnson, Meteorological Technician at WBAS Pueblo, Colorado, died March 10. He joined the Bureau in 1948 at Omaha, Nebraska, and was transferred to Pueblo in 1950. He is survived by his wife, Mrs. Barbara Johnson, and three children, of 2713 Cascade Avenue, Pueblo, Colorado.

W. H. Green

W.H. Green, Official in Charge at WBAS Abilene, Texas, from 1909 until his retirement in 1944, died on March 16. He began working for the Bureau in 1903, serving in Sand Key, Florida; Knoxville, Tenn.; and Fort Worth, Texas, before moving to Abilene. Survivors include his wife, Emma (of 409 Portland Street, Abilene), four sons, and two daughters. One son, Berton Green, is with the Bureau at WBAS Concordia, Kansas. His son-in-law, Russell Mozeney, is MIC at WBAS Corpus Christi, Texas.

Ellwood E. Unger

Ellwood E. Unger, former Official in Charge at the Weather Bureau Office, Louisville, Kentucky, died January 30, while visiting in Daytona Beach, Florida. He entered the Bureau in New Orleans in 1910 and worked subsequently at Columbia, Missouri; Davenport and Charles City, Iowa; Taylor, Texas; Wausau, Wisconsin; Meridian, Mississippi; and Evansville, Indiana. He retired in 1949.

Plastic Template Speeds Plotting Of Storm Paths

Although many field stations now are using locally constructed templates to facilitate plotting severe weather forecast areas, some stations may not be aware of this time-saving device.

To construct a template, cut a piece of plastic into a rectangle with a proportional width of 120 nautical miles (the usual width of severe storm areas) and a proportional length of about 800 nautical miles. Distances in nautical miles must be used to correspond with the units employed in forecasts issued by Severe Local Storm Center (SELS).

Between the center points of each end of the template, draw or etch a line. At one end of the template, scale off the distance in increments of 10 nautical miles, so that distances from the reference points can be measured quickly. The scale used should fit the particular base map being employed.

When using the template, place the center mark on one end over one reference point and the etched center line over the other reference point. Run a pencil around the template to plot the area quickly and accurately.

Henry J. Godbois Named New MIC at Caribou, Me.

Henry J. Godbois is the new MIC at the Airport Station at Caribou, Maine. He has been transferred to his new post from WBAS, Worcester, Massachusetts.

Mr. Godbois joined the Weather Bureau as an Airways Observer in Putnam, Connecticut, in 1944. A graduate of the University of New Hampshire, he has served at WBAS's in Caribou and Cincinnati.

For Missile Re-entry Studies

High-Altitude Balloon Soundings

It was 2:53 a.m. The 30-foot bubble of a Tropical High-Altitude Balloon (THAB) tugged at its restraining mechanism in gusty 15-knot winds. A loud-speaker blared last-minute bits of prelaunch information, and technicians rushed to take their launch positions.

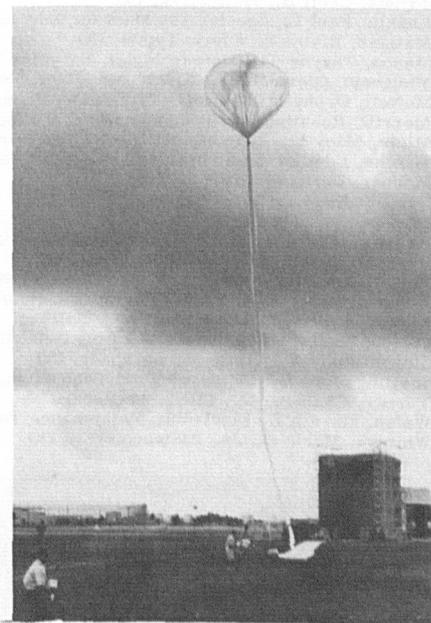
Seconds later, with an "all clear" from the control tower, the launch signal was given. When the release device let go with a shot-like report, the THAB leaped skyward, trailing folds of clear polyethylene.

More than 200 feet downwind, four men bearing train and instruments tensed expectantly as the THAB shot upward and toward them, peeling its 170-foot length from a ground cloth. The instrument launch crew scrambled frantically to get the payload safely into flight.

This was the climax of a night's activity at the U.S. Navy's PMR Weather Station on Kwajalein, operated by Weather Bureau personnel under the leadership of MIC H.E. Boyd. The operation was part of a complex study of missile re-entry problems. If the THAB and its telemetry functioned according to expectations, temperature, pressure, refractive index, speed of sound, density, relative humidity, dewpoint, absolute humidity, wind speed and direction, and ozone concentration would be obtained to an altitude approaching 140,000 feet.

In the THAB soundings, an attempt is being made to reach a new degree of accuracy in high-altitude measurement. Flight instrumentation consists of one AMQ-9 ranging radiosonde modified to transmit temperature and references on a frequency of 1680 mc.; one AMT-12 hypsometer radiosonde modified to transmit humidity, references, and hypsometric data on a frequency of 1690 mc.; and one ozonesonde,

a standard AMT-4 radiosonde adjusted to transmit on a frequency of 1670 mc., to which is attached a Regener T6 ozone meter. The ozone meter draws its power from the radiosonde and interrupts the radiosonde signal every 15 seconds with a sequence of three other signals



Launching the big balloon.

delivering information from which ozone concentration is computed. All desired parameters other than ozone are derived from the information delivered by the AMQ-9 and AMT-12 radiosondes.

A GMD-2 tracks the AMQ-9 signal, and a GMD-1B receives the AMT-12 signal. The ozonesonde is tracked by a unique manually operated receiving station.

Sixteen of these soundings have been attempted at Kwajalein in the past year. The system probably never will become as commonplace as less exotic sounding techniques. The staff members at PMRWS, Kwajalein, thus regard it as one of the most interesting facets of their work.

Welcome to the Bureau

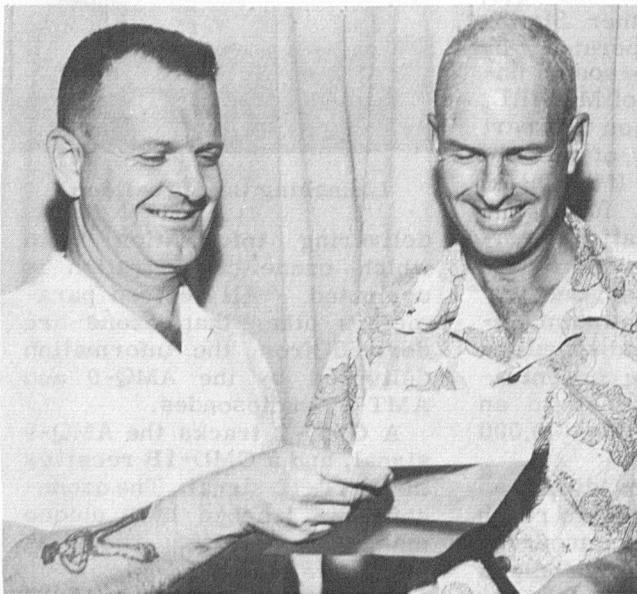
Beck, Robert E., Meteorologist, CO
 Bell, Fannie Mae, Accounts Maintenance Clerk, CO
 Coleman, Richard I., Meteorologist, Memphis
 Dunn, Emilie O., Clerk-Typist, Asheville
 Eakin, John A., Meteorologist, Wake Island
 Eckhardt, Maxine A., Clerk, Anchorage
 Flynn, Sally Ruth, Procurement Clerk, Ft. Worth
 Gaddy, William T., Meteorological Technician, Asheville
 Galkin, William L., Meteorological Technician, Sandberg, Calif.
 Griggs, Donna S., Meteorological Technician, Asheville
 Grimes, Eleanor Elizabeth, Librarian, CO
 Hobbs, Kenneth C., Hydraulic Engineer, Kansas City
 Jaramie, Ann T., Clerk-Typist, Ft. Worth
 Joseph, William, Accounts Maintenance Clerk, CO
 Joynes, Cecil B., Mail Clerk, CO
 Laskin, Paul L., Special Assistant for Legislative Planning, CO
 Matikas, Elaine H., Clerk-Typist, CO
 Mauch, Thayne O., Meteorologist, Eniwetok Island
 Maugham, Cleveland S., Electronic Maint. Technician, Pt. Mugu
 McNeil, Orphelia A., Clerk-Typist, Las Vegas
 Merrill, Rosalie, Clerk-Stenographer, Wallops Island
 Miele, Mary L., Appointment Clerk, New York
 Mische, Edward H., Mechanical Engineer, Kansas City
 Mosner, Bernard, Auditor, CO
 Neal, Judith K., Clerk-Typist, CO
 Parker, Jean E., Clerk-Typist, CO
 Pattison, Kenneth, Electronic Maintenance Technician, Denver
 Peaks, Virginia, Coding Clerk, CO
 Renne, David S., Student Trainee, Madison, Wisc.
 Roberts, Russell R., Meteorologist, Honolulu
 Rogers, David S., Repairman, Joliet, Ill.
 Sexton, Sheila, Card Punch Operator, Asheville
 Singer, Ruby B., Clerk-Stenographer, CO
 Snelling, John G., Meteorological Technician, Asheville
 Turner, Charlene M., Clerk, Anchorage
 Walsh, Marvin J., Electronic Maintenance Technician, Eniwetok I.
 Whitney, Merle B., Jr., Meteorologist, CO

Transfers

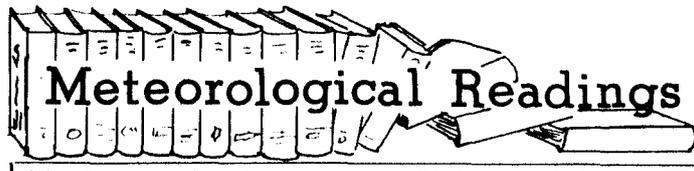
Adamo, Joseph J.
 Aranita, Ronald M.
 Arashiro, Harry H.
 Austin, John R.
 Bakeman, David F.
 Campbell, Richard L.
 Cardenas, Adam N.
 Carman, Robert G.
 Clark, Arthur O., Jr.
 Codington, Jerome H.
 Cooper, Kenneth K., Jr.
 Coulter, Neil M.
 DeLaurentis, Eileen T.
 Derryberry, Henry J.
 Dixon, Kenneth E.
 Drews, Berwick A.
 Fain, Edgar E.
 Falkenhof, Jack J.
 Franklin, William B.
 Gore, Donald L.
 Graham, Johnnie B.
 Gray, Kathryn C.
 Hanaike, Gilbert A.
 Hamilton, Dion B.
 Helgeson, Frederick P.
 Hettis, Earl R.
 Hordichok, Robert L.
 Hughes, David C.
 Hynes, Bartholomew
 Jenkins, Fred J.
 Johnson, Clyde R.
 Johnson, Solomon T.
 Kocsis, Frank J.
 Klopfenstein, James W.
 Kraft, Kay C.
 Kutaka, Clifford M.
 Lampley, Melvin D.
 Lashua, Edward H.
 Lee, Jean T.
 Leshko, Paul C.
 Longley, Gary T.
 Lowery, Fred H.
 McDonald, William C.
 McGuire, Thomas P.
 McKenny, Clarence D.
 McLaughlin, Artyn W.
 Mizukami, Takaharu
 Newhouse, Henry
 Newman, Terrence N.
 Newton, Oliver H.
 Paddock, Ervin A.
 Pales, Jack C.
 Palmer, William P.
 Pauley, James N., Jr.
 Pellerin, Francis L.
 Pye, Elvyn C.
 Rocchio, Julio E., Jr.
 Samuels, Charles B.
 Sanders, Leslie D.
 Sapp, Lowell H.
 Sears, James W.
 Shelton, John E.
 Shimomura, David S.
 Sides, James R.
 Sluder, Odell S.
 Smith, James E.
 Taboniar, John
 Toerpe, Lloyd R.
 Tomita, Kiyoji
 Unruh, Richard L.
 Vigil, Emilio D.
 Wagner, Richard J.
 Wassall, Robert B.
 Werlein, Robert O.
 Whitney, Raymond L.
 Williams, George E.
 Wilson, Dean A.
 Wood, Richard A.
 Woolard, Paul E.
 Zewe, Charles W.

FROM
 Chicago
 Eniwetok I.
 Mauna Loa, Hawaii
 Asheville
 Olympia, Wash.
 Johnston I.
 San Antonio
 Barking Sands
 Marcus I.
 Houston, Tex.
 Eniwetok I.
 Antarctica
 Tucson
 Kwajalein I.
 Cincinnati
 CO
 Galveston, Tex.
 Antarctica
 Fort Worth
 Mould Bay, NWT
 Fort Worth
 Kansas City
 Hilo, Hawaii
 San Francisco
 Dayton, Ohio
 Wallops I.
 Olympia, Wash.
 Sterling, Va.
 Johnston I.
 Olympia, Wash.
 Johnston I.
 Columbia, Mo.
 Pt. Arguello
 Sioux City
 CO
 Mauna Loa, Hawaii
 Washington, D.C.
 Yap, T.T.
 Kansas City
 Huntington, W.Va.
 Kotzebue, Alaska
 Alexandria, La.
 Wake I.
 Guam
 Antarctica
 Burlington, Vt.
 Eniwetok I.
 New York
 Midland, Tex.
 Stoneville, Miss.
 Tucson
 Mauna Loa, Hawaii
 Olympia, Wash.
 New York
 Charleston, W.Va.
 Tatoosh I., Wash.
 CO
 Olympia, Wash.
 Kansas City
 Kansas City
 Corvallis, Ore.
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 Omaha
 Roanoke, Va.
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 Canton I.
 Buffalo, N.Y.
 Canton I.
 Pt. Arguello
 St. Louis
 Bombay, India
 Baltimore
 Madison, Wisc.
 Cold Bay, Alaska
 CO
 Tucson
 Midland, Tex.
 Sheridan, Wyo.
 Eniwetok I.

TO
 Wallops I.
 Wake I.
 Eniwetok I.
 Kotzebue, Alaska
 Las Vegas
 Huron, S.Dak.
 Monterrey, Mex.
 Empalme, Mex.
 Chihuahua, Mex.
 Midland, Tex.
 Honolulu, Hawaii
 Sheridan, Wyo.
 Las Vegas
 Guam
 Asheville
 Anchorage
 San Antonio
 Mould Bay, NWT
 Montgomery, Ala.
 Brownsville
 Tallahassee
 Norman, Okla.
 Eniwetok I.
 Los Angeles
 Asheville
 Idaho Falls
 Pt. Mugu
 Kansas City
 Lihue, Hawaii
 Winnemucca, Nev.
 Dodge City
 Chicago
 Honolulu
 Chicago
 New York
 Hilo, Hawaii
 Dayton, Ohio
 Koror, T.T.
 Norman, Okla.
 Pittsburgh, Pa.
 Nome, Alaska
 Mobile, Ala.
 Canton I.
 Canton I.
 Winslow, Ariz.
 Atlantic City
 Barking Sands, Hawaii
 Washington, D.C.
 Eniwetok I.
 Lubbock, Tex.
 Boise
 Las Vegas
 Glasgow, Mont.
 CO
 Binghamton, N.Y.
 Barking Sands
 Atlantic City
 Los Angeles
 Norman, Okla.
 San Francisco
 Gilmore Creek, Alaska
 Asheville
 CO
 Kwajalein I.
 Asheville
 Honolulu
 Eniwetok I.
 Johnston I.
 Honolulu
 Koror, T.T.
 San Juan
 San Francisco
 Hartford
 Anchorage
 Asheville
 Tifton, Ga.
 Las Vegas
 Asheville
 Guam
 Galveston, Tex.



William J. Taliaferro (right), Meteorological Technician at the Weather Bureau Office, Kahului, Hawaii, receives a quality step increase from Observer in Charge Carl Peterson (left). Mr. Taliaferro was given the salary increase for his continued superior performance and especially for his outstanding job in developing a local climatological record and in organizing a sub-station inspection program. (Maui News Photo)



Meteorological Readings

Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information, see TOPICS, May 1957. When submitting answer cards, please mark envelope in lower left corner: "Meteorological Readings."

Assignment LXX: "Aspects of Hurricane Structure: Project Mercury Observations" and "Dry Days on the Island of Oahu, Hawaii," Monthly Weather Review, February 1964, Vol. 92, No. 2, pp. 43-75.

About the Assignment: The first five questions are based on "Aspects of Hurricane Structure: Project Mercury Observations" and deal with deductions, mainly from satellite spectographs, concerning the relation of a hurricane to its environment. The last five questions are based on "Dry Days on the Island of Oahu, Hawaii." This article presents charts illustrating the broad-scale synoptic features conducive to dry periods on the island of Oahu.

QUESTIONNAIRE

Col. 61 The trailing vortex is favored by:

1. a decrease of relative vorticity
2. the existence of a hurricane without the presence of an upper jet
3. a southward-flowing hurricane jet
4. increasing values of coriolis parameter

Col. 62 The line (or area) of intensifying convective activity shown on figure 15:

1. occurred within 200 miles

of the hurricane center

2. was preceded by a dense high cloud sheet

3. was not similarly duplicated in the Havana time section

4. was followed, within a day, by a deep moist layer

Col. 63 Mark all correct answers. Hurricanes Anna and Carla were alike regarding:

1. the source of the upper-level band of westerlies

2. the existence of dry zones near the ends of the bands of westerlies

3. the size area covered by cloudiness

4. an antecedent shear zone at upper levels

Col. 64 Regarding the annular zone of subsidence, the author:

1. likens this to a similar ring noted around some thunderstorm complexes (Hydrometeorological Report No. 39, page 14)

2. emphasizes continuous nature of outer convective band

3. suggests that subsidence takes part in the production of high winds aloft

4. suggests more detailed study is likely to disprove the existence of the annular zone of subsidence

Col. 65 The hurricane model presented:

1. makes allowance for hurricane tornadic activity

2. does not make allowance for peripheral subsidence

3. does not need further verification

4. proves that tornadoes occur with hurricanes when the hurricane is far removed from all land masses

Col. 66 The data for dry days on Oahu in table 4 show that:

1. all other islands in the Hawaiian group tend to be wet when Oahu is dry

2. all other islands are dry when Oahu is dry

3. there is some evidence that non-trade days are more likely to produce large rainfall totals

4. Hawaii is even drier than Oahu

Col. 67 The hypothesis of large-scale downward motion over Hawaii during dry periods is supported by:

1. the failure to account for the differences in the anomalies at the surface and aloft by advection

2. the presence of a jet stream to the south of the islands

3. the presence of higher-than-normal temperatures near the surface

4. above normal rainfall farther to the south

Col. 68 The charts for dry cases in the March through May period are distinguished by:

1. warm air advection for the trade wind days

2. a general sea-level trough appearing northwest of the islands

3. strong anomaly fields for the trade wind days

4. advection of cold air for the trade wind days

Col. 69 Mark all true statements. Dry days on Oahu are characterized by:

1. an 850-mb jet between Hawaii and 40° North Latitude

2. significantly above normal sea-level pressures near Hawaii

3. strong negative anomalies well to the north of Hawaii

4. predominantly anticyclonic flow at sea level in the vicinity of the islands

Col. 70 The various charts may be used:

1. confidently to approximate conditions for any and all dry days

2. for the island of Oahu but not for the island of Hawaii

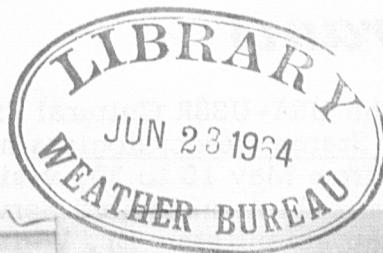
3. for all of the islands

4. for none of the islands

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TOPICS, the official Weather Bureau employee magazine, is published monthly to inform all employees about Bureau activities and programs. Articles or comments by Bureau employees are invited. Inquiries and requests for permission to reprint or quote from material contained in TOPICS should be sent to the Office of Public Information, U.S. Weather Bureau, Washington, D.C. 20235.



Topigrams

Washington, D.C.
June 1964

As part of the USA-USSR Cultural Exchange Agreement, a group of seven United States meteorologists headed by Dr. White toured the Soviet Union from May 10 to 30, visiting agencies and institutes of the Soviet Hydro-Meteorological Service. The group included four Weather Bureau scientists--Dr. White, Dr. Frederick G. Shuman, Max A. Kohler, and Feodor Ostapoff. Other members were Dr. Philip D. Thompson, Associate Director of the National Center for Atmospheric Research and President of the AMS; Dr. Verner A. Suomi, head of the Department of Meteorology at the University of Wisconsin; and Dr. Louis J. Battan, Associate Director of the University of Arizona. Areas of particular interest to the group were numerical prediction, long-range forecasting, instrument development, oceanographic and hydrologic research, and general meteorological organization and services. Dr. White left before the tour was completed to attend the WMO Executive Committee meeting in Geneva.

During Dr. White's absence, which will extend until June 15, Dr. Cressman is Acting Chief of the Bureau, and Mr. Grubb serves in an acting capacity when both Dr. White and Dr. Cressman are absent.

The second phase of the Weather Bureau's organization and management planning is scheduled for implementation by July 1. In Phase II, the division and branch structure will be described, including objectives, functions, relationships, and assignment of authority, responsibility, and accountability.

The new Office of Systems Development has begun a study of the organization of field forecasting services, to determine how meteorological information should be produced and disseminated. The office will begin its study with the National Meteorological Center and conclude with the final distribution to the user.

Tornado activity during April far surpassed that of April 1963. The 169 tornadoes that were reported represented an increase of 71 percent over the same month in the previous year. Forty-six percent occurred within valid SELS tornado forecast areas, compared to thirty-six percent during the same period last year.

As a result of the continuing reevaluation of Weather Bureau field operations, the two-man Bureau office in downtown Los Angeles is scheduled for closing late this month. The functions which have been performed by this office will be transferred to the Weather Bureau Airport Station.

On the cover...

Women meteorologists are not uncommon in the Bureau, but Mrs. Hazel Tatro is the first woman Meteorologist in Charge of a Weather Bureau Airport Station (Winston-Salem, N.C.). The complete story is on page 97.

TIROS 'Cartwheel' Spacecraft Will Be Used For Bureau's Operational Satellite System

The ninth satellite in the TIROS series, scheduled for launching by the National Aeronautics and Space Administration later this year, will be similar in many respects to the spacecraft to be used in the TIROS Operational Satellite (TOS) System recently agreed upon by the Weather Bureau, NASA, and the Department of Defense.

Plans for the TOS System call for the launching of a series of TIROS-type satellites, based on the new "cartwheel" configuration (see TOPICS, March 1964), beginning near the end of 1965 to provide meteorological coverage of the entire earth every day.

The Weather Bureau has now made funds available to NASA to procure spacecraft and launch vehicles for the operational system. NASA will negotiate a contract with the Radio Corporation of America's Astro Electronics Division to design and build five of the new TOS spacecraft for use by the Weather Bureau. The contract is expected to exceed nine million dollars.

Test Flights

Before the TOS System begins, two TIROS satellites will be launched to provide picture coverage and to test the new configuration. These include the ninth TIROS, a NASA-funded research and development satellite, and the tenth TIROS, a Weather Bureau-financed satellite scheduled for launching in the second quarter of 1965 to provide coverage during the hurricane season. Both will carry two standard TIROS cameras (1/2-inch vidicons with 500-TV-line resolution) pointing outward from the rim of the spacecraft, rather than from the bottom as in earlier TIROS'. Each camera will be tilted at an angle of 26 degrees to the orbital

plane and will operate only when facing the earth beneath the satellite. The satellites will be launched into near-polar, sun-synchronous orbits 400 nautical miles above the earth and will then be turned so that they roll along their orbits like cartwheels.

TOS System Starts

The TIROS Operational Satellite System is scheduled to begin in the fourth quarter of 1965, when two weather satellites of the cartwheel TIROS type are launched into near-polar orbits 750 nautical miles above the earth. The orbits will be sun-synchronous, so that the cameras photograph a given latitude at the same sun-time on every orbit. At an altitude of 750 n. mi., the orbital period of the satellites will be approximately 113 minutes.

The cameras will be different from those to be used on the ninth and tenth TIROS'. One satellite, ordered earlier by the Weather Bureau, will be equipped with two Automatic Picture Transmission camera systems. With the satellite orbiting at a higher altitude, each system operating independently will provide the required global coverage, thus ensuring a longer operational lifetime for the spacecraft. Also, each APT photograph will cover an area measuring 1736 n. mi. on a side, and ground stations will be able to receive pictures when the satellite is within a radius of about 1800 n. mi.

The second spacecraft in the TOS System will be designated TOS-A, the first built under the new contract. This satellite will carry two redundant Advanced Vidicon Camera System (AVCS) units, of the type developed by NASA as part of the Nimbus r & d weather satellite program. These camera units work in the same manner as the

present TIROS cameras, storing data on magnetic tape for rapid readout at central locations. The television tube will be a one-inch vidicon with 800-TV-line resolution. At a point directly below the camera, picture resolution will be 1.5 n. mi. per line. Photographs taken from an altitude of 750 n. mi. will be 1736 n. mi. on a side, and a single camera will provide daily global coverage. The two camera systems may be used alternately, or one may be kept inactive until the other fails, thus increasing the operational life of the spacecraft.

When the TOS System is in operation, two satellites--one with APT cameras and one with AVCS cameras--will be kept in orbit at all times to provide both local and worldwide cloud cover pictures at least once a day. It is expected that infrared measurements will also be made by the TOS System. At first, these would be very low resolution measurements for heat budget studies and nighttime detection of large cloud systems.

NASA is now developing a new single camera system
(continued on page 99)



This picture was televised from a TIROS satellite at its extreme perigee. Formations at bottom are of uncertain origin.



Bureau Chief Robert M. White briefed field officials and MIC's at the Regional Offices during April. These pictures were made at the New York Regional Office meeting.

Dr. White Visits Regions to Discuss Changes

During the last week in April, Dr. White visited the Regional Offices at New York, Fort Worth, Kansas City, and Salt Lake City, where he briefed assembled field officials and meteorologists in charge on the new Bureau structure.

A similar briefing was held for all Washington area employees on April 13.

Speaking at the New York Regional Office, Dr. White said: "It has really been a very great treat for me to go around the country this week as I have been doing and meet with the MIC's in the various regions. I have often wondered how I would meet, say hello, and become acquainted with you."

After explaining the new organization and the philosophy behind it, Dr. White posed the question of what it means to the MIC. "The principal importance of the organizational change," he pointed out, "is that gradually you will receive greater authority and also the responsibility for making sure that adequate services are being supplied by you and your station."

Concluding his remarks to

field officials, Dr. White said, "I am looking to you for your help in assisting the Weather Bureau to move forward."

At the meetings, Walter Hahn, Director of Policy Planning, discussed the ten newly defined public and special weather services, the Bureau program for fiscal year 1965, and plans for fiscal years 1966-1969.

An extended question and answer period was held after the two presentations, and the topics discussed covered a wide range.

Informal meetings after the talks gave Dr. White an opportunity to meet individual field officials and hold further discussions on varied subjects.

Comments on the meetings have been most enthusiastic. According to Lloyd Brotzman, Acting Regional Director in New York: "All of the field officials to whom we have talked stated that they thought this was the most outstanding meeting that they have had the opportunity to attend. A formal announcement was made to the effect that this was the first annual (regional) conference of field officials."

E.A. ("Ike") Farrell, MIC at the Houston Weather Bureau Airport Station and a Bureau employee for 45 years, writes that "During my many years of service in the Weather Bureau, I have never heretofore had an opportunity to attend a meeting so efficiently managed and informative."

"I think it is a tribute to Dr. White," Mr. Farrell says, "that he took time out from his pressing duties to acquaint the field officials with his overall philosophy and his plans for the future."

"I think that most of us have a tendency to look askance at changes in procedures resulting from a change of administration; and I further believe that this tendency arises from the fact that we are totally unacquainted with the reasons underlying the changes and the overall objectives of the new programs. By his conferences with the field officials, I feel that Dr. White took us into his confidence and made us feel that we, too, are an integral part of an organization striving for a more effective service."

Latest Detection and Warning Devices Ready

As Bureau Braces for 1964 Hurricane Season

For two consecutive years, no major hurricanes have crossed the coastline of the continental United States. The odds against a third quiet season are considerable, and the Weather Bureau's hurricane warning service will again be on the alert from June through November.

The names held in readiness for hurricanes and tropical storms of 1964 are Abby, Brenda, Cleo, Dora, Ethel, Florence, Gladys, Hilda, Isbell, Janet, Katy, Lila, Molly, Nita, Odette, Paula, Roxie, Stella, Trudy, Vesta, and Winny.

Two TIROS satellites are in operation as the season begins, and the National Aeronautics and Space Administration plans to launch the first Nimbus weather satellite soon. Information collected by Nimbus, including photographs from its Automatic Picture Transmission (APT) camera system, will augment the data available from the TIROS satellites.

On June 1, staff members of Weather Bureau hurricane warning centers gathered at the National Weather Satellite Center for a week-long workshop on the uses of weather satellite data for tropical storm detection and surveillance.

Before the season ends, three automatic weather stations will be reporting from the Gulf of Mexico. In June, the first Weather Bureau MAMOS will be anchored in the northwest Gulf, and the second will be installed during July in the southwest Gulf. (See TOPICS, May 1964, page 79.) The Navy's NOMAD will also be operating in the Gulf of Mexico.

The Department of Commerce has asked the cooperation of the Department of Defense in providing hurricane reconnaissance along the lines of that provided in past years.

Stations in the Caribbean rawinsonde network have been supplied with a new type of balloon, specifically designed to resist the low temperatures at the tropopause in the tropics and attain high altitudes before bursting. An agreement is now being negotiated between the United States and the United Kingdom to add an additional cooperative station at Seawell Airport, Barbados, West Indies. The Fort Worth Regional Office is expected to assume complete responsibility for the Caribbean rawinsonde network before the first of July.

In line with the recent Weather Bureau reorganization, the Regional Directors have been requested to indicate their readiness to assume a larger share of responsibility for operation of the hurricane warning service.

Representatives of the Weather Bureau, Navy, and Air Force met at Fleet Weather Central, Alameda, California, on May 5 to review the hurricane warning plan for the eastern North Pacific. On May 28, Dr. Robert H. Simpson, Deputy Director for Operations, National Meteorological Services, participated in a hurricane warning conference at Corpus Christi, Texas, sponsored by the Texas Department of Public Safety.

Four aircraft (two DC-6's, one B-26, and a B-57) of the Research Flight Facility will probe hurricanes and tropical storms this year, gathering new data for study by the National Hurricane Research Project. The observing capability of the two DC-6's has been increased recently by the installation of cloud cameras for photography from the aircraft's sides.

A new hurricane investigation, called "Project Cold Low," will be initiated by the Weather

Bureau this year. Intensive study of thousands of satellite photographs has led meteorologists at the Bureau's National Weather Satellite Center to suspect that certain cloud patterns indicate cyclonic circulations or eddies at high altitudes in the atmosphere which may later develop downward to the surface and become hurricanes. Since temperatures in these high-level eddies are usually lower than in the surrounding atmosphere, they are called "cold lows." This year, when cold lows are detected in satellite pictures, research aircraft will be dispatched to gather data in the area. If the scientists' suspicions prove to be correct, Project Cold Low will provide unique new data on the earliest stages of hurricane formation.

The National Hurricane Research Project has developed an improved set of equations for statistical prediction of hurricane movement. These forecast equations will be used operationally during the 1964 season to predict hurricane motion up to 48 hours in advance.

An Advanced Science Seminar on Hurricanes, conducted by the Department of Meteorology of Florida State University, will be held in Miami from July 6 to August 14. The seminar will be supported by the National Science Foundation, the U.S. Weather Bureau, and the State of Florida.

From August 24 to September 19, an Inter-Regional Seminar on Advanced Tropical Meteorology, organized by the World Meteorological Organization under its technical assistance program, will be held in Manila. This seminar will include workshops on methods of forecasting the movement, recurvature, and intensification of tropical cyclones.

Cooperative R&D Programs Started With Foreign Currency Allotment

The Weather Bureau is inaugurating a program to conduct cooperative research and development projects with other countries in the fields of meteorology and atmospheric sciences.

For the first time Congress has allotted funds to the Bureau for cooperative projects under Public Law 480. This law, passed in 1954, provides that foreign currencies paid for surplus U.S. agricultural commodities, and not required for other priority needs, may be spent for certain specified projects.

Weather Bureau FY 1964 appropriations provide \$250,000 which will be used in part for research and data-gathering projects in Israel and India.

Agreements have been signed for two projects in Israel, one to study the relationship of the dynamics of soil moisture to climate, an investigation of worldwide importance for agriculture and food production. The second project covers regional synoptic interpretation of meteorological satellite data of the Middle East.

The Bureau is negotiating

U.S., Japanese Scientists Hold Meeting

To Discuss Hurricane, Typhoon Research

The Japanese Panel VII on Hurricane and Typhoon Research met with the counterpart United States Panel of the U.S.-Japan Science Cooperation Program at Miami, Florida, from March 16 to 20.

Dr. F. W. Reichelderfer, Chairman of the United States Panel, and Dr. K. Wadati, Chairman of the Japanese Panel, presided at the meetings.

Twenty-three scientists from the two nations discussed hurricane and typhoon research, proposals for cooperative re-

search, and methods of increasing the exchange of ideas. Agreement was reached to proceed with a number of projects.

Weather Bureau personnel attending the conference were Dr. M.A. Alaka, Gordon E. Dunn, Dr. R. Cecil Gentry, William E. Hardy, Harry F. Hawkins, Dr. Banner I. Miller, and Dr. R.H. Simpson.

Technical papers were presented by Dr. S.L. Rosenthal, Dr. Banner I. Miller, Dr. R.C. Gentry, and Dr. Robert H. Simpson.

final agreements (approval expected during the last quarter of FY 1964) with the India Meteorological Department for two projects. One proposes to improve upper-air sounding techniques in India (of value to international air operations, hemispheric weather analysis, and research and analysis of typhoons), and the other project is a comparison of various methods for measurement of evaporation.

Other countries in which the United States now is proposing projects include the United Arab Republic and Poland.

The proposed FY 1965 budget requests \$500,000 for this program, which will continue several projects and initiate six new ones. In Israel, plans include oceanographic storm surge studies, meteorological instrument development, and studies of satellite data for use in numerical weather prediction. Other proposed projects include improvements in Pakistan's upper-air network, studies of coastal flooding in Pakistan from typhoons, and climatological investigations in India, Pakistan, and Israel.

Bureau Meteorologists Gather Weather Data On Pacific Expedition

The Galapagos International Scientific Project has been completed in the little-explored Galapagos Islands at the Equator, about 500 miles west of the South American mainland. The expedition, which began in mid-January and concluded in early March, was designed to gather biological, geological, and meteorological data from an area known for unusual physical properties.

Meteorological data were collected on Santa Cruz Island and during the cruise on the California Maritime Academy Ship "Golden Bear." Radiosonde observations, made twice daily on shipboard, averaged 20,000 meters. Photographs were taken of significant clouds to coincide with TIROS satellite passes over the area. Also, an all-sky time lapse camera, on loan from the Woods Hole Oceanographic Institution, recorded the daily cloud cover.

Routine radiosonde and surface observations were taken at Santa Cruz Island, and microbarographs were used at higher elevations on the Island.

Weather Bureau representatives on the expedition were Dr. Robert L. Pyle, of the National Weather Satellite Center, and Charles A. Green and Arthur C. Nahmmacher, of the Pacific Weather Project (San Francisco). At the conclusion of the expedition, Mr. Nahmmacher gave a lecture in Spanish to an Ecuadorian audience on meteorological results of the project.

The expedition was planned by the University of California in cooperation with the California Academy of Sciences and the Charles Darwin Foundation.

Dr. White Addresses Joint AMS-AGU Meeting On 'Organization of Environmental Sciences'

Dr. White addressed the joint AMS-AGU meeting in Washington, D.C., on April 23. His subject was "The Organization of the Environmental Sciences in the Federal Government."

Dr. White told a gathering of more than 400 that one problem underlying all the rest has occupied his thoughts since becoming Chief of the Weather Bureau. "It is the problem of how we have organized our geophysical or environmental scientific, engineering, and service activities in this country, particularly in the Federal Government. Have we organized ourselves so that we can attack the problems of man's natural environment effectively? And will our present organizational forms prove adequate to the tasks of the years that lie ahead?"

Scientific Expenditures

To show how big the environmental sciences have become, Dr. White cited these figures from the Federal budget:

In the current fiscal year the Federal Government will spend approximately \$700 million in the area of the environmental sciences, in research, engineering, and the provision of services (not including money spent in the space and geological sciences).

In the five-year period from 1958 to 1963, the Federal budget for oceanography, for example, has grown from \$24 million to \$124 million.

Dr. White said: "The growth in Federal expenditures in the environmental sciences attests our national concern with the array of problems that arise out of the endless interactions between the activities of man and his total physical environment. The increasing growth of our population, the increasing urbanization of our country,

the increasing industrialization of our economy, and the increasing concentration and complexity of that industrialization have imposed unprecedented demands on our environment. We are becoming concerned with the capacity of our water resources, our earth, and our air to sustain us. And as our demands increase, so also does the rate at which we spoil and use up our environmental resources. Our air and our rivers are being polluted, and our water is being drained off faster than it is being replaced. We require greater understanding of our environment and an ability to predict the consequences of natural or manmade effects if we are to learn to manage and control these resources."

While man has always had to contend with disasters such as hurricanes, tornadoes, and earthquakes, Dr. White pointed out that today man is faced with

new environmental hazards--communications blackouts, effects of turbulence on high-speed aircraft, radioactive fallout, radiation in space.

Budget Scrutinized

"The past few years have seen not only a soaring Federal science and technology budget in all the scientific disciplines--but also increasing scrutiny of that budget and of the relative priorities of competing scientific programs, both by Congress and within the Executive Branch. There is a growing concern that full value be received for every Federal dollar spent on scientific and technological activities. All this comes at a time when we in the environmental sciences have just begun to appreciate the full scope of the challenges ahead of us and of the costs of meeting these challenges. And so it seems to me that now is the

(continued on page 96)

AMS, AGU Hold Joint Washington Meeting

The American Meteorological Society held a national meeting jointly with the Section of Meteorology of the American Geophysical Union in April at Washington. A highlight of the joint meeting was a speech by Dr. White (reported above).

Many Weather Bureau meteorologists participated in this program, which included sessions on global and Antarctic meteorology; clouds, weather, and precipitation; tropical meteorology; turbulence and jet streams; objective weather analysis; atmospheric modeling and numerical prediction.

Among those participating in the joint session were Dr. F.W. Reichelderfer; J. Murray Mitchell; Frank Gifford, Jr.; Sigmund Fritz; J. K. Angell

and J. Korshover; A. F. Krueger and D. A. Haines; P. F. Clapp; Jay S. Winston; E. Flowers; Martin C. Predoehl; W. S. Weyant; William H. Klein and Curtis W. Crockett; Russell J. Younkin and Jerrold A. LaRue; E. Paul McClain and Linwood F. Whitney, Jr.; Harold J. Brodrick; H. K. Saylor and E. B. Fawcett.

Also participating were Glenn W. Brier, S. Fred Singer, Stanley Rosenthal, Carl O. Erickson, H. McClure Johnson, J. Smagorinsky, John B. Hovermale, Dr. Edwin Kessler, Vance A. Myers, Charles R. Hosler, James E. McDonnell, William F. Klein and Billy M. Lewis, Arthur F. Gustafson, Douglas Lilly, Frederick G. Shuman and Lloyd W. Vanderman.

Address (continued)

proper time to examine our institutions--to take stock of where we are and to set a course for the future that will enable us to achieve our scientific goals, and with them a host of new social and economic benefits.

"I think no one here would dispute the scientific unity of the geophysical or environmental sciences, that we may speak of them as a scientifically meaningful collection of disciplines...."

"When we look at the way in which the Federal Government has organized its work in the environmental sciences, we find none of the linking of disciplines that we find in the scientific and academic worlds. What we find instead is that a number of Federal departments and agencies have an interest in one or another aspect of the geophysical sciences, and each is actively engaged in providing services or undertaking research...."

Activities Dispersed

"Now, there is a logic in this dispersal of environmental scientific and technological activities. Each of the departments and agencies, bureaus and subagencies presently involved in one aspect or another of the environmental sciences has particular statutory responsibilities, a particular mission. Each is concerned with very particular and very important problems. Each needs environmental information to perform its missions--whether they be to ensure the national defense, to provide weather information to the general public, or to support the quest for basic scientific knowledge and the education of new scientists. And each knows which is the squeaky wheel that needs the grease. I said a moment ago that it is the stimulus of a common problem that often brings different scientific disciplines together. We should not forget that the prod-

der is often an agency or group concerned with a particular problem...."

"As Federal spending for science and technology has soared, a fresh concern has been created--how we may perform the scientific and technological activities of the Federal Government most economically. The economic factor may well be crucial in how we organize these activities, at least if we are to do all the things that we want to do...."

Coordination Increased

"The high cost of science and technology stem, as I indicated earlier, from the dispersal of the scientific and technological activities of the Federal Government among a number of different departments and agencies. In the geophysical sciences this dispersal is more extensive than many of you may appreciate. Some 25 agencies of the Federal Government are active in water resources research; some 15, in oceanography; and some 13, in the atmospheric sciences. When the Federal Council for Science and Technology was established, it saw that it must bring these agencies closer together, and it established an Interdepartmental Committee for Atmospheric Sciences, an Interagency Committee on Oceanography, and a Committee on Water Resources Research."

Dr. White pointed out that the recent Bureau of the Budget Circular (see TOPICS, January 1964) directs that a single agency--the Department of Commerce--should develop a comprehensive plan for Federal meteorological services and supporting research. It also provides that the Department of Commerce should furnish all basic meteorological services and supporting research, which are to be available to all agencies that need them, and should furnish specialized services to other agencies where it is economically feasible to do so.

Within the Department of Commerce, Dr. White noted, "The Weather Bureau and the Coast and Geodetic Survey are developing a joint laboratory to study air-sea interaction problems, to bring the expertise of both the meteorologist and the oceanographer to bear on the problems of the ocean-atmosphere interface. And the Weather Bureau and the Central Radio Propagation Laboratory are establishing a joint group at Boulder, Colorado, to work on problems of space weather forecasting.

Problem of Organization

"These are purely intradepartmental ventures. They are hesitant but hopeful steps. However, they are probably insufficient for the resolution of the dilemma that we in the United States face: How may we organize the environmental, scientific, and technological activities of the Federal Government so that we may have the benefits of integration--sound planning and management of programs, the best use of the science and technology dollar, an awareness of significant long-range problems, and an understanding of the relative value of the entire range of environmental scientific and technological activities - - without hampering the ability of an agency to perform its primary missions and without sacrificing the ability to concentrate on immediate crucial problems that dispersal gives us?"

"The time is now," Dr. White said in conclusion, "when we must confront and solve this problem if we are to realize the magnificent opportunities that lie ahead to provide mankind with an understanding of his natural physical environment, with the methodology and technology for its conservation and management, and with the comprehensive warning apparatus required to protect him against nature's calamities."

Address (continued)

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New MICs Posted At Six Facilities

Roy A. Dahl

Roy A. Dahl is the new MIC at the Shreveport, La., Airport Station. He served in the Air Force from 1942 to 1945. He attended the University of Utah and Duluth Junior College, and graduated from the University of Chicago in 1948. He came to the Weather Bureau in 1950, working first at the WBAN Charting Unit in Washington. He moved to Nashville for four years and then returned to Washington, where he worked in the Analysis Center. Most recently, Mr. Dahl has been stationed at Memphis.

David A. Horner

David A. Horner is the new MIC at the Columbia, Missouri, Weather Bureau Airport Station. Mr. Horner has been at the Columbia station since he joined the Bureau in 1955. He was named Principal Assistant there in 1960. For 11 months in 1962-1963 he was Acting MIC of the station as well as State Climatologist for Missouri. Mr. Horner, a weather officer during World War II, is a graduate of the University of Missouri and has attended Washington University (St. Louis), the University of Illinois, and the University of Maryland.

Torrance E. Kable

Torrance E. Kable has been appointed the new Meteorologist in Charge of the Weather Bureau Office in Pensacola, Florida. A meteorologist for the Army Air Corps from 1940 to 1948, Mr. Kable joined the Weather Bureau at Washington, D.C., in 1950. From 1951 to this year he was stationed in Shreveport, La. Mr. Kable is a graduate of Centenary College in Shreveport. He also has attended Pennsylvania and Oregon State Colleges.

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South Carolina's Governor Donald Russell congratulates Mrs. Hazel Tatro, the Bureau's first woman MIC, as Columbia MIC John Purvis looks on.
Columbia (S.C.) Record Photo

Mrs. Hazel Tatro Is First Woman MIC In the History of the Weather Bureau

Mrs. Hazel Tatro has been selected Meteorologist in Charge of WBAS Winston-Salem, North Carolina. She is the first woman in the history of the Weather Bureau to hold the position of MIC.

Receiving her initial experience as a weather forecaster in the WAVES during 1942-43, Mrs. Tatro entered the Bureau at Casper, Wyoming, in 1945. She was transferred to

Wilmington, North Carolina, as a radar operator in 1959.

After two years at Wilmington, Mrs. Tatro received a full-time Bureau scholarship for advanced courses in meteorology at Florida State University. On completion of her B.S. degree in meteorology, Mrs. Tatro was assigned to WBAS, Columbia, S.C.

Mrs. Tatro is married and the mother of five children.

DEATHS

Fred H. Mayeda

Fred H. Mayeda, a Meteorological Technician at WBAS Seattle-Tacoma died April 5. With the exception of a Polar Operations assignment from 1958 to 1960, his entire Bureau career was spent at the Airport Station in Seattle. He joined the Bureau in 1955. He is survived by his wife, Julie, a son, and a daughter. Their address is 2552 South Juneau, Seattle, Washington.

Fred Doloresco

Fred Doloresco, a former Meteorological Technician at DMO in Kansas City, died on May 1. Mr. Doloresco retired from the Weather Bureau on December 5, 1963. He joined the Bureau in Washington, D.C., in 1948 and moved to Kansas City in 1951. He is survived by a wife and three children. Mrs. Doloresco's address is 5052 North Euclid Street, Kansas City, Missouri.

Welcome to the Bureau

Baker, Philip L., Mathematician, CO
 Brizzi, Benjamin E., Lithographic Pressman, CO
 Conway, Wallace X., Exhibits Specialist, CO
 Evans, George P.H., Management Analyst, CO
 Frey, Carl L., Program Officer, CO
 Harper, Elizabeth C., Clerk-Typist, CO
 Hill, Gerald R., Clerk-Typist, CO
 Holleman, H. Yates, Electronic Engineer, CO
 Huson, John, Program Evaluation Officer, CO
 Littleton, George J., General Engineer, CO
 Norton, Wilbur C., Teletypist, CO
 Pickering, Harlan D., Operations Research Analyst, CO
 Thomas, William C.S., Management Technician, CO
 Tomei, Rosemary C., Secretary (Stenographer), CO
 Walker, Alma E., Clerk-Stenographer, CO
 Willis, Rebecca A., Clerk-Stenographer, East Lansing, Mich.
 Rockwood, Elizabeth B., Clerk-Stenographer, Grand Rapids
 Shafley, George T., Budget Analyst, CO

John C. Ballard

John C. Ballard has been appointed Meteorologist in Charge of the Weather Bureau Airport Station at Detroit's Metropolitan Airport. Since joining the Bureau at Peoria, Illinois, in 1927, Mr. Ballard worked at Springfield, Illinois; Fargo, North Dakota; New York City; Atlanta, Georgia (where he was MIC from 1947 to 1961); Honolulu; and the Central Office. Also, he completed special assignments in Korea and Brazil for the U.S. Agency for International Development. Mr. Ballard has a B.A. degree from George Washington University and an M.S. degree in meteorology from New York University.

Transfers

| | FROM | TO |
|---------------------------|------------------|----------------------|
| Beall, Eugene E. | Tampa, Fla. | CO |
| Black, Marvin G. | Kansas City | Honolulu |
| Blankenship, Bruce H. | Cold Bay, Alaska | Asheville |
| Carpenter, Claude E. | Kansas City | Springfield, Mo. |
| Coulter, Neil M. | Sheridan, Wyo. | Pueblo, Colo. |
| Derouin, Robert G. | Detroit | Chicago |
| DesRoches, Joseph H., Jr. | Flint, Mich. | Lansing, Mich. |
| Enbanks, Aubert D. | Montgomery, Ala. | Cold Bay, Alaska |
| Frazier, Robert | Muskegon, Mich. | Madison, Wisc. |
| Hertel, John W. | Truk, T.T. | Canton I. |
| Jenkins, Louis A. | Ft. Worth | Kansas City |
| Johnson, Douglas J. | Antarctica | Las Vegas |
| Katz, Lawrence G. | New York | Asheville |
| Kieffer, James G. | Chicago | Sterling, Va. |
| Lincoln, Zelta J. | Youngstown, O. | Akron |
| Lippert, Gordon | Detroit | Lincoln, Nebr. |
| Martin, John T. | Boston | New York |
| Mallory, Roger P., Jr. | Antarctica | Cold Bay, Alaska |
| McCann, Robert J. | Sterling, Va. | Atlantic City, N.J. |
| Palmer, Lester M. | Marcus I. | Honolulu |
| Perez, Francisco | Ft. Huachuca | Las Vegas |
| Pickering, Earl R., Jr. | Olympia, Wash. | Las Vegas |
| Poteat, Kenneth O. | Orlando, Fla. | Miami |
| Roberts, Charles L., Jr. | Antarctica | CO |
| Samuels, Charles B. | Los Angeles | Burbank, Calif. |
| Schmidtman, Richard W. | Eureka Sound | Mould Bay |
| Shaffer, Laurence G. | Kansas City | Goodland, Kansas |
| Siler, Richard K. | Honolulu | Suitland, Md. |
| Smith, James E. | New York | Honolulu |
| Spohn, Harry R. | Des Moines | Lincoln, Nebr. |
| Thomason, William J. | Burbank, Calif. | Seattle, Wash. |
| Troast, N. Lester, Jr. | Beckley, W.Va. | Wallops I. |
| Watanabe, Robert A. | Koror, T.T. | Wake I. |
| Williams, Ernest B. | Detroit | Houghton Lake, Mich. |

Matthew Lefkowitz

Matthew Lefkowitz is the new Meteorologist in Charge at the National Aviation Facilities Experiment Center in Atlantic City, New Jersey. Mr. Lefkowitz joined the Bureau at Bear Mountain, New York, in 1947. He had served in the Air Force from 1943 to 1946. He has been stationed at Youngstown, Ohio; Newark, New Jersey; and Washington, D.C. He studied at Pennsylvania State University and at Rutgers University.

Laurence G. Shaffer

Laurence G. Shaffer, the new Meteorologist in Charge of the Goodland, Kansas, Weather Bureau Airport Station, has been an Aviation Forecaster at Kansas City since 1961. Mr. Shaffer attended Kansas State College before joining the Air Force in 1943. During his wartime service, he was trained in meteorology at the University of Wisconsin and the University of Chicago and then served as a weather officer. He entered the Weather Bureau at Pendleton, Oregon, in 1956, and later worked at Seattle and Kansas City.

PAUL L. LASKIN

Paul L. Laskin is the Chief's Special Assistant for Legislative Planning.

Mr. Laskin, who comes to this newly created post from the White House, where he served as Counsel to the President's Advisory Commission on Narcotics and Drug Abuse, is a lawyer by profession and will be concerned with the legislative activities of the Weather Bureau.

He will review the basic laws governing the Bureau and will recommend needed changes, if any, in its statutory authority. He will also review legislation proposed outside the Weather Bureau that affects the Bureau. He is part of a three-man study team looking into the scientific, economic, and legal aspects of weather and climate control. He is also studying some of the broader problems of science and public policy--such as the organization of the sciences in the Government, the high cost of the sciences, and the proper role of the Government in providing meteorological services.

Mr. Laskin's presence will be felt throughout the Bureau as he brings to the organization's review of major problems an awareness of their legal implications.

Born in Boston in 1924, Mr. Laskin's education at Harvard College was interrupted in 1943 by World War II. He served with a signal service company in the India-Burma Theater. Upon discharge in 1946, he returned to Harvard and received an A.B. degree (magna cum laude) in history in 1948. He was elected to Phi Beta Kappa that year. Mr. Laskin then attended Yale Law School where he received an LL.B. degree in 1952.

After two years in private practice in Boston, Mr. Laskin began his Government career with the Office of the General

Counsel of the Department of the Navy.

In 1961 he was appointed Special Counsel of the Senate



Mr. Laskin

Subcommittee to Investigate Juvenile Delinquency, and shortly afterward became its Chief Counsel. During 1963 he was Counsel to the President's Advisory Commission on Narcotic and Drug Abuse.

Mr. Laskin is a member of the American and Federal Bar Associations. He is also a member of the Selden Society, a society devoted to the study of English legal history.

State Climatologist

For Nebraska Named

Richard E. Myers, former MIC at the WBO in Lincoln, Nebraska, has been named Nebraska State Climatologist. A University of Nebraska graduate, Mr. Myers joined the Bureau in Lincoln in 1940. He has worked for the Weather Bureau in Washington, D.C., Denver, Colorado, and Shannon Airport in Ireland. He was appointed MIC at the Weather Bureau Office in Lincoln in 1959.

which will combine both the recording functions of the AVCS unit and the direct broadcast capability of the APT system. The new camera, expected to be available by late 1966, will make possible the use of a single camera to meet all TV data requirements of TOS.

As in past weather satellite launches, NASA will orbit the spacecraft with three-stage, Thor-Delta rockets from Cape Kennedy, Florida. However, to attain the higher altitude polar orbit required for the TOS System, the thrust of the Thor will be supplemented by strapping three solid-propellant rockets to the Thor and using an improved Delta rocket.

After NASA has determined that the orbiting satellite is ready for operational use, the Weather Bureau will assume control of the satellite and supporting ground systems. Initially, the TOS System will utilize Command and Data Acquisition stations at Gilmore Creek, Alaska, and at Wallops Island, Virginia. Meteorological data from the spacecraft will be recorded on magnetic tape at the CDA stations and transmitted to the Weather Bureau's Data Processing and Analysis Facility at the National Weather Satellite Center. The information will be integrated with that obtained from conventional observations around the world and used in daily forecasts and analyses.

A number of new or improved subsystems are being studied for possible use with the TOS System. Among these are advanced infrared equipment to allow improved cloud-cover and cloud top measurements over the entire nighttime portion of the earth; and day and night TV by an image orthicon sensor. The pictures taken by a laboratory model of the image orthicon under moonlight conditions are comparable to those taken by a vidicon camera under daylight conditions.

RETIREMENTS

James V. Burchett

James V. Burchett, Meteorological Technician at WBAS Dodge City, Kansas, retired March 14, completing more than 19 years of Government service. He also worked at Garden City, Kansas, and North Platte, Nebraska. Mr. Burchett has a B.S. degree from Kansas State Teachers College. His address is 2305 - 6th Street, Dodge City, Kansas.

LeRoy F. Hafer

LeRoy F. Hafer, a Meteorological Technician with the Observations and Station Facilities Division's Upper Air Unit at the Central Office, retired April 11 after 37 years with the Weather Bureau. He joined

the Bureau in 1926 as a Minor Observer in Reading, Pennsylvania. He came to the Central Office in 1937. His address is 7232 15th Avenue, Takoma Park, Maryland 20012.

Eugene R. Iliff

Eugene R. Iliff, a Meteorological Technician at WBAS Sioux City, Iowa, retired May 9 after 33 years of Federal service. Mr. Iliff joined the Bureau as a Junior Observer at Sioux City in 1930. His address is 2725 Dupont Street, Sioux City, Iowa.

Zeal Borem

Zeal Borem, a Meteorological Technician at the Weather Bureau Office in Los Angeles, California, retired April 22 after 32 years of Bureau

service. Mr. Borem joined the Weather Bureau in 1932 as a Junior Observer in Phoenix, Arizona. He has also worked in Las Vegas, Nevada, and Flagstaff, Arizona. His address is 3826 East Blvd., Los Angeles, California 90066.

Mary A. Norris

Mary A. Norris, a Stock Control Clerk at the Central Office, retired May 8 after 25 years of Federal service. Miss Norris joined the Weather Bureau in 1941 as a Clerk-Typist at the CO. Her entire Bureau career was spent at the Washington office. Her address is 1505 North Ohio Street, Arlington, Virginia.

Nelson E. Spence

Nelson E. Spence, a Meteorologist at Houston, Texas, retired May 9 after 29 years of Federal service. He joined the Weather Bureau in 1936 as a Junior Observer at Asheville, North Carolina. Mr. Spence served with the Bureau at New York and Lake Charles, La., before moving to Houston in 1942. His address is 7110 Dillon Street, Houston, Texas.

Mildred H. Hurley

Mildred H. Hurley, a Clerk-Typist at the National Weather Records Center in Asheville, retired May 6 after 15 years of Federal service. She began her Government career with the Department of the Navy in 1941. She came to the Bureau's NWRC in 1958. Her address is 12-G Edgewood Knoll Apartments, Asheville, N.C.

Cora B. Williamson

Mrs. Cora B. Williamson, a Freight Rate Specialist at the Central Office, retired May 8 after 27 years of Federal service. Mrs. Williamson joined the Weather Bureau in 1942 as a Clerk-Typist. Her entire Bureau career has been spent at the Central Office. Her address is 1505 North Ohio Street, Arlington, Virginia.

Length of Service Awards

40-Year Awards

Dunn, Gordon E.
DMO Miami
Quattlebaum, B. Harold
WBAS Jacksonville

35-Year Awards

Brancato, George N.
WBAS St. Louis
Crowshaw, Arthur
Datac, CO
Lennahan, Charles
Datac, CO
Nichols, Roger C.
PWP, San Francisco
Skillman, Clarence E.
WBO Thomasville, Ga.

30-Year Awards

Bromberg, Samuel M.
WBFC Chicago
Erkens, Agnes
Budg., CO

25-Year Awards

Hardy, Albert V.
WBAS Raleigh, N.C.
Hoffman, Donald
Adm. Oprs., CO
Johnson, Milton G.
NWRC Asheville
Leong, Ah Kin
PSO Honolulu
Marshall, Hazel
NMS, CO
Moroni, Louise V.
WBAS Seattle-Tacoma
Pisano, Carmine J.
WBAS Pocatello
Stuart, Robert M.
WBAS Long Beach
Van Tassel, Edgar L.
WBAS Scottsbluff, Nebr.
Williams, Albert
Instr., CO

20-Year Awards

Barich, Vance P., Jr.
WBO Sexton Summit
Buchwald, Mortimer
NWRC Asheville
Campbell, Georgia
NWSC, CO
Chenault, Claudina M.
RAO Kansas City
Coggins, Dora P.
NWRC Asheville
Colby, Ralph H.
WBAS Fargo
Fimiani, Joseph
Adm. Oprs., CO
Granger, Raymond
WBAS Missoula
Gray, Eva Lou
NWRC Asheville
Hallingse, Francis M.
NWRC Asheville
Hamlin, William L.
WBAS Corpus Christi
Horner, Edith L.
DMO-WNA, Washington, D.C.
Jelesnianski, Chester
MR, CO
Johnson, Annie
Met. Res., CO
Jones, Johnie M.
NWRC Asheville
Lewis, Leanna
Adm. Oprs., CO
Macklin, Frances B.
WBAS San Francisco
Martin, Jessica
Instr., CO
Misrasi, Tess
PSO Honolulu
Monroe, Harold J., Jr.
WBO New Orleans
Moss, Alice
Adm. Oprs., CO
Mottaz, Constance
WA&P, CO

Putz, Peter George
WBAS Charleston, S.C.
Reynders, Donald E.
WBAS Raleigh
Smith, Hazel D.
NWRC Asheville
Stark, Loyal
NMC, CO
Strub, Joseph H., Jr.
WBAS Minneapolis
Taylor, James G.
WBAS Galveston, Tex.
Timeus, Robert H.
WBAS San Francisco
Turano, Salvatore
RAO New York
Uhl, Charles
Sys. Dev., CO
Wyett, Roy
Datac, CO
15-Year Awards
Faubion, Maurice H.
WBAS Boise
Fuge, John B.
WBAS New York
Hamada, Masaru
NMC, CO
Hurley, Mildred H.
NWRC Asheville
Langdon, Lillian
Clim., CO
Marshall, Marvin J.
WBAS St. Louis
McCann, Robert
Sys. Dev., CO
McIntyre, John
Sys. Dev., CO
McSwain, Raymond O.
NWRC Asheville
Murray, Robert L.
WBAS Missoula
Noble, Albert E.
PWP Seattle
Perkins, Leroy
NMC, CO

Bureau's Edwin Kessler Takes a Close Look To Report on Costa Rican Volcanic Activity

(Dr. Edwin Kessler, Director of the National Severe Storms Laboratory, visited Costa Rica in April to investigate the possibility of using weather radar in a volcano hazard warning system. Heavy rains on the volcano's slopes, which are now covered with volcanic ash, create a serious mud slide hazard. The following article is taken from Dr. Kessler's travel report.)

The volcano Irazu started recent eruptions with an explosion March 13, 1963, and has been active almost continuously since then. The volcano ejects no lava, but great quantities of pulverized rock (10,000,000 cubic yards, so far) called "ceniza" (ash), which has the same chemical composition as most rock and soil in the vicinity. Prevailing easterly winds spread the ash over the countryside. San Jose, 17 miles east of Irazu, has received ash to a total depth of about one inch (10,000 truckloads per square mile) since the start of eruptions. During the dry season (December-May), the ash rests on plant leaves to their great detriment.

City Flooded

During December 1963 with the last rain of the rainy season, there was a flood at Cartago, a town of 40,000 eight miles south of the peak. Two schools of thought exist with respect to the immediate cause; one says that a landslide temporarily blocked the Reventado River, which broke through the slide only after a great depth of water had massed behind the temporary dam. The second school maintains that unconsolidated ash on the slopes of the volcano was carried into the stream where, with the density of wet cement, it moved rapidly and irresistibly through the

narrow channels carrying boulders, trees, and all else before it. The river course bends above Cartago and the slope of the land decreases. The Reventado followed its normal course, but spread mud and boulders over the western section of the city, raising the general level of the land by about four and one half feet and encapsulating the buildings. Fortunately, only 10 deaths occurred.

Lookouts Posted

The rainy season begins in mid-May, and during the seven to nine months following its start, from 40 to 160 inches of rain may be expected on the slopes of Irazu. Several stations have been established and manned with soldiers to watch and report on the state of the rivers and quantity of rainfall

and to give early warnings of possible danger.

It is important to know that the population and economic centers of Costa Rica are situated in the vicinity of Irazu. In the United States, a calamity of comparable magnitude, relative to the size of the countries, would occur if there were a volcano suddenly between Washington and Baltimore.

When I woke in my hotel room on the morning of April 9, I was astonished to see that the window provided an excellent view of the volcano 17 miles to the east. The north side of the column of ejected material was sharply outlined against the sky and was clearly seen to be rising rapidly and turbulently. The south side was diffuse. A dense cloud

(continued on page 102)



Project leaders from the Central Office flew to Miami on March 30 for a two-day familiarization visit to the Weather Bureau's Research Flight Facility. The purpose of the trip was to give the project leaders a chance to inspect at first hand the equipment and personnel available to them through the RFF.

Volcano (continued)

like a cumulonimbus anvil drifted toward the southwest, while lower cumulus clouds unrelated to the volcano were observed to drift northwestward. By looking carefully, I could see that ceniza was falling like drizzle over San Jose. Within an hour after sunrise (behind the volcanic column), the north side of the column became diffuse. Within two hours it was virtually invisible in a general haze. This behavior was repeated on the 10th, although the winds were shifted slightly.

To visit the emergency rainfall observations posts and the summit of the volcano, I accompanied two employees of the Costa Rican Meteorological Service in a new vehicle with four-wheel drive.

Dust Devils

During the ascent of Irazu, we saw three large dust devils. These seemed unusual in that they occurred under cloudy skies (due in part to the volcanic eruption) and in that they occurred on sloping or irregular terrain. The only one close enough to permit observation of its rotation was anticyclonic. It was later confirmed to me that large dust devils are commonly observed on the mountain.

As we neared the peak it became dark indeed, and we encountered a thick ashfall, occasionally wet or mixed with rain so that it was necessary to use the windshield wipers. Within a mile of the summit, all vegetation is dead, and the darkness and continuous fall of ashes caused me to feel a bit apprehensive. At the top (11,000 feet), on the south side of the volcano was rainfall station #4, a small hut manned by two soldiers. A rain gage was covered with a cloth, to be removed during hard rains.

After my two companions explained who we were, one of the soldiers lifted a barrier, and we moved on for another 150

feet. Here was a sloping wooden tunnel in which one could stand and watch the volcano without experiencing ashes.

'Swishing,boiling...'

From Station #4 and from the observing tunnel the volcano was clearly audible, though not generally loud. The sound combined sensations of swishing, boiling, and newspaper-crumpling. Every 5 or 10 minutes there would be a series of reports, like artillery fire. Rocks would fly 1,000 feet or so above the crater, and enormous clouds of ash and vapor boiled upward incredibly, at speeds which I roughly estimate to have been 15,000 or 20,000 feet per minute.

I noticed that at the height of an eruption the ashfall would greatly diminish, while the wind would blow gently toward the rising column. After a while, the cloud spreading overhead would become diffuse, the wind would blow gently outward from the crater, and ashes occasionally lumped into a 1- or 2-mm. mudball would fall thickly.

At the Edge

After watching this 1000 feet back from the edge of the crater, the driver asked me if I wished to go to the edge. At first I thought he was joking, but accepted his assurances that we would be safe. We walked 10 minutes in the gloom through falling ashes and over a plain of ashes with scattered boulders, arriving finally at El Mirador ("The Lookout"), a building now wrecked, abandoned, and half covered with ash. From this point, one could look into two craters. The one on the right (east) contained a lake; on the left was the volcano, and the col separating the two was about 300 feet below us. Aside from the volcano itself, the most frightening phenomenon was the electric field, obviously related to charges in the cloud above us and literally hair raising. I could hear point discharge from

myself. I repeatedly asked my companion if there was danger of our being struck by lightning, and he repeated that no one had been struck so far. At any rate, I had made the decision to be as brave (or as foolish) as my guide. Although the electric field was great and illumination low, I did not observe lightning. Possibly there was some, but it was obscured by the thick clouds. Some of the noises could have been thunder--it was impossible for me to tell. (I could see no lightning in the volcano cloud at night from San Jose, although lightning was occasionally visible in other clouds. However, I understand that electric discharges can be seen in the volcano at night from Post #4.)

Down the Mountain

After an hour we left the volcano, stopping on the way down at observing post #3 and at the Cartago communications center and flood damage area. On arrival in San Jose, the air was very hazy due to the continuous dustfall.

The presence of the active volcano Irazu in Costa Rica makes that land of special interest to meteorologists. Among the volcano-connected topics which might be profitably studied there are the following:

- a) convection and entrainment associated with the eruptions;
- b) associations among winds, particle sizes, and fallout concentrations;
- c) diffusion of ash and gases;
- d) electric fields associated with convection;
- e) dust devils and possible influence of the eruption on their distribution and intensity;
- f) rainfall-volcano interactions; and
- g) in addition, there are numerous interesting meteorological problems of the tropics unrelated to the volcano; rainfall-runoff relationships should be especially noted.



Meteorological Readings

Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information, see TOPICS, May 1957. When submitting answer cards, please mark envelope in lower left corner: "Meteorological Readings".

Assignment LXXI: "Climatology of Damaging Lightning in Illinois," by Stanley A. Changnon, Jr.; and "Hailstorms in Wisconsin," by Burley, Pflieger and Wang. The first five questions are from the first article, and the last five from the second. Both articles are found in the Monthly Weather Review, Vol. 92, No. 3 (March 1964).

About the assignment: These articles deal with damaging occurrences in severe convective-type weather.

Col. 61 Figure 1 shows a minimum in the Southeast section and this means that in this section:

1. there was a minimum of damaging lightning occurrences per unit area
2. there was a minimum number of occurrences during the period of study
3. the observational network was too sparse to get a good count
4. none of the above.

Col. 62 Mark all true statements:

1. On a percentage of population basis more people were killed by lightning in rural areas than in urban areas.
2. Lightning caused more structural damage per unit area in urban than in rural areas.
3. Schools in small towns were hit by lightning less often than other structures.
4. Fire was rarely ever a contributing factor in structural

damage by lightning.

Col. 63 The two months of highest lightning damage in Illinois do not coincide with the two months of greatest thunderstorm frequency. This is possibly due to the fact that:

1. thunderstorms in May and June usually occur with squall-lines
2. thunderstorms in July and August are less severe but bases of clouds are lower
3. the freezing level is generally lower in July and August
4. the presence of warm moist tropical air is at a maximum in July and August.

Col. 64 In Illinois damaging lightning occurred most frequently:

1. from 1500 to 1800 CST
2. near sundown
3. from 1300 to 1600 CST
4. in urban areas.

Col. 65 The number of damaging lightning occurrences in each section was normalized to an area-population factor by:

1. treating Illinois as if the population were evenly distributed
2. dividing total number of occurrences by the product of the area in square miles and the population and multiplying by 2,000,000
3. taking into account the number of people per structure
4. none of the above.

Col. 66 Most severe thunderstorms occurred:

1. between 1400 and 1800 CST and in the months of June through September
2. in the northern portions of Wisconsin
3. between 1400 and 1900 CST and mid-May to mid-August
4. at a time when the katabatic effect is at its greatest.

Col. 67 The authors state that most thunderstorms are reported by observers, whereas

many hailstorms are not, because:

1. thunderstorms can be heard at a distance of at least 10 miles under favorable conditions
2. hail is reported only when it occurs at or near the station
3. thunderstorms last longer than hailstorms
4. all of the above.

Col. 68 The most frequent duration of hailstorms in Wisconsin is:

1. 5 minutes
2. about 10 minutes
3. varies markedly from one part of the state to another
4. depends on the associated type of thunderstorm.

Col. 69 Mark all true statements:

1. No station in Milwaukee averaged more than 3.8 hailstones per year for the period studied.
2. The most frequent hailstorm duration at Milwaukee was 5 minutes.
3. The ratio of hail days to thunderstorm days is highest in early spring and late autumn.
4. This study also included soft hail.

Col. 70 The minimum of hailstorm occurrence in the northeast portion of the state is probably due to:

1. more stable air prevalent in this section
2. katabatic wind effect from the Northern Upland
3. upwelling cold water in Lake Michigan and associated lake breezes
4. all or a combination of the above.

Meteorological Readings will be discontinued after Lesson LXXII, which will appear in July TOPICS. Answer cards for current or past lessons will be accepted until October 1, 1964.

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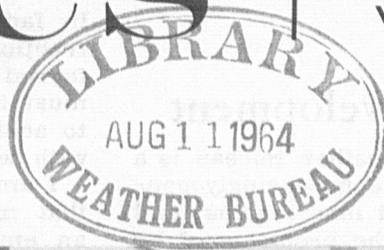
TOPICS, the official Weather Bureau employee magazine, is published monthly to inform all employees about Bureau activities and programs. Articles or comments by Bureau employees are invited. Inquiries and requests for permission to reprint or quote from material contained in TOPICS should be sent to the Office of Public Information, U.S. Weather Bureau, Washington, D.C. 20235.

TOPICS

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NO. 7



UNITED STATES DEPARTMENT OF COMMERCE • WEATHER BUREAU

Mobility and Development

That the United States Weather Bureau is a unique organization has become increasingly manifest to me during the past nine months, as I have come to grapple with the problems of its organization and as I have become familiar with its programs and services. I have been deeply impressed by the farflung nature of its operations, extending as they do from the remote islands of the Pacific to the wastes of the Antarctic and Arctic. I am deeply conscious that it must provide observations and services around the clock.

I have been particularly struck by the Bureau's growing need for alert, imaginative people--at all levels and in all areas of activity--to develop and operate its facilities and services and to take on the tasks of the future. They must be people with broad experience, people who have been exposed to different kinds of problems in different parts of the country, people who have gained a broad view of the needs and the problems of the Bureau.

There are many ways in which an employee can broaden his experience and become more valuable to the Weather Bureau. With this in mind, I am establishing a new career development program, which will be announced during the next few months. I hope that it will aid each of you in achieving his fullest career potential in our remarkable organization.

I would like at this time to emphasize one very important and essential aspect of personal growth--mobility. By mobility, I mean a willingness to accept new assignments in different areas of activity, a desire to become familiar with the wide variety of problems that now confront the Bureau. I think we must now begin to regard the transfer of personnel within our organization as a necessity of the service. It is the means by which those who wish to grow within the Bureau may broaden their experience and their knowledge of its structure, activities, and problems. And it is the means by which we may ensure that our Regional Offices are adequately staffed to meet the enlargement of their responsibilities under the new organizational structure of the Bureau.

Over the years ahead both our Central Office and our field personnel must expect to move about within our organization more frequently than has been the custom in the past. There will not be a large-scale shifting of personnel.

In fact, it is my anticipation that only a small fraction of the Bureau's personnel will be transferred in any given year. But I think that we must increasingly emphasize mobility if we are to achieve a well-rounded, flexible organization with deep experience.

I am fully conscious of the personal problems that may be created where a transfer requires an employee to move his family to a new city. I have faced them myself. I can assure you that no transfer will be made capriciously and that there will be consultation with the employee affected in the planning of any transfer. The Bureau will make every effort to minimize personal inconvenience and personal difficulties.

R.M.W.

Pilot Briefing Logs

Since the first of June, field stations have been keeping daily logs of all pilot briefings. These records are needed to provide information required by the Civil Aeronautics Board for aviation safety studies, investigations, and proceedings. Without such records, there often is no way to determine whether a flight had adequate weather information.

The consequences of this added record-keeping were considered carefully before the program began. For three months, the procedure was tested at fourteen stations. We were pleasantly surprised with the test reception and with the information the test provided, from both operational and management standpoints.

Before beginning the program various methods of keeping briefing records were studied to determine which would add the least to the station workload and still provide the required information. As a result, a very simple form was devised, so that a minimum of writing is required and the briefer can simply check the appropriate box to indicate the type of briefing, type of flight, and weather problems.

A few people have asked why we don't record the briefings on tape. Economic considerations--and legal problems in the case of telephone briefings--prevent the use of tape recorders at this time.

While the added paper work may seem burdensome to busy pilot briefers, I am convinced that this program will benefit the Weather Bureau as well as provide the information required by CAB. The records will be helpful in program planning and for evaluating and improving the quality of our aviation services.

I want to thank all of you who have added this new duty to an already heavy load.

Robert H. Simpson

On the cover...

Dr. White (at center) and a number of Bureau representatives were in Geneva for the World Meteorological Organization Executive Committee's sixteenth session. See page 108 for the story.

Topigrams

July-August 1964

Dr. Jerome Spar, Professor of Meteorology and Oceanography at New York University, has been named Director of Meteorological Research for the Weather Bureau. "Dr. Spar is one of the world's leading atmospheric research scientists," Dr. White said in announcing the appointment. "We are most fortunate in obtaining his services."

Secretary Luther H. Hodges has asked all Commerce bureau and agency heads to ensure that Government information and education activities are available to everyone on an equal basis, in accordance with established policy. "No official of this Department," Secretary Hodges said, "should participate in conferences or speak before audiences where any racial group has been segregated or excluded from the meeting, from any of the facilities of the conferences, or from membership in the group. Requests received for speakers or for Federal participation under circumstances where segregation may be practiced require specific inquiry to be made as to the practices of the group before acceptance is given."

Phase II of the Bureau reorganization, describing functions, responsibilities, and staff down to the division level, was approved by Dr. White on July 17. The actions taken will be reported in the next issue of TOPICS.

Richard D. Tarble, Hydrologist in Charge of the Sacramento, California, River Forecast Center, and Walter Davis, of WBAS, Miami, are in Costa Rica on a WMO technical assistance mission. The mission's purpose is to establish a system for warning of potential avalanches, which develop when heavy rains fall on hillsides laden with ashes from the volcano Irazu. (See TOPICS, June 1964, page 101.)

Areas of responsibility for hurricane aircraft reconnaissance in the Atlantic have been changed this year. The Air Force will investigate incipient and existing hurricanes in the Gulf of Mexico, in the northwest Caribbean, and along the Atlantic coast to about 500 miles offshore. The Navy will provide reconnaissance farther out in the Atlantic and Caribbean.

The two Weather Bureau Marine Automatic Meteorological Observing Stations (MAMOS) are afloat and undergoing tests at Galveston, Texas. They will be moved to their fixed position in the Gulf of Mexico during the latter part of August.

The Weather Bureau and Northwest Airlines are undertaking a cooperative study of pilot control of jet aircraft flying in turbulence. The airline will operate a specially instrumented jet in the vicinity of Bureau WSR-57's at Minneapolis and Des Moines. Special devices for data collection and radarscope photography will be installed on the Bureau radars.

TIROS VII was one year old on June 19 and TIROS VIII passed the six-month mark two days later.



S. Fred Singer, Director of the National Weather Satellite Center, and Gordon D. Cartwright, Chief of the Office of International Meteorological Plans, at the WMO Executive Committee meeting.

US-USSR To Exchange Weather Information By End of 1964

Weather Bureau representatives took part in the recent U.S. - U.S.S.R. discussions in Geneva on peaceful use of outer space. Agreement was reached on the information to be exchanged by way of a direct Washington - Moscow weather communications link.

In the third quarter of 1964, a duplex 24-hour communications link will be established between the World Weather Centers at Moscow and Washington. Routed from Moscow to Washington by way of Warsaw, Berlin, Frankfurt, and London, the link will allow transmission of telegraphy, photofacsimile or document facsimile information in both directions. Voice communications for purposes of coordination will also be possible.

Weather satellite data will have first priority on the line when they are available from both countries. The Soviet Union expects to have a weather satellite in operation by early 1965.

Other information to be exchanged will include upper-air data, surface synoptic weather reports, and facsimile charts (covering the entire Northern Hemisphere whenever possible).

Costs of installation and maintenance will be shared equally by the United States and the U.S.S.R. Any other weather service interested in having access to the link on a receive-only basis may make a proportional contribution to the total expenses.

lished by the Fourth Congress for the four-year period 1964-1967, with national contributions on the same proportional basis as those to the normal WMO budget. The fund is not to replace or compete with existing

(continued on page 117)

WMO Executive Committee Meets, Discusses World Weather Watch

The Executive Committee of the World Meteorological Organization held its sixteenth session at Geneva, Switzerland, from May 26 to June 12.

Accompanying Dr. White as advisers and assistants were G.D. Cartwright, Mary Ellis, Paul H. Kutschenreuter, Dr. Frederick G. Shuman, and Dr. S. Fred Singer. Dr. George P. Cressman, Director of National Meteorological Services, attended the meetings in his capacity as Chairman of the WMO Advisory Committee and President of the WMO Commission for Aerology.

The Committee approved action taken by the Secretary-General to appoint two United States experts as members of the technical secretariat staff. Dr. Gerald L. Barger, Director of the National Weather Records Center, has been named Chief of the Planning Unit, and George Kroneback of the National Meteorological Center has been offered a post in the Applied

Meteorology Section of the Technical Division.

Among the most important actions taken by the Executive Committee were approval of a new development fund and agreement to undertake a long-term planning study in preparation for the World Weather Watch.

The new development fund is to be spent for improvement of facilities, for education and training, and for surveys and studies in connection with the World Weather System. Its purpose is to ensure full use of all modern observing techniques and telecommunications devices. Improvement of national meteorological services and training of scientists and technicians under the new fund will pave the way toward completion of the World Weather Watch.

The Executive Committee drew up the plan of operation for the new development fund of one and a half million dollars estab-

Dr. Reichelderfer Awarded WMO Prize

Dr. F.W. Reichelderfer, former Chief of the Bureau and first president of the World Meteorological Organization, was selected by the WMO Executive Committee to receive the ninth International Meteorological Organization prize.

Recognized for his long and distinguished services to world meteorology, Dr. Reichelderfer is the third American to receive the IMO prize, which consists of a gold medal, a certificate, and a cash award.

The other Americans who received the prize were the late Professor C.-G. Rossby (1957) and Professor Jacob Bjerknes (1959).

Established in 1956, the prize is awarded annually to the individual who has "both scientific eminence and a record of work in the field of international meteorology." Members of the WMO Executive Committee are not eligible.

TOPICS' Satellite Photo Mystifies Many Readers

The number of inquiries we have received concerning the picture on page 91 of the June issue of TOPICS prompts us to assure our readers that the photo's caption is not to be taken seriously. The photo, of course, was not taken from an orbiting satellite. The picture is the result of a ground calibration test of a TIROS camera. The caption writer's whimsical reference to "extreme perigee" (which, in a sense, is true enough), and the picture's proximity to the serious story on satellites on the same page, led many readers to believe that either space cameras suddenly had been vastly improved or that TOPICS' editors had been hoaxed. Neither is the case. TOPICS took a step into the realm of humor...and fell flat.

NWRC's Gerald Barger to Serve As Chief of WMO Planning Unit

Dr. Gerald L. Barger, Director of the National Weather Records Center, has been granted leave to serve as Chief of the World Meteorological Organization's new Planning Unit in Geneva.

The Planning Unit, under Dr. Barger, will be the focal group in the WMO responsible for the development of the detailed global plan for the World Weather Watch.

Dr. Barger has been Director at the NWRC in Asheville since 1961. He joined the Bureau as a Meteorologist in 1948 at the Weather Bureau Unit at Iowa State University. He was made Area Climatologist in 1952, remaining at Ames, Iowa, until 1958 when he moved to Asheville as Deputy Director of the NWRC.

A graduate of Simpson College with Master's and Doctor's degrees from Iowa State University and a Master's degree from Harvard, Dr. Barger was engaged in research in the agronomy department at Iowa State before joining the

Weather Bureau. From 1942 to 1946, he served in the Air Force as a pilot and weather officer.



Dr. Barger

Dr. Barger has published a number of articles on agriculture and climatology; he has most recently co-authored the most comprehensive Bibliography of Agricultural Meteorology ever compiled.

Pilot-to-Forecaster Service Test Ends, FAA Evaluation Studies Near Completion

The Pilot-to-Forecaster Service (PTFS) test at Kansas City, Missouri, has been terminated after three years of operation, and the functions performed by the PTFS staff at Leesburg, Virginia, have been transferred to the FAWS unit at Washington National Airport.

The test program supported by the Federal Aviation Agency, was conducted by the Weather Bureau. Pilots in flight were able to contact Weather Bureau forecasters by airborne radio directly or by relay through selected FAA Flight Service Stations for the latest aviation weather information and forecasts.

An expanded FAWS staff at Washington National Airport will attempt to provide the same services 12 hours daily during the peak operating period. At other times, emergency assistance will be available on request. This experiment will be conducted by the Weather Bureau to determine whether enlarged FAWS units could provide adequate services to pilots in flight.

The FAA announced that it is now completing an evaluation of the Pilot-to-Forecaster Service data and will be studying the results to determine the advisability of including the service in the national airspace system.



Listening with interest to Russian meteorologists are, left to right, Dr. Shuman, Mr. Ostapoff, Dr. Battan, and Yuri Pashkov, who accompanied the delegation throughout the entire trip.

U.S. Meteorologists Inspect Soviet Meteorological Stations

Seven U.S. meteorologists, including, Dr. White and three Weather Bureau scientists, toured meteorological facilities in the Soviet Union during three weeks in May, as part of the cultural-scientific exchange between the U.S.A. and U.S.S.R. Six meteorologists from the Soviet Union visited this country in March 1963.

Weather Bureau members accompanying Dr. White on the trip were Dr. Frederick Shuman, Max Kohler, and Feodor Ostapoff. Also taking the tour were Dr. Louis J. Battan (Associate Director, Institute of Atmospheric Physics, University of Arizona), Dr. Verner E. Suomi (Professor of Meteorology, University of Wisconsin), and Dr. Philip Thompson (President of the AMS and Associate Director of the National Center for Atmospheric Research, Boulder, Colorado).

Arriving in Moscow on May 10, the U.S. delegation visited

the Main Administration of the Hydrometeorological Service during the next several days. This Service is responsible for administering a nation-wide network of hydrometeorological stations. In addition, the Hydrometeorological Service takes the lead in hydrological, meteorological, and oceanographic research and development and includes most of the important meteorological research institutes in the country. Academician Fedorov, Director of the Hydrometeorological Service, welcomed the delegation after his return from an inspection tour of the Zeravshan mountain region of Central Asia, the scene of the widely publicized landslide which dammed the Zeravshan River and endangered the ancient city of Samarkand with flooding.

The delegation visited the World Meteorological Center, which was established in response to the proposed World

Weather Watch and recommendations of the World Meteorological Organization, and the Central Institute of Forecasts. (The combined functions of the Center and Institute are similar to our National Meteorological Center in both organization and services.) All upper-air forecasts from the Central Institute are numerical products. Dr. Shuman noted that the numerical forecast models had fewer grid points than those used at NMC and that the forecast period was 24 hours.

Another point of interest in Moscow was the Economic and Trade Exposition, which devoted an entire building to the subjects of meteorology, hydrology, and oceanography, including displays of books and instruments. The group also toured Moscow University, the Institute of Oceanology, and the State Institute of Oceanography. (The Director of the Hydrometeorological Service admitted that the distinction between "oceanography" and "oceanology" is not always clear, but he pointed out that the activities of both Institutes are coordinated by the "Scientific Council of Oceanography and Oceanology.")

The delegation traveled some 60 miles from Moscow to Obninsk for a tour of the Institute of Applied Geophysics, which is very active in research in the fields of weather modification, low-level atmospheric studies, mechanics of aerosol in clouds, agrometeorology, and air-sea interaction. This Institute conducts experiments in weather modification and reports that it has successfully cleared an area 100 kilometers in diameter of low-lying clouds and fog for a period of 12 hours, thus dropping the night-time ground temperatures by as much as ten degrees Celsius. Also, in the area of agrometeorology, the Institute is concerned with the effects of drought, freezing,

(continued on next page)

and fertilizer on crops.

The next city on the delegation's itinerary was Leningrad, where they visited the Main Geophysical Institute. This Institute is responsible for operation of a network of 200 radiation stations over the Soviet Union and for the network of 4,500 surface meteorological stations. It is the main institute concerned with climatology, dynamic meteorology, and instrumentation. Among the principal research areas are bio-climatology, heat balance, theory and application of numerical methods to climate, diffusion, and air pollution. A tour of the Institute's laboratory facilities (on the outskirts of Leningrad) included inspection of mobile radar, rawinsonde, and instruments for measuring electrical properties of clouds and atmosphere.

Another tour in Leningrad included the Institute for Atmospheric Physics, at Leningrad State University, where Dr. Kondratiev is conducting studies of atmospheric radiation. Also visited were the Arctic and Antarctic Institute, which was recently transferred into the Hydrometeorological Service from the Ministry of Transport, and the Leningrad Hydrometeorological Institute,



At the Valdai Hydrological Experiment Station are, left to right, Dr. Kuznetsov, the station's director; Dr. Kupriyanov, its former director; Dr. Suomi; Mr. Kohler; Dr. Battan; Dr. White; and Russian scientists.



The scientists visited the lake station at Valdai where evaporation measurements are made.

one of two educational institutions on the university level to prepare specialists in meteorology, hydrology, and oceanography. The Leningrad Institute reports that it has four or five times as many applicants as it can accept and that almost 50 percent of its students are women.

Among other disciplines, hy-

drology is emphasized by the Soviet Union, as indicated by the visit to the State Hydrological Institute at Leningrad. This Institute provides technical supervision of all hydrological networks, including the 6,000 principal hydrologic stations which observe water level, discharge, sediment transport, chemical quality, water temperature, ice characteristics, snowpack and snow cover, and precipitation. Almost 3,000 additional stations take special observations. In the closely related field of agrometeorology, a Soviet scientist estimates that three-fourth's of the world's swamps are in the U.S.S.R., so reclamation of these areas for agriculture is a high priority project of the Institute.

Returning to Moscow by bus, the group stopped at Valdai (about half-way between Leningrad and Moscow) for a visit to the Hydrological Experiment Station. This experimental area has a wide variety of soil and geological conditions, thus re-

(continued on page 113)

Bureau, C&GS Establish Joint Sea-Air Interaction Laboratory

The Weather Bureau and the Coast and Geodetic Survey are establishing a joint Sea-Air Interaction Laboratory, called SAIL, to conduct and sponsor research on the little-known boundary between the atmosphere and the oceans. When a director and staff for the Laboratory have been recruited, the Department's research program in air-sea interaction will be expanded and new projects developed.

In another new development in the same field, the Department of Commerce has been assigned responsibility for coordinating all Federal research in air-sea interaction and for preparing a comprehensive Federal program plan.

Efforts to coordinate Federal air-sea interaction programs began more than a year ago when an ad hoc committee--appointed by the Interagency Committee on Oceanography (ICO) and the Interdepartmental Committee for Atmospheric Sciences (ICAS)--recommended that effective coordination of Government air-sea interaction research programs

should be established and that this responsibility should be assigned to the Department of Commerce. The recommendation was accepted by the Federal Council for Science and Technology.

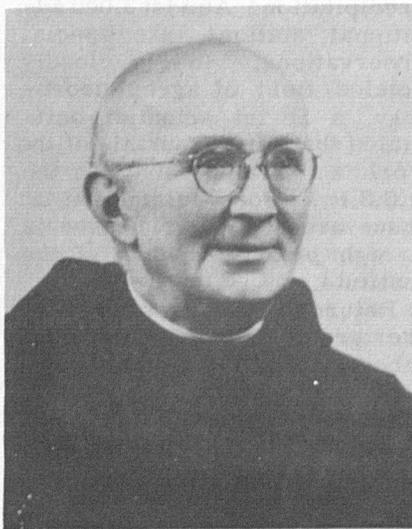
A staff within the Department of Commerce will prepare a Federal plan, which will consist of individual agencies' programs plus the additional studies needed to complete a well-balanced research effort. Departments and agencies will continue to be responsible for planning, funding, and managing their own portions of the program. The plan will be reviewed by a recently established Joint ICO-ICAS Air-Sea Interaction Panel, which is chaired by a Department of Commerce representative. Dr. Frank Gifford of the Weather Bureau is the present chairman. After approval by the Panel, the plan must also be reviewed by the Interagency Committee on Oceanography, the Interdepartmental Committee for Atmospheric Sciences, and the Federal Council for Science and Technology.

Gleiter Is Appointed Economy Coordinator For Weather Bureau

T.P. Gleiter, Special Assistant for Resource Programing, has been designated Economy Coordinator for the Weather Bureau, to be responsible for developing new improvement projects, introducing new techniques, and reporting progress in economy programs to the Department of Commerce.

Appointment of an economy coordinator is part of the President's continuing drive for greater efficiency in Government. "In our efforts to increase efficiency and economy in the Executive branch," President Johnson told a recent Cabinet meeting, "we ought to be as unsatisfied as a little boy's appetite. We should never relax our efforts to give the people a dollar's worth of value for a dollar spent."

In May, the President presented heads of Federal agencies with a plan for achieving greater productivity in Government operations. Nine points included in the President's plan were: (1) Executive-branch action to facilitate Congressional consideration of appropriation measures at the earliest possible date; (2) continued efforts to weed out unnecessary publications; (3) prompt attention and response to General Accounting Office and Congressional Committee reports on executive operations; (4) continued efforts to hold down Federal employment; (5) renewed efforts to set new targets below budget ceilings; (6) new ways to increase productivity; (7) reduction in the number of questionnaires and reports; (8) additional economies in procurement and supply; and (9) efforts to get 1966 budget requests to bedrock requirements.



Father Hess

Father Adelhelm Hess Dies

Father Adelhelm Hess, cooperative observer at Conception, Missouri, for 70 years, died June 27. Born in Switzerland in 1874, Father Hess came to the Benedictine Abbey at Conception in 1892 and began service as a cooperative observer two years later.

In 1954, President Eisenhower sent Father Hess a letter of commendation for his devoted cooperative weather service, which then totaled 60 years. At that time, Father Hess commented, "My service has been very little, only spending a few minutes a day for these many years."

Soviet Stations *(continued)*

producing a climate representative of a large area. Extensive facilities at the station include a precipitation and snow survey network, an evaporation experimental area, a radar installation, and a large raft station located on a lake.

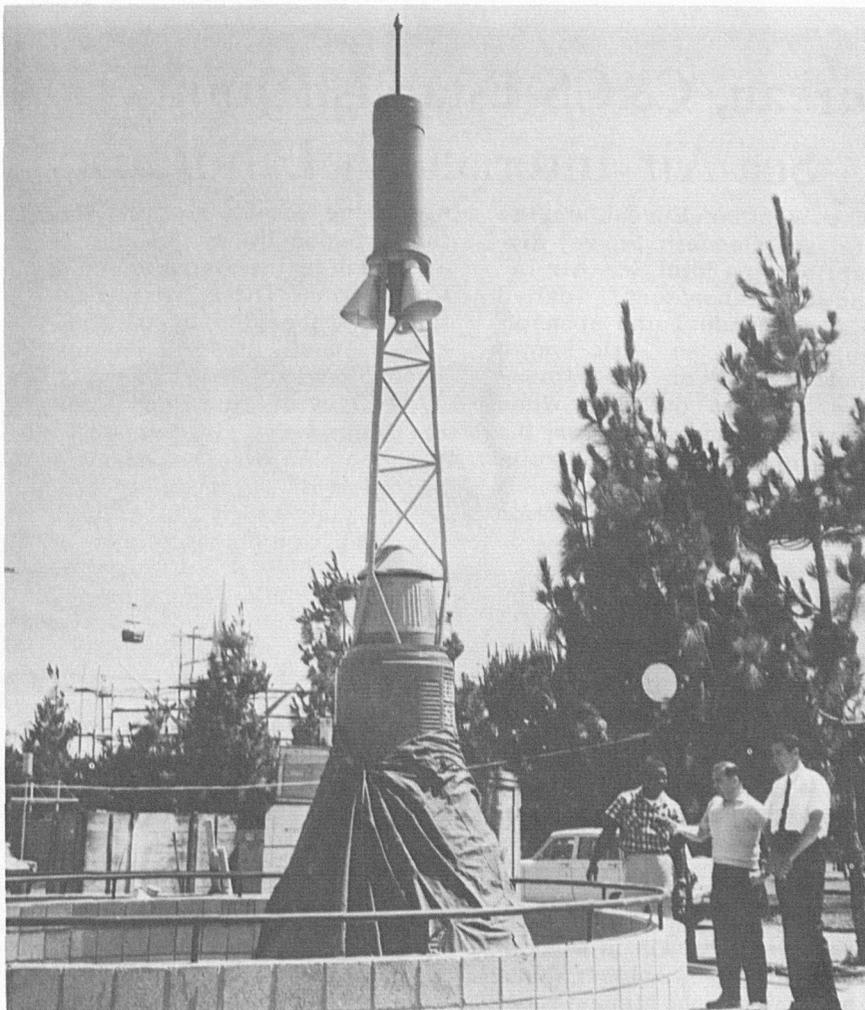
The delegation took an airplane next to Kiev, where they visited the Ukrainian Hydrometeorological Service. This main office prepares general and agricultural forecasts for the entire Republic of Ukraine. Of particular interest was a closed circuit television installed in a booth on the street in front of the office, so that by pressing a button a passerby may view weather charts on display and hear explanations of the current weather picture.

Another tour included the Ukrainian Scientific Research Hydrometeorological Institute at Kiev, which is one of five research institutes in the Soviet Union concentrating on regional problems. The five departments within this Institute cover agrometeorology, weather modification, hydrology, design, and experimental research.

After another trip by plane, the delegation visited the Marine Hydrometeorological Station at Yalta. Responsible for observations over a 500-square mile area of the Black Sea near Yalta, this station records water temperature, speed and direction of flow, and water chemistry, and processes its own data and makes chemical analyses.

An interesting part of the Soviet tour was an excursion to a state farm (Sovkhoz) near Piatyorsk, where a Hail Expedition of the State Alpine Research Institute is organized for the summer months. Hail suppression experiments were begun in 1957, and Soviet scientists showed charts which they say indicate that hail has been

(continued on page 114)



Dr. White and U.S. exhibit officials inspect the Mercury spacecraft before the opening of the trade fair at Tel Aviv.

Dr. White Opens U.S. Exhibit At Tel Aviv Trade Fair in June

After attending the WMO Executive Committee meetings in Geneva, Dr. White flew to Israel, where he represented the Secretary of Commerce at the inauguration of the U.S. Exhibit in the Tel Aviv International Trade Fair. The theme of the exhibit, which opened on June 16, was "Electronics U.S.A." The items on display included a full-scale model of the Mercury spacecraft and two communications satellites--Telstar and Relay II.

Tel Aviv Mayor Mordechai

Namir presented Dr. White with a key to the city and a gold medallion. On June 17, Dr. White was guest of honor at a reception in the U.S. Pavilion attended by more than 400 leaders of science, industry, and government in Israel. He was the main speaker at a luncheon of the Israel-America Chamber of Commerce and Industry and also laid the cornerstone of the Chamber's new building. Dr. White's busy schedule included an informal visit to the Israeli Weather Service.



Donald T. Rowland, 1963 Practice Forecast Program winner, at work at WBAS Port Arthur, Texas.

Donald Rowland Sets Record For Practice Forecast Program

Winner of the 1963 Practice Forecast Program is Donald T. Rowland (Port Arthur, Texas), who achieved the highest record ever made in the program.

Mr. Rowland had the best average in precipitation ever attained in the program (93 per cent), and his average temperature error was only 2.8 degrees. His percentage score in the program was .78, surpassing the highest previous winning score of 1.24 (1959 program). He was first in each of the three zones (eastern, midwestern, western). In the 1962 program Mr. Rowland placed eighth.

William R. Chassee (Grand Rapids, Michigan) took second place in the 1963 program. Finishing first in the previous year's competition, he actually improved his scores for both temperature and precipitation in 1963, but Mr. Rowland's exceptional rating topped the list.

The three next highest participants for 1963 were (in order):

Robert Allen (Yakima, Washington), James -Yates (Des Moines, Iowa), and Kenneth Bryan (Atlanta, Georgia). A total of 17 field stations had more than one employee on the Practice Forecast honor roll (participants in the first three deciles).

Official forecasters attained their highest rank to date in the program, with only 14 practice forecasters exceeding the average for the official forecasters in 1963.

Forecaster Commended, Top Alaskan Competitor

Irving Borjeson (WBAS Fairbanks, Alaska) has received a letter of commendation for his participation in the Practice Forecast Program in Region V. Active in the program for almost the entire two years that it has been conducted, he has maintained an average which placed him at the top of all competitors in 1963 and 1962.

Soviet Stations (continued)

substantially reduced in the experimental area. The Soviets estimated that a savings of one million rubles last year in this single area resulted from an expenditure of thirty thousand rubles.

The Alpine Geophysical Institute at Nalchik, where the group went by bus upon leaving Piatygorsk, is mainly concerned with cloud physics as related to hail suppression. After seeing these facilities, the delegation traveled over the Caucasus Mountains in a bus, arriving in Tbilisi later than expected because of delays resulting from mud avalanches at several points across the road and a severe fog followed by rain further slowing travel.

The next day, the delegation toured the Georgian Hydrometeorological Service offices at Tbilisi. Since hail is a serious problem in Georgia also, the Service has a network of about 150 stations where special hail observations are made. The Soviet hail gage is similar to our standard rain gage, except that a sloping screen diverts hail into a separate receptacle for visual observation.

Also at Tbilisi, the group visited the Transcaucasian Research Hydrometeorological Institute, another of the five regional research institutes under the Moscow main administration. Principal areas of research at this Institute include aerology, hydrology, agrometeorology, cloud physics, and hail suppression.

On returning to Moscow in the late morning of May 27, the delegation made a quick visit to the Institute of Atmospheric Physics. Before departing on May 29, they spent some time sightseeing and shopping.

The U.S. scientists on the tour express pleasure at their reception in the Soviet Union. Dr. Shuman notes, "Everyone was friendly and helpful, and we received complete, frank answers to all that was asked."

RETIREMENTS

E. Wilbur McCollum

E. Wilbur McCollum, a Supervisory Meteorological Technician with the Atlantic Weather Patrol in Norfolk, retired May 6 after 36 years of Federal service. He joined the Bureau in 1931 as a Junior Observer in Denver, Colorado. He has served in Juneau, Ketchikan, and McGrath, Alaska; Glasgow, Montana; San Francisco; and Seattle. In 1961 Mr. McCollum was awarded a Department of Commerce Silver Medal for Meritorious Service in recognition of his efficient service on over one hundred ocean weather patrols. His address is 3535 St. Johns Avenue, Jacksonville, Florida.

Claude A. Cole

Claude A. Cole, a Meteorologist at the Weather Bureau Office in Pomona, California, retired May 31 after 40 years of Federal service. An Army veteran, he joined the Weather Bureau as a Junior Observer at Portland, Oregon, in 1924. He has served in Honolulu, Los Angeles, Roseburg, Burbank, San Francisco, Oakland, Azusa and West Covina, California. His address is 494 Angelus St., Santa Rosa, California.

Thomas E. Davis

Thomas E. Davis, an Engineering Technician stationed at Sterling, Virginia, retired May 23. During his Government career he served a number of years with the Army Corps of Engineers as a Safety Officer. He joined the Weather Bureau in 1960 at Washington, D.C. His address is R.R. #5, Chambersburg, Pennsylvania.

Herold Thomas

Harold Thomas, a Stock Control Clerk at the New York Regional Office, retired May 30 after 39 years of Federal ser-

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Old Weather Bureau Word Code Produced Many Strange Phrases

"CANTON TUDOR BIGBITES SLEETING GONDOLAS KABAKOS SIDEREAL COALBOXS YAMDIGGER IYDRU"

If you sent a telegram like the one above to the Central Office in Washington today there would probably be some head shaking and tongue clucking as they started drawing up your retirement papers.

But 25 years ago you'd have gotten a pat on the back by your MIC for preparing and sending a very comprehensive surface synoptic observation.

CANTON TUDOR etc. is a weather message the Bureau transmitted in its old word code. In July 1939 the now-familiar numerical code became standard operating procedure, but before that, telegraph operators and, occasionally, enterprising newsmen watched with amusement as messages such as "THIRTY UNRULY PLUMBERS CHASING LULU" clattered out over Western Union's Telegraph lines.

The word code, complex only to the uninitiated assigned certain numerical values or word meanings to letters and syllables within the code.

For instance, in the first message above from the station at CANTON (New York) the TU in TUDOR tells the de-

coder that the barometer reading at the time of the observation was 29.90 inches. The DO indicates the temperature was 28°. The R...well, the R doesn't really mean anything.

You see, where a consonant followed by a vowel is the first or second syllable, you may disregard the following consonant unless, of course, it's an S... Wait now. If the code word begins with a vowel, only the first two combinations of syllables, disregarding double letters is to be considered as a part of ...

Anyway, there was a long list of words, each one describing some combination of meteorological conditions. As in the case of the "thirty unruly plumbers" the coincidental combination of words in some of the telegraph messages was amusing. Most of the time they were nonsensical. Occasionally, atmospheric conditions would dictate an ambiguous code combination which was indelicate, to say the least.

The days of the Jersey Fagfish and the Denver Daredevil are gone forever, but ask anyone who sports a 25-year Length of Service pin about the old word code. You're practically guaranteed a half-hour of amusing anecdotes.

New Airport Station Opens in Aberdeen, W.J. Trebbe Is Meteorologist in Charge

A new Weather Bureau Airport Station opened in Aberdeen, South Dakota, on June 29.

In addition to aviation weather services, the station will provide general weather services to the more than 80,000 people in the surrounding area as well as service to agriculture, commerce, transportation, industry, recreation, and other interests.

Meteorologist in Charge of

WBAS Aberdeen is William J. Trebbe. Mr. Trebbe joined the Bureau at Milwaukee in 1937 as an Observer. He has served at Fort Wayne, Indiana; Green Bay, Wisconsin; and St. Cloud, Minnesota, where he was MIC for a number of years.

In 1962, Mr. Trebbe received a Department of Commerce Certificate of Commendation in recognition of his outstanding performance at St. Cloud.

DEATHS

J. Cecil Alter

J. Cecil Alter, OIC at the Weather Bureau Office in Cincinnati until his retirement in 1949, died on May 20. Mr. Alter entered on duty in Atlanta, Georgia in 1903. During his 46 years with the Bureau he served at Portland, Oregon; Cheyenne, Wyoming; and Salt Lake City, Utah, where he stayed for 35 years. He was named Official in Charge at Cincinnati in 1941.

Ina F. Sutton

Ina F. Sutton, a Secretary at the Central Office, died April 20. Before joining the Weather

Bureau in 1962 as a Clerk-Typist, Mrs. Sutton was employed by the National Cancer Institute. Mrs. Sutton is survived by her mother, Mrs. Shirley F. Herman, who works in the Bureau's Executive Office. Her grandfather was the late Walter J. Moxom, former Regional Director at New York.

Ernest R. Orr

Ernest R. Orr, Production Superintendent of the Printing Section at the Central Office, died July 6. Mr. Orr joined the Weather Bureau at Washington, D.C., as an Assistant Photographer in 1943. In 1944 he was granted leave to enter the Navy. He returned to the Bureau in 1946. He was made

Production Superintendent in 1961. Survivors include his wife, Mary Maurer Orr, and a daughter, Eloise Marie, of 820 Woodside Parkway, Silver Spring, Maryland, and a son 2d Lt. Ernest Paul Orr of the U.S. Air Force.

Leon G. Conover

Leon G. Conover, a Field Aide at Jacksonville, Florida, died April 23. Mr. Conover joined the Bureau in 1947 in Williston, North Dakota. He also served at Bismarck, North Dakota. He was an Army veteran of World War II. He is survived by his wife Sara A. Conover and a son and daughter of 11774 Jocelyn Road, Jacksonville, Florida.

Welcome to the Bureau

Annis, Claudia M., Clerk-Stenographer, Corvallis, Oregon
 Banks, Evelyn M., Time, Leave, Payroll Clerk, CO
 Bartosik, Barbara C., Clerk-Stenographer, Las Vegas
 Bass, Earnest R., Clerk-Typist, CO
 Bishop, Linda S., Card Punch Operator, Asheville
 Bramlett, Franklin D., Meteorological Technician, Anchorage
 Broadhurst, Helen M., Clerk-Typist, CO
 Brooks, Herman E., Meteorological Technician, Kansas City
 Cohen, Selma, Clerk-Stenographer, New York
 Dowe, Lillian V., Clerk-Typist, CO
 Emmert, Perry J., Meteorologist, Miami
 Formica, Peter J., Construction & Maintenance Representative, New York
 Garcia, Leopoldo, Electronic Technician, Las Vegas
 Gregory, Marlon B., Meteorological Technician, Lubbock, Tex.
 Haagenon, Phillip L., Meteorologist, Las Vegas
 Halcome, Wilda B.J., Secretary (Stenography), CO
 Hivala, Carol A., Clerk-Stenographer, Minneapolis
 Holtz, Veronica A., Secretary (Stenography), CO
 Hylton, Taft H., Voucher Examiner, CO
 Jones, Stanley K., Electronic Technician, CO
 Maskell, George E., Operating Accountant, CO
 Mavros, Nicholas P., Electronic Technician, New York
 McBride, Charles R., Jr., Accounts Maintenance Clerk, CO
 Mikuemski, Gerald, Operating Accountant, CO
 Miles, Dorothy R., Secretary (Typing), CO
 Mills, Ruth F., Photographer, Asheville
 Minter, Ethel L., Clerk-Typist, CO
 Moniz, Phyllis L., Secretary (Stenography) CO
 Pierce, Patricia A., Clerk-Typist, CO
 Pressley, Gerald H., Clerk-Typist, CO
 Schuster, Melva V., Weather Data Editor, San Francisco
 Sheridan, Lawrence D., General Engineer, Kansas City
 Smith, Barbara W., Clerk-Typist, Asheville
 Stout, Albert H., Meteorologist, Las Vegas
 Straiton, John C., Electronic Engineer, CO
 Tompkins, Joe E., Warehouseman-Packer, CO
 Wolf, Harold M., Research Meteorologist, CO

Transfers

| | FROM | TO |
|------------------------|--------------------|----------------------|
| Ahola, Alvares | Duluth, Minn. | Houghton Lake, Mich. |
| Alward, George R., Jr. | Nantucket | Atlantic City |
| Baldwin, Charles A. | Flint, Mich. | Marcus Island |
| Ballard, John C. | CO | Detroit |
| Bigelow, Henry C. | Tatoosh Is., Wash. | Las Vegas |
| Bjorem, David L. | Yakima, Wash. | Olympia, Wash. |
| Clarke, Thomas P. | New Orleans | Lubbock, Tex. |
| Close, Donald J. | Hartford, Conn. | Forth Worth |

| FROM | TO |
|-------------------------|----------------------|
| Conyers, William R. | Memphis |
| Courtney, James L. | CO |
| Dahl, Ray A. | Shreveport, La. |
| Davis, Rollo T. | Jackson, Miss. |
| Drummond, Ronald E. | Alpena, Mich. |
| CO | Houston |
| Finch, Donald L. | Tulsa |
| Flint, Richard L. | Rockford, Ill. |
| Gallegos, Rafael L. | Marcus Island |
| George, David H. | Moline, Ill. |
| Goto, Walter R. | Eniwetok |
| Gregory, Charles H. | Eniwetok |
| Hatfield, Harry E. | Kansas City |
| Heaps, Kenneth L. | Fort Huachuca |
| Holcomb, James W. | Olympia, Wash. |
| Holmes, Veru S. | Omaha, Neb. |
| Hopwood, Lloyd P. | Knoxville |
| Hudson, Vernon M. | Albuquerque |
| James, Arthur B. | Albuquerque |
| Jennings, Arthur H. | Cape Henry, Va. |
| Jensen, Kenard H. | CO |
| Johnson, G. Allen | Antarctica |
| Kable, Torrance E. | Wichita Falls, Tex. |
| Kanupp, Jerry D. | Shreveport, La. |
| Katz, Lawrence G. | Nashville |
| Kelly, Eual G. | New York |
| Kimura, Akinrichi | Amarillo, Tex. |
| Laudry, Edward J. | Honolulu |
| Lewis, Darrell E. | Antarctica |
| Lewis, Harold | Pocatello, Idaho |
| Lincoln, Zelta J. | Detroit |
| Luke, George U. | Akron, Ohio |
| McGuire, Thomas P. | Canton Island |
| McNelly, Edward A., Jr. | Canton Island |
| Miller, Roy F. | Knoxville |
| Minga, Daniel R. | San Juan |
| Mittelstaedt, Roland O. | Fort Huachuca, Ariz. |
| Morris, James E. | Fargo, N. Dak. |
| Morrow, Michael J. | Miami |
| Perry, Harris M. | Fort Huachuca |
| Pruitt, Clarence M. | Cape Henry, Va. |
| Rhine, Lloyd R. | Detroit |
| Robinson, John M. | Leesburg, Va. |
| Rothrock, Harold J. | Cincinnati |
| Sheehan, Teddy J. | Detroit |
| Shibata, Mamoru | Rothrock, Harold J. |
| Spiegel, Herbert J. | Galveston, Tex. |
| Sullivan, William G. | Wake Island |
| Surface, Ronald K. | Tallahassee |
| Weaver, Robert L. | Anchorage |
| Wetters, Norris C. | Surface, Wash. |
| White, Ray E. | San Francisco |
| Zeglin, Dewain M. | Detroit |
| | Baton Rouge, La. |
| | Huron, S. Dak. |

RETIREMENTS (continued)

vice. Mr. Thomas joined the Weather Bureau as a Junior Messenger at Washington, D.C. in 1925. In 1945 he transferred to New York as a Clerk. He is an Air Force veteran. His address is 79 High Street, Montclair, New Jersey.

Blaine N. Ramsden

Blaine N. Ramsden, a Meteorologist at WBAS San Francisco, retired July 18 after 34 years of Federal service. Mr. Ramsden joined the Bureau in 1930 as a Junior Observer in Salt Lake City, Utah. He transferred to San Francisco in 1944. After a tour of duty in Honolulu, he returned to San Francisco. Mr. Ramsden's address is 528 Patricia Lane, Palo Alto, California.

Wren H. Heath

Wren H. Heath, a Meteorological Technician at the Weather Bureau Office in Galveston, Texas, retired June 1. Mr. Heath began his Federal service in 1932 with the Bureau of Air Commerce. In 1935 he joined the Civil Aeronautics Administration. He came to the Weather Bureau in 1943 at Adairville, Georgia. He has served at Dunnellen, Florida; Columbus, Georgia; and Galveston, Texas. His address is 4321 Reese Road, Columbus, Georgia.

William M. Percy

William M. Percy, MIC of the Weather Bureau Airport Station at Midland, Texas, retired July 31 after 35 years of Federal service. Mr. Percy joined the Weather Bureau in 1929 as a Junior Observer in Macon, Georgia. During his Bureau career, he served in Charlotte, N.C., Amarillo, Texas; Raleigh, North Carolina; Chicago, Ill.; Lynchburg, Virginia, where he was MIC for a time; and Denver, Colorado. He became MIC at Midland in 1959. Mr. Percy's address is 3114-A West Kansas Avenue, Midland Texas.

Term 'User Funding' Clarified

During my recent talks with Weather Bureau field officials, my use of the term "user funding" led to a number of questions about its meaning. Some listeners were under the impression that the Bureau would set a price on its services and charge for them.

The term user funding as I employ it simply means that Government agencies requiring specialized services from the Weather Bureau will obtain the funds from Congress to pay for them.

The Weather Bureau will continue to provide weather services, without charge. These basic services are available to all consumers of weather information--the general public as well as those segments of the economy with unique weather needs. Thus, user funding could also be described as interagency mission funding of specialized weather services.

Robert M. White

WMO Executive Committee (continued)

U.N. Technical Assistance on special development funds.

A panel was established to examine project proposals, and the Secretary-General was asked to draw up proposals, including improvements in the Southern Hemisphere telecommunications network, automatic weather stations, and use of merchant ships in the Southern Hemisphere; global telecommunications survey, global data-processing survey, and global observational system survey; and long-term fellowships or other training activities.

The committee members concurred that planning, development, and implementation of the World Weather Watch should be the main task of WMO during the coming years. They defined the World Weather Watch as a worldwide meteorological system, composed of the coordinated facilities and services provided by individual members and supplemented by international organizations, to ensure the obtaining of systematic information on the state of the atmosphere and the timely collection and dissemination of weather data.

The Secretary-General was directed to bring the Planning Unit to full strength as soon as possible and to prepare by Feb-

ruary 1967 a detailed plan of the World Weather Watch for presentation to the Fifth Congress in April 1967.

At the meeting, France announced plans for an experimental program of constant-level balloon observations in the Southern Hemisphere, with a satellite to interrogate the balloon-borne instruments. The Executive Committee supported the French proposal, on the understanding that the balloons will not be a hazard to aircraft and that there will be no infringement of national sovereignty.

Since 1965 has been designated International Cooperation Year by the United Nations, the committee voted to institute two research, training, and technical cooperation programs -- the International Cooperation Year Program in Tropical Meteorology and the International Cooperation Year Program for Meteorology in Africa.

The Commission for Synoptic Meteorology was asked to establish procedures for obtaining basic meteorological information from aircraft over oceans and uninhabited areas and for inclusion of this information in international exchange of synoptic data.

Length of Service Awards

45-Year Award
Long, Arthur R.
WBAS Montgomery

40-Year Awards
Brooks, Arthur W.
WBAS El Paso
Burke, Harold N.
WBAS Cleveland
Van Thullenar, Clayton F.
Research Project Kansas City

35-Year Awards
Alkire, Herbert L.
WBAS Baltimore

Bankert, Max L.
WBO Los Angeles
Bergerson, Maurice P.
PWP Seattle

Clark, Kenneth R.
WBAS Sioux Falls
Cocuzzi, Mark J.
WBAS San Francisco

Crooker, Clayton B.
WBO Houston
Fulks, Joe R.

WBFC Chicago
Hammons, Wendell
WBAS N. Platte

Hayes, Lewis
WBAS Beckley
Hiner, Thomas J.

WBAS Cincinnati
Hug, Floyd
RFC Sacramento

Klemetsmo, Arvid S.
WBAS Erie, Pa.
Kline, Alfred B.

WBAS Williamsport
Lang, Clarence V.
WBAS Las Vegas

Martin, Delance O.
WBO Cincinnati
McKinney, Wilbur

WBAS Helena
Myers, Harry V.
WBAS Grand Rapids

O'Daniel, George E.
RO Kansas City
Pullen, William Jr.

Climat., CO
Showalter, Albert
DATAC, CO

Smalley, Clarence L.
WBAS San Francisco
Stapowich, Edward F.

WBAS Omaha
Stevlinsong, David J.
WBAS Boise

Sutton, Paul F.,
WBAS Harrisburg
Ulsh, W. Howard

WBAS Wilmington, N.C.
Whipple, J. Howard
WBAS Lewiston, Ida.

30-Year Awards
Brice, June E.
RO Salt Lake City

Duggin, William G.
WBAS Fairbanks
Lennon, Woodrow W.

WBAS Wilmington, N.C.
Peters, Norman L.
WBO Pomona

Rothfuss, George A.
WBAS Madison
Starks, Lillian

Adm. Oprs, CO
Watson, Clarence E.
WBAS Anchorage

Wilson, Walter
Hydro., CO
25-Year Awards

Bland, Robert O.
WBAS Fort Worth
Brackett, Eldon A.

WBAS Astoria, Ore.
Centorrino, Joseph
RO New York

Choate, Harold
OT& DC Sterling
Corbett, John W. Jr.

WBAS Boston
Denney, William J.
WBAS San Francisco

Fox, William E.
RFC Augusta
Goodwin, Gerald D.

WBAS Goodland, Kan.
Guenzi, Ray
WBAS Yuma

Hendricks, Virgil F.
WBFC Chicago
Heuer, Alice M.

WBAS Milwaukee
Hill, John S.
WBAS Detroit

Jacobson, Arthur L.
WBAS Great Falls
Johnson, Otis J.

WBRS Idaho Falls
Larcom, Eugene H.
WBAS Seattle Tacoma, Wash.

Lyle, Richard C.
RO Kansas City
Mincz, Walter A.

WBAS Richmond
Pelletier, Harvey A.
WBAS Providence

Rothrock, Harold J.
WBFC Chicago
Rhorer, Harry L.

WBAS Albuquerque
Rudolph, George L.
WBAS Salem

Sinclair, Omar I.
WBAS Elko, Nev.
Stotler, Luella

Finance Br., CO
Winston, William
RFC Cincinnati

20-Year Awards
Andrew, Denton C.

RO Salt Lake City
Boslough, Vinton R.
WBO Minneapolis

Brofman, Eileen
WBO New York
Carr, Francis

POP Davisville, R.I.
Chapman, Dorothy, J.
WBAS Norfolk

Chapman, Warner E.
WBAS Daytona Beach
Chapman, William B.

WBAS Des Moines
Chimenz, Leo J.
RO New York

Cluff, Frank D.
WBRS Las Vegas
Conte, Dominic D.

RO Honolulu
Cook, Wendell M.
WBRS Fort Huachuca

Croteau, Paul E.
WBAS Beckley, W.Va.
Dales, Philip Jr.

Communications Div., CO
Davis, Nathaniel R.
NWRC Asheville

DeLaurentis, Eileen
WBRS Las Vegas
Eckhardt, Boyden

WBAS Anchorage
Faber, Marlon
DATAC, CO

Fellgren, James
NWSC, CO
Fenton, John W.

WBAS San Juan
Foster, George B.
WBAS Yuma

Foster, George B.
WBAS Yuma

20-Year Awards

Foster, Itichard
Sci. Doc. Div., CO
Fox, Benjamin

WBAS New York
Hansen, Jack A.
WBAS Fairbanks

Hanson, Clinton E.
WBAS Lander, Wyo.
Hine, Keith G.

WBAS Oakland
Hooper, Louise
NWRC Asheville

Hughes, Jack B.
WBAS Dodge City
Hurst, Winston L.

WBAS Columbia, S.C.
Jacob, Edward G.
WBAS Mansfield, Ohio

Johnson, Wayne S.
WBRS Fort Huachuca
Kennedy, John C. Jr.

WBAS Little Rock
Kornbrust, George B.
WBAS Bishop, Cal.

Kuehl, Donald W.
RFC Portland, Ore.
Kuhn, John Thomas

WBO Cincinnati
Lindsay, Charles V.
DMO, Washington, D.C.

Lynn, George H.
WBAS Denver
Martin, Howard R.

RO Kansas City
Mashburn, Clyde J.
NWRC Asheville

McDonald, James T.
WBAS Bridgeport
Morgan, Daniel M.

WBAS Grand Junction
Noguera, Charles J.
RO New York

Osborne, Henry D.
NWRC Asheville
Peridier, Paul

Int'l Affairs, CO
Phelan, William B.
WBAS Block Is., R.I.

Riedel, John
Hydro., CO
Rippo, Anthony E.

WBO Long Beach
Roberts, Ulysses E.
NWRC Asheville

Rochester, Thomas M.
WBAS Astoria, Ore.
Roshinski, Francis L.

NHC Miami
Shapiro, Sylvia
RO New York

Silverzahn, Warren
RFC Hartford
Sparrow, James M.

NWRC Asheville
Stadele, Marion L.
WBAS Miami

Unger, Delbert A.
WBAS Sioux City
Wakeling, Arthur W.

WBAS New York
Webb, Jackson P.
WBAS Cincinnati

Weddle, Lois E.
WBAS Anchorage
Wendel, George M.

WBAS Ypsilanti, Mich.
Whalen, Robert J.
WBAS Minneapolis

Wynn, Harry L.
WBAS Pittsburgh
Zastrow, Ruth R.

WBRO Salt Lake City

15-Year Awards

Augustus, Gloria
MR, CO
Bargamian, John

WBAS Raleigh
Bottoms, Jack D.
RO Honolulu

Branks, Clyde M.
NWRC Asheville
Coleman, Theodore H.

WBO Swan Island, W.I.
Counts, Williams H.
WBAS Knoxville

Curry, Billy R.
WBAS Amarillo
Daniel, Walter G.

WBAS Meacham, Ore.
Danish, Helen
POP, CO

Desmond, Richard L.
WBAS Salt Lake City
DiFalco, James E.

RO Anchorage
Duckett, James B.
NWRC Asheville

Evans, William A.
WBAS Oakland
Flanders, Allen

Hydro., CO
Freer, Abner E.
WBAS Galveston

Geddings, Dewey W.
NWRC Asheville
Goree, Paul

NMC, CO
Harris, Gordon W.
DMO, Washington, D.C.

Hegstrom Roger L.
WBAS, Fresno
Hill, Lillian Mason

WBAS Nashville
Lynde, Robert E.
WBAS Boston

Muldoon, William E.
AWP Boston
Overaas, LaRue B.

WBO Sacramento
Penland, Frank L.
NWRC Asheville

Plunkett, Edwin
WBAS Roanoke
Rawles, James W.

WBAS Klamath Falls, Ore.
Reese, Dee R.
RO Salt Lake City

Richards, Searl E.
WBAS Amarillo
Rouse, Ina

NMC, CO
Sawyer, Martha L.
NWRC Asheville

Schultz, James T.
WBAS Cleveland
Shawley, Homer D.

PWP San Francisco
Spano, Angelo
MR, CO

Stembach, Michael C.
WBRS Las Vegas
Strong, Arthur C.

WBAS Chicago
Sutherland, Robert G.
WBAS Moline

Swann, Wanda L.
NWRC Asheville
Tisdale, Clifton F.

WBAS Boston
Woitchek, Bernarr M.
WBAS Wake Island

Wolley, Virginia
RO Salt Lake City
Yingling, David L.

RO Anchorage
Zealor, Martin
MR, CO

Meteorological Readings

Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information, see TOPICS, May 1957. When submitting answer cards, please mark envelope in lower left corner: "METEOROLOGICAL READINGS".

Assignment LXXII: "Estimates of Maximum Mixing Depths (MMD's) in the Contiguous United States", G. C. Holzworth, Monthly Weather Review, May 1964, Vol. 92, No. 5, pp. 235-242.

About the assignment: This article gives some interesting data on the vertical temperature structure in the lower atmospheric layers over the continental United States.

Col. 61 The article implies that low maximum mixing depths (MMD's):

1. are fairly rare except at night
2. occur mostly in summer over most of the U.S.
3. are conducive to an increase of pollutants in the lower atmosphere.
4. have no seasonal preference.

Col. 62 Along the Pacific and Atlantic coasts the MMD's are relatively low throughout most of the year, due in part:

1. to the proximity of mountains parallel to the coast
2. to the cool coastal waters
3. to low (LCL) levels
4. to the above-average meridional movement of Lows in these areas.

Col. 63 Mark all items that were not considered in the computation of MMD's

1. advection
2. maximum surface temperatures
3. vertical wind shear
4. effects of convection.

Col. 64 The mean of MMD's

during October through February over almost all of the continental U.S. is below 1500 meters except over southern Florida due to:

1. the extreme dry air near the surface
2. conditionally unstable air which prevails during these months
3. longer hours of sunshine
4. the low average height of the lifting condensation level.

Col. 65 Large gradients of the MMD's values, especially in summer, are to be found (mark all correct answers):

1. just east of the Continental Divide
2. along the Pacific and Atlantic coasts
3. in Florida
4. none of the above.

Col. 66 The average MMD's computed from daily observations, compared to those computed from mean observations (for most stations):

1. are somewhat greater
2. are about twice as great
3. are much smaller
4. are greater in the summer but smaller in winter.

Col. 67 The values for the MMD's used to make up figures 2 through 13 were derived by using:

1. average monthly temperature vertical profiles and corresponding normal maximum surface temperatures
2. average monthly inversion heights and the average of daily minimum temperatures
3. the radiosonde observations and the minimum surface tem-

peratures of five typical days during the month

4. none of the above.

Col. 68 Although the MMD's are relatively low over the New England states throughout the year local accumulation of pollutants is rarely a problem because:

1. there are no smoke or dust sources
2. the low (LCL) values effectively counteract the low MMD's
3. the daily temperature range is high
4. frequent storm passages and moderate surface winds offset the effect of low MMD's.

Col. 69 Mark all correct statements:

1. mean MMD's vary very little from year to year
2. mean MMD's are very high over the Rocky Mountains in summer
3. in the mean (not daily), if the (LCL) is lower than the MMD, recomputation of the MMD using pseudoadiabatic assumptions results in lifting the MMD markedly, usually to the tropopause
4. a low MMD means more unstable air.

Col. 70 This article emphasizes that the extent of atmospheric dispersion of pollutants is most closely associated with:

1. limited horizontal mixing
2. limited vertical mixing
3. simultaneous occurrence of limited horizontal and vertical mixing
4. dry, conditionally unstable air.

Meteorological Readings Ends

This issue marks the end of Meteorological Readings. The program was started as the result of a suggestion in May 1957 with the hope that it would help Weather Bureau employees form the habit of reading scientific literature available to them at their stations.

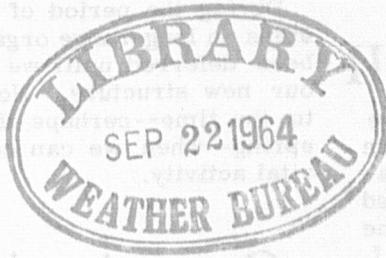
Throughout these past seven years, the Meteorological Readings program has been highly successful. During the first three years, participation was at the rate of more than 600 per month.

It is hoped that those who participated during these years will continue the practice of reading available literature.

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TOPICS, the official Weather Bureau employee magazine, is published monthly to inform all employees about Bureau activities and programs. Articles or comments by Bureau employees are invited. Inquiries and requests for permission to reprint or quote from material contained in TOPICS should be sent to the Office of Public Information, U.S. Weather Bureau, Washington, D.C. 20235.



TOPICS

**PHASE
2**

the NEW BUREAU Organization

Editorial

Reorganization - Phase II

Since the approval of Department of Commerce Order No. 91, all Bureau offices have been busily engaged in Phase II of the reorganization. The Department Order, which authorized organizational components essentially through the Office level, was the culmination of Phase I. (See TOPICS, April 1964.) Phase II, carrying the new organization down through the Division level, was approved by Dr. White on July 17.

Several weeks of planning for Phase II were followed by conferences and considerable arbitration. The results of this effort are embodied in three Weather Bureau Manual Chapters (B-10, B-11, and B-12), which have been sent to all Offices, Divisions, Regional Offices, and First Order Stations with Transmittal Memorandums 893, 894, and 895.

In this issue of TOPICS, Phase II is summarized. For those who want more detail, the Manual Chapters are available at field stations.

So, our reorganization is now two-thirds completed. The third and final phase--that of describing the Bureau organization through the Branch, Section, and Unit levels--is scheduled for completion in September.

After Phase III, while we're catching our breath, each of us will have a well-defined place in an organizational structure that should make it easier for all of us to get our work done. Within this framework, we should be more able to seize new opportunities and improve our effectiveness.

The new organization cannot be regarded as "set." It will require continual care and feeding. We fully expect some "bugs" to appear in the Bureau structure, just as they would in any new arrangement. The need for adjustment is anticipated in Manual Chapter B-11, which establishes procedures for making organizational changes.

The philosophy of constant evolution to meet changing needs is expressed in a passage from Manual Chapter B-10.

"The work of organizing in the Weather Bureau is never done as long as its environment continues to change, its service goals constantly improve and expand, or the technologies on which it is based continue to develop. A particular organization structure is not to be held as sacred. It is merely the means to an end and may be regarded as nothing more than a snapshot of the Bureau at a specific point in time. The work of organizing should be kept in mind as an evolutionary process which is continually mobilizing the Bureau's capacities to serve..."

During the period of reorganization, the next steps in long-range organizational planning have been deferred until we are more at home with our new structure. Now, we can look forward to the time--perhaps this winter or early next spring--when we can concentrate again on this vital activity.

Walter A. Hahn

Organizational Policy

Much of the philosophy behind the Weather Bureau's reorganization is expressed in the new Manual Chapter B-10, an interesting document worthy of careful reading.

Current guidelines on organization, the chapter explains, include the following policies:

"Decentralize decisions by placing them at the point of action and dominant knowledge of the situation."

"Provide short lines of authority, responsibility and accountability."

"Regional Offices will have full responsibility for technical and administrative action within their respective areas."

More specifically, the Central Office role is now one of formulating policies, procedures, and standards, and of planning and evaluation. Responsibility for work of a daily operational nature is delegated to the field.

While major service operations are decentralized, some other activities must be brought together. "Group homogeneous work," the manual says, "for reasons of improved effectiveness, economy, and service, e.g., research, development, logistic and administrative support." This does not imply that all research, for example, will be done in Washington. Rather, it means that research activities, wherever they may be, should be grouped for the greatest efficiency and productivity from the standpoint of research. A research group must be large enough to provide intellectual stimulation to the individual members of the group.

Chapter B-10 also discusses the concept of line management and functional management in relation to the Weather Bureau field services: "Have single chain of responsibility for field services from the Office of the Chief of Bureau, to Office of National Meteorological Services, to Regional Offices, to the field stations, while at the same time taking advantage of available professional specialization through acceptance and operation of the functional management concept..."

The Bureau's line managers, such as the Chief of Bureau, the Director of National Meteorological Services, the Deputy Director for Operations, the Regional Directors, and the

(continued on page 134)

Topigrams

Washington, D.C.
September 1964

A bill including Weather Bureau appropriations for fiscal year 1965 has been passed by Congress. The five Bureau appropriations totaling \$86,725,000 were: Salaries and Expenses, \$65,100,000; Research and Development, \$10,400,000; Research and Development (Special Foreign Currency Program), \$500,000; Establishment of Meteorological Facilities, \$725,000; and Meteorological Satellite Operations, \$10,000,000.

Loren W. Crow, a well-known private weather consultant from Denver, has been appointed Special Assistant for Industrial Meteorology. This position was created to help industry make full use of weather information available from private and public weather services.

The Meteorological Satellite Laboratory will test a model of its infrared spectrometer, designed to measure stratospheric temperatures from a weather satellite, on a special balloon flight from the Balloon Flight Center at Palestine, Texas, this month. Contract arrangements have been made with the National Center for Atmospheric Research for balloon launching, tracking, recovery, and telemetering.

John H. Eberly has been named Deputy Employment Policy Officer for the Weather Bureau. This appointment has been made in connection with the Department of Commerce's Equal Employment Opportunities Program. Information concerning the Department's non-discrimination policy and procedures will appear in a later issue of TOPICS.

A new world record for maximum 24-hour rainfall was set at Paishih, Taiwan, on September 10-11, 1963. During that period 49.13 inches of rain fell. The rainfall was associated with the passage of Typhoon Gloria.

The Weather Bureau and Northwest Airlines are undertaking a cooperative study of pilot control of jet aircraft flying in turbulence. The airline will operate a specially instrumented jet in the vicinity of Bureau WSR-57's at Minneapolis and Des Moines. Special devices for data collection and radar-scope photography will be installed on the radars.

Mr. J.R.H. Noble has been appointed Director of the Canadian meteorological service. Dr. Thomas G. How, whose appointment was noted in March TOPICS, was unable to assume the responsibilities of Director for reasons of health.

Six WSR-57M's are on order and will be added to the Bureau's radar network when site surveys, now being made by Regional Offices, are completed.



Cutting the ribbon at the Chihuahua dedication ceremony, left to right, Ing. Mas Sinta, Mr. Barber, General Giner Duran, Dr. Carols Villa Mar (Rector of the University of Chihuahua), and Mr. Thompson.

Cooperative Upper-Air Station Opened in Chihuahua, Mexico

A new weather station at Chihuahua, Mexico, built and operated as a cooperative project of the U.S. and Mexico, is now taking upper-air measurements.

At the opening ceremonies, August 1, the Weather Bureau was represented by Wilmer L. Thompson, Acting Director of Region II, and Milton Blanc, Region IV Climatologist. Director Mas Sinta of the Mexican Meteorological Service and John Barber, representing the U.S. Ambassador, both gave brief addresses and jointly cut the ribbon at the entrance to the office building. The Governor of Chihuahua, General Parazedes Giner Duray, then cut the ribbon for the opening of the inflation building. The release of a balloon was recorded by press and television.

Located on the grounds of the University of Chihuahua, the new upper-air station is the first of three to be opened this year in northern Mexico as the result of an agreement an-

nounced in February 1964. A similar station at Monterrey was scheduled to begin operation about September 1, while a third cooperative station, near Empalme, is scheduled to open in early November. These stations represent an expansion of a cooperative meteorological program initiated by the U.S. and Mexico in 1942; nine other stations in Mexico already are operating under the agreement.

The U.S. furnishes balloon inflation buildings, electronic tracking equipment, and meteorological supplies. A Weather Bureau technician is assigned to each of the new stations to maintain electronic equipment. Arthur O. Clark, Jr., is the Bureau's technician at Chihuahua; Michael Sunray, the Bureau's technical representative at Mexico City, supervises the electronic facilities at all of the jointly operated stations in Mexico.

Mexico provides the land, office buildings, communications, and staff.

Three Receive Awards For Actions During Alaskan Earthquake

Three Weather Bureau employees in Alaska received special cash awards for their extraordinary services immediately following the devastating March 27 earthquake.

Dexter Ferry and Karl Staack, electronic technicians at WBAS Anchorage, were awarded \$300 each in recognition of their prompt restoration of communication facilities at the Weather Bureau Forecast Center. Their long hours of work under difficult conditions enabled the Bureau to resume forecast services and observations with a minimum delay.

A part-time aviation weather observer at Valdez, Mrs. Mary Gilson, received \$200 for her restoration of weather observations soon after the disastrous earthquake and flood. Her efforts under the most adverse physical conditions assisted military and civilian agencies in relief activities.

Pacific Forecasts Are Computerized

WBAS Honolulu in cooperation with local military services is presently preparing objective wind analyses and 24-hour forecasts on an IBM 704 computer.

The computer analyses and forecasts are prepared twice each day in time to be used by the duty forecasters in their day-to-day strict deadline operations. Data for the computer are gathered from raob and pibal soundings and supplemented by the unusually large number of aircraft reports available at Honolulu.

The analyses and forecasts are for the 700-, 500-, 300-, and 200-mb. levels and cover the tropical Pacific in both the Northern and Southern Hemisphere.

Two Prominent Scientists Take Top Posts To Guide Weather Bureau Research Projects

Chief Scientist

Professor Verner E. Suomi has been appointed to the newly created post of Chief Scientist of the Weather Bureau.

In this position, Professor Suomi will act as top scientific advisor to the Bureau's research meteorologists, and as a consultant in problems of over-all scientific planning.

Professor Suomi, who has been with the University of Wisconsin's Departments of Meteorology and Soils since 1948, has conducted extensive studies into the earth's heat budget. With fellow scientists at the University of Wisconsin, he has designed a number of instruments and experiments which have been orbited in Explorer and TIROS satellites.

Born in Eveleth, Minnesota, Professor Suomi received a Bachelor of Education degree in 1938 from Winona Teachers College in Minnesota. He earned a Ph.D. degree in meteorology in 1953 from the University of Chicago.

From 1938 to 1943 he taught in the public school system of

Minnesota. He then went to the University of Chicago as an instructor of meteorology from 1943 to 1945. In 1945 he became director of the University of Chicago's Instrument Laboratory in the Department of Meteorology. He held that post until he moved to the University of Wisconsin.

In 1954, Professor Suomi and the Weather Bureau's resident meteorologist at the University of Wisconsin, Peter Kuhn, developed an improved net radiometer which the Bureau is using at a number of its stations including those at the South Pole.

Professor Suomi is a member of the Subcommittee on Meteorological Satellites of the Space Science Board of NASA and a member of the Atmospheric Sciences Panel of the National Science Foundation. In 1961, the American Meteorological Society granted him its Clarence LeRoy Meisenger Award for his work in atmospheric radiation.

Professor Suomi is a member of the Panel on Weather and Climate Modification sponsored by the National Academy of Sciences and the National Research Council.

Among Professor Suomi's published works are: "Preliminary Report on Temperature Measurement by Sonic Means" (with E.W. Barrett), Journal of Meteorology, August 1949; "Direct Measurement of Infrared Radiation Divergence to 160 Millibars" (with P.M. Kuhn and D.O. Staley), Quarterly Journal of the Royal Meteorological Society, April 1958; "An Economical Net Radiometer" (with P.M. Kuhn), Tellus, February 1958; "Analysis of Satellite Infrared Radiation Measurements on a Synoptic Scale" (with M. Weinstein), Monthly Weather Review, November 1961; and "On the Pos-

sibility of Atmospheric Infrared Cooling Estimates from Satellite Observations" (with R.R. Sabatini), Journal of the Atmospheric Sciences, July 1962.

Director of Meteorological Research

Dr. Jerome Spar is the Weather Bureau's new Director of Meteorological Research.

A former Professor of Meteorology at New York University, Dr. Spar is responsible for a



Dr. Spar

number of broad research projects being carried out by the Bureau, including the National Hurricane Research Laboratory and the Research Flight Facility in Miami, the National Severe Storms Laboratory in Norman, and the Geophysical Fluid Dynamics Laboratory and Atmospheric Physics and Chemistry Laboratory in Washington, D.C.

Born in New York City in 1918, Dr. Spar received a B.S. degree from City College of New York in 1940. He joined the staff of New York University as a Teaching Fellow in

(continued on page 126)



Prof. Suomi

Thirty-one Volunteer Observers Receive Jefferson-Holm Awards

For the sixth year since their creation, Thomas Jefferson and John Campanius Holm Awards have been presented to volunteer weather observers throughout the country for outstanding achievement. Thirty-one cooperative observers were selected to receive the 1964 awards.

Five observers have received the Thomas Jefferson Award for outstanding accomplishments in the field of meteorological observation. The award is named for Jefferson because the statesman-scientist took an almost unbroken series of weather observations from 1776 to 1816.

Named to receive Thomas Jefferson Awards were: Frank H. Brown, Cullowhee, North Carolina; Ralph N. Buckstaff, Oshkosh, Wisconsin; Miss Mae McCabe, New Burnside, Illinois; Henry Twete, Victor, South Dakota; and the Willis family of Olga, Washington.

The John Campanius Holm certificate for continued excellence is named for the first known systematic weather observer in the American Colonies. In 1644 and 1645 the Reverend Campanius made records of the climate without the use of instruments, near the present site of Wilmington, Delaware.

Recipients of the John Campanius Holm Award were: Ernest J. Anderson, Orleans, California; Oscar Angle, Ennis, Montana; Thomas J. Burne, Owings Ferry Landing, Maryland; Norris Bruce, Westernport, Maryland; Robert E. Burton, Santa Cruz, California; William H. Cumming, Houlton, Maine; Joseph B. Dodge, Conway, New Hampshire; Ross E. Forward, Sheldon, Iowa; and Fred Hahn, Fremont, Nebraska.

Frank S. Hatch, Scipio, Utah; Andrew M. Johannsen, Dunkirk, Montana; Dr. Stanley Johnston, South Haven, Michigan; Mrs. Etta L. King, Holley, Oregon; Martin G. Kizer, Apache, Oklahoma; James F. McCray,

Mount Carroll, Illinois; Charlie McCornack, Jr., Cloud Chief, Oklahoma; Thomas C. Merchant, Madison, Florida; and Orlan C. Moore, Akron, Iowa.

Oliver M. Orendorff, Sallisaw, Oklahoma; Homer L. Parnell, Graton, California; George Raveling, Rock Rapids, Iowa; Wesley C. Roscoe, Upper Mattole, California; Earl V. Slife, Hawarden, Iowa; Arthur Suess, Menno, South Dakota; Mrs. Elizabeth H. Williams, Rougemont, North Carolina; and Stuart T. Witherell, Cornwall, Vermont.

Wanted...

One Weather Machine

Dear Sirs:

Would you please send me a weather machine so I can forecast weather by myself. Also would you send me a pamphlet on the newest cloud formations you have gathered. Also a thermometer I can hang out on my window sill.

Would you also send me the next 30 day forecast. Also and very important would you send me a machine or pamphlet that tells either when a thunderstorm or tornadoes are coming.

Sincerely,

James
James

(The Office of Public Information is having a bit of trouble answering this letter from a junior meteorologist. If any station has an extra weather forecasting machine on hand, or has recently gathered a new cloud formation, please send it on to the Central Office so we can forward it to Jim...er...James.)

Dr. Spar (continued)

1941 and received an M.S. degree in 1943. From 1942 to 1946 he served in the Army Air Corps.

On being discharged from the Air Corps as a Major in 1946, he rejoined the teaching staff at New York University as an Instructor. In 1950, Dr. Spar was awarded a Ph. D. degree by New York University.

In addition to his post as head of the Bureau's Office of Meteorological Research, Dr. Spar is a member of the National Research Council's Division of Earth Sciences (representing the American Meteorological Society).

While at New York University, Dr. Spar was a member of the Weather Bureau's advisory panel on Project Stormfury. He was also the director of the University's Hurricane Research Project which is sponsored by the National Science Foundation. He has served as a Trustee of the National Center for Atmospheric Research at Boulder, Colorado.

Dr. Spar has done research in atmospheric tides, radioactivity, weather modification, numerical weather prediction, and tropical meteorology.

Among Dr. Spar's published works in the field of meteorology are two books (The Way of the Weather and Earth, Sea, and Air) as well as numerous articles in meteorological journals.

TOPICS' Distribution

Several field stations have asked why they are not receiving the number of TOPICS copies they requested in the recent distribution survey. This survey was made as part of an effort to speed delivery of the magazine to field stations. When the responses have been tabulated, the new circulation figures may be used for direct mailing from the Central Office. If not, they will be sent to the Regional Offices to bring their distribution lists up to date.

New MIC's Appointed At Three Stations

Springfield, Mo.

Ray C. Nelson is the new Meteorologist in Charge of WBAS Springfield, Missouri. Joining the Bureau in 1946, Mr. Nelson has been stationed at Coeur d'Alene, Idaho; Sheridan, Wyoming; and Kansas City, where he has been supervising forecaster of the Public Service Unit, District Meteorological Office, since 1960. During World War II, he was in the Air Weather Service. Mr. Nelson attended N. Idaho Junior College, the University of Kansas City, and the University of Miami.

Roswell, N. Mex.

Robert E. Muller is the new MIC at the Weather Bureau Airport Station in Roswell, New Mexico. A Navy veteran, Mr. Muller joined the Weather Bureau in 1955 at Flint, Michigan. He has been stationed at Detroit and Grand Rapids, and Kwajalein in the Pacific where he was Acting MIC for a time. He has studied at Flint Junior College, the University of Kentucky, and Pennsylvania State University.

Midland, Tex.

Young T. Sloan has been named Meteorologist in Charge at the Weather Bureau Airport Station in Midland, Texas. He succeeds William M. Percy who retired July 31.

Mr. Sloan joined the Weather Bureau at Abilene, Texas, in 1946. He has served in San Antonio, Honolulu, Wake Island, Washington, D.C., and Fort Worth.

A graduate of North Texas State College in 1940, Mr. Sloan was with the Texas public school system until he joined the Army in 1941. In 1946 he was discharged as a Captain and Base Weather Officer at Fredrick, Oklahoma.

Dr. Jose A. Colon Is New MIC At WBAS San Juan, Puerto Rico

Dr. Jose A. Colon has been named Meteorologist in Charge at the Weather Bureau in San Juan, Puerto Rico. Dr. Colon succeeds Ralph L. Higgs, who is retiring in October.

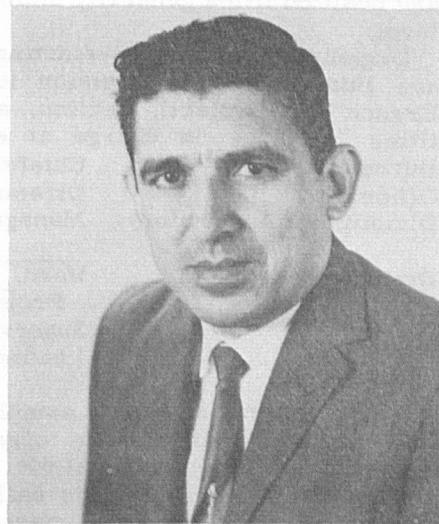
Since 1959, Dr. Colon has been supervisory research meteorologist at the National Hurricane Research Project in Miami. During 1962-63, he was research meteorologist representing the Bureau at the International Indian Ocean Expedition.

A native of Puerto Rico, Dr. Colon received his B.A. from the University of Puerto Rico and his M.S. and Ph.D. from the University of Chicago. He was awarded a Weather Bureau scholarship to the latter university in 1958.

He has served as research forecaster at San Juan and has done research and taught at the University of Chicago.

His more important technical publications include: "On the Heat Balance of the Troposphere and Water Body of the Caribbean Sea," NHRP Report No. 41 (1960); "On the Structure of Hurricane Daisy (1958)," NHRP Report No. 48 (1961); "On the Evolution of the Wind Field During the Life Cycle of

Tropical Cyclones," NHRP Report No. 65 (1963); "A Study of Hurricane Tracks for Forecasting Purposes," MWR (1953);



Dr. Colon

and "On Interactions Between the Southwest Monsoon Current and the Sea Surface Over the Arabian Sea," given at the Seminar on Tropical Meteorology, New Zealand, 1963 (to be published).

Dr. Colon is married to the former Lydia Velez of Puerto Rico, and they have three children.

Visitor Startles Meteorologist

Chuck Eggleston at WBAS Houghton Lake expected an unusually severe atmospheric disturbance at his station, and though he was 100 per cent wrong, he's not complaining.

Eggleston, normally a brave enough fellow, beat a hasty retreat when, on his second night on duty at the station, he suddenly became aware that his plotting activities were being watched with some interest by a small creature at his feet.

Though more learned in meteorology than zoology, Eggleston had no trouble identifying his visitor as a skunk and in a surprisingly short time he was standing in the clear night air.

Outside, a group of boys searching for a pet skunk assured the meteorologist that the skunk was of the smell-less variety and the little animal was soon captured.

Eggleston then typed out a statement on the weather wire noting the skunk-caused evacuation and ending with a cheerful "All Clear."

Bureau's Component Names and Position Titles Are Now Uniform To Show Organizational Level

As an outgrowth of reorganization, a new system of terminology has been developed, making names of Bureau organizational components and position titles generally uniform at any given level.

Organizational levels--starting from the top--are Bureau, Office, Division (or Laboratory), Branch (or Project), Section, and Unit. The titles of those in charge at each level are:

| | |
|--------------------------|--|
| Bureau | Chief of Bureau |
| Office | Director of _____ |
| Division (or Laboratory) | Manager (or Director), _____ |
| Branch (or Project) | Head, _____, (or Project Scientist) |
| Section | Supervisor, _____ |
| Unit | Leader, _____ |

A new pattern has been established for using the names and titles. Any organizational component headed by an official who reports directly to the Chief of Bureau is called the Office of _____. The person in charge of that component is Director of _____, not Director of the Office of _____. Thus, for example, Mr. Grubb--who is in charge of the Office of Administration and Technical Services--is the Director of Administration and Technical Services. The title itself indicates the organizational level, and the word "office" does not appear in the position title. The same is true at other levels, except that a comma is substituted for the word "of." The official in charge of the Communications Division is called Manager, Communications.

Several components are at the Office level even though they are headed by officials who do not report directly to the Chief of Bureau. These components are the Systems Development Office, the National Meteorological Center, and the Regional Offices.

Regional Directors are designated according to their headquarters locations, as New York Regional Director, Kansas City Regional Director, Fort Worth Regional Director, Salt Lake City Regional Director, Anchorage Regional Director, and Honolulu Regional Director.

Exceptions

1. Those individuals who make up the Office of the Chief of Bureau and report directly to the Chief of Bureau are known by their given titles, such as Chief Scientist, Executive Officer, and Special Assistant for _____.

2. Although its level is that of an Office and its Director reports to the Chief of Bureau,

the National Weather Satellite Center will retain its familiar name.

3. On the Division level, the Systems Design Team and the National Weather Records Center do not follow the pattern of nomenclature.

4. An organizational component established for a special purpose or exploratory work is called the _____ Group, if it is an operational program (for example, the Spaceflight Meteorology Group), or _____ Study, if it is a management research or R&D activity.

5. There are several exceptions to the rule that the organizational level does not appear in the position title. These include the Directors of Centers--Director of National Meteorological Center, Director of National Weather Satellite Center, and Director of National Weather Records Center--and, of course, the Chief of Bureau.

Director, Division Manager Assignments Are Announced

Personnel have been designated to act as follows:

| | |
|---|---------------------------|
| Chief of Bureau | V.E. Suomi |
| Chief Scientist | J.H. Eberly |
| Executive Officer | T.P. Gleiter |
| Special Assistant for Resource Programming | P.L. Laikin |
| Special Assistant for Legislative Planning | L.W. Crow |
| Special Assistant for Industrial Meteorology | Col. C.E. Roache, USAF |
| Military Advisor | |
| Director of Aviation Weather Affairs | N.A. Lieurance |
| Director of International Affairs | G.D. Cartwright |
| Director of Policy Planning | W.A. Hahn |
| Director of Public Information | J.M. Beall |
| Director of Meteorological Research | J. Spar |
| Director, Atmospheric Analysis Laboratory | S. Teweles |
| Director, Atmospheric Physics & Chemistry Laboratory | G.D. Kinzer |
| Director, Air Resources Laboratory | L. Machta |
| Director, Atmospheric Turbulence & Diffusion Laboratory | F.A. Gifford, Jr. |
| Director, Geophysical Fluid Dynamics Laboratory | J. Smagorinsky |
| Director, National Hurricane Research Laboratory | R.C. Gentry |
| Director, National Severe Storms Laboratory | E. Kessler, III |
| Director, Research Flight Facility | H.J. Mason, Jr. |
| Director, Sea-Air Interaction Laboratory | F. Ostapoff |
| Director of Hydrology | W.E. Hiatt |
| Chief Hydrologist | M.A. Kohler |
| Manager, Water Management Information | J.L.H. Paulhus |
| Manager, Hydrologic Services | B. Swenson |
| Director, Hydrologic Research & Development Laboratory | M.A. Kohler |
| Director of Administration & Technical Services | R.C. Grubb |
| Manager, Administrative Operations | E.L. Kvam |
| Manager, Budget & Accounting | G.L. Bowie |
| Manager, Facilities & Maintenance | H.R. McBirney |
| Manager, Management & Organization | L.C. Armstrong |
| Manager, Personnel | G.H. Dorsey |
| Manager, Scientific Documentation | J.E. Caskey |

Functions of Bureau Offices and Divisions

OFFICE OF CHIEF OF BUREAU

The Office of Chief of Bureau and its functions were outlined in the April 1964 issue of TOPICS. The Office of Chief of Bureau includes the Chief Scientist (see page 125), and the Offices of International Affairs, Policy Planning, Public Information and Aviation Weather Affairs.

EXECUTIVE OFFICE

In the Executive Office, the Chief of Bureau has an Executive Officer, a Military Advisor, and Special Assistants (not shown on the organization chart) to act as extensions of the Chief and advise him on their assigned fields of Resource Programming, Legislative Planning, and Industrial Meteorology.

OFFICE OF METEOROLOGICAL RESEARCH

The Office of Meteorological Research (see page 125 for announcement of new Director) conducts research in its laboratories or by grants and contracts with other organizations made through these laboratories. Of nine research laboratories responsible to the Office of Meteorological Research, five are located at the Central Office and four are in the field.

Those laboratories with headquarters at the Central Office are:

The Air Resources Laboratory which con-

ducts research on meteorological problems associated with the diffusion, transport, and deposition of atmospheric contaminants. This Laboratory contains the former Environmental Meteorological Research Project, Atmospheric Radioactivity Research Project, and Atmospheric Motions Research Project. It also includes the work performed for the Atomic Energy Commission by Weather Bureau Research Stations at Las Vegas and Idaho Falls, and the air pollution studies of the Weather Bureau Research Station at Cincinnati.

The Atmospheric Analysis Laboratory, which conducts analytical investigations of the physical structure of the atmosphere and of atmospheric systems and disturbances (except hurricanes, tornadoes, and severe local storms) and performs statistical investigations of atmospheric processes. This Laboratory is made up of the former Polar Meteorological Research Project, Stratospheric Meteorological Research Project, and Meteorological Statistics Research Project.

The Atmospheric Physics and Chemistry Laboratory, which conducts physical and chemical research related to atmospheric processes and composition. This Laboratory includes the former Physical Science Laboratory, the Atmospheric Ozone Research Project, Experimental Meteorological Research Project, and the Mauna Loa Observatory.

The Geophysical Fluid Dynamics Laboratory, formerly the General Circulation Research Laboratory, which conducts research on physics and dynamics of processes occurring in geophysical fluid media to develop mathematical-physical models of the circulation of the atmosphere.

The Sea-Air Interaction Laboratory, operated jointly with the Coast and Geodetic Survey (see TOPICS, July-August 1964), which conducts research on problems involving the interaction of the sea and the atmosphere and, in consultation with other interested government agencies, develops coordinated plans for the Federal air-sea interaction research program. The former Storm Surge Research Project and Meteorological Oceanographic Research Project will be part of this new Laboratory.

The four laboratories located in the field are:

The Atmospheric Turbulence and Diffusion Laboratory, a new Laboratory at Oak Ridge, Tennessee, which conducts research on atmospheric turbulence and diffusion by means of theoretical and experimental investigations. The Laboratory includes the former Weather Bureau Research Station at Oak Ridge, which conducted studies sponsored by the Atomic Energy Commission.

The Research Flight Facility, at Miami,

(continued on page 132)

Assignments (continued)

| | |
|---|--------------------------------|
| Director of National Weather Satellite Center | D.S. Johnson |
| Scientific Advisor | to be filled on rotating basis |
| Director, Meteorological Satellite Laboratory | S. Fritz |
| Manager, Operations | A.W. Johnson |
| Manager, TOS Systems Engineering | J.G. Vaeth |
| Director of Climatology | H.E. Landsberg |
| Assistant Director | R.W. Schloemer |
| Manager, Field and User Services | H.B. Harshbarger |
| Director, Laboratory of Climatology | H.E. Landsberg |
| Director of National Weather Records Center | W.H. Haggard |
| Director of National Meteorological Services | G.P. Cressman |
| Deputy Director for Operations | R.H. Simpson |
| Deputy Director for Service Programs | P.H. Kutschenreuter |
| Manager, Data Acquisition | A.K. Showalter |
| Manager, Weather Analysis & Prediction | E.M. Vernon |
| Manager, Communications | J.C. Stratton |
| Manager, Systems Control | to be activated 1 Jan. 1965 |
| Director of National Meteorological Center | F.G. Shuman |
| Deputy Director | F.W. Burnett |
| Manager, Analysis and Forecast | H.K. Saylor |
| Manager, Computation | S. Herman |
| Manager, Development | F.G. Shuman |
| Manager, Extended Forecast | J. Namias |
| Director of Systems Development | M.N. Techter |
| Manager, Systems Design Team | E.W. Estelle |
| Director, Techniques Development Laboratory | C.F. Roberts |
| Director, Equipment Development Laboratory | W.F. Staats |
| Director, Test and Evaluation Laboratory | A.N. Hill |
| New York Regional Director | L.E. Brotzman |
| Fort Worth Regional Director | W.L. Thompson |
| Kansas City Regional Director | R.L. Fox |
| Salt Lake City Regional Director | H.D. Spangler |
| Anchorage Regional Director | M.A. Emerson |
| Honolulu Regional Director | J. W. Osmun |

Regional Office Division Manager assignments will be announced at a later date.

CHIEF OF BUREAU
Executive Office

CHIEF SCIENTIST

METEOROLOGICAL RESEARCH
Air Resources Lab.
Atmospheric Analysis Lab.
Atmospheric Physics & Chemistry Lab.
Geophysical Fluid Dynamics Lab.
Sea-Air Interaction Lab.

CLIMATOLOGY
Field & User Services
Laboratory of Climatology

HYDROLOGY
Hydrologic Services
Water Management Information
Hydrologic Research & Development Lab.

INTERNATIONAL AFFAIRS

PUBLIC INFORMATION

POLICY PLANNING

AVIATION WEATHER AFFAIRS

NATIONAL WEATHER SATELLITE CENTER
Meteorological Satellite Lab.
TOS System Engineering Operations

ADMINISTRATION AND TECHNICAL SERVICES
Administrative Operations
Budget and Accounting
Facilities and Maintenance
Management and Organization
Personnel
Scientific Documentation (Includes Library)

NATIONAL METEOROLOGICAL SERVICES

SYSTEMS DEVELOPMENT
Equipment Development Lab.
Systems Design Team
Techniques Development Lab.
Test and Evaluation Lab.

Data Acquisition
Weather Analysis & Prediction
Communications
Systems Control

DEPUTY DIRECTOR FOR OPERATIONS

DEPUTY DIRECTOR FOR SERVICE PROGRAMS

USER SERVICES REPRESENTATIVES
Public
Agriculture
Aviation
Fire Weather
Marine
Military

NATIONAL METEOROLOGICAL CENTER
Analysis & Forecast
Computation
Development
Extended Forecast

Atmospheric Turbulence & Diffusion Lab. (Oak Ridge, Tenn.)
Research Flight Facility (Miami, Fla.)
National Hurricane Research Lab. (Miami, Fla.)
National Severe Storms Lab. (Norman, Okla.)
National Weather Records Center (Asheville, N. C.)

REGION I New York
Operations
Administration and Technical Services
Regional Meteorologist/Scientific Services
Regional Climatologist
Regional Hydrologist
Regional User Services Representative
State Coordinators
FIELD OFFICES

REGION II Ft. Worth
Operations
Administration and Technical Services
Regional Meteorologist/Scientific Services
Regional Climatologist
Regional Hydrologist
Regional User Services Representative
State Coordinators
FIELD OFFICES

REGION III Kansas City
Operations
Administration and Technical Services
Regional Meteorologist/Scientific Services
Regional Climatologist
Regional Hydrologist
Regional User Services Representative
State Coordinators
FIELD OFFICES

REGION IV Salt Lake City
Operations
Administration and Technical Services
Regional Meteorologist/Scientific Services
Regional Climatologist
Regional Hydrologist
Regional User Services Representative
State Coordinators
FIELD OFFICES

REGION V Anchorage
Operations
Administration and Technical Services
Regional Meteorologist/Scientific Services
Regional Climatologist
Regional Hydrologist
Regional User Services Representative/
State Coordinator
FIELD OFFICES

REGION VI Honolulu
Operations
Administration and Technical Services
Regional Meteorologist/Scientific Services
Regional Climatologist
Regional Hydrologist
Regional User Services Representative/
State Coordinator
FIELD OFFICES

Functions (continued)

Florida, which maintains and operates aircraft for meteorological research and develops instruments for meteorological measurements from aircraft.

The National Hurricane Research Laboratory, at Miami, which is the former National Hurricane Research Project.

The National Severe Storms Laboratory, at Norman, Oklahoma, which conducts research on tornadoes, squall lines, thunderstorms, and other severe local storms, including techniques for detection of these storms.

OFFICE OF CLIMATOLOGY

The Office of Climatology directs the collection, processing, international planning, archiving, and publication or recall of climatological data. It also guides the Weather Bureau efforts in research aimed at greater application of climatological data for solution of problems in agriculture, commerce, industry, health, and recreation.

The Field and User Services Division directs the technical operations of Weather Bureau climatological services in the field. In carrying out these functions, the Division acts for the Director of National Meteorological Services and maintains close coordination with the Data Acquisition Division of the ONMS, as well as with the Regional Climatologists. Through the Director of Climatology, the Field and User Services Division also coordinates the program of data dissemination from the National Weather Records Center. The Division is made up of the former Climatological Advisory Services Branch and the Climatological Field Services Branch.

The Laboratory of Climatology seeks to improve the interpretation of climatological data by statistical or synoptic devices, in order to meet user requirements. The Laboratory encompasses the former Climatological Investigations Branch and personnel at the National Weather Records Center who are engaged in research.

The National Weather Records Center in Asheville, North Carolina, under the direct supervision of the Director of Climatology, collects, processes, archives, and publishes climatological data.

OFFICE OF HYDROLOGY

The Office of Hydrology establishes plans, policies, and procedures for observing, collecting, and processing hydrologic data for river and flood forecasts and warnings and for water supply forecasts. It also conducts research and development programs for improving field services.

The Chief Hydrologist advises on the need for hydrologic research to be undertaken or

sponsored by the Office of Hydrology, conducts specific research projects, and serves on national and international committees concerned with hydrologic research.

The three divisions of the Office of Hydrology are:

The Hydrologic Services Division, which includes the former River Services Section. The Division directs the operation of the river and flood forecasting field services, working through the Director of National Meteorological Services and the Regional Directors.

The Water Management Information Division, which analyzes, investigates, and interprets hydrometeorological data for the development and management of water resources. To carry out its objectives, this Division reviews hydrologic literature and participates in the maintenance of an information and retrieval system. The Water Management Information Division is made up of the former Cooperative Studies and Hydro-meteorological Sections.

The Hydrologic Research and Development Laboratory, which investigates all phases of the hydrologic cycle and applies new knowledge and techniques to improve the Bureau's river and flood forecasts and warnings and water supply forecasts. The former Hydrologic Investigations Section is part of the new Laboratory.

NATIONAL WEATHER SATELLITE CENTER

The National Weather Satellite Center is responsible for establishing and operating a National Operational Meteorological Satellite System and for improving the system and the usefulness of data gathered. It has the status of an Office but will retain its former name.

Reporting to the Director of the Center are the Spaceflight Meteorology Group, the Support Services Staff, and the Advanced Satellite Systems Staff. (The Advanced Satellite Systems Staff investigates and evaluates new technology applicable to meteorological satellite systems. Through contracts, it conducts advanced satellite system studies and procures prototypes of sensor subsystems for advanced satellites.)

The three major subdivisions of the National Weather Satellite Center are:

The Meteorological Satellite Laboratory, which investigates atmospheric dynamics, thermodynamics, and composition with the aid of satellite data. The Laboratory devises new or improved methods of measuring atmospheric parameters by means of satellites. It also provides consultant services in satellite research and development and assists in training and applications development.

The TOS System Engineering Division, which performs engineering and system design tasks and engineering management required to establish and improve the TIROS Operational Satellite (TOS) System. The Division carries out the functions

of the former Systems Division.

The Operations Division, which operates the weather satellite data collection, processing, and analysis system. It also determines user requirements and develops procedures for analysis and presentation of satellite data for meeting the requirements with maximum effectiveness. The Division Manager serves as Acting Director of the Center during the absence of the Director.

OFFICE OF ADMINISTRATION AND TECHNICAL SERVICES

The Office of Administration and Technical Services and the functions of its divisions were discussed in the April 1964 issue of TOPICS.

OFFICE OF NATIONAL METEOROLOGICAL SERVICES

The Office of National Meteorological Services, the two Deputy Directors, and the four Divisions (Data Acquisition, Weather Analysis and Prediction, Communications, and Systems Control) were covered in the April issue of TOPICS. It has since been determined that the Deputy Director for Service Programs will have on his staff User Service Representatives for public, agriculture and fire-weather, aviation, and marine and military interests.

SYSTEMS DEVELOPMENT OFFICE

The Systems Development Office, which was discussed in April TOPICS, has four components with division status:

The Equipment Development Laboratory, which is responsible for development and design of meteorological sensors and prototypes, incorporating new instrument and equipment technology. A portion of the former Instrumental Engineering Division, including those people working on instrument development and the staff of the model shop, forms the basis of the Equipment Development Laboratory.

The Systems Design Team, which studies improvements to the design of the National Meteorological System and ensures that meteorological subsystems are integrated with those of hydrology, climatology, and allied fields. The Team also assists with the design of the World Weather System. Included on the Systems Design Team are the former Office of Forecast Development and some members of the former Office of Planning.

The Techniques Development Laboratory, which carries out applied research and development, testing, and evaluation, to improve operating techniques and procedures. The Laboratory includes three projects formerly part of OMR (the Aviation Forecasting Research Project, Short Range Forecasting Research Project, and Clear Air Turbulence Research Project) and the former Technical Investigations Section of the Observations and Station Facilities Division.

The Test and Evaluation Laboratory, which conducts bench tests and limited field tests of instruments and equipment developed by the Equipment Development Laboratory and by other groups. The Laboratory, located at Sterling, Virginia, was formerly known as the Observational Test and Development Center.

NATIONAL METEOROLOGICAL CENTER

The Center's four branches remain as before, but are now divisions: the Analysis and Forecast Division, the Computation Division, the Development Division, and the Extended Forecast Division.

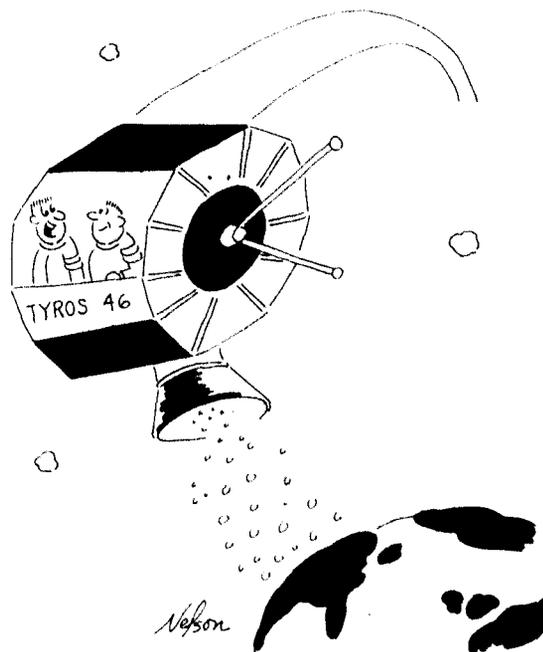
REGIONAL OFFICES

Regional Office responsibilities were discussed in the April issue of TOPICS. Each of the six Regional Offices has five divisions.

The Operations Division, carrying out the policies and procedures developed by the Office of National Meteorological Services, manages the observing and communications systems of the region and the programs for prediction, warning, and special services for the general public, military, aviation, marine, forestry, and agricultural interests in the region.

The Administration and Technical Services Division provides administrative and fiscal support functions for the region. It also provides engineering support for the installation, operation, and maintenance of instrumental systems,

(continued on page 134)



"When we predict snow, it snows!"

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Organization Policy *(continued)*

MIC's, have authority over personnel in their respective line organizations. They are concerned with the what, where, when, and who of execution and operation. Line management has continuous, direct contact with specific operating problems and, through a continuous series of operating decisions, directs and operates a national system developed by specialists with the total Bureau in mind.

Specialists who provide professional assistance to line managers are functional managers. They are concerned with technique--how operations are performed. The majority of the components on the Weather Bureau organization chart outside of the direct line from the Chief of Bureau to the field have a functional management relationship to the field services. Their responsibilities, outlined in the manual, include: "formulation of Bureau-wide policy, plans, procedures, measurements, and performance standards; determination of adherence to policies, plans, procedures; conducting Bureau-wide evaluations, analyses, syntheses, studies; providing consultation and advice in area of expertise; evaluating counterpart performance and assisting on counterpart key personnel matters; specification of positions, candidate nominations, evaluations; and trouble shooting as assigned or requested."

In order to fulfill these responsibilities, functional managers have the right to look at operations and to have access to data. They have the authority to prescribe procedures and standard practices and, as delegated by the Chief of Bureau, to develop policy.

Although direct lines of authority have been established to provide leadership and control, information should be "permitted to flow throughout the organization by encouraging open and direct communications between individuals..." Certainly, it is difficult to kick ideas around in a long formal chain of command, to talk about possible mutual problems, and to develop joint solutions. Direct contact between individuals, regardless of their organizational components or levels, is usually the best way to obtain information, exchange ideas, and solve problems. But the prescribed, formalized organization channels are the only routes through which orders can be given or resources committed.

Of course, the success of the new organization depends on the people in it. The final, and perhaps most significant, expression of organizational policy in the Manual Chapter directs that organization design "recognize human values and characteristics . . ." In doing so, the organization must: "Provide full, challenging work opportunities. Recognize superior accomplishment. Tolerate reasonable level of errors. Provide opportunities for learning and growth."

Functions *(continued)*

plants, and structures for the region.

The Regional Meteorologist serves as Manager of the Scientific Services Division. He evaluates the effectiveness of existing techniques for the preparation of forecasts and warnings, and develops and tests improved methods for performing these services.

The Regional Climatologist serves as a consultant and supervises all climatological activities in the region, in accordance with the policies developed by the Office of Climatology.

The Regional Hydrologist directs the activities of the river and flood forecasting field services, which include observing, collecting, and processing hydrologic data and the distribution of forecasts and warnings.

The Regional User Services Representatives and the State Coordinators perform, at regional and state levels, the customer service function outlined in Department Order No. 91 as follows: "Through continuous liaison with user groups, receives requests from any user group for change in Weather Bureau services; recommends action in the light of related programs and probable effect on all services; and evaluates effectiveness, for the user, of weather services."

The Regional User Services Representative advises the Regional Director on the type and depth of services to be provided to users. He maintains constant liaison with user groups, analyzes their problems, and develops specific suggestions for meeting their needs. Recommendations for new or revised policy are referred to the Deputy Director for Service Programs of the Office of National Meteorological Services for inclusion into national systems. The Regional User Services Representative reviews the recommendations of State User Service Representatives (State Coordinators) in the region.

The State User Service Representative (State Coordinator) duties will be assigned to an MIC in each state except in Regions V and VI, which include only one state. The duties of the State User Service Representative are similar to those of the present State Aviation Liaison Official (SALO), but involve the full range of user groups.

Forecaster Wins Soaring Award

Leland D. Wilkins, fruitfrost forecaster at Pomona, California, recently received special recognition for an outstanding wave flight in a glider. In this flight, made two years ago, he reached an altitude of 28,800 feet, with an altitude gain after release of 17,800 feet.

The award given to Mr. Wilkins consists of a Lennie Pin and a Symons Wave Memorial plaque, named for the late waveflying pioneer Robert Symons.

Bureau Operates Weather Station At Scout Jamboree

A completely equipped weather station was operated by the Weather Bureau for more than 50,000 Boy Scouts attending the National Boy Scout Jamboree at Valley Forge, Pennsylvania, in July.

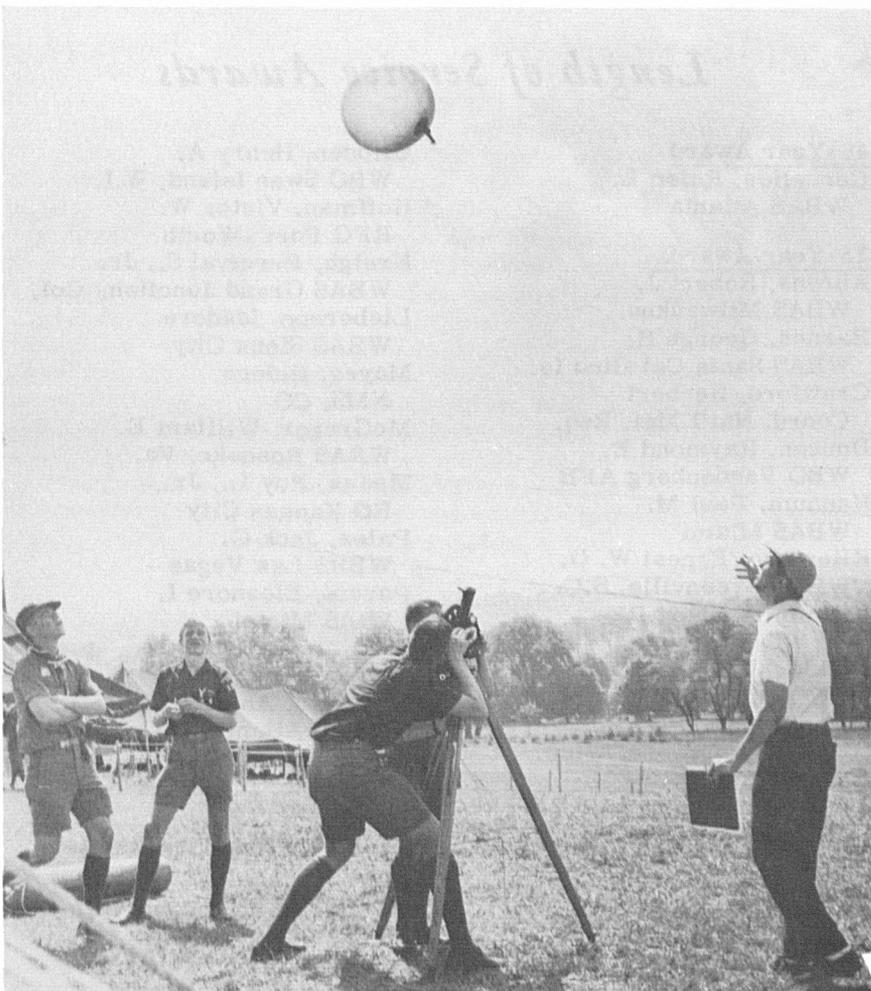
The Valley Forge station took regular surface and upper-air observations and issued forecasts and warnings as required for Jamboree operations. Teletypewriters and facsimile equipment brought the latest weather bulletins and forecasts, maps, and TIROS information from the Weather Bureau Airport Station at Philadelphia to the Boy Scout station at Valley Forge.

Weather equipment, furnished by the Bureau, was installed by technicians from Washington and Philadelphia, with the assistance of Boy Scouts. Radar equipment was rolled into place near the weather station tent and was put into operation by U.S. Army technicians from Fort Monmouth, New Jersey. The Air Weather Service supplied equipment for pilot balloon observations.

James Fidler, Central Office meteorologist, supervised eight Eagle Scouts from Explorer Post 123, Falls Church, Virginia, who manned the station.

Daily weather briefings were given to members of the Jamboree headquarters and public relations staffs to assist them in operational planning. A daily weather map prepared at the station appeared in the official Jamboree newspaper.

Weather Bureau representatives who assisted at the Jamboree were William Nash, Stanley Yarkin, A.J. Hull, James Fidler, and John Nyhan, of the Central Office; Nelson Kauffman, State Climatologist for Pennsylvania; and Donald Dunlap; State Climatologist for New Jersey.



Stanley Yarkin, right, of the Data Division, trains scouts to track a pilot balloon. Photo by Philadelphia Inquirer

DEATHS

James F. Beach, Jr.

James F. Beach, Jr., a Meteorological Technician at Atlantic City, New Jersey, died on July 2. Mr. Beach joined the Weather Bureau in 1946 and served at Atlantic City until his death. He was a World War II veteran and a graduate of Juniata College in Huntingdon, Pa. Mr. Beach is survived by his wife, Anna, and a son, James, of 312 Pine Street, Absecon, New Jersey.

Raymond G. Strietzel

Raymond G. Strietzel, a Supervisory Meteorological Technician at the Weather Bureau Airport Station in Denver, Colorado, died on July 12. Mr.

Strietzel entered the Bureau in Portland, Oregon, in 1947 and served at Troutdale, Oregon; Swan Island, W.I.; and Rapid City, South Dakota. He transferred to Denver in 1956. He is survived by his father, Fred W. Strietzel of Rolla, North Dakota, three sisters, and two brothers.

Earl F. Beal

Earl F. Beal, a Packer with the Central Office's Procurement and Supply Section, died August 8. Mr. Beal joined the Bureau in Washington as a Junior Laborer in 1942. His 22-year Weather Bureau career was spent at the Central Office. Mr. Beal is survived by his wife, Alice E. Beal of 78 Seaton Place, N.W., Washington, D.C.

Length of Service Awards

40-Year Award

Cornelius, Rolen L.
WBAS Atlanta

35-Year Awards

Ahrens, Robert J.
WBAS Milwaukee
Barnes, George H.
WBAS Santa Catalina Is.
Crawford, Herbert
Coord. Nat'l Met. Req.
Duncan, Raymond E.
WBO Vandenberg AFB
Hannum, Paul M.
WBAS Miami
Kliemann, Ernest W. G.
WBAS Greenville, S.C.
Krumm, Wilbert R.
WFWC Missoula
Nickles, J. Harold
WBO Cincinnati
Peterson, Carl G.
WBAS La Crosse, Wisc.
Raven, Charlie J.
RO Fort Worth

30-Year Awards

Campbell, Vivian
Adm. Oprs., CO
Waite, Robert J.
WBAS Memphis

25-Year Awards

Briggs, Murray B.
RO Kansas City
Collins, Grover T.
WBAS Brownsville, Texas
Hight, Warren
WXAP, CO
Kurtz, Emil S.
WBAS Los Angeles
Manning, Edmund J.
WBAS Honolulu, Hawaii
Spratt, Clinton
Adm. Oprs., CO
Stallcup, Don D.
WBAS Fort Myers, Florida

20-Year Awards

Anderson, Howard J.
RO Kansas City
Carmichael, Jesse V.
WBAS Miami
Cohoe, Gatch T.
WBAS Anchorage
Gardner, Anne W.
RO Anchorage
Gift, Frank C.
WBAS Reno

Glidden, Henry A.
WBO Swan Island, W.I.
Hoffman, Victor W.
RFC Fort Worth
Kreigh, Percival S., Jr.
WBAS Grand Junction, Col.
Lieberson, Isadore
WBAS Sioux City
Mayes, Helene
NMS, CO
McGregor, William E.
WBAS Roanoke, Va.
Meaux, Roy L., Jr.
RO Kansas City
Pales, Jack C.
WBRS Las Vegas
Parent, Eleanore I.
WBAS Miami
Sullivan, William G.
WBAS Denver
Tancreto, Anthony E.
WBAS Atlantic City
Vaiksnoras, John V.
San Juan, P.R.
Woods, Perry A.
DMO Kansas City

15-Year Awards

Bobbitt, Hal D.
WBO Vandenberg AFB
Foster, George M., Jr.
WBRS Wallops Island
Gove, Kenneth E.
AWP Boston
Grishan, Claude E.
WBAS Kansas City
Hall, Ferguson
NWSC, CO
Keiger, Miles O.
WBAS Montgomery, Ala.
Lawrence, Joseph F.
WBAS Fresno
Mullin, Robert J.
WBRS Wallops Island
Newman, Terrence N.
PMRWS Eniwetok, Pacific
Nunan, Jack R.
RO Honolulu
St. Croix, Andrew F.
WBAS Anchorage
Terban, Harry
WBAS Boston
Thomas, John, Jr.
NMC, CO
Welch, Anna
NMC, CO
Ziegler, Thomas E.
WBAS Midland, Texas

RETIREMENTS

Nathan S. Waldrop

Nathan S. Waldrop, an Aviation Forecaster at El Paso, Texas, retired June 2. Mr. Waldrop joined the Bureau at Big Spring, Texas, as a Meteorological Aid in 1946. He has served at Galveston, Brownsville, and San Antonio, Texas; Wake Island in the Pacific, and Jacksonville, Florida. His address is 7405 Dempsey Avenue, El Paso, Texas.

Vincent Vasco

Vincent Vasco, Chief of the Bureau's Publications Section at the Central Office, retired June 8. He started his Federal career in 1923 with the Government Printing Office. In 1944, he transferred to the Department of Commerce Publications Division. He joined the Weather Bureau in 1949 as an Administrative Assistant in the Printing Section. He was named Chief of the Publications Section in 1953. His address is 6209 Hollins Drive, Bethesda, Maryland.

William C. Drapier

William C. Drapier, a Meteorological Technician at Brownsville, Texas, retired July 8 after 35 years of Federal service. Mr. Drapier joined the Weather Bureau at Omaha, Nebraska, in 1929. He has served in St. Louis, Mo.; Asheville, N.C.; Spartanburg, S.C.; Silver City, New Mexico; and Knoxville, Tenn. His address is 713-A Court Street, Maryville, Tenn.

Dwight F. Gibson

Dwight F. Gibson, a Meteorologist at the Weather Bureau Airport Station in Norfolk, Virginia, retired July 15 after 34 years of Federal service. Mr. Gibson joined the Bureau in Oklahoma City as a Junior Observer in 1930. He also served in Tulsa, Oklahoma. His address is 5014 East Prin-

(continued on page 137)

RETIREMENTS (continued)

cess Anne Road, Norfolk, Virginia.

Irvine F. Schnittgrund

Irvine F. Schnittgrund, a Meteorological Technician at WBAS La Crosse, Wisconsin, retired July 22 after 22 years of Federal service. Mr. Schnittgrund joined the Weather Bureau at La Crosse in 1931 as an Airways Observer. After a tour of duty with the Atlantic Ocean Weather detail in 1944-45, he returned to La Crosse. He also served in Waterloo, Iowa, for a time. Mr. Schnittgrund's address is 2627 King Street, La Crosse, Wisconsin.

Andrew D. Robb

Andrew D. Robb, a Meteorologist (Climatology) at Topeka, Kansas, retired July 24. Mr. Robb joined the Weather Bureau in Columbia, Missouri, as a Junior Observer in 1927. He has also served the Bureau in Helena, Montana. He transferred to Topeka in 1946. Mr. Robb is a graduate of Geneva College in Beaver Falls, Pennsylvania. His address is 1180 Garfield Street, Topeka, Kansas.

Robert D. Church

Robert D. Church, MIC at the Weather Bureau Airport Station in Medford Oregon, retired July 18 after 33 years of Federal service. Mr. Church joined the Weather Bureau in 1935 as a Junior Observer at Pendleton, Oregon. He has served at Spokane, Seattle, and Glasgow, Montana stations. He became MIC at Medford in 1949. His address is Route #1, Box 33B P.O. Topez Island, Washington.

Harry M. Gerber

Harry M. Gerber, Principal Assistant at the WBO in Pittsburgh, retired July 31. He joined the Weather Bureau as a Junior Observer at Ithaca, New

(continued on page 139)

Recorded Telephone Forecasts Gage 'Weather Interest'

Which U.S. city served by recorded Weather Bureau forecasts is most interested in weather?

The Nation's capital is, if the number of calls per capita a year is a reliable weather interest factor. Washington area residents each placed 15.5 calls last year (1963) to the recorded forecast, while the Cleveland metropolitan area was a close second with 15.1

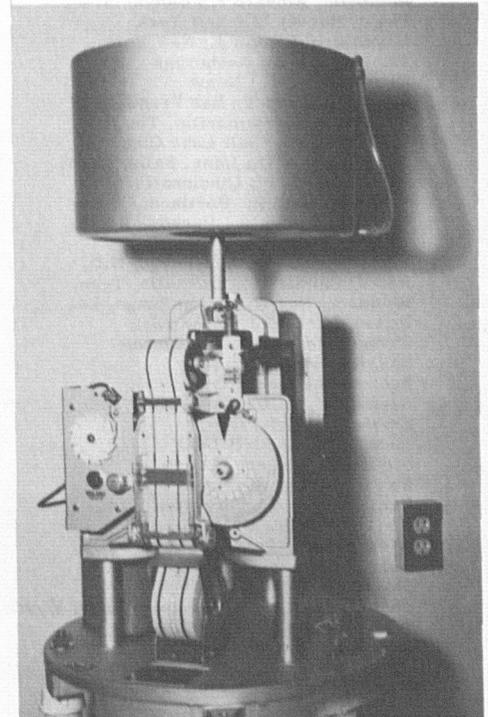
calls per capita. Milwaukee scored 13.8 calls, and Detroit 10.3 calls per capita.

An all-time high of 235 million calls was placed to the recorded forecast last year, indicating a general rise of public interest in weather. With the recent addition of facilities at Richmond and Norfolk, Virginia, 14 cities now have automatic telephone weather service.

| CITY | ANNUAL TOTAL | POPULATION | CALLS PER |
|---------------|------------------|------------------------------|-----------------|
| | CALLS (Millions) | METROPOLITAN AREA (Millions) | CAPITA PER YEAR |
| Washington | 32.7 | 2.1 | 15.5 |
| Cleveland | 31.8 | 2.1 | 15.1 |
| Milwaukee | 16.5 | 1.2 | 13.8 |
| Detroit | 39.4 | 3.8 | 10.3 |
| Baltimore | 10.3 | 1.6 | 6.4 |
| Pittsburgh | 7.8 | 2.0 | 3.9 |
| Philadelphia | 14.1 | 4.0 | 3.5 |
| Chicago | 22.8 | 6.5 | 3.5 |
| Boston | 8.5 | 2.9 | 2.9 |
| New York City | 42.2 | 15.4 | 2.7 |
| San Francisco | 5.5 | 3.3 | 1.7 |
| Los Angeles | 3.9 | 6.6 | 0.6 |

New Rain Gage →

This is the Bureau's new recording precipitation gage. At right, with its collector hood and instrument shell removed, the gage's inner workings are exposed. This is a weighing-type gage which records rain-fall and also the water equivalent of snowfall. The record is automatically punched out on the tape at five-minute intervals. The tape can then be fed through a machine translator at the NWRC directly on to punch cards for computer analysis. Readings may also be taken directly from the gage. Two hundred and fifty of these gage-recorders are being placed in the field.



Welcome to the Bureau

Ackley, Clarence W.; Tatoosh Is.
 Alvarado, Ruben; Galveston, Tex.
 Amelunke, Walter C.; Louisville, Ky.
 Anderson, Eric A.; CO
 Barndt, Richard L.; Las Vegas
 Barnes, Maux; Salem, Ore.
 Bartell, Henry R., Joliet, Ill.
 Berry, Lee C.; Asheville
 Blackwell, Jacqueline Y.; CO
 Blyton, Jerald L., Chicago
 Bourrillion, Neville A.; San Francisco
 Braun, Walter Charles; CO
 Bridge, Leonard L., CO
 Chagery, Michael J.; Asheville
 Chapman, Clarence R., San Francisco
 Devore, Donald E., Oklahoma City
 Eklund, Nancy A., CO
 Erdahl, Robert J., CO
 Fredrickson, Dave I., Seattle, Wash.
 Fryman, Edgar G., Barrow, Alaska
 Ganny, Glenda F.; CO
 Gray, Donald D., CO
 Gruber, John; Minneapolis
 Haas, Richard A.; Atlantic City
 Harrington, John R.; CO
 Hart, Jack D.; Dallas, Tex.
 Higa, Herbert I.; Honolulu
 Hill, Carrol R.; Tatoosh Is.,
 Hopkins, Rhoda I.; Norman, Okla.
 Horner, James F.; Chicago
 Houze, Robert A. Jr.; Houston, Tex.
 Howard, James E.; Wendover, Utah
 Hughes, Jerrell E.; Tifton, Ga.
 Hyatt, Paula; Salt Lake City
 Jameson, Arthur Robert; CO
 Jafferis, Ted C.; Madison, Wis.
 Jones, Darrel K.; Las Vegas
 Kalar, Roger M.; CO
 Kennedy, Lawrence W.; Montgomery, Ala.
 Kozak, Albert J.; Key West, Fla.
 Kunkel, Harry F.; Corpus Christi, Tex.
 Langham, Charles G., Jr.; CO
 Leshner, David C.; CO
 Lowe, Samuel V.; Midland, Tex.
 Madrid, Shirley E.; Salt Lake City
 Maruca, James P.; CO
 McInturff, Raymond M.; CO
 McLeod, Robert J., Jr.; Baltimore
 Mitsutani, Richard K.; Canton Is.
 Mogil, Harvey M.; New York
 Monastero, Lillian J.; New York
 Moore, Jane E.; Anchorage
 Moyer, Brian L.; Nome
 Moyer, Edward T.; San Francisco
 Nelson, James; Amarillo, Tex.
 Nelson, Jennie; Salt Lake City
 Newby, Derry D.; Inter. Falls, Minn.
 Olmes, Jerry P.; Cincinnati
 Papkoff, David H.; Portland, Ore.
 Pfeiffer, Martin A.; Barrow, Alaska
 Polger, Paul D.; CO
 Pugh, Myers Franklin; Fargo, N.D.
 Ricks, Emmett L.; Knoxville, Tenn.
 Robinson, Roy W.; Baton Rouge, La.
 Rosen, Michael J.; New York
 Savage, Stephen J.; Sacramento
 Sax, Robert; Harrisburg
 Scolnik, Stephen; CO
 Seemuller, William W.; CO
 Shaffer, John P.; CO
 Shreeve, Kenneth H.; CO
 Silverman, Eugene, CO
 Smith, Ned P., Sheridan, Wyo.
 Smith, Roger V., Shreveport, La.
 Smith, Ross H., Chicago
 Sommers, William T., Albany, N.Y.
 Soto, Simon; Del Rio, Tex.
 Stackpole, John; CO
 Stedman, James A.; Houghton Lake, Mich.
 Stout, Phil; Las Vegas
 Tangren, Alan E.; Sacramento
 Thorsen, Bernard W.; New York
 Tosini, Peter; CO

Transfers

| | FROM | TO |
|---------------------------|------------------------|-----------------------|
| Aikens, Bruce M. | Leesburg, Va. | Oklahoma City |
| Alderman, Dorus D. | Abilene, Tex. | Victoria, Tex. |
| Anderson, Bill B., | Santa Catalina, Calif. | Eugene, Ore. |
| Archambault, Charles E. | Leesburg, Va., | Washington, D.C. |
| Armstrong, John D., Jr. | Yakutat, Alaska | Tampa |
| Arnett, A.B., Jr. | Kansas City | Las Vegas |
| Bagnell, James N. | Santa Maria, Calif. | Goodland, Kan. |
| Barnes, Bruce O. | Kahului | Wake Island |
| Barnes, Burton R. | Tatoosh Island | CO |
| Baldwin, Ronald C. | Cold Bay, Alaska | Asheville |
| Bell, Irene L. | Memphis | Lubbock, Tex. |
| Cunningham, John W., Jr. | Tampa | Yakutat, Alaska |
| Curran, John T., Jr. | Kansas City, Mo. | Ft. Wayne, Ind. |
| Cutshall, Ralph L. | Wallops Island | Kalispell, Mont. |
| Degan, Edward W. | Marcus Island | Lincoln, Nebr. |
| Derrickson, Jehu F. | Burlington, Vt. | Kahului, Hawaii |
| DeRouse, William J. | Asheville | Fargo, N.D. |
| Doran, Donald W. | Boston | Norfolk |
| Duncan, Raymond E. | Santa Maria, Calif. | Vandenberg AFB |
| Dyrdahl, Nels L. | Huron, S.D. | Aberdeen, S.D. |
| Egger, Reuben G. | Barrow, Alaska | King Salmon, Alaska |
| Ewers, Robert J. | Lander, Wyo. | Aberdeen, S.D. |
| Fleming, Donald R. | Carlsbad, N.M. | Las Vegas |
| Gauna, Ray H., | Ft. Huachuca, Ariz. | Grand Junction, Col. |
| Geer, Roger L. | Fargo, N.D. | Marcus Island |
| Gray, Elwood C. | Raleigh, N.C. | Norfolk |
| Gross, James F. | Green Bay | Detroit |
| Hambidge, Richard E. | Sacramento | Reno |
| Harmon, David E. | Nome | San Francisco |
| Hudson, Horace R., Jr. | Daytona Beach | Montgomery, Ala. |
| Hursh, John S. | Memphis | Stoneville, Miss. |
| Ierien, William W. | Inter. Falls, Minn. | Lincoln, Neb. |
| Jacob, Warren J. | Detroit | CO |
| Johnson, Nels E. | Honolulu | CO |
| Jones, Everett D. | Kansas City, Mo. | Omaha |
| Jones, Leonard C. | Los Angeles, Calif. | Eugene, Ore. |
| Kanan, Robert A. | Ryan Air Field, Ariz. | Ft. Huachuca, Ariz. |
| Kelly, Fred R. | Winnemucca, Nev. | Hilo, Hawaii |
| Kline, Marvin C. | Inter. Falls, Minn. | Duluth |
| Krebs, Robert P. | Kansas City, Mo. | New York |
| Kuhn, John T. | Cincinnati, Ohio | Anchorage |
| Labaya, Flaviano | Marcus Island | Hilo, Hawaii |
| Lacy, Malcolm S. | Oklahoma City | El Paso, Tex. |
| McDonald, William C., Jr. | Canton Island | Barter Island, Alaska |
| Melick, Arthur R. | Norfolk | CO |
| Middleton, George D. | Ft. Worth | Springfield, Mo. |
| Miller, James R. | Saigon | Sacramento |
| Muller, Robert E. | Kwajalein | Roswell, N.M. |
| Misiewicz, Edith G. | Bethel, Alaska | McGrath, Alaska |
| Misiewicz, Edward F. | Bethel, Alaska | McGrath, Alaska |
| Nadeau, Philip V. | Winston-Salem | Caribou, Maine |
| Norwood, Albert H. | Shreveport | Silver City, N.M. |
| Nuesca, Maximo | Wake Island | Kwajalein Island |
| Ogden, Richard M. | Los Angeles | Ft. Smith, Ark. |
| Okaji, George Y. | Hilo, Hawaii | Kwajalein Island |
| Olkiewicz, David W. | Marcus Island | Fargo, N.D. |
| Osmun, James W. | CO | Honolulu |
| Paxton, Forrest D. | Long Beach | Anchorage |
| Pelkey, Oliver E. | Johnston Island | Kahului, Hawaii |
| Pike, Ralph C. | Brownsville, Tex. | Albuquerque |
| Russ, Thomas W. | Knoxville, Tenn. | Atlanta, Ga. |
| Rutkowski, Richard L. | Dayton, Ohio | Antarctica |
| Schultz, William P. | Indianapolis | Houghton Lake |
| Sermans, Lowell R. | Cincinnati | Memphis |
| Shaffer, Thomas H. | Pittsburgh | Boston |
| Shannon, William M. | Kwajalein | Las Vegas |
| Shenot, Richard B. | El Paso, Tex. | Victoria, Tex. |
| Shute, Larry R. | Antarctica | Mould Bay, NWT |
| Sigler, Stanley G. | Colorado Springs | Cheyenne |
| Skillman, Clarence E. | Thomasville, Ga. | Atlanta, Ga. |
| Ward, Harold A. | Leesburg, Va. | Washington, D. C. |
| Warren, Howard W., Jr. | La Crosse, Wisc. | Sioux City |
| Webb, George J., Jr. | Cincinnati | Cleveland |
| Westwood, James N. | Medford, Ore. | Portland, Ore. |
| Wheeler, David R., Jr. | Amarillo | El Paso |
| Whelsky, Michael J., Jr. | Barter Island, Alaska | Norfolk, Va. |
| White, Gary Olin | Wichita | Louisville |
| Williams, George E. | Tifton, Ga. | Jacksonville, Fla. |
| Willis, Ronald A. | Minneapolis | Houghton Lake, Mich. |
| Willison, Paul R. | Medford, Ore. | Salem, Ore. |
| Yamada, Henry M. | San Francisco | Honolulu |
| Zamarripa, Isalah | Kansas City, Mo. | San Juan, P. R. |

RETIREMENTS (*continued*)

York, in 1927. Mr. Gerber served at Bellefonte, Pennsylvania, Newark, New Jersey, New York, and Cleveland. His address is 1940 Spring Valley Road, Pittsburgh, Pennsylvania.

Betty B. Duffy

Betty B. Duffy, a Clerk-Typist at the Central Office, retired July 23 after 22 years of Federal service. Mrs. Duffy began her Government career with the Treasury Department in 1941. She transferred to the Weather Bureau in Washington, D.C., in 1942. Her address is 3201-19th Street, Washington, D.C.

Keith S. Nicoson

Keith S. Nicoson, Administrative Assistant in the Instrumental Engineering Division at the Central Office, retired July 28 after 27 years of Federal service. Mr. Nicoson joined the Bureau at Washington as a Junior Operative in 1936. He also served with the National Bureau of Standards for a time. His address is 4518 North Glebe Road, Arlington, Va.

Mary R. McDaniel

Mary R. McDaniel, a Clerk-Stenographer at the Weather Bureau Office in Sacramento, California, retired August 11 after 33 years of Federal service. Miss McDaniel joined the Government with the Department of Agriculture in 1931. She transferred to the Weather Bureau at Sacramento in 1952. Miss McDaniel's address is 4116-57th Street, Sacramento, Calif.

Edna P. Wilson

Edna P. Wilson, a Meteorological Technician at the National Weather Records Center in Asheville, retired on August 31. Mrs. Wilson joined the Weather Bureau in 1945 as a Junior Clerk in San Francisco. In 1962, she was transferred to the NWRC's Climatography Section. Her address is 103 Charlotte Street, Asheville, N.C.

Weather Bureau Radar Stations Help Track Migratory Birds

Radar meteorologists at a number of Weather Bureau WSR-57 installations have been commended for their part in a study of the migratory habits of birds.

The Illinois Natural History Survey has contracts with the National Science Foundation for basic research on bird migration, and with the Federal Aviation Agency as to the possibility of being able to predict massive bird migrations that might be hazardous to aircraft.

Hourly Observations

During the spring and fall migration periods (and when it would not interfere with normal meteorological observations), Weather Bureau operators took hourly radar photographs for analysis by Mr. Frank Bellrose, Wildlife Specialist for the Illinois Natural History Survey.

Mr. Bellrose reported that the Weather Bureau radars provided an enormous volume of data that could not have been obtained by other than an "army" of cooperative observers.

During the spring and fall of 1963 about 6,000 Polaroid photographs taken at Bureau stations were submitted. When the study is completed, it will be possible to set up parameters of altitude, regions, chronology, and weather in which birds will most likely create hazards for aircraft.

Academic Value

Academically, the study will be of value in determining the influence of geography and topography on lines of flight, the influence of wind and temperature in initiating the arresting waves of migrants and whether birds must rely on celestial clouds for navigation or whether they can navigate under total cloud cover without reference

to sun or stars.

While data are still being studied, a number of interesting facts have come to light. Mr. Bellrose notes that several million birds (mostly waterfowl) migrate south over St. Louis, Missouri, each fall. Aircraft in the vicinity of the St. Louis Airport are, therefore, most vulnerable to duck "strikes," since this airport is located at the small end of the migration funnel.

Interesting Notes

Mr. Bellrose also noted:

Waterfowl migrate out ahead of a cold front, whereas small landbirds will fly behind it.

In stratus situations, birds fly "on-top."

Birds are capable of analyzing wind-shear.

In general, large birds fly in groups; small birds fly independently.

Ninety percent of migratory flying is done at night.

Mr. Bellrose has observed small birds in front of a light plane fold their wings and drop. He believes that most birds will do this.

Mr. Bellrose considers hawks and eagles more of a hazard to planes than waterfowl.

Cooperating Stations

WSR-57 personnel at the following stations cooperated during the spring migratory data gathering program in 1963: Apalachicola, Brownsville, Des Moines, Galveston, Lake Charles, Little Rock, Minneapolis, St. Louis, and Tampa. During the fall of 1963, WSR-57 stations at Buffalo, Cincinnati, Charleston, Daytona Beach, Detroit, Evansville, Fort Worth, Miami, New Orleans, Oklahoma City, Washington, D.C., and Wichita joined the previous stations in monitoring the passage of birds.

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TOPICS, the official Weather Bureau employee magazine, is published monthly to inform all employees about Bureau activities and programs. Articles or comments by Bureau employees are invited. Inquiries and requests for permission to reprint or quote from material contained in TOPICS should be sent to the Office of Public Information, U.S. Weather Bureau, Washington, D.C. 20235.

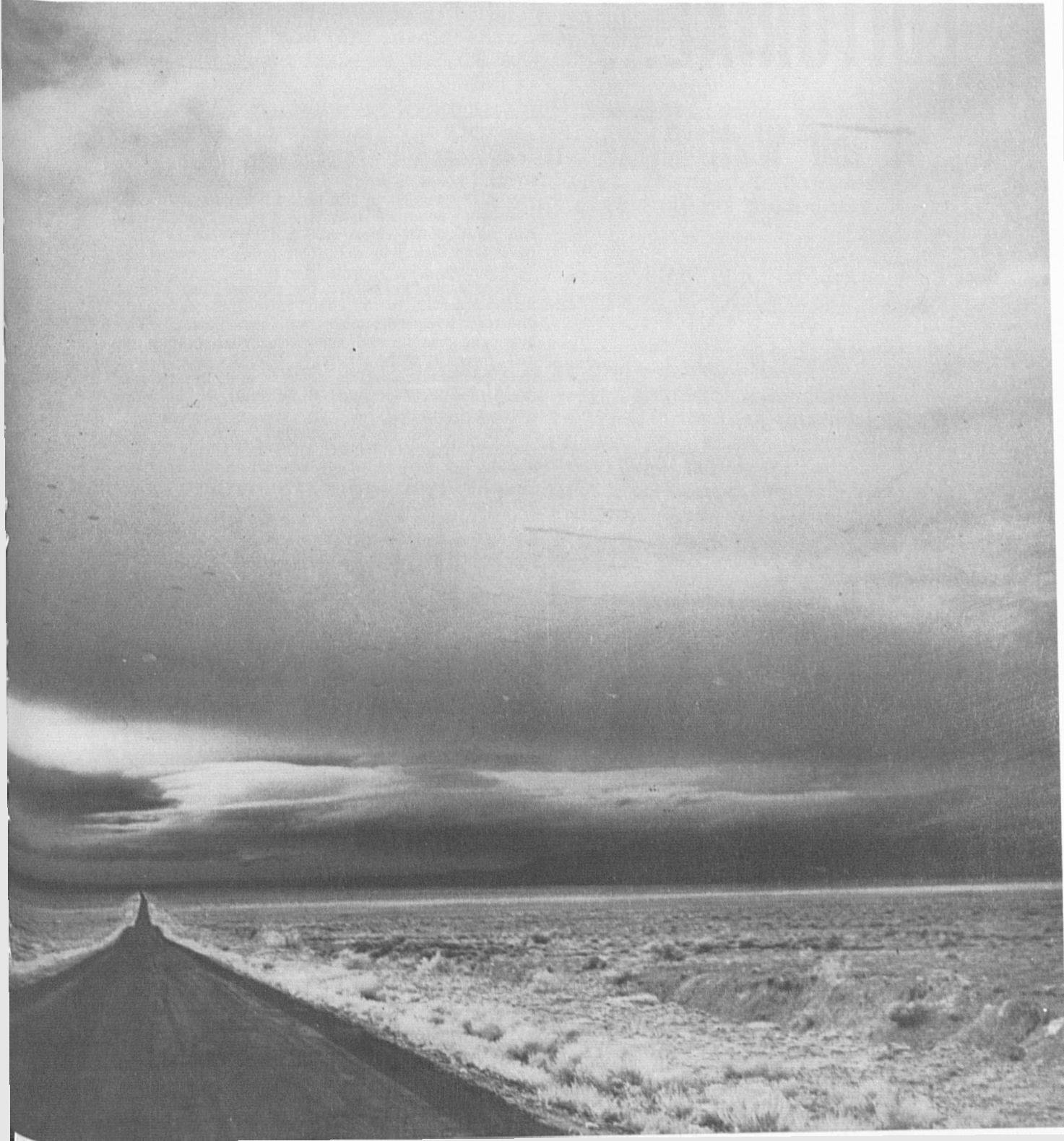
TOPICS

OCTOBER-NOVEMBER 1964

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NO. 9

UNITED STATES DEPARTMENT OF COMMERCE • WEATHER BUREAU



EDITORIAL...

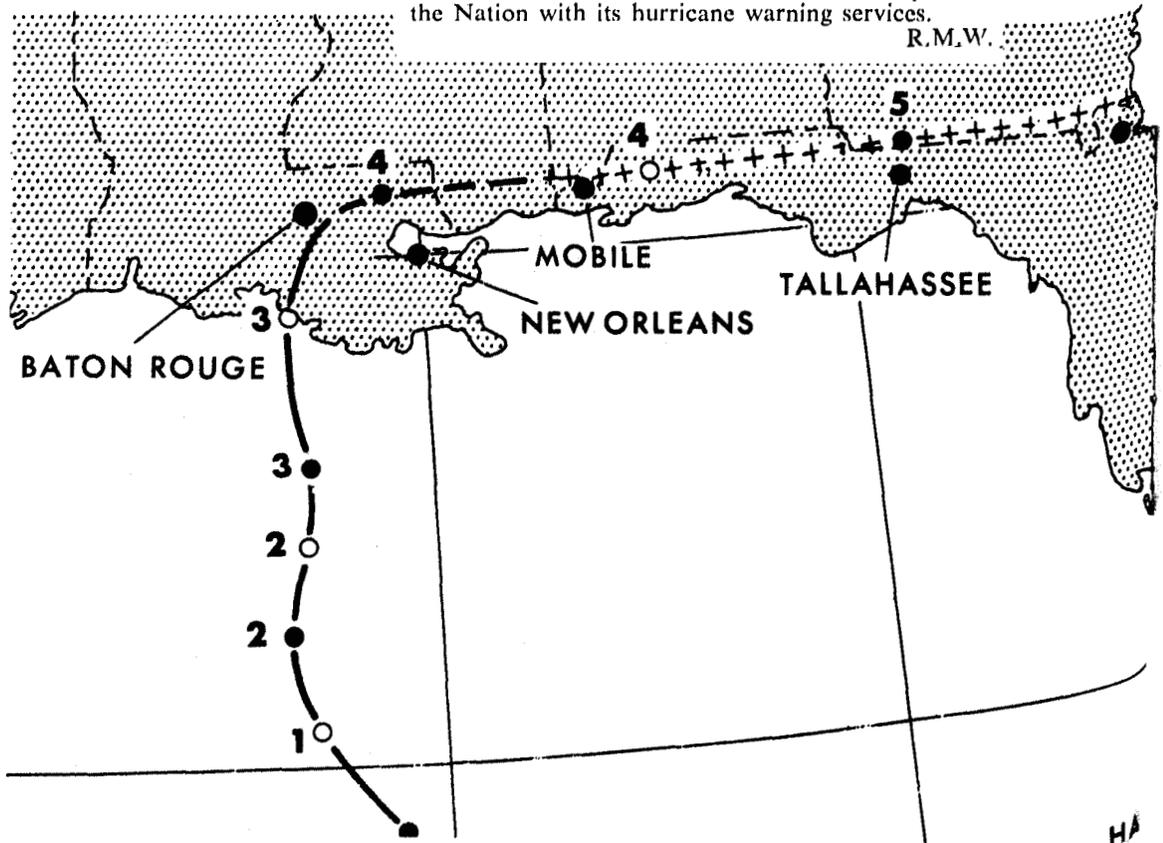
A Job Well Done

As I write this, Hurricane Hilda is wasting her strength in the Southeast. At the Central Office we can relax once again, and in the field our Hurricane Forecast Center staffs at New Orleans and Miami can stand down—blear-eyed but satisfied that they have done their jobs well. Our research aircraft are back at base.

Once again the Bureau has proven itself a most valuable service to the public in the face of natural disaster. Its performance was near perfect. The hurricane was located early, tracked continuously, and forecast with accuracy. Hurricane warnings were posted 48 hours in advance and, through the excellent efforts of local authorities, people were evacuated to safety.

And so it has been all season . . . through Cleo, Dora, Gladys, and Hilda. There has hardly been a day during the past month when some part of the United States has not been under active threat from hurricanes. We can all be proud of and say thanks to the dedicated members of our Bureau who provide the Nation with its hurricane warning services.

R.M.W.



The final phase of the Weather Bureau reorganization--through the Branch, Section, and Unit levels--has been completed and will be covered in the next issue of TOPICS.

The WMO Commission for Hydrometeorology held its second session in Warsaw from September 29 to October 16. The Commission considered the role of the WMO in the International Hydrological Decade. Max Kohler, the Weather Bureau's Chief Hydrologist, attended as President of the Commission, and W.E. Hiatt, Director of Hydrology, headed the American delegation.

Dr. Joseph Smagorinsky, Director of the Geophysical Fluid Dynamics Laboratory, has been designated Deputy Director of Meteorological Research.

The isotope-powered automatic weather station was reinstalled on Axel Heiberg Island in the Canadian Northwest Territories during August and became operational on September 1. In 1963, after the station's first two years of unattended operation, its automatic weather transmission equipment was removed and shipped to Washington for repair and modification. The work party that put the station back in operation included J. Glenn Dyer (Polar Operations Project), F. V. Kohl (Equipment Development Laboratory), L. E. Mills (Facilities and Maintenance Division), and Jack Falkenhof (Electronic Technician at Resolute).

The Weather Bureau, the Coast and Geodetic Survey, and the National Bureau of Standards have established a Joint Space Environmental Forecasting Task Group at the Central Radio Propagation Laboratory in Boulder, Colorado. W. L. Kiser, of the Office of Meteorological Research, has been assigned to the Task Group.

Films of the moon's surface, taken by Ranger VII, were processed in the photographic laboratory at the National Weather Satellite Center. The Center has unique equipment for producing special density-compensated and enhanced film.

Dr. D. Q. Wark of the National Weather Satellite Center and Dr. Syukuro Manabe of the Geophysical Fluid Dynamics Laboratory attended the International Symposium on Radiation, held in Leningrad from August 5 to 17. Dr. Wark presented two papers of which he was co-author and read another prepared by J. S. Winston of the Satellite Center. Dr. Manabe presented a paper which he had prepared in cooperation with Dr. Joseph Smagorinsky and J. Leith Holloway, Jr.

BRIEFS...



From the CO Staff Conferences

The Chief of Bureau briefed staff members on appropriation action, including Congress' deletion of funds from the Weather Bureau budget for the ocean station vessel program and operation of the weather station at Marcus Island. In a supplemental appropriation bill, Congress has authorized the Department of Defense to reimburse the Weather Bureau for these programs, beginning October 1, 1964. The Weather Bureau is required to pay the costs for the first three months, July through September. Since no additional Weather Bureau appropriations were approved for this purpose, a change in Bureau spending programs will be required. Dr. White emphasized the need for economy at all levels.

Discussions within the Department of Commerce recently concern possible ways of integrating activities of the Department's science bureaus. Establishment of the Sea-Air Interaction Laboratory and the Weather Bureau office at the Central Radio Propagation Laboratory in Boulder, Colorado, are examples of closer working relationships and integration of activities.

Dr. White emphasized that the completion of Phase III of the Weather Bureau reorganization is only a beginning and that implementation of the changes will take a long time. An evaluation will be conducted after a six-month shakedown period. Delegation of authority, a key element in the new organization, was stressed.

The Office of National Meteorological Services is developing a standardized procedure for effecting program changes. Such program changes must be thoroughly coordinated at the Central Office, as well as at the Regional Offices and the field offices concerned.

In addition to his regular Weather Bureau duties, N. A. Lieurance, the Bureau's Director of Aviation Weather Affairs, is now serving as staff meteorological advisor to the Administrator of the Federal Aviation Agency. This move, designed to improve the aviation weather services so that they will be more responsive to the requirements of aviation operations, is an important step toward strengthening coordination between the Bureau and the FAA. The success of this undertaking may lead to the establishment of similar liaison offices with other agencies.

NIMBUS...

Weather Satellite

Polar-orbiting Nimbus 1, launched by the National Aeronautics and Space Administration on August 28, suffered a mechanical failure when the satellite's solar paddles froze in position. Since the paddles could not be rotated toward the sun, the satellite's batteries could not be recharged, and all operations ceased on September 23.

Nimbus transmitted more than 27,000 weather photographs back to earth during its 380 orbital passes.

Nimbus' first and last transmissions were of hurricanes. In its first day in orbit the 830-pound satellite produced a picture of the coastline of eastern Texas, the Gulf of Mexico, part of the swirling clouds of Hurricane Cleo as she passed over northern Florida, and a frontal system extending from the Great Lakes to Louisiana. On September 22, Nimbus' Automatic Picture Transmission (APT) system sent its final photograph—a picture of Hurricane Gladys.

Nimbus also transmitted the first infrared pictures of nighttime cloud-cover ever obtained by a weather satellite.

Planned for a circular 575-mile-high orbit, Nimbus was thrown into an elliptical path (perigee, 263 miles—apogee, 579 miles) when the Agena upper-stage rocket shut down prematurely on launching from Vandenberg Air Force Base, California.

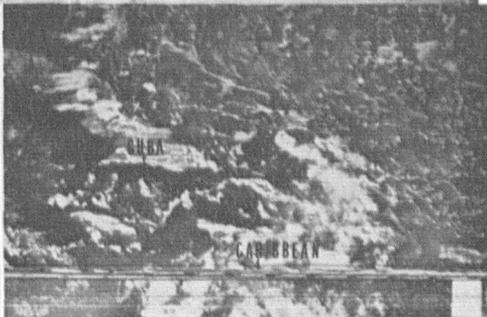
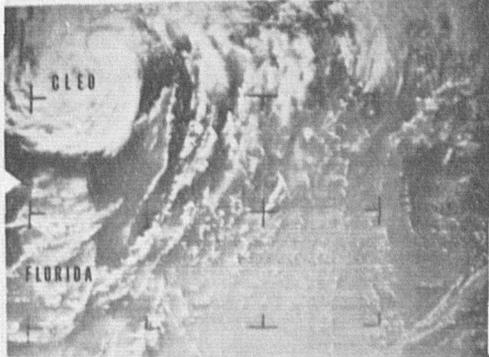
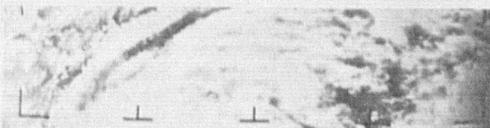
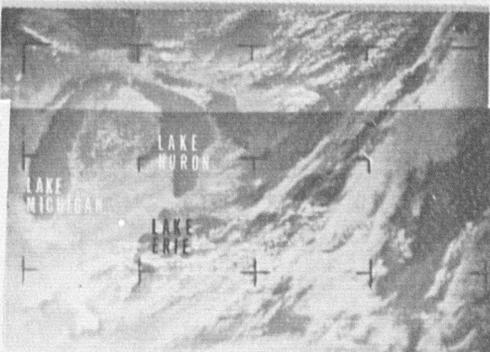
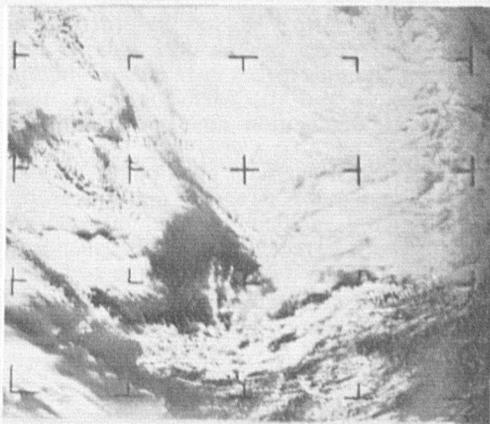
On board Nimbus 1 were three major experiments.

The Advanced Vidicon Camera System (AVCS) for tape storage and readout of global cloud pictures taken during daylight produced remarkably clear photographs. (Each separate frame of Nimbus' AVCS pictures was of a smaller area and higher resolution than those of TIROS satellites.)

AVCS pictures were received from Nimbus by NASA Command and Data Acquisition (CDA) stations at Gilmore Creek, Alaska, and Rosman, North Carolina. The pictures were then microwaved to Goddard Space Flight Center in Greenbelt, Maryland, which relayed operationally useful pictures to the Weather Bureau's National Weather Satellite Center in Suitland, Maryland.

The "venetian blind" effect seen in many of the APT photographs from TIROS VIII (TOPICS, February 1964, page 23) did not show in the Nimbus APT pictures. TIROS VIII rotated, so that the scanning beam of the APT vidicon was deflected by cutting across the lines of force of the earth's magnetic field. The Nimbus satellite did not rotate and—being earth oriented—held the APT vidicon nearly parallel to the magnetic field, so that deflection was either negligible or non-existent. APT camera systems for future TIROS satellites will be shielded to prevent the scalloped effect.

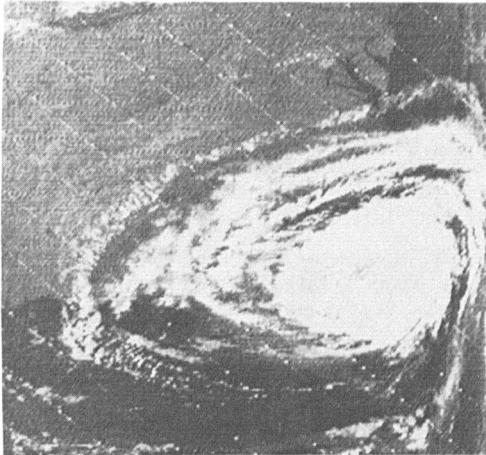
A composite of four APT photos taken by NASA's Nimbus 1 on August 29 covers an area from northern Canada to the Venezuelan coast and shows Hurricane Cleo over Florida. The pictures were recorded at Goddard Space Flight Center near Washington.



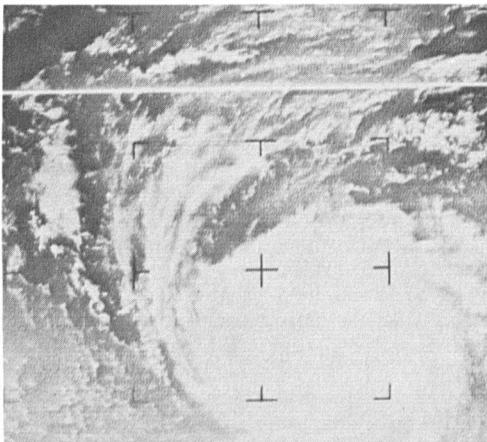
The satellite's High Resolution Infrared Radiometer (HRIR) was automatically turned on as Nimbus went into the earth's shadow in order to view the earth's cloud cover on the dark side of the globe. By sensing the differences in radiation intensity emitted by clouds and the earth's surface, the HRIR provided high-resolution nighttime cloud-cover pictures.

Nimbus' HRIR worked even better than expected as rivers and lakes (warmer and therefore distinguishable from surrounding land masses) were detected in the infrared pictures. These landmark features were valuable for orienting the pictures.

A second Nimbus is being prepared for launch sometime next year. The more advanced "B" model Nimbus will follow. ■



Nimbus' infrared system produced this photograph of Hurricane Dora at 1:27 a.m. on the morning of September 9. Just above the storm (at top right) are the Chesapeake and Delaware Bays.



This is Hurricane Dora as viewed by Nimbus' Automatic Picture Transmission (APT) system direct readout camera as Dora moved toward the Florida coast on September 5.

SIRS .. Satellite Infrared Spectrometer

A prototype Satellite Infrared Spectrometer (SIRS), developed for the Weather Bureau, was successfully flight-tested at the National Center for Atmospheric Research (NCAR) Balloon Flight Station at Palestine, Texas, on September 11.

A 3.2-million-cubic-foot-capacity balloon carried the SIRS to 100,000 feet, where the equipment operated as planned throughout its flight of 9 hours and 14 minutes.

One of the main purposes of the flight was to test a new technique for measuring temperatures in the high atmosphere. The spectrometer is designed to obtain measurements of the energy emitted by atmosphere in the infrared part of the spectrum. These measurements can then be converted to obtain the desired temperature values.

Infrared radiation energy emissions from carbon dioxide in the atmosphere were measured in six spectral bands near a wavelength of 15 microns. All six sensors in this spectral band returned signals which are being converted to show a vertical temperature profile of the atmosphere over Texas from the surface or the cloud tops to 100,000 feet.

Emissions measured at 11.1 microns were recorded to obtain ground and cloud-top temperatures. Temperatures as low as -30°C . were measured over cumuliform clouds.

The SIRS was recovered and was reported to be in normal working condition after its return to Palestine.

After the SIRS' instrumentation testing is completed and measurement techniques are perfected, it is planned to fly the spectrometer on a weather satellite. This technique may be used for the worldwide collection of high atmosphere temperatures. These data will be of major importance to meteorologists for research and forecasting.

The National Center for Atmospheric Research conducted the SIRS' flight test under a contract from the Weather Bureau. The spectrometer was built by the Barnes Engineering Company and the balloon-flight equipment integration was handled by Vitro Laboratories.

The test was under the supervision of Don T. Hilleary of the National Weather Satellite Center, Meteorological Satellite Laboratory. ■

CAREER DEVELOPMENT...

A New Weather Bureau Plan

BY ALBERT V. CARLIN
HEAD, CAREER DEVELOPMENT BRANCH

Shortly after Dr. White's appointment as Chief of the U.S. Weather Bureau, he directed the Training Section (now the Bureau's Career Development Branch) to devise a Career Development Plan for all employees. He stressed the importance of such a program for the attainment of long-range goals of the Weather Bureau.

This directive from the Chief, who gave the project an extremely high priority, set in motion a number of activities. The Career Development Branch investigated career development programs of other agencies, consulted many training directors regarding their opinions on the better programs, examined the Bureau's own training programs of long standing, and analyzed a large volume of Weather Bureau data collected by the University of Michigan Survey Research Center in 1963. The Branch consulted a number of times with the professional staff of the Survey Research Center regarding interpretation of the survey data. In addition, Dr. White appointed a Career Development Committee, made up of representatives from the various functional management offices, such as the Office of Climatology, the Office of Meteorological Research, and so forth. This committee held a number of meetings during the spring of 1964, reviewing plans submitted by the Career Development Branch and offering suggestions and advice.

A report on a proposed career development plan was submitted to the Chief on April 2, 1964, and was accepted on April 15. With acceptance of the report, the Chief requested that it be translated into a concrete operational program, within pertinent constraints of organization, funds, general policies already established, and coordination among the various program directors. The operational program and implementation schedule were prepared and presented to the Department of Commerce Director of Personnel and members of his staff on July 8, and to Dr. Herbert Hollomon, Assistant Secretary for Science and Technology at the Department of Commerce, on July 15, who gave the program his approval.

The Weather Bureau's Career Development Plan is designed to ensure that personnel with appropriate knowledge, skills, and abilities are available when needed. At the same time, the plan should satisfy the career needs and aspirations of employees. Based on this problem, we have derived a highly specialized definition of career development. Quoting from the report:

"Career development is defined as any planned process of change in an employee which contributes toward the improvement of his performance, achievement of his career potential, and enhancement of his value to the organization."

Of importance is the phrase, "planned process of change in an employee."

Again, the general policy with regard to the Weather Bureau Career Development Program is best expressed by quoting from it:

"The keynote of the Career Development Plan and Weather Bureau policy with regard to it is employee self-motivation."

What does this mean? It means that the employee must have the desire and initiative for self-improvement. He must demonstrate this by striving to improve his performance on the job, by taking courses on his own time, and by willingly broadening his experience through movement to new assignments.

What part does the Weather Bureau play in the Career Development Program? The policy statement in the plan answers in this way:

"The Bureau's responsibility is to make development opportunities available to those who have earned them, and to properly use the abilities and skills developed."

and further:

"The supervisor plays an important role by encouraging his employees and by providing and recommending development opportunities for those who respond and show promise. This is so important, in fact, that evaluation of each supervisor will be based to a great extent upon his efforts to develop his employees toward better performance and higher responsibilities."

How will the program work? The program will operate through five systems of action:

1. The career development needs of the Bureau will be determined from operational and functional managers and staff advisors, both at the Regional Offices and Central Office. In other words, the program managers will supply information as to the kinds of knowledges, skills, and abilities which they

need on a current basis and also with regard to long-range trends and plans. The career development needs and aspirations of individual employees will be determined jointly by the employees and their supervisors. This will be accomplished through an annual personnel appraisal of each employee by his supervisor and through individual training and development plans which will be made annually by supervisors together with their employees. These will be reviewed at the Regional Offices in the field and in Division-level offices for Central Office employees. In order that the supervisors are well equipped to accomplish these tasks, a special supervisory training course in employee appraisal and career counseling will be developed.

2. Effective career development activities will be administered. These will comprise assignments for on-the-job training, details for gaining experience, and formal training courses.

3. Employees will be selected for career development assignments in accordance with the merit system. Some assignments can be made at station level by the station or office supervisor, whereas other training courses, transfers to other positions, or on-the-job training will have to be carried out at a higher level.

4. An appropriate system will be inaugurated for the effective utilization of the knowledges, skills, and experience derived from training and development assignments. Complete career development records will be kept; these records will be automated on electronic computers so that cumulative records of experience, training and development activities, location and job preferences, and employee performance evaluations can be matched with job requirements.

5. As far as possible, measurable objectives will be defined for each assignment, course, etc., of the Career Development Program. Procedures will be devised for evaluating each of these elements in terms of its objectives.

What are some of the key developments we expect from implementation of the Plan? Here are some which we believe may be of special interest:

A Career Development Manual for all employees, containing career charts to show directions for career progressions;

Use of appraisal and placement systems for career development;

An MIC training program;

Supervisory training in career counseling and evaluation;

A Weather Bureau training institute for specialized in-service training;

Improved station libraries;

Eventual threefold increase of university assignments to about sixty a year;

Refresher training for all employees, beginning with field meteorologists;

Improved orientation and introductory training;

Increase of employee flexibility, and re-training and up-grading of technicians likely to be replaced by automation; and

More programs for the training of "user agency" personnel.

All of these developments will not take place this year, but a few things will. We hope to publish a preliminary Career Development Manual this winter; it will not be complete but will contain a great deal of information that will be useful immediately.

The appraisal and placement systems used for career development will be placed into operation sometime in the latter part of the year, and the first phase of an MIC training program should be operational by that time.

The advanced supervisory training course will be started but will not reach all supervisors during the coming year.

The concept of a Weather Bureau "academy," or "institute," will be adopted to provide a focus for our educational and training activities. All within-Bureau courses, as well as contract courses, will come under its aegis.

Station libraries will be improved by the addition of necessary publications.

We have already made a sizeable move toward the objective of tripling the number of university assignments. This year 32 full-time university assignments have been authorized. This is double the number authorized last year.

It is hoped that a refresher training program for professional meteorologists can be started in April 1965. There are difficult problems to solve with respect to this program, and we will have to start at a rather slow pace. The problems involved include financing; but ever more difficult is the problem of releasing large numbers of employees from the operating responsibilities of their stations. The ultimate solution may involve on-station training courses.

What does the new Career Development Plan mean to you, the employee? It means this: If you have ambition and ability and are willing to work, not only to improve your performance in your current job, but also to demonstrate potential for greater responsibility, the Weather Bureau will help you (a) determine realistic career goals, (b) devise a step-by-step plan to achieve your career aspirations, and (c) will give you fair consideration on a competitive basis for the assignments and courses outlined in your training development plan. In short, the Bureau will attempt to facilitate each individual's development, to help employees who help themselves, and to provide a system for this which is open to all. ■



APPROPRIATIONS

\$86,725,000 for the Weather Bureau

Weather Bureau appropriations for Fiscal Year 1965 total \$86,725,000, a net increase of \$6,747,900 over appropriations for last year.

For Salaries and Expenses, the 1965 appropriation is \$65,100,000, a net increase of \$572,900 over Fiscal Year 1964. Included in the S&E appropriations are authorized program increases totaling \$1,171,900; \$146,900 for operation and maintenance of new instrumental facilities; \$125,000 for rent and utility cost increases; \$300,000 for aviation and satellite data facsimile circuits; \$350,000 for centralized computer processing; \$100,000 for fire-weather services; and \$150,000 for executive direction and administrative support. Also, an additional \$1,050,000 will be spent in FY 1965 to meet the full year cost of the pay increases which went into effect on January 5, 1964. The Ocean Station Vessel program has been eliminated from Weather Bureau funding for 1965, subtracting \$1,144,700. Congress has authorized the Department of Defense to transfer \$860,000 to the Weather Bureau to operate this program during the last nine months of the fiscal year.

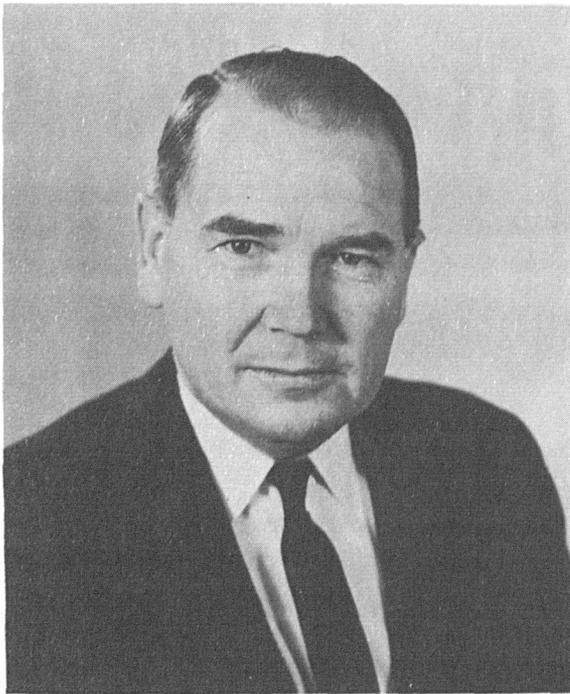
A total of \$10,400,000 is authorized for Research and Development in 1965, representing no net change from the 1964 appropriation. However, \$900,000 appropriated for aviation-related research and development in 1964 was deleted from the Bureau's budget. Negotiations are under way with the Federal Aviation Agency for them to finance this program in FY 1965. The money made available

by this change will be used for national weather system development, hydrologic research, climatic research, sea-air interaction research, and pay increases.

Foreign currency totaling \$500,000 is available to support research and development work in foreign countries. This represents an increase of \$250,000 over last year. The 1965 funds will be spent for oceanographic storm surge research (Israel), instrument development (Israel), use of satellite data in numerical weather prediction (Israel), improvement of upper-air network (Pakistan), studies of typhoon coastal flooding (Pakistan), monsoon regime research (India), analysis of statistical data (Pakistan), and soil moisture studies (Israel).

For Establishment of Meteorological Facilities, the Weather Bureau has \$725,000 in 1965 plus authority to reprogram \$1,095,000 of previously appropriated funds. The FY 1965 funds will be spent for radar microwaves, surface equipment, hydrologic equipment, climatic benchmark stations, National Meteorological Center data transfer, equipment construction, and engineering and technical support.

Appropriations for Satellite Operations in FY 1965 total \$10,000,000: \$6,019,000 for command and data acquisition; \$3,079,000 for data processing, analysis, and archiving; and \$902,000 for technical management. ■



Loren W. Crow

New Special Assistant for Industrial Meteorology

Loren W. Crow has been appointed to the newly created position of Special Assistant for Industrial Meteorology.

In this position, Mr. Crow, a well-known private weather consultant, will provide a liaison between the Weather Bureau and the growing number of private meteorologists. Also, he will assist in the development of greater industrial use of the weather information and services provided by private meteorologists.

For the past nine years, Mr. Crow has operated his own meteorological consulting firm in Denver, Colorado, and recently has been active in investigating air pollution in the Denver metropolitan area. Before 1955, he worked with another consulting firm, was an instructor at the California Institute of Technology, and spent four years as a weather officer in the U.S. Air Force.

Mr. Crow is a graduate of Simpson College, Indiana, Iowa, and received his master's degree in meteorology from the California Institute of Technology in 1943. He also attended the Institute of Tropical Meteorology at San Juan, Puerto Rico.

A Professional Member of the American Meteorological Society, he has held several AMS committee assignments. He is currently Chairman of the Society's Board for Certification of Consulting Meteorologists. He is active in the American Society for Heating, Refrigerating, and Air-Conditioning Engineers.

Mr. Crow's publications consist primarily of technical reports prepared for industrial firms and governmental agencies. His main work has been concerned with weather and air conditioning, air pollution, weather modification, and the use of climatic data for economic planning. ■



Loren W. Crow, Special Assistant for Industrial Meteorology, is sworn in by Dr. White as Guy Dorsey, Manager of the Personnel Branch, assists.

New Director of Systems Development

Merritt N. Techter has been named Director of the Bureau's recently established Systems Development Office.

In this position, he is responsible for applying modern technology to the development of a national system for observing, processing, communicating, and presenting weather information. He will manage laboratories that develop new forecasting techniques and design and test improved weather instruments.

Since 1950, Mr. Techter has been with the United Aircraft Corporation Systems Center. Most recently, he was Technical Head of Operations Analysis in the Weather Systems Center, and his responsibilities included direction of weather system studies for the U.S. Air Force, the FAA, and the Weather Bureau. In connection with these programs, he has written, or contributed to, many reports dealing with various aspects of design and analysis of weather systems. Included among these is the report, "Preliminary Study, National Meteorological Service System," done for the Weather Bureau.

Born in Morristown, New Jersey, in 1924, Mr. Techter served in the Navy from 1943 to 1945. In 1947, he graduated from Yale University with a B.S. degree in industrial engineering and administration. Later, he studied operations research at Case Institute and the Massachusetts Institute of Technology.

Mr. Techter was production manager for a boat-building firm before joining United Aircraft's Operations Research Section in 1950. For eight years, he conducted and directed operations research studies in commercial data-processing systems, allocation of manpower, production and inventory control systems, and various weapons systems evaluations. In 1958 and 1959, he headed the Mathematical Analysis Section of United Aircraft's Research Department.

Mr. Techter is married to the former L. Janet Millhouse and has two daughters, Cathy and Pam. He is a member of the American Meteorological Society and the Operations Research Society of America. ■



Merritt N. Techter



Merritt N. Techter receives Dr. White's congratulations after being sworn in as the Bureau's Director of Systems Development.

Science and Technology Fellowship Program

Three Weather Bureau men are among 17 Commerce employees selected to participate in the Department's new Science and Technology Fellowship Program. They are Ralph P. James, Grady F. McKay, and Gene T. Triplett.

Under the direction of Dr. J. Herbert Hollomon, Assistant Secretary of Commerce for Science and Technology, the program is planned for development of administrators who combine technical competence with broad experience in government and management.

Now in progress, the training program began with briefings on the interrelationship of science and government and continued with an orientation by the Department of Commerce covering scientific and technological roles in economic development, followed by a two-week observational assignment at the Capitol. For the major part of the fellowship program, each participant is spending about eight months in important policy-making activities at a Commerce science or technological bureau other than his own.

Weather Bureau Fellow Ralph P. James (Project Leader, International High-Altitude Aviation, Weather Analysis and Prediction Division) is assigned to a staff position with Coast and Geodetic

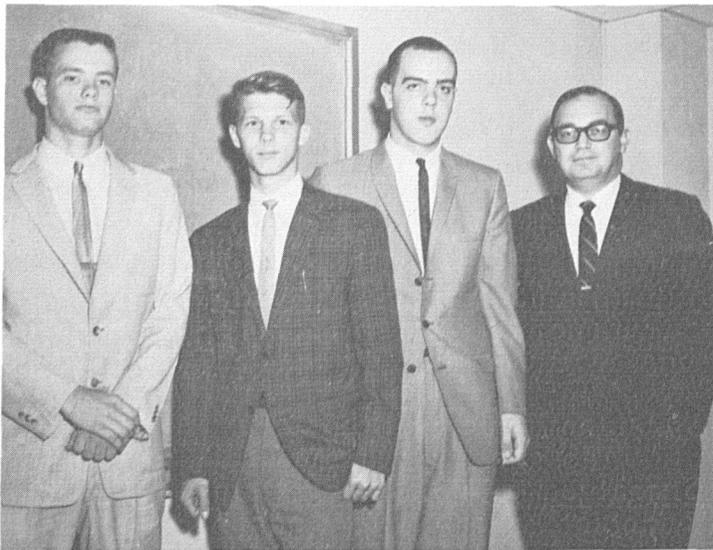
Survey, where he serves as advisor for operations and research on the air-sea interaction program.

Grady F. McKay (Head, Data Reduction Branch, National Weather Records Center) is at the Institute of Basic Standards, National Bureau of Standards, where he acts as Assistant Chief for Computer Application, devising techniques for competent evaluation of major computer systems.

Gene T. Triplett (Staff Assistant, Budget and Accounting Division) is conducting studies to accomplish overall cost reduction during his experience assignment at the Patent Office as a Management Analyst for the Office of Program Planning and Evaluation.

Also as part of the Science and Technology Fellowship Program, the Weather Bureau is receiving the services of four scientists. Ralph Klein, a physical chemist from the National Bureau of Standards, is assigned to the Office of Meteorological Research, where he is assisting in the development of an atmospheric chemistry research program for the Bureau. Steacy D. Hicks, from the Research Group, Office of Oceanography, Coast and Geodetic Survey, is at the Geophysical Fluid Dynamics Laboratory, where he is working on the application of numerical general circulation models to air-sea interaction problems.

Roger Lanier, Commanding Officer of the U.S. Coast and Geodetic Survey Ship *Pierce*, is at the National Weather Satellite Center, devising improvements for satellite system engineering and determining further applications of weather satellite data. Joshua Stern, Chief of the Office of Precision Instrumentation, National Bureau of Standards, is analyzing program areas for the Office of the Federal Coordinator for Meteorology. ■



The three winners of the Bureau's annual Student of the Year Awards pose with Dr. White. They are (left to right) Thomas Baxter, Richard Randall, and Clifford Howell.

Student Trainee of the Year Awards

Three Weather Bureau student trainees won Student of the Year Awards for their outstanding work during the Bureau's summer training program. Dr. White presented the awards, a certificate plus \$100, in a ceremony at Washington on August 28.

Selected from a total of 200 summer trainees, the students were Thomas Baxter, a sophomore at Northeast Louisiana State College majoring in physics, who worked at the Agricultural Meteorology Office in Stoneville, Mississippi; Clifford Howell, a senior at Oregon State University majoring in climatology and data processing, who was stationed at the office of the Oregon State Climatologist; and Richard Randall, a senior at Massachusetts Institute of Technology majoring in mathematics, who worked at the National Weather Satellite Center, Suitland, Maryland. ■

HURRICANE SEMINAR

Advanced Studies in Miami

An Advanced Science Seminar on Hurricanes was conducted by Florida State University at the U.S. Weather Bureau in Miami from July 6 to August 14. Supported by the National Science Foundation, the Weather Bureau, and the Florida Institute for Continuing University Studies, the seminar was aimed at summarizing the important advances in the knowledge of hurricanes which have been made in recent years, primarily from data collected by the National Hurricane Research Laboratory.

Two graduate-level courses were conducted by Professors N. E. LaSeur and C. L. Jordan as a part of the seminar. A lecture course dealt specifically with hurricanes, and a laboratory course was concerned with synoptic analysis in the Tropics. Special lectures were given during the seminar by:

Dr. Stanley L. Rosenthal, National Hurricane Research Laboratory—11 lectures dealing with the theoretical approach to hurricane development;

Professor Herbert Riehl, Colorado State University—5 lectures and 4 laboratory sessions covering selected topics in tropical meteorology and hurricanes;

Professor Joanne S. Malkus, University of California at Los Angeles—4 lectures dealing with the modification experiments on convective clouds and hurricanes.

In addition, single lectures were given by the following U.S. Weather Bureau personnel associated with the National Hurricane Center:

Dr. Jose A. Colon—Climatology of Hurricane Motion;

Gordon E. Dunn—Climatology of Hurricane Formation;

Harry F. Hawkins—Aircraft Reconnaissance of Hurricanes;

Dr. R. Cecil Gentry—A Study of Hurricane Rainbands;

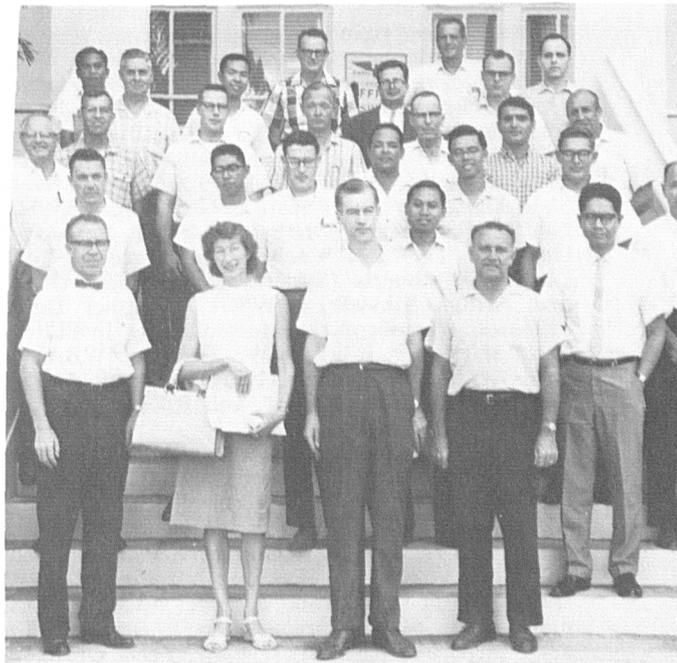
Dr. Banner I. Miller—Surface Energy Exchanges in Hurricanes;

Dr. Mikhail A. Alaka—Inertial Instability in Relation to Hurricane Formation;

Neil L. Frank—The Development of a Tropical Storm from a Cold Low;

Jack D. Tracy—Verification Statistics on Forecasts of Hurricane Motion;

Gordon E. Dunn—Hurricane Forecasting.

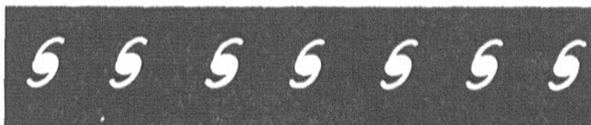


These are a number of the participants in the Advanced Science Seminar on Hurricanes held in Miami from July 6 to August 14.

In addition, Dr. Sigmund Fritz of the National Weather Satellite Center lectured on the uses of satellite data in studies of hurricanes.

There were 25 full-time participants in the seminars, and 10 people participated on a part-time basis. Twelve of the full-time participants were sponsored by the National Science Foundation, and eight were sent by the Weather Bureau.

Full-time Weather Bureau participants were: Jean A. Brown, San Francisco; Sigmund Fritz, NWSC; George W. Geisler, Honolulu; Euläh L. Hill, New Orleans; Eugene W. Hoover, Washington, D.C.; Raymond H. Kraft, Miami; Charles H. Pierce, Boston; and Mark A. Zimmer, San Juan. Part-time Weather Bureau participants included Robert L. Carrodus, George E. Fisher, Walter J. Koss, Daryl T. Rubsam, Clark L. Smith, and Jack D. Tracy, of the National Hurricane Research Laboratory. ■



University Assignments for Bureau Employees

Full-time university assignments of Weather Bureau employees number 32 this academic year, a 100 percent increase over the 16 assignments in 1963. The growth of this program reflects the Bureau's increasing emphasis on career development.

Under a new ruling, selected individuals may now pursue scientific studies at a university for two consecutive years, or two years in every ten-year period. The previous maximum was one year of university study in every ten years of Government employment.

The majority of this year's students are taking advanced meteorological training. At Pennsylvania State University are Robert E. Bradford (NWSC), Norbert F. Delver (WBR\$ Las Vegas), Frederic A. Godshall (NWSC), John Hovermale (NMC), Charles F. Roberts (Systems Development Office), and Arthur Schwalb (NWSC). Weather Bureau meteorology students at Massachusetts Institute of Technology are Edward W. Diemer (WBAS St. Louis), James R. Neilon (NMC), Eugene M. Rasmusson (WBAS St. Louis), and Robert B. Wassall (WBAS Hartford).

Philip A. Calabrese (WXAP) and Billy M. Lewis (NMC) are studying meteorology at Florida State University, and George E. Fisher (NHRL) will enroll there at the beginning of the second semester in January 1965. Virgil E. Quinn (WBAS Los Angeles) and Hugh H. Stone (WBAS Walla Walla) are at the University of California at Los Angeles. Other meteorology students are: James T. Bradley (Kennedy airport, New York); New York University; Harry P. Foltz (WBAS Anchorage), Colorado State University; Ronald D. McPherson (WBAS Austin), University of Texas; Jack E. Mickelson (WBAS San Francisco), San Jose State College; James G. Taylor (WBAS Galveston), Texas A & M; and Vasco R. Taylor (WBAS Portland), University of Utah.

Eugene Peck (WSFU Salt Lake City) is at Utah State University for study in hydrology, while Lars O. Feesé (Office of Hydrology) pursues the same field at Stanford University. Lawrence E. Niemeyer (WBR\$ Cincinnati) and Hans E. Rosendal (Office of Climatology) are studying air pollution at the University of Michigan, and John D. Alyea (WBAS Cheyenne) is working on climatology at the University of Wyoming.

Other Bureau employees are taking non-meteorological courses. Richard D. Decker (RFF) is studying engineering and physics at the University of Miami; Henry G. Flemming (NWSC), mathematics at the University of Maryland; Robert E. Helbush (Office of Policy Planning), management sciences at American University; Gerald A. Petersen (Systems Development Office), engineering administration at George Washington University; Byron B. Phillips (Atmospheric Physics and Chemistry Laboratory), physics at Catholic University; and Jack M. Vochatzer (RFC Fort Worth), engineering at Arlington State. ■



Conference on Radio Meteorology--Radar

The World Conference on Radio Meteorology incorporating the 11th Radar Conference was held in Boulder, Colorado, September 14-18.

The conference, held at the National Bureau of Standards' Boulder Laboratories, was sponsored by the Inter-Union Committee on Radio Meteorology (of the International Scientific Radio Union and the International Union of Geodesy and Geophysics), the American Meteorological Society, the National Bureau of Standards' Central Radio Propagation Laboratory, and the Weather Bureau.

Of the 341 registrants, 45 represented 12 nations other than the United States.

A "Proceedings," containing all accepted papers, was printed in advance of the meeting. Sessions were then devoted to discussion of the papers.

Stuart Bigler, Data Acquisition Division, Central Office, was a member of the conference's Program Committee and in charge of publishing the "Proceedings." Mr. Bigler also served as chairman of the session devoted to Techniques and Instrumentation.

Weather Bureau personnel whose papers were presented were: Allen F. Flanders, Office of Hydrology, Central Office, *Results of Precipitation Measurements With Weather Bureau Radars*; Charles R. Holliday, WBAS Washington, D.C., *Comparison of Hurricane Center Fixes From Land-Based Radar and From Reconnaissance Aircraft During Hurricane Ginny*; Alexander Sadowski, Weather Analysis and Prediction Division, Central Office, *Evolution of Hurricane Ginny As Seen On WSR-57 Radar at Charleston, S.C.*; Howard Ulsh and Gerald S. French, WBAS Wilmington, N.C., *Comparison of 18 Simultaneous Eye Positions of Hurricane Ginny By Three Coastal Radars.* ■

STUDENT TRAINEE SEMINAR

Weather Bureau offices in the Oklahoma City area last summer conducted a special student trainee program in meteorology for eight high school juniors. The program offered each student a total of 160 hours of orientation, study, training assignments, and work at the Weather Bureau Airport Station, the State Climatologist's office, the National Severe Storms Laboratory, and the Weather Bureau Instruction Unit at the FAA Academy.

By rotating through the offices in the Oklahoma City area, the students obtained a broad view of meteorology and its applications—observational programs and networks, climatological data collection and processing, forecasting and public service programs, and research programs in spheres, radar, and severe storms.

The eight students were selected by school officials as part of the city's Science Seminar Program. Other students took part in similar training programs in other scientific fields. During the school year, the students hold seminars and complete projects in their areas of interest.

In 1962 and 1963, the Weather Bureau Airport Station provided training for two students. Success in stimulating interest in meteorology among the students was responsible for the expanded program in 1964. Some of the past participants have applied for Weather Bureau student trainee positions and enrolled in college courses preparatory to meteorological training. ■

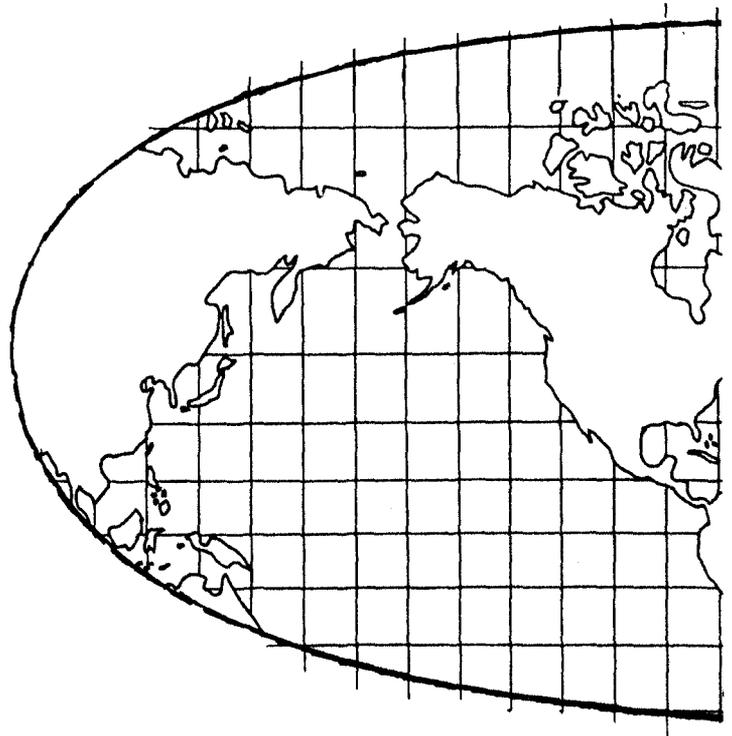
Exchange of U.S. - Soviet Scientists

An agreement for the exchange of scientists between the U.S. and the Soviet Union during 1964 and 1965 has been reached by the U.S. National Academy of Sciences and the U.S.S.R. Academy of Sciences. This arrangement was made in accordance with the scientific, technical, educational, and cultural exchange program.

As part of the recent agreement, the two science academies will exchange 20 prominent scientists (at least half shall be members of the respective academies) for a period up to one month each to deliver lectures, conduct seminars, and to study scientific research.

Also, the two academies will exchange ten scientists for a period up to one month each for familiarization with scientific research, and 25 scientists for a period from three to ten months each for the conduct of scientific research and for advanced study in scientific research institutions.

The selection of these scientists will be made by the sending academy, and the visits will be subject to acceptance by the receiving academy. ■



From Hurricane's Eye

RFF Plane Answers MAY-DAY

When a Navy weather reconnaissance aircraft was severely damaged in Hurricane Cleo, the Research Flight Facility's DC-6 (40C) answered the call for help.

On August 23, the Bureau DC-6 took off from Curacao for a research mission into the hurricane. En route, the Bureau aircraft intercepted a May-day message from the Navy Super Constellation. In violent turbulence, the hurricane hunter had lost both tip tanks and now had a runaway propeller. The crippled plane was flying in the hurricane's eye.

The crew of the DC-6 established voice radio contact, provided position and vectoring information, and escorted the Navy plane as it limped toward the coast of Puerto Rico. The research aircraft then returned to the storm area and completed its planned eight-hour data-gathering mission.

The contract flight crew on board the Research

Flight Facility plane were D. H. Mettrick, Don George, Jack Lubin, Frank Ciccirelli, and A. D. Ricci. Weather Bureau personnel on the flight were Harlan W. Davis, William S. Callahan, Charles W. A. Travis, Jr., Paul G. Connor, John B. Thompson, Harry E. Pohl, Samuel C. Pierce, and Charles Holliday, a Student Trainee.

Three RFF aircraft—two DC-6's and the W-57—flew a total of 188 hours and 57 minutes in Hurricane Cleo, 120 hours in Hurricane Dora, and 78 hours and 32 minutes in Hurricane Hilda.

During the research flights, the planes collected data for studies of natural variations in unseeded hurricanes, hurricane regeneration over warm water after dissipation over rough land, and the effects on hurricane motion of proximity to land masses.

In addition to gathering research data, the RFF planes made and transmitted regular reconnaissance observations. ■

Commerce Photographic Contest

The Fourth Annual Department of Commerce Photographic Contest and Exhibit will be held in the lobby of the Commerce building in Washington from January 10 to 23, 1965.

The contest is open to all Department employees, active or retired, and their wives or husbands. Weather Bureau entries will be accepted by Bernard Rochlin of the Communications Division, from December 21 to January 6.

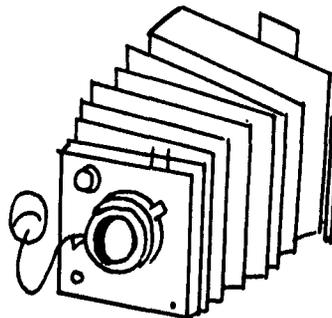
In this year's contest, photographs may be entered in each of three categories (black and white, 8 x 10-11 x 14"; black and white, 11 x 14-16 x 20"; and color, 8 x 10-16 x 20") in three classes—Action, Portrait, and Pictorial. First, second, and third prize trophies will be awarded in each class and category.

Photographs must be mounted on 16 x 20" card backgrounds. Small prints must be mounted with card in vertical position. Unmounted photographs will be disqualified automatically. No border should be visible when the photograph is mounted or matted.

Only the title may appear on the front of the photograph. The name of the photographer, the Bureau in which he is employed, his building and room number, his telephone number, and the title of the photograph must appear on the back, in the upper lefthand corner.

The entries should be accompanied by releases from any recognizable people who appear in the photographs.

For further information on the contest, contact Mr. Rochlin in the Central Office. ■



Children Visit Richmond WBAS



After the Weather Bureau Airport Station at Richmond, Virginia, played host to a third-grade class, MIC Joseph T. Harden received an entertaining collection of illustrated thank-you letters from the children. The following are a few excerpts from the efforts of the nine-year-olds:

"Thank you for showing us the Weather Station. After I climbed all those stairs my feet hurt. When I looked down I got dizzy."

"I think the teletypes are very useful. They can be working while you do other work."

"Thank you for letting us see the Weather Bureau and letting us get the papers out of the trash can. I liked it very much."

"Thank you for the paper. I put mine back in the trash can."

"The tape I took home made a mess. My sister is 21 months old, she got it an through it all over the house. But I got it up before my mother found out. I liked the balloon too."

"I thought it was neat when the balloon when up. You sure must spend a lot of money on the balloons."

"Some of the words you said I didn't understand. But I still like it."

"We would not have known about the balloon if you did not tell us. It was fun but I have other work to do today so good-by." ■

New Kansas State Climatologist

Merle J. Brown has been named Kansas State Climatologist. In this position, Mr. Brown also serves as liaison between the Weather Bureau and the Great Plains Agricultural Council, which deals with special agricultural problems of a vast area in Montana, Wyoming, Colorado, New Mexico, Texas, Oklahoma, Kansas, Nebraska, North Dakota, and South Dakota.

A graduate of Kansas State Teachers College and

an Army Air Corps veteran of World War II, Mr. Brown joined the Weather Bureau in 1946 at Dodge City, Kansas. He has also served at Denver; Salt Lake City, where he was Utah-Nevada State Climatologist; and Honolulu, where he was Pacific Area Climatologist. Mr. Brown has taken advanced training in meteorology at the University of Chicago and in agricultural climatology at Iowa State University. ■

New WBAS in Asheville

A new Weather Bureau station at Asheville, North Carolina, Airport was formally inaugurated on September 10.

Among those attending the ribbon-cutting ceremony and luncheon were P. H. Kutschenreuter, Deputy Director for Service Programs, representing the Central Office; James McCloy, of the New York Regional Office; and Earnest A. Rodney, MIC at Asheville. Also present were Congressman Roy A. Taylor and the Mayor of Asheville, Earl Eller.

Bureau public services, fire weather, and aviation services were transferred to the new site from the former Weather Bureau Office in Asheville. ■



At the WBAS Asheville inauguration were (left to right) MIC Earnest A. Rodney, Paul Kutschenreuter, James McCloy, Charles G. Lee II, and Congressman Roy A. Taylor.

Retirements



The Governor of Puerto Rico, Don Luis Munoz Marin, bids official farewell to Ralph L. Higgs, retiring MIC at San Juan. The Governor's gift to Mr. Higgs was an old drawing of San Juan's fortifications. From left to right are Mr. Higgs, Mrs. Higgs, Mrs. Marin, and Governor Marin. (Official Photograph, Governor's Mansion, San Juan)

CARROLL J. BILBREY

an Instrument Maker at the Service Testing and Reconditioning Unit in Washington, D.C., retired on August 10 after 23 years of Federal service. A Navy veteran of five years, Mr. Bilbrey joined the Weather Bureau as a Meteorological Aid at Washington National Airport in 1946. He transferred to the Central Office Instrument Division in 1947. Mr. Bilbrey's address is 4326 East-West Highway, Bethesda, Maryland.

HERBERT L. ALKIRE

MIC at the Weather Bureau Airport Station in Baltimore, retired August 28 after 35 years with the Bureau. Mr. Alkire joined the Weather Bureau as a Junior Observer at Davenport, Iowa, in 1929. He has served at Nashville, Tenn.; Charleston, S.C.; Cleveland, Ohio; Camden, N.J.; Murfreesboro, Tenn.; Moline, Ill.; Wise, Va.; and Philadelphia, Pa. He was named MIC at Baltimore in 1957. Mr. Alkire's address is 822 Kingston Road, Baltimore, Maryland.

RUSSELL A. GROSSE

a Weather Data Editor at the National Meteorological Center, retired September 28 after 22 years of Government service. Mr. Grosse served with the War Department as a Clerk-Typist and Clerk-Stenographer from 1942 until he came to the Weather Bureau in 1947. He served in Washington, D.C., for the remainder of his Federal career. Mr. Grosse's address is 7319-12th Street, N.W., Washington, D.C.

JOHN J. DAVIS,

former Chief of the Bureau's Personnel Management Division, retired on September 11 after 27 years of Federal service. Mr. Davis began his Government career with the Federal Security Agency in 1936. He worked for the War Department from 1941 until he joined the Army Air Corps in 1942. On discharge from the service in 1945, he joined the Weather Bureau in Washington, D.C. He has served the Bureau at Fort Worth, Texas, for a time. He was made Chief of the Bureau's Personnel Office in 1957. Mr. Davis' address is 100 Stockton Street, Apt. F-1, Princeton, New Jersey.

MRS. GERTRUDE E. SWIFT,

a Secretary at the Data Acquisition Division, Station Facilities Section, retired September 7 after 24 years of Federal service. Mrs. Swift worked for a number of Government agencies before joining the Weather Bureau on a permanent basis in 1953 as a Clerk-Typist at the Central Office. Mrs. Swift's address is 2475 Virginia Avenue, N.W., Washington, D.C.

RALPH L. HIGGS

MIC of of the Bureau's Hurricane Warning Center at San Juan, retired October 23 after 42 years of Weather Bureau service. Mr. Higgs joined the Bureau as an Assistant Observer at Key West in 1922. He also served in Atlanta, Ga.; Miami, Fla.; and Washington, D.C. He transferred to WBAS San Juan in 1954. In 1957 he received the Department of Commerce Meritorious Service Silver Medal for his outstanding work for the Bureau. Mr. Higgs' address is 617 Ashe Street, Key West, Florida.

ERVIN J. LAGER

a Meteorologist at the Weather Bureau Airport Station in Salt Lake City, Utah, retired September 21 after 33 years of Federal service. Mr. Lager joined the Bureau in 1930 at La Crosse, Wisconsin, as a Junior Observer. He has served at Sandberg, San Diego, and San Francisco, California; Washington, D.C.; and Ogden, Utah. He transferred to Salt Lake City in 1944. Mr. Lager's address is 3727 Le Maur Street, Salt Lake City, Utah.

DALE R. HARRIS

a Meteorologist at the National Weather Satellite Center, Systems Division, retired August 17 after 34 years of Government service. Mr. Harris joined the Weather Bureau at Springfield, Mo., in 1930 as a Junior Observer. He has served at Seattle, Wash.; Burbank, Calif.; Omaha, Nebr.; Albuquerque, N. Mex.; and Washington, D.C. He came to the Central Office in 1943. Mr. Harris' address is 1900 South Eads Street, Apt. 627, Arlington, Virginia.

The retirement notice for Robert D. Church, in the September issue of TOPICS, contained several errors. Mr. Church joined the Weather Bureau in 1931 at Pasco, Washington, and later served at Pendleton, Spokane, Seattle, and Glasgow, Montana. He became OIC at Glasgow in 1943 and MIC at Medford in 1944. His correct address is Route #1, Box 33B, Lopez, Washington 98261.

Welcome to the Weather Bureau

BRIDGES, MARIE D.; CO
CAMPBELL, BETTY J.; Fort Worth
CARPENTER, BARBARA L.; San Francisco
COOPER, GEORGE H.; CO
DECARRE, SUZANNE E.; CO
LEFTWICH, PRESTON, JR.; Richmond
LIPPS, FRANK B.; CO
LOWRY, MARTHA L.; CO
MIGNARDI, FRANCESCO A.; CO
NORMAN, FREDERICK J.; Tulsa, Okla.
OLSON, ROGER H.; CO
PIERCE, WILLA M.; CO
RUNDLE, WILLIAM G.; CO
STILLWAGGON, HELEN F.; Ithaca, N.Y.
STOLOVE, LEON; Roanoke, Va.
TECHTER, MERRITT N.; CO
THOMPSON, TIM; El Paso, Tex.
VANCE, ZONA L.; Las Vegas
WALSH, JOHN N.; Tatoosh Is.
WEBSTER, CHARLES W.; Aberdeen, S. Dak.
WETHERALD, RICHARD; CO
WHEELER, RICHARD M.; CO
WHELAN, SHIRLEY G.; CO
WILSON, FRED D.; CO
YELVINGTON, VERA M.; Quincy, Fla.

Obituaries

CLINTON E. NORQUEST,

Official in Charge at WBAS San Francisco when he retired in 1947, died June 14. Mr. Norquest joined the Weather Bureau at Portland, Oregon, in 1904. He served at Spokane, Wash.; Cleveland, Ohio; Devils Lake, North Dakota; Indianapolis, Indiana; Boise, Idaho; and Houston, Texas. He was OIC at Boise and Houston for a time.

BERNARD H. MOORE,

a Forecaster at Lakeland, Florida, died September 10. Mr. Moore joined the Weather Bureau as a Junior Observer in 1929. His major Bureau assignments were at Richmond, Virginia, and Lakeland. Mr. Moore is survived by his wife, Virginia, of 408 East DeVane Street, Plant City, Florida.

MARION E. HESS,

a Clerk at the National Meteorological Center, Extended Forecast Division, died September 10. Mrs. Hess transferred to the Weather Bureau from the Department of the Air Force in 1957. She worked in the Office of Climatology and the Office of Meteorological Research in Washington for a time and then returned to the Department of the Air Force. She rejoined the Weather Bureau at the NMC in 1961. Mrs. Hess is survived by her husband, Fred W. Hess, of 7418 Lacona Street, S.E., Washington, D. C.

NEMESIO O. CALUB,

a Cartographic Draftsman in the Administrative Operations Division, Graphic Arts Section, died September 10. Mr. Calub began his Federal career with the Treasury Department in 1941. In 1942 he came to the Bureau's Office of Scientific Services as a Clerk. He moved to the General Accounting Office in 1943. In 1947 he returned to the Weather Bureau, where he served until his death. Mr. Calub is survived by his brother, Servando Calub, of 7727 Pennsylvania Avenue, S.E., Suitland, Maryland.

CHARLES J. NOGUERA,

a Voucher Examiner at the New York Regional Office, died August 23. An Army veteran, Mr. Noguera joined the Weather Bureau in 1952. Mr. Noguera is survived by his wife, Nina, and three sons of 143-20 Poplar Avenue, Flushing, New York.

MARSHALL E. RICE,

an Aviation Forecaster at WBAS Los Angeles, died September 5. Mr. Rice joined the Weather Bureau at Burbank, California, as a Meteorologist in 1946. In 1947 he transferred to Los Angeles, where he served the remainder of his Bureau career. He was a World War II veteran and a graduate of the University of California at Berkeley. Survivors include his wife, Phylis, of 542 South El Camino Real, San Mateo, California, and three children.

Length of Service Awards

35-YEAR AWARDS

Alexander, Harold
WBAS Norfolk, Nebr.
Blumenauer, Robert
IED, CO
Bobbitt, Ottis C.
WBAS San Angelo, Tex.
Long, Thomas L.
NWRC Asheville
Munch, Charles B.
NWRC Asheville
Waite, Loren H.
WBO Cairo, Ill.
Ziegler, William J.
RO Kansas City

30-YEAR AWARDS

Brownlee, Willard A.
WBAS Atlantic City
Burt, David A.
WBAS Los Angeles
Ingram, William E.
WBAS Winston-Salem
Morrison, James
Adm. Oprs., CO

25-YEAR AWARDS

Dutton, Harold
DATAC, CO
Humphrey, Paul A.
WBRS Cincinnati
Hunter, Marvin N.
WBAS Washington, D. C.
Jetton, Eldon V.
WBAS El Paso
Myers, Vance
Hydro., CO
Poulson, Claude
Adm. Oprs., CO
Rush, Harold F.
WBAS Yakima
Stangland, Dell H.
WBAS Missoula
Stone, Alton L.
WBAS Winston-Salem

20-YEAR AWARDS

Birge, Margaret M.
NWRC Asheville
Bonebright, Frank A.
WBRO Kansas City
Brown, Natalie
WBAS San Francisco
Brennan, Edward
NMC, CO
Carter, Gerald J.
WBAS Oklahoma City
Clarkson, Omer Jr.
WBRS Fort Huachuca

Clithero, John
NMC, CO
Gelhard, Robert
NMC, CO
Goodmond, Samuel
NWRC Asheville
Ledford, John B.
NWRC Asheville
Lee, Phyllis
Avia. Wea. Servs., CO
Middleton, Quimby M.
WBAS Jackson, Miss.
Nixon, Norman W.
WBAS Miami
Riddle, Winton B.
NWRC Asheville
Stosser, William
WBAS Miami
Swope, Paul H.
WBFC Chicago
Tierney, John
NMC, CO
Waite, Paul J.
S/C, Des Moines
White, Mary
NWRC Asheville

15-YEAR AWARDS

Adams, Paul
Polar Oprs., Sterling, Va.
Arnold, Joe
NMC, CO
Carranza, George P.
WBO Walla Walla
Chapman, Janie W.
NWRC Asheville
Chick, John M.
WBAS Caribou
Dupree, John
WBAS Concord, N. H.
Goodin, Ruth
WBAS Miami
Harrison, Donald D.
WBAS Kwajalein
Morine, Frank
AWP Boston
Nielsen, Robert L.
WBAS Lander, Wyo.
Norton, Laetitia
NWSC, CO
Reid, Albert E.
NWRC Asheville
Stallings, Excell R.
AWP Norfolk
Taylor, Floy M.
NWRC Asheville
Uram, Nicholas
WBAS Youngstown

Transfers

ANDERSON, ELWYN E.
 ARMBRUST, JOHN P.
 BAGBY, RICHARD C.
 BAILEY, MORTON H.
 BENFER, JOSEPH W.
 BILLMAN, DONALD R.
 BILLONES, LOUIS
 BINDER, ROBERT J.
 BIRDSALL, JOHN E.
 BLANCHARD, LAWRENCE G.
 BLIVEN, RAYMOND B.
 BOOTH, DAVID M.
 BOUDREAUX, JAMES E.
 BROWN, THOMAS I.
 BRYTE, STANLEY R.
 BURGMANN, WALTER S.
 BROWN, MERLE J.
 BYERLY, EUNICE A.
 CASADA, RAY R.
 COFIELD, JOHN L.
 COLEMAN, RANDY J.
 COLON, JOSE A.
 COOPER, KENNETH K., JR.
 COULTER, DAVID R.
 COURTNEY, JAMES L.
 CRUMBAUGH, JOSEPH J.
 CRUZ, JOAQUIN T.
 DUDLEY, JAMES K.
 EAKIN, OTHO M., JR.
 EVANS, CHARLIE
 FALKENHOF, JACK
 FIDLER, JAMES C.
 FRENCH, GERALD S.
 FROUNDFELKNER, CHARLES M.
 GALLEGOS, RAFAEL L.
 GARCIA, LEOPOLDO
 GIBSON, HAROLD M.
 GILBERT, STEPHEN H.
 GORE, DONALD L.
 GOULAIT, ROLAND J.
 GRAHAM, WALTER R.
 GREENING, RICHARD M.
 HARRINGTON, JOHN R.
 HARTY, ALLAN K.
 HASTRUP, HARVEY E.
 HEINS, JERRY L.
 HILL, JOHN S.
 HOFFERT, HENRY H.
 HOLLIS, JACK
 HOLLOWAY, JOSEPH O.
 JACKSON, THOMAS F.
 JENSEN, CLAIRE D.
 KING, CHARLES
 LANDRY, EDWARD J.
 LA POINTE, DONALD P.

FROM

Leesburg, Va.
 Bethel, Alaska
 Raleigh, N. C.
 Nashville, Tenn.
 Del Rio, Tex.
 Pt. Arguello, Calif.
 Sacramento, Calif.
 Barter Is.
 Huron, S. Dak.
 Ft. Huachuca, Ariz.
 Nantucket, Mass.
 Amarillo, Tex.
 Kwajalein Is.
 Resolute Bay, NWT
 Pt. Arguello, Calif.
 Atlanta, Ga.
 Honolulu, Hawaii
 CO
 Rome, Ga.
 Midland, Tex.
 San Antonio, Tex.
 Miami, Fla.
 Honolulu, Hawaii
 Oklahoma City, Okla.
 CO
 Denver, Colo.
 Grand Junction, Colo.
 Waco, Tex.
 Leesburg, Va.
 Del Rio, Tex.
 Mould Bay, NWT
 CO
 Wilmington, N. C.
 Cordova, Alaska
 Alpena, Mich.
 Las Vegas, Nev.
 Kansas City, Mo.
 Ft. Huachuca, Ariz.
 Brownsville, Tex.
 Leesburg, Va.
 Mould Bay, NWT
 CO
 CO
 Del Rio, Tex.
 Canton Is.
 Norfolk, Va.
 Detroit, Mich.
 Pt. Mugu, Calif.
 Port Arthur, Tex.
 El Paso, Tex.
 Nome, Alaska
 Anchorage, Alaska
 Wallops Is., Va.
 Alert, NWT
 Huron, S. Dak.

TO

Tatoosh Is., Wash.
 Nome, Alaska
 Antarctica
 Pretoria, S. Africa
 San Antonio, Tex.
 Johnston Is.
 San Francisco, Calif.
 Flint, Mich.
 Lincoln, Nebr.
 New Orleans, La.
 Burlington, Vt.
 Victoria, Tex.
 Cold Bay, Alaska
 Eureka, NWT
 Los Angeles, Calif.
 Tallahassee, Fla.
 Manhattan, Kans.
 Kansas City, Mo.
 Tallahassee
 Burrwood, La.
 San Angelo, Tex.
 San Juan, P.R.
 Kwajalein Is.
 Kansas City, Mo.
 San Andres
 CO
 Marcus Is.
 Tallahassee, Fla.
 Fort Worth, Tex.
 El Paso, Tex.
 Resolute, NWT
 Austin, Tex.
 Atlantic City, N. J.
 Fairbanks, Alaska
 Denver, Colo.
 CO
 Anchorage, Alaska
 Charleston, S. C.
 Montgomery, Ala.
 CO
 Las Vegas, Nev.
 New York, N. Y.
 Springfield, Ill.
 Marcus Is.
 Eniwetok Is.
 Boston, Mass.
 Albuquerque, N. Mex.
 Winnemucca, Nev.
 Memphis, Tenn.
 Resolute Bay, NWT
 Fort Worth, Tex.
 San Francisco, Calif.
 Picayune
 Antarctica
 Charleston, S. C.

LISH, JAMES W.
 LITTLEFIELD, GUY W.
 LÖVILL, JAMES E.
 MANGELS, ROBERT J.
 MARSHALL, RALPH E.
 MARTELL, LEROY
 MARTIGNETTI, JOHN A.
 MATHERS, JESSE A., JR.
 MATTHES, WILLIAM P.
 McSWEENEY, MILES E.
 MELROSE, ROBERT L.
 MILLER, JAMES R.
 NELSON, RAY C.
 NICHOLSON, JAMES R.
 PEARSON, ALLEN D.
 PETERSON, KENNETH D.
 PORTER, NEWTON E., JR.
 RADULOVICH, MILO J.
 RASMUSSEN, EUGENE M.
 RANTA, TAUNO H.
 RIEDY, DANIEL J.
 RILEY, HUGH B.
 RIPPEN, GEORGE W.
 ROBINSON, JOHN M.
 ROBBINS, BEN C.
 ROSEMAN, HERBERT
 ROSS, MARTIN
 RUBIN, FRED W.
 SCHNABEL, JACK
 SHAW, SAMUEL L.
 SHELTON, JOHN E.
 SHRIDER, BERNARD L.
 SLOAN, YOUNG T.
 SMITH, JOHNNY S.
 SMITH, ROSS H.
 SMITH, WARREN J., JR.
 SNYDER, QUENTIN C.
 SOPKO, JOSEPH L.
 SPILLERS, JAMES R.
 SPRAGUE, RICHARD A.
 SPRINGER, HAROLD S.
 STAGNO, RONALD P.
 STEVENSON, JAMES D.
 STEWARD, PHILBERT G.
 STEWART, JACKIE E.
 TANNER, JACK R.
 TATRO, HAZEL C.
 THOMAS, DAVID C.
 THOMPSON, JAMES R.
 TOLER, JAMES E.
 TREBBE, WILLIAM J.
 TRICE, JACK L.
 TROWBRIDGE, RUSSELL D.
 TUMMONS, WAYNE P.
 VAN REEMAN, IVAN D.
 VICKERY, ROY J.
 VISOCKY, EUGENE F.
 WEBSTER, CHARLES W.
 WHITMAN, DAVID R.

FROM

Salt Lake City, Utah
 Great Falls, Mont.
 Knoxville, Tenn.
 Ft. Huachuca, Ariz.
 Ft. Huachuca, Ariz.
 Ft. Huachuca, Ariz.
 CO
 Leesburg, Va.
 Dodge City, Kans.
 Key West, Fla.
 Eureka Sound, NWT
 CO
 Kansas City, Mo.
 CO
 Honolulu, Hawaii
 Lander, Wyo.
 San Andres Is.
 Redding, Calif.
 St. Louis, Mo.
 Albert, NWT
 Ryan AFB
 CO
 Madison, Wis.
 Kansas City, Mo.
 Honolulu, Hawaii
 Kansas City, Mo.
 Atlantic City, N. J.
 Goodland, Kans.
 El Paso, Tex.
 San Juan, P.R.
 Jacksonville, Fla.
 Kansas City, Mo.
 Ft. Worth, Tex.
 Kansas City, Mo.
 Chicago, Ill.
 Hartford, Conn.
 Williamsport, Pa.
 Cincinnati, Ohio
 Greenville, S. C.
 Tatoosh Is.
 CO
 King Salmon, Alaska
 Leesburg, Va.
 Detroit, Mich.
 Silver City, N. Mex.
 Wendover, Utah
 Columbia, S. C.
 San Diego, Calif.
 Detroit, Mich.
 Wake Is.
 Washington, D. C.
 Burrwood, La.
 Tatoosh Is., Wash.
 New York, N. Y.
 Rockford, Ill.
 Albany, N. Y.
 Boston, Mass.
 Aberdeen, S. Dak.
 Antarctica

TO

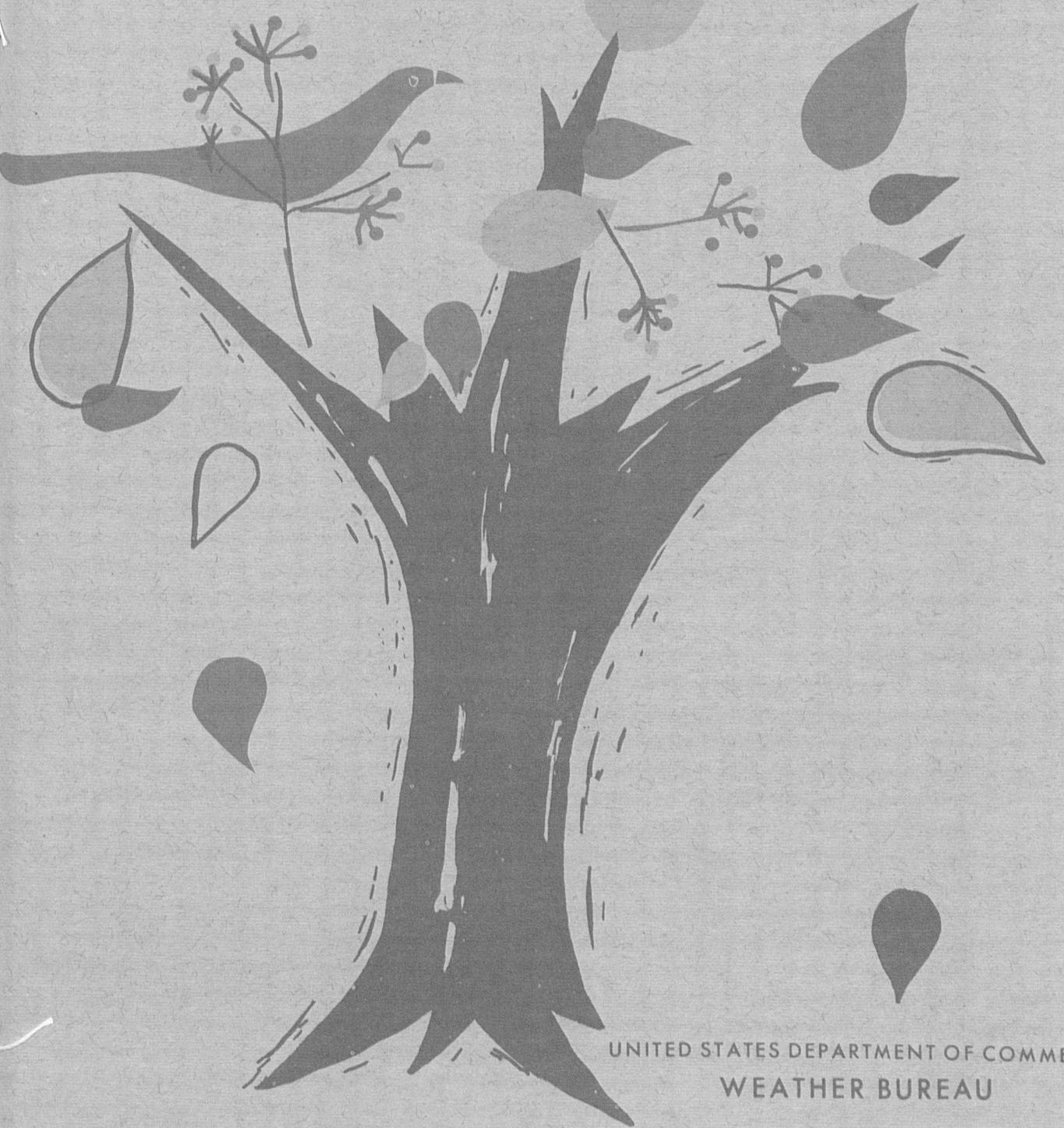
Kalispell, Mont.
 Billings, Mont.
 Antarctica
 Canton Is.
 Memphis, Tenn.
 Lincoln, Nebr.
 New York, N. Y.
 Wallops Is., Va.
 Lincoln, Nebr.
 Tallahassee, Fla.
 Isachsen, NWT
 Sacramento, Calif.
 Springfield, Mo.
 Honolulu, Hawaii
 CO
 Casper, Wyo.
 Pt. Arthur, Tex.
 Sacramento, Calif.
 Cambridge, Mass.
 Isachsen, NWT
 Ft. Huachuca, Ariz.
 Birmingham, Ala.
 Fairbanks, Alaska
 Cincinnati, Ohio
 Huntington, W. Va.
 Honolulu, Hawaii
 Washington, D. C.
 Aberdeen, S. Dak.
 Austin, Tex.
 San Antonio, Tex.
 Antarctica
 Bethel, Alaska
 Midland, Tex.
 Chicago, Ill.
 Antarctica
 Atlantic City, N. J.
 Asheville, N. C.
 Cleveland, Ohio
 Greensboro, N. C.
 Seattle, Wash.
 Lubbock, Tex.
 Galveston, Tex.
 Washington, D. C.
 Washington, D. C.
 Brownsville, Tex.
 San Francisco, Calif.
 Winston-Salem, N. C.
 Burbank, Calif.
 Raleigh, N. C.
 Dayton, Ohio
 Aberdeen, S. Dak.
 CO
 Los Angeles, Calif.
 Asheville, N. C.
 Lander, Wyo.
 Richmond, Va.
 Pittsburg, Pa.
 Kansas City, Mo.
 Eureka, NWT

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TOPICS, the official Weather Bureau employee magazine, is published monthly to inform all employees about Bureau activities and programs. Articles or comments by Bureau employees are invited. Inquiries and requests for permission to reprint or quote from material contained in TOPICS should be sent to the Office of Public Information, U.S. Weather Bureau, Washington, D.C. 20235.

TOPICS



UNITED STATES DEPARTMENT OF COMMERCE
WEATHER BUREAU

DECEMBER 1964

VOL. 23 NO. 10

WHITE HOUSE PRAISES HURRICANE FORECASTS

On October 9, President Johnson issued the following statement praising the Weather Bureau's performance in Hurricane Hilda:

If a State could be awarded a medal for coolness under fire, I would be here today to give one to Louisiana.

The evacuation of over 100,000 persons from the coastal areas in the 96-hour warning period before Hurricane Hilda struck was a miracle of organization.

It was a tribute to the qualities of your State and community leaders, from Governor McKeithen on down. It was a great display of the courage of the people of the State of Louisiana.

Hilda was probably the best tracked and most accurately predicted hurricane in history. We had four full days' notice, which is enough time to prepare for the worst, and thereby to avoid much of the disastrous death toll of Hurricane Audrey in 1957, when 534 lives were lost.

This is an example of the way in which your government makes the fullest use of modern technology in the interests of our people. Hurricane Hilda was under surveillance by four different land-based weather radars. The TIROS Weather Satellite provided valuable observation of the storm. Most important of all, Hurricane Hilda was traced by reconnaissance planes of the United States Air Force and the United States Weather Bureau. Those civilian employees of the United States Government were willing to risk their lives to probe the severe interior of the storm. They, too, deserve our praise.

From the moment the storm was discovered a wide range of Federal activities were begun. Even before the storm hit the coast, Federal disaster experts from

the Office of Emergency Planning were dispatched to Louisiana from around the Nation.

During this preparatory period, and ever since, cooperation among Federal, State and local officials was of the highest order.

As you know all too well, the property damage and the loss of life, while less than it might have been, was nonetheless a tragic loss. . . .

We must continue to work to improve our weather warning services so that these devastating storms can be tracked and predicted even more accurately. The time has also come to find out whether there is anything that can be done to diminish the destructive force of the storm itself. ■



TIROS VIII photographed Hurricane Hilda as she moved toward the Gulf Coast on October 2. President Johnson said, "Hilda was probably the best tracked and most accurately predicted hurricane in history."



Best Wishes
For a Joyous
Holiday
Robert M White



PRESIDENTIAL STATEMENT

U.S., U.S.S.R. to Exchange Weather Information

I am happy to be able to announce that we have reached an agreement with the Soviet Union for the exchange of weather information between Washington and Moscow.

This is a good step forward in building the World Weather System to which I re-pledged American cooperation last June at Holy Cross College.

This cooperative effort has grown out of the beginning made by President Kennedy in his speech to the United Nations on September 25, 1961. He said then that our country ". . . would propose cooperative efforts between all nations in weather prediction and eventually in weather control. . . ."

In 1961 and 1962, the United Nations called upon the World Meteorological Organization to develop a program of cooperation that would strengthen weather service and research. The Organization responded with a concept of a World Weather System and has designated Moscow and Washington as two World Weather Centers.

The United States and the Soviet Union have been working out an agreement to exchange weather information over a direct communications link between the two capitals. The agreement we have now reached provides for the exchange on a reciprocal basis of weather information gathered by satellites. For a

short initial period conventional data will be exchanged. We hope that other member nations of the World Meteorological Organization may eventually participate in the exchange of data over this weather link.

We expect that the formal terms of this new agreement will be released next week at a meeting in New York of the United Nations Committee on Peaceful Uses of Outer Space.

In addition, I expect to be able in the near future to announce the opening of the World Weather Center in Washington. We have already been exchanging test transmissions on an experimental basis. We know that the new link, when in operation, will be a substantial step forward in speeding the transmission of valuable weather data in both directions. The American weatherman and the American public will immediately benefit from these improvements.

I take this opportunity to release a letter that I have sent to Secretary Hodges. This letter emphasizes my continuing support for international cooperation in weather matters, and my desire to ensure that all departments and agencies of the United States Government do their full part in support of international weather activities.

October 23, 1964

The Honorable Luther H. Hodges
Secretary of Commerce
Washington, D.C.

Dear Mr. Secretary:

As you are fully aware, we have over the past few years witnessed a substantial increase in international cooperation in weather matters. The nations of the world are exchanging meteorological data and pooling their activities to a greater extent than ever before to provide early warnings of severe storms and other calamities of nature, to further the safety and efficiency of air and sea travel, and to promote industry, commerce, and agriculture within their own borders. The most recent significant event in international weather cooperation has been the agreement among the member nations of the World Meteorological Organization to accelerate the development of a World Weather System. When the System is brought into full operation, it will bring substantial benefits both to our own country and to the less developed nations of the world. I have pledged the cooperation of the United States in the development of the System because of its importance to us and to the world at large.

A number of Federal departments and agencies are presently involved in international activities in meteorology and have a concern with one aspect or another of United States international meteorological policies. With the growth of international cooperation in weather matters, and particularly with the quickening of international efforts to develop a World Weather System, there must be even more continuing consultation among them and effective coordination of their activities than has been necessary up to now.

I therefore direct that you take such action as you may deem necessary to bring the interested Federal departments and agencies into closer consultation and coordination with regard to international activities in meteorology and the formulation of United States international meteorological policies and programs to ensure that the United States will continue to make a significant contribution to international meteorological activities.

Sincerely,
LYNDON B. JOHNSON

WASHINGTON TO MOSCOW

Weather Communications Link Completed

On October 25, President Johnson announced the completion of the United States-Soviet agreement for exchange of weather information on a direct communications link.

Three days later, weather data began flowing between the two nations on a 5000-mile cable circuit routed from Washington to Moscow by way of London, Frankfurt, Berlin, and Warsaw. The Washington end of the circuit is located in the Communications Branch of the National Meteorological Center.

The special link was established under contract by RCA Communications, Inc. Telegraphy, photofacsimile, or document facsimile can be sent in both directions at the same time on the new circuit, and there is also provision for voice communication to aid coordination.

When tests are completed and the link becomes operational, equivalent weather information will be exchanged on a 24-hour schedule agreed upon by the Chief of the Weather Bureau and the Chief of the Hydrometeorological Service of the U.S.S.R.

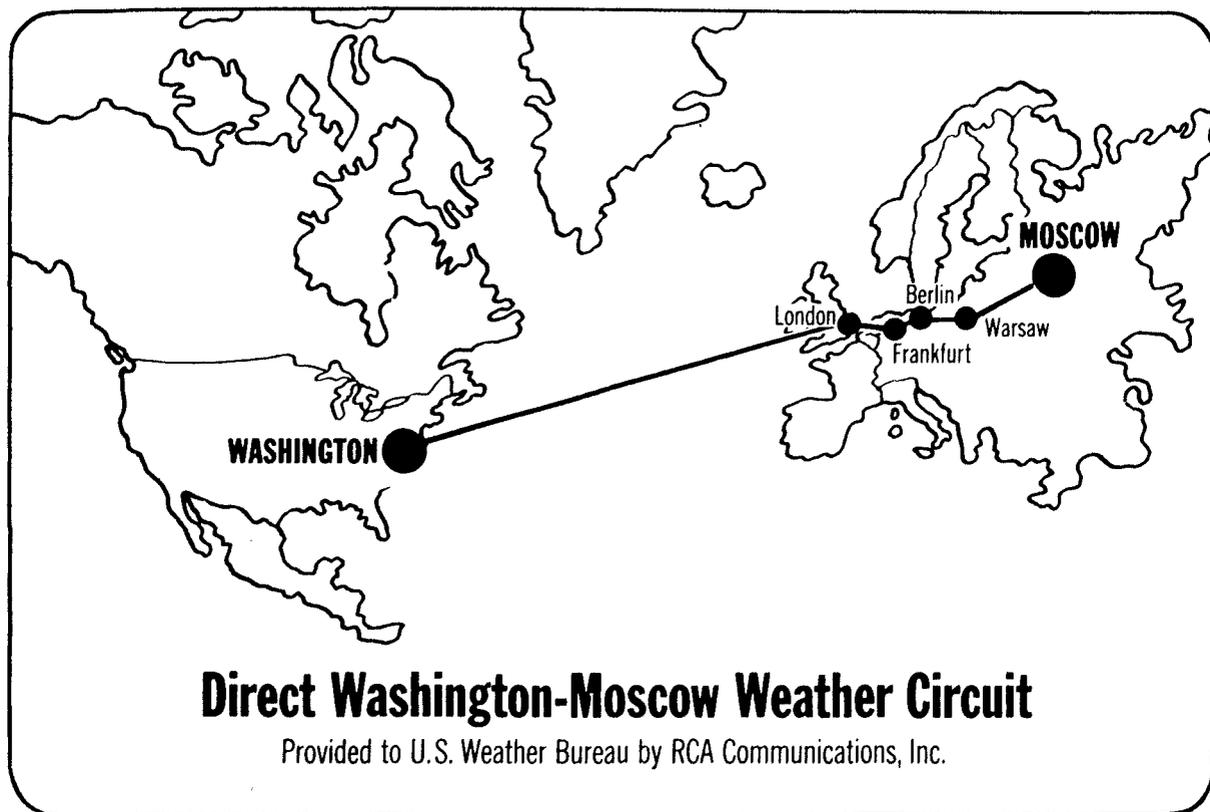
Satellite pictures, and cloud maps based on these pictures, will have first priority for exchange when weather satellite data are available from both nations.

Upper-air measurements will be transmitted by teletypewriter within four hours of observation time, and surface data will be sent within three hours of observation time. Washington will transmit surface data available from North America, Central America, and the North Atlantic and North Pacific Oceans, while Moscow will transmit surface data available from eastern Europe, the U.S.S.R., and southern Asia.

Forecast charts, including 30-day precipitation and temperature outlooks, will be exchanged by means of document facsimile. All charts exchanged will be polar stereographic projections, and whenever possible they will cover the entire Northern Hemisphere.

Expenses of the weather communications link will be shared equally by the Soviet Union and the United States, each paying the costs for alternate months.

Later, other weather services will be invited to install connections that enable them to receive the exchanged information. Each weather service that does so will make a proportional contribution to the total expenses of the link. ■



Practice Forecast Program

The Weather Bureau's Practice Forecast Program was discontinued in August 1964. Distribution of the individual results for the year 1964 was completed in October.

More than a thousand employees participated in the program which began in 1955.

The top ten participants for the ten-year period are Charles T. Watson, WBAS Knoxville, Tenn.; Charles R. Hays, WBAS Shreveport, La.; J. H. Eggleston, WBAS El Paso, Texas (deceased); William J. Trebbe, WBAS Aberdeen, S. Dak.; Henry C. Schaefer, WBAS Milwaukee, Wis.; Leonard R. Gilbert, Jr., WBAS Columbus, Ga.; E. La Marr Eaton, WBAS Albuquerque, N. Mex.; Donald T. Rowland, WBAS Port Arthur, Texas; Fred Bohnenberger, Jr., WBAS Oklahoma City, Okla.; and Norton D. Strommen, WBAS Madison, Wis. ■

* * * * *

Florida State Offers Two Special Programs

Florida State University will offer special programs in Climatology and Planetary Atmospheres during the spring and summer of 1965.

From April 29 to June 16, the University will hold a four semester-hour course in Applied Climatology and a three semester-hour course in Physical Climatology. In addition to these formal courses, a series of non-credit lectures will be given by research climatologists working in such areas as agricultural and forest climatology and micrometeorology.

Further information regarding these climatological courses may be obtained by writing to Chairman, Department of Meteorology, Florida State University, Tallahassee, Florida.

A special seven-week program in Planetary Atmospheres will run from June 21 to August 6. Plans call for graduate courses in planetary atmospheres, the upper atmosphere, and atmospheric radiation. Accompanying non-credit lectures in such fields as radio astronomy, infrared spectroscopy, air glow, aurora, ionospheric physics, and solar physics will be given by the University's staff and visiting lecturers.

Participants in this special program will be required to have a baccalaureate degree, a solid background in mathematics and physics, and some training or experience in atmospheric physics.

Further information on this program may be obtained by writing to Dr. Seymour L. Hess, Chairman of the Space Science Committee at Florida State University. ■

Christmas Airlift Set for Arctic Weathermen

The Polar Operations Project has completed preparations for the last delivery of emergency supplies, equipment, and Christmas amenities for delivery by airdrop to the five Joint Arctic Weather Stations (Resolute, Eureka, Isachsen, Mould Bay, and Alert) in the Northwest Territories of Canada. The amenities include some of the Traditional Christmas fare, together with Christmas trees from southern Canada—none being available at these far northern stations.

This airlift operation will involve a flight, or flights, by the Royal Canadian Air Force during the last full moon before Christmas. This will occur on December 19 this year, at which time planes based at RCAF Namao Station, Edmonton, Canada, will fly north with material, supplies, and equipment packaged for parachute drop. In certain instances, if weather and the landing area permit, the planes will land; otherwise, the delivery will be made by parachute drop.

The full moon period is selected to provide as much light as possible, so that personnel on the ground at these remote stations might locate the drop kits before they are moved out of reach by surface winds or covered up by snow. Further, in the event of trouble, the moonlight will enable search and rescue planes to assist in locating a downed plane or engage in rescue operations.

The men at these Arctic stations look forward eagerly to receiving mail and Christmas packages from home, the Christmas "bonus" from the Weather Bureau and the Meteorological Service of Canada, and emergency supplies needed to keep the stations running through the dark period of the year.

On one occasion, however, in 1952 the two Christmas trees provided for Isachsen Station broke free from the parachute container on the way down and fell free to the ground. The combination of very low temperature, which froze the needles, and the sudden violent impact, when the trees hit the ground, completely removed all of the green needles from the trees. Nevertheless, the men used one of the trees by decorating it with suitably colored paper, tinsel made from materials on the station, and candles, which, incidentally, were not lighted but were for decoration only. Although the natural green color was entirely absent, the tree served its purpose perfectly and added to the Christmas cheer for all personnel on the station, both Americans and Canadians.



In another incident, at Eureka Station in 1956, fairly strong winds carried some of the parachute kits several miles from the station and the amenities for Christmas that year were not found until the return of daylight in March of the following year. Considerable damage had occurred in the meantime to the kits from being dragged by the parachute and from predatory arctic foxes. ■



Synoptic Code Groups Slated for Revision

Effective with the 0000 GMT synoptic observation on January 1, 1965, temperature in group 4 and dew point in group 6 of the code for synoptic weather observations will be reported in degrees Celsius instead of degrees Fahrenheit.

This action will bring the United States into full compliance with recommended procedures of the World Meteorological Organization for the first six groups of the synoptic code (all that are exchanged internationally).

This procedure does not apply to aviation observations, nor does it involve the use of Celsius units in the general public service. It relates only to the use of the Celsius scale for reporting current temperature in group 4 and current dew point in group 6 of the surface synoptic code. Temperatures will be reported in degrees Fahrenheit in other code groups where they appear. ■



"3-E Programs" Readied to Improve Operations

The Weather Bureau's first annual Economy-Efficiency-Effectiveness Improvement Plan was submitted to the Department of Commerce in October.

Preparation of a yearly plan is an essential part of the Department's new "3-E program" instituted as a result of President Johnson's personal interest in economy and efficiency in Government. The President has praised the Defense Department's cost reduction efforts on several occasions. Now, he has set this program as an example for other Federal departments to follow.

On August 21, 1964, Secretary Hodges sent a memorandum to heads of Commerce Bureaus and Offices, calling for a more intensive program throughout the Department to improve the economy, efficiency, and effectiveness of operations. Shortly thereafter, a departmentwide administrative order was issued, inaugurating a 3-E program in the Commerce Department.

In establishing the Department's 3-E program, Secretary Hodges has adapted those portions of the Department of Defense program which are applicable to Commerce activities. The Secretary has given the program his personal attention and has asked each Bureau head to become personally involved in order to guarantee the success of the improvement program.

The 3-E program is not a brand new undertaking for the Weather Bureau. Economy has been a Weather Bureau watchword since Signal Corps days. For the past 15 years, the Weather Bureau has participated in a Government-wide Management Improvement Program initiated as part of the Classification Act of 1949. This effort has consisted of

MAJOR END PRODUCTS

| | |
|--|------------|
| Aviation observations | 2,607,303 |
| Synoptic observations | 162,790 |
| Upper-air observations | 101,488 |
| Pilot balloon observations | 117,360 |
| State forecasts | 134,061 |
| Hurricane, tornado, severe storm, and other warnings | 18,622 |
| Text for transcribed weather broadcasts | 177,803 |
| Area and regional aviation forecasts | 45,533 |
| Aviation terminal forecasts | 899,224 |
| Meteorological flight advisories | 9,836 |
| Advisories to light aircraft, local aviation warnings, and special forecasts for special flights | 21,725 |
| Local marine forecasts | 104,025 |
| River forecasts, warnings, and advisories | 135,670 |
| River briefings | 111,430 |
| General weather telephone briefings | 10,567,047 |
| General weather personal briefings | 1,135,201 |
| Domestic pilot telephone briefings | 4,136,948 |
| Domestic pilot personal briefings | 1,664,156 |
| International aviation briefings | 70,374 |
| Bulletins and summaries | 617,255 |
| Direct radio originations | 218,635 |

improving operations, reducing expenditures, developing more efficient methods of work performance, and reporting annually on improvements accomplished.

One of the significant differences in the 3-E program, compared to prior efforts, is its requirement for an annual improvement plan, including goals toward which each Commerce Bureau or Office will work. These targets or goals, which each Bureau is free to set for itself, are individual improvement projects aimed at greater economy, improved efficiency, or more effective service. Projects can be quite broad in scope, as for example the Weather Bureau's goal of acquiring a new building to centralize activities in the Washington area. Other projects are more limited, such as the transfer of intermediate rawins from Jackson, Miss., to Nashville, Tenn., or the substitution of hydrogen for helium in inflating upper-air balloons. Projects may be of a one-time nature with a definite end or continuing, with progress toward the goal reported each year.

Another requirement of the 3-E program is an itemized list of agency end products. The production statistics for Fiscal Year 1964 reported by the Weather Bureau appear in the accompanying table.

In the 3-E program, efficiency and effectiveness are as important as economy. Certain effectiveness projects actually may require increased dollar expenditures. The overall aim of the 3-E program is to provide greater service to the taxpayers for each dollar spent. ■

Researchers Offered WB-NAS Associateships

The Weather Bureau, in cooperation with the National Academy of Sciences-National Research Council, is offering a number of associateships for postdoctoral research in atmospheric sciences, instrumental engineering, and data handling in the projects listed below. Consideration will also be given to related areas of research.

The purpose of these awards is to provide young scientists of unusual ability and promise an opportunity for fundamental research in various branches of the physical and mathematical sciences.

Applicants whose research plans appear to fall within the scope of the research activities listed should communicate directly with the scientific advisor designated for their field of interest. The applicant must present evidence that his problem is acceptable to the scientific advisor under whom he will work at the Weather Bureau before his application can be considered by the National Academy of Sciences-National Research Council's board of selection.

More complete information on these associateships may be had by contacting the Fellowship Office, NAS-NRC, 2101 Constitution Avenue, N.W., Washington, D.C.



The following is a list of the projects, their locations, and the scientific advisor supervising the project. The advisor should be contacted through the Central Office.

Application of Satellite Radiation Data to General Circulation Studies, Dr. Sigmund Fritz, Suitland, Md.; Atmospheric Diffusion and Transport Theoretical Studies, Dr. Lester Machta, Dr. Norman Isltzer, and Dr. Frank Gifford, Washington, D.C., Oak Ridge, Tenn., Idaho Falls, Idaho, and Cincinnati, Ohio; Bioclimatology Research, Dr. H. E. Landsberg, Suitland, Md.; Climatic Change, Dr. J. Murray Mitchell, Jr., Suitland, Md.; Cloud Patterns vs. Flow Fields and Stability, Dr. Sigmund Fritz, Suitland, Md.; Cloud Pictures Related to Vertical Motion and Humidity Fields, Dr. Sigmund Fritz, Suitland, Md.

Contaminant Removal Processes, Dr. Norman Isltzer, field and theoretical studies at Idaho Falls, Idaho, and theoretical work in Washington, D.C.; Determination of Temperature of the Atmosphere, Dr. Sigmund Fritz, Suitland, Md.; Dynamic Meteorology of the Tropics, Dr. Stanley Rosenthal, Miami, Fla.; Field Tracer Experiments, Dr. Norman Isltzer, Idaho Falls, Idaho, and Las Vegas, Nevada; General Circulation Models, Dr. Joseph Smagorinsky and Dr. Syukuro Manabe, Washington, D.C.; Hurricane Development, Dr. Mikhail A. Alaka, Washington, D.C.

Macro-scale Applications of Constant Volume Balloons, Dr. James K. Angell and Dr. Frederick G. Shuman, Suitland, Md.; Measurement of Atmospheric Ozone Distribution, Dr. Sigmund Fritz, Suitland, Md.; Meridional Heat Transfer in Oceans, Dr. Kirk Bryan, Washington, D.C.; Mesoclimatology, Dr. J. Murray Mitchell, Jr., Suitland, Md.; Mesometeorology Through Studies of Lagrangian Air Motion, Dr. James K. Angell, Washington, D.C.; Problems of Arctic Climatology with Special Emphasis on the Arctic Region of North America and Greenland, Dr. H. E. Landsberg and Dr. P. Putnins, Suitland, Md.

Problems of General Climatology of the North American Continent, Dr. H. E. Landsberg, Suitland, Md.; Radar Climatology, Dr. H. L. Crutcher, Asheville, N.C.; Research and Development in Numerical Weather Prediction, Dr. George P. Cressman, Dr. Frederick G. Shuman, and Staff, Suitland, Md. ■



Glenn Dyer (left), Head of the Bureau's Polar Operations, and author Robert Simpson at Eureka Sound in Canada's Northwest Territories.

THE ARCTIC Our Weather Frontier

BY
ROBERT H. SIMPSON
DEPUTY DIRECTOR FOR SERVICE OPERATIONS
OFFICE OF
NATIONAL METEOROLOGICAL OPERATIONS

The crest of the plateau was directly ahead. I paused momentarily to admire the magnificence of Eureka Sound. New ice covered most of the water surface from which protruded several large icebergs. And beyond Eureka Creek rose old Black Top Mountain, significantly capped by mountain wave lenticularis, the only clouds in the sky. Early equinoctial snows had covered the landscape to a depth of several inches, enough to supply graphic evidence of wolves, foxes, musk oxen, and arctic hares which roam the area.

I was impressed with the intense silence. In comparatively warm 15° F. temperatures, there was no air movement and not the slightest sound could be detected as I listened intently.

Whan an amazing land; what a challenging frontier! And what a magnificent access to this frontier is our chain of polar weather stations which extends across Canada's Northwest Territories from Resolute Bay at 75° North to Alert, only 450 nautical miles from the pole.

The visit to Eureka was the longest pause in a swift journey to the Arctic for inspection of five weather stations operated jointly by the United States and Canada. I was accompanied by Mr. Glenn Dyer, Head of the Bureau's Polar Operations, and Mr. D. C. Archibald, Chief of the Basic Weather

Services Division (Canadian Meteorological Service), both experienced hands in the Arctic. The three of us were passengers aboard an RCAF C-130 aircraft during the fall airlift, an operation well designed to test both the versatility of this amazing aircraft and the skill and endurance of aircrews. I came away with the utmost admiration for both. During the five days of the operation, two C-130's flew 23 sorties, delivering 385 tons of supplies to Resolute, Mould Bay, Isachsen, Eureka, and Alert. The planes were operated as much as 21 hours a day, often under forbidding weather conditions.

We had left Washington at noon on Thursday, September 10, and reached Nomo Airbase at Edmonton early that evening. Friday morning we left for Resolute Bay, 1500 miles north. After several hours' pause at Resolute, we continued on to Mould Bay on Prince Patrick Island, then to Isachsen on Ellef Ringnes Island, and finally to Eureka. On Sunday we moved on to Alert, returned to Resolute, then proceeded again to Isachsen where we remained overnight. We returned to Resolute on Tuesday and—after a second trip to Mould Bay—departed from Resolute for Thule, Greenland, where the U. S. Air Force was our host for a tour of the Ballistic Missile Early Warning System installation.

This rapid series of sorties in the Arctic afforded an excellent opportunity to view some of the unique terrain and glacial features. Among the most spectacular sights was that of the ice cap which covers Axel Heiberg Island whose upper plateau rises to nearly 11,000 feet. The journey across Ellesmere Island from Eureka to Alert was memorable for the numerous glaciers pouring down from the United States range to the sea, where icebergs were being manufactured and small and large ice islands were in the process of formation. Mr. Archibald told the story of an ice island previously manned by the Russians, which drifted southward from the Arctic Sea into Baffin Bay and finally ran aground near the coast of Baffin Island.

Perhaps the most unusual experience of this interesting journey occurred on our trip northward to Alert. When we left Eureka the sun had slipped below the horizon an hour earlier, but when we reached our cruising altitude of 25,000 feet the upper rim of the sun was again visible. Proceeding northward to Alert at these high latitudes, we saw the sun emerge on the horizon until its disk was completely visible. After remaining in Alert for several hours, we departed with the sun well above the horizon at takeoff period. During the flight back to Resolute, however, the speed of the C-130 was sufficient for us to observe the sun receding below the horizon in the east; when we arrived at Resolute there was deep twilight. With standard transportation equipment, the sun can be observed to rise in the west and set in the east only at equinoctial times of year and at very high latitudes.

Air navigation in the resupply missions provides a unique challenge. The only aids are homer beacons usually located about a mile to one side of the runways. Terrain is a factor in nearly all of the approaches, especially at Mould Bay and Isachsen. While the hills are generally no higher than 1000 feet, the approach often must be made with ceiling no more than 500 feet and visibilities of two to three miles. In these circumstances, airborne radar becomes a primary landing aid. Runways, while not paved, are generally good, although mostly less than 5000 feet in length.

One soon learns a respect for the C-130 under such difficult operating conditions. With a load of 16 to 18 tons of cargo, it takes off from a snow-covered runway in no more than 1500 feet, climbs out to about 28,000 feet at more than 2000 feet per minute, and later descends at more than 4000 feet per minute. On our first approach to Isachsen, the ceiling was almost 1000 feet. From the flight deck I strained for a first glimpse of the runway. Then, through the deep twilight over the snow surface, the runway lights burst into view. Later, I was astounded to find that these "lights" were home-made flares—coffee tins filled with diesel oil with rolls of toilet tissue for wicks.

When the aircraft returned for us at Isachsen, weather conditions were less satisfactory. The C-130 had to make several approaches before breaking out over the adjacent fjord ice, a few hundred feet above the surface. Since higher terrain at either end of the runway was obscured, the pilot executed a unique maneuver consisting of a long base leg perpendicular to the end of the 4200-foot runway, flown at about 200 feet, then a sharp turn and final approach of no more than 2000 feet (along the runway), rolling to a stop in another 1200 feet.

The Arctic stations are surprisingly well equipped and show evidence of good planning and management. Construction is modern with more convenience, better food and facilities than any outpost station I have ever visited.

The stations are staffed by U. S. and Canadian personnel. The Station Chief is a Canadian, the Executive Officer an American, and the remaining staff is equally divided. The personnel at these stations take pride in their work, and the record of high rawinsonde flights attests to this.

All in all, the Arctic operation is one the Weather Bureau can view with pride, not only because of the achievement in developing these stations and mounting effective programs under extreme environmental conditions, but because of the fine example of international cooperation in science which this represents.

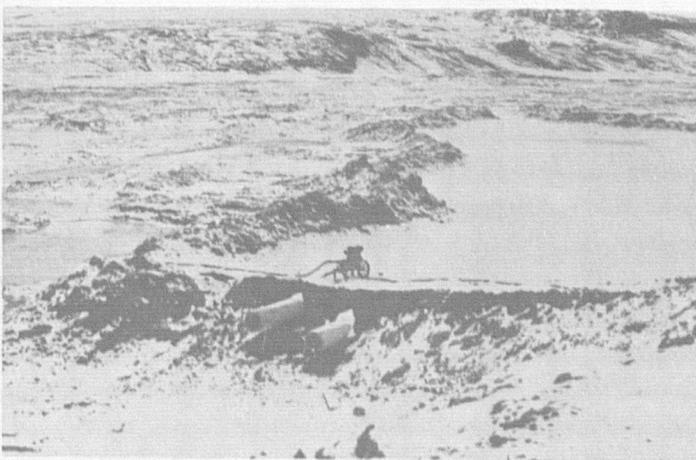
Dr. Simpson reports arctic hares at Eureka are fairly tame but when frightened stand on their hind legs and scamper like kangaroos.



A few "young icebergs" trapped in Eureka Sound



This pond, created by damming the Eureka Creek, is the source of water for the Eureka Sound Station.



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PHASE III

Weather Bureau Reorganization

Phase III of the Weather Bureau reorganization was completed on September 18, with approval of the organization charts and functional statements contained in New Weather Bureau Manual Chapter B-12. The 372-page chapter of Volume I, which describes branch, section, and unit organization levels, is an enlarged version of the chapter issued on July 17, 1964, at the conclusion of Phase II.

Four branches appear on the Regional Office organization charts. Under the Operations Division are the Data Acquisition Branch and the Weather Analysis and Prediction Branch. These new branches assist the Manager of Operations in carrying out his twin objectives—to implement the policies and procedures of the Office of National Meteorological Services (ONMS) for the production of weather services at field offices, and to ensure that weather observing and communications systems of the region are operated in accordance with ONMS policies.

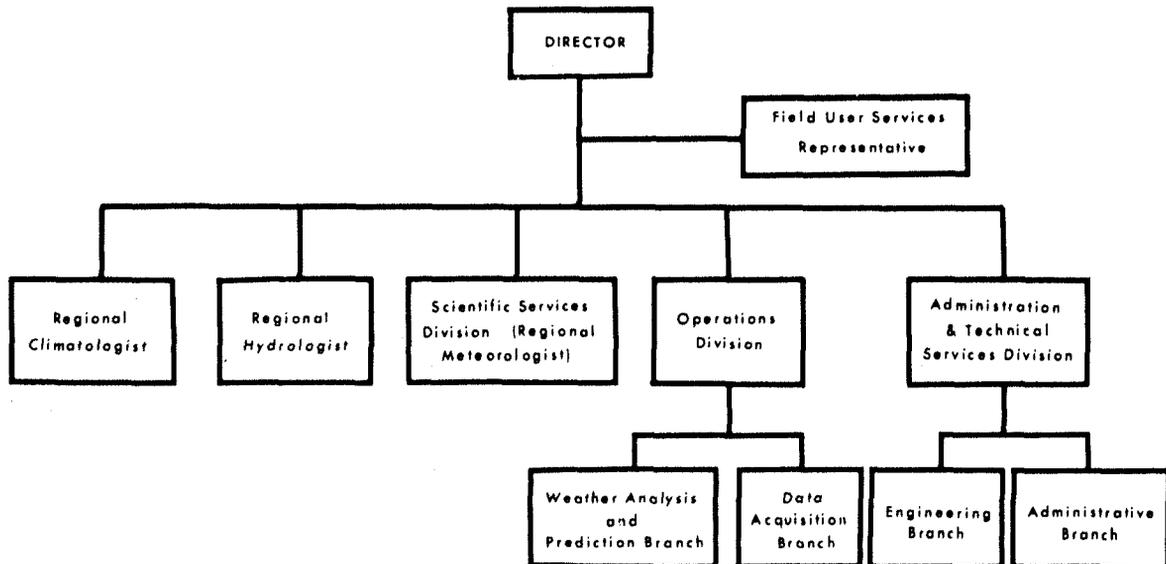
The regional Data Acquisition Branch, counterpart of the Data Acquisition Division in the Central Office, manages, monitors, and evaluates weather

observing programs, including substation networks. Management of regional weather communications programs is also the responsibility of the Data Acquisition Branch.

The Weather Analysis and Prediction Branch is the regional equivalent of the Central Office Weather Analysis and Prediction Division. The Branch manages the daily weather services of all first-order stations and cooperative aviation offices in the region, including public, aviation, marine, agricultural, and fire-weather forecasts. It is also responsible for proper use of products of the National Meteorological Center and of the forecast offices in the region.

Regional Administrative and Technical Services Divisions have two branches, Engineering and Administrative. The Administrative Branch provides fiscal, payroll, contract, procurement and supply, personnel management, and other support services. The Engineering Branch develops plans and procedures for installation and maintenance of field meteorological equipment. ■

REGIONAL OFFICE ORGANIZATION



IN OUR MAIL

A Variety of Letters

TO : TOPICS Editor
FROM : Francis K. Schwarz
Office of Hydrology
SUBJECT : Telephone forecasts

It is very unlikely that recorded telephone forecasts can be used to gage "Weather Interest" as suggested in the September TOPICS article. As presently constituted there are too many factors that serve to obscure any simple relationship. Among the factors that would have to be considered are the following:

(1) The capacity for building up the volume of calls on days of extreme weather is limited by saturation of the available "drops" on WE 1212. This factor penalizes a city such as New York where many potential callers cannot get through. The important point here is that saturation conditions are not in proportion to population differences.

(2) The climate of the region needs to be considered. The proportion of rainy days to non-rainy days, for example, would in itself result in more calls in a typical eastern city compared to a place like Los Angeles. People have a natural affinity for greater interest in "bad" rather than "good" weather.

(3) The toll-call situation needs to be assessed. A great many of the 42.2 million listed for New York City and suburbs have to pay a toll to call

Weather. Therefore, a city and its suburbs with a lesser percentage of required toll calls would naturally show a proportionally greater, but *fictitious* "weather interest."

Hale and hearty Gordon Dunn sent in an article from the *Tallahassee (Fla.) Democrat* on hurricanes.

Circled in red was the following paragraph:

"Gordon Dunn, the Miami Weather Bureau's hurricane forecaster who collapsed and died at his post during Hurricane Hazel in 1955 once said that he worried most about the 400 miles of coastline between St. Marks and Pensacola where roads from beaches in many places are no more than three feet above sea level."

Gordon's comment: ". . . report is slightly exaggerated."

United States Weather Bureau
Washington, D.C.

Dear Sirs:

If you are looking for an unusual name for one of your Hurricanes, try that of my wife, ERNA. Save it for one of your most unusual and violent! She comes on like a storm at sea.

Sincerely yours,
(and he signed it)

New Journal To Feature Hydrology

The American Geophysical Union has announced that a new journal, *Water Resources Research*, will begin publication in January 1965.

The journal will serve as a medium for original scientific contributions that present results of basic or applied research in hydrology, or that examine principles governing water planning and development. The emphasis will be on the sciences of water—whether physical, chemical, biological, or social—rather than on water engineering or water projects.

Papers are now invited—those in the physical, chemical, or biological sciences should be sent to W. B. Langbein, U.S. Geological Survey, Washington, D.C. 20242. Papers on the social sciences, including economics or law, should be sent to Allen Kneese, Resources for the Future, 1755 Massachusetts Avenue, N.W., Washington, D.C. 20036.

Subscription rates to *Water Resources Research* are \$3.00 per year for members of the AGU, \$6.00 per year for nonmembers. Subscription orders should be addressed to the American Geophysical Union, Suite 506, 1145 19th Street, N.W., Washington, D.C. 20036. ■



"Buck a Day" Savings Could Really Pyramid

Ever realize what your saving of a "buck a day" on the job would amount to in a year? In 20 years?

If you saved the Government a dollar a day for a year, your savings contribution to taxpayers would total around \$250. If you sustained that effort for 20 years, your individual savings would total around \$5,000. If every employee followed your example through the years, the combined effort would produce a whopping savings of over \$12 billion for Uncle Sam.

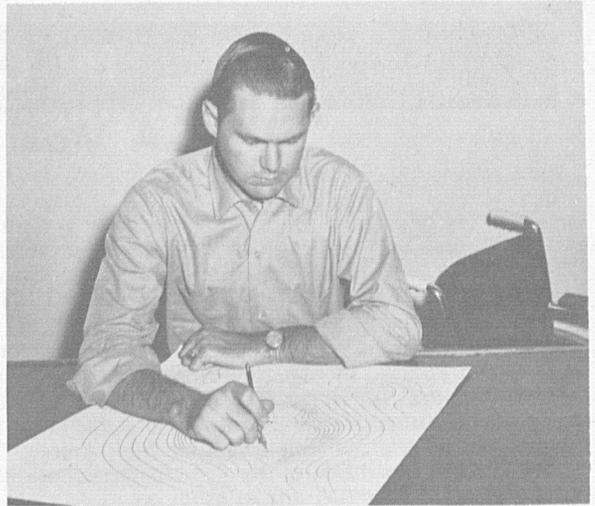
This exercise in arithmetic was prompted by an article in a recent issue of *DESC Electron*, publication of the Defense Electronic Supply Center at Dayton, which challenged Center supervisors and employees to seek ways to save a "buck a day." Here are a few thought-starters the *Electron* offered for their consideration—plus a few we've added:

- Get to work on time and start work on arrival.
- Get to meetings on time.
- Avoid long-winded telephone calls or personal discussions.
- Shorten correspondence to say only what is necessary.
- Work safely—avoid any accident.
- Take care of your health—stay on the job.
- Keep lunch periods and coffee breaks within established limits.
- Help a co-worker whenever you can, especially when he's in a bind.
- Limit unofficial visits with fellow workers to a bare minimum.
- Do a top-flight job the first time and avoid rework.
- Exceed what is expected—give bonus performance.
- Beat deadlines and reduce costly followup.
- Request and use only essential supplies.
- Check all work habits for savings.

Every employee doubtless can think of scores of other possibilities for saving a buck a day. Every employee could save at least a dollar a day by a slight improvement in performance alone, and he could save more by suggesting ways to do a job more efficiently and economically.

By accepting this challenge, what's in it for you? Plenty! You increase your job worth. By improving your job performance, you strengthen your skills and enhance your promotion potential. You develop a new sense of genuine pride in your work, of doing a top job for all America, of contributing to the welfare of every American. And by doing a top job, you may qualify for quality-rate increases in pay and in cash awards.

Will you accept the challenge? ■



James R. Owenby, of the National Weather Records Center, has been named Asheville's "Outstanding Handicapped Employee for 1964."

Mr. Owenby, a Statistical Draftsman at NWRC, was honored at an awards luncheon on October 8 when Asheville's Mayor Earl W. Eller presented him with a mounted plaque.

Mr. Owenby suffered complete paralysis of his legs in a childhood attack of polio. Although he is confined to a wheelchair, he drives his own specially equipped car to work every day.

Nominated by William H. Haggard, Acting Director of the NWRC, Mr. Owenby was selected from a list of employees by the mayor's Committee on Employ the Handicapped Week.



Former Weather Bureau Chief F. W. Reichelderfer received the ninth International Meteorological Organization Prize at ceremonies in Geneva, Switzerland, on November 10.

The IMO Prize—a gold medal, a certificate, and a cash award—was presented to Dr. Reichelderfer by the WMO President, Dr. Alf Nyberg (see photo). The ceremony marked the first time the prize has been presented in Geneva. On hand for the award presentation were U.S. Ambassador Roger Tubby and Dr. Robert White.

RETIREMENTS

RUSSELL V. WILGUS,

a Meteorologist at WBAS San Francisco, retired November 14 after 30 years with the Weather Bureau. Mr. Wilgus joined the Bureau in 1929 as a Junior Observer at Valentine, Nebraska. He has served at Duluth, Minn.; Cheyenne, Wyo.; Joliet, Ill.; and Fairbanks, Alaska. He is a graduate of North Dakota School of Mines. Mr. Wilgus' address is 3415 Del Monte Street, San Mateo, California.

BENJAMIN RATNER,

a Meteorologist in the Office of Climatology, retired November 20 after 40 years of Federal service. Mr. Ratner came to the Weather Bureau from the Bureau of Plant Industry in 1926. He was named Chief of the Dynamic Climatology Section in 1958. Mr. Ratner's address is 1401 Blair Mill Road, Apt. 1810, Silver Spring, Maryland.

DORSEY P. MARTING,

MIC at the Weather Bureau Airport Station at Winslow, Arizona, retired October 31 after 36 years of Federal service. Mr. Marting joined the Bureau as a Junior Observer at Evansville, Indiana, in 1929. He has served at Denver, Colo.; Roseburg, Oreg.; Oakland, Calif.; and Astoria, Oreg. (where he was MIC from 1953 until he transferred to Winslow in 1956). Mr. Marting's address is Box 49, Winslow, Arizona.

EDWIN M. LEGG,

a Meteorologist at the Weather Bureau Office at Pomona, California, retired on November 30 after 31 years of Government service. Mr. Legg was in the U.S. Navy for eight years before beginning his Bureau career in 1940 as a Junior Observer at Denver, Colo. He also served at Dayton and Vandalia, Ohio. Mr. Legg holds degrees from Western State College of Colorado. This address is P.O. Box 237, Bryn Mawr, California.

MILDREL V. J. ROGERS,

a Meteorological Technician at the National Weather Records Center in Asheville, retired September 30 after 18 years of Government service. Mrs. Rogers joined the Weather Bureau in 1953 after serving with the General Accounting Office in Asheville. Mrs. Rogers' address is 31 West Street, Asheville, North Carolina.

LESLIE F. CONOVER,

a Meteorologist with the National Hurricane Research Laboratory in Miami, retired October 7 after nearly 38 years of Federal service. Mr. Conover joined the Bureau as a Minor Observer in Atlantic City in 1925. He served in Philadelphia; Scranton,

Pa.; New York; Hartford, Conn.; Harrisburg, Pa. (where he was MIC); and Miami, Fla. Mr. Conover's address is 8960 S.W. 59th Street, Miami, Florida.

OBITUARIES

ARTHUR J. LaCOMBE,

a Meteorological Technician at Marquette, Michigan, before his retirement in 1959, died on October 24. Mr. LaCombe joined the Weather Bureau when he was 15 years old as an apprentice at Marquette and, with the exception of six years as OIC at East Liverpool, Ohio, during World War II, he spent his entire career there. Mr. LaCombe was with the Bureau for nearly 42 years.

ROBERT R. DAVIS,

a Meteorologist at WBAS Amarillo, Texas, until his retirement in 1949, died October 24. Mr. Davis joined the Weather Bureau at Amarillo in 1926 as a Minor Observer. His entire Weather Bureau career was spent at that station.

STEVE M. FOTTA,

a Facsimile Communications Specialist at the National Meteorological Center, died November 4. Mr. Fotta came to the Bureau from the Department of the Air Force in 1959. A World War II veteran, he served his entire Weather Bureau career at the NMC. Mr. Fotta is survived by his sister, Mrs. George Rapchak of 207 Inwood Avenue, Carmichaels, Pa., and two brothers, Stephen and Andrew.

ROY J. ROGERS

MIC of the Weather Bureau Office in Pomona, California, before his retirement in 1956, died on October 23. Mr. Rogers was with the Federal Government for over 47 years. He joined the Bureau as a Messenger in 1909 at Northfield, Vt. A World War I veteran, he also served at Raleigh, N.C.; Charleston, S.C.; Baltimore, Md.; Birmingham, Ala.; Denver, Colo.; Phoenix, Ariz.; San Francisco, Calif.; and a number of stations in his role of "relief" OIC for supervisory personnel on leave.

WALTER F. FELDWSCH,

Climatologist for Hawaii for 20 years before his retirement in 1959, died in September. Mr. Feldwisch was with the Bureau for 45 years. He joined the Bureau at the Mount Weather Observatory in Virginia in 1911. He served in Peoria, Ill.; Cape Henry, Va.; Evansville, Ind.; North Head, Wash.; Raleigh, N. C.; Richmond, Va.; and Springfield, Ill. Mr. Feldwisch is survived by his wife, Virginia Feldwisch, of 602 Curtis Street, Honolulu, Hawaii.

GEORGE C. WILLIAMS,

a Meteorologist assigned to the Great Lakes Illinois River Basin Project in Chicago, died November 14. Mr. Williams joined the Weather Bureau in 1945 as a Meteorological Aid at Petersburg, W. Va. He served at Elkins, W. Va.; the New York Regional Office; Vicksburg, Miss.; and Anchorage and Fairbanks, Alaska. He is survived by his wife, Rose Williams, and three daughters of 514 Wildwood Drive, Park Forest, Illinois.

New MIC's Appointed at Four Facilities

VICTOR B. COTTEN

is the new Meteorologist in Charge of WBAS Yuma, Arizona. Mr. Cotten, a World War II veteran, joined the Weather Bureau in 1946 as a Meteorological Aid at Hatteras, North Carolina. He has also served in Meridian, Mississippi; Atlanta, Georgia; Fort Worth, Texas; and Tallahassee, Florida.

JOSEPH F. LAWRENCE

has been appointed Meteorologist in Charge at WBAS Medford, Oregon. Mr. Lawrence joined the Bureau at Wake Island in 1951. He has also served at San Diego, Oakland, Burbank, and Fresno, California. Mr. Lawrence is a graduate of the University of California at Los Angeles and a World War II veteran.

JAMES C. FIDLER

has been named Meteorologist in Charge at WBAS Austin, Texas. Mr. Fidler joined the Weather Bureau in 1947 as Training Officer at the Central Office. He has also worked as Head of the Weather Bulletin Unit and with the Emergency Warning Section where he helped to develop the Central Briefing Office. (See TOPICS, May 1963.) Mr. Fidler is a graduate of Ball State Teachers College in Indiana and an Air Force veteran.

JAMES R. MILLER

is a new MIC at the Weather Bureau Office at Sacramento, California. Mr. Miller joined the Bureau in 1947 in Tokyo, Japan. He has served in San Francisco; Boise, Idaho; the Central Office; and Phoenix, Arizona. Before his Sacramento assignment he was a meteorological consultant for five years to the Viet Nam Meteorological Service in Saigon. Mr. Miller is an Air Force veteran and a graduate of North Dakota State Teachers College.



Joseph A. Lola, Department of Commerce Chairman of the Combined Federal Campaign, presented Dr. White with a special award on November 6 after Washington, D.C., area Weather Bureau employees pledged \$39,029.76—142.6 percent of the Bureau's quota for the campaign. The certificate, signed by Secretary of the Treasury Douglas Dillon who was Chairman for the entire campaign, is for "Outstanding achievement in the First Combined Federal Campaign, 1965."



Before the opening of three cooperative upper-air stations in Mexico, the installations' supervisors attended special training courses at Fort Worth, Texas. Standing are instructors Mike Sunray, the Bureau's technical representative at Mexico City, and Henry Resendez, Upper Air Supervisor at San Antonio, Texas. Seated (left to right) are Vincent Ortegon Sanchez, MIC at the Empalme station scheduled to open in the middle of November; Juan Riera Galera, in charge of the Chihuahua station which opened August 1; and Encarnacion Charles Arriga, head of the Monterrey station which opened October 16.

Fort Worth Star Telegram Photo

LENGTH OF SERVICE AWARDS

45-YEAR AWARD

Farrell, Edward A., Jr.
WBAS Houston

40-YEAR AWARD

Becker, Jonathan O.
WBAS San Diego

35-YEAR AWARDS

Brown, George H.
WBAS Washington, D.C.
Foreman, Henley T.
WBAS Shreveport
Harrell, E. Wayne
WBAS Salt Lake City
Jones, Leonard E.
Pubs CO
McLaughlin, Earl S.
WBAS Minneapolis
Pharr, Emory C.
Adm. Oprs. CO
Scott, Jere B.
WBRB Cincinnati
Swayne, William W.
Hydro. CO
Wiedeman, Edwin D.
Instr. CO

30-YEAR AWARDS

Johnson, Lester A.
WBAS Washington, D.C.
Savage, James O.
WBAS Oklahoma City
Wilgus, Russell V.
WBAS San Francisco

25-YEAR AWARDS

Atkinson, Paul E.
WBAS Prescott
Broussard, Willard L.
WBAS Columbus, Ga.
Bulgarelli, George J.
WBAS Pittsfield, Mass.
Casorso, Parmolino
WBAS Detroit
Davis, Gerald R.
WBAS Lakeland, Fla.
Field, Milton J.
Pers. CO
Fields, Melvin L.
PWP San Francisco
Fries, Rose M.
WBRO Kansas City
Garfinkel, Matthew
WBAS Orlando, Fla.
Kiser, Kenneth R.
WBAS Lander, Wyo.
Kolbohn, Annie R.
WBRO Fort Worth
Lynch, Paul T.
WBO Albany
Magnuson, Marvin D.
WBO Seattle
McFarland, Alfred
WBAS Jackson, Miss.

Miller, Banner I.
NHRL Miami
Nurnberger, William D.
WBAS Grand Rapids, Mich.
Orton, Robert B.
WBO Austin
Preikszas, Otto J.
RFC Augusta
Ruth, Mary B.
Phy. Sci. CO
Schmidli, Robert J.
WBAS Phoenix
Scott, Ethan A.
WBAS Key West
Self, Wayne A.
WBAS West Palm Beach
Sommerfeldt, Elroy W.
Adm. Oprs. CO
Stone, James M.
WBAS Minneapolis
Trapp, Ted C.
WBAS Memphis
Travis, James
WBRB Las Vegas
Worrell, Joe D.
WBAS Lake Charles, La.

20-YEAR AWARDS

Beckham, Aliene B.
WBRO Fort Worth
Bennick, James W.
WBO Vandenberg AFB
Boone, Harold E.
WBRB Wallops Island
Boyd, Frank
Adm. Oprs. CO
Breazeale, Earle W.
WBAS Athens, Ga.
Burden, Inez V.
NWSC CO
Burger, Anna H.
Facilities and Maint. CO
Carroll, Kenneth H.
WBAS Raleigh
Dervin, Raymond W.
WBAS Akron
Elliott, Eugene M.
Adm. Oprs. CO
Ellis, Nathan
WBAS Miami
Ensign, Leslie E.
WBAS Seattle
Godbois, Henry J.
WBAS Caribou, Maine
Gordon, Rose
WBRO New York
Grooms, Edna L.
Hydro CO
Hayes, William P.
WBAS Syracuse
Kerchusky, William G.
WBAS Jacksonville
Kipps, Dolph A.
WBAS Richmond
Kutaka, Clifford M.
WBAS Honolulu

Leonard, Earl W.
WBAS Salt Lake City
Lippart, Gordon
WBAS Detroit (Metro)
McMahon, Francis J.
WBAS Ypsilanti, Mich.
Miles, Raymond E.
WBAS Amarillo
Morrison, William
Facilities and Maint. CO
Nelson, Thomas A.
WBRO Kansas City
Newman, Walter L.
WBAS Fort Smith, Ark.
Nolen, Robert H.
WBO Kansas City
Pappas, Peter E.
WBO New York
Paukert, Harold T.
WBRO Fort Worth
Roadcap, Violet B.
WBRO Kansas City
Russell, John C.
Budget CO
Samet, Alvin M.
DMO Miami
Shoemaker, Charles H.
WBAS Allentown, Pa.
Simmons, Robert S.
NMC CO
Snyder, Lester A.
WBRO Fort Worth
Ward, Harold A.
WBAS Washington, D.C.
Wilcox, Alvin A.
WBAS Spokane
Williams, George E.
WBAS Jacksonville
Williams, Richard A.
WBAS Dayton
Yates, John M.
RFC Tulsa

15-YEAR AWARDS

Allen, Bobby D.
WBAS Mobile
Anderson, Calvin E.
MR CO
Anderson, Harold D.
WBRO Kansas City
Bays, Ernest E.
WBAS Amarillo
Beaman, Gladys L.
WBAS San Antonio
Beranck, Glenn C.
WBAS Philadelphia
Collins, John E.
WBO Vandenberg AFB
Crown, Gladys M.
Climat. CO
Evangelista, Francisco A.
NMC CO
Flores, Manuel A.
WBRO Fort Worth
Gerrity, James H.
NMC CO

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