WEATHER BUREAU JANUARY 1958

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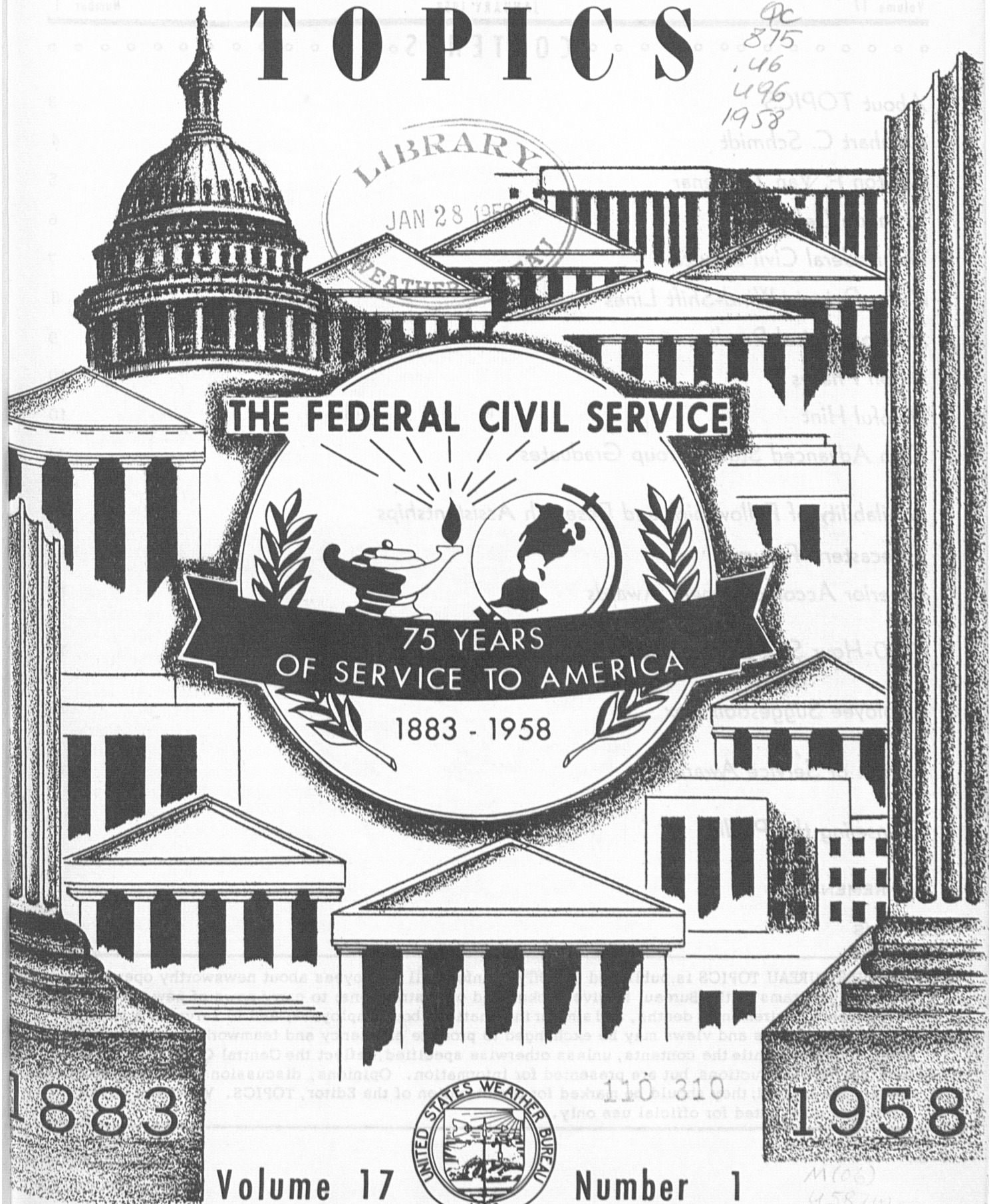

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Volume 17 Number 1

National Oceanic and Atmospheric Administration
Weather Bureau Topics and Personnel

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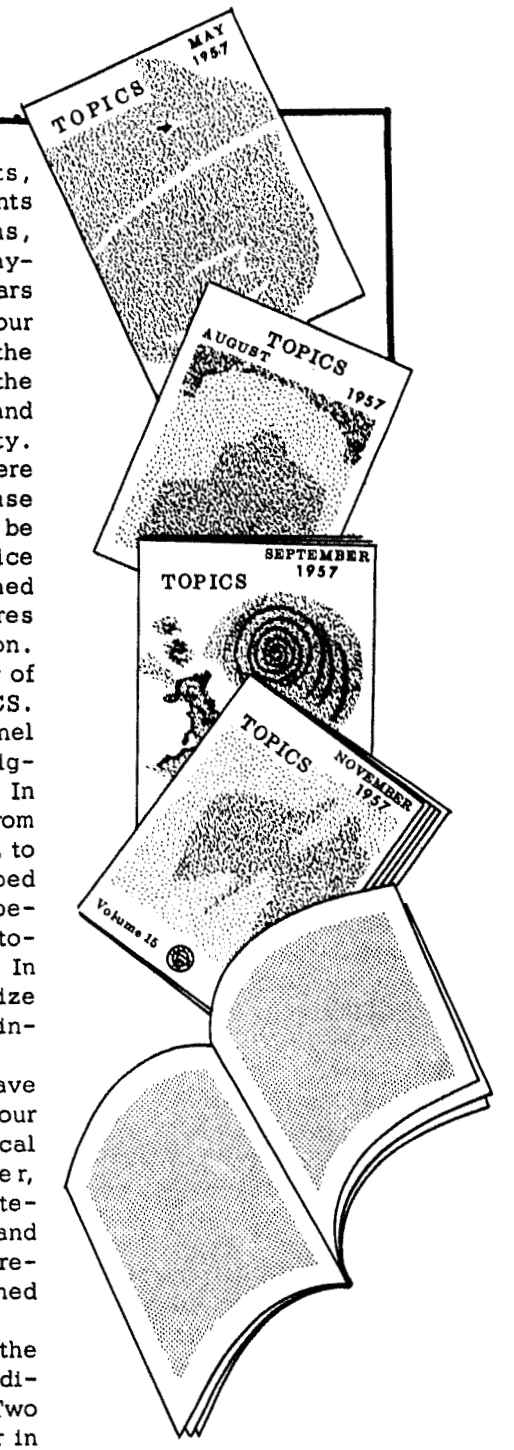
WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through 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.

ABOUT TOPICS



EVERY so often our readers inquire about the processes of preparing TOPICS. Who is responsible for the publication; who is the editor; who writes the articles; who prepares the drawings, etc.? A brief review of the origin and development of TOPICS follows.

TOPICS is published basically for employees by employees. It is your publication—a medium through which you can express your ideas, relate your experiences and exchange your views. TOPICS is prepared in the Office of Program Planning, under the direction of Mrs. Mary Lee Hulmes. There is no editorial staff as such, as most of the articles are written by Bureau employees either in the Central Office or at field stations. The preamble following the Table of Contents states in concise form the objectives of the publication.

A Topics Policy Board, composed of the Chief of Bureau, Deputy Chief, Assistant Chiefs, and Offices of F&SR, OMR and Personnel, reviews the contents of each issue. Mrs. Hulmes assembles the material, reviews it for content and consistency with the publication's objectives, and arranges the page layout. The Printing Section sets the headlines in type, and the Drafting Section prepares sketches for the cover and to accompany the various articles. The completed format is then sent to the Printing Section and "put to bed." Those who have a hand in the preparation and production of TOPICS take pride in this publication; but we depend on co-workers throughout the Bureau for interesting and timely material.

The first issue of this publication was in July 1915 when it was known as TOPICS AND PERSONNEL. That issue carried such headlines as Practice Forecasts, Relations with the Public, Hints on Mechanical Work at Stations, The Making of Forecasts by Laymen, etc., captions that 43 years later are still prominent in our thinking. As an example, the Bureau's objective through the years has been to determine and develop forecasting ability. Practice forecast programs were limited for many years because all verification work had to be done manually. Today's practice forecast program is accomplished by using card punching procedures for analysis and summarization.

There have been a number of changes in the format of TOPICS. In 1939 the section on personnel assignments, promotions, resignations, etc., was dropped. In 1948 the name was changed from TOPICS AND PERSONNEL to TOPICS. In 1949 copy was typed on electric marginating typewriters and printing by photo-offset process was begun. In 1952 TOPICS was enlarged in size so that photographs could be included with greater facility.

Since 1955 new sections have been added such as the 1000 Hour Sick Leave Club, Meteorological Readings, Publications Corner, Employee Suggestions, Meteorological Book Exchange, and within the past year the Forecasters' Forum has been combined with TOPICS.

So much for a resume of the past and present; there are additional plans for the future. Two new features will appear in TOPICS, "Length of Service Awards," and "Question Box." On the latter we need your questions to start the "ball rolling" so please send them to the Office of Program Planning and we will do our best to answer them.

Contributions from field stations have made interesting reading in past issues and while we know you are interested in what's going on in the Central Office, we want to include many more stories about station activities. We are also always glad to have your suggestions for the improvement of TOPICS.

Chief District Meteorologist

Reinhart C. Schmidt

THIS month we have the pleasure of introducing Reinhart C. Schmidt, our genial Chief Meteorologist at Washington National Airport.

Despite his abounding energy and youthful appearance, "Art" has been in the Weather Bureau long enough to be classed as an "Old Timer." He was born in Green Bay, Wisconsin, and graduated from Green Bay High School. He worked as a Western Union messenger boy during his last year in high school and thus first came to know the Weather Bureau by delivering the old Signal D and A reports and forecast messages to the Green Bay Weather Bureau in 1923. He must have picked up the "weather bug" on these daily visits for on February 4, 1924, Art came into the Bureau as messenger boy at $480 per annum.

By July 1, 1927, Art had learned all the work at Green Bay and had become a full-fledged Junior Observer at $1320 per annum and was looking for new worlds to conquer. His opportunity came with a transfer to St. Louis six months later. He made full use of his opportunities at St. Louis by attending night classes at Washington University and his unusual ability and capacity for hard work were rewarded by annual promotions through the observer ranks. Art was a keen and diligent observer for when a beautiful young St. Louis girl, Marie Bremer, came into his field of observation, he recognized what he saw as the real thing. Art and Marie were married May 17, 1930, and Art's career as Observer ended. A promotion to Junior Meteorologist, July 1, 1930, made it official.

The expansion of aviation was beginning and Art got in on the ground floor by being transferred from the City Office to the St. Louis Airport to establish the station and train personnel, make trip forecasts, and install instruments at substations.

By 1935 his superior leadership and organizational ability, along with his excellent forecasting work, were recognized, and he was called to Kansas City Airport Station to become First Assistant in charge of forecasting. This was a general supervising station and Art had a hand in establishing a number of the early airways stations in the midwest. In 1937 he came to Washington to serve as First Assistant at the old Washington Hoover Airport Station located where the Pentagon now stands. A year later he was transferred to the Chicago Airport Station, again as First Assistant in charge of forecasting and station activities.

In Chicago he gained experience in nearly all phases of the Weather Bureau forecast activities, working under and learning from such outstanding men as Jakl, Dunn and Donnel. In addition, he attended a three-month course in air mass analysis given in the Central Office in 1938 and attended Dr. Petterssen's class held at Newark Airport Station in 1939.

Art came to Washington National Airport in July 1945, became Acting Official in Charge in 1946, and soon after that Meteorologist in Charge of this, one of the Bureau's most active and diversified forecast centers.

During his years as MIC he has earned the respect and admiration of his staff who know him as a forecaster's forecaster and as a man whose administrative abilities, leadership, and pleasing personality wins their loyalty to the Weather Bureau and this station's exacting program.

His staff is proud that their "boss" received the Departmental Meritorious Service Award in 1955 in recognition of his important (Cont'd on bottom of next page.)

Revision of District Meteorological Office Program

Clayton F. Van Thullenar

CLAYTON F. VAN THULLENAR has recently been placed in charge of all meteorological activities at the Kansas City Forecast Center and the title of his position has been changed to Chief District Meteorologist (CDM). This change in Mr. Van Thullenar's duties was decided upon after gaining experience with the same type of operation at the Washington National Airport where Mr. R. Schmidt had retained the duties normally assigned to the Meteorologist in Charge. In addition, it appears that the program assigned to the District Meteorological Office can be carried on, and perhaps enhanced, while at the same time the several different functions at Kansas City could be coordinated more readily if he assumed full responsibility for direction of the Forecast Center program.

The responsibilities of the Kansas City Forecast Center have expanded considerably over the years and the outlook is for somewhat greater concentration of guidance forecasting when the FAWS program is revised early in 1958. In addition to the district and aviation forecast programs, Kansas City is the headquarters for SELS Center and the comparable Severe Weather Warning Center of the Air Weather Service. It is also headquarters of the Radar Analysis and Development Unit, and field research on forecasting problems and severe weather (tornadoes) has been concentrated there. Heretofore SELS, RADU and Research Personnel received their direction mainly from Central Office divisions. Hereafter, these unit supervisors will be under direction of Mr. Van Thullenar, who will work directly with the Central Office.

Under the new program at Kansas City, Mr. Henry L. Jacobson has been named Chief Forecaster. He will continue to supervise the district and aviation guidance forecast programs and the local weather service for Kansas City.

In continuing his duties as District Meteorological Officer, Mr. Van Thullenar will visit state forecast centers and local offices with the purpose of encouraging use of the best meteorological techniques. In many of these visits the leading forecasters at District Forecast Centers, Kansas City, Chicago and Denver, will be called upon to assist.

(Schmidt cont'd.)

contributions to the science of meteorology and for his extremely competent performance of duties during the past 30-odd years.

Since then, in 1956, he participated in a four-month course with the Advanced Study Group at the Central Office. His most recent honor and increase in responsibility came in March 1957 with his promotion and appointment as Chief District Meteorologist. (See TOPICS May 1957)

A few years ago Art, with the able assistance of several of the office staff, built a lovely rambler out in Virginia. This has given the family a great deal of satisfaction and enjoyment and has given Art an opportunity to put one of his hobbies, gardening, to work. His other hobbies are golf and fishing.

Art and Marie have a son Bob, who is now married and studying for his Doctor's degree at Virginia Polytechnic Institution; a beautiful daughter, Marilyn Ann recently married; and a three-year old son Doug who is all boy and solid as a rock.

Art is not a joiner, but despite his obviously busy Weather Bureau

career he has found time for Boy Scout work and other civic activities and has been active in the American Meteorological Society as officer in local branches, as a professional member, and as councilor. He is well known for his several published papers on objective methods of forecasting precipitation, tornadoes, and cold front passages in the Washington Forecast District. As Chief Forecaster for the Bureau in the Nation's Capitol, he is naturally called upon to furnish all kinds of special forecasts for officials in government from the President on down. Outlooks and forecasts for Inaugurations, parades, and the weather for the recent visit of Queen Elizabeth to Virginia and Washington are all taken care of in a day's work.

Typhoon Della

(By A. J. Rohlfs, Port Supervisor, PWP Honolulu)

DELLA'S origin is somewhat obscure. It is thought that she came into being as a tropical storm during late August of 1957 in an area of few ship reports to the south and east of the Hawaiian Islands. She was nameless until she crossed the International Date Line at which time her classification changed from hurricane to typhoon.

On September 3, a small but well developed storm of hurricane proportions was first picked up by ship reports approximately 300 miles west of the Island of Kauai of the Hawaiian group. She took her time in deciding which direction to pursue. Such as it was she set her course for the Island of French Frigate Shoals which is inhabited only by men of the U.S. Coast Guard Loran Station.

The weather ship, USCG Cutter Matagorda, returning to Honolulu from station Victor diverted from its course to stand by French Frigate Shoals in case of an emergency. The hurricane, still relatively small, passed over the Island. The seas had not built up and the resulting damage was relatively minor. The Matagorda was within one hundred miles at that time and experienced little or no effect from the hurricane.

The storm then made a feint toward Midway Island and then passed over the International Date Line to become Typhoon Della. She flirted with Wake Island but passed a safe distance to the north and continued on to the west and past Marcus Island.

At some time on September 14, Della changed her mind for the last time and recurved from a westerly course to an east-northeasterly direction. At 1200 GCT on the 15th an Air Force weather reconnaissance plane made a penetration fixing her position approximately 200 miles south and west of Pacific Ocean Station Victor. A later report placed Della just 120 miles away and the plane radioed to Station Victor that she was headed their way. The weather ship, USCGC Bering Strait, had a good three hours advance warning to take necessary precautions for safety of ship and personnel.

Fred Price, Weather Bureau Observer in Charge gives this account: "Della came upon us suddenly. She was traveling so rapidly the sea had little chance to build up before her. Dawn brought a grayish-white seascape with little differentiation between sea and air. An occasional 40-foot wave was observed, but the tops were blown off almost as soon as they formed. Excellent ship handling kept the vessel's rolling and pitching to a minimum; thus making it possible to keep all observational schedules including one radiosonde flight. The wind and sea had abated rapidly by afternoon."

A radiosonde observation has never been made from the very center of a typhoon, and first assistant Frank Johnson and Jack Nunan began to plan their activities to be the first to ever make such an observation. Three full cylinders of helium were connected to the line for inflating balloons, two radiosondes were checked and made ready for flight, and all radio gear was tested to make sure everything was in top shape. As it worked out, the capricious Della passed some 30 miles to the northwest of Station Victor. The rawinsonde release at 0000GCT on September 16, was made with winds blowing over 60 knots. The fourth weatherman aboard, Kiyoto Endo, said the highest one minute wind speed was logged as 97 knots during the storm passage.

Soon after the passing of Della, radio central aboard the Bering Strait intercepted a distress call from the Liberian freighter Cygnet. The vessel had been buffeted about severely by Della and had suffered damage as well as injuries to the crew. A large wave had carried away part of the bridge structure. The third officer had suffered severe facial injuries from flying glass and was unable to control the bleeding from a severed artery.

After 36 hours of search, the cutter was able to put their Public Health Service doctor aboard. He attended to the injured officer and also found the captain with a bad heart in a near state of collapse, after having spent a continuous 36-hour watch on the bridge.

This done, the Bering Strait headed back to station. About 12 hours later the Cygnet again sent a distress message saying that she had developed a list and with the approach of a second typhoon, Carmen, was in danger of capsizing. The cutter returned to the stricken vessel and put a damage

control party aboard to help trim it. The Coast Guardsmen stood by until Carmen was no longer a threat.

Della, after passing station Victor, continued on a northeasterly course to become an extratropical storm shortly before crossing the International Date Line a second time.

Della was unusual in these respects. First, it was unusual for such a storm to develop in the eastern North Pacific and travel so far into the western part of this ocean before recurving. Second, Della as a hurricane and typhoon traversed a distance of more than 5000 miles before becoming an extratropical storm, which may well be a record. Third, in spite of the great distance traveled, Della came into contact with no major island or continental land masses; likewise, to the best of our knowledge, no serious damage to merchant shipping was reported officially other than that suffered by the freighter Cygnet.

The Federal Civil Service

THE symbol depicted on the cover has been approved by the Civil Service Commission for use in observing the 75th anniversary of the signing of the Civil Service Act of January 16, 1883. The Act founded the merit system that now covers more than two million Federal workers. Departments, agencies and management at all levels are planning to support and participate in a year-long observance of the diamond anniversary of the Federal Civil Service and of the Civil Service Commission. This anniversary provides a timely opportunity to summarize the history of the merit system.

Before the creation of our Federal merit system victorious party workers were rewarded with public jobs. Naturally this practice disrupted almost all Government activities after every national election. Every four years, the succeeding President was burdened with pressures from Congressional delegations and avid office-seekers. After one national election, 30 to 40 thousand office-seekers descended on the Capitol to press their demands. They waylaid Congressmen on the streets and camped in the offices of Cabinet officers. The Congress had already begun to talk of civil service reform when the climax came in 1881—President Garfield was assassinated by an irate job-seeker in a Washington railroad station.

The Civil Service Act was signed by President Arthur on January 16, 1883. The fundamental purpose of the Act was to establish a merit system for the selection of public servants upon the basis of fitness—selection was not to be made upon the basis of religious or political considerations. (Political non-discrimination does not extend to political parties which advocate the overthrow of our constitutional form of government.) The system provides opportunity for all citizens to compete for appointment, under high standards of ability and character.

The spoils system did not end abruptly with the passage of the Act as it was put on the defensive in the ensuing fight between spoils and merit. However, the evident weakness of the spoils system gradually led to the growth of the merit system, and today it has been extended to cover about 90 percent of all the employees on the federal payroll. While the merit system has grown in numbers of employees protected, the Civil Service Commission's personnel management functions have also expanded considerably. Initially, the Commission was concerned only with testing applicants for fitness. Currently, the Commission directs and leads the following government-wide programs:

1. Providing the best qualified personnel to fill positions;

2. Administering the Veterans' Preference Act of 1944;

3. Conducting security checks and inquiries on persons entering the Federal service;

4. Continually studying the administration of the employees security program;

5. Administering the Classification Act of 1949;

6. Reviewing and approving agency plans for rating employees' work performance;

7. Administering the Federal Employees' Group Life Insurance Act of 1954;

8. Administering statutory provisions and Civil Service regulations restricting political activity by Federal employees in positions in the competitive service;

9. Administering the Government Employees' Incentive Awards Act;

10. Exercising leadership in Federal personnel administration by stimulating and recommending improvements in personnel laws, regulations, policies, and methods.

11. Administering the Civil Service Retirement Act.

Thus great strides have been made in breadth and depth towards bettering the merit system. Furthermore, these strides are continuing along many paths leading to a modern system of administering and operating a Civil Service merit system adapted to a very large work force. We should salute the merit system's progress in our observance of this diamond anniversary and be proud of the employer we are all privileged to serve—The Government of the United States.

Radar Detects Wind-Shift Lines

AMARILLO, TEXAS, reports that their radar has been able to detect weak, narrow line echoes that are associated with the passage of a wind-shift line and accompanying pressure rise or jump at the station. On the fourth such occurrence, a photograph of the radar scope was obtained. This was on October 8, 1957, during the passage of a weak cold front. The radar, which was set on 25 mile range, showed a narrow, diffuse line, 1 to 2 miles in width, and about the same intensity as light rain. The sky was clear, except for cirrus clouds, both before and after the observation. Surface winds were SSE, 5 MPH in advance of the line, shifting to NE, 4 MPH on passage. The pressure subsequently rose .05 inches in the next 45 minutes.

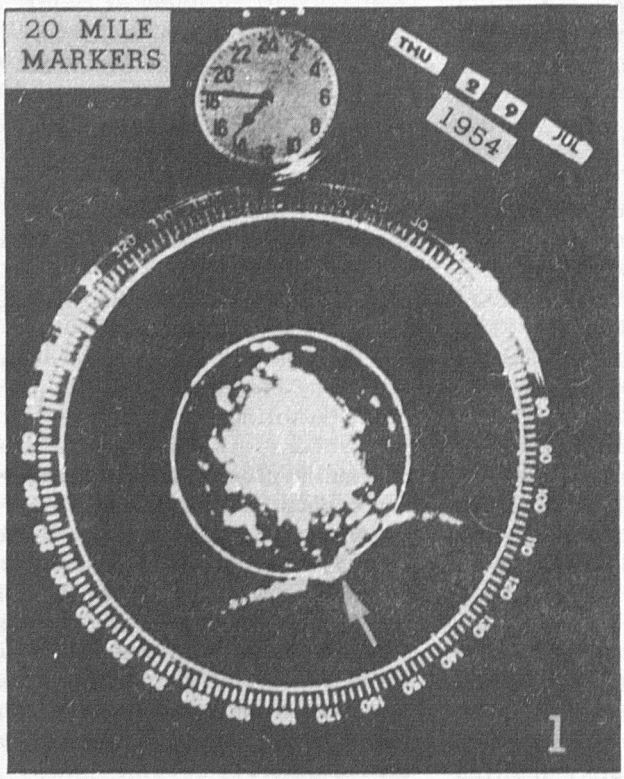
Each of the three previous observations of this type of echo was coordinated with the passage of a wind shift and pressure rise. In one case, in which the line echo was somewhat more prominent (of greater width and more rapid movement), an actual pressure jump of .04 inch was observed at the station. The greatest distance from the station that this line echo has been observed on the scope was 20 miles.

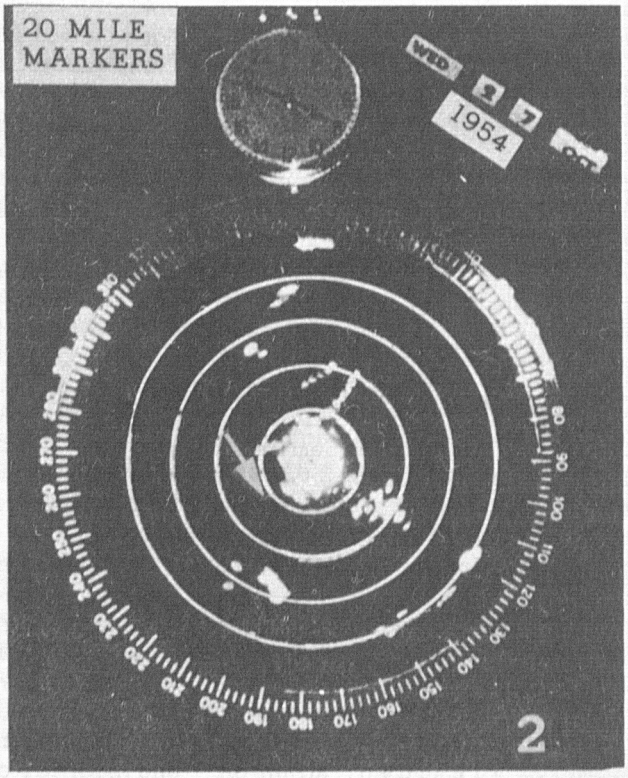
This capability of radar has been noted before by several Weather Bureau offices, primarily those with high powered sets, as well as by stations of the Air Defense Command. WBAS Victoria, Texas, reported a year ago about observing frequently "'precursor bands' (line echoes without precipitation and immediately preceding squall lines) and having named them windshift lines, since they always are accompanied by wind shifts. They may or may not be accompanied by pressure jumps." A couple of their radar photographs of wind-shift lines are presented with the following descriptive excerpts of the photos taken from the report of Victoria.

"It has been our observation that when the wind-shift line outruns the squall line, the rain echoes dissipate quickly. On a few occasions we have cancelled shower forecasts on this basis.

"Figure 1 made on July 29, 1954 shows a warm moist airmass coming in from the Gulf. (The direction of movement is shown by the white arrow.) When the line passed the station, the wind shifted from SSW-18 to SSE 21+26. We have observed this several times and refer to it as a sea-breeze front. ...on the barogram...no pressure jump is recorded.

"We were having radar trouble on October 27, 1954, when a dry 'norther' arrived, as Figure 2 shows. The echo of the wind-shift line is across the northwest part of the ground pattern. Again the wind shifted from NE-2 to NNW-



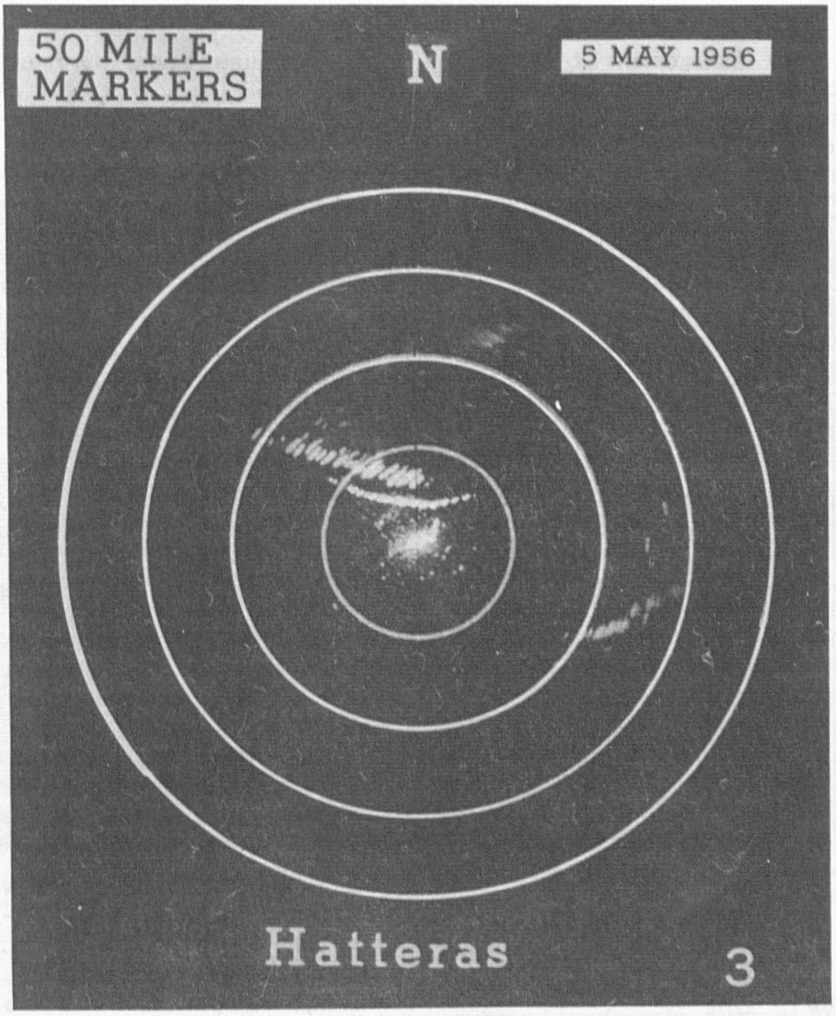


21+24, but in this case a pressure jump did occur."

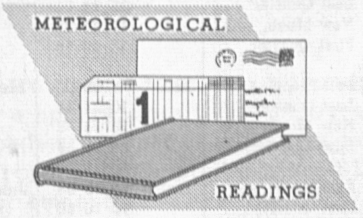
Figure 3 shows the PPI scope taken at Cape Hatteras, N.C., on May 5, 1956. The markers are 50 miles apart. A detailed analysis of a similar observation at Hatteras on October 24, 1955, was reported on by W. A. Hass and G. T. Dellert, Jr. at the September 1956 AMS meeting in Albuquerque, and definite association of the line echo and a well-defined pressure jump line was shown.

Several reports and papers have come from the Department of Meteorology of Texas A&M, under the direction of Dr. M.G.H. Ligda, describing numerous observations of these thin line echoes by means of the very powerful Air Defense Command radars. From their investigations, Dr. Ligda and his associates have also concluded that this echo is a manifestation of the presence of a pressure jump line.

Our understanding of this phenomenon is still incomplete. The wind shift or pressure jump line is apparently detected by radar because of the discontinuity of moisture and consequently of index of refraction which accompanies such phenomena, but not all such occurrences are detected because the gradients involved are not sufficient.



Stations having opportunities to note, and better still, to photograph radar observations of similar thin line echoes are requested to bring this fact, together with pertinent information on concurrent weather conditions, to the attention of the Central Office.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information and instructions for participants, see TOPICS May 1957.

Assignment IX: Meteorological Analysis in the Middle Latitudes by V. J. Oliver and M. B. Oliver on pages 715 through 726 of the Compendium of Meteorology.

About the Assignment: This assignment covers many techniques used and problems encountered by forecasters especially in the United States. Brief, but concise explanations and evaluations are used in presenting the subject primarily from the practicing forecasters' point of view. Examples of important meteorological information and forecast inferences to be derived by correlation of the sea-level and upper air charts are pointed out by map discussion of a few synoptic situations. For many who remember the trial period when isentropic charts were used, there are comments of special interest.

QUESTIONNAIRE

Assignment IX

(To be answered by participants after reading assignment.)

(For complete instructions, see TOPICS May 1957)

Col. 61 The most important consideration in the selection of analytical processing techniques for use by the practicing meteorologist is

1. data
2. time
3. ability
4. facilities

Col. 62 The most important application of the isentropic chart was the forecasting of

1. cyclogenesis and anticyclogenesis
2. movement of pressure systems
3. cloudiness and precipitation
4. severe storms

Col. 63 The next progressive development in the field of Weather Analysis will most likely result from

1. upper air techniques
2. frontal techniques
3. electronic applications
4. oceanographic applications

Col. 64 Pressure jumps in the atmosphere are believed by some to cause

1. fronts
2. squall lines
3. jet streams
4. high pressure areas

Col. 65 The method of differential analysis described by Namias is most efficient for constructing

1. baric charts in the troposphere
2. baric charts in the stratosphere
3. thickness charts in the troposphere
4. thickness charts in the stratosphere

Col. 66 The various indirect techniques which have been developed for the analysis of upper air charts are necessary primarily

1. because of regions of sparse data
2. because of non-representative data
3. to determine vertical velocities
4. to determine areas of convergence and divergence

Col. 67 In making pressure pattern prognoses, the best chart to superimpose on the sea-level chart is the

1. 850 mb chart
2. 700 mb chart
3. 500 mb chart
4. 300 mb chart

Col. 68 Randomly distributed air means showers due solely to thermal instability generally occur

1. in Florida
2. in the mid-western plains
3. in the western rockies
4. very rarely

Col. 69 Shower forecasting by study of the dewpoint isopleth patterns on the 850 and 700 mb charts is most successful in

1. the plateau and mountain region of Western North America
2. the Great Lakes and Hudson Bay region
3. Southeastern United States except for Florida
4. the Gulf Coast and Mississippi Valley region

Col. 70 Discontinuance of the isentropic charts is described in this article

1. as a step forward
2. as a step backward
3. to be of little consequence
4. to be completely justified by the analysis of the constant pressure charts

NOTE: Question Col. 68 of Assignment VI was ambiguous and incorrectly graded. Therefore, it will not be counted and all participants with less than 100 for this assignment are automatically receiving 10 additional points.

Moon Phases

ALL times in the table below are given in Greenwich Meridian Time or "Universal" Time. To convert to local standard time, the following number of hours should be subtracted: for E.S.T., 5; C.S.T., 6; M.S.T., 7; P.S.T., 8.

Vernal Equinox, 3:06 a.m., March 21, 1958.

Summer Solstice, 9:57 p.m., June 21, 1958.

Autumnal Equinox, 1:10 p.m., September 23, 1958.

Winter Solstice, 8:40 p.m., December 22, 1958.

		d h m		d h m		d h m		d h m
○ Full Moon	Jan.	5 20 09	Apr.	4 03 45	July	1 06 04	Sept.	27 21 43
☾ Last Quarter		12 14 01		10 23 50		9 00 21	Oct.	6 01 20
● New Moon		19 22 08		19 03 23		16 18 33		12 20 52
☽ First Quarter		28 02 16		26 21 36		23 14 19		19 14 07
○ Full Moon	Feb.	4 08 05	May	3 12 23		30 16 47		27 15 41
☾ Last Quarter		10 23 34		10 14 37	Aug.	7 17 49	Nov.	4 14 19
● New Moon		18 15 38		18 19 00		15 03 33		11 06 34
☽ First Quarter		26 20 51		26 04 38		21 19 45		18 04 59
○ Full Moon	Mar.	5 18 28	June	1 20 55		29 05 53		26 10 16
☾ Last Quarter		12 10 48		9 06 59	Sept.	6 10 24	Dec.	4 01 24
● New Moon		20 09 50		17 07 59		13 12 02		10 17 23
☽ First Quarter		28 11 18		24 09 44		20 03 17		17 23 52
○ Full Moon	Apr.	4 03 45	July	1 06 04		27 21 43		26 03 54
☾ Last Quarter		10 23 50		9 00 21	Oct.	6 01 20		33 10 50

Helpful Hint

FAULTY brushes on the aspirator motor of your telepsychrometer can be quickly replaced by a piece of the carbon core from a small size flashlight battery until such time as your requisition comes in.

Fifth Advanced Study Group Graduates

THE Fifth Advanced Study Group completed its studies December 13, 1957, in time to return home for Christmas. As usual, there were six members of the group, working together for about four months. They were:

Corday R. Counts, Jr., San Francisco, Calif.

John H. Eberly, Central Office

Roy L. Fox, Honolulu

Louis R. Jurwitz, Phoenix, Arizona

Aurel J. Knarr, Fort Worth, Texas

Edward F. Stapowich, Omaha, Nebraska

The highlights of the program were the intensive course in practical meteorology, a new course in hydrology, and a one-week visit to Boston and environs to look at meteorological research outside the Weather Bureau. The Human Relations Workshop provided a continual topic of conversation throughout the course, since it was given very early in the program. If you ask any alumnus of the Advanced Study Group about "hidden agendas," "hip pocket solutions," and "shared leadership," you'll start an interesting discussion.

Back row-left to right- E. F. Stapowich, R. L. Fox, A. V. Carlin-Training Officer, C. R. Counts,
Front row-left to right- L. R. Jurwitz, V. J. Oliver-Instructor, A. J. Knarr, J. H. Eberly

Availability of Fellowships and Research Assistantships

THE Department of Oceanography and Meteorology at the A. and M. College of Texas has announced the availability of fellowships and research assistantships to qualified graduates in physics, chemistry, geology, meteorology, biology, and engineering for 1958-59. Included are three fellowships with stipends ranging from $1,800 to $3,000 and research assistantships ranging from $1,800 to $2,775 for 12 months.

Costs for residents of Texas (matriculation and other fees, board, room rent, and laundry) are approximately $600 for the academic year. Additional fees for out-of-state students are $150 per semester.

Fields of emphasis include interaction between ocean and atmosphere, marine meteorology, radar meteorology, ocean waves and wave forces, weather analysis, water level problems, micrometeorology, agricultural meteorology, marine geochemistry, carbon dioxide relationships in sea and atmosphere, radioactive and industrial waste disposal, comparative biochemistry of marine organisms, organic composition of marine sediments, demineralization of sea water, estuarine pollution, coastal and estuarine geology, trace minerals, and bacteria-phytoplankton relationships in the sea.

Application forms may be obtained from the Head of the Department of Oceanography and Meteorology, the A. and M. College of Texas, College Station, Texas.

Forecasters' Forum

How the Quality of the Forecast Hinges so Largely on the Quality of Observations

Sir:

The importance of good observations in the making of good forecasts was brought sharply home in the case of the Kansas City tornado of May 20 of this year. One of the most important criteria in the formulation of a tornado forecast is the character and distribution of low level moisture, and the major working level for observing this is the 850-millibar chart.

On the 0300C 850-millibar chart on the morning of May 20, a real and marked drying out had occurred south of the Kansas City area. A station south, and much farther to the west, transmitted an observation with an error on the dry side of about 28°. The result was that the analysis indicated a general drying across the area to the south and west of Kansas City.

Although the 0900C data showed sufficient moisture for the forecasts that were issued late in the forenoon, and readjusted in midafternoon, the suspected presence of the advection of this apparently very dry air into the aerologically blind area in southeastern Kansas, and its further northward and northeastward movement, weighed heavily against including extreme eastern Kansas and the Kansas City area in a forecast throughout most of the day on the part of several of the forecasters involved in the formulation of such forecasts. It is very likely that had this error not existed, the Kansas City area might have been included in a forecast area late in the forenoon. The forecast was finally issued on about a three-hour range. The possibility existed that the forecast, owing to this "phantom drying," might not have been issued at all. It is not likely that the excellent job of warning that was done would have been half as effective without the very important background of the forecast.

The importance of this one value at one level at one station clearly demonstrates the extent to which the forecaster is dependent on observations for the preparation of a good forecast. The fact that our forecasts are good is a real testimonial to the excellent job that is being done in observing. I'd like to toss a special bouquet to those who man our aerological stations. The quality of their product is so consistently good that errors like the one mentioned above, when they infrequently occur, stand out like a "sore thumb."

We in SELS have had occasion to call on several stations for soundings at unusual times in connection with severe local storms. These requests have been filled cheerfully and efficiently, although many of these soundings must have required hours of overtime and disrupted schedules for the stations.

Although it's a little like one head on a two-headed man turning to the other head and saying, "Well done," since the forecaster-observer team is so closely knit, it would be a good idea for every forecaster to mull the matter over and then give his observational personnel the pat on the back he'll find they merit.

F. C. Bates
WBAS
Kansas City, Mo.

Upper Level Troughs

Sir:

The well-known long wave formula of Rossby was derived by using a set of assumptions which deviated considerably from the conditions usually observed on weather maps. Perhaps for this reason forecasters are reluctant to apply this formula too rigorously. Certainly they are right in many cases. Let us consider a specific case.

In prognosticating the motion of upper-level troughs, one could find nearly a dozen different methods of doing this in a more or less objective fashion (see Staff Members WFRC University of Chicago in Journal of Meteorology, October 1956). The vast majority of these would indicate what we practically always observe—troughs are progressive. Occasionally however the Rossby equation will indicate that retrogression will occur. This is the case when the actual distance between troughs is greater than the so-called stationary wavelength.

If the equation were applied rigorously in this case, a forecast of westward motion of the trough would be required. In such instances we observe instead that the trough is still progressive. POSSIBLE CONCLUSION: The Rossby equation is no good.

This conclusion is the exact opposite from the truth for it is

here that the Rossby equation probably is the most valuable to forecasters. "Discontinuous retrogression" is the term used by Cressman for this phenomenon (see Journal of Meteorology, April 1948 on the forecasting of long waves in the upper westerlies). The discontinuous retrogression model concerning events at the surface and aloft and when and where it should be applied is found only from application of the Rossby equation. Such retrogressions practically always involve significant changes from the existing weather regime and practically always involve significant cyclogenesis. As such, this model and its implications should be fully understood by every forecaster. They are discussed in the above paper by Cressman which I find profitable to re-read occasionally. As a rather recent example of the application of this model to a dramatic weather situation—the severe cold wave in northwest United States, November 1955—see the paper by Hughes and Saxton in the June 1957 issue of the Bulletin of the American Meteorological Society.

Lawrence A. Hughes
WBFC
Chicago, Illinois

★★★ Superior Accomplishment Awards ★★★

★ *Dorothy L. Babich*

Richard R. Byrd ★

DOROTHY L. BABICH and RICHARD R. BYRD, Meteorological Aids in the Severe Local Storms Unit at Kansas City, shared equally a $100 award in recognition of their excellent work which resulted in greatly improved instructions for preparation of the SELS Severe Weather Log.

The Severe Weather Log is a record prepared at SELS principally for verification and local information purposes. Mrs. Babich and Mr. Byrd undertook on their own initiative a study of the log to develop procedures and instructions for uniform logging in the record by all personnel at SELS. The value of their contribution lies in the improved quality of severe local storms records that will result from using the new instructions prepared by these two employees.

★ *Joseph H. Ganser* ★

JOSEPH H. GANSER, Meteorologist, was awarded $300 in recognition of his excellent work in organizing and developing the fruit-frost service at Sacramento.

Mr. Ganser was assigned to Sacramento in April 1956 to assist with the implementation of the fruit-frost program. His competence in forecasting and demonstrated ability in establishing and managing a very effective program have resulted in an expanded service which has been given an enthusiastic reception by the growers in the lower Sacramento Valley.

While the organization and operation of the fruit-frost program is the most spectacular of Mr. Ganser's achievements, it is representative of the manner in which he performs all assignments.

★ *Ray Guenzi* ★

RAY GUENZI, Meteorologist, was awarded $100 in recognition of his excellent work at Yuma.

Mr. Guenzi has performed all his assigned duties in an outstanding manner, producing a large volume of high-quality work. He has displayed unusual initiative in constantly seeking ways to improve station efficiency, shown excellent judgment in meeting difficult or emergency situations, and has represented the Bureau very creditably in his contacts with the public. His intense interest in his work and high devotion to duty are evidenced by his meeting with local groups on his own time to better acquaint them with the Weather Bureau services available at Yuma. Mr. Guenzi's ability and performance have earned him "Outstanding" ratings for the past several years.

★ *Cecil R. Jobe* ★

CECIL R. JOBE, Meteorologist, received an award of $100 in recognition of his very fine work at Birmingham.

Important considerations in granting Mr. Jobe's award were his competence in forecasting; his excellent briefing, which has earned for him the high regard of the pilots he serves; his willingness and ability to frequently perform duties normally assigned employees of a much higher grade; his unusual skill in training new employees; and his initiative in constantly seeking ways to improve the public service program at Birmingham.

★ *Warren G. Lundfelt* ★

WARREN G. LUNDFELT was awarded $100 in recognition of his excellent work as Analyst Assistant at the National Weather Analysis Center.

In carrying out his responsibilities Mr. Lundfelt has consistently demonstrated the ability

to recognize faulty data and follow through to determine correct values and has at all times shown excellent judgment in checking data and handling requests in order of their priority. Mr. Lundfelt's work is completed with such speed that he has had time to assist others with their duties, yet because of their accuracy and detail his charts have served as models for fellow workers. His day-to-day competence has made him a key man in the operation at NAWAC where the final product is a result of group effort.

✦ *Vincent J. Oliver* ✦

VINCENT J. OLIVER was awarded $300 in recognition of his highly competent performance as instructor of the Fourth Advanced Study Group from February 18 to June 7, 1957.

The members of the group were unanimous in their feeling that they were able to derive maximum benefit from the course because of Mr. Oliver's exceptional ability as a teacher, his devoting full attention and energies to making the course meaningful, and his willingness to go over difficult concepts repeatedly so that each member could fully comprehend the meteorological significance of the matter under discussion. His sound grasp of theoretical principles, together with his ability to relate the principles to daily forecast problems, was invaluable, and he passed on to the group not only the benefits of his own long experience in forecasting and analysis methods, but the results obtained by other investigators in related fields.

Mr. Oliver's excellent work and the enthusiasm displayed in giving each Advanced Study Group an outstanding course in theoretical and applied meteorology exemplify the superior performance on which his award is based.

✦ *George L. Poole* ✦

GEORGE L. POOLE was awarded $200 in recognition of his excellent work as Supervisor of the Atlantic Weather Project.

Assuming supervision of the AWP in 1955, Mr. Poole has through very capable leadership conducted a highly effective program. Gaining the complete confidence and cooperation of his personnel, he has been able to maintain a difficult scheduling program, assist in cooperative projects without requesting additional help, and complete special projects in a most commendable manner. His outstanding performance in administering the AWP program, his initiative and ingenuity in accomplishing special assignments, and his intense interest in the work and the men under his supervision were important considerations in granting his award.

✦ *Charles G. Reeves* ✦

CHARLES G. REEVES, Forecasts & Synoptic Reports Division, was awarded $200 in recognition of his very fine work as Chief of the Codes and Maps Section.

Mr. Reeves has displayed a high degree of initiative, good judgment, and unusual competence in successfully solving the many coding and related synoptic problems that have faced the Bureau and in addition has completed many special assignments during the past several years. His direction, as chairman of a special committee, of the preparation of material for the WMO codes adopted January 1, 1955, and the new manual for coding rawinsondes for use by Weather Bureau, Air Force, and Navy personnel, as well as his participation in the development of a special code for transmitting fallout data, typify the exacting tasks which have been his responsibility. His performance has been rated "Outstanding" for the past three years.

✦ *Jay F. Reynolds* ✦

JAY F. REYNOLDS, Analyst Assistant, was awarded $100 in recognition of his very fine work at the National Weather Analysis Center.

Two contributions which were important considerations in granting his award were his excellent plotting and a scale he developed which permits direct reading and correction of raob data without adjusting the overlay for each standard height. The latter results in a substantial reduction in the time required to check and correct an erroneous height or sounding curve.

The problem of determining the plotting size and techniques most suitable for facsimile was a difficult one, with no guides available for charting personnel until his charts were adopted as a standard after several comments were received from the field concerning their readability. With his charts serving as a model, plotting has become more uniform with a general improvement in the readability of facsimile charts. Contributions such as Mr. Reynolds has made are important in improving the operations at NAWAC.

✦ *Harlan K. Saylor* ✦

HARLAN K. SAYLOR, Meteorologist, was awarded $100 in recognition of his excellent work at the National Weather Analysis Center.

Mr. Saylor's intense interest in meteorology is manifested in his enthusiastic efforts to keep abreast of the developments in the field of numerical weather prediction, his outstanding prognostic skill, and his efforts to improve the quality and quantity of the work performed at NAWAC.

Mr. Saylor's technical knowledge of meteorology and his unique ability in the practical application of his knowledge have contributed immeasurably to the program at NAWAC.

✦ *Katherine M. Dooley* ✦

KATHERINE M. DOOLEY was awarded $200 in recognition of her very fine work as clerk-stenographer at the WBAS New York International Airport.

Mrs. Dooley's award was based on her excellent performance, particularly during the period January to June 1957 when she carried practically the full workload of two stenographers, producing an amazingly large volume of high quality work. Her intense interest in her work, high devotion to duty, excellent judgment in determining appropriate actions to be taken, and initiative in accomplishing a variety of difficult tasks with little supervision were important considerations in granting her award.

✦ *Charles H. Carpenter* ✦

CHARLES H. CARPENTER, Meteorologist, received $200 in recognition of his excellent work at Port Arthur, Texas.

Important considerations in granting Mr. Carpenter's award were his capacity for accomplishing an unusually large volume of high-quality work; his excellent observing and briefing which resulted in commendations from pilots, CAA, and airlines personnel; and his skill in training new employees. Mr. Carpenter's fine performance has done much to strengthen relationships between the Port Arthur station and the industrial, aviation and other interests served.

✦ *Shirley F. Herman* ✦

SHIRLEY F. HERMAN was awarded $200 in recognition of her very fine work as secretary to the Assistant Chief for Program Planning.

Applying a comprehensive knowledge of rules, regulations, policies and procedures gained through long association with Weather Bureau activities, Mrs. Herman has performed her duties in an outstanding manner, displaying a high degree of skill and judgment. Her tact and discretion in receiving visitors to the office and supplying requested information, her excellent review of incoming correspondence and initiative in preparing replies and assembling data requested, and her high rate of productivity and efficient handling of the numerous details of her position exemplify the outstanding performance on which her award is based.

✦ *Hugh D. Watson* ✦

HUGH D. WATSON, Meteorologist, was awarded $100 in recognition of his very fine record in minimum temperature forecasting for Burlington, Iowa, and vicinity for the period November 1956 through February 1957.

Mr. Watson's interest in improving service to the public in his area and his initiative and ingenuity in developing a system for minimum temperature forecasting which have resulted in an average error of less than three degrees for the winter of 1956-57 were considered worthy of special recognition and formed the basis of the recommendation for his award.

✦ *William H. Templeman* ✦

WILLIAM H. TEMPLEMAN was awarded $100 in recognition of continued outstanding performance of duties as supply clerk at the National Weather Analysis Center.

Mr. Templeman has made a significant contribution to the efficiency of the Analysis Center by insuring that necessary supplies are on hand at all times, which is extremely important in an operation involving 200 employees working to meet stringent deadlines.

Mr. Templeman's competent handling of assigned duties, high devotion to duty, and ability to solve the many problems encountered in carrying out the supply function at the Analysis Center exemplify the fine performance on which his award is based.

✦ *Yasuo Yatsushiro* ✦

YASUO YATSUSHIRO was awarded $200 in recognition of his very competent performance as General Supply Clerk at Honolulu.

Mr. Yatsushiro's thorough knowledge of the complex supply function in the Pacific, his capacity for accomplishing an unusually large volume of work, his high devotion to duty, and ability to deal effectively with others both within and outside the Bureau formed the basis of the recommendation for his award.

In addition to his day-to-day competence in the performance of assigned duties, Mr. Yatsushiro has ably demonstrated his ability to plan, organize, and follow through in many special assignments. For example, in the recent move of the warehouse facility in Honolulu, he directed the relocation of supplies and equipment in such a manner that it was possible to carry on normal operations while the move was in progress.

1000-Hour Sick Leave Club

Alamosa, Colo. WBO
John C. Stokes
Albuquerque, N. M. WBAS.
James E. Hainlin
Boston, Mass. WBAS
Anthony J. Gregory
Central Office
Jeff D. Ardoin
William A. Kuning
Joseph E. Cooper
Agnes B. Erkens
Edwin E. Hamilton

Christos Harmantas
Donald A. Mathews
Harold R. McBirney
Marie M. McGonegal
Benjamin S. Milano
Norma J. Powers
Wayne F. Staats
William R. Thickstun
Gilbert R. Wright

Cleveland, Ohio WBAS
Robert F. Bowes

Concordia, Kansas WBO
Berton B. Green

Denver, Colo. WBO
Gladys P. Shaw

Eugene, Oregon WBAS
Raymond E. Dunnavin

Evansville, Ind. WBAS
John P. Robertson

Goodland, Kansas WBAS
Warren O. Eckert

Grand Junction, Colo. WBAS
Donald S. Dorman
Robert L. Spengler
Charles A. Workman

Greensboro, N. C. WBAS
Arthur B. Baskin, Jr.

Hartford, Conn. WBAS
Roger S. Frantz

Hilo, Hawaii WBAS
Raymond G. Busniewski

Kansas City, Mo. WBRAO
Murray B. Briggs
Jane L. Brown

Kansas City, Mo. RFC
John P. McCallister
Charles K. Nevins

Kansas City, Mo. WRPC
Gilbert E. Stegall

Los Angeles, Calif. WBAS
John H. Aldrich
Thomas A. Powell
Gemo Yakobovsky

Louisville, Ky. WBAS
Edward P. Johnson
Joseph A. Strahl

Milwaukee, Wis. WBAS
George Blandino
Edward F. Gress
Alice M. Heuer
Sylvester W. Kipper
Henry C. Schaefer
Howard J. Thompson

Montgomery, Ala. WBAS
Hubert D. Bagley

Nantucket, Mass. WBAS
William L. Turner

Newark, N. J. WBAS
James W. Allen

New Orleans, La. WBO
Talmage L. Banister
Eulah L. Hill

Norfolk, Va. AWP
Charles L. Grover, Jr.
Lennart A. Gunnarson
E. Wilbur McCollum

St. Louis, Mo. WBO
George N. Brancato

San Francisco, Calif. WRPC
Anton A. Hannel

San Juan, P.R.
Marcus W. Brooks
Robert E. Lindstrom

Scranton, Pa. WBAS
Richard E. Simmermacher

Seattle, Wash. WBAS
Herbert J. Gudyka
Edgar G. Johnson
Adolf V. Kolitsch
Wesley K. Orendorff
Ruben "S G" Schulz
Richard S. Way
Wendell H. Woodward

South Bend, Ind. WBAS
Eugene A. Majewski
Edmond F. Striker
Maxine S. Weber
Ervin A. Wesley

Springfield, Mo. WBAS
John E. Bowers
Darrel E. Burr
Rollo T. Davis
William F. Frank
Robert C. Kerr
Daniel J. Maguire

Wichita, Kansas WBAS
Charles E. Harris
Theron E. Sallee

Yakima, Wash. WBAS
R. L. Phillips

Employee Suggestion Box

W. O. Eckert $15
Cooperative Observer
Grapeview, Wash.
The Office of Climatology recently incorporated a change in the Official Weather Observer's Record (612-7) recommended by Mr. Eckert. This change recommended that the form be perforated so that individual pages might be easily torn out and carried into the house for the transcribing of data onto the monthly form.

Leland D. Wilkins $15
Pomona, Calif.
Instrumental Engineering Division is planning to adopt single-thermometer supports at those installations observing only minimum temperatures. Mr. Wilkins' suggestion will be implemented as replacement needs arise. Definite savings will be realized once the program is underway.

Max L. Caldwell $25
Seattle, Wash.
O&SF Division adopted Mr. Caldwell's suggestion of plasticizing the Dew Point Evaluator for use in radiosonde observations. They would be made longer lasting and it would eliminate the necessity of preparing a new slide rule each time the scale becomes dirty. (Note: Other scales are being plasticized as funds become available.)

Martha W. Cournoyer $15
Personnel Div., CO
Personnel Division has recently adopted a memorandum type form to cover both the explanation and authority to administer oaths of office. This provides a more convenient form and eliminates an extra piece of paper.

Rose M. Fries $15
WBAS Kansas City
Budget and Management Division adopted a suggestion which eliminated the justification clause, from authority to fill positions by new appointees. A savings in

time will result as well as a savings in money by the elimination of numerous words in dispatches.

Ralph S. Wolbach $30
O&SF Div., CO
O&SF Division has recently adopted Mr. Wolbach's suggestion on modifying the Weather Bureau inflation shelter. This idea would eliminate the motorized door hoist on the windward side of the prevailing wind pattern. A manually operated chain hoist would prove quite satisfactory for the few times that this door is used. A considerable savings in money will be realized in the construction of each new shelter.

Ivan Brunk $10
WBO Chicago, Ill.
Personnel Division, CO has adopted a modification of Mr. Brunk's suggestion on notification to station of EOD date of transferee. Instructions have been issued recommending that employees notify their stations of their EOD date when it has been firmly established.

Ben Singer $25
NAWAC
F&SR Division has adopted this suggestion recommending the discontinuance of a certain teletypewriter circuit at NAWAC and WNA. This will mean a considerable annual monetary saving.

William M. Rowe $10
Memphis, Tenn.
As a result of Mr. Rowe's suggestion Instrumental Engineering Division has arranged for improved workmanship on some of the Townsend supports.

William J. Trebbe $50
St. Cloud, Minn.
O&SF Division adopted this suggestion by the issuance of MAL 34-57 whereby rawinsonde entries of heights above the surface be made for only those minutes for which computations of distance are required. Transmission deadlines are more easily met by this method.

Lawrence A. McDonald $15
Orlando, Fla.
O&SF Division has incorporated a change in Cir. N, as a result of this suggestion. To better utilize man-power, rain gage charts may be changed on Mondays, Wednesdays, and Fridays or Mondays, Thursdays and Saturdays whichever is most convenient to station routine. (Note: See Change 4 to Cir. N, Par. 4061 and 11033 effective 10/1/57.)

John B. Keller $100
Toledo, Ohio
Personnel Division adopted this suggestion recommending an on-station training program for General Service Meteorologists. A modification of his idea in the form of Meteorological Readings is now appearing in each monthly issue of TOPICS. Improvement of professional interest and knowledge are expected to result.

John T. Murrary $25
Williamsport, Pa.
Attach lighting devices directly to parachute lines during nighttime pibals which will result in saving of cord as well as time required to cut and tie the cord. To be used on optional basis, see revision 5th Edition, Circular O.

Earl S. Morgan $20
Orlando, Fla.
Revise the WB Manual to provide for plotting whatever winds aloft charts stations find necessary to carry out public and aviation services and forecasting functions. Chapter A-15, Vol. III to be revised.

James R. Thompson $15
Inkster, Mich.
Telephone certain Coast Guard reports to Flint, Mich. rather than to Detroit, Mich. This relieves forecaster of one task during time that he is alone on shift and preparing his forecast.

Harold R. McBirney $15
Instrumental Engineering Division, CO
Use waterproof envelopes for all outside packing lists to eliminate loss when ordinary envelopes become wet and lists can be easily dislodged.

Richard E. Carter $20
Santa Maria, Calif.
Eliminate the extra copy of raob error letters to save handling and filing of an unnecessary piece of correspondence at many stations and NWRC.

Ray C. Nelson $10
WRPC Kansas City, Mo.
Discontinue copying dates of issuance of 32°, 28°, 24° and 16° temperatures for spring and fall by one WRPC which had been doing it, thereby eliminating duplication since these data are available in published form only a short time later.

Joe R. Fulks $15
WBFC Chicago, Ill.
Revise the format of the address list in the WB Manual to three columns to facilitate making changes in the listing, make it easier to look up addresses and reduce errors.

Evelyn M. Rice $10
RAO New York
Discontinue sending copies of personal correspondence to RAOs for filing when evident that RAO has copy. Saves time of file clerk and eliminates an extra piece of correspondence.

John A. Cummings $100
Charleston, S. C.
Use a tornado reporting reminder. Gummed labels carrying information as to whom to notify in case of a tornado sighting are easily affixed to phones and other appropriate places. This places the local WB phone number in a handy spot for easy reference with the likelihood of improving the method of tornado reporting.

Length of Service Awards

30-Year Awards

Central Office
Norman R. Hagen
Cleveland, Ohio WBAS
Irving I. Zellon

20-Year Awards

Birmingham, Ala. WBAS
Charles F. Bradley, Jr.
Central Office
Julius Badner
Charles L. Bristor
Benjamin S. Milano
Alice V. Mothershead
David J. Stowell
Charlotte, N. C. WBAS
William T. Conner
Denver, Colo. WBAS
Carl F. Steffan
Jacksonville, Fla. WBAS
Clyde C. Johnson
New York, N. Y. RAO
William F. Powell
Seattle-Tacoma Airport, Wash.
William J. Allyn

10-Year Awards

Abilene, Tex. WBAS
James H. Morrow
Asheville, N. C. NWRC
Charles H. Lamb
Doris P. Sorrells
Baltimore, Md. F.I.U.
Edgar G. Hultman, Jr.
Cape Hatteras, N. C. WBO
Eulas J. Miller
Central Office
Arthur C. Carlson, Jr.
David W. Holmes
Herbert S. Lieb
Phyllis R. Vetter
Lucy A. Wade
Elko, Nevada WBAS
Bruce R. Kewley
El Paso, Tex. WBAS
Gregory F. Bussiere
Hilo, Hawaii
Roy R. Sodetani
Honolulu, T.H. PWP
Kiyoto Endo
Idaho Falls, Idaho WBO
Harold L. Boen
Kansas City, Mo. RAO
Ladislao G. Lopez
Omaha, Nebr.
Lawrence K. Eide
Salt Lake City, Utah RAO
Louis S. Welch
San Francisco, Calif. FI
Robert G. J. Rivard
Wichita, Kansas WBAS
Clarence C. Hill
Youngstown, Ohio WBAS
Joseph R. Vazzo

Washington National Airport
Thomas H. Carpenter
James A. Middleton

Counseling the Public

An incident occurred at New Orleans that suggests a partial solution to the problem of overloaded telephone calls during stormy weather. A lady who telephoned the Weather Bureau office frequently during thunderstorm situations finally mentioned that thunderstorms worried her and asked "What should I do? I am afraid of thunderstorms."

The reply was "One of the worst things you can do is to be on the telephone."

No more calls were received.

This recalls to mind an anecdote told about Professor Henry Cox when he was in charge at Chicago years ago. Frost had been forecast and a lady telephoned to inquire if her potted tomato plants would be safe on her outside window ledge during the night.

When the staff member who received the telephone call relayed the question to Professor Cox, his reply was "That depends on how honest her neighbors are."

RETIREMENTS

Rachel E. Thompson

RACHEL E. THOMPSON, Clerk at the National Weather Records Center in Asheville since 1952, retired November 30 after more than fifteen years of government service.

A native of Wisconsin, Mrs. Thompson attended Viroqua High School and taught rural school from 1902 until 1912 when she gave up her teaching career for marriage.

Mrs. Thompson entered the government service during World War II as an inspector in the U.S. Navy's Bureau of Ships at Milwaukee. After two years in this assignment, she transferred to a similar position with U.S. Army Ordnance, and at the termination of the war in 1945 she continued her government service, accepting an assignment with the U.S. Treasury Bureau of Public Debt in Chicago. In February 1948 she entered the Weather Bureau at the

WRPC Chicago where she served until April 1950. When the WRPC's were consolidated, Mrs. Thompson transferred to Kansas City where she remained until May 1952 when she commenced her most recent assignment at the National Weather Records Center.

Mrs. Thompson's plans are still indefinite, but for the present she may be contacted at P. O. Box 1945, Asheville, N. C.

Dr. Charles C. Clark

DR. CHARLES C. CLARK, formerly Assistant Chief of Bureau for 30 years until his retirement on March 31, 1945, died December 27, 1957, after a short illness. He was 82 years old.

Dr. Clark was born in Washington, D. C., and attended the District public schools. He was an outstanding athlete and held the District tennis singles title in the early 1900s.

Dr. Clark received the degrees LLB, LLM, and DCL, in 1900 and 1901 from Temple College and Columbian University. His career in government service began in October 1896 as a clerk in the Navy Department at Philadelphia. In October 1899 he transferred to the Bureau of Statistics, Department of Agriculture in Washington where he served as clerk, chief clerk, associate statistician, assistant chief and acting chief until 1908. He was a delegate of the United States, in 1908, to the Organizing Convention at Rome, Italy, of the International Institute of Agriculture. During the years 1908 to 1910, he was Statistician and Chief, Division of Statistics of that Institution, residing in Rome and traveling extensively in Europe. After returning to the United States in 1910, he was appointed Chief Clerk of the Department of Agriculture. On July 1, 1913 he was transferred to the Weather Bureau as Chief Clerk and Executive Assistant and on July 1, 1915 became Assistant Chief of the Bureau. For many years Dr. Clark's office served in effect as the field personnel office of the Bureau and in this capacity his friendliness and warm interest in people are well remembered by Weather Bureau employees, many of whom are retired.

As one of the earliest residents of nearby Maryland, Dr. Clark took an active part in community affairs and assisted in the drafting of an act of the Maryland legislature which created special taxing laws. He assisted with the organization of the Chevy Chase Fire Board and became its first chairman. He was a past commander of the District Commandery of the Military Order of the Loyal Legion and a past president of the Bethesda-Chevy Chase chapter of the Izaak Walton League. He was a member of the University Club, the Torch Club, the Columbia Historical Society and the Oldest Inhabitants, all organizations in Washington, D.C.

Charles L. Grover

CHARLES L. GROVER, Ship Observational Supervisor on the Atlantic Weather Project, died in his sleep on December 3. He was 42 years of age and had not been in ill health.

Mr. Grover entered the Weather Bureau in 1941 at Elkins, West Virginia. Later assignments included Philadelphia, the Atlantic Weather Project, Swan Island, Syracuse, RO New York and Binghamton. He returned to the AWP in January 1956. More than eight of Mr. Grover's sixteen years with the Weather Bureau were spent on the AWP. He was a very competent employee, well-liked by his co-workers, and considered one of the best Ship Observational Supervisors on the AWP.

Mr. Grover is survived by his wife and five children who live at

33 Schiller Street
Binghamton, New York

Samuel K. Pearson

SAMUEL K. PEARSON, veteran cooperative observer, died on November 19 at the age of seventy-one. He was born and educated in Jersey City, N. J., where he was appointed a cooperative observer in 1905. In 1918, he moved to Plainfield, N. J., and continued his voluntary duties there until shortly before his death, receiving a 50-year service pin in 1955. He is survived by a daughter, Mrs. Raymond R. Scherer of Plainfield, and two granddaughters.

Mr. Pearson's business career was spent in New York City's financial district. Upon his retirement in 1952, he became a professional meteorological consultant. He devoted part of his lunch hour regularly for many years to visiting WBO New York, to keep posted on the weather. He was also a welcome visitor to WBAS Newark, and WBO Trenton. His knowledge and enthusiasm for the weather, joined with a lively manner and friendly personality, caused him to be widely and affectionately known as "Sam the Weatherman" to his business associates and fellow townsmen. The words of the MIC, WBO New York, sum up the sentiments of his Weather Bureau friends: "We were proud to have had such a fine association with such a good man."

Story on Page 7

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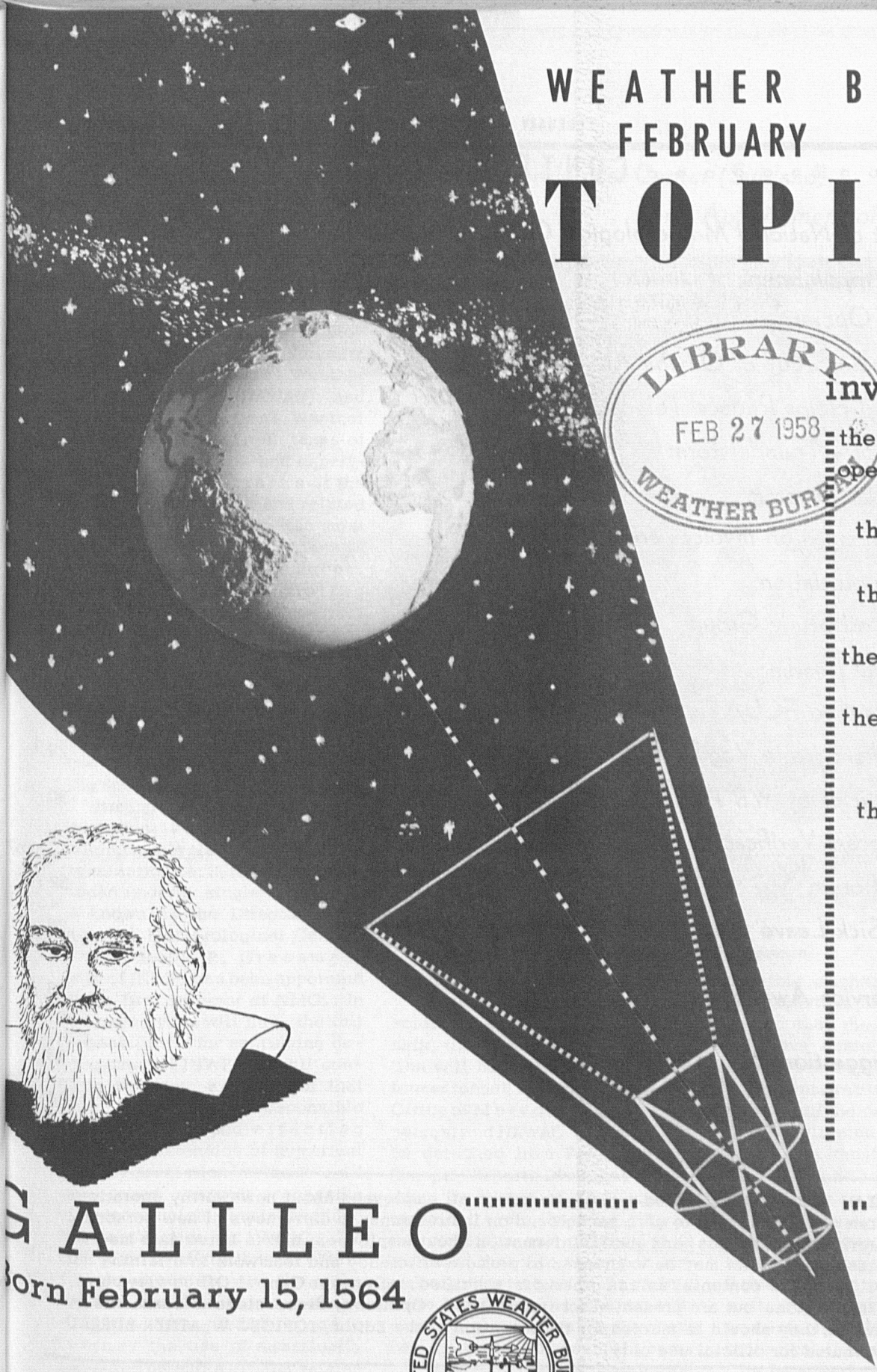

inventor of

the first practical operating telescope

the sector

the microscope

the thermometer

the hydrostatic balance

the pendulum

GALILEO

Born February 15, 1564

Volume 17 Number 2

Volume 17 FEBRUARY 1958 Number 2

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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.

Establishment of National Meteorological Center (Suitland) and Appointment of Director

AMONG the major developments in weather forecasting facilities and techniques during the past decade have been the programs of the Extended Forecast Section, the National Weather Analysis Center (NAWAC), and the Joint Numerical Weather Prediction Unit. In terms of computing facilities and experimentation with patterns of the general circulation and related large-scale motions, the most recent and promising of these is Numerical Weather Prediction. For the purpose of promoting further development of numerical weather prediction and in turn, providing the Extended Forecast Section and NAWAC with objectively prepared short-period analyses and prognoses, thus enabling them to devote more time to their respective weather prog specialties; and also in order to "streamline" facilities to whatever extent is desirable, the three weather analysis and forecasting organizations at Suitland are being placed under a single director to be known as the Director of the National Meteorological Center.

Dr. George P. Cressman, Head of JNWP, has been appointed as the first Director of NMC. In this capacity he will have the full responsibility for continuing development of JNWP and will continue to serve as Head of that Unit. He will also be responsible for coordinating and effecting plans for extension of numerical weather prediction methods and high-speed computer processing of meteorological data in Extended Forecast Section and NAWAC. He will visit field stations to obtain first-hand contact with the problems involved in the use of numerical weather prediction and to further the use of numerically computed products in daily weather forecasting.

Dr. George P. Cressman

For purposes of technical and scientific supervision and leadership, the Extended Forecast Section will be detached from its former formal integration with the Office of Meteorological Research; and NAWAC will similarly be detached from Forecasts and Synoptic Reports Division. However, by virtue of the inherent technical relationships between the divisions and offices, it is expected that this change in formal organization will involve little or no actual change in working relationships as they have been carried on for several years.

In order to provide the greatest possible emphasis on technical and scientific aspects, it is expected that the Director of NMC will have a minimum of administrative responsibility. In time the administrative functions of the three Suitland organizations may be consolidated and it is anticipated that these duties will be delegated to an executive assistant.

Since the analysis program of NAWAC is designed to serve the field requirements of both Weather Bureau and military field stations, a steering committee for NAWAC was established by the Joint Meteorological Committee of the Joint Chiefs of Staff. The Chief of F&SR

will continue to serve as the Weather Bureau coordinator on this committee for the present. Likewise, the Director of OMR will continue to serve as the Weather Bureau representative on the JMC Ad Hoc JNWP Subcommittee.

It is impossible to clearly delineate all of the duties of this new position, but it is expected that numerical computations will assist the analyst and forecaster with those processing and calculating jobs which are time-consuming, cumbersome or impossible to individually undertake. Recognizing the present limitations of numerical predictions in meteorology, NWP does solve some of the complex problems that are beyond exact solution by subjective methods and it gives promise of further advances. Lest an impression be given that we are expecting the impossible from numerical weather prediction, the point is emphasized that we expect personal forecasting skills not only in the field of extended range forecasts but also in short-term forecasts to continue to be as essential as ever although developments in NWP are likely to cause a shift in the "areas" to which the skilled forecaster will give attention.

The NMC will operate as a separate center attached directly to the Office of Chief of Bureau. All major plans and changes in technical material furnished to the field will be coordinated with Central Office officials concerned before being adopted.

Dr. Cressman has been Director of the Joint Numerical Weather Prediction Unit at Suitland, Maryland since 1954. From 1949 to 1954 he served as Meteorologist-Consultant in the Air Weather Service of the Air Force.

From 1946 to 1949 Dr. Cressman was a research assistant in the Department of Meteorology at the University of Chicago and also served as an instructor at the Institute of Tropical Meteorology at the University of Puerto Rico 1945-1946. He served with the U. S. Army with the rank of Captain from 1941 to 1946.

Dr. Cressman was born in West Chester, Pennsylvania, and received a bachelor of science degree from Pennsylvania State College in 1941, a master of science degree at New York University in 1942, and a Ph.D at the University of Chicago in 1949. He is a member of the Washington Academy of Sciences, the American Meteorological Society, and the Association for Computing Machinery, and is the author of numerous articles published in many meteorological journals here and abroad.

Dr. Cressman is married to the former Nelia Hazard. They have four children and live at 7309 Hansford Street, Berkshire, Maryland.

Streamlining Operations

MANY new and unforeseen requirements are being placed on the Bureau which must be met. As a result the Bureau is constantly faced with the problem of reprogramming current resources to meet higher priority requirements. Consequently whenever an employee retires, resigns, or is transferred, his position is not filled until after the station program and work load are analyzed to see if some alternative arrangements can be made that will forego the need to fill the vacancy. In some cases it has been possible to place the station on a part-time basis with the aid of the Civil Aeronautics Administration or airline personnel in taking airway observations during the period our office is closed, but in a large number of cases the Meteorologist in Charge has streamlined station activities, and curtailed or eliminated some activities which heretofore have been thought indispensable. As requests for weather service continue to increase, such reductions in station program are extremely difficult to accomplish.

The Telephone. One very effective means for reducing telephone load was described in November 1957 TOPICS, "Telephone Problem Solved at Wichita." Other approaches include:

Examine radio originations and material carried on public weather circuits carefully to make sure that routine data for which a public need exists are always included.

Take full advantage of automatic answering devices. However, the recording should always indicate a period during which manual answering of the public line will be resumed. (Circular Letter 21-56 sets forth our conception of how automatic answering devices should be employed under normal circumstances.)

Avoid lengthy telephone conversations, and suggest to frequent callers that they telephone, if necessary, at a time (give the time) when the office is not so busy with priority work.

Direct Radio Originations. While these originations function both as mass dissemination media and producers of good will, because of the existing heavy work load at stations and limited staff, we believe that all requests for new originations should be given careful review. If the new request can be handled by "sharing" an existing program, the Central Office will approve it. If this is not the case, the MIC should state the special circumstances which seem to justify approval.

Current Forms 1040 show that there are several Weather Bureau offices with numerous originations which might be reduced markedly by "sharing" originations.

Text for originations should use the AB2 National Weather Summaries as much as possible, with some slight modification to highlight the local or regional aspects.

Briefing for Television.

One station successfully arranged to brief two individuals simultaneously by means of a conference telephone call. Of course, it is always easier for station personnel when the television performer can be persuaded to come to the station and brief himself from material available.

Checking for Observational and Punch Card Errors.

Some offices have reported devoting as many as 15-20 man hours weekly on observational errors and to some extent punching errors. This seems excessive and we believe checking can be reduced by at least 50% without seriously affecting the quality of the observational program, particularly since this is a basic function of the WRPC and NWRC, and tends to duplicate the checking process.

Housekeeping.

Streamline the office for the most efficient operations possible; distribute essential housekeeping jobs among the personnel so that they can be performed at odd times when workload permits; discontinue any nonessential administrative tasks.

Priority List.

During severe weather a reduced staff cannot meet all the emergency requirements and still carry on usual routine. MIC's should be certain that everyone on the station clearly understands what comes first during an emergency. (See WB Manual III-B-19.)

Television-Radio Study of Omaha Area Farms

AN extensive Television-Radio study dealing with farm families of the Omaha area was recently conducted by the Meredith Publishing Company. Since many of the results are interesting and significant from a weather service viewpoint, some of the highlights are given below:

Of the total of 45,600 farm households within an 80-mile radius of Omaha, 65% reported that on TV farm programs, weather information is generally the most important item to them as farm operators.

Of the 45,600 total of farm households, 43% said radio was the most helpful in their daily farm operations; 27% said television was most helpful and 13% preferred the daily newspapers.

68% of the 45,600 farm households depended on television most to obtain their weather information but 15% say they depend on radio (total does not add up to 100% due to multiple answers).

86% of the farm families appreciate the Weather Bureau tornado warnings on TV and 89% felt these warnings were usually understandable. 67% of the farm families have taken some sort of action as a result of tornado or storm alerts.

47% of the farm households feel that the 3-day agriculture outlook is "very useful" while only 7% said they "use very little." 45% find the 5-day forecasts "very useful" and only 10% said they "use very little." When asked which of the two is most useful, 47% said the 3-day agricultural outlook as against 45% for the 5-day forecast.

In response to the question "Do you feel there are too many references to weather when only routine weather is anticipated?" 72% of the farm families said "no."

Safety Council Helps Reduce Telephone Load

AN article in a recent issue of the National Safety Council's monthly magazine describes in detail the cooperation of a county Safety Council with the Weather Bureau at Memphis, Tennessee. Severe weather forecasts are telephoned to the Safety Council and this automatically touches off an alert to suburban and rural community fire departments, police in county towns, the sheriff's office, and key industrial plants and businesses.

Action is varied following the relay of forecasts by the Safety Council. Fire departments in rural areas turn on pumps and fill the communities' water reservoirs to prepare for possible power failure or possible inability of auxiliary power units. Industrial plants may post observers. Construction operations and critical production areas are secured to a certain degree for keeping damage to a minimum should a storm strike. In all cases, those notified turn their standard broadcast receivers to their favorite station and listen for additional weather information. This relieves congestion of vital telephone lines.

After the initial forecast is distributed, the Memphis office provides additional information from time to time to the Safety Council so that it may be relayed, or provided to callers who may be concerned. Telephone operators are on duty 24 hours a day at the Council's office.

The Genesis of a Thunderstorm

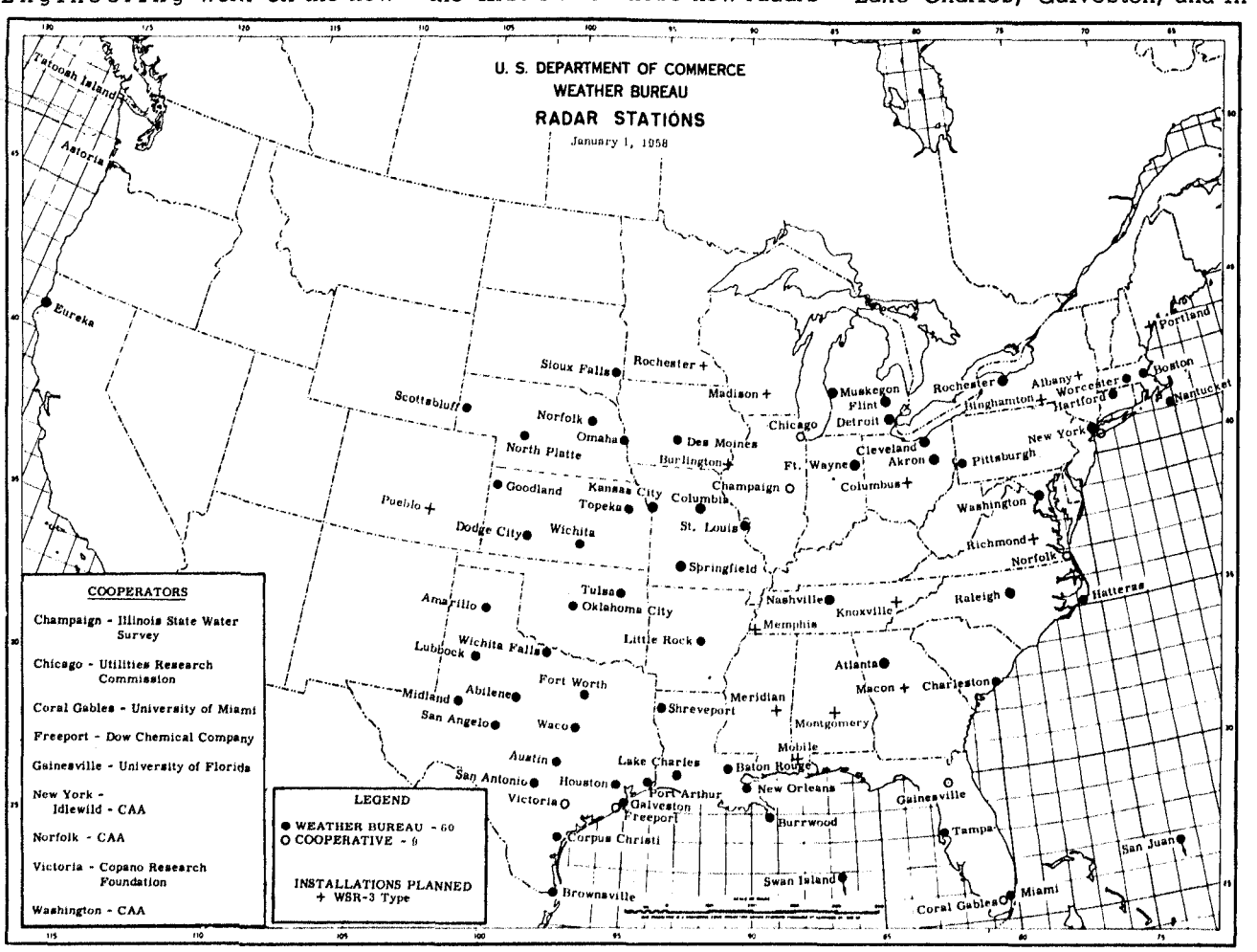
SEVERAL copies of a 16-mm., color, time-lapse film "The Genesis of a Thunderstorm" taken at Socorro, New Mexico, by the New Mexico Institute of Mining and Technology, Thunderstorm Research Project, have been added to our library of research and training films. They are available for loan to field stations.

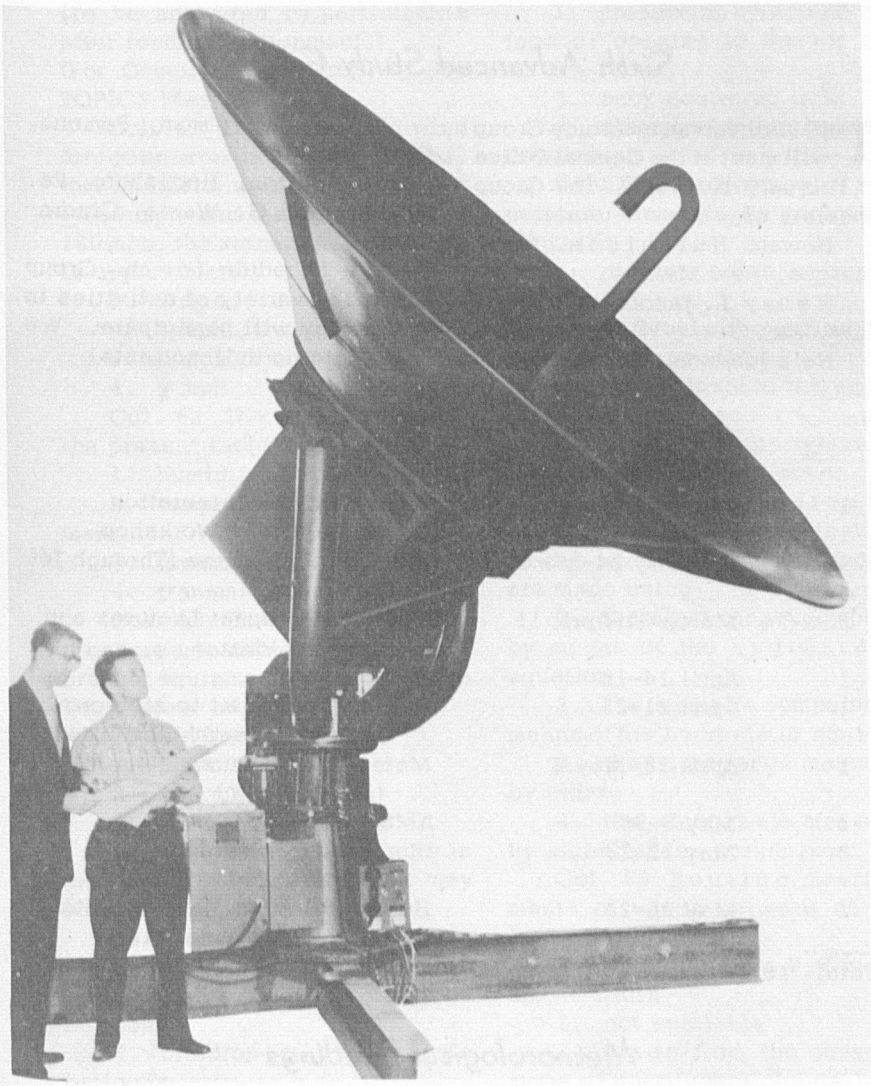
As the title indicates, this film shows the development of a thunderstorm beginning with a cloudless sky followed by the first shred of a cloud and continuing to the cumulonimbus stage. It covers a time sequence of about five hours and forty minutes and has a running time of about three minutes.

Status of Radar Program

THE map shows the current status of installations of modified war surplus type (WSR-1 or 3) radar. At the stations indicated by a + it is planned that the installations will be completed during calendar year 1958. Engineering work on the new WSR-57 radar is well along and we are hopeful that the first model will be available for accelerated service testing in four to six months. Quantity production is expected to begin in the late fall of 1958. It is planned to install the first one of these new radars at Miami.

Present plans are to install this new radar also at New York; Atlantic City; Washington, D. C.; Wilmington, N. C.; Charleston, S. C.; Daytona Beach; Key West; Tampa; Apalachicola; Burrwood; Lake Charles; Galveston; and in





16 other locations in central United States. Plans for expansion of the network of these new-type radars to cover the entire United States have been formulated and provision made in them for cases where it is necessary to remote the radar antenna to the top of nearby hills or mountains in order to obtain good exposures.

Reporting Damages on Invoices and Bills of Lading

IT has come to the Bureau's attention that bills of lading are completed, signed, and returned to the carrier before the shipments are inspected for damages and/or shortages. Stations usually follow this procedure when receiving shipments of equipment marked, "Hold for installation by Technician."

It is very difficult for the Bureau to file claims for damages and/or shortages if the original bill of lading is completed, signed, and returned to the carrier before the discrepancies are discovered.

All cartons and boxes received at the stations should be opened and the contents inspected before the bills of lading are accomplished and turned over to the carrier. This should be done regardless of the markings on the cartons or boxes.

Here are a few tips on what you should do before you sign the delivering carrier's invoice and accept shipment. Inspect all boxes and cartons for rough handling. Pick up and shake the small or light packages. This will indicate whether anything is broken or loose inside the package. If there are any indications that something may be damaged, the shipment should be inspected before the invoice is signed. If it is not possible to inspect the shipment before the invoice is signed, and there is a possibility of damages, the notation "Possible Concealed Damages" should be entered on the invoice before it is signed.

Shipment should be inspected as soon as possible after receipt. The delivering carrier should be immediately notified of any damages or shortages. All damages, shortages, etc., should be entered on original copy of bill of lading.

Settlement of claims for damages and/or shortages will be expedited if you follow the instructions.

Letters of Appreciation

Mr. Warren O. Johnson
Weather Bureau
Lakeland, Florida

Dear Mr. Johnson:

The Board of Directors at their regular meeting this morning passed the following resolution and instructed me to convey it to you.

"Be it resolved that we the Board of Directors of Waverly Growers Cooperative on behalf of our grower members and employees express to Warren O. Johnson, Meteorologist in Charge of the United States Weather Bureau at Lakeland, our sincere gratitude

and deep appreciation for the splendid service and very accurate predictions of the temperatures experienced during the damaging cold invasion of Florida's Citrus Area December 12 and 13, 1957.

"Be it further resolved that we commend Mr. Johnson for his untiring devotion to duty, for his skilled and helpful forecasts, and always courteous response to our requests for information.

"Be it further resolved that a copy of this be made a part of our minutes, and a copy sent to the Chief of the United States Weather Bureau, Washington, D. C."

Yours very truly,
/s/ W. C. Pedersen
President
Waverly Growers Cooperative
Waverly, Florida

Mr. George V. Fish
U. S. Weather Bureau
Municipal Airport
Jackson, Miss.

Dear Mr. Fish:

This belated note on behalf of the participants of the International Houseparty for the opportunity of visiting with you at the weather station during the Thanksgiving holidays.

The group certainly enjoyed their visit at the weather station which was evidenced by the numerous questions raised concerning the how and why of weather forecasting.

I don't recall whether I told you or not but there were 117 students in attendance representing 30 different countries. You certainly did an outstanding job as an official of the U.S. Government in showing us the facilities at the weather station and explaining how it worked.

Thanks again for a grand job.

Sincerely yours,
/s/Dr. B. Roark,
Executive Assistant
and Personnel
Director.
Mississippi Chemical Corp.
Yazoo City, Mississippi

Sixth Advanced Study Group

THE Sixth Advanced Study Group will meet at the Central Office on February 10, 1958. The Group consists of:

Howard Hutchison, Albuquerque, New Mexico

Henry L. Jacobson, Kansas City, Mo.

Nels Johnson, Central Office

R. Roy Simpson, Pomona, California

Paul Sutton, Harrisburg, Pa.

Raymond C. Wanta, Cincinnati, Ohio

The schedule for the Group shows the variety of activities in which they will participate. We anticipate no dull moments!

No. of Weeks	Date	
1	February 10-14	Central Office Orientation
1	February 17-21	Human Relations Workshop
5	February 24-March 28	Meteorology Course (Through Jet Stream)
2	March 31-April 11	Extended Forecast Lectures and Suitland Visit
1	April 14-18	Hydrology
1	April 21-25	Out-of-Town Visit to Meteorological Research Activities
1	April 28-May 2	Meteorology Course (continuation)
1	May 5-9	AMS National Meeting
2	May 12-23	Meteorology Course (continuation)
1	May 26-29	Human Relations Review - Staff Meetings - Final Visits
Total 16 weeks		

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 and instructions for participants, see TOPICS May 1957.

Assignment X: Instruments and Techniques for Meteorological Measurements by Michael Ference, Jr., and Aircraft Meteorological Instruments by Alan C. Bemis on pages 1207 through 1231 of the Compendium of Meteorology.

About the Assignment: An observational system capable of accurate continuous observations to higher atmospheric levels is an important requirement for meteorological development. The instrumental descriptions in these two articles indicate the accuracies and limitations of our present equipment much of which is only used on research projects. More information about the Rawin Set AN/GMD-1 and the new GMD-2 system may be found in a lecture by William Todd, pages 3-23 Proceedings of the Workshop on Stratospheric Analysis and Forecasting, Washington, D. C., February 1-3, 1956, District of Columbia Branch, AMS.

QUESTIONNAIRE
Assignment X

(To be answered by participants after reading assignment.)
(For Complete Instructions, See TOPICS May 1957.)

Col. 61 If the standard wind direction error is ± 0.05 radians, the standard wind speed error is ± 5.0 mph and the wind speed is 100 mph, the standard vector error is approximately

1. 2 mph
2. 5 mph
3. 7 mph
4. 9 mph

Col. 62 The weakest link in the present radiosonde is the

1. humidity element
2. temperature-sensing element
3. pressure capsule
4. transmitter

Col. 63 The overall probable pressure measurement error in our present equipment is estimated to be greatest at

1. 1000 mb
2. 500 mb
3. 100 mb
4. 10 mb

Col. 64 Ascensional rates in excess of 2000 ft. per minute may be obtained by the use of

1. spherical rubber balloons
2. teardrop rubber balloons
3. spherical polyethylene balloons
4. teardrop polyethylene balloons

Col. 65 In the radar wind system the horizontal distance is computed by using the following trigonometric function of the elevation angle

1. sine
2. cosine
3. tangent
4. cotangent

Col. 66 M-measurements are generally made by

1. presenting a trapping surface or opening to the air flow
2. radar
3. back scattered light
4. electromagnetic radiation devices

Col. 67 The heating of temperature elements on aircraft is generally

1. proportional to the true air speed
2. inversely proportional to the true air speed
3. proportional to the square of the true air speed
4. inversely proportional to the square of true air speed

Col. 68 In the radiowind system now in use determinations of the wind speed and direction are made using

1. the slant range computed by means of the hydrostatic equation
2. the height computed by means of the hydrostatic equation
3. the slant range measured by radar
4. the slant range measured by signal phase comparison

Col. 69 Routine measurements of winds between 35 and 80 km. are

1. obtained from V-2 rocket smoke trails
2. not available
3. made from the observations of noctilucent clouds
4. obtained from doppler studies of meteor trails

Col. 70 Accurate measurement of air temperature by aircraft is most difficult

1. at high speeds
2. in the presence of liquid water
3. in turbulent conditions
4. at high altitudes

CORRECTION

In the January 1958 TOPICS under Meteorological Readings, Page 10, Questionnaire Col. 68, should read Randomly distributed air mass showers....

New Consultant to FCDA

HENRY R. McQUEEN of the National Weather Analysis Center has been selected to replace Mr. Harry L. Hamilton as meteorological consultant to FCDA National Headquarters at Battle Creek, Mich.

Mr. McQueen is 49 and began his service in the Weather Bureau on June 1, 1929. His assignments have been at Kansas City, New York, Seattle, Shannon Airport, Washington National Airport, San Francisco, and Analysis Center. He received his BS degree in Meteorology from the University of Washington in 1945.

Tornado Stickers are in Vogue

H. S. KENNY, MIC at Columbus, Ohio, reports that the Ohio Bell Telephone Company has furnished colored, gummed stickers as telephone reminders for distribution by Weather Bureau offices in the State. Officials in other states may want to explore the possibility of having similar stickers printed by the telephone company, or other organizations, as a public service. Colored labels might possibly have more public appeal than the plain gummed labels that are available on request from all Regional Administrative Offices.

To Report Tornados Windstorms and Hail, Inform Operator This Is an Emergency Call.
U.S. Weather Bureau
Columbus, Ohio
BElmont 1-4381
BElmont 1-5992

Published Articles by WB Personnel

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Tornado Forecast Verification

FOLLOWING is a comparison of tornado forecasts which includes available data for the years 1953 through 1957. You will notice that there is an outstanding increase in accuracy for 1957; also, that there has been a steady improvement in the accuracy in the forecasts since 1953.

	1957	1956	1955[A]	1954	1953[A]
No. of tornadoes*	1244	599	417	330	367
% of tornadoes forecast	50	30	32	20	30
% of tornado hits and near hits **	70	55	62	35	53
No. of forecasts	277	187	191	232	162
% of forecasts with tornado(es) inside	65	41	35	20	22
% of forecast hits and near hits **	84	70	59	30	53

*No. of tornadoes reported to the SELS Center.

**Tornadoes inside forecast boundaries and within 150 miles, or within 2 hours after expiration of valid time.

[A]January 1 to August 1.

Forecasters' Forum • • • • • *Making Prognosis From 500-mb Chart*

Sir:

Through the past several years the emphasis in meteorology has been on the 500-mb chart as the major tool, along with the surface chart, in making prognostic charts. Many forecasters, especially those working at small stations, have had to attain their knowledge of this chart from the many fine recent publications such as "Practical Methods of Weather Analysis and Prognoses" and the U. S. Air Force publication "Forecasting by Vorticity Techniques." The forecaster at a small station is, of course, aided in his thinking by the twice daily discussions out of Washington and by the FP-1's issued by the various forecast offices.

However nearly all forecasters wish to make some computations of their own. One of the major difficulties I find in trying to make a prognosis from the 500-mb chart is that there is no way of determining whether or not the situation is progressive or retrogressive. If zonal wind data could be transmitted once daily, say as a portion of either the FUNA WBC or the FSNA WBC, it would take little time to make a Rossby computation. An alternate suggestion would be for the Analysis Center to include in its discussion statements as to whether wavelengths between troughs are supra-stationary, sub-stationary, or stationary.

A chart of height rises and falls at the 500-mb level similar to the 12-hour surface pressure change chart would also be helpful to the forecaster at a small station in the making of a surface prognosis, especially in predicting changes in the steering pattern. Time frequently does not permit placing the height changes on charts at the local station, and more often than not it is quite difficult to read the fax charts well enough to determine the changes. I think the inclusion of a 12-hour height change chart on the composite fax chart would be quite helpful.

I would like to mention that the discussion material both from the Analysis Center and the various forecast centers have, in my opinion, been excellent.

Eugene C. Harris
WBO
Chicago, Ill.

1000-Hour Sick Leave Club

EMPLOYEES who have accumulated 1000 hours or more of sick leave.

Albuquerque, N. M. WBAS
Irwin A. Teske
Asheville, N. C. NWRC
Allen B. Elam, Jr.
Paul J. Kane
Charles F. Simon
Arthur C. Wagner
Boise, Idaho WBAS
Archer B. Carpenter
Edward Reimann
John P. Sherry
Charles E. Syverson
Goodwin P. Taylor
Buffalo, N. Y. WBAS
Edward A. Miechowicz
Fred R. Mueller
Richard H. Rausch
George R. Wright
Central Office
Julius F. Bosen
Vincent J. Creasi
Annie E. Grimes
George B. Scott
Edgar J. Saltsman
William H. Seay
John R. Swartz
H.C.S. Thom
Fred D. White
Thomas D. Whitely
Chicago, Ill. WBO
Ivan W. Brunk
Dorothy L. Davis
Goodland, Kansas WBAS
Paul L. Bredeman
Honolulu, T. H. PWP
Wilson Floe
Albert J. Rohlfs
Kansas City, Mo. WBFC
Cecil D. Anderson
Robert C. Baskin
Ferdinand C. Bates
Robert G. Beebe
Billie J. Cook
Hilmer A. Crumrine
Burton Handy, Jr.
Donald M. Hanson
Donald C. House
Jean T. Lee
Harry Swenson, Jr.
Dansy T. Williams
Perry A. Wood

Length of Service Awards

30-Year Awards

Amarillo, Texas
Henry C. Winburn
Fort Smith, Ark.
James H. Huff
Fort Worth, Tex. RAO
Vernon F. Schaad
Fresno, Calif. WBAS
Harry L. Bahr
Marquette, Mich. WBO
Laurel W. Dahlin
Pocatello, Idaho WBAS
Ralph W. Neick
Salt Lake City, Utah RAO
Harry N. Weirauch
San Diego, Calif. WBAS
Gilbert L. Prucha

20-Year Awards

Birmingham, Ala.
Cecil R. Jobe
Cairo, Ill. WBO
Gail W. Mulligan
Central Office
Christos Harmantas
Robert A. Hoover
Sidney Teweles, Jr.
Joliet, Ill. RRC
Glenn M. Miller
Laredo, Texas
George M. Fugate
New Orleans, La. WBAS
Murray W. Smith
Pittsburgh, Pa. WBO
Vernon T. Houghton, Jr.
Wilmington, Del. WBAS
Guy C. Anderson

10-Year Awards

Boise, Idaho WBAS
Virginia R. Newton
Maynard W. Zlomke
Central Office
Sally S. Foreman
Paul E. Lees
John S. Raver
Raymond W. Richardson
Paul E. Ruest
Jerome J. Speth
John L. Strong
Honolulu, T. H. PWP
Frederick A. Price
Las Vegas, Nev. WBAS
Walter M. Jagodzinski
Miami, Fla. WBAS
Leonard L. Bailey
Julia A. Henderson
Miami, Fla. WBO
Gilbert B. Clark
New York Int'l. Airport, N.Y.
Nathaniel P. Malcolm
New York, N. Y. AWP
Joseph D. Paranzino, Jr.
Norfolk, Va. WBAS
Charles W. Kearney
Oak Ridge, Tenn. WBO
Gifford A. Franklin
Richmond, Va. WBAS
Anna Lee Simmons
St. Cloud, Minn. WBAS
Hugh E. Doerr
Scranton, Pa. WBAS
Ovid E. Sibert

Employee Suggestion Box

Erwin E. John $20
Minneapolis, Minn.
Denote paths of highs and lows on the 48 hour Surface Prognostic Chart by means of trailing, wavy lines during the 48 hour prognostic interval to better identify the path and avoid confusion should a straight line isobaric condition prevail.

Pauline T. Best $20
Publications Unit, CO
When several items including a daily weather map are to be mailed, use the folded weather map as an envelope for the other items thereby saving envelopes.

Edward F. Cook $20
RAO Ft. Worth
Eliminate from the SF-1038 (Application for Advance of Funds), the statement of the number of rooms of furniture and the origin and destination of travel, including both on the CD-29. Block 17 of the CD-29 will be used to designate the number of rooms of furniture. Savings in time of prep-

aration will be realized and some duplication will be eliminated.

Henry Taback $25
NAWAC, CO
Use a printed base map rather than a Bruning copy for facsimile transmission of Asiatic surface maps. A definite improvement in appearance and readability of these transmitted maps has resulted from this change.

Glenn Stallard $25
WBAS St. Louis, Mo.
Install a teletypewriter drop from an airline's dispatch office to one WBAS to improve receipt of PIREP information. Wider application will depend upon availability of funds and certain procedures being in use in the airline office.

Henry G. Kaplan $10
WBAS New York
Prevent the curling of the lower edges of weather maps by placing a strip of cellophane tape along the lower edge of the chart. Easier handling and improved life of the map will result.

Sylvester R. Ullsperger $10
Green Bay, Wis.
Have the second man use a clinometer and call off elevation angles as an aid in getting radiosonde tracking equipment on target at release. Especially helpful to new observers.

Wilson R. Tschiffely, Jr. $20
NWRC Asheville, N. C.
Draw raob sounding above 10 mb with red pencil to facilitate extraction of data and help decrease errors in computation. Refer to Change 1, Circular P.

Rachel E. Thompson $10
NWRC Asheville, N. C.
Make available a registry of foreign merchant vessels with name, nationality and classification listing for use in a section preparing certain marine tabulations at NWRC.

Clyde H. Blackwood $25
Nantucket, Mass.
Purchase a hand truck for transportation of helium cylinders and other heavy cargo at stations. This will prove a time saver and eliminate many of the hazards attendant to the movement of heavy articles. (Purchase of trucks is dependent upon availability of funds - See Sept. 1957 TOPICS.)

Norman J. Asbridge $15
Columbia, Mo.
Devise a stamp to provide space for entering data of high wind speeds aloft on form 610-12 thereby facilitating the entering, punching, and checking of these data on cards.

Matthew Garfinkel $15
Orlando, Fla.
Have the station lists for use with sequence displays printed with columnar lines so they may be more easily cut to uniform size for insertion in a standard briefing display.

William B. Chapman $10
Des Moines, Ia.
Permanently attach altitude scale 20 and 21 on the pibal graphing board to eliminate the problem of alignment of the graph and graphing scale for each pilot balloon observation.

Ivan W. Brunk $30
Chicago, Ill. WBO
Transmit LAFOT data from Chicago by means of RAWARC thereby saving time and communication expenses. (Note: RAWARC was established to handle emergency warnings primarily but a limited number of other items are also included.)

James T. Rodewald $20
Lubbock, Tex.
In the Manual for Synoptic Codes distinguish more clearly, in future printings, the tables for use in the United States from those for use in other parts of the world. Coding and decoding errors should be reduced by this system.

Robert B. Caldwell $20
WBAS Anchorage
Eliminate the time group at the beginning of each station's winds aloft forecast with a resulting savings in time, tape cutting, and teletypewriter transmission. The eliminated group was a duplication of the time group which appears under the main heading (MAL 59-57).

Address of Paul B. Marks

SINCE his retirement, May 31, 1957 (See TOPICS June 1957), Mr. Marks has been living at the following address.

Palmyra, R. 1
Pennsylvania

RETIREMENTS

Stella W. McKinnon

STELLA W. McKINNON, Telegraphic-Typewriter Operator, WBAS, Miami, Florida, retired December 31 after more than fifteen years of government service.

Mrs. McKinnon was born in St. Paul, Minnesota, and attended high school and business college in Kansas City, Missouri. She entered the government service during World War II at the War Department's Miami Air Depot where she was employed until March 1947 when she transferred to the Weather Bureau as a Telegraphic-Typewriter Operator. Mrs. McKinnon plans to remain in Miami where she has accepted employment in private industry. Her address is 651 N.W. 90th Street, Miami.

Deaths

Dr. C. F. Brooks *Dr. C. G. Rossby*

BECAUSE necrology of meteorologists working outside the Weather Bureau is carried in AMS and other publications, it has not been the practice of the Bureau to include notices in TOPICS. However, within the past six months, the science of meteorology has suffered the loss of two outstanding and irreplaceable men, Dr. C. G. Rossby and Dr. C. F. Brooks. Both men at one time had held positions in the Bureau, Dr. Rossby as Assistant Chief for Scientific Services from 1939-1941 and Dr. Brooks as Editor of the Monthly Weather Review from 1919-1921.

At the AMS Meetings in New York the week of January 27th eulogies were given by Dr. Petterssen for Dr. Rossby and by Prof. Houghton for Dr. Brooks. These eulogies will be published in the Bulletin of the Society.

Mack L. Chappell

MACK L. CHAPPELL, Meteorologist, WBAS Norfolk, Virginia, died suddenly of a heart attack on December 6 at the age of 62.

A veteran of World War I, Mr. Chappell entered the Weather Bureau in 1922. With the exception of a two-year tour of duty at Charleston, South Carolina, he spent his entire Weather Bureau career at Norfolk.

Mr. Chappell is survived by his wife who resides at 241 West 35th Street, Norfolk.

Marion A. Clark

MARION A. CLARK, Voucher Examiner in the Fiscal Section of the Central Office, died December 1 from burns suffered in an accident in her home October 20.

A native Washingtonian, Mrs. Clark attended Eastern High School, Emerson Institute and Strayer Business College. Her first government service dates back to 1918 when she accepted an assignment as messenger girl with the Department of Agriculture. Other prior government employment included service with the Federal Board of Vocational Education, the War Department, and GAO. She joined the Weather Bureau on January 31, 1947, and has been employed in the Fiscal Section since that time.

Mrs. Clark is survived by a daughter, Mrs. James F. Crowley; a brother, Eugene F. Sweeney, a retired Weather Bureau employee; and three grandchildren.

Robert H. Johns

ROBERT H. JOHNS, Meteorological Aid, Polar Operations Project, died at Arctic Ice Floe Station "A" on January 14 following a brief illness. Mr. Johns, "Bob" to all who knew him, was in Washington in December just prior to departing for the Arctic. His sudden death came as a shock and a great personal loss to his many friends and associates.

A native of Virginia, Mr. Johns was born in Surry County on June 25, 1932, attended Virginia public schools, and graduated from Disputanta, Virginia High in 1949. In August of the same year he joined the Air Force. He completed the Weather Observer and Rawinsonde Operator courses at Chanute Air Force Base in 1950 and served in the Air Weather Service until his discharge, attaining the rank of Staff Sergeant.

Mr. Johns served as a member of one of the earliest Air Force groups stationed at Fletcher's Ice Island (T-3), the present IGY Ice Floe Station "B". He served in Alaska from March to November 1952 and received a citation from the Air Force for meritorious service in the Arctic.

Upon his discharge from the military service in January 1953 Mr. Johns entered private industry but after a few months he decided to return to weather work, and on January 28, 1954, he accepted an assignment in the Weather Bureau as a Meteorological Aid at Canton Island. He also served at Ponape and upon completion of a tour of duty there in September 1956 he returned to the States for reassignment to participate in the IGY Program as a member of the Weather Bureau complement at Byrd station in Antarctica. He arrived in the States in December after a year in the Antarctic, and just a few days before his death he proceeded to IGY Station "A" to participate in the Arctic Ice Floe Program.

Mr. Johns is survived by his mother, Mrs. Robert H. Johns, Route 2, Box 66, Spring Grove, Virginia, three sisters, and two brothers.

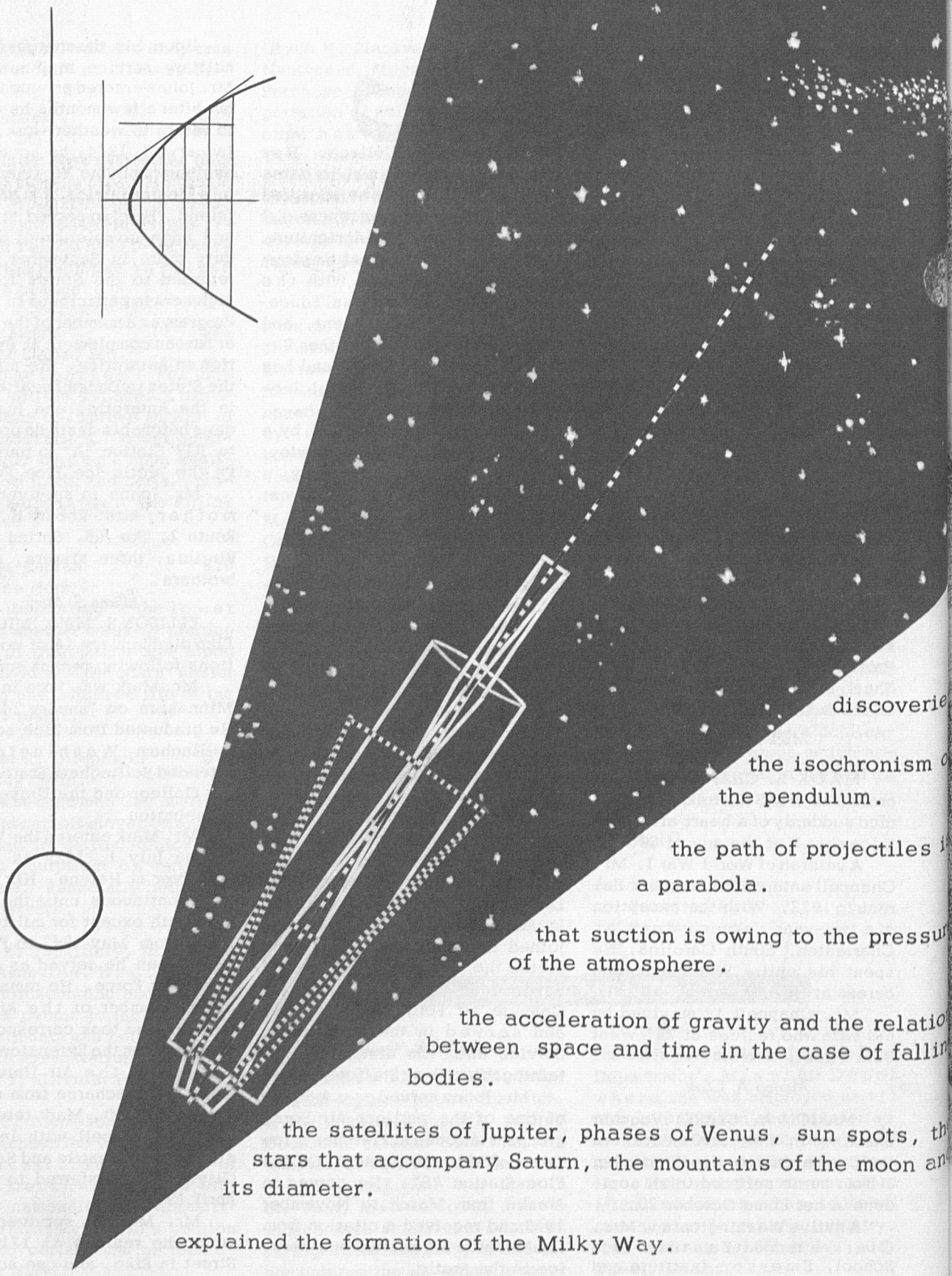
Ellison S. Mark

ELLISON S. MARK, MIC, WBAS Elko died January 16 of complications following recent surgery.

Mr. Mark was born in Aitkin, Minnesota on January 24, 1905. He graduated from high school at Bellingham, Washington and attended Bellingham State Teachers College and the University of Washington.

Mr. Mark entered the Weather Bureau July 1, 1929 as a Junior Observer at Helena. His service was continuous until the time of his death except for military furlough from May 1942 to February 1946 when he served as a Major in the Air Force. He remained an active member of the Air Force Reserve and took correspondence courses from the Extension Course Institute of the Air University. Upon his discharge from military service, Mr. Mark returned to duty at Kalispell with later assignments at Seattle and Salt Lake City. He transferred to Elko in April 1951.

Mr. Mark is survived by his wife who resides at 171 Maple Street in Elko, and one son.



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bodies.

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its diameter.

explained the formation of the Milky Way.

ARCH WEATHER BUREAU 1958

TOPICS

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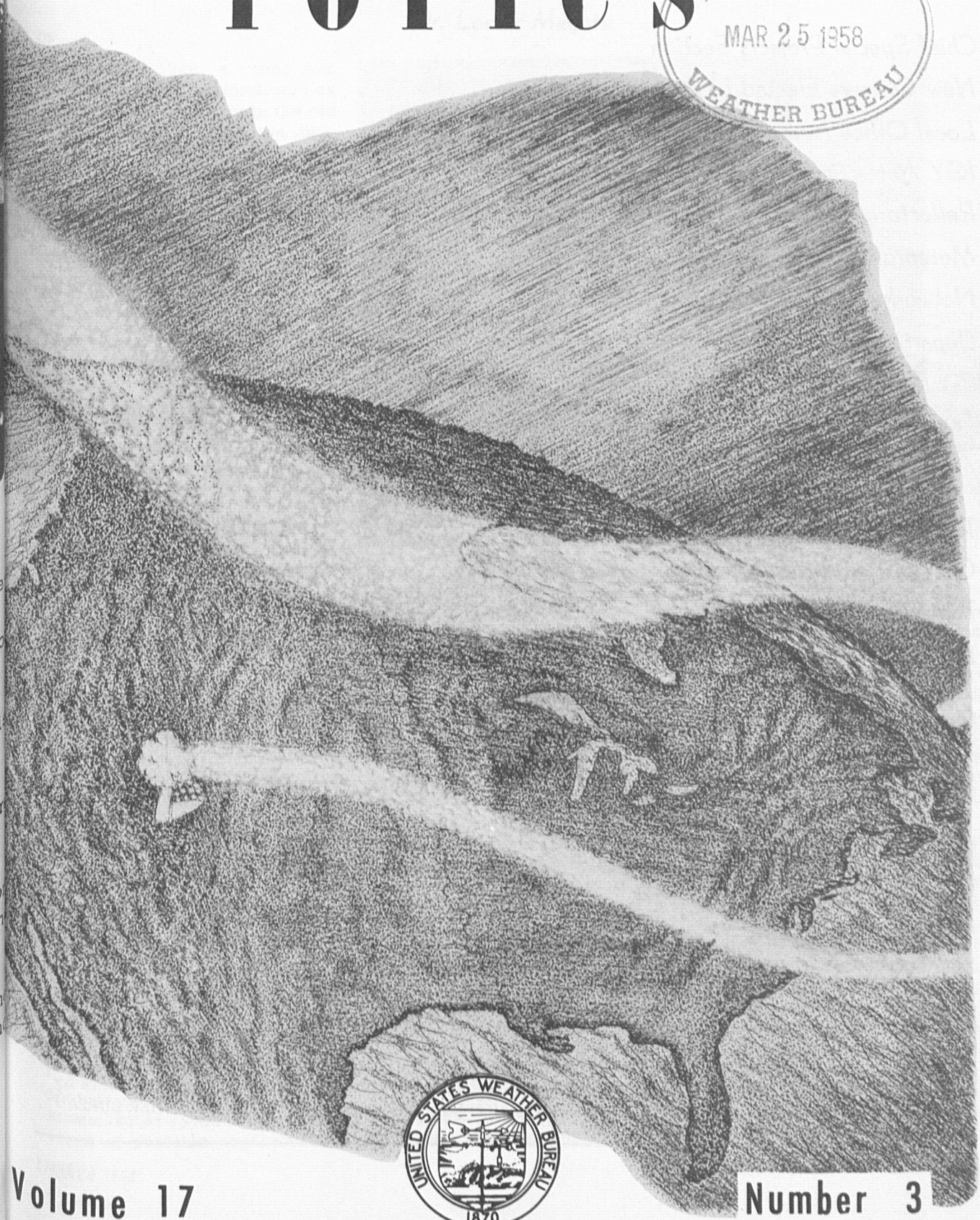

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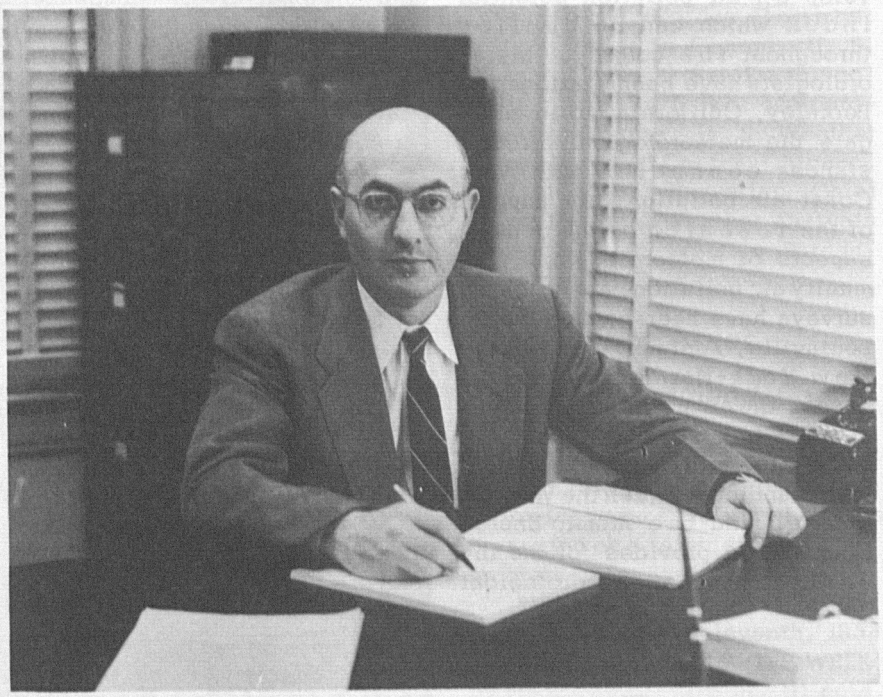
WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through 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.

Chief Special Projects Section

Dr. Lester Machta



IN July of 1948, a young man fresh from his doctoral studies at MIT reported for duty in the old Scientific Services Division, and, together with a small staff, was promptly locked in the inner recesses of the Old Annex Building in a room labelled "Restricted Area, No Admittance." This was the beginning of the Special Projects Section and of Dr. Lester Machta's association with the Bureau. Lester is familiar to the former Army Air Forces meteorologists who attended the Forecasters' School at Chanute Field and Grand Rapids through his wartime instruction in dynamic meteorology. He received his Bachelor's degree from Brooklyn College in 1939 and his Master's in meteorology from NYU in 1946. Since that time, he has acquired, in addition to his Doctor's degree, a wife, Phyllis, and two children, Jonnie, 7, and Dibsy, 4.

The growth and increasing responsibilities of the Special Projects Section can be traced directly to Dr. Machta's aggressive leadership and growing stature in the scientific world. The original problem the section faced was that of tracking, on a world-wide basis, the radioactive debris resulting from the testing of atomic bombs. This naturally led to investigation of such problems as atmospheric turbulence, diffusion, isentropic motion, ageostrophic flow, analysis in regions of scanty data, sources of meteorological data, wind variability, analysis procedures, and all the other facets of computing hemispheric trajectories. These intermediate and long-range aspects of the fallout problem include, for example, keeping the photographic industry through the Atomic Energy Commission advised of possible contamination hazards, studying of the distribution of radioactivity which remains in the atmosphere for extended periods, and participating in the National Academy of Sciences Committee on the Biological Effects of Atomic Radiation.

Another activity is the prediction of local fallout from atomic tests. This involves not only detailed analysis of the wind field, but also a very careful scrutiny of where local fallout has occurred in the past to build a consistent model of the atom bomb cloud and how it is affected by the atmosphere. At present, much effort is going into preparing for the forthcoming atomic test series in the Marshall Islands.

Dr. Machta also directs the Weather Bureau's participation in the Federal Civil Defense activities. Besides technical guidance to this program the section developed a rapid scheme for computing fallout winds, (the "UF" program), and performs research on fallout prediction improvement and participates in exercises involving the effect of fallout on the continuity of government functions on a national scale.

Another outgrowth of the original interest in long-range trajectories is research connected with constant-level balloons. The utilization of this type of data for synoptic analysis of upper-air flow patterns is being investigated.

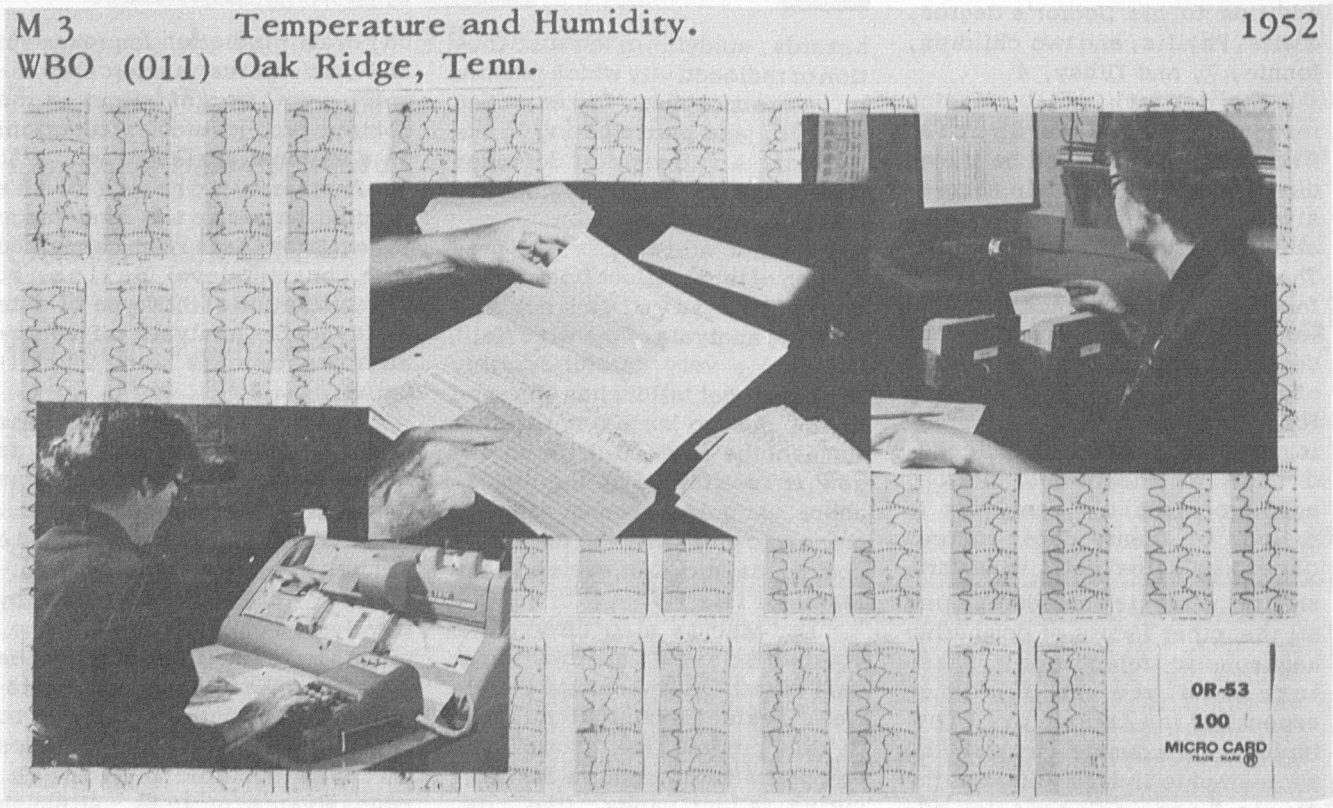
Since radioactive debris is only one of the many contaminants found in the atmosphere, it was only logical that the scope of Dr. Machta's work should include studies of other atmospheric pollutants. This work, supported by the U. S. Public Health Service, ranges from smog research in Los Angeles to the forecasting of meteorological situations leading to persistent air pollution episodes such as occurred in Donora, Pennsylvania in 1948. Although under Dr. Machta's direction,

this work is primarily concentrated at the Public Health Service's Robert A. Taft Sanitary Engineering Center in Cincinnati. In cooperation with the Office of Climatology, efforts are being made to develop an air pollution potential index which can be applied throughout the country. Meteorologists have been stationed at Berkeley, California, to investigate the meteorological circumstances connected with West Coast air pollution. In support of the research on the general aspects of meteorology in community air pollution, air sampling surveys have been carried out at Louisville, Kentucky, and in the New York-New Jersey area to assess the air pollution problems at these localities.

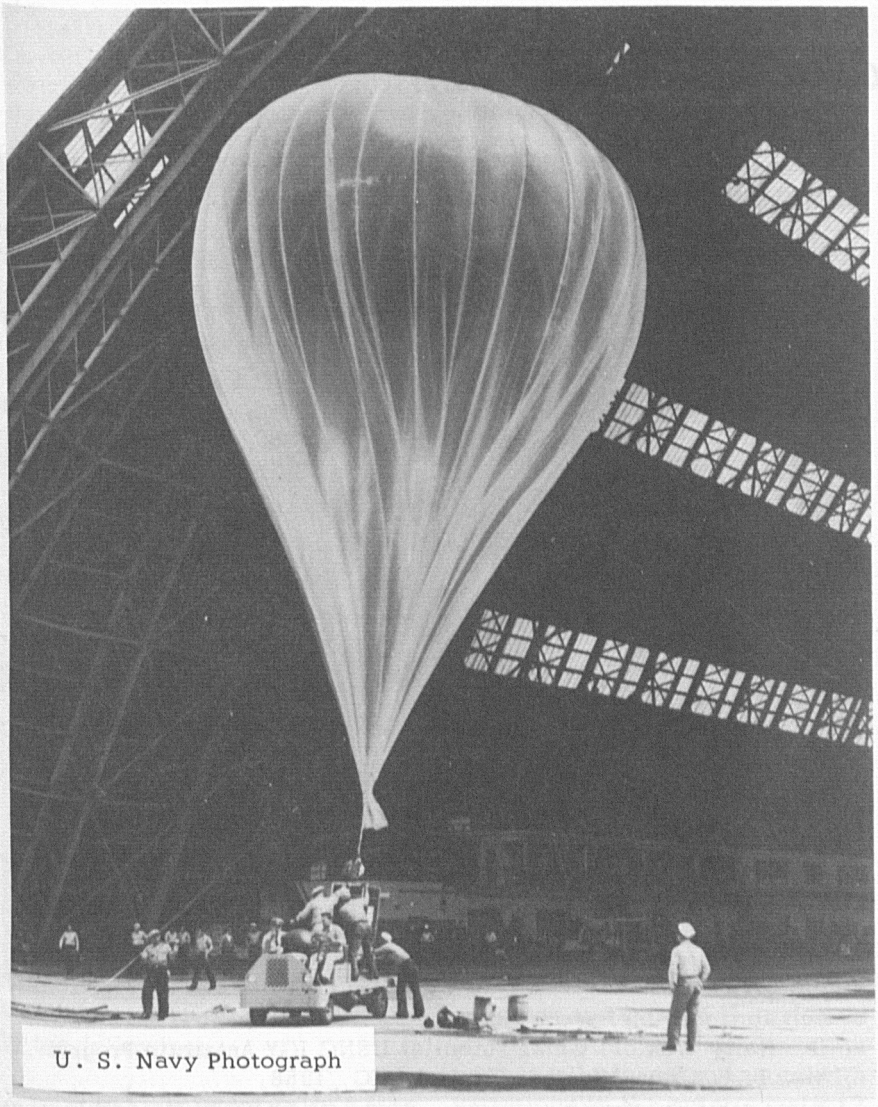
A cooperative agreement of long standing between the Weather Bureau and the Atomic Energy Commission provides for the investigation of meteorological parameters at various atomic reactor sites to evaluate the possible hazards from the release of radioactive material. One of the important problems is the analysis of various locations in terms of the suitability from an atmospheric diffusion standpoint. As the result of this work a digital telemetering network was developed at Oak Ridge and the publication "Meteorology and Atomic Energy" was prepared for the Atomic Energy Commission in an effort to consolidate information on techniques for evaluating atmospheric travel and dilution. There are stations at Middletown, Connecticut; Shippingport, Pennsylvania; Oak Ridge, Tennessee; Idaho Falls, Idaho and Las Vegas, Nevada. All of these stations are working on the problem of low-level transport and diffusion; in addition, the Las Vegas Research Station is investigating the variability and forecast improvement of winds aloft from the surface to 50,000 feet and is providing meteorological support for the Nevada Test Site. The fundamental properties of boundary-layer turbulence are also being investigated by a group within the Special Projects Section.

And now, with the advent of the IGY, Dr. Machta has been selected to coordinate the United States efforts in connection with the IGY and the International Union of Geodesy and Geophysics nuclear radiation programs. He is also active as Dr. Wexler's alternate on the WMO Panel of Experts on Atomic Energy.

Atomic energy, radioactivity and other forms of air pollution are here to stay. Dr. Machta and members of the Special Projects Section are trying to help understand the meteorological factors associated with the diffusion of these contaminants in the atmosphere.



Punch card tabulation and "Microcard" storage of meteorological data.



Transosonde balloon ready for launching.

New Officers Elected by Meteorologists

PROF. SVERRE PETTERSSEN, internationally known Norwegian meteorologist, will direct the affairs of the American Meteorological Society as President in 1958-59. The announcement of election by members of the Society was made at the 38th annual business meeting held in the Barbizon-Plaza Hotel in New York City, January 29. Henry T. Harrison, Director of Meteorology for United Air Lines in Denver, Colo., was elected Vice-President.

Re-elected for 1958 as Secretary and Treasurer, respectively, were Dr. Thomas F. Malone, Director of Research, The Travelers Insurance Companies, Hartford, Conn., and Henry DeC. Ward, Vice-President, Eaton and Howard, Inc., Boston, Mass.

Five members of the Council were elected for a three-year term of office: Prof. James M. Austin, Department of Meteorology, Massachusetts Institute of Technology, Cambridge, Mass.; Robert G. Beebe, Research Forecaster, U. S. Weather Bureau, SELS Forecast Center, Kansas City, Mo.; R. Corday Counts, Meteorologist in Charge, U. S. Weather Bureau, San Francisco, Calif.; Joe R. Fulks, Meteorologist in Charge, U. S. Weather Bureau Forecast Center, Chicago, Ill.; Albert K. Showalter, Chief of the National Weather Analysis Center, U. S. Weather Bureau, Washington, D. C.

Local Office Issues Commendation

WBAS Springfield, Illinois took the initiative in preparing the following commendation which was presented on a television weather program in January:

"Whereas, the week of January fifth through eleventh, 1958 has been proclaimed 'WTVP WEEK' by the Mayor of Decatur, Illinois, and,

"Whereas, Television Station WTVP and Loren Boatman have generously devoted a portion of their time and talents to providing timely and interesting weather information to the people of Decatur and the surrounding countryside.

"Now, therefore, the United States Weather Bureau at Springfield, Illinois expresses its appreciation and extends thanks to Loren Boatman and Television Station WTVP for their assistance in furnishing weather information and severe storm forecasts and warnings to the people of Decatur and vicinity."

CORRECTION

ON the back cover of the February 1958, issue of TOPICS, Galileo is credited with the discovery "that suction is owing to the pressure of the atmosphere." The credit belongs to his pupil, Torricelli.

IGY Antarctic Weather Central

THE arrival of the icebreakers, U.S.S. ATKA and the U.S.S. GLACIER and the M.S.T.S. Ship GREENVILLE VICTORY on November 30, 1957 was a welcomed event at Little America. On board these ships were mail, supplies, and replacement personnel for the people who had wintered over in the Antarctic during 1957. The early arrival of these ships meant that many of the men would be able to return home for Christmas.

Dr. Harry Wexler, Chief Scientist for the U.S. IGY Antarctic Program was on hand to welcome the newcomers. Dr. Wexler spent several weeks in the Antarctic in order to obtain firsthand information concerning the problems of the various scientific disciplines.

Mr. Thomas I. Gray, formerly of the Extended Forecast Section, Washington, D.C., will be the Meteorologist in Charge of the Weather Central during 1958. He and three other American meteorologists, Messrs. H. B. Cochrane, N. J. Ropar, and C. F. Fopay will work with foreign meteorologists from several different countries. The foreign representatives who will participate in the Weather Central program during 1958 are as follows:

M. Alt, France
A. J. Arruiz, Argentina
K. Morley, Australia
P.D. Astapenko, U.S.S.R.
H. Van Loon, South Africa
(summer period only)

Left to right—Mr. W. B. Moreland, Weather Central MIC 1957, Dr. Harry Wexler, Chief Scientist USNC IGY Antarctic Program, Mr. T. I. Gray, Weather Central MIC, 1958.

The presence of these foreign representatives makes possible an exchange of meteorological techniques which are employed by these various countries and also promotes the efficiency of the meteorological communications system.

Reflectorized Materials

AT many of our field installations the stairs to the observing platform or instrument shelter are inadequately lighted for taking night time observations.

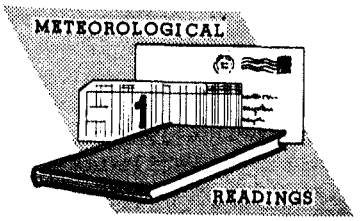
Highly effective reflectorized products are now available for use where visual emphasis is needed.

The range of materials includes self-adhering tape in various sizes and colors, sheets of reflective material, prefabricated signs and ready mixed paints.

Some stations may find it advisable to paint stair risers with luminous paint, while in other situations the application of self-adhering tape to the leading edge of the stair tread would be adequate. Reflective paint in spray cans may be available in certain areas.

The more general use of these materials in darkened areas is recommended. Markings in this manner should be relatively inexpensive, and could prevent an injury.

The above is offered as a substitute, where the furnishing of additional direct light is impractical or impossible. Purchases should be made according to prevailing instructions from the Regional Administrative Office concerned.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information and instructions for participants, see TOPICS May 1957.

Assignment XI: Solar Radiant Energy and Its Modifications by the Earth and Its Atmosphere, by Sigmund Fritz, on pages 13 through 31 of the Compendium of Meteorology.

About the Assignment: Space for radiational measurements is included in plans for some of the first Vanguard satellites. The extent of need for this type of data is indicated in this assignment by the contrast between what is known with certainty and areas of speculation. Before reading the assignment, it may be helpful to review the units of measurement for radiation and some mathematical shorthand especially the following:

$1\ \text{cm} = 10^4\ \mu\ (\text{micron}) = 10^8 \text{A}\ (\text{ang strom})$

$\exp(-X^2) \equiv e^{-x^2}$

QUESTIONNAIRE
Assignment XI
(To be answered by participants after reading assignment.)
(For complete instructions, see TOPICS May 1957.)

Col. 61 When will the greatest intensity of solar radiation be measured on a horizontal surface?
1. snow covered terrain and high values of precipitable water vapor
2. snow covered terrain and low values of precipitable water vapor
3. city conditions and high values of precipitable water vapor
4. city conditions and low values of precipitable water vapor

Col. 62 In order to determine the albedo of the whole earth by observation of the moon's dark-side illumination, measurements are necessary from
1. outside the earth's atmosphere
2. widely separated regions of the earth
3. areas during a total eclipse
4. Polar regions

Col. 63 If $I_o = 1.94$ ly min^{-1}, how much solar energy will be received on a horizontal surface outside the earth's atmosphere at New Orleans, La., during the day of the Vernal equinox?
1. 225 langleys
2. 600 langleys
3. 775 langleys
4. 950 langleys

Col. 64 From a meteorological viewpoint what is the relative importance of the variations in the earth's albedo as compared with variations in the solar constant?
1. one-fifteenth as important
2. one-fifth as important
3. five times as important
4. fifteen times as important

Col. 65 Variations in the "solar Constant" could be determined best by observations from
1. an earth satellite
2. rockets
3. constant pressure balloons
4. additional surface stations

Col. 66 Sudden ionospheric disturbance or radio fade-out is caused by
1. decreased F_2 - layer ionization due to sunspot activity
2. increased F_2 - layer ionization due to chromospheric eruptions
3. decreased D - layer ionization due to sunspot activity
4. increased D - layer ionization due to chromospheric eruptions

Col. 67 The type of solar energy responsible for aurora is
1. electromagnetic radiation
2. emitted particles
3. ultraviolet
4. infrared

Col. 68 What is the wave length of maximum intensity in solar radiation outside the atmosphere
1. 2225A
2. 2900A
3. 4740A
4. 6000A

Col. 69 Measurement of solar energy from the ground in wave lengths less than 2900A has been difficult because of atmospheric absorption by
1. water vapor
2. dust
3. ozone
4. clouds

Col. 70 Which of the following causes for changes in solar irradiation of a unit area horizontal surface on the planet Earth can be evaluated most accurately?
1. the quality of energy leaving the sun
2. the quantity of energy leaving the sun
3. the reflectivity of the atmosphere
4. astronomical and trigonometrical considerations

Network Cooperation at Worcester

LAWRENCE M. DYE, MIC at Worcester, Massachusetts, reports that the Gaslight Company has reproduced selected portions from the "Severe Weather Reporting Handbook" on light cardboard suitable for folding and carrying in a wallet or purse. The folded card also has the Weather Bureau's telephone number printed on it.

Department of Commerce Honor Awards

AT the Tenth Honor Awards Program in the Department of Commerce Auditorium at 3:00 p.m. on February 12, 1958, twenty-two Weather Bureau employees were given recognition for their outstanding contributions to the public service or for services of unusual value to the Department. Four employees were presented medals at the ceremony by the Secretary of Commerce, assisted by Mr. D.M. Little, Deputy Chief of Bureau. Other recipients will receive medals in ceremonies at their stations at a later date. Two Gold Medals for Exceptional Service, the highest honor award of the Department, and nine Silver Medals for Meritorious Service were granted this year. At the same ceremony length of service awards were presented to those employees in the Washington area who had completed forty years of service during 1957.

Mr. Hardy, Secretary Weeks and Mr. Little

Exceptional Service - Gold Medal

ERLE L. HARDY, Regional Administrative Officer, Fort Worth for outstanding contributions to the public service through leadership in the organization of hurricane preparedness plans and for demonstrated managerial effectiveness in his capacity as Special Assistant to the Chief of the Bureau.

Following Hurricane Audrey, which struck the Louisiana - Texas coast in June 1957, the Weather Bureau made a broad review of all hurricane preparedness plans. Mr. Hardy, along with local Weather Bureau officials, met with representatives of local and state governments, disaster agencies, the press, and radio and television staffs to promote more effective plans in all major coastal cities from Brownsville, Texas, to Key West, Florida. Mr. Hardy's high quality of leadership, his ability to enlist the cooperation of all officials concerned, and his tremendous background knowledge of all facets of the storm warning problem resulted in a series of outstandingly successful conferences which should be reflected in a maximum saving of life and property in future hurricane emergencies. After completing this project Mr. Hardy directed a management team dealing with major administrative reorganization at the NWRC, Asheville. He brought to this project the benefit of many years' executive experience, and displaying a high degree of proficiency in the diverse functions of management, he analyzed the problems, developed measures to better serve current and future needs, and furnished the necessary guidance to implement more effective practices and procedures. These very significant contributions were made by Mr. Hardy during the past year in addition to carrying out his responsibilities as Regional Administrative Officer in a highly creditable manner.

HARRY WEXLER, Director of Meteorological Research - for significant contributions to the science of meteorology in extending the knowledge of the upper atmosphere; for the direction and encouragement of a broad program of meteorological research; and for outstanding leadership in the 1957-58 International Geophysical Year program.

As Director of the Weather Bureau's Office of Meteorological Research, Dr. Wexler has directed a successful Weather Bureau investigation of meteorological problems associated with the development of atomic energy in the United States, a program for the development of numerical

weather prediction, an effective program of research on solar radiation and high atmosphere problems, and a program for further investigation of the general circulation of the atmosphere around the world. In addition Dr. Wexler has played an important role in the development of national and international programs for the current International Geophysical Year, and especially the scientific effort of the U. S. program in the Antarctic for which he is directly responsible as Chief Scientist of the U. S. National Committee for the IGY Antarctic Program.

Dr. Wexler, Secretary Weeks and Mr. Little

Meritorious Service -
Silver Medals

JAMES E. CASKEY, Chief of Editorial Section, Office of Meteorological Research - for extremely important accomplishments in providing leadership and editorial guidance to the Weather Bureau scientific publications program.

Mr. Caskey provides leadership and guidance to the Bureau's publications program, edits and publishes the Monthly Weather Review and Weather Bureau research and technical papers, reviews scientific and research articles and initiates action for their publication in scientific journals, and writes articles on meteorological subjects for encyclopedias and other outside media.

During the time Mr. Caskey has been Chief of the Editorial Section, the published research has been maintained at a high level of scientific quality and the Weather Bureau's reputation has been greatly enhanced by the results of its research which have appeared in Weather Bureau publications as well as those of scientific societies in the U. S. and foreign countries. An important aspect of the Weather Bureau's work is the means by which the results of scientific research become available to the Weather Bureau staff, to other agencies concerned with meteorology, and to the general public. From a small beginning in 1948 Mr. Caskey developed the Weather Bureau's publications program into a nationally recognized series of scientific presentations.

Mr. Caskey, Secretary Weeks and Mr. Little

GEORGE L. COURVILLE, MIC, WBAS, Caribou, Maine - for unusual competence and devotion to duty in successfully managing a station program in a remote location and under difficult conditions.

Mr. Courville has been MIC at Caribou for thirteen years. Under his capable leadership the station program has been developed and expanded through the years despite high personnel turnover caused by Caribou's remote loca-

tion and adverse winter weather.

The station program is well organized, yet sufficiently flexible to allow participation in special projects whenever the need arises. The entire staff takes pride in its service to the public for which the station has been frequently commended. The high morale at Caribou despite adverse operating conditions is a tribute to Mr. Courville's effective management.

EUGENE J. DeVEAUX, Meteorologist - Charleston, South Carolina - for valuable contributions to the very important storm surge and hurricane warning programs and for extremely competent performance of duties for many years.

Mr. DeVeaux has been engaged in independent research into the tidal situation along the South Carolina coast for the past several years. The results of his studies were published in the October 1955 Monthly Weather Review. He has also prepared charts and visual aids for use in lectures and other educational work, as well as for use in issuing area warnings. Other considerations in granting his award were his unusually competent performance of duties for the past ten years (particularly during hurricane emergencies), his valuable assistance to the MIC in all phases of the station program, and the fine work he has done in improving public relations for the Bureau in the Charleston area.

JOE R. FULKS, Meteorologist in Charge, WBO, Chicago - for extremely competent performance of duties for the past fifteen years, including valuable contributions to the public service through the direction of a highly effective program at Chicago.

Throughout his career in the Weather Bureau, Mr. Fulks has carried out his responsibilities in a highly creditable manner. During the past fifteen years he has served in a variety of important assignments, utilizing a combination of technical and administrative experience to perform a significant contribution to the Weather Bureau's mission. When the Master Analysis Center was established in Washington in 1942, Mr. Fulks was selected to head the technical program. Later that same year he was given full charge of the Center. In 1947 when the civilian and military were combined to form the WBAN Analysis Center Mr. Fulks was appointed Chief of that section. He served in this capacity until 1952 when he was awarded a WB scholarship to study meteorology at the University of Stockholm. Upon his return he served in the Central Office until March 1955 when he was selected for his present position in Chicago.

ROBERT E. HELBUSH, MIC, WBAS, Burlington, Vermont - for extremely capable performance of official duties in a variety of assignments and particularly for his excellent work as MIC at Burlington.

Throughout his Weather Bureau career Mr. Helbush has rendered extremely competent service. He has been MIC at Burlington since March 1955 and has done a remarkable job in improving the public service program. He is an effective organizer, operates a very smooth-running, efficient office, and with the wholehearted support and loyalty of his staff, renders an excellent service for the Weather Bureau.

Mr. Helbush is diligent, understanding of the people working under him, and highly interested in his work and those served by his office. He maintains a high level of technical efficiency and constantly seeks ways to improve the value of his service to the public.

VERNON T. HOUGHTON, Meteorologist, WBO, Pittsburgh - for a very valuable contribution to the public service through the direction of a highly effective Federal - State Flood Forecasting Service.

Mr. Houghton's excellent work at Pittsburgh for the past ten years has brought about a remarkable improvement in the flood forecasting program. His award was based on his timely and accurate warnings and the outstanding manner in which he has handled individual flood situations, the improved river stage forecasting procedures

Mr. Houghton, Secretary Weeks and Mr. Little

which he has developed, and the excellent relations he has maintained with the State, Corps of Engineers, and others concerned with river and flood problems. In addition he has improved the public's understanding of the river forecasting service through interviews, talks before civic groups, and visits to flood-threatened areas.

PAUL E. JOHNSON, formerly MIC, WBAS, Grand Rapids (retired January 31, 1958) - for sustained efficiency and devotion to duty for over fifty-one years in a series of assignments, including twenty-five years as MIC at Grand Rapids.

See article under "Retirements" in this issue of TOPICS for a resume of Mr. Johnson's career.

GLEN V. SACHSE, MIC, WBAS, Norfolk, Virginia - for exceptionally outstanding service in carrying out a complex weather program at Norfolk for the past four years.

Mr. Sachse's excellent work in improving the hurricane warning service proved very valuable during Hurricanes Carol, Edna, and Hazel in 1954. In 1955 he further strengthened procedures for hurricane service and increased dissemination of warnings in the Norfolk area. In 1957 Mr. Sachse played an important role in successfully organizing the hurricane preparedness conferences in the coastal states from Florida to Virginia. In addition to his very fine work in the hurricane warning program, Mr. sachse and his staff have developed an outstanding public service program at Norfolk.

SELS UNIT, Kansas City, Missouri - for important contributions to the advancement of tornado and severe local storm prediction. The group includes the following meteorologists: Donald C. House, Dansy T. Williams, Donald S. Foster, Joseph G. Galway, Robert G. Beebe, Ferdinand C. Bates, Harold L. Coleman, Jean T. Lee, Bernard W. Magor, Perry A. Wood, Charles F. Chappell, and Howard H. Hanks.

A comparison of tornado forecast statistics for the years 1953 through 1957 shows an outstanding improvement during 1956 and 1957. (See Tornado Forecast Verification, page 32, February 1958 TOPICS.) The impressive progress in tornado forecasting is attributed largely to the development of refined forecasting techniques and to the competent performance of SELS Center personnel under the leadership of Donald C. House.

Length-of-Service Awards

The following employees completed forty years of service during 1957.

Central Office
John J. Brennan
B. Francis Dashiell
Delbert M. Little
Olive M. Long
William C. McConnell
Von M. Summers
Lorenzo C. Walker

James J. Cassidy, Albany, N. Y.
Ralph H. Desmond, San Antonio, Texas
Samuel M. Goldsmith, Key West, Florida
Charles E. Hubbard, Salt Lake City, Utah
Clarence R. Kallquist, Chattanooga, Tenn.
Andrew P. Keller, Syracuse, N.Y.
James P. Molen, Greensboro, N.C.
Merton P. Mott, Providence, R.I.
Elbert A. Owen, Baton Rouge, La.
Matthew J. Peacock, Reading, Pa.

Fiscal Year 1958 Research Contract Program

THE Weather Bureau's research contract program for Fiscal Year 1958 is not as large as in the preceding year because of the tighter budget situation this year; nevertheless it continues to be an important aspect of the Bureau's over-all research program. Continued emphasis is being given to the investigation of hurricanes, tornadoes, and other severe local storms. The projects under contract during the current fiscal year are as follows:

Hurricane Research Contracts

University of Chicago
Numerical Hurricane Prediction

Investigation of numerical prediction of subtropical flow patterns and hurricane movement.

University of Chicago
Hurricane Cloud Physics

Cloud physics instrumentation, observation, and data analysis as part of the National Hurricane Research Project.

Florida State University
Hurricane Research

Investigations of hurricanes and other tropical storms as an adjunct of using facilities available through the National Hurricane Research Project.

Massachusetts Institute of Technology
Dynamics of Hurricanes

Studies of the dynamics of hurricanes through the development of mathematical models which will be tested by high speed computations using data collected by the National Hurricane Research Project.

University of Miami
Hurricane Precipitation Bands

Study of the spiral precipitation bands associated with hurricanes using information obtained from radar as well as other related meteorological information.

Woods Hole Oceanographic Institution

Hurricane Research
Studies of the combined meteorological and oceanographic factors relating to hurricanes.

University of Chicago
Prediction of Storm Surges
Investigations of problems associated with the prediction of storm induced water levels.

Texas A. and M. Research Foundation
Prediction of Storm Surges
Investigations of problems associated with the prediction of storm induced water levels.

Severe Local Storms Research Contracts

University of Chicago
Severe Local Storms Research
Analysis studies on a meso-scale of selected severe local storm situations.

Johns Hopkins University
Models of Atmospheric Vortices
Theoretical and experimental studies of intense vortices including quantitative experiments with vortices produced in the hydraulic laboratory.

University of Miami
Precipitation Amounts from Radar
Studies of the use of electrostatic storage tubes in the radar - rainfall amount problem and further studies utilizing photographic integration of the radar scope presentation for precipitation measurement.

University of St. Louis
Tornado Structure
Studies of the structure of tornadoes using data collected through tornado damage surveys and formulation of mathematical models of tornadoes.

Texas A. and M. Research Foundation
Radar Meteorological Studies of Tornadoes
Study of radar echoes associated with tornadoes and study of radar echoes associated with meso-scale circulation.

James Cook
Tornado Research Aircraft
Meteorological observations and measurements from a P-38 Aircraft in severe local storm situations using flight plans developed by the Weather Bureau.

University of Wisconsin
Studies of Differential Heating
Investigation of the differential heating of air columns and its effect on the occurrence of severe local storms.

Other Research Contracts

American Meteorological Society
Early Weather Records
Investigation of early weather records in the United States for use in reconstructing the occurrence of early weather events with special emphasis on severe storms.

Florida State University
Marine Climatological Studies
Studies to determine the representativeness of marine weather observations and the density of these observations required for climatological purposes.

Harvard University
Local Forecast Studies
Studies in forecasting and climatology for Boston and vicinity and assistance in solar radiation measurements program at the Blue Hill Observatory.

Massachusetts Institute of Technology
Extended Forecast Studies
Studies of methods of extended forecasting in cooperation with the Weather Bureau's Extended Forecast Section.

Scripps Institution of Oceanography
Carbon Dioxide Studies
Research on the volume and isotope abundance of carbon dioxide in the atmosphere and exchange across the sea surface.

New York University
Indirect Sounding of the Atmosphere
Investigation of methods of sounding the atmosphere continuously by indirect means.

University of California at Los Angeles
Los Angeles Air Pollution
Study of the feasibility of a research project to determine the three dimensional travel of Los Angeles air pollution. This project is supported by and conducted for the U. S. Public Health Service.

University of Stockholm
General Circulation of the Atmosphere
Investigation of various aspects of the general circulation of the atmosphere.

Iowa State College
Drought Study
Study of relationships between meteorological factors and agricultural drought as measured by evapotranspiration from bare soil and cropped soils under optimum soil conditions.

Kansas State College
Drought Study
Study and comparison of various methods which have been proposed for estimating evapotranspiration and agricultural drought from climatological data.

University of Missouri
Drought Study
Study of the manner in which the meteorological elements control agricultural drought by the movement of water vapor from the earth to the atmosphere under various conditions.

University of Wisconsin
Agriculture Climatological Studies
Cooperation in a project to

improve the use of climatological data as applied to agriculture.

University of Michigan Radiometer Evaluation

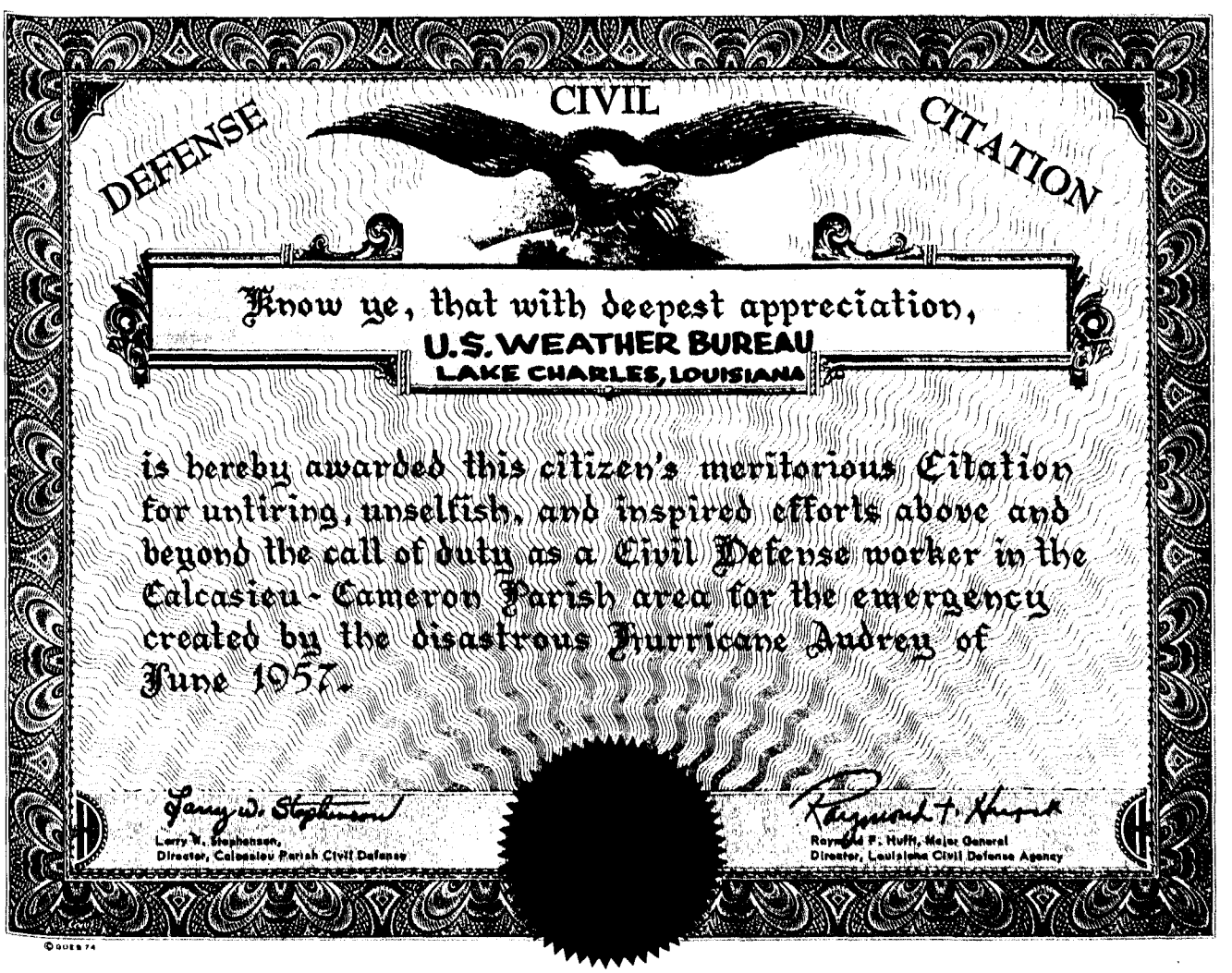
Tests and investigations to evaluate the Beckman and Whitley total hemispherical thermal radiometer.

Taxes

BEGINNING with the taxable year 1958, the Bureau of Internal Revenue will enforce regulations requiring taxpayers to report on annual tax returns all travel expenditures and reimbursement therefor. Accordingly, all employees who perform travel on official business are urged to maintain adequate records of travel expenditures and reimbursements. It is suggested that employees keep a copy of each Travel Voucher for a personal file and maintain, while traveling, a detailed record of the cost of hotel accommodations, meals, taxi fares, tips, etc., to support annual tax returns.

Award for Lake Charles, Louisiana

WBAS Lake Charles, Louisiana was awarded a citation for the long hours and conscientious service performed during Hurricane Audrey. The citation was presented on December 28 at a public ceremony held in the Parish Court House.



Time and Labor Saving Summaries

METEOROLOGIST IN CHARGE B. L. Wiggin, WBAS Buffalo, New York writes as follows concerning a newspaper article (quoted in part below) in the Buffalo-Courier-Express, January 1, 1958:

"The article in which I am quoted with great profusion did not cost a minute of my time. In fact, it was a pleasant surprise to read it on New Year's Day. All the quotes are accurate, yet none were made to this particular reporter. Here is how it happened -

"The Local Climatological Data for Buffalo wraps up the weather for each month as it occurs and while it is still fresh in mind. Weather highlights and comparisons with the records are put into the space provided for 'notes.' When desirable, a summation phrase which we try to make apt is used to describe the late departed month.

"To be sure no item is overlooked a monthly clipping file is kept. All weather items available to the staff in local and surrounding papers are clipped and saved for tally day when the LCD format is prepared.

"Space for notes is quite limited. So far, however, we have found enough to carry on the monthly LCDs as sort of subtotals of the year's weather to date. At any time we can quickly refer to them and determine the outstanding weather events of any preceding month, season, or year.

"In the reference clipping even the narrative summary of the Annual has been quoted which is good, since it was written with that application in mind.

"We find that this practice during the past 12 years has made many friends for us among press and newswire reporters. Equally important, we have been as well prepared to furnish immediate and rather complete answers on past weather as we have been to describe the present. The reporter who wrote the referenced clipping was more than pleased with the set of 1957 LCDs furnished by a harried and understaffed office on New Year's eve."

The clipping referred to by Mr. Wiggin contained a graph indicating highest, average, and lowest temperatures observed for each month of 1957. The article is headed "Weatherwise, 1957 Went Out Like Lamb in Buffalo" and went on in part as follows:

"In the matter of weather, 1957 went out like a lamb. It wasn't always thus.

"As Weatherman Barney Wiggin modestly describes it in his report for the year to the U. S. Department of Commerce, Buffalo and Western New York weather 'is varied and changeable, characteristic of the latitude.' City temperatures varied, in fact, 107 degrees of Fahrenheit - from 12 below zero on Jan. 15 to 95 above zero on June 18.

"Wiggin says some other things about his favorite subject in his annual roundup. For instance:

"The vigorous interplay of warm and cold air masses during the winter and early spring months causes one or more wind storms. One of these wind storms, described as 'a small tornado,' blew down a barn near South Newstead on April 29."

Also:

"Wide seasonal swings of temperature from hot to cold are tempered appreciably by the proximity of Lakes Erie and Ontario. Nevertheless, we had a high temperature of 87 on Aug. 3 and 'light frost was observed at Colden and Cowlesville' on Aug. 22. That meant frost every month but June and July."

Also:

"The spring season is cloudy and cooler than points not affected by the cold lake. Vegetation is retarded, a fact that protects it from late spring frosts. Fruit and berry farmers shudder when they recall the killing frost of May 17, 1957.

Also:

"Snow flurries off the lake begin in mid-November or early December. The flurries Nov. 21-22 added up to 36 inches around Hamburg, East Aurora and Orchard Park.

"Wiggin also notes that Western New York has more summer sunshine than other sections of the state and due to the stabilizing effect of the lake thunderstorms are relatively infrequent."

Then followed a resume of general weather conditions prevailing in Buffalo during each month of 1957. It would seem that writing a weather summary can now be added to the many "do-it yourself" feats.

Change in the Issuance of Bills of Lading

AS noted in MAL 75-57, the issuance of bills of lading in the Continental United States has been restricted to the Regional Administrative Offices and the Central Office. This arrangement was dictated by a number of circumstances, the prime reason being the urgent need for better control of an annual expenditure in excess of $500,000. Heretofore when a bill of lading was issued by a field station it was, in effect, equivalent to issuing a blank check on an account whose

balance was indefinite, but which had to be accounted for and payment made.

Too often in the past this account has been in danger of being over obligated, and at times it was difficult to make necessary adjustments. Bills of lading are direct obligations and must be accepted as authorized expenditures against Weather Bureau appropriations. By this new procedure, we will have a monthly accounting of transportation costs thereby making it possible to improve control of the allotment, and effect periodic adjustment as required.

The Central Office realizes that some change in station procedures will result because of this new requirement, and the cooperation of all stations is requested in working out their individual details.

At a later date we hope that studies being conducted Government wide will enable us to ease the complications brought about by this necessary change. In the meantime, however, we must as stated earlier continue our efforts to exercise stringent control of this large expenditure, and see no alternative but the arrangement put into effect by MAL 75-57.

Tapes and Tape Recordings

A number of MICs have secured the cooperation of radio stations to prepare tape-recorded interviews for use by the stations at appropriate intervals. The recordings range in time from one minute to 15 minutes as determined by the needs of each broadcast station. Some officials prefer to confine each recording to a separate subject, such as tornado forecasts, tornado warnings, community storm warning networks, or tornado safety rules. As a rule, an MIC requests an extra tape which the Weather Bureau office loans to organizations, including schools and civic organizations. The availability of such recordings on a loan basis is publicized by the radio station(s) and the response has been gratifying.

Pre-cut teletypewriter tapes are another type of "recording" being used by some offices that have local teletypewriter loops. Tapes on various subjects including tornado safety rules, the meaning of hurricane watch, etc., are cut in readiness for use on the local loops immediately after applicable forecasts or warnings have been transmitted. This is considered a desirable means of overcoming the problem of radio and television stations not being able to locate public information material in their files for immediate use when needed.

Any office wanting assistance for the preparation of pre-cut tapes or tape recordings should feel free to send a preliminary script to the Central Office, F&SR Division, for review.

Length of Service Awards

40-Year Awards

Escanaba, Mich. WBO
Sylvester E. Decker

30-Year Awards

Central Office
George G. Rabbitt
Alver E. Sik
Evansville, Ind. WBAS
Stanley W. Rampy

20-Year Awards

Albuquerque, N. Mex.
Mary Helen Marshall
Central Office
Jeff D. Ardoin
Madeleine H. Christian
Norman A. Matson

10-Year Awards

Brownsville, Tex.
Gifford H. Turner
Buffalo, N. Y. WBAS
Lester M. Palmer
Central Office
George P. Casely
Colby A. Foss
Guy H. Gray, Jr.
Marshall Kathan
Fern D. LeBlanc
Howard R. Tatum
Charles F. Thomas
Fort Worth, Texas RAO
Mary S. Cotten
Hartford, Conn. WBAS
John Laban
New York, N. Y. AWP
Herbert E. Chadwick
San Diego, Calif. WBAS
Max P. Vander Horck
Tampa, Fla.
Donald M. Schuler

Pilot Report of the Year

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PACKED THRILLER 8OMSL

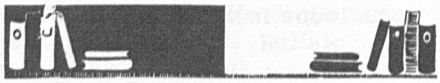
Our Very Young Scientists and Their Rockets

WITH the advent of the sputniks and our own Explorer, those of us with teenage boys (and even girls) have been faced with the problem of curbing the dangers of amateur experiments in rocketry. While we all want to do everything possible to foster and encourage interest in the physical sciences, at the same time we are more interested in keeping our youngsters alive. The ideal way to capitalize on the youthful interest in rocketry is to find adult rocket specialists willing to supervise teen-age experimenters.

In addition to this, we felt being meteorologists that we would like to know something about rockets ourselves to keep up with Junior. We found that the National Bureau of Standards has published a bibliography on the subject up through 1950. You can get it from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. by asking for NBS Circular 509, "Bibliography of Books and Published Reports on Gas Turbines, Jet Propulsion, and Rocket Power Plants" (cost; 25¢). There is also a more recent addition, "Supplement to NBS Circular 509" for 50¢. A few of the many interesting references are the following: "Characteristics of the Rocket Motor Unit based on the Theory of Perfect Gases" by F. J. Malina, J. Franklin Institute, Vol. 230, p. 433 (1940); "Thrust of Power Rocket Charges" by R. Healy, Astronautics No. 51, p. 6 (1941); "The Rocket Research of Dr. R. H. Goddard" by A. Africano, J. Am. Rocket Soc. No. 71 p. 28 (Sept. 1947); Hazards Involved in the Use of Rocket Propellants" by M. P. Dunnam, CADO Tech. Data Digest, vol. 15, p. 30 (Nov. 1950); Equations of Motion of a Rocket" by F. R. Gantmacker and L. M. Levin, NACA Tech. Memo No. 1255 (1950).

"Operator! Operator! I've been cut off!"

Drawing by Mulligan, © 1958 The New Yorker Magazine, Inc.



Publications Corner

IN this column are listed the publications that were issued and distributed to field stations since June. Prices opposite titles mean that the publications are sold by the Superintendent of Documents.

Causes and Characteristics of Thunderstorms and other Atmospheric Disturbances, 9th Interim Report. 1957. 24 p.

Climate of the States. Idaho (Reprint). 1957. 8 p. 10 cents; Hawaii (Reprint). 1957. 8 p. 5 cents.

Circular II. Wage Rates for Substation and Second-Order Station Personnel. 1957. 82 p.

Climatography of the U. S. No. 10-77. Climatic Summary of the U. S. (1930). Sec. 77; Eastern Tennessee. (Revised and Reprinted). 1957. 22 p. 20 cents.

General Summary of Tornadoes 1956. 46 p. 10 cents.

Hurricane Audrey, June 24-27, 1957. Preliminary Report. 1957.

Letter Supplements:

5603. Part II (Revised). Hurricanes Entering U. S. Mainland, 1921-1956.

5610. Number of Tropical Storm Tracks (Eye) Passing through States By 5-year Periods.

5612. Total Number of No. Atl. Tropical Storms and Number of these Reaching U.S. Coast by 5-year Periods.

Mean Temperature and Precipitation for:

5709. North Carolina
5710. Georgia
5713. Maryland & Delaware
5714. New Jersey

5715. Virginia
5718. Kansas
5719. Ohio
5720. Wisconsin
5721. Minnesota
5722. Arkansas
5723. Michigan
5724. North Dakota
5725. South Dakota
5726. Alabama
5727. Kentucky
5728. New Mexico
5729. South Carolina
5730. Arizona
5731. Colorado
5732. Iowa
5733. Tennessee
5734. Louisiana
5735. Montana
5736. Oregon
5737. Washington
5738. Wyoming
5739. Illinois
5740. Nebraska

5711. Dates of 1st and Last Tropical Storms and Hurricanes for Each Year 1887-1956.

5716. U.S.W.B. Coastal Warning Display System.

5717. U.S.W.B. Storm Warning Display System.

5741. Weather Records in Private Litigation. 4 p.

Manual of Card Punching. 6th ed. (1956). Change No. 5. 1957. 18 p; also change No. 6. 1957. 12 p.

Manual of Surface Observations abridged. For CAA Stations. Revised to include changes 1-4. 1957. 144 p; Also for SAWRS and A-Type Second-Order Stations. Revised to include changes 1-4. 1957. 78 p. and change 5. 1957. 10 p.

Manual of Radar Meteorological Observations. 3rd ed. Change No. 1. 1957. 6 p.

Mariners Weather Log. Vol. 1. No. 4, July 1957. 36 p. 20 cents; No. 5, Sept. 1957. 36 p. 20 cents; No. 6, Nov. 1957, 52 p. 20 cents.

National Hurricane Research Reports: No. 6. A Mean Atmosphere for the West Indies Area. 1957. 20 p.; No. 7. An Index of Tide Gages and Tide Gage Records for the Atlantic and Gulf Coasts of the U. S. 1957. 108 p.; No. 8. Pt. 1. Hurricanes and the Sea Surface Temperature Field. Part II. The Exchange of Energy Between the Sea and the Atmosphere in Relation to Hurricane Behavior. 1957. 52 p; No. 9 Seasonal Variations in the Frequency of North Atlantic Tropical Cyclones Related to the General Circulation. 1957. 36 p.; No. 10. Estimating Central Pressure of Typical Cyclones from Aircraft Data. 1957. 16 p.; No. 11. Instrumentation of National Hurricane Research Project Aircraft. 1957. 76 p.; No. 12. Studies of Hurricane Spiral Bands as Observed on Radar. 1957. 16 p.; No. 13. Mean Soundings for the Hurricane Eye. 1957. 12 p.

Preliminary Report on Tropical Storm "Esther," Sept. 16-19. 1957. 22 p.

Research Paper No. 40. Principal Tracks and Mean Frequencies of Cyclones and Anticyclones in the Northern Hemisphere 1957. 64 p. $1.00.

Radio Telephonic Hurricane Warnings in the Caribbean Area. (Annex #1 to Weather Service for Merchant Shipping. 7th ed. 1957.) 1957 4 p.

Radiosonde Observation Computation Tables and Diagrams. 1957. 14 p. 25 cents.

Storm Warning Facilities Charts: Morgan City, La., to Brownsville, Tex. 1957. 2 p. 5 cents; Point Conception, Calif., to Mexican Border. 1957. 2 p. 5 cents; Eastern Florida. 1957. 2 p. 5 cents; Morgan City, La., to Apalachicola, Fla. 1957. 2 p. 5 cents. Canadian Border to Eureka, Calif. 1957. 2 p. 5 cents; Eureka to Point Conception, Calif. 1957. 2 p. 5 cents; Montauk Point, N. Y. to Manasquan, N. J. 1957. 2 p. 5 cents. Terminal Forecasting Reference Manuals: Moisant International Airport, New Orleans, La. 1957. 14 p.; Dress Memorial Airport, Evansville, Ind. 1957. 12 p.; Quad-City Airport, Moline, Ill. 1957, 12 p.

Technical Paper 29. Rainfall Intensity Frequency Regime. Part 1. The Ohio Valley. 1957. 48 p. 30 cents; 30. Tornado Deaths in the United States. 1957. 54 p. 50 cents; 32. Upper-Air Climatology of the U. S. Part 1. Averages for Isobaric Surfaces. Height. Temperature, Humidity and Density. 1957. 204 p. $1.25.

The Aneroid Barometer. 1957. 12 p. 15 cents.

NEW MIC'S

Grand Rapids, Mich.

FRED A. BAUGHMAN, now Supervising Forecaster at Cincinnati, Ohio, has been selected for the MIC vacancy at Grand Rapids. He will succeed Mr. Paul E. Johnson, who retired January 31, 1958.

Mr. Baughman, who was born in Yankee Springs, Michigan, in 1907, entered the Weather Bureau on September 16, 1925, as a Minor Observer at Lansing. Subsequent assignments were at Omaha, Sault Ste. Marie, Pomona, Cleveland, Washington National Airport, Elizabeth City, New York and Cincinnati.

Elko, Nevada

CHARLES T. COCHRANE of WBAS Salt Lake City, Utah has been selected to succeed Ellison S. Mark as Meteorologist in Charge at WBAS Elko, Nevada.

Mr. Cochrane is 38 years of age. He entered the Bureau as Meteorologist in July 1951, with assignments at Wake Island, San Francisco, California and Salt Lake City, Utah. During World War II he served as Forecaster in the Army Air Corps following completion of the Enlisted Forecasters School at Chanute Field, Illinois. He has attended Brownsville Junior College, Bucknell University, and Syracuse University.

RETIREMENTS

Edna N. Anderson

EDNA N. ANDERSON, Property and Supply Clerk in the Salt Lake City Regional Administrative Office, retired February 28 after more than fifteen years of government service.

A native of Missouri, Mrs. Anderson was born in St. Louis, where she attended high school and business college. She was employed in private industry for ten years before giving up her secretarial career in 1916 to be married.

Mrs. Anderson began her government career with the Treasury Department at Atlanta on December 18, 1942. In September 1943 she transferred to the Atlanta Weather Bureau Regional Office and served in various assignments there until January 1950, except for seven months at the Climatological Section Center in Atlanta during 1948. In January 1950, Mrs. Anderson accepted an assignment in the Salt Lake City Regional Office, where she worked until her retirement.

Combining a warm, pleasant personality with the ability to perform creditably any assigned task, Mrs. Anderson has won the admiration and respect of a host of friends and associates during her career in the Weather Bureau.

Following retirement Mrs. Anderson will make her home at 2025 Peachtree Road, N. E., Atlanta, Georgia, where she will be near her son and daughter and her grandchildren.

James E. Brown

JAMES E. BROWN of the Central Office General Services Section retired February 28 after more than thirty-nine years of government service.

Mr. Brown entered the Weather Bureau on December 4, 1922, by transfer from the Navy Department. Through the years he has served with an excellent record as chauffeur, laborer, truck driver, and forklift operator.

Following retirement Mr. Brown plans to do considerable traveling but will maintain his residence at 3007 South 19th St., Arlington, Virginia.

Marvel G. Chinn

MARVEL G. CHINN, Rawinsonde Specialist at Grand Junction, Colorado, retired January 31 because of disability after more than twenty-seven years of government service.

Mr. Chinn was born in Wellington, Utah. He graduated from Rifle, Colorado High School and attended Denver University, Western State College of Colorado, Colorado State Teachers College, and the University of Southern California. Before coming into the Weather Bureau, he was a teacher, high school principal, and coach.

Mr. Chinn gave up his teaching career to enter the Bureau in May 1930 as a Junior Observer. His entire service has been at Grand Junction.

Mr. Chinn plans to remain in Grand Junction where friends may contact him at 2329 South Broadway.

Robert E. Davidson

ROBERT E. DAVIDSON, Chief of the Drafting Section in the Central Office, retired January 31 after more than thirty-seven years of government service.

Mr. Davidson was born in Wilmington, Delaware, and moved to Washington with his parents at an early age. He attended D. C. public schools and upon graduation from elementary school at the age of 14, he commenced earning his livelihood as a farm hand. Three years later he took up carpentry, following this trade until 1920 when he entered the Weather Bureau as a drafting clerk. Working full time and attending school at night, he furthered his education, completing high school as well as pursuing special training in drafting and architectural drawing.

Mr. Davidson progressed through a series of assignments in the Drafting Section and in 1937 he was promoted to Chief of Section, serving in this capacity until his retirement.

Mr. and Mrs. Davidson will maintain their residence at 5411 Galena Place, N. W., Washington, D. C., but plan to do considerable traveling in the States during the next year.

Paul E. Johnson

A career of over fifty-one years of devoted public service came to a close on January 31 when Paul E. Johnson retired as Meteorologist in Charge at Grand Rapids, Michigan.

A native of Elizabeth, New Jersey, Mr. Johnson entered the Weather Bureau as a messenger boy at Atlantic City in 1906. After seven years of competent service, he was rewarded in 1913 with a promotion to assistant observer and transfer to Marquette. His Weather Bureau service was interrupted by World War I in 1917. During his military service, he attained the rank of sergeant in the Signal Corps, and upon his return to duty in 1919, he accepted an assignment at Ellendale, N.D. Mr. Johnson transferred to Chicago in 1921, serving there until 1932 when he was selected for the MIC position at Grand Rapids.

Mr. Johnson's career spanning fifty-one years and four months

is a distinct achievement for its length alone, but in addition it embraces a multitude of contributions to a more effective public service. As a fitting climax to his Weather Bureau career, Mr. Johnson received the Department of Commerce Silver Medal for sustained efficiency and devotion to duty for over half a century.

Mr. Johnson has been active in civic affairs and professional societies in Grand Rapids. Following a trip to California to visit relatives, he plans to return to Grand Rapids where he will resume his work with the Civil Defense Organization, as well as enroll at a local college to study history and foreign languages. He will keep physically fit endeavoring to bring his golf score down and his bowling score up. Friends may continue to contact the Johnsons at 742 College Avenue, S.E., Grand Rapids 3, Michigan.

William J. Knott

ON October 16, 1916, William J. Knott, a young man of 17, reported for duty as a messenger boy in the Central Office. On February 28 retirement from his assignment as Lithographic Pressman in the Central Office Printing Section terminated his career of over forty-one years' service.

Mr. Knott served as a messenger boy until March 1918 when he was granted military furlough to join the Navy. Shortly after his return to duty in July 1919, he commenced his printing career as a folder and feeder in the Printing Section. In the years that followed he progressed through a series of assignments, and in 1944 he became a full-fledged lithographic pressman, serving in this capacity until his retirement.

Mr. Knott has no firm plans for after retirement—except a trip to Florida and perhaps Mexico in the near future. For the present, friends may continue to contact him at 6817 Georgia Avenue, N.W., Washington, D. C.

Benjamin E. Reed

BENJAMIN E. REED'S retirement on January 31 terminated a career of more than half a century of communications work which commenced in 1906 when he became a messenger boy for Western Union at the age of thirteen.

Mr. Reed was born in Louisiana, Missouri, and attended public schools there. He spent three years as a messenger boy in his home town before becoming a full-fledged telegrapher and manager of the Webster City, Iowa, Western Union office at the age of sixteen. After a year's experience he moved on to a more important assignment in Chicago. He left Western Union in 1910 to go with Postal Telegraph. He was associated with that company for the next twenty-seven years except for military service during World War I. Mr. Reed came to the Weather Bureau on November 8, 1937, as a telegrapher and continued his work in communications until retirement on January 31 from his position in the Synoptic Section of the Forecasts and Synoptic Reports Division.

Mr. Reed carries with him many rich memories of his experiences as a telegrapher. These recollections include such history-making events as front-line messages he transmitted during World War I, descriptions of memorable happenings he transmitted such as the "long-count" fight between Dempsey and Tunney, the nominations of presidential candidates, and most recently President Eisenhower's inaugural ceremony in 1957.

Mr. Reed has been very active in the welfare services of the American Legion, the Veterans of Foreign Wars, and in volunteer work for the Veterans Administration hospitals. He was Commander of Commerce Post No. 45 of the American Legion in 1951-52, Post Chaplain for twelve years, Department Chaplain of the District of Columbia Department of the VFW for ten years, and Service Officer for both the American Legion and the VFW. He holds a certificate for 1,000 hours of volunteer work at Mt. Alto VA hospital in Washington. These activities in the interest of helping others with their problems reflect the high ideals for which Mr. Reed is admired and respected by a wide circle of friends and associates.

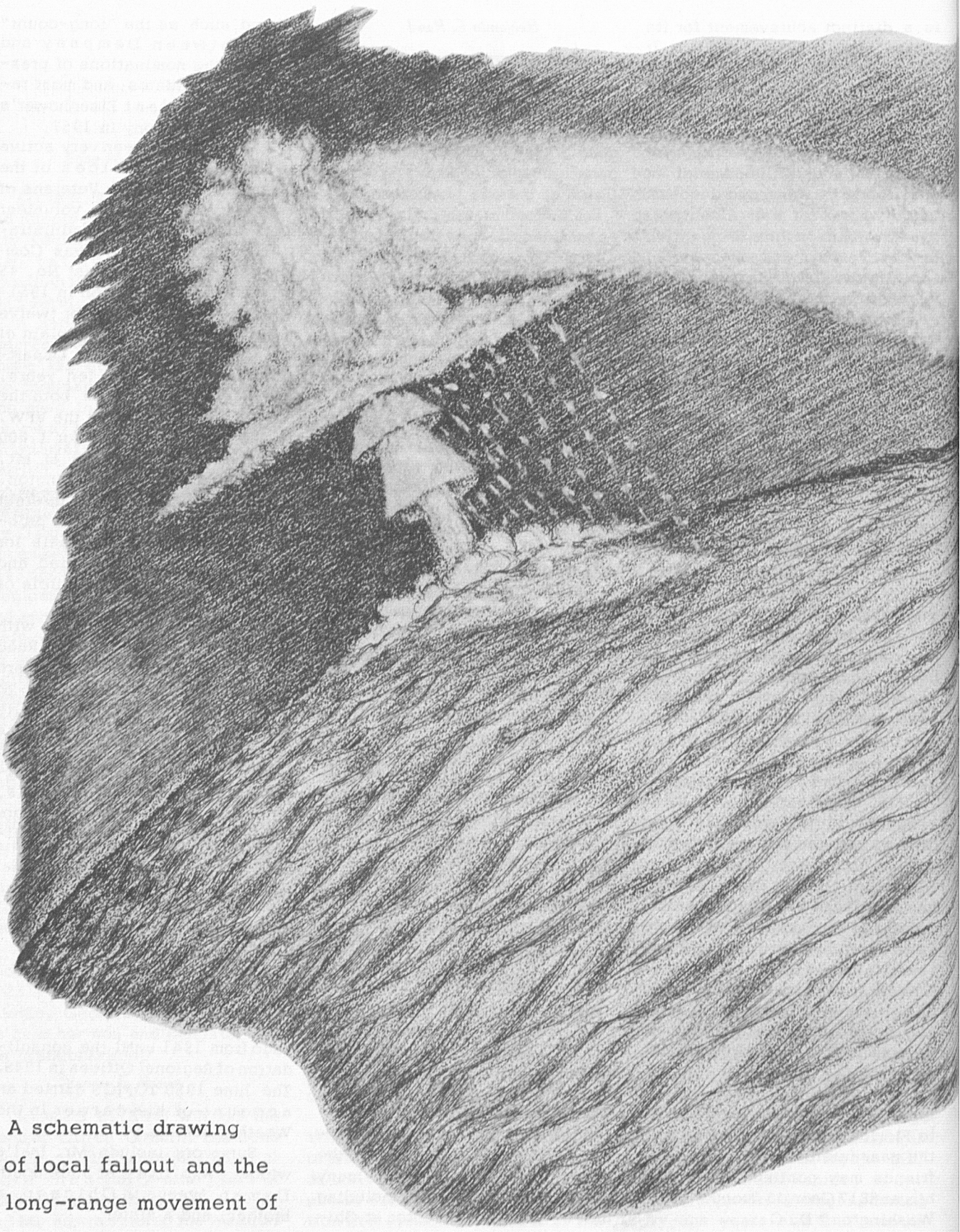
After a leisurely vacation with relatives in Missouri, Mr. Reed will return to Washington where he is maintaining his residence at 3725 Macomb St., N. W. He plans to continue his work as Service Officer for the American Legion and the VFW and his volunteer work at the VA hospitals, as well as spend a great deal more time with his son and grandchildren in nearby Virginia.

Vincent E. Jakl

VINCENT E. JAKL who retired from the Bureau May 31, 1950, died February 14 at his home in Chicago at the age of 77.

During his more than forty-nine years of service with the Bureau, Mr. Jakl served in many important assignments including that of Regional Director at Chicago from 1941 until the consolidation of Regional Offices in 1949. The June 1950 TOPICS carried an account of his career in the Weather Bureau.

Survivors include Mr. Jakl's widow, who lives at 9904 South Damen Avenue in Chicago, a brother, and a sister.



A schematic drawing of local fallout and the long-range movement of radioactive debris (see pages 39-41).

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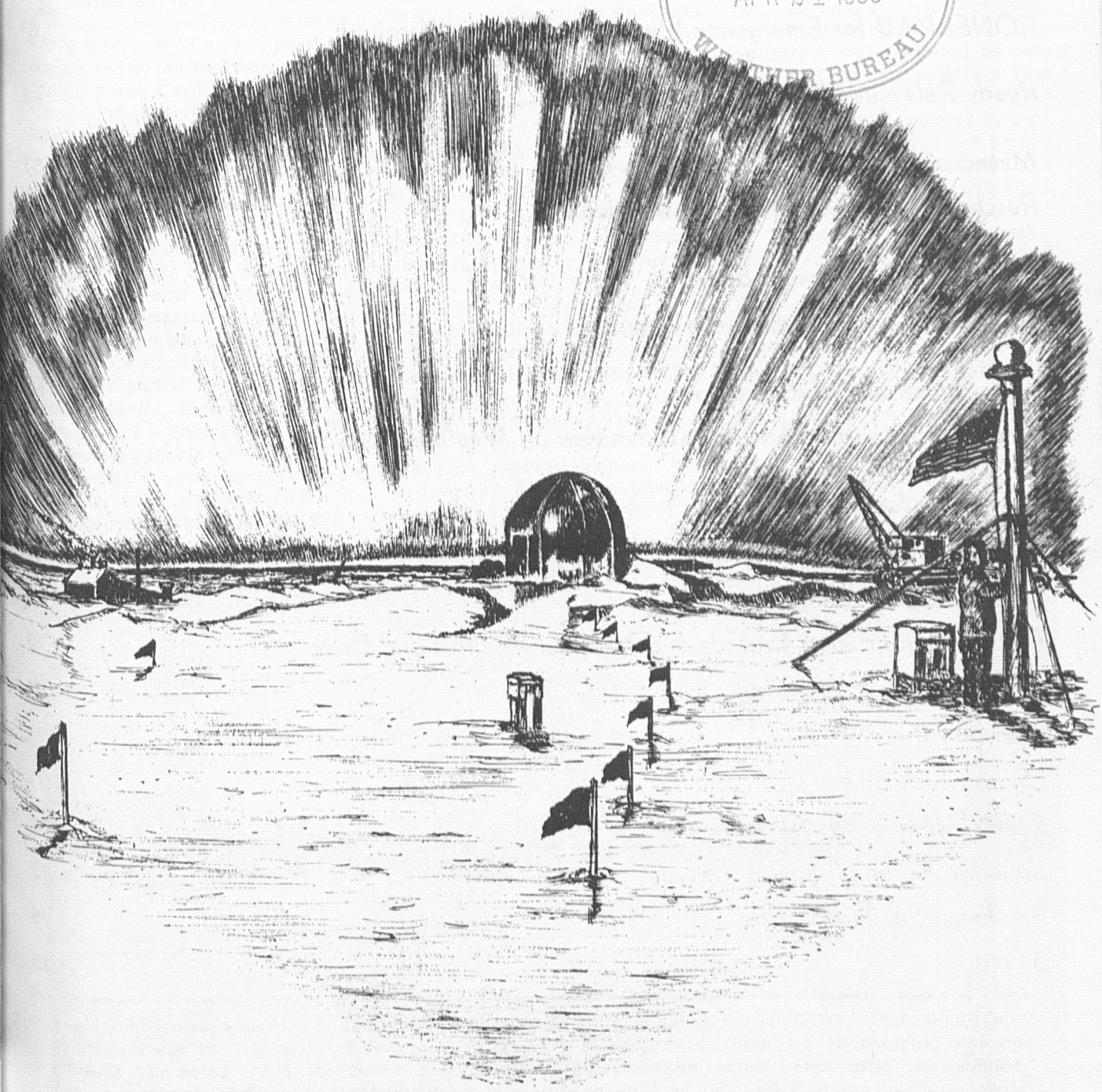

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WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information 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.

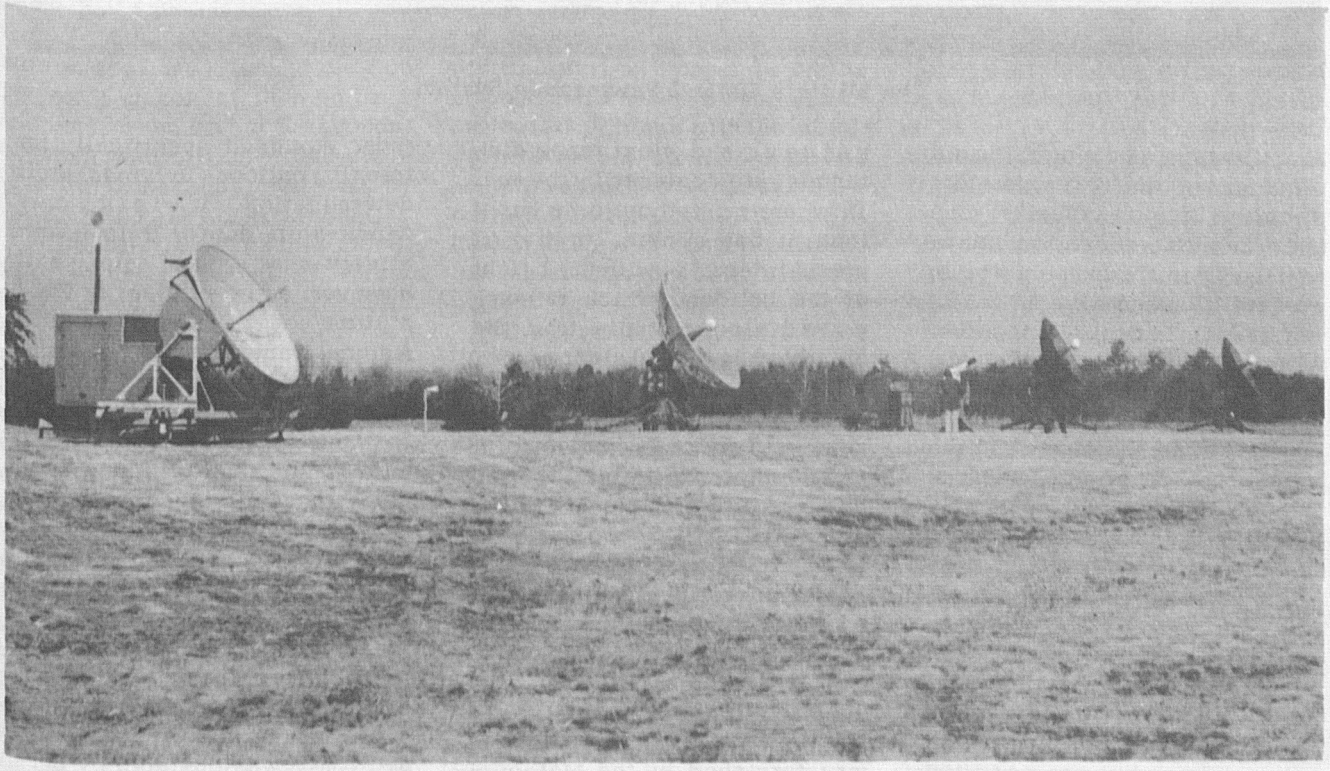
Upper-Wind Test Project

A series of comparative upper-wind observations were taken early this year in a joint program conducted by the Weather Bureau, the Air Force Cambridge Research Center, the Army Signal Engineering Laboratory, and the Meteorological Service of Canada. A temporary site having a suitable exposure for the tracking sets was selected on Andrews Air Force Base. Joint observations were taken with all sets tracking on the same train. Rawin tracking was supplemented by theodolite observations whenever cloud and weather conditions permitted. The test period was divided into two phases. In the first phase, January 17 - February 1, all cooperating agencies participated in twice-daily observations scheduled at 0000 and 1800 GCT. In the second phase, February 2 - March 31, the Weather Bureau and the Air Force Cambridge Research Center participated in routine observations scheduled at 0000 GCT daily, and in addition observations taken on days when jet-stream wind conditions prevailed over the Washington area.

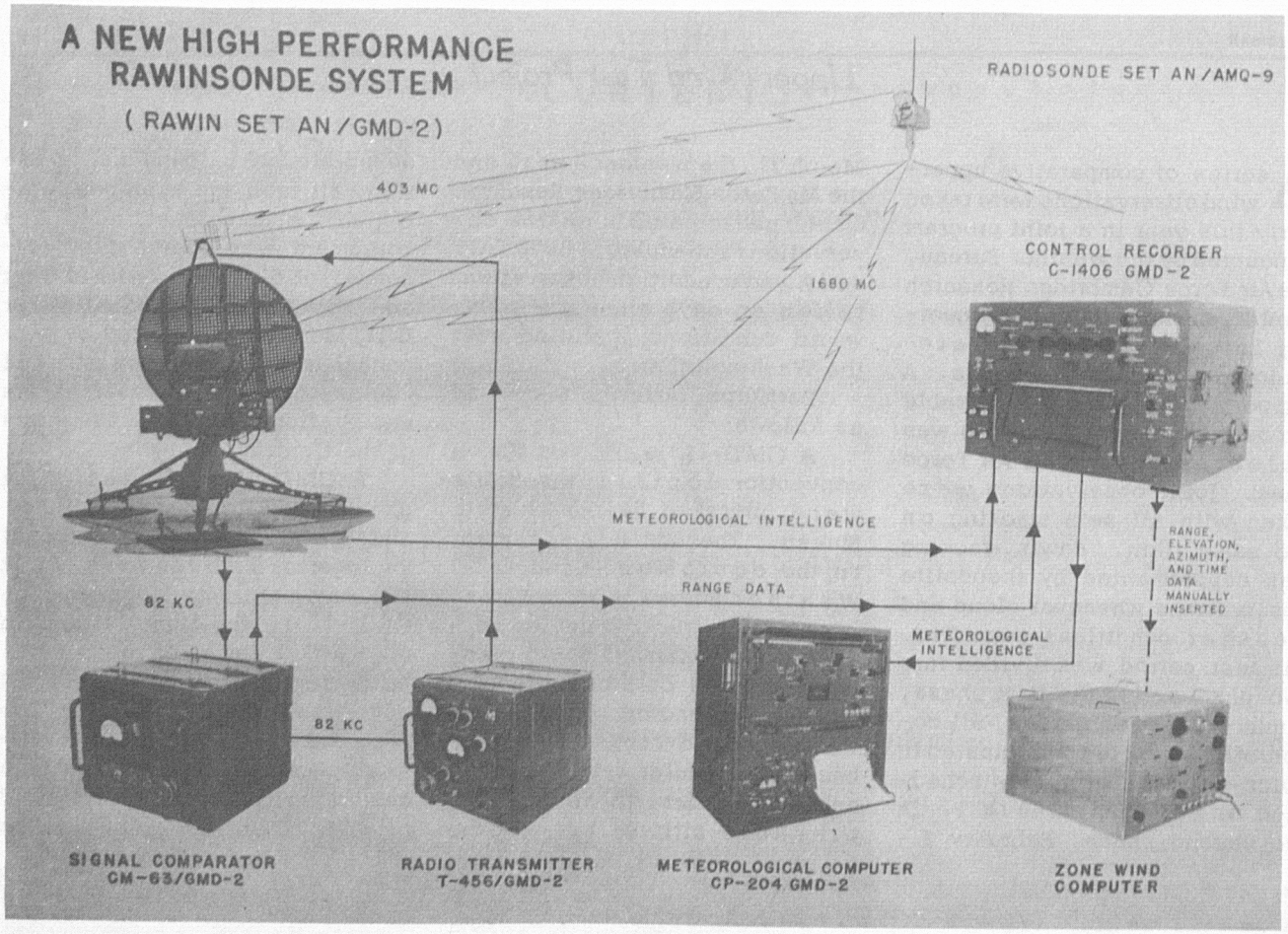
Participation in the tests was as follows:

A GMD-1A rawin set and a conventional optical theodolite were furnished by the Weather Bureau. The GMD-1A is similar to the equipment used at 53 Weather Bureau field stations. It is a self-tracking device with elevation and azimuth angle readings recorded on a paper tape at one-minute, or other preset intervals. Wind computations are based on angular readings, and on height data taken from the pressure-altitude curve of the associated raob. In normal operation, all raob and wind computations are made by observers. The equipment was operated by personnel of the Observational Test and Development Center, Silver Hill, Maryland, assisted by personnel from the Instrumental Engineering and the Observations and Station Facilities Divisions of the Central Office.

A GMD-1B rawin set and a phototheodolite were furnished and operated by the Army Signal Engineering Laboratory, Fort Monmouth, New Jersey. The GMD-1B is the latest model in the GMD-1 series of rawin sets. It is similar in appearance and operation to the GMD-1A. The phototheodolite is a laboratory instrument which incorporates a camera that photographs the field of view of the telescope and the



Left to right: Canada's Decca radar, WB's GMD-1A, ASEL's phototheodolite, ASEL's GMD-1B, ASEL's and AFCRC's GMD-2.



The Military GMD-2 Rawinsonde System

angular scales each time a reading is taken. Two operators track the balloon visually, one operating the elevation handwheel. Data are computed as in a conventional rabal.

A GMD-2 rawin set, together with a zone wind computer, and a meteorological data computer, were supplied by the Army Signal Engineering Laboratory and the Air Force Cambridge Research Center. This equipment is relatively new and as yet is untried in routine observations at field stations. The GMD-2 rawin set is essentially a GMD-1B to which has been added transponder capabilities. A signal transmitted from the GMD-2 is picked up by a receiver in the radiosonde and retransmitted with the usual raob data. Elevation and azimuth angular values, and slant range distances, are measured by the set. They are printed out on a paper tape at one-minute, or other preset intervals, with the height of the balloon, which is computed electronically from the elevation angle and slant range. Wind directions and speeds are computed electronically in a zone wind computer from angular and slant-range values. Raob data fed directly into the meteorological data computer are evaluated electronically, with values printed out in digital form on paper tape. Personnel from the Air Force Cambridge Research Center, Bedford, Massachusetts, operated this equipment.

A Decca wind-finding radar was furnished by the Meteorological Services of Canada. The Decca radar is a primary-type radar designed specifically for tracking balloons in winds-aloft determination. It yields only winds-aloft data. It is a relatively new type of equipment; however, a few sets are in field station use in other countries. A signal transmitted by the radar is returned by a reflector attached to the balloon. The device is manually operated. Elevation and azimuth angular values, and slant range distances are read from dials within the set at one-minute, or other preselected intervals. Wind directions and speeds are computed by an observer from angular readings and slant range values. Heights are computed from the elevation angle and the slant range. This equipment was operated by personnel from the Meteorological Service of Canada assisted by

personnel from the Decca Radar Inc.

The observed data for all observations taken during the first phase of the test and for selected observations taken during the second phase were punched on cards. From these cards, wind data and summaries were derived by machine methods. A report including analysis and summary of the results will be published.

CONELRAD for Emergency Weather and Flood Warnings

CONELRAD, a system devised for alerting the nation to an enemy aircraft attack, is now available for broadcasting emergency severe weather or flood warnings.

On January 6, 1958 the Federal Communications Commission and the U.S. Air Force authorized all radio and television stations in the United States to use the CONELRAD alert signal to preface the broadcast of an emergency weather or flood warning when requested to do so by the local Weather Bureau office.

The CONELRAD ALERT SIGNAL is designed to alert all listeners to the CONELRAD alert message which follows the signal. This signal is given by turning off the station's power (sound only on TV) for 5 seconds, then on for 5 seconds, then off for 5 seconds; and then transmitting a 1000 cycle tone for 15 seconds, followed by the CONELRAD ALERT MESSAGE.

The purpose of this signal procedure is two-fold. First, many broadcast stations, public safety and emergency agencies, schools, industrial plants, transportation and other business concerns, farms, recreational areas, etc., are equipped with CONELRAD receivers, which are automatically activated by this signal and alert the listener for the emergency message which follows. Second, the signal attracts the attention of anyone listening to a radio or watching television by interrupting the program and giving the weather or flood warning before returning to the program.

The CONELRAD ALERT SIGNAL will be used only when weather or flood conditions pose an immediate threat to life and property and time is of the essence. Once the Meteorologist in Charge has completed arrangements with the broadcasters in his area of warning responsibility the use of the CONELRAD alert signal for warnings is simple. When a decision is reached that the weather or flood situation warrants use of CONELRAD, a request for such use is transmitted to the radio and TV stations in the threatened area with the text of the warning message. Broadcast stations can then be expected to take immediate action, and thereby give the warning widespread distribution.

This simplification of the procedure, from Weather Bureau office to broadcaster to widespread distribution, all depends on the arrangements made by the Meteorologist in Charge with the broadcasters in his area. To date, many Weather Bureau offices have completed arrangements for use of CONELRAD, and many patterns for implementation have been reported.

The best method appears to be the use of the "Skywave Key Station" as the initial distributor. This is a radio station, on the air 24 hours a day, and broadcasting over a large area, which other broadcasting stations are required to monitor for the CONELRAD ALERT SIGNAL AND WARNING MESSAGE.

Weather Bureau offices having a Skywave Key Station in their area of responsibility can then distribute the warning to all broadcasters in the area of responsibility by requesting the Skywave Key Station to use the CONELRAD ALERT SIGNAL before broadcasting the warning. Should the warning require a limited distribution, individual stations can be requested to use the signal preceding the warning, or the message worded so that broadcasters monitoring the Skywave Key Station will readily recognize whether the warning is of concern to their broadcast area. The effective means of using the Skywave Key Station is limited by the number available, but the Federal Communications Commission is now planning to increase the number of Skywave Key Stations with the specific needs of the Weather Bureau in mind.

In areas where use of a Skywave Key Station is not available or desirable, other patterns have evolved. Meteorologists in Charge in making arrangements have found many stations monitor a 24 hour station in their city although it is not designated as a Skywave Key Station, and perhaps two or three calls will cover all broadcasters in their area. Others, having local public teletypewriter circuits have arranged for broadcasters on the circuit to relay the message to other broadcasters not monitoring a local station, or to monitor a station which is on the public circuit. Many ingenious arrangements have been worked out by the broadcasters to assist the Weather Bureau in using the facilities of CONELRAD. The enthusiasm and cooperation of the broadcasters have been a contributing factor in most of the plans reported by the Meteorologists in Charge to date.

It is not necessary to have a CONELRAD receiver to receive the signal and warning, but it is necessary to have your radio or

TV on to do so. With a CONELRAD attachment to a radio or TV or a separate CONELRAD receiver one can silence his receiver, yet receive emergency warnings of weather, flood or enemy attack when broadcast. The attachments are wired to actuate a bell, flashing light, or turn the volume up. Many of these receivers are now on the market ranging in price from $15 for receivers with alarms that receive only the CONELRAD signal and are attached to the user's radio or TV set, up to $150 for complete radio receivers with built in CONELRAD alarm. Any ordinary aural broadcasting receiver can be adapted for the automatic receipt of the attention signal at a modest cost for the parts and labor.

However, the greatest value of the CONELRAD alert is dependent on the ability of radio manufacturers to include a low-cost automatic alarm feature in radio and television receivers. The cooperation of the broadcasters and the Weather Bureau in publicizing and using this means of warning is an effective means of stimulating public interest in the use of CONELRAD receivers, and encouraging manufacturers to incorporate this feature in standard receivers.

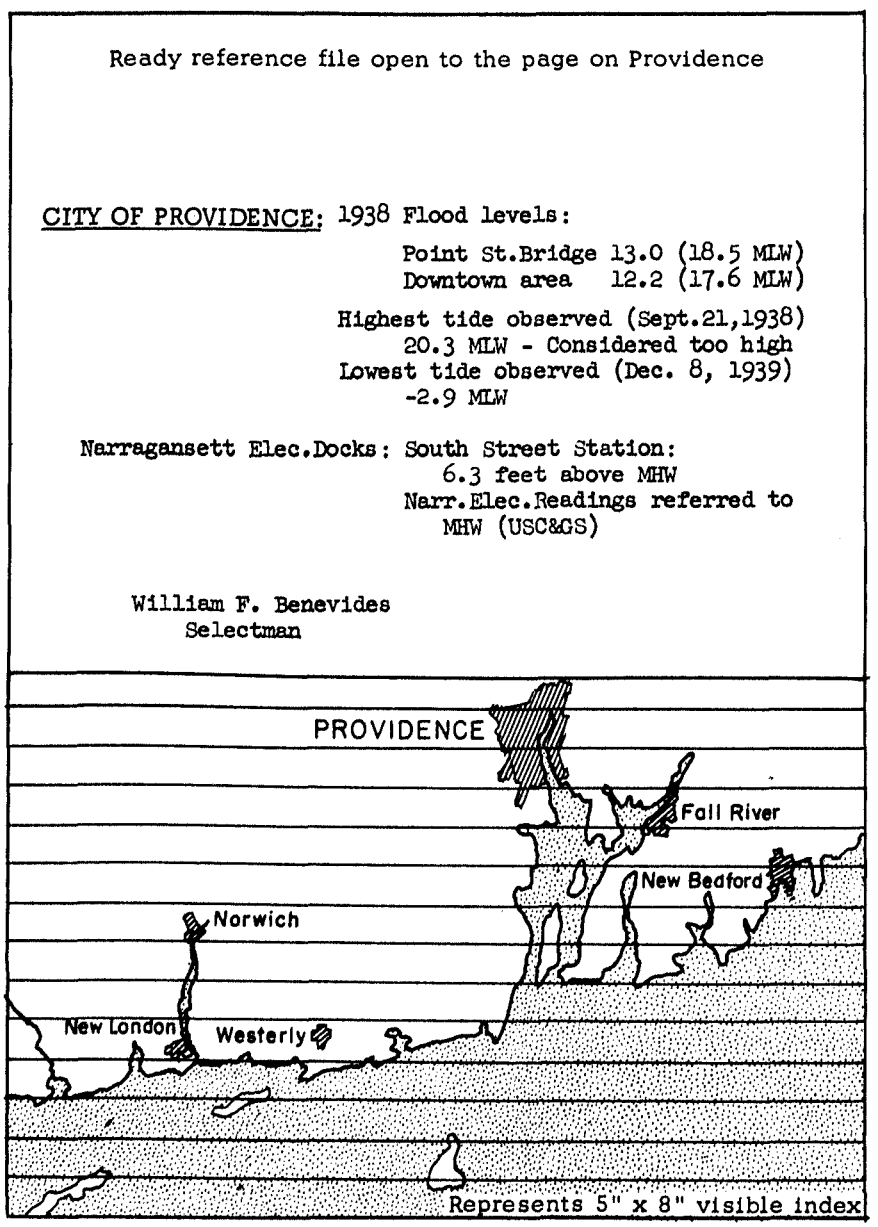
The CONELRAD alert signal is an excellent means of getting a warning out quickly, but since it is used only in the most serious emergencies, it does not replace the present weather warning distribution methods, but supplements them. This additional means of distribution may save many lives when time is an important factor in the warning.

The progress made in the few months since authorization for use of CONELRAD is encouraging, and it is hoped that all Weather Bureau offices and broadcasters will complete plans for its use in the near future. The 1958 tornado and hurricane seasons will undoubtedly provide occasions for the system to prove its usefulness.

Ready Reference File on Storm Surge

R.E.LYNDE of the Providence, R. I. office has prepared a convenient reference file of information used in the storm surge forecasting program for the Rhode Island coast and Narrangansett Bay. The file used is of the visible index type, with each folder devoted to a specific section of the coast. The indexing method used is unique and quite effective. An 8 inch square sector of a map covering the whole area was cut into 1/4 inch strips. The strips were then placed in index folders of a standard 5" x 8" visible file in such manner that the visible portions present a map of the area, as shown in the accompanying drawing.

The data for any locality can be readily found by selecting the folder that displays the desired section of the coast. The file



card contains reference data of past hurricane storm surges; such as high water levels, effects of flooding on municipalities, damage, vulnerability to wave battering, flooding, etc. In addition, the following data are included - datum planes, tide ranges for established tide staffs and gages.

Variations of this type of ready reference file may be desirable for use of other data required in a hurry; for example, lists, by geographical areas, of warning distributors to be contacted when tornadoes or flash floods threaten. Local officials may wish to explore other possible applications.

Meteorologist goes "Scouting"

PAUL RHODES recently represented the Oak Ridge Weather Bureau Office as speaker to a group of Cub Scouts and Rainbow girls. He discussed Weather Bureau activities and meteorology in general, and demonstrated some meteorological instruments. During his talk, he passed out paper and suggested that the group write out any questions they might have. The results lightened the burden of the day considerably, and are printed with the thought that others in the Weather Bureau might also be entertained, as well as instructed as to the attitudes of the 9 to 11 year old group toward our profession.

How do you no when it is going to rain?

How do you know when a tornado.

How long do you work?

How dose a torandl stort.

What do clouds have to do with hell (hail ?)

How can you be a weather man.

How far does the transmitter in the radiosonde transmitt.

Do you have to learn to read clouds before you can be airplane pilot.

Can a ship get away from a Hurricane.

Rescheduling of Facsimile Transmissions

FROM time to time comments and suggestions are received pointing out the need for more flexibility in the facsimile schedule. At present if a particular chart has not been sent on schedule, it is impossible to change the schedule so that the missed chart can be sent while still timely. If a chart is started late for any reason, only part of the chart can be transmitted. Even though a particular chart may be incomplete the next regularly scheduled chart must be started on time.

This procedure causes difficulties at field stations. If a station is depending upon the facsimile recorder for a surface map, and if the surface map is missing or is incomplete, the station is seriously handicapped.

From an overall point of view, the problem does not seem serious For example, the USAF Airway and Air Communication Service (AACS) which operates the fax-transmission reports that of the 6188 transmissions scheduled during the last several months, all but 38 were sent on time: 16 maps were delayed by machine trouble, 9 missed because of circuit outage, and 13 were filed late. In other words about 99-44/100 percent were sent on time. As comforting as these statistics may be to the Central Office, they do not help a forecaster who failed to receive an essential surface, upper air, winds aloft or prognostic chart.

The facsimile schedule serves both military and civil requirements. The military users desire some charts that would be of little interest to the Weather Bureau; similarly civil users would like some charts that would have little value to military users. Until there is some agreement on priorities, the only generally acceptable practice is strict adherence to the published schedules.

To reach agreement on priorities the Steering Committee on NAWAC matters (SC/NAWAC), established by the Joint Meteorological Committee, is making a detailed study of facsimile transmissions. Some time ago all USWB offices using facsimile were requested to list the charts needed in order of priority. These lists were consolidated and then sent to forecast offices for further study before the final Weather Bureau list was sent to the SC/NAWAC. This committee is now coordinating the Weather Bureau, the USAF and Navy priority lists. In these discussions the Weather Bureau must also present the requirements of commercial and other non-governmental users. When agreement is reached it should be possible to use the priorities for at least some emergency rescheduling.

There are other complicating factors. Most Weather Bureau offices with continuous recorders use a timer to control the recorder. This is done to reduce the amount of paper used, an important cost factor. Deviations from the printed schedule could cause these stations to miss some of the desired maps. This is not an insurmountable problem - increasing paper allotments (at increased cost) and the transmission of appropriate notices on the facsimile circuit and/or teletypewriter circuits would do much to overcome this difficulty. Of course, this would not help a station that preselects charts with its timer during periods when the station is left unmanned.

It is hoped that this discussion will help answer some of the questions that are asked about current transmission procedures.

Recognition of Warning Service

CRITICISM of our warning service is sometimes justified but many times not. In view of this, some items in the press on the severe east coast snowstorm February 15-17, 1958, were a pleasure to note:

On February 18, 1958, Sumner Barton, in an article on the New England aspect of the storm, said "If New England must get snowstorms - and New England must - they should come under the following conditions:

"On a Sunday, when most persons can stay home and cars and trucks can be kept off the streets.

"After midnight, when persons who have been out the day and evening before will be safely at home.

"After a good forecast, with warnings in ample time to permit communities and residents to prepare for the worst.

"All of that may be too much to ask, but that was exactly the case with Sunday's storm. It was on Sunday. It started after midnight. The forecast of heavy snow went to the public early Saturday morning, a good 15 hours before the storm Sunday.

"Thus the heavy fall was a surprise to no one."

On March 5, 1958, Dorothy Thompson, in her syndicated column, said "Snow in New York is a calculable probability, and for the fall on February 15-16 there was ample advance warning. The storm blew up from the south and newspapers and radios reported quite accurately when it would strike the Nation's largest metropolis ...."

Plans for Continuing Antarctic Program

THE following statements by Dr. Alan T. Waterman, Director, National Science Foundation, before the House Committee on Interstate and Foreign Commerce, Washington, D. C., January 24, 1958 are of special interest to Weather Bureau employees interested in Antarctic assignments.

"The United States plans to continue scientific operations in the Antarctic beyond the International Geophysical Year which ends next December, according to an announcement made today by Alan T. Waterman, Director, National Science Foundation. Scientific research programs will be formulated under the auspices of the National Science Foundation, the Department of Commerce, the Department of Interior, and other agencies having scientific interests in the region.

"Planning for the scientific programs to be continued in the Antarctic is in the formative stage. Detlev W. Bronk, President of the National Academy of Sciences, is appointing a special committee to serve in an advisory capacity to the Government on the scientific planning. The International Council of Scientific Unions (ICSU) has already appointed a special committee, including an American representative designated by the National Academy of Sciences, to prepare suggestions for suitable cooperative scientific programs in the region after the close of the IGY. The recommendations of these committees will be carefully considered by the United States in formulating its plans for scientific research in the Antarctic after next December.

"The logistics support provided for IGY scientific activities in the region has been a major contributory factor to the success of the program. The DEEP FREEZE operation conducted by the Navy with assistance from the Air Force and Army made possible the establishment of IGY stations in the region. The U. S. Navy, which has conducted systematic operations in the Antarctic since the late Rear Admiral Richard E. Byrd's first expedition in 1928, is issuing instructions to Rear Admiral George J. Dufek, Commander of the Antarctic Task Force and U.S. Antarctic Projects Officer, to make the necessary preparations for continued support of the scientific program beyond the IGY period.

"In anticipation of these plans, the United States intends to continue operations at the Amundsen-Scott IGY Station at the South Pole. Certain other United States IGY scientific stations in the region will also be included in the coordinated scientific activities to follow the end of IGY operations. The choice of other stations depends on scientific, logistic, and geographic considerations, which are now under study."

Inquiries and applications for the following "excepted" positions at McMurdo Sound, Byrd and South Pole stations are now being invited:

GS-9 - 13 Meteorologists (General)
GS-9 - 11 Electronics Technicians
GS-7 - 9 Meteorological Technicians (Rawinsonde Specialists)

Remuneration for the foregoing grades will be enhanced by an Antarctic differential and premium pay (overtime, night differential, and holiday pay) which together will total about 35 percent additional.

Plans are being made for successful applicants to be detailed to the Central Office and other training centers in the United States in July 1958, or sooner if possible, with departure for approximately one year tour of duty in Antarctica occurring in late 1958.

IGY Amundsen-Scott Station

by Edwin Flowers

ON November 19, 1956, an advance party of eight Navy personnel and 11 sled dogs was landed on the 9000 foot high polar plateau some eight miles from the geographical South Pole. This was the beginning of the IGY Amundsen-Scott Station at the South Pole, one of six similar stations built in the Antarctic by the United States for scientific measurements during the 18 month International Geophysical Year.

The construction of the main part of camp was completed and the last group of construction Sea Bee's departed by January 4, 1957. Within a few weeks, the last seven of our 18 wintering-over men were landed at the Pole Station and on February 12 we said goodbye to our last physical contact with the outside world. Ahead of us was the 6 month long Polar night and 8½ months of isolation. Temperatures that had been a relatively mild -10 to -20F in January, fell gradually to -60 by late February. When we lowered the flag on March 22, our sunset day (and the last day of concerted outdoor work), the temperature was -80 with a 15 knot breeze. Mid-winter was still three months in the future and already our weather was as severe as anywhere on earth.

During the period from January to March 22, we worked long hours making the camp as secure and comfortable as possible. All buildings were interconnected by a tunnel system that allowed communication without the necessity of going outdoors, although the tunnel temperatures were a fairly constant -55 all winter. Our daily routine during this period devoted half of the day to group camp work and the remaining half day to science. Spare moments were used to collect the day's supply of snow that would be melted for water, fueling the stoves, or helping the cook with the supper dishes. After March 22 we worked full time on our science programs except for helping with the camp chores. For four of us, Herb Hansen, Floyd Johnson, John Guerrero and me, this meant getting the meteorology program into full operation. Already we had spent many hours completing and insulating the radome and installing the GMD radio-direction finder. Equipment installations in the climate of Antarctica are in many ways different and more time consuming and more painfull than any place in the world. Ordinary plastic and some rubber covered cable freezes rigid as steel in a short time and shatters like glass when disturbed. Bare or lightly-gloved fingers freeze in minutes and the large insulated mitts necessary for warmth forbid any dexterity. Every outside installation carries with it the painful memory of thawing frozen fingers.

On March 27, we launched our first rawinsonde balloon and by mid-April our meteorology program was proceding routinely with two rawinsondes and eight synoptic observations daily. In addition we were operating radiation equipment, continuously recording gradient temperatures at five levels and collecting snow and air samples.

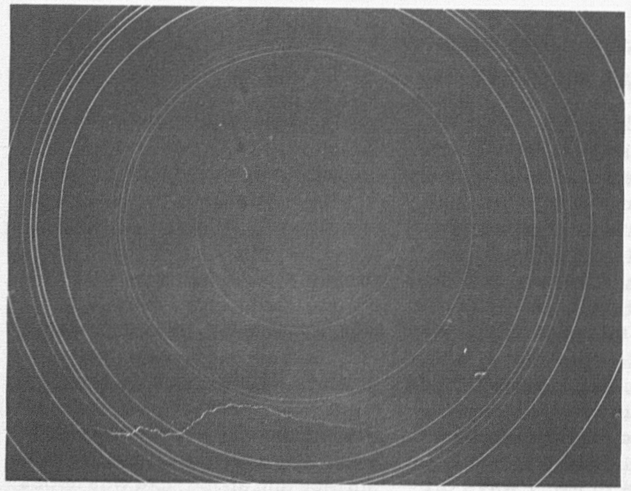
After our sunset day, the camp routine became less frenzied. Three movies were shown weekly. Lt. Taylor, our Navy doctor, gave us a medical lecture every Thursday. On various Tuesdays and Fridays, science talks were provided and on Sunday evenings after a brief religious ceremony, an hour of lively discussion was had on subjects ranging from conservation to marital bliss. Sundays, dates of full moon and the regular holidays were declared holidays for those whose jobs did not dictate a seven-day week. On these days we cooked our own breakfast-usually steak and eggs.

To maintain our water supply and also to assist the glaciologist dig a deep pit, we all spent a minimum of 2 hours per week in the snow mine. The mine entrance was inside the camp and descended at a 15 degree angle. Snow was dug and hauled to the top of the mine by an ingenious winch arrangement. By mid-November we were down to 90 ft. below the surface and an ice-axe was necessary equipment for mining the flinty-hard snow.

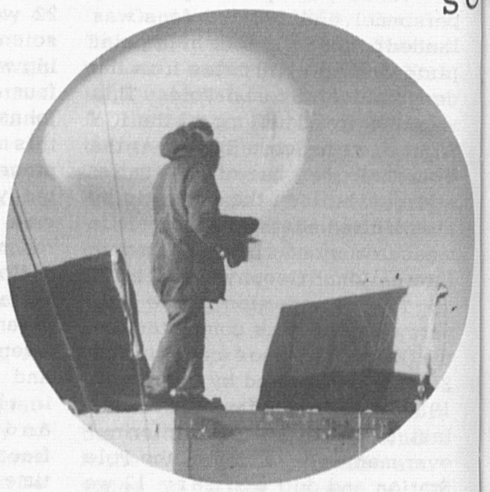
Renovation and innovation were the order of the day for nearly all activities including the meteorology program. Maintaining sufficient heat in the inflation shelter to keep the low-pressure hydrogen generator operative, and the launching of 8-ft. diameter balloons through 8-ft. square overhead release doors were difficult problems. Eventually both problems were solved and we look back with pride at our record of but one missed rawinsonde run (caused by a breakdown of the hydrogen generator) from May 29 to November 25 when we were officially relieved.

All 18 of us feel privileged to have been part of a unique experience and proud of the measurements and observations we made despite the harshness of the climate. Sitting in the warmth of a comfortable office many thousands miles remote from the South Pole, it is difficult to write of the hardships of that austere life. It is not difficult, however, to recall the many beauties of the South Pole: a full moon over the barren snow plain or a dazzling, dancing display of Aurora Australis, or perhaps a sight even more exciting - the first glimpse of returning twilight. These are the things that will stay with us always.

IGY AMUNDSEN-SCOTT STATION

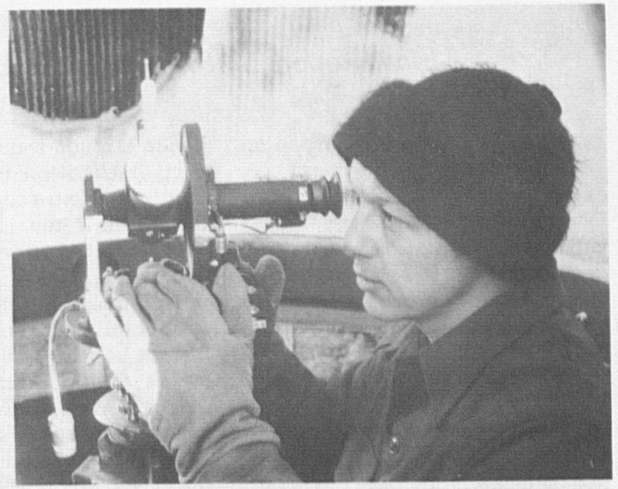


24-hour exposure, white circles are stars, vertical line is a lighting unit on a radiosonde.



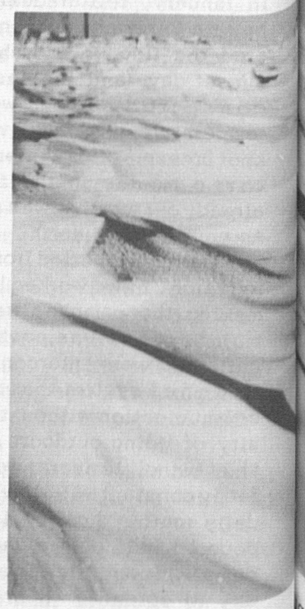
Balloon release

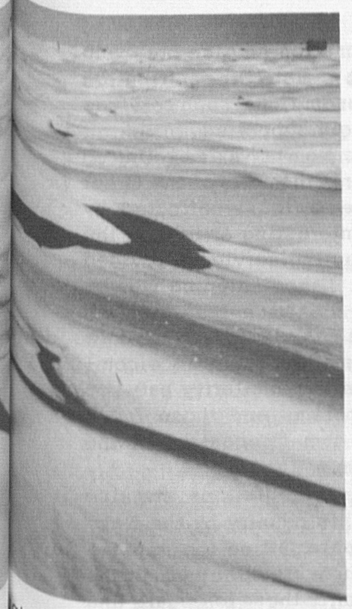
Bravo-camp mascot

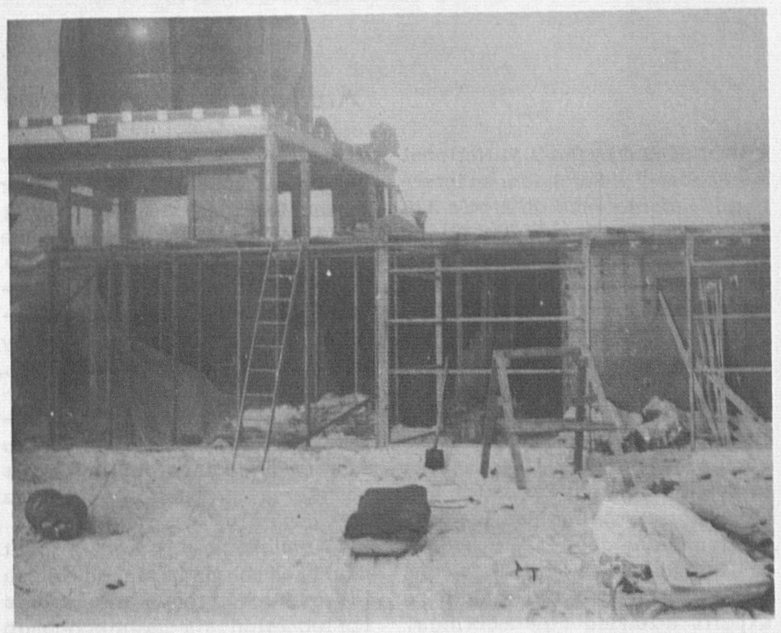


Edwin Flowers taking pibal observation

Mid-winter banquet







Tunnel construction

Final Report on the Advisory Committee on Weather Control

THE Advisory Committee on Weather Control which was established as a temporary agency by act of Congress in August 1953 submitted its final report on December 31, 1957. Its activities were officially brought to a close on that date as required by the provisions of the Supplemental Appropriations Act for Fiscal Year 1958.

Arrangements for the printing and distribution of the report (in two volumes) were made independently by the Committee staff. Copies either have or are being mailed to many foreign and domestic organizations and selected individuals. The participating government agencies, including the Department of Commerce, received a limited number which, in the case of the Bureau, is inadequate to meet its internal needs through the usual publication distribution channels. Accordingly, extra copies have been deposited in the Library where they will be made available for temporary loan to field offices upon request. Stations that have a special need for a copy that cannot be met by a loan arrangement should notify the Central Office. A few spare sets are being retained to supply special needs.

The first volume constitutes the ACWC report while the second volume contains miscellaneous contributions on rainmaking and related topics in the form of reports to the Committee. Some of the latter items were not subjected to independent technical review due to publication deadlines.

The essential conclusion of the Committee was that statistical evidence for increases in precipitation of 10 to 15 percent exists from several West Coast orographic seeding operations conducted during winter and spring months. Flat land projects yielded no evidence of "unnatural" effects from the evaluation techniques applied. The evidence developed is in many respects comparable to the conclusions reported by the Bureau in RESEARCH PAPER No. 36, January 1953 which was distributed to all field stations.

Those readers who are interested in the details of this report should not overlook the interlaid erratum slip applying to the Atlanta project report on pages 22 and 23 of Volume I. The results of this project were not reviewed by the Committee and should not have been included in this Volume.

Arctic Sea Ice Conference

SPONSORED by the U.S. National Academy of Sciences, an international conference on Arctic Sea Ice was held at Easton, Maryland on February 25-28, 1958. The objectives of the conference were to facilitate the world-wide interchange of information on sea ice problems, and to stimulate new ideas and research. Discussion included such topics as Sea Ice Observing and Reporting Techniques, Physics and Mechanics of Sea Ice, Sea Ice Formation and Disintegration, and Sea Ice Prediction Techniques.

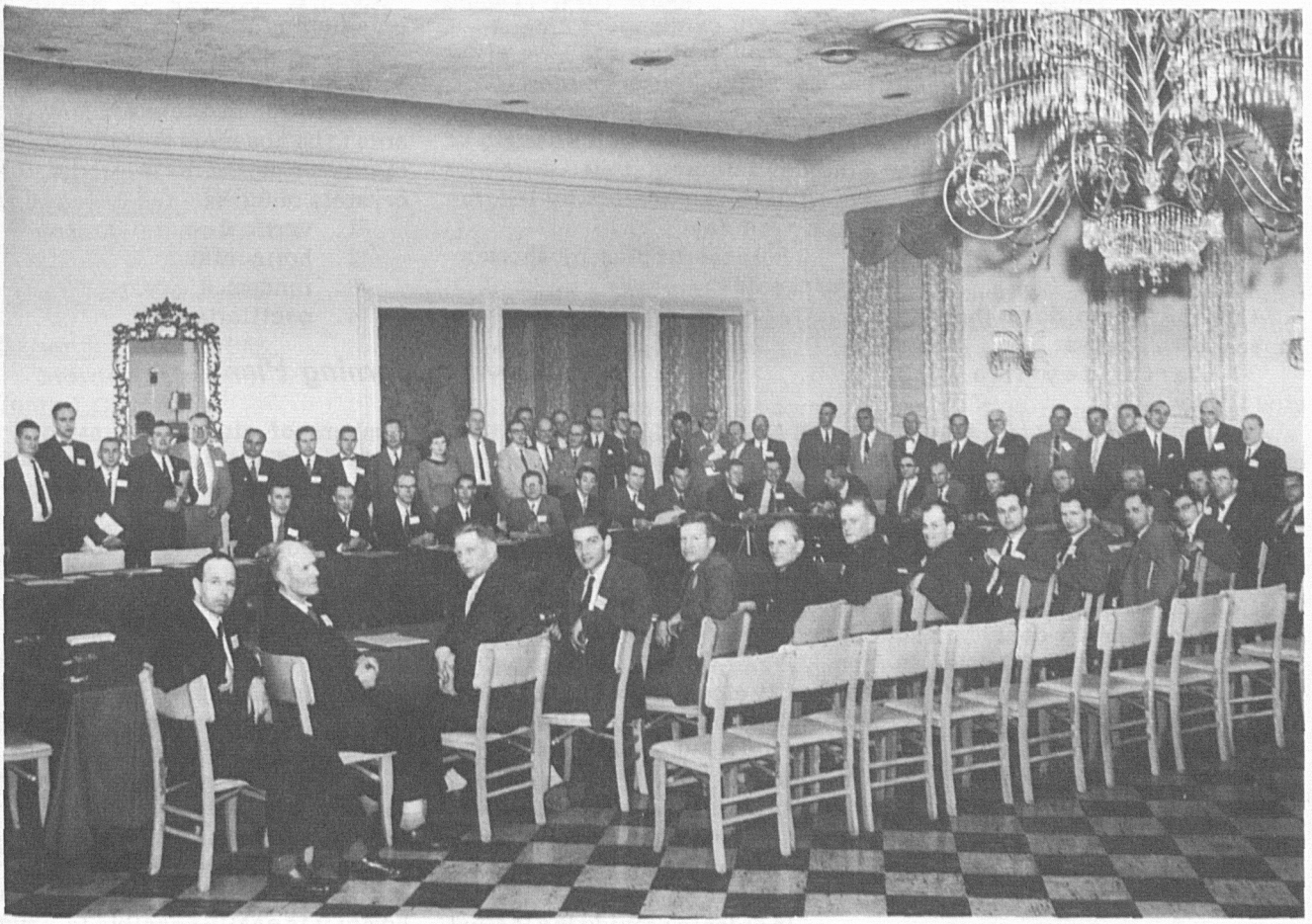
In addition to scientists from the U.S.A., about 30 foreign ice experts attended the meetings. Representatives were present from Canada, Denmark, England, Finland, Germany, Japan, Sweden, and the U.S.S.R. Weather Bureau participants included Sigmund Fritz, William Klein and Jack Thompson of the Office of Meteorological Research, Glenn Dyer of the Polar Operations Project, and Alver Sik of the Radio Marine Section, F&SR Division.

More than 20 papers were presented during the three-day session. These will be published by the National Academy of Sciences, along with a transcript of the discussions. Copies will be available from the Weather Bureau Library as soon as publication is completed, probably some time this summer.

As might be expected, a great deal of emphasis is placed on sea ice research in those areas where ice formation is a major economic hazard to ocean going vessels. Such countries as Finland, Sweden and the U.S.S.R. are faced with a regular ice blockade of major ports during certain periods of the year. For this reason, forecasts of ice formation and ice break-up represent a material contribution to the economy, and such services are strongly supported.

In the continental United States, only the ports of the Great Lakes are seriously affected by ice. An interesting article on the ice forecasting services provided for Great Lakes shipping will be found in the "map-back" article of March 7, 1958. Swedish scientists at the conference commented on the similarity between these problems and those faced by their own forecasters in the Baltic Sea.

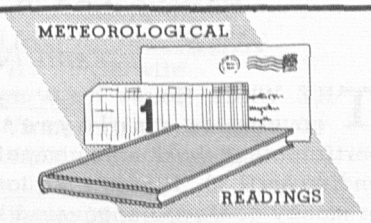
Sea ice predictions are also made in this country by the Navy Hydrographic Office for shipping lanes in the north Atlantic. In the preparation of these forecasts and also those for the Arctic, the Hydrographic Office emphasized the use which is made of the



Arctic Sea Ice Conference

Bureau's weather forecasting services, especially the extended predictions and 30-day outlooks prepared by the Extended Forecast Section.

A curious and appropriate sidelight to the meeting was the presence of an unusually heavy formation of "pancake" ice in the Chesapeake Bay during the sessions. Residents of the community of Easton, where the conference was held, suggested that perhaps our northern visitors had brought the ice with them for an on-the-spot study.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment No. XII: General Meteorological Optics, by Hans Neuberger, on pages 61 thru 77 of Compendium of Meteorology.

About the Assignment: Are Weather Bureau people familiar with atmospheric optical events? They should be, considering the time spent observing the sky. This assignment includes details on the familiar phenomena such as halos and coronas. In addition, many less familiar events are described and explained. For example, the purple light of sunset and the variation of lunar size during passage. This type of information is important in answering many questions individuals ask based on their own observations.

QUESTIONNAIRE

Assignment No. XII

(To be answered by participants after reading assignment.)

(For complete information, see TOPICS May 1957.)

Col. 61 At what angle of the sun's depression does the earth's shadow (dark segment) enter the stratosphere?

1. 1°
2. 2°
3. 4°
4. 6°

Col. 62 The cause of purple light is most similar to that of the

1. Brocken-specter
2. Bishop's ring
3. heiligenschein
4. rainbow

Col. 63 When does the sky appear to be flattest?

1. During daytime with cloudy sky
2. During nighttime with cloudy sky
3. During daytime with clear sky
4. During nighttime with clear sky

Col. 64 Estimates of high level atmospheric density are based on the sun's depression in relation to

1. the zenith
2. the dark segment
3. the bright segment
4. the purple light

Col. 65 Towering results from

1. positive density gradients that decrease with height
2. positive density gradients that increase with height
3. negative density gradients that decrease with height
4. negative density gradients that increase with height

Col. 66 Approximately what is the apparent size of the moon at less than 15° elevation as compared with 90° elevation?

1. One-half as large
2. The same size
3. One and a half times as large
4. Twice as large

Col. 67 Brocken-specter is produced by the sun shining on

1. dust clouds
2. hydrometeor clouds
3. bedewed surfaces
4. inversion surfaces

Col. 68 What size air density schlieren at 30,000 ft. would be required to produce chromatic scintillation of a star observed to have a zenith distance of 70°?

1. 20 centimeters
2. 30 centimeters
3. 40 centimeters
4. 50 centimeters

Col. 69 The effect of atmospheric refraction on the length of the day is greatest

1. in the tropics by lengthening the day
2. in the tropics by shortening the day
3. in the polar regions by lengthening the day
4. in the polar regions by shortening the day

Col. 70 In order for Lowitz-arcs to be observed the orientation of the principal axis of the ice crystals must be

1. vertical
2. horizontal
3. random
4. oscillating

Time-Saving Warning Plan

HAROLD ALEXANDER, MIC, Norfolk, Nebraska, has written about his time-saving warning service plan for the period when the station is closed. We are presenting it for possible application to other offices opened less than 24 hours daily.

"WBAS Norfolk, Nebraska, is normally closed between the hours of 2130 and 0530 CST. We remain open after 2130 when there is observed or developing severe weather in the area; however, there is always the possibility of a weather emergency when no one is on duty at the office.

"In order to provide the fastest possible warning service when no one is on duty we have furnished each employee with a complete copy of the warning procedures to post near his home telephone. This folder of warning information includes a copy of all current warning instructions, telephone numbers of city and county officials, Red Cross and Civil Defense personnel, weather observers, and others who might be concerned. Listings of all radio and TV stations in the area are provided; Weather Bureau offices having county responsibility for adjacent areas are enumerated. Each man also has a map of the Area of County Responsibility under the supervision of Norfolk.

"This plan makes it possible for an employee to alert a community within a few minutes, without the necessity of first making a trip to the Airport from his home; it is easily possible to save 15 or 20 minutes in getting the warning out to residents of a community.

"We have used this system for the past 5 years and recommend it to other offices which are open less than 24 hours daily."

Participation in Joint Crusade and National Health Fund Drive

THE White House has urged government employees to participate in the double campaign ending April 30, 1958. No quotas or money goals are suggested but rather each one should be given an opportunity to contribute to worthwhile voluntary activities in which he believes. Communities throughout the country are conducting campaigns to raise funds for these organizations which benefit the entire nation. You may designate the organizations to benefit from your contributions no matter how small an amount might be. The JOINT CRUSADE includes CARE and CRUSADE for Freedom and the ten voluntary national agencies working to control the major threats to national health are also known throughout the land. In NATIONAL HEALTH AGENCIES and JOINT CRUSADE drives in the District of Columbia we are shooting for 100% participation.

Length of Service Awards

40-Year Awards

Central Office
William R. Thickstun
El Paso, Texas
Jose A. Rivera

30-Year Awards

Bismarck, N.D. WBAS
Meyer S. Cohen
Central Office
Ethel M. Fuller

20-Year Awards

Central Office
Albert V. Carlin
Esther K. Grabill
Laura V. Wolford
Fort Worth, Texas WBAS
Samuel J. Easley
Las Vegas, Nev. WBAS
William J. Hammond
Omaha, Nebr. WBAS
Vern S. Holmes
Rapid City, S. D.
Harvey A. Boyles

10-Year Awards

Anchorage, Alaska WBAS
Albert L. Comisky
Allen J. Jacoby
Asheville, N.C. NWRC
Louisa W. Sanders
Ruby L. Silvers
Marie O. Snelling
Central Office

Albert F. Miller
Richard W. Niblett
Craig, Alaska
Bert Jensen
Fairbanks, Alaska WBAS
Curtis K. Doran
James L. Pruter
Glasgow, Alaska WBAS
Dwight Baertsch
Honolulu, T. H. PWP
James E. Boudreaux
Idaho Falls, Idaho WBO
Edmund D. Porter
Kansas City, Mo. WRPC
Mary K. Turnour
Lander, Wyo. WBAS
Ronald L. Dorsey
Little Port Walter, Alaska
Jerrold M. Olson
Midland, Texas
Max R. Cagle
New York, N.Y. (T.I.U.)
George Berger
Springfield, Mo. WBAS
Henry A. Kyle
West Palm Beach, Fla.
Ralph W. Sevelius
Winnemucca, Nev. WBAS
Harold N. Wolcott

Question Box

1. Does the Bureau plan on the distribution of an Alphabetical Roster for the Year 1958?

Yes

2. If an employee is forced to resign approximately how long does it take for the refund of retirement deductions?

Three to four weeks after the Individual Retirement Record and the Application for Refund of Retirement Deductions has been received in the office of the Civil Service Commission. Individual Retirement Record cannot be submitted to the Commission until the final salary payment has been made.

3. How many radiosondes are used by the Bureau in a 24-hour period?

Approximately 300

This is a new feature in TOPICS. Send your questions to the Office of Program Planning and we will do our best to answer them.

Unused Sick Leave

THE following list of employees have 1000 hours or more of unused sick leave.

Annette, Alaska WBAS
Harold E. Lowman
Central Office
Virginia M. Anderson
Grace W. Carter
Ethel L. Griffin
Rosalind R. Hill
Raymond P. Hogan
Chicago, Ill. WBFC
Arwin C. Hoge
Evansville, Ind.
Howard Simmons
Clarence A. White
Fort Worth, Tex. WBRAO
H. B. Carwile
Guam WBO
Vincent F. Callaway
William F. Monahan
Honolulu PSO
Yasuo Yatsushiro
Honolulu WBAS
Ernest A. Amman
George W. Geisler
Louis Hacker
Paul R. Moore
David H. Shideler
Indianapolis, Ind. WBAS
Charles E. Petzhold
Alex Popadines
Lake Charles, La. WBAS
Clement A. Richard
Joe D. Worrell
Lander, Wyo. WBAS
Clinton E. Hansen
Kenneth R. Kiser
Norbert G. Ribble
Olympia, Wash. WBAS
Leonard Dahl
Clifford A. Littke
Omaha, Nebr. WBAS
Helen F. Bruchman
Vern S. Holmes
Paul L. Naylon
W. A. Searcy
Edward F. Stapowich
San Antonio, Tex. WBAS
R. V. Gonzales
D. H. Gould
H. S. McGrabb
I. E. Medford
H. A. Rollins
L. F. Windt
A. A. Duff
Tucson, Ariz. WBAS
Herbert L. Eger
Wake Island WBAS
John R. Berger
Hubert E. Boyd
Edmund J. Manning

Special Rawinsonde Observations

DURING 1957, 426 special rawinsondes were taken for tornado forecasting and research, and 192 for hurricane or typhoon work—a total of 618 special rawinsondes for severe-weather purposes.

Thirty-seven stations took one or more tornado special observations during the year. Midland, with 41, led the list; San Antonio was second with 36. Specials were taken in all months except January. The greatest number, 131, was taken in April.

Twenty-one stations took special rawinsondes during the year for hurricane or typhoon purposes. Miami and San Juan each took 28 to top the list. Guam and Lake Charles were next highest with 18 each. Hurricane or typhoon specials were taken in all months except July—the greatest number, 60, being taken in August.

Special Tornado Rawinsondes 1957

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Albuquerque	0	0	4	6	5	2	0	0	0	2	0	0	19
Amarillo	0	0	0	0	2	4	0	0	0	5	0	0	11
Athens	0	0	0	3	0	0	0	1	1	0	2	1	8
Bismarck	0	0	0	0	0	0	3	2	0	0	0	0	5
Brownsville	0	0	2	8	0	0	0	0	0	0	0	1	11
Burrwood	0	0	0	5	0	1	0	0	0	1	2	0	9
Cape Hatteras	0	0	0	0	0	0	0	0	0	0	0	1	1
Charleston	0	0	0	3	0	0	1	0	1	0	2	1	8
Columbia	0	0	1	6	5	4	3	2	1	0	0	0	22
Denver	0	0	0	0	0	0	1	0	0	1	0	0	2
Dodge City	0	0	0	8	6	5	2	0	0	4	0	0	25
El Paso	0	0	3	6	4	1	0	0	0	2	0	0	16
Flint	0	0	0	0	1	0	0	0	0	0	0	0	1
Fort Worth	0	0	0	3	1	0	0	0	0	0	0	0	4
Glasgow	0	0	0	0	0	0	1	1	0	0	0	0	2
Green Bay	0	0	0	1	1	4	4	1	1	0	0	0	12
Greensboro	0	0	0	2	0	0	0	0	0	1	2	1	6
Jackson	0	1	1	8	3	1	0	0	0	1	4	2	21
Jacksonville	0	0	1	2	0	0	1	0	0	0	2	1	7
Lake Charles	0	0	1	8	3	2	0	0	0	0	2	2	18
Lander	0	0	0	1	1	0	0	0	0	0	0	0	2
Little Rock	0	0	3	11	7	3	0	0	0	1	0	2	27
Midland	0	0	7	13	10	4	0	0	1	5	1	0	41
Montgomery	0	0	0	0	0	0	0	0	0	1	3	0	4
Nashville	0	0	0	6	3	2	0	2	0	1	1	1	16
New York	0	0	0	0	0	0	0	0	0	0	1	0	1
North Platte	0	0	0	5	2	1	0	0	0	1	0	0	9
Oklahoma City	0	0	0	0	1	0	0	0	0	0	0	0	1
Omaha	0	0	0	2	4	19	2	1	0	2	0	0	30
Pittsburgh	0	0	0	0	0	0	0	0	0	0	1	1	2
Rapid City	0	0	0	2	1	0	3	2	0	0	0	0	8
St. Cloud	0	0	0	2	2	2	4	1	0	1	0	0	12
San Antonio	0	0	5	16	4	3	0	0	0	5	1	2	36
Shreveport	0	0	0	2	0	0	0	0	0	1	2	2	7
Tampa	0	0	0	1	0	0	0	0	0	0	2	1	4
Topeka	0	0	0	0	7	7	0	0	0	2	0	0	16
Washington	0	0	0	1	0	0	0	0	0	0	1	0	2
Total	0	1	28	131	73	65	25	13	5	37	29	19	426

Special Hurricane or Typhoon Rawinsondes 1957

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Brownsville	0	0	0	0	0	5	0	3	0	0	0	0	8
Fort Worth	0	0	0	0	0	3	0	0	0	0	0	0	3
Guam	0	0	0	0	3	1	0	3	2	6	3	0	18
Jackson	0	0	0	0	0	8	0	0	0	0	0	0	8
Koror	1	0	0	2	0	0	0	0	0	0	0	0	3
Lake Charles	0	0	0	0	0	8	0	7	3	0	0	0	18
Lihue	0	0	0	0	0	0	0	0	0	0	0	4	4
Little Rock	0	0	0	0	0	0	0	0	3	0	0	0	3
Miami	0	14	0	0	0	0	0	14	0	0	0	0	28
Nashville	0	0	0	0	0	9	0	0	3	0	0	0	12
Oklahoma City	0	0	0	0	0	2	0	0	0	0	0	0	2
Ponape	0	0	0	0	3	0	0	0	0	2	0	0	5
San Andres	0	0	0	0	0	0	0	0	1	0	0	0	1
San Antonio	0	0	0	0	0	3	0	4	0	0	0	0	7
San Juan	0	14	0	0	0	0	0	14	0	0	0	0	28
Shreveport	0	0	0	0	0	6	0	0	0	0	0	0	6
Swan Island	0	0	0	0	0	2	0	14	0	0	0	0	16
Tampa	0	0	0	0	0	0	0	1	0	0	0	0	1
Truk	0	0	0	0	6	2	0	0	0	0	4	0	12
Wake	0	0	0	0	0	0	0	0	4	0	0	0	4
Yap	1	0	3	1	0	0	0	0	0	0	0	0	5
Total	2	28	3	3	12	49	0	60	16	8	7	4	192

The above tabulations show the breakdown of special rawinsonde observations by type, stations, and months.

☆☆☆☆ Superior Accomplishment Awards ☆☆☆☆

☆ *Marshall Kathan Philo Ruggles John Smiles* ☆

MARSHALL KATHAN and PHILO RUGGLES, Illustrators in the Central Office Drafting Section, and JOHN SMILES, formerly of the Drafting Section, shared a group award of $700 granted for sustained superior performance, and particularly for development and application of art skills and designs which have greatly improved the presentation of Weather Bureau scientific and technical information.

Working as a team, these men produced a large volume of high-quality work, developing a service and employing skills over and above their position requirements. In providing this service for the Weather Bureau, they not only developed new skills on their own time but also studied and did personal research to enable them to correctly interpret and portray the scientific and technical information of the various subject matter fields of the Weather Bureau.

Mr. Kathan received $300 and Messrs. Ruggles and Smiles, $200 each.

☆ *Marshall E. Soderberg* ☆

MARSHALL E. SODERBERG, Meteorologist, was awarded $200 in recognition of sustained superior performance of duties at Muskegon.

Important considerations in granting Mr. Soderberg's award were his capacity for accomplishing an unusually large quantity of high-quality work, his very fine performance as Acting MIC which has permitted the MIC to absent himself for developing the severe storm warning system and other important public service work, his initiative in assuming responsibility for additional duties in order to improve the station program, and his high devotion to duty as demonstrated in 1956 when he remained at his post, without regard for his personal safety, to transmit the warning that a tornado was approaching the station.

☆ *Loren F. Pitts* ☆

LOREN F. PITTS was awarded $100 in recognition of his excellent work as Communications Supervisor at the Forecast Center in Kansas City.

In directing the Communications Unit, Mr. Pitts has displayed a high degree of leadership, initiative, planning, judgment, and tact. These attributes, together with his wide knowledge of com-

munications practices and procedures, have enabled him to solve the many complex problems that have arisen and carry on the day-to-day operations of his unit in a manner that has contributed greatly to the efficiency of the Forecast Center program.

Alma H. Worth

ALMA H. WORTH, Meteorologist, was awarded $200 in recognition of her very fine work at Wilmington, Delaware, for the past several years.

Mrs. Worth's intense interest in meteorology has been expressed in numerous ways, among them her continuing effort to apply new theory to the solution of local forecasting problems, her alertness to weather changes and developments in other than local areas, and her preparation of supplemental charts on off-duty time to better understand existing conditions. Her unusual initiative and excellent judgment in the performance of duties, her very fine pilot briefing for which she has been frequently commended, and her willingness and ability to assist whenever and wherever needed to improve the efficiency of the station program exemplify the contribution on which her award was based.

Margaret Brenner

MARGARET BRENNER was awarded $150 in recognition of her excellent work in assisting the SELS research personnel, as well as performing her duties as secretary to the District Meteorological Officer, Kansas City, in a highly creditable manner.

Mrs. Brenner was commended highly by members of the SELS staff for her fine work, which released professional personnel for non-technical tasks. Her award was based on the large volume of high-quality work she produced for two offices, her excellent judgment in determining appropriate actions to be taken, and her initiative in accomplishing a variety of difficult tasks with little supervision.

Allen D. Pearson

ALLEN D. PEARSON received an award of $200 in recognition of his highly competent performance of duties as Aviation Forecaster at Honolulu.

In addition to outstanding skill in forecasting, Mr. Pearson has consistently displayed unusual initiative and alertness in improvement of the forecast program and an ability in dealing with the public which has fostered excellent public relations for the Bureau. These very desirable attributes, together with his capacity for turning out an astonishingly large volume of very accurate work, have resulted in a valuable contribution to the effectiveness of the program at WBAS Honolulu.

Sarah O. Henkora

SARAH O. HENKORA, Meteorologist, received an award of $200 in recognition of extremely competent performance of duties at Pendleton, Oregon, during the past fourteen years.

Important considerations in granting Mrs. Henkora's award were her excellent pilot briefing, the professional manner she has displayed in dealing with the public and other interests served, her proficiency in observational and charting work, and her unusual ability in training new employees. In addition she often spends off-duty hours in providing adequate coverage, assisting new employees, or in performing additional duties in the interest of maintaining station efficiency.

Jack W. Kepner

JACK W. KEPNER, Topeka, was awarded $200 in recognition of his many contacts and has displayed unusual initiative and ingenuity in the installation, repair, and maintenance of substation equipment. Other important considerations in granting his award were his effective recruiting and instructing of cooperative observers, his high devotion to duty, and his willingness and ability to assist with other programs particularly during emergencies.

SELS Unit, Kansas City, Mo.

SELS UNIT, Kansas City, Missouri—A group award of $2400 has been approved for the twelve meteorologists who received the Department of Commerce Silver Medal for their important contributions to the advancement of tornado and severe local storm prediction. (See March 1958 TOPICS.) The $2400 will be shared equally by Ferdinand C. Bates, Robert G. Beebe, Charles F. Chappell, Harold L. Coleman, Donald S. Foster, Joseph G. Galway, Howard H. Hanks, Donald C. House, Jean T. Lee, Bernard W. Magor, Dansy T. Williams, and Perry A. Wood.

Phyllis M. Lee

PHYLLIS M. LEE received $200 in recognition of her very fine work as secretary to the Chief of the Observations and Station Facilities Division.

Mrs. Lee has performed her assigned duties in an outstanding manner tackling difficult problems cheerfully and always volunteering to assist in any way possible to carry out the work of the Division. She has displayed a high degree of initiative in setting up control procedures and records for priority jobs and in coordinating the clerical work so that projects are completed on schedule and rush jobs are handled efficiently. Her ability to plan, her high devotion to duty, and her excellent judgment in determining appropriate actions to be taken are most commendable and were important considerations in granting her award.

Employee Suggestion Box

Herbert A. Wright $75
RAO Salt Lake City
Procurement and Supply Section of CO has adopted the suggestion of combining various requisition forms into one form. Savings in storage, printing, distribution and manhours will result from this adoption.

Paul L. Bredeman $50
Goodland, Kansas
Clifford E. Bond $20
Mobile, Alabama
F&SR Division is preparing for distribution to field stations a cross referenced list of various aircraft types showing speed, range, ceiling, etc., as a result of Mr. Bredeman's suggestion and incorporating a nomenclature of various aircraft (DC-3, Civil; C-47, Air Force; R4D, Navy) as a result of Mr. Bond's suggestion. This should assist pilot briefers by giving them greater knowledge of aircraft and pilot problems.

Jeff D. Ardoin $15
Proc. & Supply Section, CO
O&SF Division has adopted this suggestion - to clarify instructions for evaluating winds-aloft data bounding a stratum of missing data similar to that for the termination of the observation. Although the procedure was used by a number of stations, more specific instructions will be incorporated in the 5th Edition of Cir. O.

William J. Trebbe $75
St. Cloud, Minn.
Robert E. Helbush $75
Burlington, Vt.
As a result of identical suggestions submitted by these two employees, F&SR Division adopted their suggestion that when stations already have a perforator for use with another circuit, that perforator be used also for the RAWARC circuit rather than renting a separate perforator for RAWARC.

Aubrey D. Hustead $20
Norfolk, Va.
F&SR Division has adopted the suggestion by discontinuing the facsimile outage log at those stations which had previously been instructed to keep such a log.

Allen D. Stedry $10
St. Joseph, Mo.
F&SR Division adopted a suggestion of modifying date-time stamps for sequence displays until new stamps may be procured. By cutting off the "30" part of the time stamp, times will be shown in whole hours as the minutes portion is not considered necessary.

Ivan W. Brunk $20
WBO Chicago, Ill.
Personnel Division has adopted this suggestion that more publicity be given for length of service awards to regular Weather Bureau employees. Lists will be published in TOPICS hereafter.

Emilie J. Franklin $10
WRPC San Francisco
Two WRPCs put into use this suggestion to provide a small box to keep drum cards from becoming warped and torn as well as making them more readily available.

Howard J. Thompson $10
Milwaukee, Wis.
F&SR Division has adopted the idea to discontinue the use of Mt. Washington, N. H. minimum temperatures for publication and broadcast purposes. The intent of the AB2 was to include temperatures from communities rather than from some highly exposed point.

Arthur W. Youmans $25
National Hurricane Research Project, CO
Civil Service Commission has adopted this suggestion that on future printings of form SF-71 the Certificate of Physician or Practitioner be to the effect that the employee was incapacitated for duty rather than that he was merely under the physician's care.

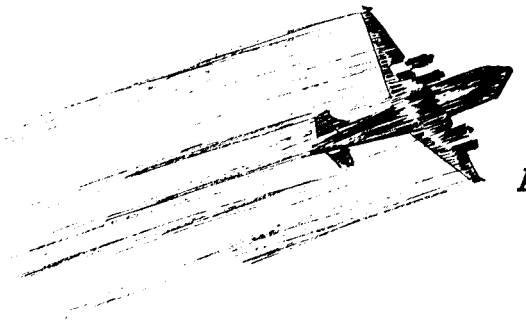
Marcus L. Snelson $75
NWRC Asheville, N. C.
NWRC Asheville adopted this suggestion of establishing a staging area differentiating between the incoming and outgoing cards from the card library. Considerable time will be saved because of the large number of cards handled daily.

Harlan H. Smith

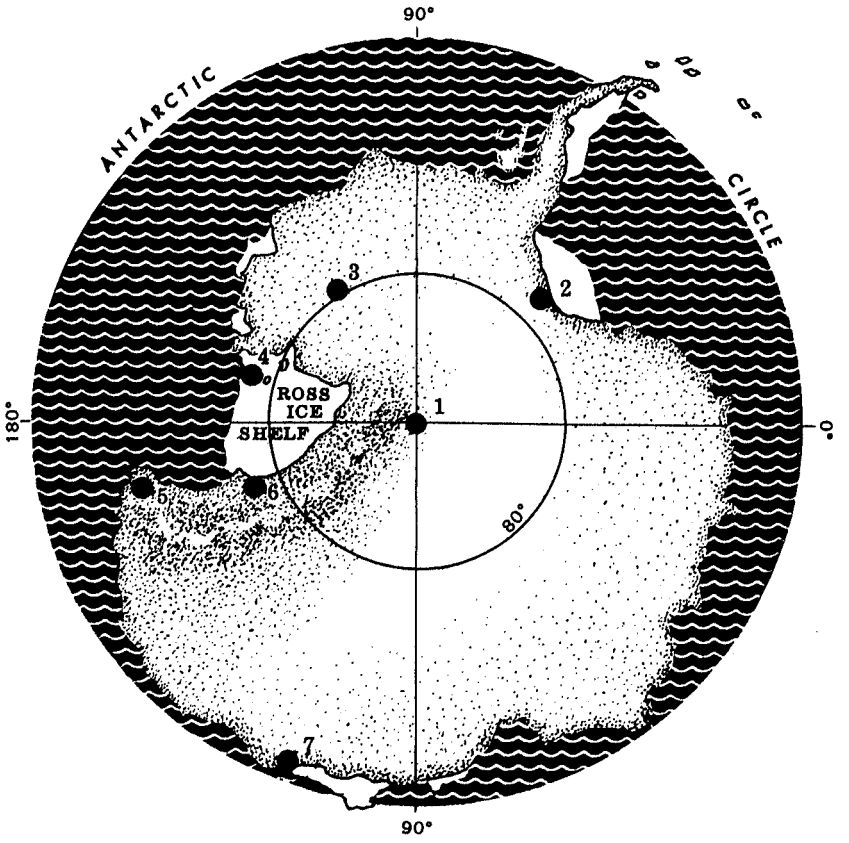
HARLAN H. SMITH, who retired from the Bureau January 31, 1955, died March 15 at his home in Pocatello, Idaho, at the age of sixty-one.

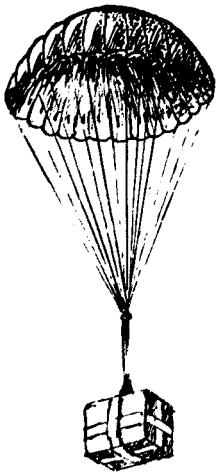
Mr. Smith completed over thirty years of government service during his career, serving at Pocatello from 1932 until his retirement. (See January 1955 TOPICS.) For the past three years Mr. Smith has been engaged in raising ornamental trees and shrubs and operating the Riverside Nurseries at his home, as well as serving as Weather Bureau cooperative observer.

Survivors include his widow, who lives at 11 Rosewood Avenue in Pocatello, and two daughters.



U. S. Stations in ANTARCTICA





1. Amundsen-Scott South Pole
2. Ellsworth
3. Byrd
4. Little America V
5. Cape Hallet (jointly with New Zealand)
6. McMurdo
7. Wilkes

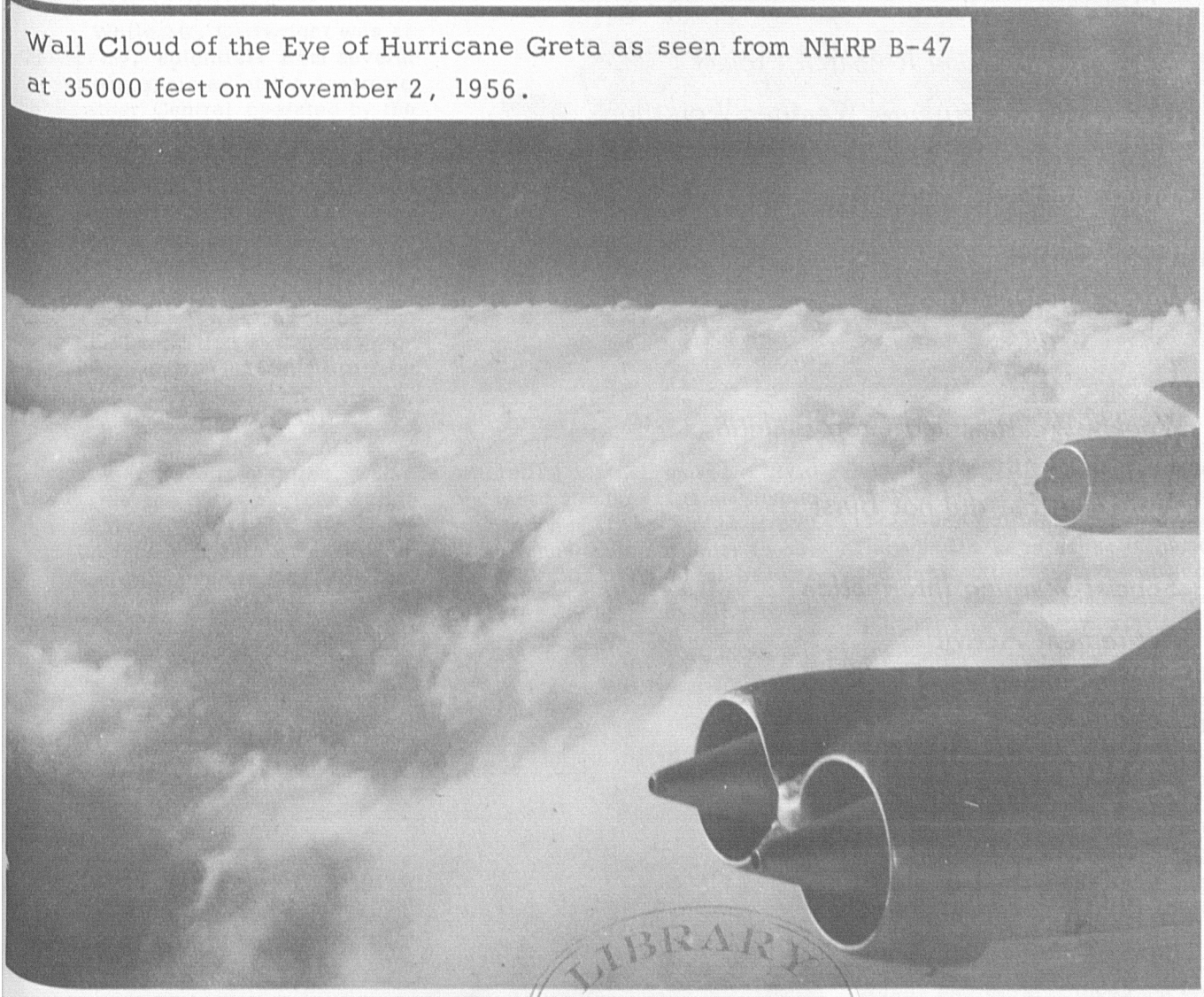
Tucker Sno-Cat IGY traverse party

See Pages 65-67

WEATHER BUREAU

TOPICS

MAY
1958



Wall Cloud of the Eye of Hurricane Greta as seen from NHRP B-47 at 35000 feet on November 2, 1956.

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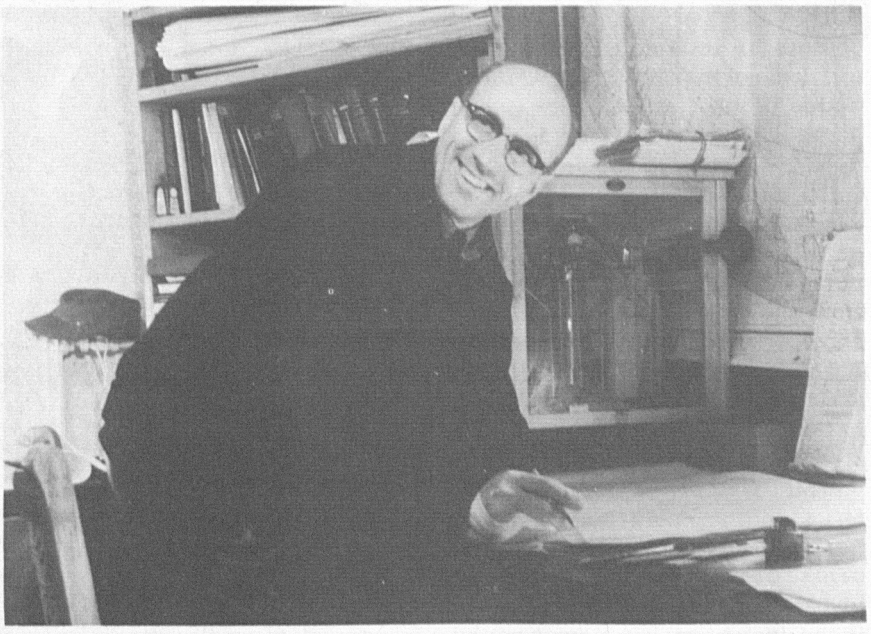
WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through 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.

Gordon Cartwright Returns from Antarctica

GORDON D. CARTWRIGHT, Weather Bureau meteorologist, returned to Washington, D. C., after spending 14 months on an International Geophysical Year assignment at the Soviet Antarctic IGY station at Mirny.

While Mr. Cartwright was at Mirny, scientists from several nations assisted at the Antarctic Weather Central operated by the United States for the IGY at Little America. He was often in touch by radio-telephone with Vladimir Ivanovich Rastorguev, Russian meteorologist who served as a weather analyst at the Weather Central.

Mr. Cartwright joined the Soviet Expedition at Capetown on December 26, 1956 and left it at Adelaide, Australia, on March 4, 1958.



Mr. Cartwright in the Synoptic Room

In describing his Antarctic winter at the Mirny Station, where he was the only American among more than 100 Russians, Mr. Cartwright said: "This was the most stimulating experience of my life. Antarctica by itself makes a vivid and lasting impression on anyone who touches it, and in addition I had an unusual opportunity to observe a group of Russians at work and off duty. I found them warm, hospitable, and with broad scientific and cultural backgrounds. They had a keen sense of humor and their differences of outlook were, of course, sometimes delightful and sometimes difficult to understand."

Iceberg near Mirny in winter.

Mr. Cartwright joined in the regular weather analysis work at Mirny where he was responsible for the preparation of daily upper-air charts covering most of the Southern Hemisphere. The IGY network of observing stations in the Antarctic has made possible for the first time in history the drawing of reliable weather charts of the South Polar regions.

Hundreds of cloud photographs and several thousand feet of "time-lapse" color pictures of special cloud developments in the Polar region were taken by Mr. Cartwright. These films, he hopes, will be useful in explaining some of the unique weather processes that have puzzled meteorologists since the earliest

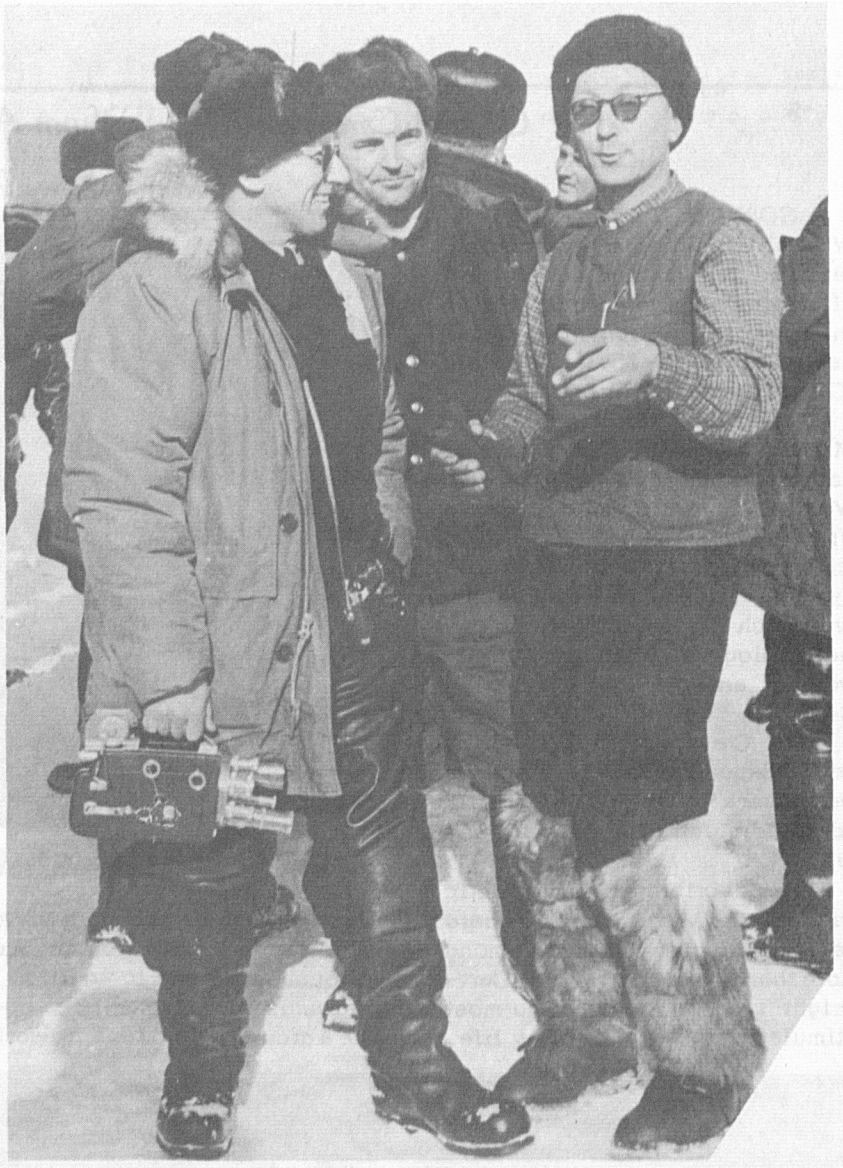
explorations in Antarctica.

The Soviet Expedition is operating in one of the most difficult and least known areas of the Antarctic, according to IGY scientists. The interior stations of the Soviets are located near the central dome of the great East Antarctic ice plateau at elevations near 12,000 feet. In establishing these stations they were faced with two major problems: the "height-cold barrier," where the combination of intense cold and great height places exceptional strain on both men and equipment; and "soft snow," which can bog down the most powerful tractors and can make ski landings of aircraft highly dangerous except on specially prepared runways.

Mr. Cartwright reported that this "height-cold barrier," and "soft snow" combination prevented establishment last year of two stations the USSR had planned in the deep interior. However, by a massive effort during this recent Antarctic summer, and by using new equipment designed on the basis of last year's experience, both stations are now in full operation.

The USSR, as one of the major participants in the IGY Antarctic program, is now operating six scientific stations in East Antarctica. Their main station at Mirny is on the Antarctic Circle at 93° East Longitude. A second USSR station is located on the edge of the ice sheet at Bunger Oasis and a third station called Vostok is in the region of the geomagnetic pole. Their newest station, Sovietskaya, is near the so-called "Pole of Relative Inaccessibility." Two smaller USSR observation stations lie on the tractor route to Vostok and Sovietskaya.

Members of the Soviet Expedition expressed admiration for US achievements in getting all planned stations in operation before the beginning of the International Geophysical Year on July 1, 1957. Mr. Cartwright said the Russians also held Admiral Byrd in great respect and were grieved by his untimely death on the eve of the IGY. Copies of his several books were widely read in Russia.



Mr. "C" getting the "picture" from Alexander Maximov, radio chief tractor train.

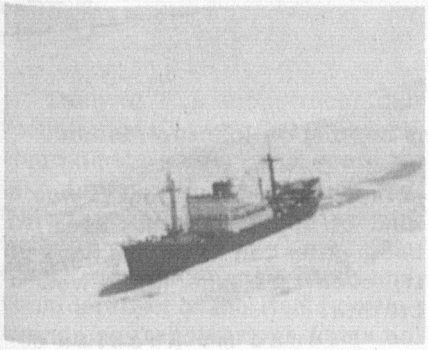
The leader of the Soviet Expedition, Alexei Fyedorovich Troshnikov, is well known for his work as a hydrologist in Arctic regions. Their chief meteorologist, Oscar Grigoriovich Krichak, is a member of the Central Forecasting Bureau in Moscow.

Mr. Cartwright was especially impressed by the well-equipped ships, the OB and LENA, which served not only as major transport ships for the USSR expedition but also carried out some of the most comprehensive oceanographic surveys and observation work ever made in Antarctic waters.

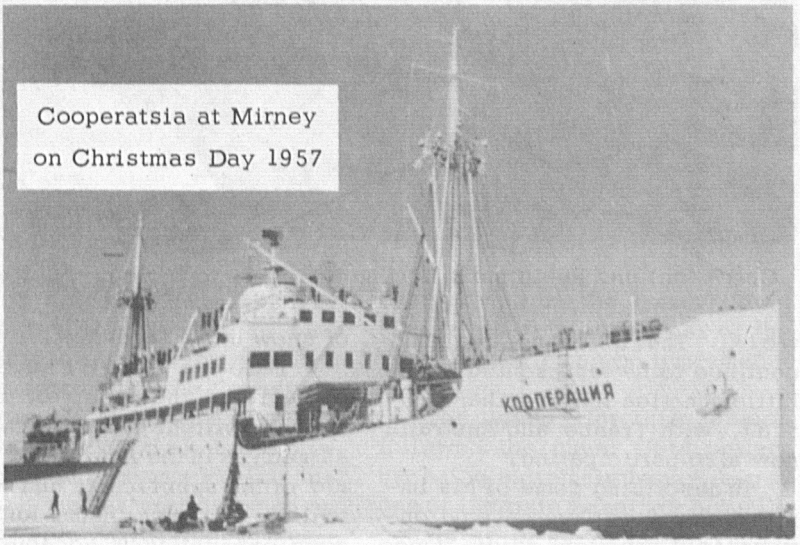
The scientific exchange in which Mr. Cartwright took part was so successful that USA and USSR scientists have agreed that similar arrangements should be continued for another year. Meteorologist Morton J. Rubin, of the Office of Meteorological Research, is already at the Russian station at Mirny and will spend the next year there doing meteorological

Chernov bringing penguin home

Dogs ride home



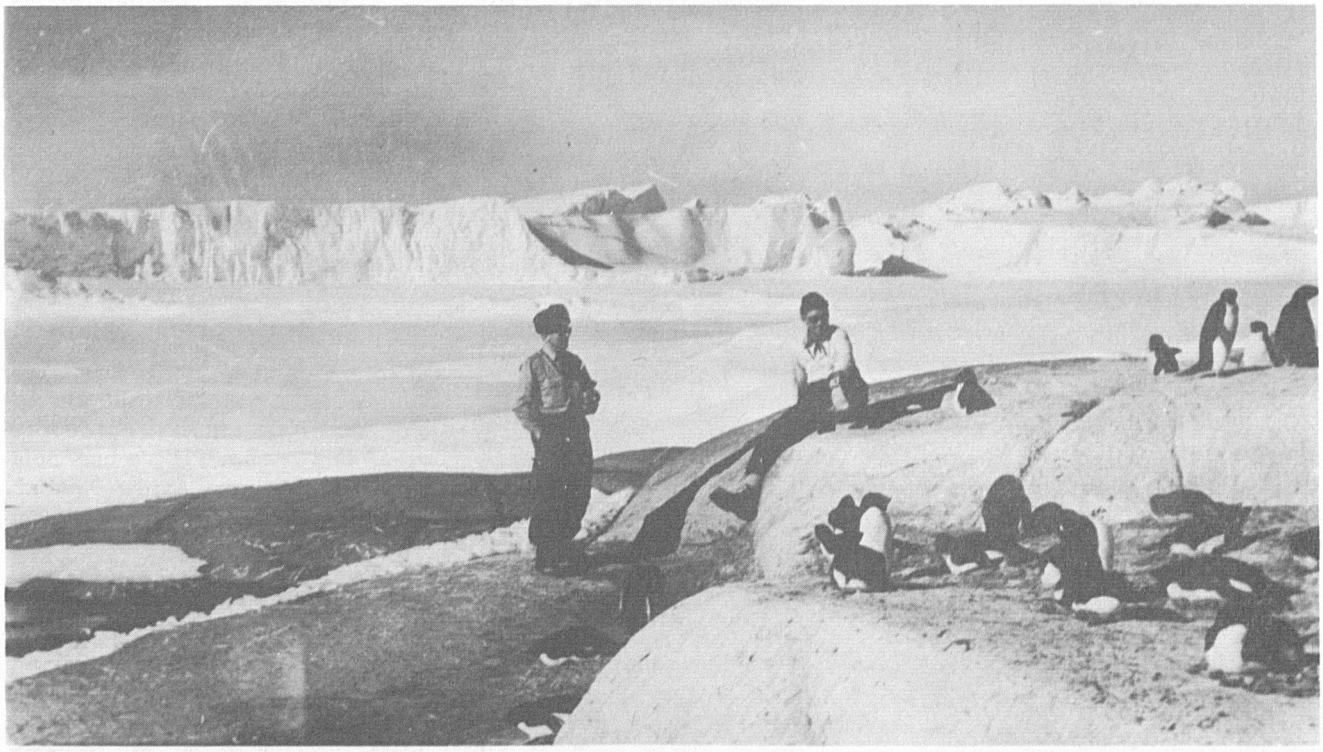
OB breaking ice near Mirny



Cooperatsia at Mirney on Christmas Day 1957

Goryev playing Bayan

Vassili Tetyurim, Chief Aerologist at Vostok and Cartwright



Cartwright and Rubin shift from meteorology to biology; Adelie penguins nesting on Johnson Island.

work. The USSR and Argentina continue to be represented at the Little America IGY Weather Central, with France and Australia now also participating.

In describing some of his impressions of the physical environment Mr. Cartwright said: "One of the most powerful attractions of the Antarctic is the simplicity of the landscape. In the interior you have the feeling that an ant must have when he is dropped in the center of a smooth white table cloth, a white infinity bounded by a blue nothingness. The sky is the only source of variety of scene and you turn to it constantly as a relief from the dazzling white disc of snow under your feet.

"I don't think I have ever appreciated the beauty of clouds and the twilight colors of the sky as much as in the Antarctic. They are often spectacular and with a twilight four to six hours long you soon exhaust your vocabulary--and color film--in describing them.

"At the edge of the Continent low temperatures were never a problem. It was wind and snow, a screaming void filled with millions of tiny icy barbs, that kept us on edge. The 200 yard trip from quarters to mess hall was often the toughest obstacle course I have ever tackled. Once you persuaded yourself that it was a kind of sport, it didn't seem so bad. After ten or twelve days of it, even this idea would wear a bit thin.

"I found my Russian coworkers remarkably adaptable to these difficulties. They seemed to accept them without a second thought. But even their patience would sag after a week or more of blizzards and then the meteorologists would become the target for complaints. A rugged sense of humor is as essential a requirement for the Russian forecaster as it is for those of any other country."

Commission for Synoptic Meteorology Meets in New Delhi

THE Second Session of the Commission for Synoptic Meteorology (CSM) of the World Meteorological Organization (WMO) was held in New Delhi, India, from January 21 through February 15, 1958, with Professor Dr. W. Bleeker of the Netherlands, President of the Commission, presiding. The U. S. Delegation consisted of P. H. Kutschenreuter, Captain P. R. Drouilhet (USN), L. W. Snellman (AWS), S. R. Barbagallo and C. G. Reeves.

As the name implies, the CSM is the Commission primarily responsible for the standardization of methods, procedures and techniques for reporting, disseminating and charting all forms of synoptic data. Its terms of reference

include studying the scientific aspects and encouraging the development of new techniques for analysis and forecasting, and advancing their practical application. Specifically, these responsibilities include: synoptic observational requirements; identification systems; synoptic networks; times of observations; graphical representation on charts and diagrams; scales and projections of charts and diagrams; telecommunication networks, schedules and operational procedures required for international exchange and dissemination of synoptic data, analyses, forecasts and warnings; questions relating to radio frequencies used in transmitting meteorological messages; etc. The CSM has often been referred to as the "Forecasters' Commission."

Opening of Session—U.S. Delegates (left to right)—L.W. Snellman (AWS), Captain P. R. Drouilhet (USN), S. R. Barbagallo, P.H. Kutschenreuter (Principal Delegate), and C. G. Reeves.

Each of the eight technical commissions of the WMO meets approximately every four years to take appropriate action on the matters requiring attention within its field of competence. The action resulting from the study and consideration of the items on the agenda may take various forms as the Commission considers appropriate; however, the usual procedure is to adopt a resolution or a recommendation concerning each of the technical items involved. Briefly, a resolution is one which involves only the Commission or a matter pertaining only to the Commission and as such does not require approval of the Organization or any of its constituent bodies before it can be implemented; a recommendation involves a matter pertaining to an activity which will affect a Member, another constituent body of the Organization, or some organization outside the WMO. A recommendation, therefore, must be approved by the Executive Committee or the Congress of the WMO before it can be implemented.

The agenda for this session followed the usual CSM pattern by being extremely heavy (e.g., one of the main headings actually consisted of 48 sub-items, each of which had to be dealt with individually in Committee) as is attested by the 89 recommendations and 13 resolutions adopted during the session. Each of these resolutions and recommendations was given careful consideration and their implementation will have an overall beneficial effect on world meteorology.

The resolutions established seven working groups which are to make recommendations to the Third Session of CSM (CSM-III) on the following: (1) Code Problems; (2) Telecommunications Matters; (3) Networks, with respect to developing quantitative criteria for spatial separation of observing stations; (4) Terms describing the intensities of meteorological phenomena; (5) Pressure Reduction; (6) Guide to Syn-

U. S. Delegation being greeted by Minister of Communications and Transport at Palace reception.

optic Meteorological Practices; and (7) Streamline Isotherm and Isotach Analyses and Prognostic Techniques in the Tropics. Provision was made for the U. S. to be adequately represented on these working groups.

Considering all aspects of each of the actions taken by CSM-II and the points of view of the countries represented, it would be difficult to decide which are the most important of the actions taken. From the U. S. point of view, however, it appears that the two most important actions, which will result in both immediate and lasting benefit to world meteorology, are: (1) The adoption of plans for the establishment of a comprehensive 5-center, point-to-point, telecommunications network for the rapid exchange of synoptic data throughout the Northern Hemisphere and (2) the establishment of the Working Group on Code Problems.

The five centers involved in the Northern Hemisphere exchange network are: Moscow, New Delhi, Tokyo, Frankfurt and New York. Recommendation was also made for providing special assistance for speeding up the implementation of the Tokyo and New Delhi installations which are not yet in operation. Although the complete implementation is still sometime in the future, interim arrangements were agreed upon and the acceptance of the point-to-point concept for the international exchange of continental collectives is considered to be a major advancement.

Numerous suggestions and proposals for changing and modifying various code forms were on the agenda. Early in the session the Commission discussed the desirability of making major changes in the code forms and agreed that such changes should be avoided at this session if at all possible since present developments in synoptic meteorology indicate that world-wide synoptic requirements will undergo considerable change during the next four years. Therefore, the Commission felt that the practical approach to the problem would be to establish a Working Group of experts to study the proposals received by CSM-II, such other suggestions as may be received from Members, and other code problems which may arise. The Commission will then view these proposals as a whole and in light of their relationship to the world's changing synoptic requirements. The Working Group was instructed to make a thorough study of all aspects of the code problem and to report its findings, or make appropriate recommendations, to the Third Session of CSM. Considering these recommendations, the latest advances in instrumentation and observational techniques and the requirements of numerical prediction methods, the session will then decide upon the proper action.

As an example of some of the other items which were discussed in considerable detail: The Commission recommended that Members (i.e., National Meteorological Services) be asked to conduct comparative tests of various methods for reporting visibility and to make the results of these tests available to CSM-III for study and guidance in making its recommendations regarding the method considered adequate for international adoption; also, considerable discussion centered around the questions of gust reporting criteria from the standpoint of the synoptic meteorologist and that of simultaneity between surface and upper air observations. No changes were made in requirements in either of these categories which would reflect material changes in present U. S. practices.

One afternoon was devoted to scientific lectures and discussions in the field of the Commission. Of the six topics presented during this discussion, four were by members of the U.S. delegation.

The Commission recommended January 1, 1960 as the effective date for the implementation of its recommendations. These recommendations were considered at the Tenth Session of the Executive Committee which convened in Geneva on April 29, 1958.

At the close of the session, Mr. P. H. Kutschenreuter of the U.S.A. was elected President of the Commission for the ensuing four years and Mr. S.N. Sen of India was elected Vice President.

Appreciation in Press

THE Winston-Salem, N. C. Twin-City Sentinel said on Feb. 14, 1958 "Weatherman Wiley Sims (MIC) said today 'The best chance for snow we've had all winter....' "

Two days later (Feb. 16) the Winston-Salem Journal and Sentinel headlined a weather article with "Wiley Sims Hits Nail on the Head." A few days later on Feb. 19 an editorial in the Twin-City Sentinel included the phrase "most streets cleared by Sunday afternoon—it would, in the future, be considerate of motorists if they would park their cars elsewhere (not on the streets) when Wiley Sims predicts a snowstorm—even if the sun is shining, as it was when he predicted it this time."

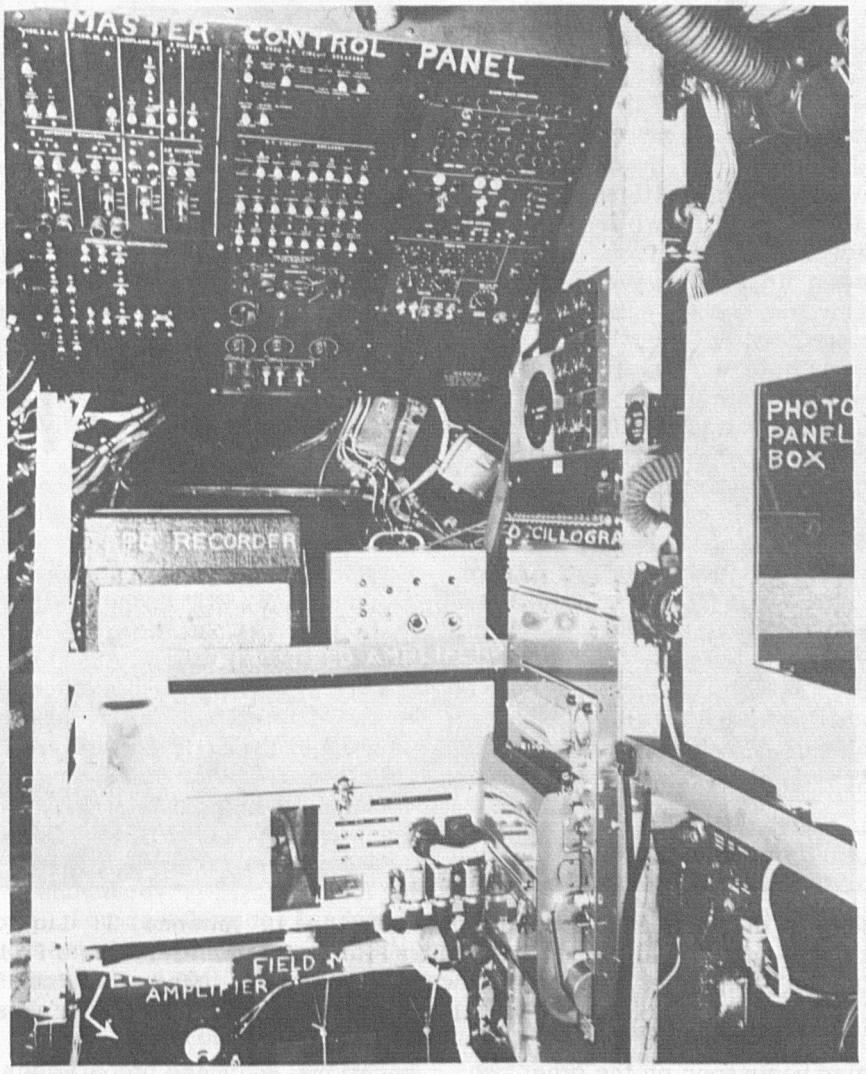
We know that all snowstorms can't be predicted as well as the one mentioned above, but it is nice to note expressions of appreciation by the press when it is done.

National Hurricane Research Project

IN spite of the small number of storms that occurred last season a considerable quantity of important data was collected by the NHRP aircraft. The B-47 made one flight into Hurricane Audrey just as it was crossing the coast even though the storm occurred in June before the aircraft was supposed to be available for hurricane flights. Multiple flights were made into Tropical Storm Frieda and Hurricane Carrie. In addition 41 flights were made to investigate synoptic weather patterns or for cloud physics purposes.

Evaluation of the flight data from Tropical Storm Frieda reveals important clews regarding hurricane formation. Recent studies of data collected from Hurricane Carrie throw some light on the energy of hurricanes. Contrary to the hypothesis of nondivergence in the middle troposphere at the hurricane core, and the assumption that temperatures at the core in the rain area are usually determined by parcel ascent of the subcloud air, there is instead a marked ventilation of the storm core by intrusion of mid-tropospheric air. The resulting vertical mixing seems to have a marked restraint upon development and intensification of the storm.

These and other studies underway reveal that while important progress is being made we are still a long way from solving the hurricane problem. In December 1957 an interdepartmental meeting was held at the Department of Commerce which was attended by representatives of the Department of Commerce, Department of Defense, Bureau of Budget, Weather Bureau, Air Force and Navy for the purpose of evaluating the progress made and the need for continuing the aircraft data collection phase of the National Hurricane Research Project. Although it was brought out that less than 50 percent of the data originally estimated as the minimum amount needed had been obtained it was recognized that considerable progress had been made. It was agreed that the Department of Defense would continue to furnish and operate the three aircraft (1 B-47 and 2 TB-50's) during the period July 1 - October 31, 1958, and that if additional flights were needed after that date, they would loan the planes to the Department of Commerce for as long as they might be needed to accomplish the objectives of NHRP.



Technicians position in B-50.

With aircraft assured for the 1958 season plans are being made for their maximum utilization to obtain as many of the needed data as possible this summer. The first aircraft has already been turned over to the technicians at West Palm Beach for reconditioning and reinstallation of the meteorological equipment. Work will

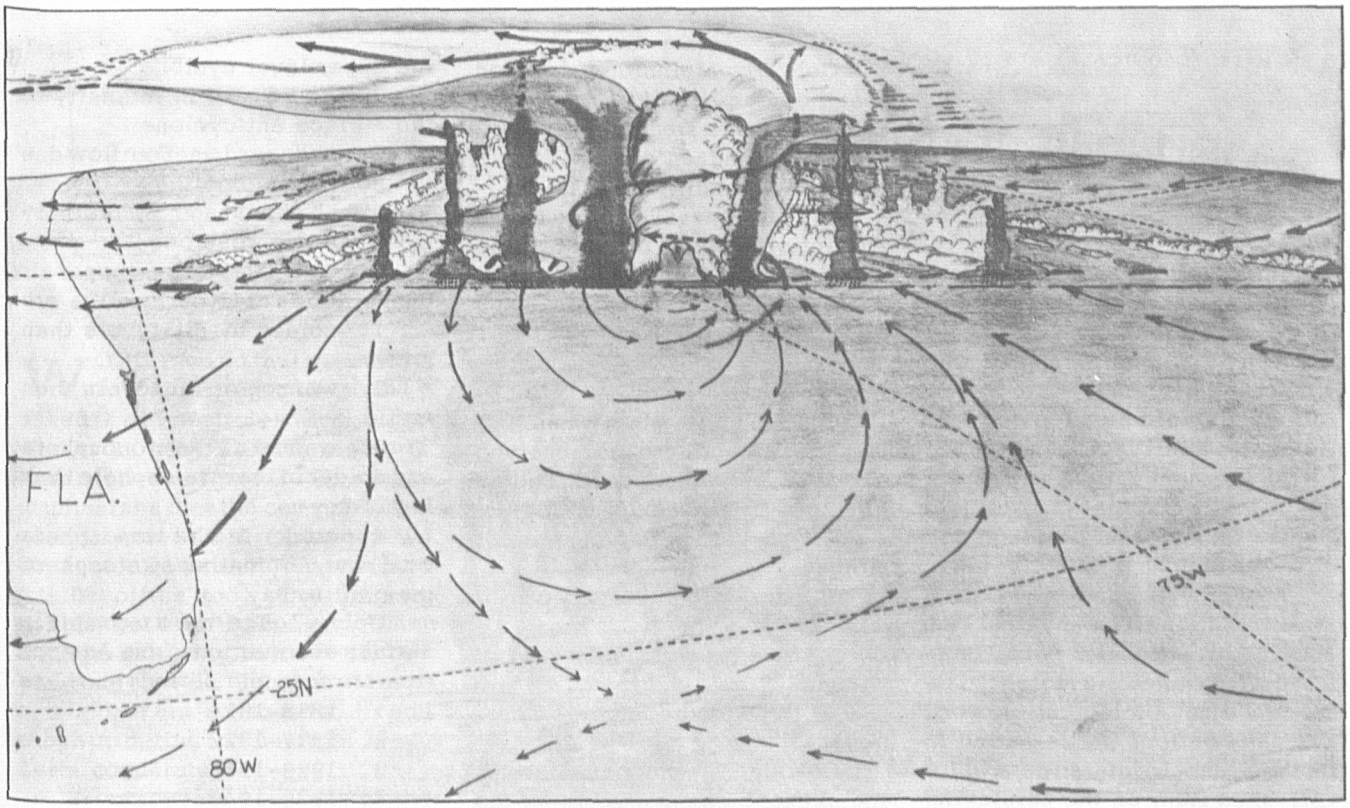
Some of the instrumental probes on the B-50— 1. Antenna, 2. Liquid water content meter, 3. Yawmeter, 4. Antenna, 5. Air Speed Transducer Pilot, 6. NACA Icing Rate Probe and Thermometer, 7. Cloud Droplet Sampler, 8. Reverse Flow Thermometer, 9. Meteorological Static System Pressure Ports, 10. Vortex Thermometer, 11. Pilot and Navigator Pilots, 12. Stagnation Thermometer 13. Antenna.

also begin soon on the other two. It is planned to have all three planes completely ready for data collection flights on July 1, 1958.

The existing agreements with the various governments in the West Indies for the cooperative operation of the West Indies Rawinsonde Stations have only a year left before they expire. So a supreme effort will be made to obtain the maximum amount of the best possible data from these stations this summer. At present the program has been reduced to one observation daily to permit the technicians and observers to take vacations and make preparations for the coming season. Several of the technicians are taking advantage of this opportunity to return to the United States for their vacations. The full twice daily observational program will be resumed at all of the stations on June 15 and continue throughout the hurricane season.

Plans are also progressing for a maximum effort this summer on other phases of the Hurricane Project. It is expected that several of the "Hurricane Beacons," a constant level balloon carrying a radio transmitter to be released from an aircraft in the eye of a hurricane, will be ready for testing this summer.

With preparations going forward on all fronts for a maximum effort to make the most, "research-wise," of any hurricanes or tropical storms that occur this summer we await the whims of nature with mixed feelings. Certainly we do not want to see any more hurricanes such as Audrey ravage our coast. If we can just get a number of nice tame hurricanes that will remain over the ocean areas but within reach of our West Palm Beach Base we will be happy.



Cross Section of a hurricane model based on recent NHRP data.

Mid-South Agriculture-Weather Workshop

REPRESENTATIVES of the Weather Bureau in the Cotton Belt met at the request of the National Cotton Council with agricultural interests from the Mid-South on February 26. This workshop, held at Stoneville, Mississippi, resulted from the excellent response to a similar meeting held last spring.

The program of the one-day workshop was as follows:

Relating Weather to Different Phases of Cotton Production—W. L. Giles, Superintendent, Delta Branch Experiment Station.

Using Weather Information in a County Agricultural Program—R. P. Lewis and M. E. Hill, County Agents, Mississippi Agricultural Extension Service.

Applying Weather Information to My Farming Operations—J. S. Dollahite, Lake Cormorant, Mississippi.

The Part a Farm Broadcaster Can Play in Disseminating Weather Forecasts—Derek Rooke, Farm Director, WMC-WMCT, Memphis, Tennessee.

Forecast Services Rendered by the U. S. Weather Bureau—Gilley Stephens, CAM, WBAS Memphis, Tennessee.

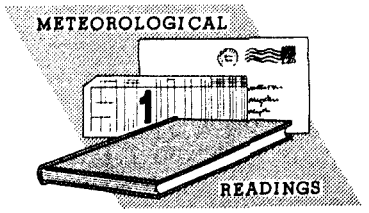
Weather Forecasts and Services Available to Mississippi Agriculture—G. V. Fish, MIC, WBAS Jackson, Mississippi.

Future Role of U.S. Weather Bureau in Agricultural Weather Forecasting—E.L. Hardy, Regional Administrative Officer, Second Weather Bureau Region, Fort Worth, Texas.

The Role of Climatology in Agriculture—C. K. Vestal, Regional Climatologist, U.S. Weather Bureau, Fort Worth, Texas.

This meeting provided an opportunity for exchange of ideas on the operational aspects of the dissemination and utilization of weather information for agriculture. Those in attendance included farmers, representatives of the Agricultural Extension Service, the Delta and Pine Land Company, various farm machinery manufacturers and distributors, seed companies, agricultural aviation, the press, farm publications, and radio farm directors in addition to men from the Weather Bureau, the U. S. Department of Agriculture, and the National Cotton Council.

Reports from Weather Bureau participants in the workshop indicate that the meeting was particularly successful in emphasizing the many ways that weather services can be used advantageously by the farmer and in clarifying the role of county agents, experiment stations, TV and radio stations, and the press as an intermediary between the Weather Bureau and the farmer.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment XIII: Antarctic Atmospheric Circulation by Arnold Court, on pages 917 through 938 of Compendium of Meteorology.

About the Assignment: During the International Geophysical Year special attention is being centered on the Antarctic region. The combined meteorological effort of the many nations participating in this area should furnish data which will shed light on the perplexing problems of that area. To really appreciate the contribution that is being made, it is necessary to know something about the exploration and meteorological information available prior to the IGY and also something of the numerous conflicting theories regarding meteorological problems important to that area and their relationship to those of other areas. This assignment should be useful in obtaining some of this background material.

QUESTIONNAIRE

Assignment No. XIII

(To be answered by participants after reading assignment.)

(For Complete Information, See TOPICS May 1957.)

Col. 61 Meinardus deduced that the mean height of Antarctica is 2000 meters from

1. Amundsen's and Scott's barometric readings
2. the annual variation in the amount of air over the rest of the world
3. aerial photographic maps of Antarctica
4. the rate of glacial outflow from the entire continent

Col. 62 The annual march of surface temperature as observed at Little America is described as having a single maximum and

1. two progressively cooler minima
2. three progressively cooler minima
3. two progressively warmer minima
4. three progressively warmer minima

Col. 63 The present antarctic ice sheet is considered to be the remains of the

1. Obigocene epoch
2. Miocene epoch
3. Pliocene epoch
4. Pleistocene epoch

Col. 64 Kidson's estimate of annual antarctic precipitation was based on the

1. continental outflow of ice
2. available moisture in a saturated atmospheric layer
3. the precipitation data of various explorations
4. the precipitation data of the Arctic region

Col. 65 The long period surges in atmospheric pressure which appear to originate at 80°S, 120°W have been ascribed to

1. changes in intensity of the upper level cyclone
2. changes in intensity of the surface anticyclone
3. changes in net outflow due to heating and cooling
4. the passage of ordinary fronts and depressions

Col. 66 Summertime upper air temperatures at Little America are

1. colder at all levels than Arctic Bay
2. warmer at all levels than Arctic Bay
3. warmer at the troposphere and colder in the stratosphere than Arctic Bay
4. colder in the troposphere and warmer in the stratosphere than Arctic Bay

Col. 67 The most complete surface observations from Antarctica are from the period

1. 1898-1916
2. 1917-1927
3. 1928-1938
4. 1939-1949

Col. 68 Antarctic springtime warming is first apparent in the

1. mid stratosphere or above
2. lower stratosphere
3. upper troposphere
4. lower troposphere

Col. 69 The antarctic tropopause is sometimes nonexistent in the

1. spring
2. summer
3. fall
4. winter

Col. 70 Manley's glaciation cycle is based on

1. sun spot changes
2. oceanic temperature changes
3. air temperature changes
4. geographical changes

Honor Graduates

WORD has been received from the Department of Weather Training at Chanute Air Force Base that Thomas C. Council of WBAS Hartford and Delance O. Martin, WBO Cincinnati, both USAF Reserve Lieutenant Colonels, recently graduated from the Modern Weather Techniques course and were named honor graduates of the class.

Major Edwin E. Carmell, Deputy Group Commander for Weather Training, wrote that normally a single honor graduate is named, but the performance of Colonels Council and Martin while attending the course was so comparable it would have been an injustice to name one and not the other. Both were commended for their achievement during graduation exercises and presented with a Certificate of Achievement for outstanding performance of academic duties.

Spring Housecleaning-at the Office Too

WOULD you do that at home?", is a question commonly asked in office circles when a co-worker is seen flicking cigarette ashes on the floor. It simply emphasizes that the common rules of tidiness and cleanliness we observe at home should be applied at the office too. Our homes usually get a spring housecleaning and who can deny that our offices need one as well. Secretary Weeks has asked us all to pitch in and clean up during the month of May. Let's cooperate!

Several years ago, one of the Central Office division chiefs took a unique approach to the clean-up problem and got the idea across to his employees. Here it is, reproduced again in TOPICS, for the benefit of employees who may be "down in the dumps."

TO: MEMBERS OF DIVISION
SUBJECT: Short Route to City Dump

Here and there the top of a file cabinet or book case acquires a roll of maps, a broken-backed book, a disjointed letter tray or a file of correspondence. Soon other choice items join them; an old hat, a coat hanger, an ozalid copy of a 500-millibar chart, mimeographed copies of an obsolete circular, a telephone book, an atlas, a spare stapler, a shoe rag, an old powder puff. The division begins to look like the inside of a lady's pocketbook.

Dust slowly settles on this aggregation of junk and the division begins to resemble the alley on trash-collection morning. The most annoying item is a roll of something that doesn't fit well in a desk or cabinet. Gradually the division begins to look like the cellar of a paperhanger or the attic over a bird store.

It is only one more step until the old shoes, worn neckties and discarded girdles join the piles on top of cabinets and bookcases. Empty ink bottles, ornamental paper weights, spare ash trays and cracked dentures are piled on top and every time there is a high wind, unimportant stuff begins to roll off and accumulate in the corners. Whenever a window is raised, little clouds of dust chase across the floor and here and there a dust whirl becomes organized and lowers the visibility. This is swept around by the charwomen but it settles back on the desks and clings to the elbows and chins of the hard-working employees of the division.

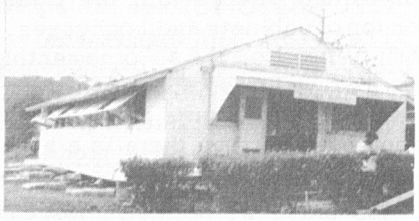
The next step is the city-dump stage. Empty cartons, string, spark plugs, paper clips, stencils, can openers, broken parasols, dust rags, beer bottle caps, coca cola bottles, paper napkins, seat covers, spare tires, daggers, false whiskers, Geiger counters, overshoes, rubber boots, busted suspenders, dog-eared pamphlets, egg beaters, horse collars, rubber stamps, garters, door mats, lunch sacks, old brief cases, hand bags, false hair, bobby pins, tobacco cans, ripped rain coats, picture moulding, trusses, cigar butts, corn cobs, bandages, spectacle cases, hair brushes, ear rings, and megaphones join the collection.

This is just a hint that the stuff is beginning to accumulate again.

NOTE: This memorandum, of course, does not apply to YOUR office.

Three with one Blow

PETULANT Pacific Miss might well be another title applied to small but destructive Pacific typhoon OPHELIA of 1958. When first detected by forecasters analyzing charts at the Weather Bureau Airport Station, Honolulu at noon on the last day of December 1957, she was nothing more than an incipient vortex on the Intertropical Convergence Zone. At that time she was 1,300 miles south of Hawaii and headed on a westerly course.



WB Building, Ponape blown off its foundation by OPHELIA
Trust Territory Adm. Photo.

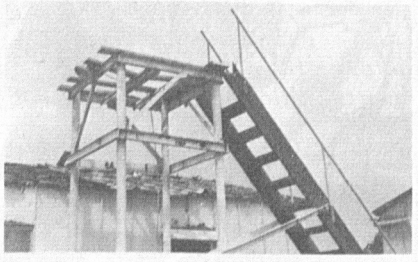
Keeping to this course, she moved during the next few days over a vast island-free stretch of the Tropical Pacific Ocean which is seldom traversed by ship or plane. Because there were no reports to provide a clue to her intensification, she was still being referred to as just a vortex when she made her first landfall and a lethal strike on Jaluit Atoll in the southern Marshall Islands on January 7.

In making this strike, she took the lives of 14 people and did an enormous amount of damage to structures, coconut trees, and other vegetation on the Atoll. From the post storm reports, this storm was rapidly developing into a full-fledged typhoon just at the time it struck and laid waste to this Atoll.

Proceeding westward and intensifying, on January 10, she struck Ponape where she literally blew the two frame buildings occupied by the Weather Bureau off their foundations and damaged them beyond use.

Not content with this destruction to facilities of one of the agencies instrumental in charting and predicting her course, she proceeded on westward to Truk Atoll where, on January 11, she struck another damaging blow to the Weather Bureau. At this location, she severely damaged the quonset buildings occupied by the Bureau, completely demolished the inflation shelter and leveled the power line running to the rawinsonde tracking equipment.

Then, as if still intent on wreaking more vengeance on Weather Bureau First-Order installations in the Tropical Pacific, she continued to move on a westerly course and, on January 13, she struck the Island of Yap.



OPHELIA damaged WB Facilities at Yap

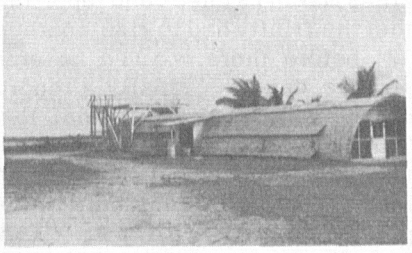
There, she destroyed the roof on the old Butler-type corrugated sheet-metal building occupied by the Weather Bureau and seriously damaged the inflation shelter, the theodolite and a radio antenna.

Fortunately, new Atomic Energy Commission-constructed buildings, intended for ultimate occupancy by the Weather Bureau, were all but completed at Truk and Ponape at the time of OPHELIA's unappreciated visit. Through arrangements with the Commission and the cooperation and assistance of Trust Territory Administration personnel, and, by dint of hard work and perseverance by Weather Bureau employees based at these two stations and those who were able to come in, moves to these new quarters were quickly accomplished. As a result, except for more aching muscles and bruises than usual and numerous little annoyances, things were practically back to normal within a few days.

At Yap, the story was different. There, the Weather Bureau has contracted for the construction of a new typhoon proof combined office building and inflation shelter. The testing for typhoon-proofness administered by OPHELIA came a little too soon, though; the contractor who is to erect this structure was in the process of having the necessary equipment, materials and supplies loaded on board a ship in Guam, for shipment, at just the time OPHELIA struck Yap.

There was, therefore, no new structure available to move into at Yap. Fortunately, though, the Trust Territory Administration people adapted a portion of a very old pre-World War I German-erected concrete structure and made it available for Weather Bureau use. Again, by the cooperation, assistance and hard work of many, the station activities were moved to different quarters. WBO Yap was then back in operation on a "business as usual" basis—only

Some of OPHELIA's destruction on Ponape
Trust Territory Adm. Photo.



The old ---

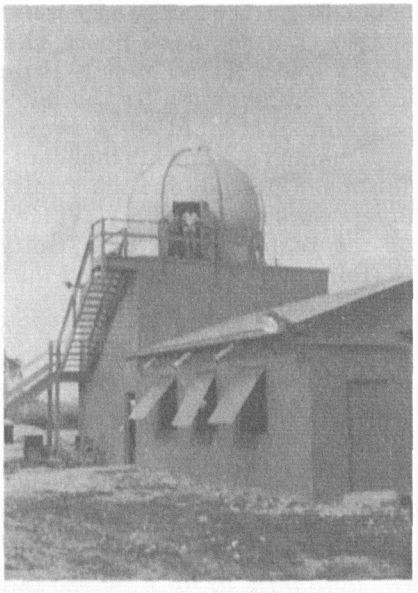
temporarily, we hope, until it gets its brand new building. Then it will again be inconvenienced briefly by another move.

What did all this reveal? For one thing, it showed that it takes more than "three strikes" at Weather Bureau First-Order Stations in the Pacific by one relatively small typhoon carrying around a girl's name and a lot of air in rapid motion to get the Bureau completely "out." Second, it revealed that, "when the chips are down" and emergencies develop, Weather Bureau employees in the Pacific "rise to the occasion" just as do those elsewhere. It also showed that people in other agencies operating in the Trust Territory go out of their way to be helpful to the Weather Bureau in times of emergencies even though they have numerous added problems of their own with which to contend at these times.

By meteorological standards, OPHELIA was not a large storm, nor did she pack exceedingly strong winds, as typhoons go. At the Ponape weather station, the highest wind observed in this storm up until the equipment became inoperative, was 60 knots. At Truk the highest reported wind speed in the gusts at the weather station was 74 knots, and at Yap peak gusts were only a little over 70 knots at the weather station. OPHELIA did, though, produce tide surges of 11 feet and create waves well in excess of 25 along some of the reefs fringing Trust Territory islands and atolls. In fact, at Jaluit Atoll, waves were high enough to inundate most of the land area; even to a depth of six feet in places.

The Weather Bureau was not the only agency to experience losses from this typhoon; Trust Territory Administration facilities at various locations were severely damaged and many were completely demolished. The storm also did untold damage to the homes and other facilities and to the lands and the crops of the Micronesians who are the native inhabitants of these Pacific Islands.

OPHELIA and the destruction she wrought will long be remembered in this part of the world.



and the new at Truk

Weekly Weather and Crop Bulletins

ALL states are now covered by local weather and crop bulletins. These are generally issued on Tuesdays throughout the growing season. A typical bulletin consists of a section on the progress and condition of crops during the week and one on the weather, followed by weather data in tabular or map form.

For a number of years the Weather Bureau has attempted to strengthen the crop reporting part of this bulletin, feeling that this could best be done by the specialists of the Agricultural Marketing Service of the U. S. Department of Agriculture. For the first time, the Agricultural Marketing Service will assume this job for all states, as well as to accept responsibility for furnishing the supplies and reproducing and mailing the bulletin. (An exception is the Puerto Rican bulletin, since Agricultural Marketing Service does not have an office there.)

Weekly crop-weather telegrams sent in for use in the National Bulletin are now prepared in cooperation with the local State Statisticians. The National Bulletin, which began in 1872, is prepared in the Office of Climatology of the Weather Bureau, with professional agricultural assistance from a crop statistician detailed from the Agricultural Marketing Service to the Bureau two days per week for this purpose.

The distribution of the Weather and Crop Bulletin material by publication, re-publication, and wire service is very extensive. A survey in September 1954 showed that much of the information published in the National Bulletin was used by newspapers, magazines, and periodicals with a combined circulation of over 5 million. An additional several million persons obtain portions of the Bulletin on radio and TV programs, and commodity wires each week. Wall Street Journal and Weatherwise are among the disseminating media.

The articles on the effects of the weather during the week on "Small Grains," "Corn," and "Cotton" (800 to 1500 words) are given national distribution to the press and exchanges at 12 noon, E.S.T., each Tuesday by the Wall Street Journal's Dow-Jones ticker system and by Western Union for the Commercial News Department. These articles and the "Weather of the Week" are put on the Service C System where they

are made available to the field stations and subscribers on local public service loops. The Commercial News Department is given additional information on temperature, rainfall, moisture, and cotton during the week in each of the cotton states for transmission to the various cotton exchanges and related interests. Also the "Small Grains," "Corn," "Cotton," and occasionally the "Miscellaneous" articles as well as the condensed weather-crop summaries for the 14 corn and wheat states are transmitted to Chicago. The Weather Bureau in that city makes this information available to the extensive exchange and press services through the local public service loop promptly after 11 a.m. (12 noon E.S.T.) each Tuesday.

Close cooperation between the Domestic Area Section of the Office of Climatology, the Agricultural Marketing Service, the State Climatologists and other field officials, Communications Unit, and Printing Section, all make it possible to meet the tight deadlines of press releases at 12 noon, and the printing and mailing of the National Bulletin by 5 p.m. each Tuesday. This is an excellent example of the fine cooperation necessary for the issuance of a public service product.

The Dam that did not Burst

THE following is quoted from a recent flood report submitted by Ivan E. Anderson, MIC, WBO Eureka:

"Meteorological conditions just prior to February 18, 1958 were quite similar to those prevailing when the disastrous floods of December 1955 hit this area. In addition to the heavy rains, erroneous information was given that the Army Engineers were forecasting a flood which would exceed that of 1955. Thus the stage was all set for trouble, and trouble really began. On February 18th I called the River Forecast Center at Portland, Oregon and discussed the river conditions with them. We arrived at a forecast for all the rivers in this district. Minor flooding on the Eel River and near flood on the Smith River, Redwood Creek and Mad River and about five or six feet below flood stage on the Klamath River at Klamath, California. These forecasts were given wide dissemination early in the afternoon and through the early hours of the evening and it looked like a routine flood condition where minor flooding takes place. All during the evening hours it rained, and rained hard, but everything was still going along as forecast. Then someone hit the panic button and it took about four hours to get relatively quiet again. During those hours the MIC's hair turned just a little grayer, the question 'is the forecast correct or could we be wrong' kept running through his thoughts. The upper Klamath and the Trinity Rivers were rising rapidly. Voices on the radio network 'the Trinity is rising a foot an hour' and then the big blast 'run for your lives, the dam has broken, there is a 40 foot wall of water coming down the Trinity River.' The MIC asking over and over again as calls came in 'What dam has broken, there is no dam up there to break' finally silence on the breaking of the dam, but no silence on the wild rumors. Again and again the question 'is the forecast correct?' No reports from the official observers, just from individuals patrolling the river banks. Finally the radio voice of one of the official reporting stations. 'The Trinity has only come up two inches in the past three hours. Apparent crest about 9 feet below the 1955 height.' Civil Defense volunteers in some of the remote areas making a check and reporting that the Trinity had to rise another 12' before there would be any serious danger. Finally a report on the radio network that the Trinity had started falling. Then the worries about the lower Klamath began. Residents were poised to flee and many had actually loaded their moveable possessions and were heading away from Klamath and Klamath Glen. The Klamath River was rising slowly but steadily and still the wild rumors about the high water up-stream. By daybreak the rumor of the 40' wall had dwindled to only a 6' wall of water but it was published in the newspaper and put out over the radio news broadcasts. More near panic but not nearly as great as during the dark hours of the previous night. Then came the cheering news that the Klamath River had crested at the town of Klamath very close to the height forecast and was now on the way down. Panic and worry all night had produced a mite instead of a flood. In the meantime the Eel River rose to a height of 19½ feet, about 2 feet over flood stage, and then began to fall without causing a tenth of the furor of the below flood conditions on the Klamath River. All other rivers in this district came to near flood stage during this period of time but no actual flooding took place."

Special Warning Information

CERTAIN community activities require constant awareness of the need of certain special warning information. A good example of this type of service was recently brought to our attention by Mr. S. E. Decker, MIC, WBO Escanaba, Mich.

On February 27, 1958, the Escanaba Daily Press reported "Commercial fishermen were reported removing their pound nets from Green Bay ice off Cedar

River and in the Menominee-Marinette area today and nets in the mouth of Little Bay de Noc were being prepared for a gale expected to break up Green Bay ice. U.S. Weather Bureau meteorologist S. E. Decker relayed the Bureau's warning to the State Police and commercial fisheries on the bay, who were warning fishermen of the gale peril.... ...The Escanaba Fisheries reported today that commercial fishermen fishing out of Cedar River and Menominee-Marinette were removing Green Bay nets today in response to the warning."

The next day, February 28, the same newspaper reported "The Weather Bureau's warning to fishermen was realized in the night by crack-off of a large floe of Green Bay ice off Breezy Point south of Escanaba...."

The Daily Press reported on March 3 that "nets ... were anchored in the ice floe that broke off from the solid sheet, but because of warnings issued by the Weather Bureau they had been 'triggered' to sink to the bottom of the bay in case of a break and are expected to be recovered when boat operations become possible." (These nets are valued at about $5,000 each.)

Familiarity with local activities makes it possible for the Weather Bureau to render a valuable and, sometimes, life saving warning service.

Retirement Activities

FRANK E. HARTWELL, who retired from the Weather Bureau in 1935 (*see* TOPICS AND PERSONNEL June 1935) belongs to the "do-it-yourself" school. A recent accomplishment, and a most unusual one, concerns the publication of his book, "Forty Years of the Weather Bureau." Mr. Hartwell, now in his 85th year, did not give up when he struck a snag in finding a publisher for his book. Instead he went ahead on his own, setting type and doing the printing himself on his own press. The illustrations are from pen and ink drawings sketched by Mr. Hartwell many years ago.

Some of Mr. Hartwell's many and varied activities since retirement are described in the following letter.

"My wife (in her 76th year) and I in my 85th, have always held that the 'programs' prepared to entertain oldsters begin at the wrong end, with the oldster sitting in an easy chair waiting for the Reaper.

"To put it briefly, our philosophy is to keep busy. To that end, I may say that since retirement we have visited all the states but eight by automobile, also the northern provinces of Mexico and the eastern provinces of Canada. I taught meteorology to embryonic pilots at the University of Vermont under the CAA in the late 'thirties, did considerable commercial printing in the 'thirties and when the war broke we entered the welfare work of the Masonic Service Association, which held us for the years '42 to '47 inclusive, when we started to 'see the country.'

"We have an old house which has needed a lot of attention: we have done our own repairs, papering, plumbing, wiring, and I put on an entire new roof after I was 80 without assistance.

"I occupied a seat in the Vermont Legislature in '53-54 and drew a paragraph in Who's Who in the East for my work there. I, with two others, represented Vermont at the Federal-State symposium in Washington in June 1956. Have filled in 'spare time' keeping up with the times by reading and needlepoint. Have several blue ribbons from the Champlain Valley fair on the latter and have exhibited water and oil paintings both here and in Asheville, where we were stationed following the close of the war.

"The good wife is equally busy, for in addition to being a bang-up New England cook, she makes all her own and my suits. While printing the book, the weather turned so cold in January that she insisted that I bring the type cases upstairs to the living room (the shop is in the cellar) so I set the type up here and carried the forms down to the press. So, with a two-floor house, I was negotiating two flights of steep stairs several times a day for nearly four months.

" 'Chores' include occasional use of the snow shovel and the pick to get the car on the street, bringing in oil for the water heater, measuring the snowfall, which up to now (March 20) adds up to 121 inches, the first 100 of it without a thaw. It is settling a bit now--down to 22 on the ground this morning."

In addition Mr. Hartwell was elected to the office of Secretary of the Vermont Society of the Sons of the American Revolution at their annual meeting in February 1958, and keeps a rainfall record in his valley for Mr. Robert E. Helbush, MIC of the Burlington WBAS, under the new flood forecast setup.

Information received recently from the RAO New York indicates that Mr. Hartwell is still interested in Weather Bureau activities--so much so that he drove 20 miles from his home in the hills of Vermont to attend the presentation of a Silver Medal to MIC Helbush of the Burlington station. (Mr. Hartwell was in charge of the Burlington station from 1919 to 1930.)

Who among our retired employees can match Frank E. Hartwell?

Bond Campaign

ON April 17 the Chief of Bureau reminded all employees that the annual Payroll Savings Plan Campaign would begin on May 5.

Keymen may now roll up their sleeves and bend every effort toward contacting non-participants.

The percentage of participation in the Weather Bureau continues well below the Department of Commerce average. But since one region maintains an average well above the Department of Commerce average we assume this is possible elsewhere. Let's give it a good try.

We believe Weather Bureau participation will be equal to any if the advantages of the Payroll Savings Plan are completely understood by all. As a matter of self interest all members of the Weather Bureau family are urged to read the literature that will be supplied, and discuss the propositions at home, with fellow workers who are participating and with Keymen.

Your pledge will be serviced promptly and the bonds will soon roll in. You will like it!

Superior Accomplishment Awards

Nathan Kronberg

NATHAN KRONBERG, WBAS Columbia, South Carolina, received $200 in recognition of his very fine work as South Carolina State Climatologist and while serving as Acting MIC at Columbia.

Mr. Kronberg's award was based on his effective liaison with other agencies and local Chambers of Commerce in furthering the state-wide climatological program at comparatively little cost to the Bureau; his outstanding work in carrying out an extensive program in cooperation with Civil Defense and State highway officials, public schools, and other organizations to provide an effective storm warning network; the many climatological services he has been able to provide to a variety of users; and his leadership and supervision of the station program and personnel while Acting MIC at Columbia

Lorenz C. Armstrong

LORENZ C. ARMSTRONG, Meteorologist, was awarded $300 in recognition of his excellent work in the Central Office Management Section since June 1956 when the management functions of Plans and Program Management Office were transferred to the Budget and Management Division.

During this period Mr. Armstrong carried out a multitude of important functions in an outstanding manner, keeping in view long-range plans so that current decisions would fit into overall objectives of the Bureau. His very realistic day-to-day recommendations, his spearheading the planning of recent staff adjustments, his high level of productivity, and the judgment, tact, and cooperation he has displayed in negotiating with operating divisions formed the basis of the recommendation for his award.

Lena Drebert

LENA DREBERT received $200 for sustained superior performance of her duties as Supervisory Clerk in the San Francisco WRPC Bulletin Copy and Assembly Unit.

Mrs. Drebert has performed her duties in the preparation and assembly of climatological data formats in an outstanding manner. She has displayed initiative in reviewing operations which has resulted in many worthwhile suggestions for improving the publications, and has consistently planned her work in such a way as to take maximum advantage of the Machine Unit's schedule. In addition to her excellent work in the performance of assigned duties, Mrs. Drebert keeps abreast of the work of one of the other WRPC units in order to fill in during emergencies and during periods when her workload is not heavy.

Dale R. Harris

DALE R. HARRIS, Meteorologist, Central Office Observations and Station Facilities Division, was awarded $300 in recognition of his accomplishments as Project Leader of the Newark ANDB Project.

Since the beginning of meteorological service to aviation, the Weather Bureau has been continually striving to improve the quality of service to pilots. The problem of furnishing more accurate and useful information for landing under conditions of low ceiling and visibility has become increasingly acute. Mr. Harris supervised research which resulted in the development of a system for reporting runway visibility which is representative of what the pilot sees during his landing. A pilot can now be given representative observations under the most critical conditions. Runway visual range has been accepted by CAA and the aviation industry as legally controlling landings and take-offs at airports equipped with suitable electronic and visual aids.

NEW MIC

Tampa, Florida

ROBERT M. FERRY, Supervisory Meteorologist in Charge of the Weather Bulletin Unit at Suitland, Maryland, was selected to succeed Mr. William E. Maughan as Meteorologist in Charge at Tampa, Florida. Mr. Maughan is retiring after 44 years of service with the Weather Bureau.

Mr. Ferry is 36 years of age. He entered the Weather Bureau as a Meteorologist at Chicago in

1946; has held subsequent assignments at Honolulu and the Extended Forecast Section before being chosen to establish and head the Weather Bulletin Unit in November 1955. During World War II he served as Station Weather Officer with the Army Air Corps in the United States and Japan, following completion of the Army "A" course in meteorology at the University of Chicago in 1942. He also holds a BS degree from the Tri State College in Indiana.

RETIREMENTS

William E. Maughan

A career of more than forty-four years of public service came to a close on April 30 when William E. Maughan retired from his position as Meteorologist in Charge at WBAS Tampa.

A native of Minnesota, Mr. Maughan graduated from Morris (Minnesota) High and taught rural school for one year before entering the Weather Bureau on September 16, 1913, as an observer at Los Angeles. He served very capably at Los Angeles, Phoenix, Davenport, and in the Central Office before his career was interrupted for military service during World War I. After his discharge from the military in 1919, he returned to duty at Ellendale and served briefly at Des Moines before his transfer in 1920 to Helena with promotion to meteorologist. His very fine work was further recognized in 1933 when he was named Section Director for Montana. After ten years in this position he went on to assignments of greater responsibility, first as MIC at Oklahoma City and since 1955 as MIC at Tampa.

Mr. & Mrs. Maughan expect to do considerable traveling throughout the West this summer with visits planned to Helena, their former home, and Los Angeles, the home of their daughter. Eventually they will settle somewhere in the West to be near their daughter. For the present, however, friends may continue to contact the Maughans at 7103 Coarsey Drive, Tampa 4, Florida.

James T. Mills

JAMES T. MILLS of the Central Office General Services Section retired April 30 after twenty years of government service.

Mr. Mills entered the Weather Bureau December 20, 1940, and has served as laborer, chauffeur, and forklift operator.

Born in Richmond, Virginia, on April 17, 1893, Mr. Mills first came to Washington in 1914 to work as a cook in the House Office Building. He served overseas in the Army during World War I and after his discharge in 1919, he was employed as a moving van driver until he entered the Bureau.

Following his retirement Mr. and Mrs. Mills will move to Salem, N. J., where he plans to operate a chicken ranch.

Robert W. Pinder

ROBERT W. PINDER, Area Electronic Technician at Miami, retired March 31 because of disability after more than twenty years of Weather Bureau service.

Mr. Pinder was born in Key West, Florida. He graduated from Monroe County (Florida) High School and attended Burlington (Iowa) Junior College. He was employed as a musician and as a radio repairman in private industry before coming into government.

Entering the Weather Bureau in 1937, Mr. Pinder served as an observer at Miami until March 1940 when he was selected for the OIC assignment at Burlington, Iowa. He returned to Miami in May 1941, and in 1943 he was promoted to Supervising Observer, serving in this capacity until 1948, when he was designated Area Electronic Technician.

An expert in the installation, modification, and maintenance of electronic equipment, Mr. Pinder contributed a great deal to the development of the automatic weather station program. His technical competence, dedication to duty, tireless energy, and genuine interest in his work are well known to all with whom he was associated. Mr. Pinder's friends may contact him at 6750 N. W. Fifth Avenue, Miami, Fla.

Deaths

Harvey H. Spindler

WORD has been received that Harvey H. Spindler, who retired from the Bureau September 30, 1935, died last October at the age of 80.

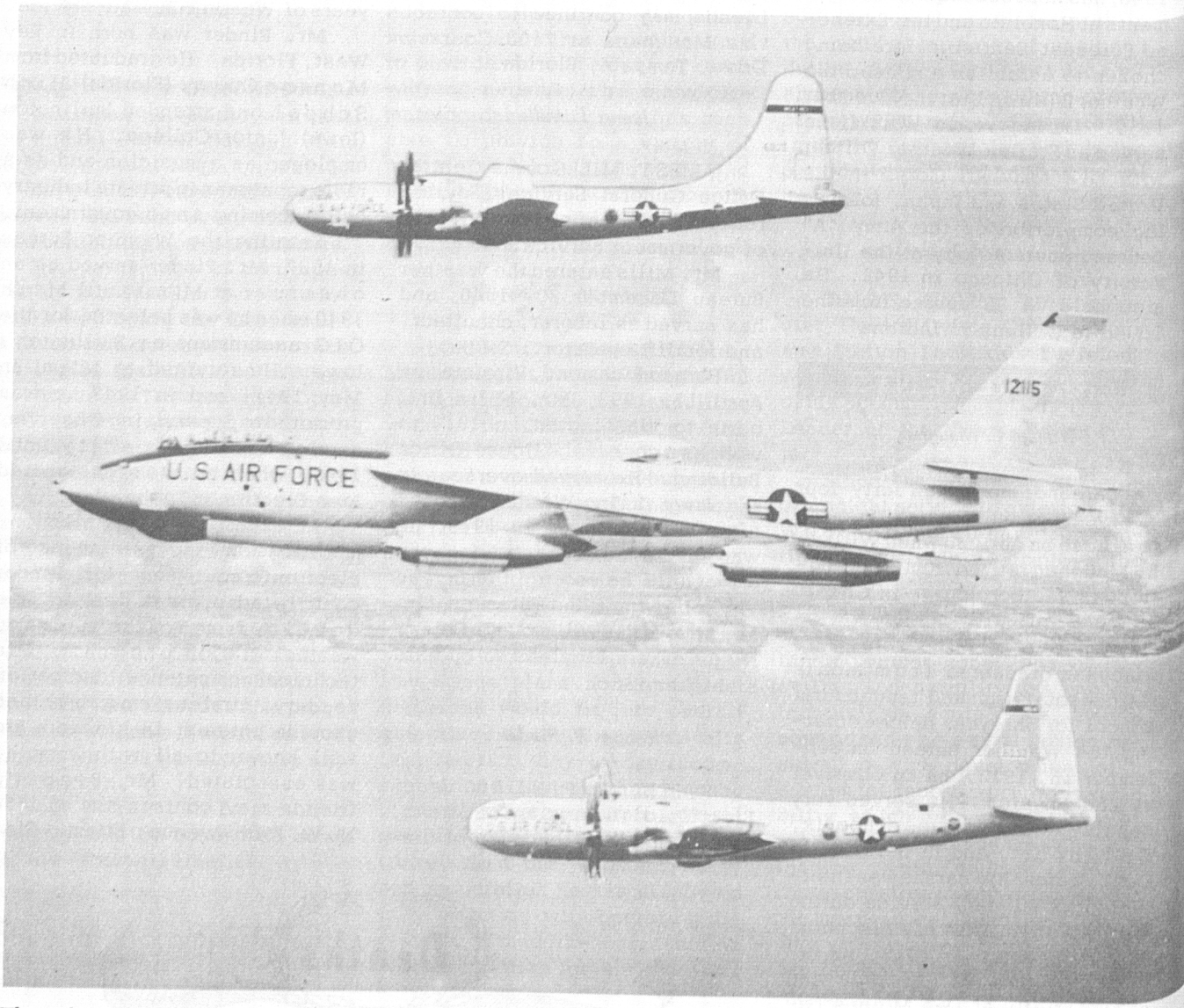
Mr. Spindler was born at Barton City, Ohio on January 11, 1877. He entered the Weather Bureau on September 1, 1904, serving as assistant at Nashville, Cape Henry, Mount Weather, and Lansing and as Official in Charge at Escanaba from November 11, 1914, until the time of his retirement.

Malcolm Sprague

MALCOLM SPRAGUE, who retired from the Bureau December 31, 1943, died March 15 at the age of 79.

Mr. Sprague was born in Greenwood Township, Pennsylvania, on October 14, 1878. He entered the Weather Bureau as an assistant observer at Richmond on June 1, 1905. He also served at Houston and from 1932 until his retirement as a meteorologist at San Francisco.

Survivors include his widow, two sons, and a daughter.



The three Hurricane Project Aircraft off Florida Coast.

For story see pages 85 to 87.

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WEATHER BUREAU

TOPICS

JUNE
1958

Messrs. Hamann and Grubb receiving award from Under Secretary Walter Williams. See page 105 for story.

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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.

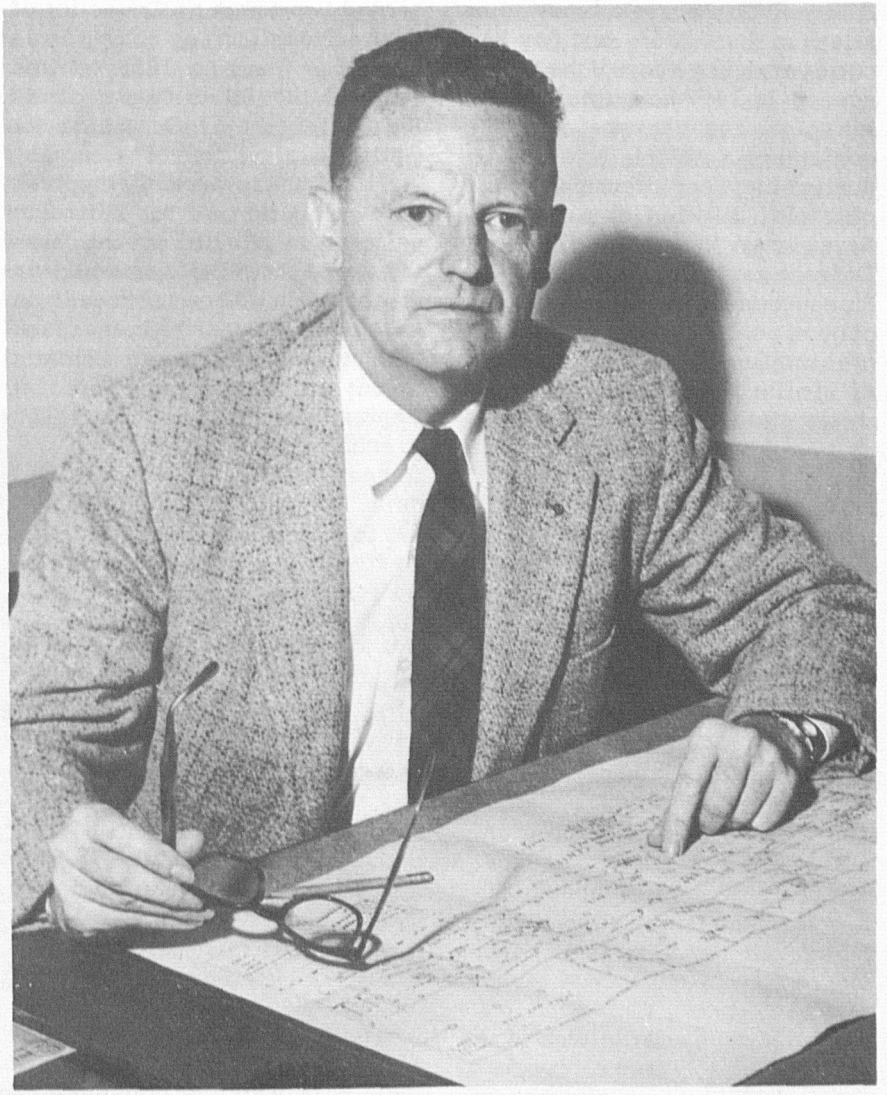
Gordon E. Dunn

GORDON E. DUNN, meteorologist in charge at the Miami Hurricane Center of the Weather Bureau, is the orginator of the twenty-five hour day, so his associates claim. For himself, that is, not for those in his office. Literally he spends nearly that much time every day watching the weather, being known as both a professional meteorologist and a weather hobbyist.

Dunn was born at Brownsville, Vt., on August 9, 1905. He attended the Brownsville public schools, followed by a year at Brown University, Providence, R. I. He entered the Weather Bureau at Tampa in 1924, where he witnessed a freak late-season tropical disturbance that crossed the Florida peninsula the night of November 30, 1925. Incidentally, even though Dunn is foremost among the world's hurricane experts, one of his minor claims to fame is that he's never experienced the full "benefit" of exposure to the center of a hurricane.

Following his apprenticeship at Tampa, Dunn was transferred to Washington, where most of the Bureau's forecasting activity was centered at that time. Here he won his spurs as a student forecaster, studying the methods and techniques of some of the earlier forecast experts, such as Weightman and Mitchell, and incidentally developing a few tricks of his own. During this period he continued his education, being graduated from George Washington University in 1932.

That same year he was married to the former Mildred Bigelow, also a native Vermonter. They have three children, Kristine, a working newspaperwoman at Miami; Arthur, in the Navy at Key West; and Sarah, a college freshman.



Gordon Dunn reviewing plans for the layout of the new office in the Aviation Building. Photograph courtesy of Miami Herald.

In 1935 the Weather Bureau began its decentralization of the hurricane warning service. Dunn went to Jacksonville as assistant hurricane forecaster under the late Grady Norton, remaining there until 1939. He then became supervising forecaster for the North Central States at Chicago, succeeding to the position of meteorologist in charge in 1943 following the retirement of Charles A. Donnell. He was an instructor at the Institute of Tropical Meteorology for a year, followed by another period of a year as Technical Consultant to the Air Weather Service in India. He returned to Chicago after the end of the war, where he remained until 1955. During the latter part of this period he was detailed to Washing-

ton, acting for a time as Assistant Chief for Administration.

The present phase of Mr. Dunn's career began with his selection as meteorologist in charge of the Miami Hurricane Forecast Center. He reported at Miami in April 1955, and has become very much a part of the Miami scene. In 1957 he originated the idea of the hurricane preparedness conference. Widely attended by public safety and communications officials, utilities operators, American Red Cross and Civil Defense personnel, other Weather Bureau meteorologists, and the general public, this seminar-type presentation was the forerunner of similar meetings in other hurricane-area cities. Dunn followed up this day-long discussion by a swing around the hurricane belt, consulting with public officials concerning the division of duties between them and the Weather Bureau during a hurricane emergency.

Dunn has written a number of papers on hurricanes and other aspects of meteorology, including "Short-Range Weather Forecasting" and "Tropical Cyclones" both in the Compendium. He has served two terms as Councilor of the American Meteorological Society, and in 1955 he was awarded the Silver Medal of the Department of Commerce for meritorious service.

Mr. Dunn is currently involved with relocation of his office to quarters in a building known as the Aviation Building which is roughly four miles northwest of the present site. Ample space will be available for an efficient layout of the Hurricane Forecast Center. There will also be space to accommodate the National Hurricane Research Project at a later date. In addition, plans are going forward for the Navy Weather Central at Miami to be located on the floor below the Weather Bureau quarters. The new WSR-57 radar will be installed on a tower in the Aviation Building, and this radar will be available for research on hurricanes and other severe storms as well as for daily operational use. In effect, a model forecasting and research center is in prospect, and there will be ample opportunity for meteorological research personnel from all over the world to carry on research at this location.

Dunn's hobbies occupy a large niche in his twenty-five hour day. He is an assistant scoutmaster of a troop in suburban Coral Gables, where he and Mildred make their home. He has long been a Rotarian. He is a gardener and an enthusiastic fisherman, often being accompanied on his forays down the keys by other staff members at the office, including several of the "Chicago Syndicate," made up of former employees up there who followed their boss to Florida.

Garden City—Dodge City Telephone Line Discontinued

WEATHER BUREAU support for the special telephone line over which Garden City (Kansas) residents have been accustomed to calling the Dodge City Weather Bureau Airport Station without charge was withdrawn at the end of April 1958. This line was established as an aftermath of the severe Great Plains blizzards of the late 40's in an effort to improve distribution of emergency weather warnings to residents of Garden City and the surrounding area. In recent months, the Weather Bureau has had requests from other communities in Kansas for telephone arrangements similar to those in effect at Garden City. Since the Bureau was not in a position to extend such arrangements to other areas, actions were taken toward discontinuance of the Garden City line. It was pointed out to local interests that communications facilities in their area are now considerably superior to those in effect when the special line was installed and that the special line was no longer a necessity. A visit to Garden City by the Meteorologist in Charge at Dodge City and a representative of the Regional Office proved highly effective and local interests agreed to the proposal that government support for the line be discontinued at the end of April. It is understood that weather information previously obtained by local radio stations and newspapers over the line will continue to be furnished but at the expense of the recipient for communication charges.

A Bouquet for MKC

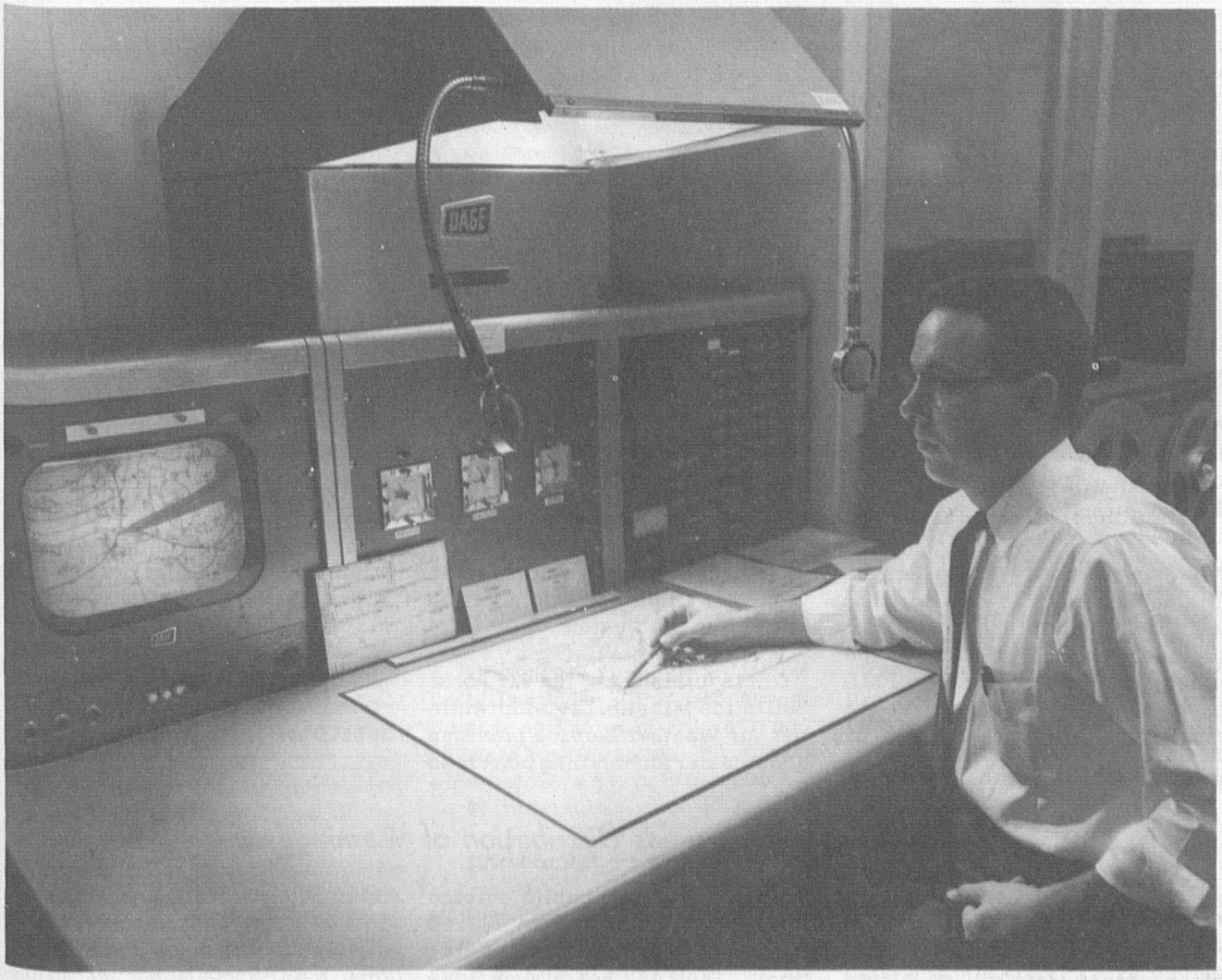
THE following is quoted from a recent letter to Kansas City, signed by 12 residents of Ruskin Heights where a tornado struck last May:

"If only you could know how those of us in Ruskin Heights rely on your forecasting and warning systems. We feel secure in knowing that we will be warned and without this feeling it would be impossible for many of us to rebuild our homes in this area and live here with a feeling of security."

Weathervision at Los Angeles

THE WBAS at Los Angeles now has Weathervision to help serve Air Force pilots flying out of Los Angeles Municipal Airport. The service was begun experimentally in July 1957 at the request of the Air Force Ballistics Missile Division whose logistic and administrative flight operations had increased to a point where some sort of direct weather service support was needed. The experimental service proved very helpful to BMD and they offered to furnish and maintain a Weathervision installation at the WBAS on a continuing basis.

Weathervision is an Air Weather Service development of the application of closed circuit television for briefing pilots on weather. It was brought about by the need for supplying weather briefings from a single weather station to the various flight operations and concerned offices on Air Bases and their auxiliary landing fields. After an extensive development and testing period a system was developed in cooperation with Dage Television and packaged under the name - Weathervision. Dage equipment is used at Los Angeles, the same as at Air Force Bases. It consists of a specially designed console equipped with a television camera, remote control panel, 14" monitor receiver, panel clock, audio circuit speaker and microphones, adjustable opaque and surface lighting display facilities, and



Weathervision equipment at WBAS Los Angeles. M/Sgt. James Berry, USAF briefing officer at console. Monitor at left, voice recorder at right.

110 310

Weathervision receiver in USAF Operations Office, Los Angeles International Airport. Weather briefings are broadcast from WBAS across the airport. Official Air Force Photograph.

file drawers and storage trays. The audio circuit is connected to a voice-actuated tape recorder to provide a record of briefings. The video signal is carried to the BMD flight operations office on the opposite side of the airport by microwave. A 21" receiver and audio speaker and microphone in the BMD flight operations office completes the system.

The Weathervision system itself is furnished by the Air Force Ballistics Missile Division while the Air Weather Service provides a forecaster for handling peak load briefing of BMD flight personnel. M/Sgt. James Berry is assigned to the WBAS for this purpose. When M/Sgt. Berry is off duty the WBAS staff handles the Weathervision service. Over 180 pilots at BMD are served by this system.

"Bulletin Trap" Speeds Distribution of Warnings

THE problem of calling attention of radio and television station announcers to the presence of an urgent warning, or news bulletin, on press services' teletypewriters (AP, UP and INS) and on Weather Bureau public service teletypewriters has been solved by a number of broadcasting stations. Their engineers have constructed an inexpensive "bulletin trap" attachment that serves all teletypewriters in a newsroom. The device, which can be assembled by a station engineer from readily available material, turns on a light at the studio announcer's console any time 5 bells

(the press services' signal for a bulletin) or more are struck by the person transmitting the message. In addition, the bulletin trap turns on a secondary light and chime, or buzzer, in the newsroom where the teletypewriters are located. The signals continue to be activated until a re-set button is pushed. The only requirement for an installation of a bulletin trap is that each teletypewriter have a contact installed by the agency servicing the machine. All officials wanting to eliminate the time and expense required for telephoning radio and television stations to check on their receipt of urgent warnings over press wires and over weather public service loops should consider encouraging every station to install a bulletin trap. F&SR Division of the Central Office can furnish copies of the wiring diagram and instructions to any Weather Bureau office requesting them.

Broadcasting stations that do not want to install their own bulletin trap can inquire from their local telephone company and Western Union office as to the availability of such a ready-made unit.

Familiarization Tours Exchanged Between WB and Air Force Personnel

ARRANGEMENTS for Weather Bureau personnel to tour Air Force Operations offices and traffic control facilities and for Air Force Pilots to tour Weather Bureau facilities at Geiger Field, Spokane, Washington are proving very helpful in familiarizing each group with the activities of the other. The following memorandum from the MIC at Spokane discusses the advantages of such exchanges.

"All members of the GEG WBAS staff have made the tour of the GEG Air Force Operations. The staff was divided into two groups and the two-hour tours were made on different days.

"The object of the tours was to give our staff a better understanding of the Air Force problems on this field, especially those pertaining to weather observations. Visits were made to 9th Air Division Weather Office, 9th Air Division Combat Operations Center and Control Plotting Board, the 498th Fighter Squadron Alert Hangar, and the Fighter Operations Center.

"A similar tour was made last spring to the Spokane Center and RAPCON and we plan to tour the ADC AC&W Operation in the next few weeks.

"Our experience has definitely shown that the cooperation between the agencies involved improves materially following these visits and we feel that they are well worth the time required.

"A program is also underway in which the Air Force pilots at Geiger will visit the Weather Bureau in groups of ten or less. To this date there have been four groups through this office."

Automatic Telephone Weather Forecasts for 1957

OUR nation's busiest telephone service received a total of over 181 million calls from weather-conscious citizens during the year 1957. To be exact, 181,779,477 calls were placed to automatic telephone installations which use data furnished by the U. S. Weather Bureau. This is an increase of almost 7 million calls over the previous year, and a new all-time high total for this public service.

Detroit had the greatest total during the year with 33,029,915 calls, and on January 15 New York City recorded the highest day for the year with 343,897 calls. In 1957 the daily average number of telephone calls to WEather 1212 was slightly under 46,000. Details on 1957 calls are given below:

City	Annual Total	High Day	Monthly Average	Daily Average
Baltimore	6,671,317	106,205 (Dec. 4)	555,943	18,278
Boston	6,527,396	89,751 (Mar. 20)	543,950	17,883
Chicago	21,230,281	268,084 (July 12)	1,769,190	58,165
Cleveland	18,978,963	173,569 (Jan. 16)	1,725,360	56,654
Detroit	33,029,915	291,492 (Jan. 17)	2,752,493	90,493
Milwaukee	13,466,333	116,273 (Jan. 16)	1,122,194	36,894
New York	32,731,358	343,897 (Jan. 15)	2,727,613	89,675
Philadelphia	15,076,046	197,581 (Dec. 11)	1,256,337	41,304
Pittsburgh	6,589,662	62,882 (Jan. 17)	549,138	18,054
San Francisco	3,478,568	31,894 (June __)	289,881	9,531
Washington, D.C.	23,999,638	289,845 (Jan. 15)	1,999,970	65,752
	181,779,477		1,390,188	45,698

"Z" time on Teletypewriter Transmissions

WITH the increased use of "Z" time in meteorological information appearing on Service A, stations might find it desirable to have a clock showing "Z" time.

Individual block type letters, "GMT," red, and 1½ inches high are available for labeling the face of station clocks. They come with a wax back and when burnished are self adhering. Properly applied, they are comparable in appearance to decalcomanias.

Stations that have two clocks and would like to use one of them for "Z" time could easily attach these letters to the face of the clocks. They may be obtained upon request from the F&SR Division, Attention: Synoptic Section.

If an extra clock is needed a request should be submitted to the RAO.

How Radar Works

AN additional supply of the publication "How Radar Works" has been received. This publication explains in layman's language the basic principles of radar systems such as are used in weather detection. Stations that have not previously received this manual and desire a copy should address their request to the Publications Unit, Central Office.

Operation Look-Out 1958

WICHITA, KANSAS has initiated "Operation Look-Out, 1958" which included:

1. A bulletin emphasizing the importance of each community organizing its own "Operation Look-Out" for participation in county-wide storm warning networks.

2. Distribution of the bulletin to all communications outlets, including the press, in the 28-county area with a letter reactivating the Weather Bureau's public reporting type of network.

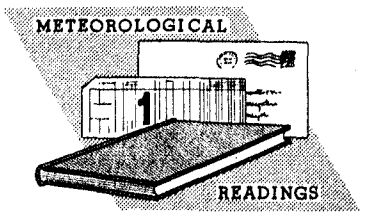
3. Letters to all telephone company managers and operators, reminding them to interrupt telephone conversations at the Weather Bureau for the prompt receipt of storm reports.

4. Letters to school superintendents and sheriffs requesting them to help provide the public with factual information about tornadoes by use of the film "Tornado" and by reproduction and distribution of appropriate leaflets.

5. Wichita press release describing the use of CONELRAD for weather warnings.

6. City of Wichita press release describing its plan to use police car and Civil Defense sirens, plus public address amplifiers, to notify residents that radio or television sets should be turned on to secure a weather warning. The release also outlined the newly leased weather wire transmitting equipment that permits the State Highway Patrol, County Sheriffs, City Police and Turnpike Authority to furnish immediate storm reports, received by radio, direct to the Weather Bureau.

Offices wanting copies of Wichita's "Operation Look-Out" material can write to F&SR Division of the Central Office.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment XIV: Tropical Cyclones, by Gordon E. Dunn, on pages 887 thru 901 of the Compendium of Meteorology.

About the Assignment: This article presents a general survey of the nomenclature, climatology, theory, and forecasting of tropical storms. Some of the data collecting and research requirements mentioned are being accomplished by the National Hurricane Research Project, which the Weather Bureau established at West Palm Beach, Florida in 1956. An operational description of this project may be found in Weatherwise, Vol. 9, No. 4, August 1956.

QUESTIONNAIRE

Assignment No. XIV

(To be answered by participants after reading assignment.)

(For complete information, see TOPICS May 1957.)

Col. 61 How does the observed hurricane wave compare with the height calculated on the basis of the decrease in pressure?

1. one-fourth as high
2. one-half as high
3. twice as high
4. four times as high

Col. 62 Riehl found that one of the most important factors in tropical cyclone intensification is

1. the location of the forward edge of the westerlies
2. high-level extratropical disturbances
3. changes in the tropospheric lapse rate
4. advection of low-level cyclonic vorticity

Col. 63 Hurricane tides are most dangerous in what coastal region?

1. Lesser Antilles
2. Gulf of Mexico
3. Cape Verde Islands
4. Burmuda Islands

Col. 64 What area is free of tropical cyclones of hurricane intensity?

1. South Atlantic Ocean
2. North Indian Ocean
3. South Indian Ocean
4. North Pacific Ocean

Col. 65 Simpson has indicated the probable temperature relationship between the core and outer vortex as

1. warmer at both 20 and 60 thousand feet
2. colder at both 20 and 60 thousand feet
3. warmer at 20,000 and colder at 60,000 feet
4. colder at 20,000 and warmer at 60,000 feet

Col. 66 What is the normal frequency of swells in the trade region of the Gulf of Mexico

1. 2 per minute
2. 4 per minute
3. 8 per minute
4. 14 per minute

Col. 67 Which report from the Atlantic trade wind area would be most indicative of a tropical cyclone?

1. Northeast wind of 20 mph.
2. Swell frequency of 8 per minute
3. 24-hour pressure fall of 2.5 mbs.
4. Steady rain of 2 inches in six hours

Col. 68 The height of the hurricane season is reached in

1. the first-half of August
2. the last-half of August
3. the first-half of September
4. the last-half of September

Col. 69 What is the most difficult problem in forecasting hurricanes?

1. recurvature
2. changes in intensity
3. speed of movement
4. cyclogenesis

Col. 70 According to investigations by Riehl and Shafer, the westerlies as low as 8-14 thousand ft. begin to influence tropical cyclones at a range of

1. 100 - 300 miles
2. 300 - 500 miles
3. 500 - 700 miles
4. 700 - 900 miles

Bureau Safety Program Wins Secretary's Award of Merit

IN a recent ceremony at the Department of Commerce Building, attended by Bureau chiefs and Safety Officers, Under Secretary Walter Williams presented Safety Awards to five of the 15 Bureaus within the Department for reduction of injuries and improved safety during 1957.

The Secretary's Award of Honor

"In recognition of greatest percentage reduction in injury frequency and motor vehicle accident rates and the maintenance of a superior safety program " was presented to the Director, and Safety Officer for the National Bureau of Standards.

The Secretary's Award of Merit was presented to the Civil Aeronautics Administration, Coast and Geodetic Survey, Office of Business Economics and the Weather Bureau—in recognition of outstanding Safety Programs and, in the case of the Weather Bureau, for the persistently low incidence of accidents over the years. Award for the Bureau was accepted by R. C. Grubb, Assistant Chief of Bureau, and R. R. Hamann, Safety Officer.

Each employee should take pride in the award since safety is largely a state of mind and therefore an individual accomplishment. A poster for the station's bulletin board has been previously supplied.

To supervisory employees, station officials, and Regional Safety Officers we extend special congratulations, since it is their review of accident causes and preventive measures taken to forestall recurrences, which gives substance to the overall program. The incorporation of safety features in our operating instructions had considerable influence on the Awards Committee. As new equipment is put into use it is intended that instructions will continue to emphasize safety factors for installation, operation and maintenance.

During 1958 the Central Office plans to issue station check lists for use of station officials and inspectors and special precautionary reminders for the individual employees.

To each of you as individuals is entrusted the responsibility for avoiding injury to yourself and to your associates. The Central Office can only attempt to maintain safety awareness and distribute information on physical hazards.

Accident rates by geographic areas for the past 3 years are given in the table below. Let's set our sights on the Award of Honor for 1958.

ACCIDENT PERFORMANCE BY YEARS

	1955	1956	1957
Region One	10	13	10
Region Two	17	13	18
Region Three	12	7	4
Region Four	10	8	9
Region Five	3	3	12
NWRC Asheville	3	5	6
Foreign Countries &Territories	2	5	7
Central Office	21	19	18
Total Accidents	78	73	84
Exposure Time (man/hours)	9,563,802	11,314,554	11,587,535
Frequency Rate	8.15	6.45	7.24
Lost Time Accidents	32	29	31

Convenient Method for Assembling and Filing Hurricane Information

WBAS Charleston, S. C. has been using a simple but effective means of assembling and filing hurricane information as follows:

A Weather Bureau hurricane tracking chart is trimmed and stapled to an opened faced file folder.

Compressor type paper fasteners are inserted on each opened side of the folder.

The name of the hurricane is placed on the front of the folder or entered on the index tab.

Position plots are made on the tracking charts as the storm progresses.

On one side of the open folder the advisories and bulletins are filed and on the opposite side the forecasts, local statements, etc., are fastened.

After the storm, the folder can be immediately filed without further assemblage ready for easy future reference.

This procedure might be used at offices not having an organized system at present.

Certified Professional Secretary

TRUBEE T. CAMPBELL, CPS (Certified Professional Secretary), Clerk (Typing) at WBAS Los Angeles, was one of the finalists in the selection for Secretary of the Year, Westchester Chapter, National Secretaries Association (International). In presenting the trophy to the winner at the National Secretaries Week dinner in April, the Assistant Director of Industrial Relations, Northrop Aircraft, said "one of the things a good secretary does is to make her boss feel more important at work than he does at home." Can the secretary expect her boss to make her feel more important in her job than she does at home?

Sciench... The Diabolical Language

by Robert V. Kesling[1]

THE following article was sent in by H. Dean Parry, CAM, WBAS Honolulu. The article appeared in the April 1958 issue of "Geo Times" published by the American Geological Institute and is reprinted with their permission. We found this article both amusing and instructive:

An informer has passed the word along that my fellow word-detective and I (Stumm & Kesling, 1957, Jour. Paleontology, v. 31, p. 1019-1028) slighted a crime in scientific writing. We thought we had them all-hard-boiled inconsistencies, violent adjectives, crooked constructions, and pronouns from off the streets. There is still at large another killer of meaning, "Sciench," formerly known as "Padding" or "Gilding-the-Lily." In some manuscripts all simple statements have been annihilated.

Certain sinister workers have been communicating in a strange language, which (because they are convinced it is scientific style) may be called "Sciench." Our cryptographers broke the nefarious "scienchist" ring when an English translation was intercepted in an abstract. "Sciench" is coded from English by adding excess words, excess phrases, excess clauses, and even excess sentences. The table below gives some translations from this corrupted language.

Attention, authors! Be on the lookout for excesses. Arrest all malefactors in your first draft, bring them to the bar of common sense, and give them proper sentences. That is all.

TRANSLATION OF SOME SENTENCES AND PHRASES FROM "SCIENCH" TO ENGLISH

"Sciench"*	English
A method, which was found to be expedient and not very difficult to accomplish and which possessed a high degree of accuracy in its results, was devised whereby ...	An easy, accurate way to ...
The quantitative findings reported by Smith were analysed and seemed, according to our interpretation, to contain significant inconsistencies. Our reasons for attaining this diverse opinion are ...	We think Smith's measurements are wrong because ...
Of the utmost importance in this respect is the need to examine quantitatively the various instars which have not attained maturity, in order to evaluate and determine the validity of the theory which Przibram has advocated.	To test Przibram's theory, all immature instars must be measured.
Our research, designed to test the correlation of the total number of chambers to the maximum length in P. oblongus, was carried out by counting the number of chambers, measuring the maximum length, and recording the results in tabular form. In the course of our investigation, a relatively large number of specimens was utilized. One hundred excellently preserved shells were selected for examination. It was discovered that, in this group of specimens, at least, a specific chamber count corresponded to several lengths, which varied greatly. Conversely, for a particular length, the number of chambers was not constant. We find it impossible, therefore, to correlate ...	In the 100 well preserved specimens of P. oblongus studied, the number of chambers has no relation to the maximum length.
One might well be censured for having so tenaciously propounded this hypothesis in view of the overwhelming weight of evidence to the contrary.	I was wrong.

*Any resemblance to my own articles, living or dead, is purely coincidental.

[1] A member of the geology staff at the University of Michigan, Dr. Kesling is also curator of micropaleontology at the museum.

Scale model of new radiotheodolite. Actual diameter of antenna is 10 feet.

WB to Receive Radiotheodolites

THIS fall, the Weather Bureau will receive the first of the radiotheodolites now on order. The remainder are expected to follow at a rate of approximately five per month. Since the exact delivery schedule is not firm, the priority of installation will depend upon the season of the year when the sets become available. These will replace the SCR-658 radio-direction-finding sets now installed at Weather Bureau stations in the continental United States and Alaska.

These radiotheodolites incorporate the most advanced measures known for wind determination by radio-direction-finding means. Under favorable tracking conditions, they will be able to track radiosondes to heights in excess of 100,000 feet and to distances in excess of 100 miles from the station.

This equipment can be converted into a transponder unit when funds become available. The conversion would provide slant-range data in addition to elevation and azimuth angles, and would result in still greater accuracy and simplify the problem of centralized data computation.

An Open Letter

THE following item appeared in the February 3 issue of the Air Line Pilots Association Newsletter and is reprinted with their permission. We feel its message is valuable not only to a safety program but to the Weather Bureau's Public Service Program.

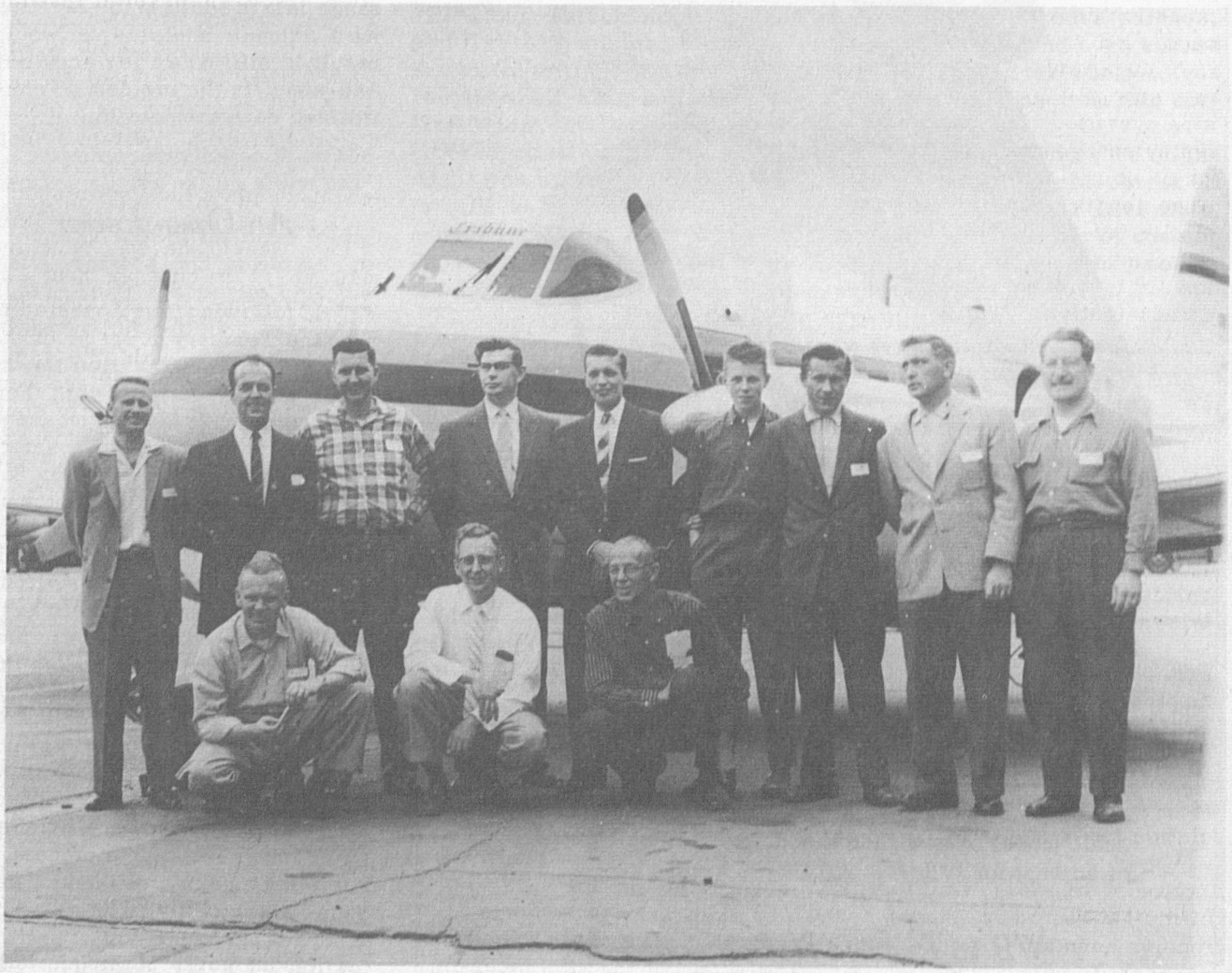
"Xvxn though my typxwritxr is an old modxl, it works quitx wxll xxcxpt for onx of thx kxys. It is trux that thxrx arx forty-six kxys that function wxll xnough, but just onx kxy not working makxs thx diffxrxncx. --Somxtimxs it sxxms to mx that a safxty program is somxwhat likx my typxwritxr - not all thx kxy pxoplx arx working propxrly. --You may say to yoursxlf, 'Wxll, I am only onx pxrson. I won't makx or brxak a program.' But it doxs makx a diffxrxncx bxcausx a safxty program, to bx xffxctivx nxxds thx activx participation of xvxry mxmbxr. --So thx nxxt timx you think you arx only onx pxrson and that your xfforts arx not nxxdxd rxmxmbxr my typxwritxr and say to yoursxlf, 'I am a kxy pxrson in our safxty program and I am nxxdxd vxry much.' "

Weather Bureau—Pilots Meeting

THE following report was submitted by R. O. Reinhold, CAM, at WBAS Chicago, Illinois. This is certainly an excellent way to exchange ideas and for both pilots and meteorologists to broaden their understanding of each other's problems.

"Saturday, April 19, 1958 personnel from this station spent a very interesting day meeting with a group of executive pilots from Midway Airport. The idea originated with the pilots and the purpose of the occasion was to discuss mutual weather and flying problems at somewhat more length than permitted in our hurried day-to-day briefing contacts.

"A hangar lounge was provided in the morning for a two hour session in which we outlined the Weather Bureau's severe weather forecasting organization and some of the basic forecast techniques in thunderstorm and tornado forecasting. Facsimile charts were



Front kneeling: Parker Berge-Chicago Tribune, George Polensky-WBAS, Harold Ervin-Chicago Tribune
Back row: Paul Lauver-Int'nl Min & Chem, Bob Reinhold-WBAS, Dick Prendergast-Oliver Corporation, Howard Roudebush-WBAS, Ray Carls-WBAS, Warren Polensky-Mr. Polensky's son, Lenny Kmiecek-National Plywood, Phil DeSalvo-Hollymatic, Gus Stephens-Int'nl Min & Chem. Not shown but also participating from WBAS were: Roger Hegstrum, Ed Lazar, Leif Lie, Dick Micka, Dan O'Connell.
Participating pilots not shown: Bob Vinson, Bill Ford and Steve Beville from International Mineral and Chemical and Dave Jackson and Lloyd Miller from National Aero.

displayed and RAREP and some SELS teletypewriter material was explained. The morning meeting was concluded with a showing of the 30 minute 16 mm film 'Disaster Dallas.'

"Approximately two hours were devoted to an inspection of aircraft including rides. Three aircraft, a Dehaviland Dove, Aero-Commander and a Twin-Beech were 'put at our disposal.' The basic features of the planes were explained and we were given the opportunity of watching the pilot in action as well as seeing Chicago and vicinity from the air.

"The afternoon was concluded in a strictly 'down to earth' session over fried chicken in a local restaurant. Among others, two major points were discussed at some length. One was the possibility of a radio frequency assignment to the Weather Bureau for air to ground radar observer communication. While this was admitted to be a highly desirable service, no hope was held out for such a program in the Weather Bureau's immediate future planning. The other problem was that of pilot reports and on this subject we promised to do our part to improve the situation. The paradoxical situation was pointed out where a dearth of PIREP information exists in the heart of a high-density aviation area such as Chicago. Within the past week the problem has been discussed with the most logical pirep sources here at Midway, Traffic Control Tower, ARTC and American Airlines meteorology office and this office is attempting, when at all possible, the hourly reporting of pireps (mostly tops) in record observations during periods of IFR or near IFR conditions locally.

"Through a certain amount of schedule juggling, all of our personnel were able to share in the day's activities."

American Meteorological Society
3 Joy Street
Boston 8, Massachusetts

Mr. James W. Decker
U.S. Weather Bureau Airport Station
Bridgeport Airport
Stratford, Connecticut

Dear Mr. Decker:

I am pleased to inform you that the entry you submitted for the lapel-pin design contest has won honorable mention as selected by the AMS Committee. We have selected for you a copy of the Glossary of Meteorology, and you will receive this prize when publication is realized in the spring or early summer of 1958. May we extend to you our heartiest congratulations and appreciation for your efforts.

Notice of your entry in the contest will be noted in the Bulletin of the AMS as one of the winners selected by our committee to receive honorable mention. Please note that none of the entries necessarily will be the final design selected for the AMS lapel pin.

Yours sincerely

/s/ Thomas F. Malone, Secretary

cc: Dr. Robert D. Fletcher, President
Executive Secretary Spengler

Sinistration at WRPC San Francisco

DO you have a feeling that your individuality is repressed, that you are just one of the crowd? Are you buried somewhere among the faceless mass of right-handed people? You can rise above all this and express your own individuality. Become a sinistral. Verlee Van Alstine, Card Punch Operator at the San Francisco WRPC, has shown the way. Released from the hospital last fall after an accident that shattered the bones of her right hand, Verlee returned to her 024 key punch machine at the WRPC and attacked it left-handed. Within a short time she could punch cards at about one-third her very respectable right-handed speed. Within a few weeks she was punching 120 No. 1 cards per hour for Alaskan First-Order stations, 550 cards per hour for full climatological stations, with other types at comparable rates. These were wintertime cards with lots of snow and heavy weather. She now has production speed with her left hand equalling her former right-handed speed, and, what's more, she is recovering the use of her right hand. Verlee may become the first puncher to operate two 024's simultaneously, one with each hand. This will probably be discouraged, however, on the ground that there is no legal way for her to collect two salaries at the same time.

Quarterly Raob Altitude Tabulation

AN examination of the quarterly raob altitude tabulations shows that some of our stations achieved a very high level in balloon performance during the year 1957, indicating that the balloons were carefully conditioned, inflated, and handled. The follow-

ing tabulation lists the stations that had a quarterly average raob altitude in excess of 25 km. for two or more quarters of 1957:

Station	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.
		Meters (msl)		
Canton	-	26,172	27,461	-
Curacao	-	-	26,580	28,296
Guam	25,878	27,076	25,897	25,335
Hilo	-	25,952	25,571	-
King Salmon	-	26,158	30,021	28,530
Lihue	-	25,191	26,507	26,093
Omaha	-	-	25,738	25,501
Pacific Ocean Sta. "V"	-	25,420	26,141	25,354
Ponape	-	-	26,526	25,617
St. Paul Island	-	-	25,163	25,776
San Diego	-	-	26,107	25,830
San Juan	-	-	25,705	26,389
Santa Monica	-	25,795	27,130	25,551
Seattle	-	26,006	27,606	-
Spokane	-	27,649	27,101	-
Wake	-	25,752	25,990	26,998
Washington	-	25,648	26,469	-

Several outstanding performances will be noted:

(1) Guam was the only station that averaged 25 km. or higher for all four quarters.
(2) King Salmon was the only station with a quarterly average in excess of 30 km.
(3) Pacific Ocean Station "V" was the only ocean station having a quarterly average in excess of 25 km., and this was maintained for three consecutive quarters.

The following stations had a quarterly average altitude in excess of 25 km. for one quarter during 1957:

Barrow	Koror	St. Cloud
Barter Island	Majuro	St. Paul Island
Bethel	McGrath	Salem
Bismarck	Medford	Salt Lake City
Caribou	Nantucket	Shreveport
Cold Bay	Nashville	Swan Island
Columbia	Nome	Tampa
Ely	Oklahoma City	Tatoosh Island
Fairbanks	Peoria	Truk
Grand Junction	Rapid City	Winnemucca
Great Falls	Sabana de la Mar	Yakutat

Observers at the above stations are to be congratulated *for their part in helping to make this fine record possible.*

The fact that a station does not appear in either of the above lists does not necessarily reflect on the quality of the observers, since there are some factors beyond their control, such as the type, size, and age of the balloons. However, appearance on the lists does reflect favorably on the performance of the observers when quality balloons are available.

Forecasters' Forum

Computational Techniques for Prognostic Chart

Sir:

At present the emphasis in forecasting is on computational techniques for prognosis of the field of motion. This is certainly to be recommended but it also has certain dangers. One of these came to light recently while working in a synoptic laboratory at the University of Chicago. The students were requested to use as many computational techniques as they could and to base the prognostic chart on these computations unless they had a good reason for modifying them to some extent.

After several weeks it was fairly obvious to most that the position of the surface low centers as prognosticated by the students were generally significantly south of the verifying position of the center. The main computational tool for these motions was the pressure kinematic formulas as developed by Petterssen. These give the motion as the mean for a 3-hour period which is then continued for eight such periods to arrive at the 24-hour forecast.

The students then took this motion vector and determined the forecast position of the low from the end point of the vector. This, of course, works well if the map is a Mercator projection but on those with curved latitude lines, and especially on the Polar Stereographic projection (used for the Facsimile maps), this curvature frequently results in the low being several degrees of latitude too far south for the speed of systems generally observed.

SOLUTION: Consider the

curvature of the latitude lines when using the result of most computational methods on positioning pressure centers. This is especially important when working on facsimile maps with systems that have a large easterly component of motion.

I believe that in many oral and written map discussions, such as the FP-1, the curvature of the latitude circles is not fully considered. In these cases the compass direction for the movement seems to refer more to the edges of the chart than to the latitude lines.

Lawrence A. Hughes
WBFC
Chicago, Illinois

Employee Suggestion Box

Warren B. Price $25
Great Falls, Montana
F&SR Division adopted the use of half sheet, fanfold type paper for preparation of Flash Advisories. This will expedite issuing advisories during periods when staffs are under heavy work loads. (CO Memo dated 10/14/57, file 0-5.31.)

Leslie R. Houser $50
Dodge City, Kansas
O&SF Division adopted this suggestion advocating the use of gummed labels on the radar camera data plate to improve identification. This will eliminate much useless film due to illegibility of the data card and save time of the researcher.

Clifton A. Englund $50
Scottsbluff, Nebr.
O&SF Division adopted the suggestion of consolidating certain data onto one rubber stamp for entering data on WBAN-20. This will save a considerable amount of stamping time at field stations. (See MAL 62-57 dated 9/6/57.)

Myron H. Kerner $25
Agana, Guam, M. I.
Personnel Division adopted the plan whereby authority was delegated to PSO Honolulu for the hiring of ungraded Micronesians, thereby simplifying and speeding the appointment procedure.

Joel J. Woodside $15
WBFC Kansas City
As a result of this suggestion and successful test use, the availability of "Radiograph" pens is being announced by F&SR. These pens are advantageous at stations where maps are prepared for duplication.

Lester Epstein $10
San Diego, Calif.
O&SF and F&SR adopted the suggestion of eliminating the 1XXX group on aviation sequence reports. Transmission time will be saved by the elimination of this code group when obscuration of the sky is present or when no clouds are observed. (Change 4 and 5 Cir N, Oct. 1, 1957.)

Max K. Bankert $15
Los Angeles, Calif.
Office of Climatology adopted the suggestion recommending that a printed certification be placed on WB publications authenticating its validity for use in court. This will alleviate the problem of hand stamping at those stations where requests for certified copies are numerous. (Par. C-0240, Vol. III, WB Manual.)

Jewell Wheeler $10
Little Rock, Ark.
O&SF Division adopted the idea of modifying Form 612-13. This will include widening the temperature columns and reducing slightly the column marked "adjusted gage readings, etc." More legible entries should result from the widening of the temperature columns.

Melvin A. Johnson $15
NAWAC, Washington
F&SR adopted the suggestion recommending that blue broken lines be printed on facsimile maps to outline areas I and II. This definition would assist the analyst and would not interfere with the bruning process.

Frederick B. Warren $75
Conrad D. Maney
NWRC Asheville
NWRC Asheville adopted the suggestion by Mr. Warren and Mr. Maney concerning the use of a foot control switch on the film advance mechanism of the microfilm camera and the addition of a mirror at the rear of the camera so that the operator can detect film jamming. An estimated savings of $2,000 is expected the first year by filming only the data needed and eliminating the need for an additional man at the rear of the camera.

Ruth R. Jones $15
WRPC Kansas City
Administrative Operations Division recently adopted the suggestion recommending that return addresses be printed on all envelopes ordered in quantity by those WRPC's not already doing so. Hand stamping will be eliminated and no extra costs will be incurred by the government.

George C. Williams $15
Chicago, Ill.
F&SR Division has adopted the suggestion to use a card for reporting to the district forecast office the requirement (or discontinuance of need) for frost warnings thus doing away with the need to type a memorandum and envelope. Chapter III-B-1603 of the WB Manual has been revised to include the use of the card.

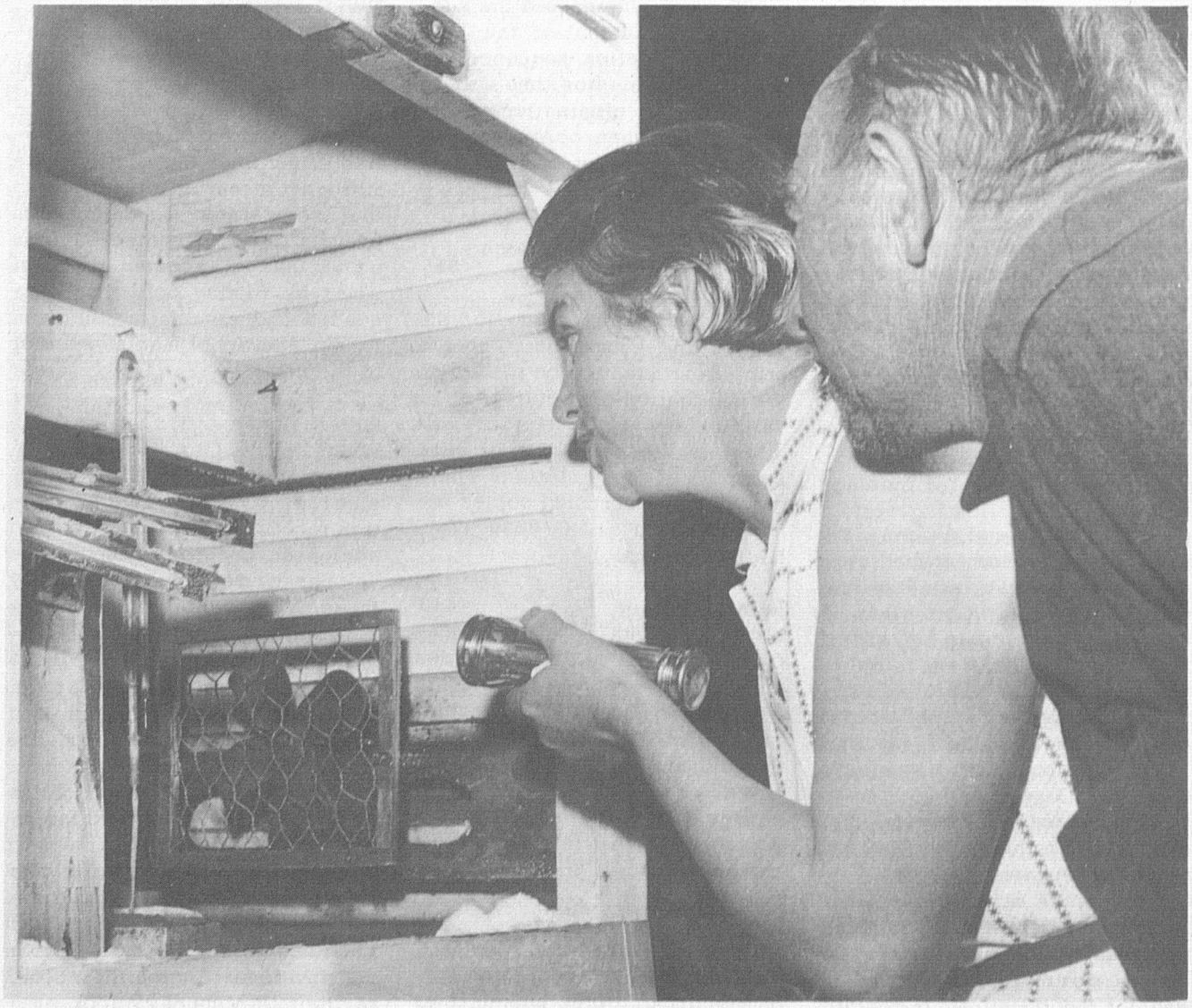
Description of Fraser, Colorado

by Kenneth Tillotson

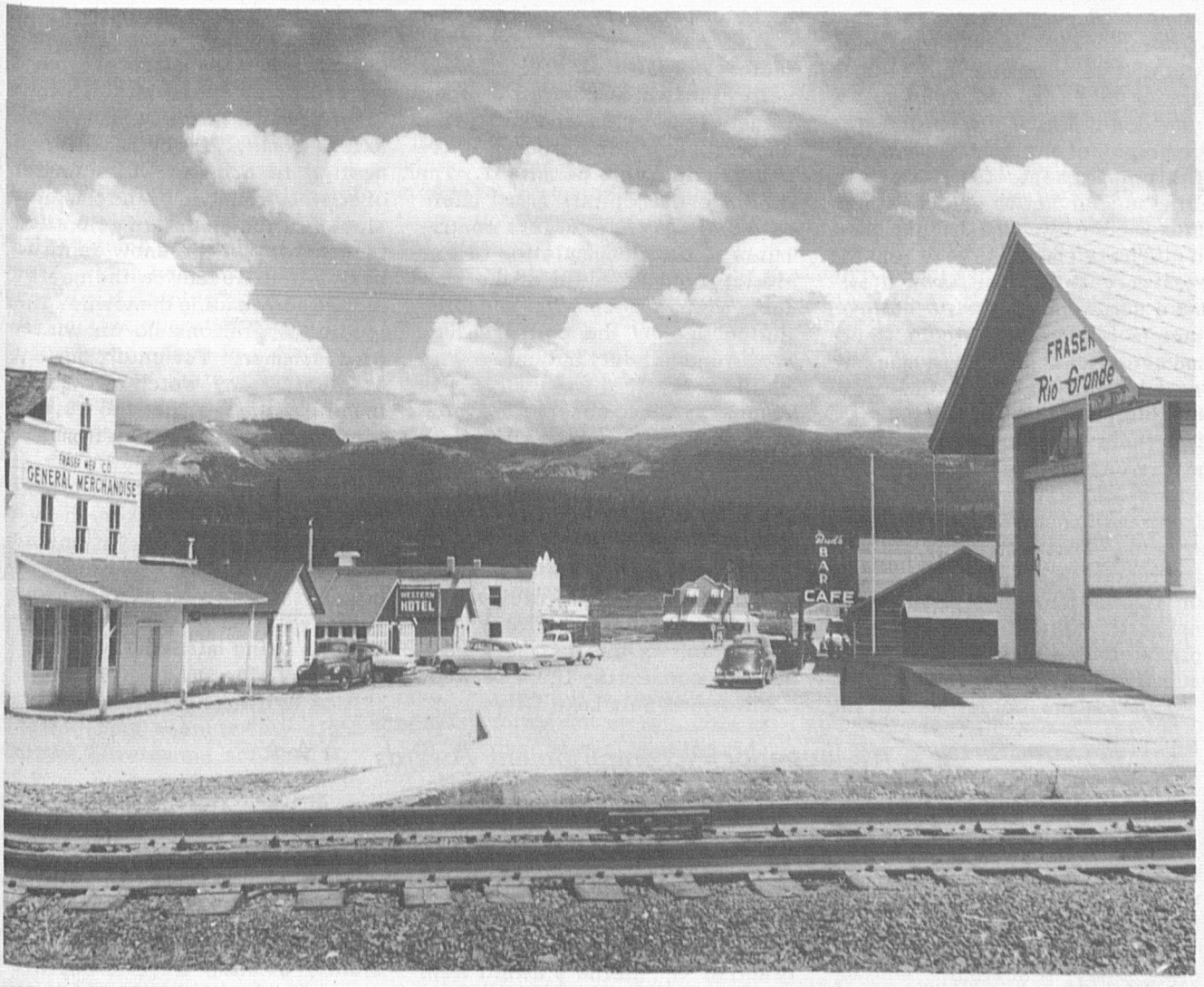
ONE of the most often-mentioned cold spots in the nation is Fraser, Colorado. Since it is included so frequently in routine weather bulletins and broadcasts, many people have come to believe that Colorado as a whole is an unusually cold state. During the winter season Fraser, Colorado and Big Piney, Wyoming compete for the rather dubious honor of being the "Nation's Icebox."

The accompanying maps show its location with respect to the mountains. The six-mile long Moffat Tunnel on the Rio Grande Railroad is shown six miles to the southeast, and Berthoud Pass, over which U.S. 40 goes, is 12-airline miles to the south, while Loveland Pass on U.S. 6 is shown 11-airline miles farther south. The black rectangle on the Colorado map indicates the area shown on the contour map. The photograph shows the Continental Divide looking east-northeast from the town.

Fraser is a relatively small mountain town of approximately 350 residents, and is located in a pocket literally a stone's throw from the Continental Divide which



Mr. & Mrs. Ronald Tucker, Observers at Fraser, Colorado. Photograph courtesy of Bob Tonsing, staff writer, The Denver Post.



View of the Continental Divide from Fraser, Colorado. Looking east-northeast. Photograph courtesy of Bob Tonsing, staff writer, The Denver Post.

lies 10-15 miles to the east. It is nearly surrounded by 13,000 foot mountains and has an elevation of 8560 feet. It is 40 miles west-northwest of Denver as a jet flies, however, 72 miles by auto since one must climb from mile-high Denver on U.S. 40 over Berthoud Pass at an elevation of 11,312 feet then down into the valley on the western slope.

Fraser is directly under the airway from Denver to Los Angeles, and was established as an aviation reporting point in 1945. Regular reports are made day and night at 2-hourly intervals. All elements reported are considered very important, but perhaps the most significant are the remarks. Clouds, even scattered in coverage and 4000 feet above Fraser, might at first indicate excellent flying conditions over the Continental Divide, except for the fact that the clouds frequently are found lying principally on the mountain ridges and therefore obscure them. These remarks concerning the clouds as to whether or not they obscure the mountains on the western side of the Continental Divide are invaluable to private pilots who wish to cross the mountains. It is not uncommon to have light snows falling from 2000-3000 foot ceilings due to the pronounced orographic effect of the normal westerly flow which prevails at the upper levels. The surface wind is ordinarily light except immediately following a new push of cold air from the west, when light to moderate west or northwest winds prevail for a short time.

What do the residents do when the bottom drops out of the thermometer? They just don't pay much attention to the cold. There the cold is merely routine. Some say that they rarely look at a thermometer unless it is 25 degrees below zero or colder. A

number of people have said that "It seems twice as cold in Denver when it is 20 above than it is in Fraser at 20 below. It is so dry you don't notice the cold." The principal of the school says that the only absenteeism is due to illness and not to cold weather. The record low temperature came on Christmas 1924 when the "mercury" fell to 50 below. However, meteorologically informed people realize that alcohol thermometers must be used to measure such low temperatures since mercury freezes at 40 below.

There are numerous "high mountain valleys" or pockets where comparable and even much lower minimum readings are observed. Fraser is unique in that its reports are entered regularly on the Service A teletypewriter network. Many of the others are climatological stations which submit their readings monthly.

During the colder season the night temperatures reach such low values due to a combination of factors. Fraser lies in a small valley into which cold air drains. Under clear skies and over the snow cover on the ground, maximum radiation is permitted. The drainage out of this small basin is rather restricted. This contributes to the accumulation of extremely cold dense air at the surface. An atmospheric sounding during one of the cold nights would undoubtedly indicate a very shallow layer of cold air. It is not uncommon to observe the mid-morning temperature shoot rapidly to a value 30 to 40 degrees above its early morning minimum, with the maximum at times as much as 50 degrees above the minimum.

The town is made up of loggers, trappers, and people in business serving travelers on highway U.S. 40, which is one of the year-around connecting links between Denver and Salt Lake City.

In the summer the tourists come. The most important ones during a number of recent years were President and Mrs. Dwight Eisenhower. In the winter the skiers come. Then the town is nestled in a broad white saucer of snow surrounded by the timbered slopes of the mountain peaks. It is common for the snow depth to be from 7 to 10 feet on the nearby slopes surrounding the town. The logging operations go on winter and summer. For entertainment at night, many watch television in spite of the fact that the 13,000 foot range separates them from the transmitters.

The present observers, Mr. and Mrs. Ronald Tucker, have been taking the observations as regularly as clockwork at the two-hourly intervals for the past four years with but a very few observations being missed.

☆☆☆ *Superior Accomplishment Awards* ☆☆☆

☆ *John J. Holstein* ☆

JOHN J. HOLSTEIN was awarded $300 for his excellent work as Region III Supervising Electronic Technician.

Mr. Holstein's high technical proficiency, leadership, and devotion to duty in directing the work of the electronic technicians under his supervision are reflected in the efficient and economical program which has been carried out in the Kansas City region. He was present at every complex installation job during the period on which the award is based and devoted numerous hours of his own time to make certain that installations were completed on schedule. By careful planning, an extra-heavy workload has been accomplished with a staff of over 50% trainee technicians. In addition, Mr. Holstein has consistently contributed to regional facility installation and operation matters outside his own area of responsibility.

☆ *Gilbert L. Sternes* ☆

GILBERT L. STERNES was awarded $200 in recognition of his excellent work as State Climatologist for Oregon.

Important considerations in granting Mr. Sterne's award were his exceptionally fine liaison with other Federal and State agencies, agricultural services, industrial interests, and Chambers of Commerce; his ability to organize and present ideas and material, which has resulted in outstanding cooperation from other agencies in supporting climatological projects; and the success with which he has been able to provide a variety of state-wide climatological services to all types of users.

☆ *Albert Malach* ☆

ALBERT MALACH, Meteorological Aid, was awarded $200 in recognition of his excellent work at Elko, Nevada.

Mr. Malach has performed all his assigned duties in an outstanding manner, producing a large volume of high-quality work. He has displayed initiative in constantly seeking ways to improve station operations and has shown excellent judgment in meeting difficult or emergency situations. During a period in 1957 when the station was already operating with a reduced staff, the MIC was hospitalized. Mr. Malach assumed the duties of MIC and for two months carried out an effective program despite the reduced staff. In addition to handling a regular shift seven days per week, he trained new employees, performed the routine administrative work of the station, and compiled data for annual reports which became due during the period. His competence and high devotion to duty during this emergency exemplify the fine performance on which his award is based.

☆ *Ralph T. Tice* ☆

RALPH T. TICE, Meteorologist, was awarded $200 in recognition of sustained superior performance at Topeka.

Mr. Tice's competence in pilot briefing and other assigned duties, his leadership in the program at Topeka which has contributed so much to maintaining good morale and effective operations, and the fine job he has done in promoting Weather Bureau-State cooperation during severe storms and flood emergencies are most commendable and formed the basis of the recommendation for his award.

RETIREMENTS

Rupert J. Batz

RUPERT J. BATZ, Meteorologist, WBAS Madison, retired April 30 after more than twenty-eight years of government service.

Born on a farm in Wisconsin on March 30, 1891, Mr. Batz graduated from Sun Prairie (Wisconsin) High School and the University of Wisconsin with a B.A. in accounting. He entered the banking field shortly after graduation, but his career was interrupted in 1917 for World War I service. He enlisted in the Army as a private and rose to the rank of Lieutenant in the field artillery before his discharge in 1918. Returning from the military service he continued his career in banking and was vice president of the Sun Prairie Farmers and Merchants Bank prior to entering the government in 1930.

Mr. Batz entered on duty at WBO Madison on June 11, 1930, serving there until 1953 when the facilities were consolidated at the airport station. He is probably the best known weatherman in Wisconsin, having made broadcasts over WHA, Madison for nearly twenty-eight years. His diligence and devotion to duty are well known to those with whom he has been associated. During World War II and other periods of staff shortages, Mr. Batz is known to have spent the night at the office on many occasions during winter storms in order to make sure that the station program continued uninterrupted. His physical stamina is a marvel to all, and during his entire career he has never taken so much as one hour of sick leave.

An ardent sportsman, Mr. Batz is looking forward to retirement as an opportunity to devote more time to hunting and fishing. He travels to Canada for goose hunting, South Dakota for pheasants, and northern Wisconsin for deer. He also does considerable hunting and fishing on Lake Mendota, which is practically in his front yard.

Mr. Batz will continue to make his home with a son, Gerard. Four other children live nearby. The address furnished by Mr. Batz is 546 Windsor Street, Sun Prairie, Wisconsin.

Meyer S. Cohen

MEYER S. COHEN, Meteorological Aid, WBAS Bismarck, retired April 30 after thirty years of government service.

A native of North Dakota, Mr. Cohen graduated from Bismarck High School and attended the University of North Dakota. He was manager of a variety store and worked briefly in the insurance field prior to entering the Weather Bureau as a Junior Observer at Bismarck on April 2, 1928. His entire service has been at the Bismarck station.

Plans for after retirement include resuming the career in insurance which he interrupted to come into government. Mr. Cohen's mailing address is 815 Fifth Street, North, Bismarck, North Dakota.

Milford F. King

MILFORD F. KING, Meteorologist, WBAS Muskegon retired April 30 after more than thirty-two years of Weather Bureau service.

A native of West Virginia, Mr. King graduated from Ravenswood (W. Va.) High School and attended Morris Havey College in Charleston, West Virginia, and Marshall College in Huntington. He taught rural school for one year prior to entering the Bureau as a Junior Observer at Cincinnati on June 16, 1925. Two years later he went to Louisville as Assistant Observer, and on June 30, 1928, he accepted an assignment in the Central Office as a chartman in the Forecast Division. Mr. King also served at Washington National Airport and the Analysis Center, and in 1944 he transferred to Muskegon where he remained until his retirement.

Friends may contact Mr. King at 800 Airport Road, Muskegon, Michigan.

Deaths

Mark T. Nesmith

MARK T. NESMITH, who retired from the Bureau July 31, 1952, died May 5 at his home in Stoneham, Massachusetts, at the age of seventy-five.

Mr. Nesmith, who was Section Director for New England at the time of his retirement, served at Boston for over fifty-one years (See August 1952 TOPICS).

Survivors include his widow, who lives at 16 Sunset Road, Stoneham, and three daughters.

ANNUAL SAFETY AWARD

Certificate of Merit

THE SECRETARY OF COMMERCE OF THE UNITED STATES

In recognition of an outstanding Safety Program, awards to

Weather Bureau

this Citation for achieving a substantial reduction of accidents in 1957, thereby preventing human suffering, economic waste, and contributing to a more efficient public service.

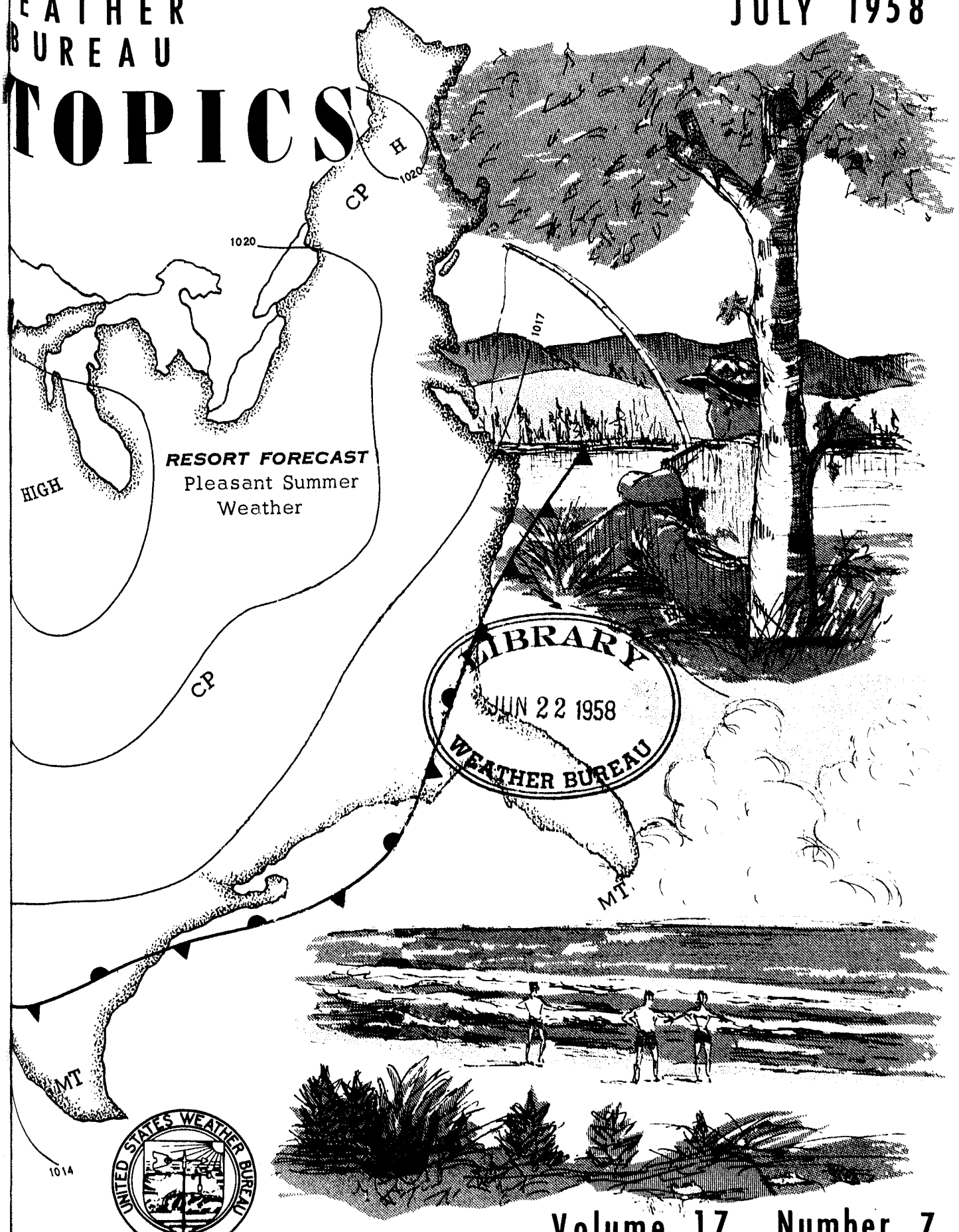
DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

Secretary of Commerce

EATHER
BUREAU

TOPICS

JULY 1958



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WEATHER BUREAU

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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.

New Director of National Weather Records Center

Roy L. Fox

ROY L. FOX has entered on duty as Director of the National Weather Records Center at Asheville, North Carolina.

Mr. Fox brings a wealth of experience and training to this challenging assignment. A native of Kansas, he received his Bachelor of Science degree from Kansas State Agricultural College; his Master of Science degree from the University of Michigan in 1937; was a Weather Bureau scholarship student in meteorology for 9 months during World War II at the University of Chicago and was a member of the Weather Bureau Advanced Study Group in 1957.

Roy taught science in Kansas High Schools for seven years before entering the Weather Bureau in October 1938 as a Junior Observer at Topeka. He later served as an observer at Tulsa and Atlanta. While in Atlanta he became a forecaster and went to Anchorage as a forecaster in 1944. He was selected as MIC at Anchorage in 1948, MIC at Billings in 1950, and in 1954 (after a brief transfer to Great Falls) was made MIC of the Pacific Supervisory Office at Honolulu, T.H. At Honolulu he was responsible for the Bureau's work in the tropical Pacific area which extends from Canton Island, south of the equator, and the Hawaiian Islands on the east, to Guam, Yap, and the Palau Islands in the west.

Roy is a member of various professional societies. He is known as an able meteorologist and administrator. In 1954 he received the Department of Commerce Superior Accomplishment Award for competence in combining his scientific skills with his excellent supervisory ability. A bright future for the NWRC under his direction seems assured.

He is married to the former Harriet McConnell and they have two children, Linda, age 9, and John, age 7. A substantial portion of Roy's leisure time at present is concerned with sidewalk superintending the construction of a house on a three-fourths acre plot just outside of Asheville. This and his official duties do leave him time, though, for family-centered projects, church and community activities, and gardening. He also contemplates getting in some fishing in North Carolina waters beginning next spring.

The NWRC, a part of the Weather Bureau Office of Climatology, is the largest weather repository in the world. The Center is under the over-all supervision of the Weather Bureau but it is jointly used by the meteorological agencies of the Air Force, Army and Navy. The principal functions of the Center are:

1. Weather records archives.

The Bureau has been designated by the National Archivist as the official custodian of Federal resources in weather records.

2. Preparation, publication, and distribution of climatological summaries such as Climatological Data; Climatographies of the United States; Hourly precipitation Data; the Northern Hemisphere Map series; and Climatic Data for the World.

3. Publication and distribution of bulletins prepared elsewhere, such as Climatological Data and Local Climatological Data.

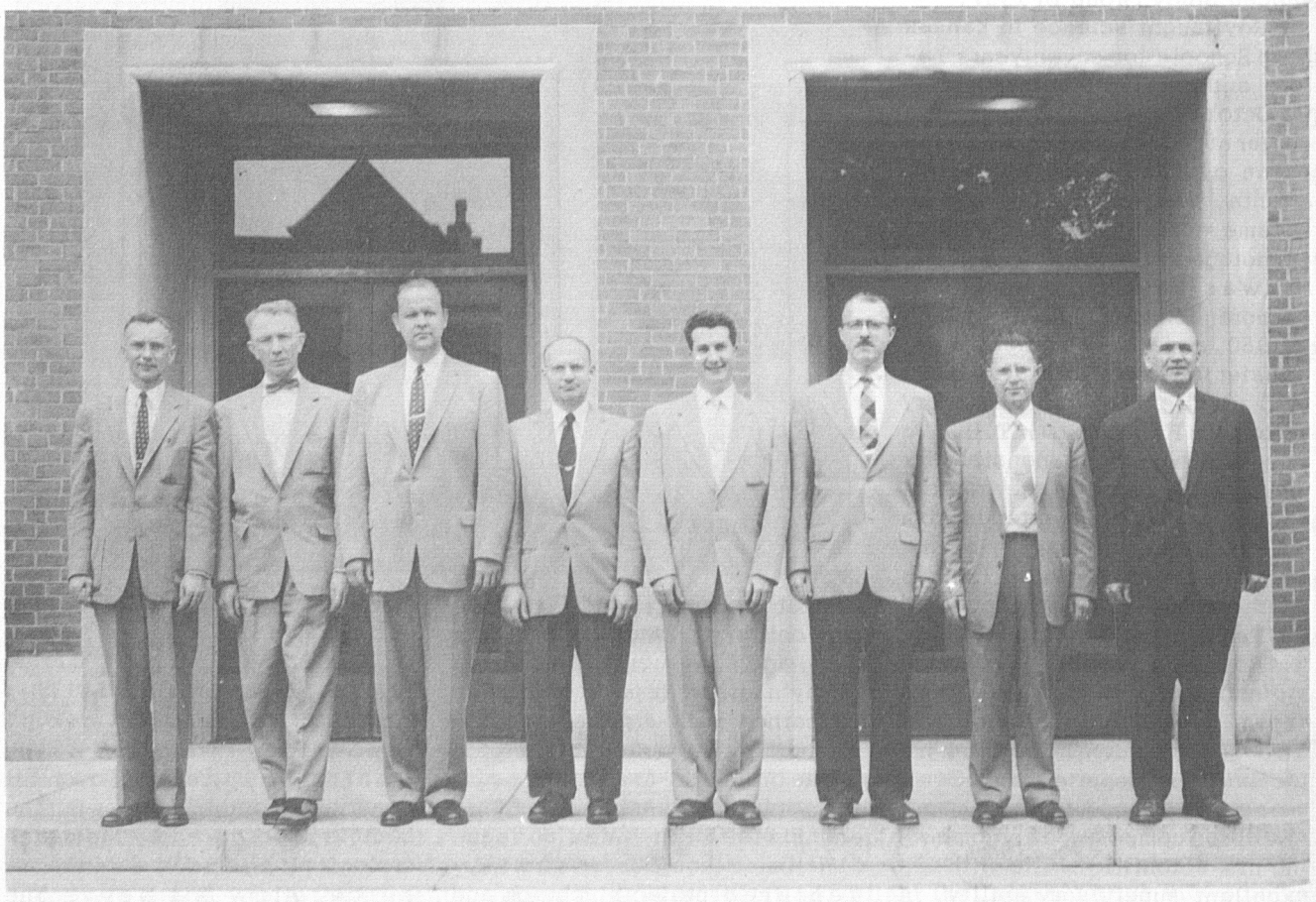
4. Routine processing of current upper air data by punched card machine techniques.

5. Servicing weather records, and making copies of them available to users.

6. Carrying on climatological investigations for the Weather Bureau and other Federal Agencies or private groups where such work requires summarizing or processing of climatological data.

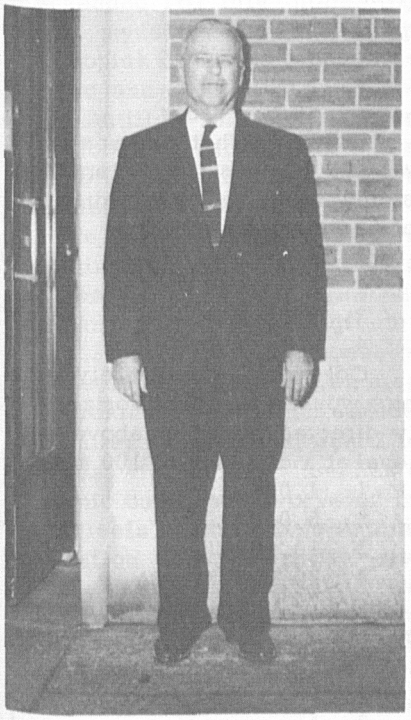
Sixth Advanced Study Group Graduates

THE Sixth Advanced Study Group completed its studies at the Central Office on May 29, 1958. This brings the alumni to a total of thirty-three. One of the highlights of the Group's program was again a visit to the New England area where they enjoyed the hospitality of M.I.T., the Geophysical Research Directorate, Blue Hill Observatory, the Quartermaster Research and Development Command at Natick, Mass., Allied Research Corporation in Boston, and the Travelers Insurance Weather Service at Hartford, Conn.

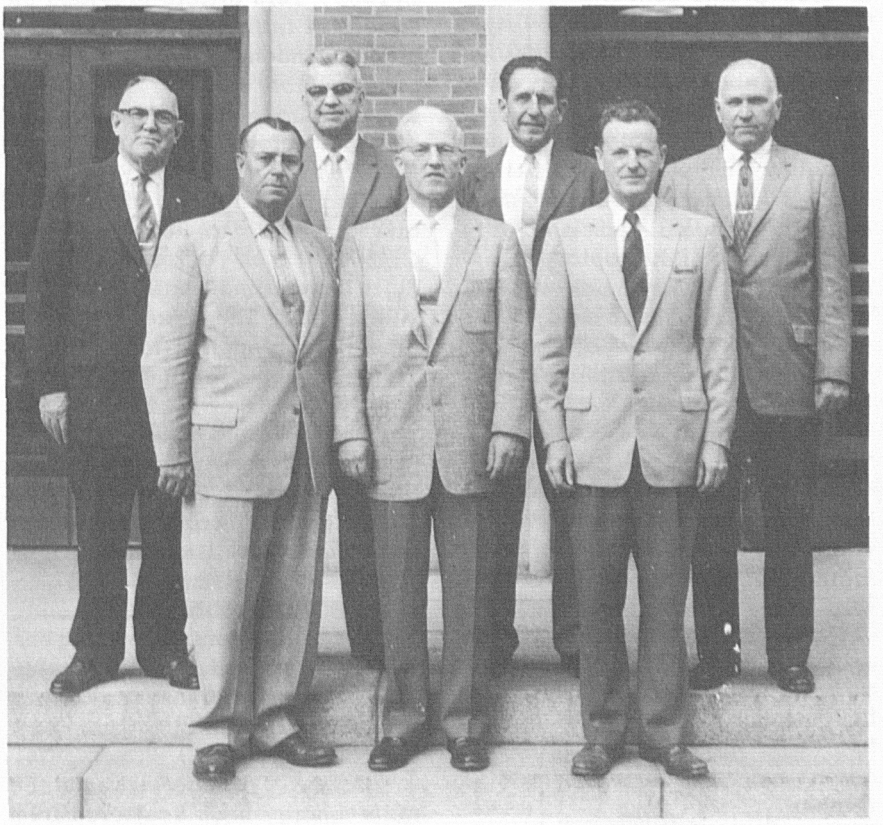


Left to right—R. Roy Simpson-Pomona, Calif., Henry L. Jacobson-Kansas City, Mo., Nels Johnson-CO, Vincent J. Oliver-Instructor, Albert V. Carlin-Training Officer, Raymond C. Wanta-Cincinnati, Ohio, Howard Hutchison-Albuquerque, N. M., Paul Sutton-Harrisburg, Pa.

Participants in RAO–CDM Conference



H. D. Spangler



Back row—E.L. Hardy, C.F. Van Thullenar, R.C. Schmidt, J.W. Osmun
Front row—M.A. Emerson, A.W. Walstrom, G.E. Dunn
Messrs. Spangler and Johnson were not available at the time the group photograph was taken.

N. E. Johnson

A conference of Regional Administrative Officers and Chief District Meteorologists was held at the Central Office from June 9 through June 20. The conference topics included budgeting, personnel policies, reallocation program for F.Y. 1959, electronic technician and field inspection programs, long range plans for research, forecasting, aviation, climatology and hydrology, instrumental procurement and installation plans, and subjects relating to fiscal and procurement practices at the Regional Offices. Conferences were scheduled with Division Chiefs on special plans and problems. Visits were made to the National Meteorological Center and the Office of Climatology at Suitland, the Silver Hill Observational Test and Development Center, the Instrumental Engineering Division, and Officials of the Department of Commerce. A dinner meeting was held at the Cosmos Club attended by ten Central Office officials in addition to the field officials. Mr. D. M. Little took this occasion to announce his retirement from the Bureau to be effective on July 23, 1958.

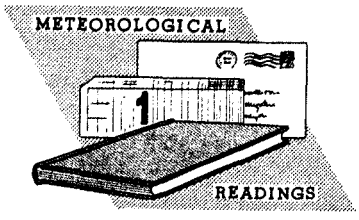
Meteorological Readings

THE following was sent in by Stephen J. Rigney, MIC, Madison, Wis.:

"Often we don't take the time to drop a line concerning something we really like and believe most worthwhile. Rather than just talk about it out here, we'll drop you a line.

"These Meteorological Readings, to our way of thinking, certainly have proved most successful. We readily admit we were rusty on some of the topics covered and doubt very much whether we would, for instance, have taken the initiative of our own volition to have read the material covering Assignment X. Now that we did though, it was worthwhile. These readings have filled in between formal education, correspondence courses and a person's own private special subject or field. We trust work limitations will allow you to continue."

This is a well deserved tribute to the work of the Training Section.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment XV: Radar Storm Observations by Myron G. H. Ligda, on pages 1265 thru 1281 of Compendium of Meteorology.

About the Assignment: Radar Meteorology is one of the most promising and rapidly developing fields in the Weather Bureau today. Since this article was printed, important progress has been made in techniques, equipment, and application. In view of the importance of radar, and of the large number of new radar installations being made and planned for the near future, the Weather Bureau expects to have a correspondence course in radar meteorology available to its employees some time in 1959. This article provides an excellent introduction and background condensed into a very few pages. More specific information is available in the MIT Department of Meteorology Technical Report No. 20, The Use of Radar in Weather Forecasting, with particular reference to Radar Set AN/CPS-9 by Hal Foster which was distributed to most stations a few years ago. The Texas A and M Final Report, Applications of Radar Weather Observations to Hydrology, by Stuart J. Bigler and Richard D. Tarble, and The use of Radar in Severe Storm Detection, Hydrology, and Climatology, by Ligda, Bigler, Tarble, and Truppi were given more limited distribution.

QUESTIONNAIRE

Assignment No. XV

(To be answered by participants after reading assignment.)

(For complete information, see TOPICS May 1957.)

Col. 61 In what way is the radar energy back scattered from a raindrop generally related to the wave length?

1. inversely to the square of the wave length
2. inversely to the fourth power of the wave length
3. directly to the square of the wave length
4. directly to the fourth power of the wave length

Col. 62 For raindrops small compared to the radar wave length, how is the scattered energy related to the drop diameter?

1. directly to the fourth power
2. directly to the sixth power
3. inversely to the fourth
4. inversely to the sixth power

Col. 63 How does the energy from a radar scattered by a sphere of water compare to that by a similar sphere of ice?

1. the same
2. twice as much
3. five times as much
4. eight times as much

Col. 64 Precipitation attenuation would be the least serious with

1. 1 cm. radar
2. 3 cm. radar
3. 5 cm. radar
4. 10 cm. radar

Col. 65 What radarscope would be best for determining signal intensity over a distance of 5 to 10 miles?

1. A - scope
2. R - scope
3. PPI - scope
4. RHI - scope

Col. 66 Approximately how high would a sea level horizontally directed beam be above sea level at a distance of 100 miles?

1. 1,000 ft.
2. 5,000 ft.
3. 10,000 ft.
4. 20,000 ft.

Col. 67 The most objective measurements of echo signal intensity are made with the

1. PPI - scope
2. A - scope
3. R - scope
4. "pulse integrator"

Col. 68 According to tests with contour radar aboard aircraft, areas of greatest turbulence coincide with

1. maximum echo strength contours
2. minimum echo strength contours
3. closely packed contours
4. widely spaced contours

Col. 69 Complete PPI-scope pictures require the shutter to be open at least

1. 1/50 sec.
2. 1/10 sec.
3. one 360° sweep
4. two 360° sweeps

Col. 70 Radar is considered the best means of making observations in the

1. micrometeorological scale
2. mesometeorological scale
3. macrometeorological scale
4. astrometeorological scale

Assignment to Curacao

By Mike Sunray

As soon as we found ourselves headed for this interesting island, my family and I hunted up back copies of the National Geographic and wrote to the Netherlands Antilles Tourist Bureau in New York for information. We were fortunate in learning quite a bit before we arrived here.

We learned that Curacao is the main island in the Netherlands Antilles (West Indies), at about 12N Latitude and 69W Longitude, 15 to 38 miles off the coast of Venezuela. Curacao has an area of approximately 180 square miles, is 38 miles in length and from 2 to 7 miles wide. The island has a volcanic base, partly covered by coral reefs. It has little natural vegetation other than divi-divi trees, aloos and cacti. The climate is tropical. Temperature ranges from 76 to 90 degrees and rainfall about 22 inches per year. The fresh trade winds, averaging about 16 mph, bring a welcome coolness, except during the hottest months of August to October when the breezes die down to light variable. Fortunately, except for rare close calls, Curacao is not visited by the Caribbean Hurricane.

One acquires a pleasing reaction to Curacao from the beginning. It is one of the cleanest and neatest of the Caribbean Islands, in the Dutch tradition. The pleasant people, easy way of life, modern conveniences blending with the atmosphere of the past, fine roads and facilities and an abundance of shopping possibilities, are among the first impressions met with.

The capital city is Willemstad, with a population of about 60,000 out of 120,000 for the entire island. Willemstad is one of the most interesting cities a traveler can visit in this part of the world. The original central part was built in a walled area more than 300 years ago. It has passed through successively Spanish, Dutch, French and English administrations. (It is interesting to note that one of the early governors of Curacao was Peter Stuyvesant, who later became governor of New Amsterdam.) The Dutch influence has remained, giving the impression that this city has been transplanted from Holland.

One of the most prosperous cities in the Caribbean, Willemstad is a mecca for bargain hunting tourists. Many of the products of Europe may be bought here for a great deal less than their cost in the states. Perfume from France, for example, is about 1/2 the stateside price. Aside from the profitable tourist industry, Curacao is supported primarily by the petroleum processing industry. Here is processed crude oil from Venezuela and Colombia. This has made Willemstad the 4th largest port in the world in the number of ships serviced. In 1956, 7196 ships entered the harbor, mostly tankers.

The people of Curacao are descendants of negro slaves brought to these islands over a period of 200 years, as well as mixtures of various races and nationalities. In the minority are the Dutch, Portuguese, Venezuelans and sprinklings of a dozen other nationalities. Among the Dutch are the descendants of the early settlers and those who have been in the islands only for the past few years, working here on a contract basis for the local government and for the oil company.

"The Netherlands Antilles," consisting of all of the Dutch possessions in the West Indies, forms an autonomous part within the Kingdom of the Netherlands and is united, on a footing of equality, with the mother country. It is self-governing, with the government in Holland responsible for only its defense and foreign relations.

We entered Curacao through the modern Dr. Plesman Airport, one of the finest and busiest in the Caribbean. We were fortunate in having made arrangements to take over the house of a Dutch Airline pilot returning to Europe for 4 months' leave. Our temporary home, typical of the Dutch homes in Curacao, was of concrete block, of definite European and South American design. All the floors are tiled and the windows shuttered. Water being scarce in this dry country, all homes have rain cisterns built underneath, the roofs catching the rain during the brief, sometimes violent wet season. In addition to rain water, almost every home has a deep well, operated by a windmill or electric pump. Well water, although used by some for drinking, is used primarily for washing and garden spraying. An extensive water distillery system is the third source of water. This water costs approximately 1/2 cent per gallon and is used for cooking and drinking. In our kitchen we have three taps above the sink; one each for rain water, well water and "city" water.

Shopping for food is no problem. In addition to hundreds of small stores there are several supermarkets that compare in size to stateside ones. In addition to most U.S. canned and packaged goods we are familiar with, these stores carry the food products of Europe: cheeses, canned foods, processed meats, baked goods and liquor. Whereas our food budget in Hawaii, an area of higher living cost than the states, was about 160 dollars per month, eating on a comparable level here

costs us 260 dollars per month. Fortunately, Uncle Sam makes up a large part of this difference through a post allowance. Meat cuts here are strictly European—all fat and bone removed. This is done to give the costumer more meat for his money.

Two weeks after our arrival our children started school. This began by being quite a problem. Since all instruction is in Dutch it was necessary for our 12-year-old daughter to get special tutoring in Dutch. At the same time she was placed in the first grade in school, with the "babies," to start her off on the elementary level. As time progressed, and with some mighty effort on her part, she has mastered the language and has climbed to the 7th grade. The school curiculum she is following would be considered very stiff back home. In addition to learning Dutch, which is a "must," she is taking Spanish, French and English (British version), in the same year. Algebra and geometry are also taken. Science, mathematics and languages are taught on far higher levels than in equivalent grades back home.

Most of the people here have a working knowledge of at least one language besides their own, English and Spanish being the most common second language. The observers at the station will carry on a conversation in papiamento - the local native tongue, switching with ease to Dutch, Spanish and English as the occasion arises. I find it difficult to learn Spanish, and more so, Dutch, because English is spoken by all I come in contact with.

To be happy in Curacao, or in any foreign land as a matter of fact, a newcomer must learn to bear with the local customs. I am happy to say that I have learned during the past two years to go along with the local ways, yet adapting them to our needs as well as possible. When the time comes for us to leave this station it will be with a feeling that we have gained in experience and in association with interesting people in an interesting country.

1958 Agricultural Meteorology Institute

THE following applicants from the field have been selected to attend this year's Agricultural Meteorology Institute. Classes began on June 30 and will continue until August 15. The training consists of 4 weeks of intensive agricultural instruction at the University of Maryland and 3 weeks' training in Agricultural Meteorology at the Weather Bureau facilities in Suitland, Maryland.

Robert J. Babb, WBAS Kansas City, Mo.

Cecil E. Carney, WBAS Memphis, Tenn.

Allan B. Elam, NWRC Asheville, N. C.

Harold Harvey, WBO Pomona, California

William T. Hodge, WBSC, WBO Huron, S. D.

Edward G. Jacob, WBAS Richmond, Va.

Earl Leonard, WBAS San Francisco, Calif.

William R. Long, RFC Cincinnati, Ohio

Gustavus Meyer, WBAS Miami, Florida

Creighton Nelson, WBAS Minneapolis, Minn.

Edward Nelson, WBAS Portland, Oregon

Gilbert F. Pitts, WBAS Fort Worth, Texas

John A. Riley, Jr., WBAS Des Moines, Iowa

Donald C. Russell, WBO Lakeland, Florida

Warren Silverzahn, WBAS Hartford, Conn.

Simplex Timer Trouble

WBAS PEORIA, was having difficulty with the Simplex 3-program timer not turning the equipment on or off at the prescribed time. A close check of the operations at the time the over-sized bead passed under the contact showed that actually two impulses were being sent to the latching relay when the clock cam closed the microswitch, thus turning the equipment on (or off) and seconds later reversing it. The MIC discovered that the trouble was not in the relay but in the microswitch operated by the clock cam and that a .05 MFD condenser across the terminals of the microswitch remedied the trouble.

Other stations may be having the same type of trouble and may wish to try the above plan. The microswitch is on the 115 volt AC line so the condenser should have an adequate voltage rating to avoid breakdown. A good place to install the condenser is on the terminal block on the right inside of the clock case between the terminal marked "BF" and one of the "Bell Common" terminals.

Periodic Inspection

ATTENTION has been directed to the availability of hardened-steel bolts for tilt-control on rotary office chairs. The cast iron bolts with which such chairs are originally equipped are subject to breakage under severe or sudden strains, after long periods of use. Breakage while the chair is occupied might cause a very serious accident.

Station officials should provide for a periodic review of the office furniture and equipment in use. Those articles which might contribute to accidents because of their worn or outmoded condition should be reported to the Regional Office in order that repairs or replacement may be authorized.

Questions and Answers Concerning the New Federal Promotion Program

IN February Commissioner Watson's "Message to all Employees" informed us of the new Civil Service promotion program. The following questions and answers concerning this new program have been published by the Civil Service Commission.

Q. What are the principal features of the new Federal merit promotion program?

A. Under the new program, agencies are now required to set up and follow systematic procedures in making selections for promotion from among the best qualfied employees. These systematic procedures must be written down and made available to employees concerned.

The new program also requires agencies (1) to publish agency guidelines (the general promotion policy of the agency), (2) to consult with employees and employee organizations on merit promotion plans, (3) to inform employees about promotion procedures, and (4) to document promotion actions. Many agencies already have programs in effect which include many of these features. However, some adaptations of their existing programs may be needed.

Q. What is a merit promotion plan?

A. A merit promotion plan is a written statement of the requirements and procedures to be followed by an agency in making promotions to a specific position or group of positions. It tells which employee groups will be considered, what procedures and standards will be followed to determine which are the best qualified, and how much choice a supervisor will have in making selections for promotion.

Q. Where can an employee get a copy of the promotion plan that affects the jobs he is interested in?

A. He will be able to get this information through his agency personnel office. These plans will not be available from the Civil Service Commission.

Q. When will the new promotion program go into effect?

A. On or before January 1, 1959. After that date, all promotions must be made in accordance with the requirements of the new program. In the meantime, agencies are to develop the necessary policies and merit promotion plans needed to put the new program into effect.

Q. Will agencies be required to fill jobs by promotion?

A. No. Although most agencies generally fill jobs above the entrance levels by promotion, the new regulations leave to agency management the decision whether to fill vacancies by promotion,

(Cont'd on page 128)

Radar Echoes Without Precipitation

SINCE publication in the January TOPICS of the article "Radar Detects Wind-Shift Lines," Loren F. Jones, MIC, WBAS Victoria, Texas, has received several inquiries for further information on these dry echoes. Mr. H. R. Fedrick, who was on duty at the time, has written the description. The radar is high-power, 10 cm equipment provided and maintained at the station by the Copano Research Foundation.

"On October 30, 1956 at 1040C a moderate cold front passed Victoria moving southeastward. The radar had been running continuously showing scattered shower activity, first to the northwest, and after the frontal passage, to the southeast.

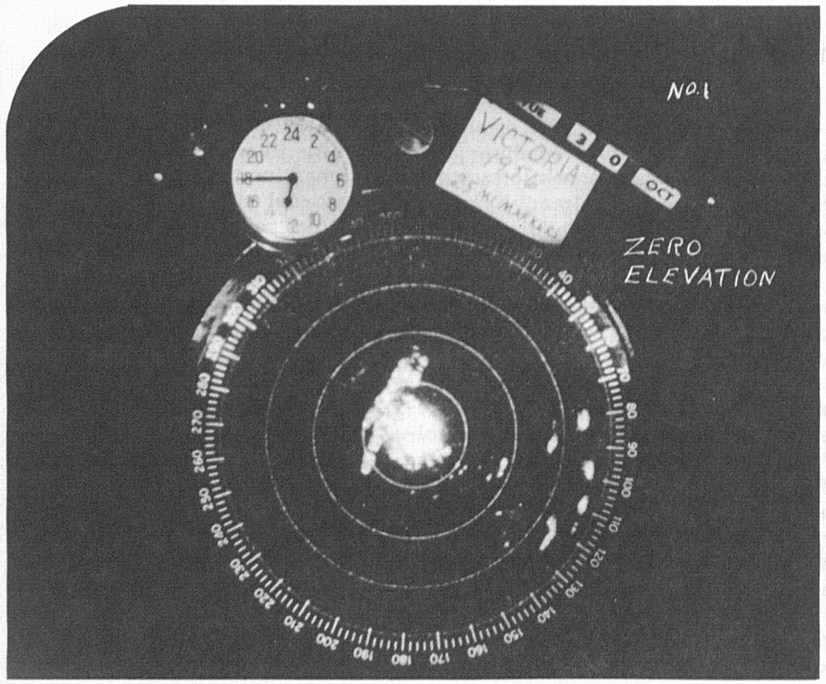
"Two hours later, at 1242C, a broken to solid line, orientated north and south about two miles wide was observed about 20 miles west of the station. (photo #1) This line intensified rapidly. At 1305C the antenna was elevated to 5½ degrees, and the echoes were observed in a U-shape around the station. (photo #2) At this time streaks that looked like rivers or wind streams appeared through the line of echoes. These streaks also appeared at an antenna elevation of 7½ degrees. (photo # 3) The antenna was then elevated to 12 degrees, and the echoes completely disappeared.

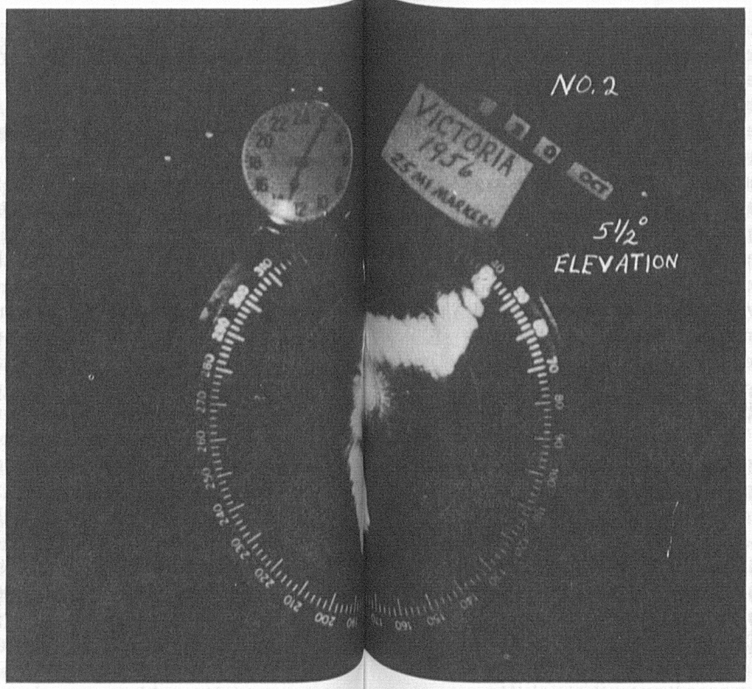
"With the antenna lowered to 6½ degrees, the U-shape began to reappear. (photo #4) At zero elevation a line similar to the original was observed. (photos #5 & 6) The line dissipated slowly, with only a small weak echo remaining by 1445C.

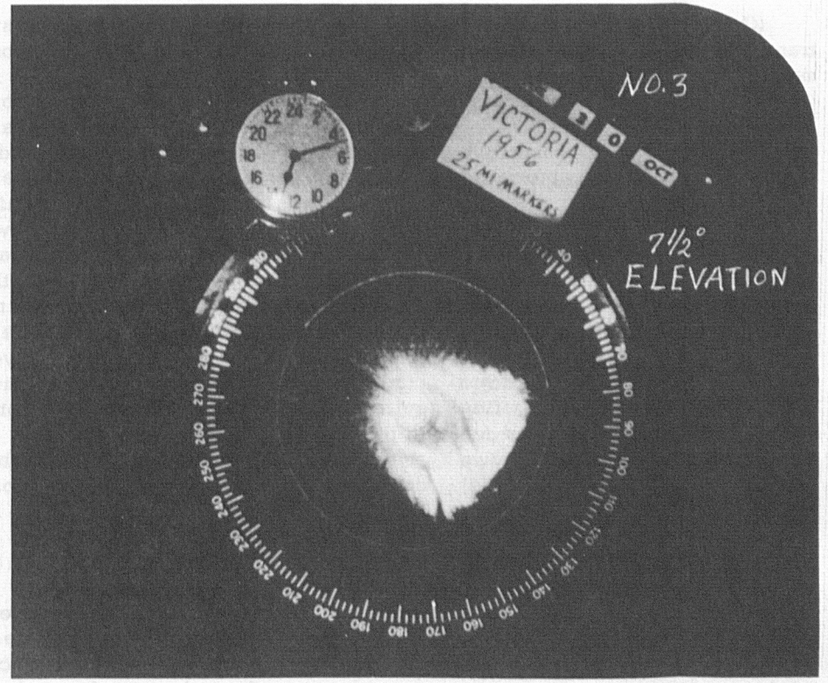
"When the rivers or streams first appeared on the radar, Foster AFB Weather Station was called, and a pilot report for this area was requested. A jet, F-100, crisscrossed the entire area from the surface to 20,000 feet, and reported no build-ups, no turbulence, no strong winds, no significant temperature change, and no precipitation in any form.

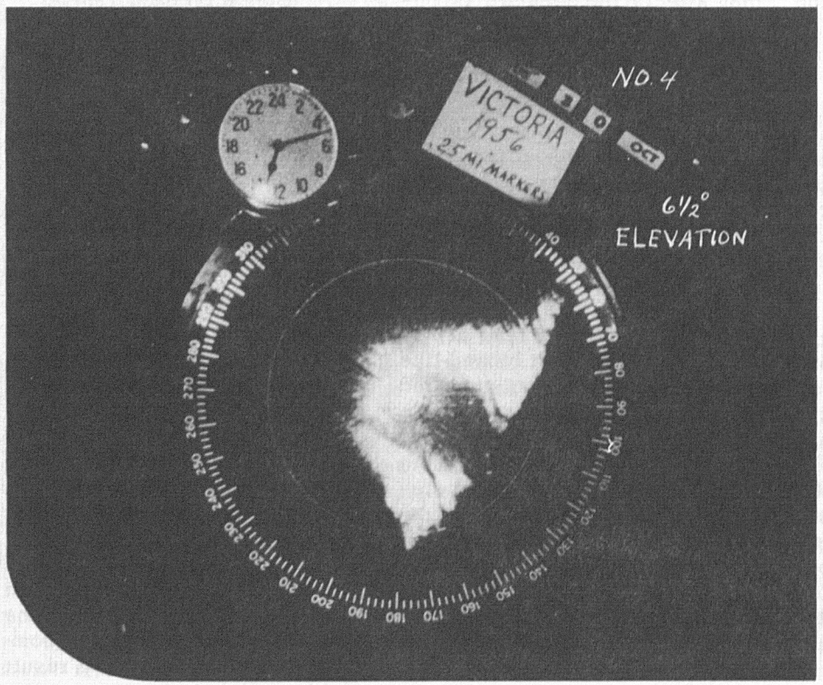
"The 700 mb chart at the time showed a weak trough to the west of this station with a very moist tongue of air orientated in about the same direction as the echoes. This tongue of moist air was not in the trough line, but on the eastern slope of the trough. Possibly these echoes were a result of this cool moist tongue.

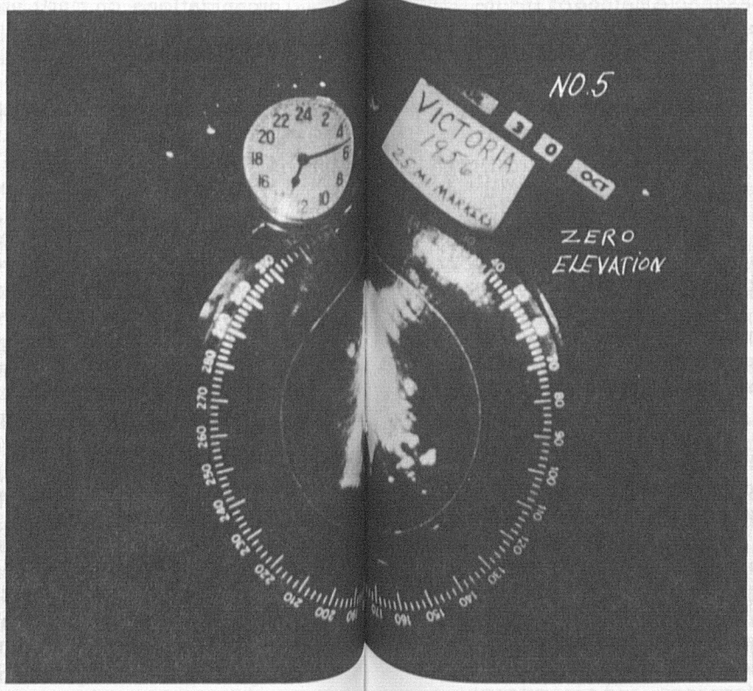
(See pictures on next page)


NO. 1
VICTORIA
1956
25 MI MARKERS
3 0 OCT
ZERO
ELEVATION


NO. 2
VICTORIA
1956
25 MI MARKERS
3 0 OCT
5½°
ELEVATION


NO. 3
VICTORIA
1956
25 MI MARKERS
3 0 OCT
7½°
ELEVATION


NO. 4
VICTORIA
1956
25 MI MARKERS
3 0 OCT
6½°
ELEVATION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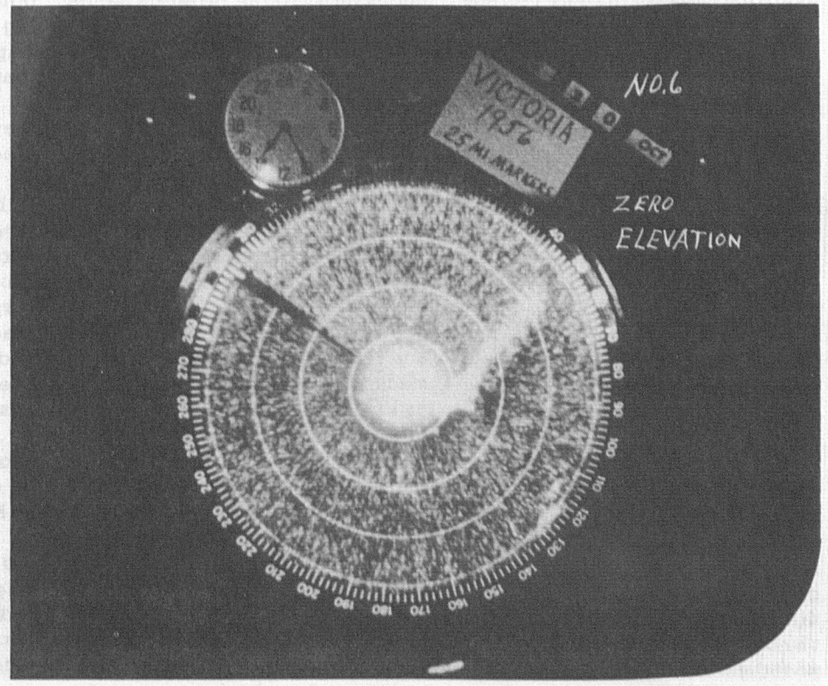
NO. 6
VICTORIA
1956
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(Cont'd from page 125)
transfer, reassignment, or other methods.

Q. What jobs will be covered by merit promotion plans?

A. All jobs in the competitive service that are filled by promotion will be subject to the new procedures.

Agencies may exclude promotions made under Commission-approved training agreements and promotions resulting from classification review of the duties (upgrading). Also, action taken to restore an employee to a position or grade from which he was demoted through no fault of his own (for example, reduction in force) may be excluded by agencies from their promotion program.

Agencies may apply the new promotion procedures to assignments (without promotion) that offer better opportunities for later promotion. Examples are assignments to understudy positions and assignments on long-term detail that will give the employee special qualifications for higher-grade jobs.

Q. As an employee, will I be consulted in the development of merit promotion plans?

A. Agency officials will ask employees and employee organizations for comments and criticisms on a proposed plan before the plan is officially adopted. Employees thus will have the opportunity for comment on such matters as which groups of employees will be considered and how employees are to be compared and selected for promotion.

Q. How will merit promotion plans be publicized?

A. The agency may use any appropriate communication channel to inform its employees about an approved plan. The agency may publish plans in its employee publication, distribute copies directly to employees or send them through supervisory channels, post them on bulletin boards, etc.

Q. Will an employee be able to find out about the promotion plans for all kinds of jobs in his agency?

A. This is not required. The promotion program requires only that an employee be given information about promotion plans that affect him personally; however, most agencies make this information freely available.

Q. How will employees be compared to determine which ones are best qualified for promotion?

A. Different methods will be followed for different jobs in accordance with the specific requirements and procedures stated in the plan. For some positions, employee qualifications may be compared by an agency official. For others, a promotion committee may make the comparison. At other times a written test may be given. Each promotion plan will tell what method will be used.

Q. How will my agency make selections for promotion from the group determined to be best qualified?

A. Methods of selection must necessarily fit the different kinds of jobs being filled. Employees will therefore find out from the appropriate promotion plan how selections are to be made for the jobs they are interested in.

For example, a plan may require that employees be ranked in an order determined by their qualifications and the selection made from the five ranked highest. Another plan may require that employees be placed in groups as "outstanding," "well qualified," and "qualified," and the selection made from the "outstanding" group as long as employees in that group are available. A supervisor will generally be free to select any one of the candidates whose names are presented to him for selection under the plan. As mentioned above, each plan will spell out the method to be used.

Q. Will employees now have to take written promotion tests?

A. The new promotion program makes no change in present qualification requirements for written tests. Agencies have found written promotion tests to be useful for an increasing number of types of jobs such as typist, stenographer, claims examiner, ship scheduler, and first-line supervisor. There are other types of jobs, however, which require abilities that cannot now be measured by written tests. Examples are the ability to deal with people, good judgment, and initiative. Employees should read the promotion plan for the jobs involved to find out whether a written test will be given to promotion candidates.

Q. Some agencies do not publicize vacancies. How will those agencies locate employees to be considered for promotion?

A. Agencies must consider all qualified employees in the area of consideration stated in their specific promotion plans. Agencies, therefore, may publicize vacancies, maintain lists of employees according to their skills, identify the candidates in the promotion plan itself, or use any other reasonable method of insuring consideration of all qualified employees in the area of consideration.

Q. Will an employee be interviewed every time he is considered for promotion?

A. The promotion plan will tell the employee whether an interview will be required. While personal interviews are helpful in making comparisons for promotion purposes, they are sometimes impractical to schedule because of such factors as the large number of employees involved or the necessity for travel.

Q. How will an employee know what factors are considered in deciding which employees are to be promoted?

A. This is set out in the promotion plan. It will list the factors, including incentive awards, that will be used in comparing and selecting employees for promotion. Experience, training, performance, and supervisory appraisal are typical of the factors

used to evaluate candidates.

Q. What part does the supervisor play in filling jobs in his unit under the new promotion program?

A. The role of the supervisor in selecting employees for promotion is determined by management and will vary for different jobs. The agency's promotion plans will, however, identify the supervisor's role in promotion actions.

Q. How broad are the areas from which employees are drawn for consideration under the new promotion program?

A. The new program requires that consideration for promotion be given to qualified employees from as broad an area as practical. The area of consideration will necessarily vary from job to job because of the availability of qualified employees, grade level of positions to be filled, geographical location of positions, and the career development plans of the agency.

Q. Will this new program bring about more promotions?

A. No. The number of promotions made by an agency is determined by the needs of that agency.

Q. Will the new program help employees in dead-end jobs?

A. In many cases, it should. Broad areas of consideration often increase promotion opportunities for employees in dead-end jobs. Also, it is planned that the new promotion program be geared in with agencies' manpower-planning, training, and career-development programs. The latter program can help employees in dead-end jobs to become qualified for other positions.

Q. Does the new program cover transfer from one department or agency to another, when a raise in grade is involved?

A. No.

Q. Does the new program cover moves between bureaus or offices within a given department or agency when a raise in grade is involved?

A. Yes

Q. If my personnel office rates me not qualified for promotion, may I appeal this action?

A. Yes. Under the new program, agencies will have procedures for employee grievances on promotion matters. Either the agency's regular grievance procedures or its promotion plans will identify what matters will be given administrative review and where requests for such review should be filed.

Q. Can I appeal to the Civil Service Commission if an agency fails to select me for promotion?

A. No. However, if the Commission receives information that an agency is not following its own promotion plans, this information will be used to check on and to insure agency compliance with its established plan.

Q. Does the new program change the provision of the Whitten amendment which sets time-in-grade requirements for promotion?

A. No. The time-in-grade requirements are unchanged.

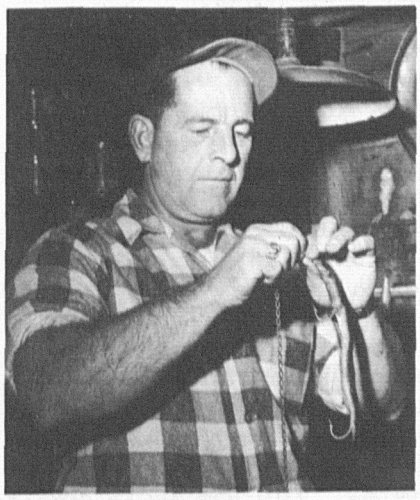
Block Island Wizard Tells How It's Done

THE following article appeared in the March 16, 1958 issue of the Providence Journal and is reprinted with their permission. We believe many Weather Bureau employees enjoy fishing as a hobby and will be interested in the accomplishments of Bill Phelan at Block Island - The Bermuda of the North.

"There's an old saying that a good fisherman has to know more than the fish he's after.

"Sports fisherman Bill Phelan of Block Island would appear to meet this requirement when it comes to battles of wit with his favorite adversary, the striped bass.

"Bill, who runs the U. S. Weather Bureau station at the island's airport, took 20 stripers last year, including a 58½ pound monster - the largest ever in this state.



Bill Phelan

Providence Journal-Bulletin Photo

"The catch eclipsed his earlier records of a 52-pounder and a 53½-pounder taken in 1954.

"How does he do it? Bill's answer is amazingly simple:

"'Eels,' he said, 'Just eels, young ones as thick as your forefinger and about a foot long.'

"He sews them on a chain, the same kind used to support window sashes, at the mouth and then pushes the free end through a slit near the eel's tail with a forked stick. One hook is under the eel's tail, the other at his mouth which is sewed to the line.

"The chain he ties to a 12-pound test, monofilament line wound on a ... spinning reel. Usually, Bill says, he uses two, 110-yard spools on his reel, making a total of 220 yards....

"The proper technique, he

feels, is to cast and reel in, cast and reel in and so forth until a fish bites or he gets tired and moves to another location in his beach buggy, a jeep.

"His favorite night time fishing spots are Charlestown Beach south of the New Harbor Coast Guard Station, Sandy Point, the beach back of the former Ballard's Inn and Southwest Point....

"Bill had a word of caution for those who think his description of how to catch stripers is too easy.

" 'Remember,' he said earnestly, 'There are plenty of nights when you won't catch a single fish. Stories about big catches are all right, but you just can't expect to get a record fish on every cast.' "

Tatoosh Island, Washington

THE most northwesterly point in the continental United States is Tatoosh Island, Washington. This jutting mass of rock lies just 5/8 mile off the point of Cape Flattery, at the mouth of the Strait of Juan de Fuca, in one of the most scenic sections of the Pacific Northwest.

The main island is about 17 acres in extent; smaller islands and rocks nearby total an equal amount. About an acre of sandy beach connects the main island with North Island. Small boats may be launched from this beach, but the principal means of getting on and off the island is by power hoist to the top of a 75-foot cliff on the northeast side. Boats maneuver up to the base of the cliff, then the people or goods are hoisted in a basket. This operation is usually remembered by newcomers to the island as providing all the thrills of a roller coaster.

While Tatoosh is only a short distance offshore, the nearest town is Neah Bay, Washington, 7 miles by water. When sea conditions permit, crossings are made by skiff over the short stretch of water to the cape. From there a 15-minute climb up a steep trail leads to a road into Neah Bay. In summer, the island people sometimes go all the way into Neah Bay by outboard motor-powered skiff. Boats kept on the island, however, must be hauled out of the water when not in use, as there is no protected mooring.

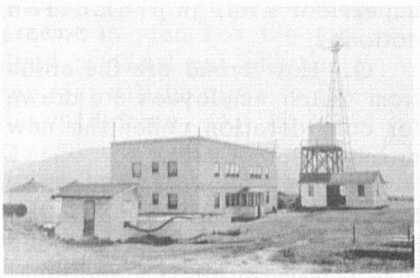
Main office building in foreground Coast Guard lighthouse and quarters in background

The nearest shopping center is Port Angeles, Washington, 72 miles down the Straight from Neah Bay. The boat trip from Tatoosh to Neah Bay takes about an hour, and the automobile trip from Neah Bay to Port Angeles takes about 2 hours, as the road is crooked and sometimes rough.

Normally there is boat service from Neah Bay once a week, although in winter the sea and weather sometimes cause interruptions to this schedule. The Coast Guard goes out each Friday afternoon with a motor launch, carrying personnel, mail, groceries and supplies.

Heavy shipments, such as helium, fuel, equipment, household goods, etc., are transported from Seattle by Coast Guard tender, at intervals of from 3 to 6 weeks. Material from the tender is loaded into workboats, which carry it to the foot of the cliff, to be hoisted to the top in slings or cargo nets.

Inhabitants of the island, Weather Bureau and Lighthouse employees and their families (now about 20 people), find it a most healthful place, with no flies or mosquitoes, and practically no germs. The sea air is always invigorating, and only when a person goes ashore does he catch cold.



Large building-apartment house

Fishing is very good in the waters around the island. Greenling, sculpin, ling cod, and rockfish (called "red snapper" in butcher shops) are caught the year round, either from shore or a small boat. Halibut may be had if one knows where to fish, and has the patience to "jig" for them. Salmon are caught in scattered amounts from May through October. During the main run of King Salmon, usually in August, so many boats troll near the island they get in one another's way. Everyone always catches at least a few, and the families on the island usually can or freeze a considerable amount. In the opinion of many, there is no fish to compare with freshly caught salmon.

Quarters, fuel and lights are provided for approximately $3.00 per pay period. The apartments are modern and would be quite expensive in a city. Adequate furniture, a good range and refrigerator are furnished, but other furnishings such as radio, record players, etc., must be provided by the personnel themselves.

Electricity is standard 110-volt, 60-cycle alternating current from the Diesel-Waukesha generating plants, so that any ap-

pliances, washing machine, vacuum cleaner, radio, television, etc., may be used.

Communication with the mainland is by Government-owned telephone, and groceries can be ordered from Neah Bay or Port Angeles as easily as in any suburban area, and will be delivered on the next boat.

If an employee owns an automobile he can park it in Neah Bay, and having one's own transportation when going ashore has been found to be most advantageous. However, the salt air and the long periods of standing cause considerable deterioration, and new cars do not remain new long.

There is almost constant need for qualified single male volunteers for assignment to Tatoosh in the GS-7 grade. The observational program at the station consists of hourly, pibal, raob and rawin observations. Interested employees are invited to apply by WB Form 114-1 to the Regional Administrative Officer, Salt Lake City, through official channels.

Texas Governor Commends Tornado Action

A press release from the Office of Governor Daniel of Texas announced that the teachers and pupils of the LaCoste School (Medina County) were commended for their courageous action when a tornado struck on May 2. The announcement mentioned that the action of the teachers in moving pupils from the exposed second floor to the first floor and against inside walls "undoubtedly saved the children from serious injury or perhaps death." Governor Daniel noted that the Tornado Safety Rules, previously distributed to every school in Texas, were followed exactly. Also, satisfaction was expressed over the operation of the Severe Weather Warning System.

Retirement Activities

O. R. ROGERS of Moon Valley Farm, Columbia, Missouri, wrote the Central Office recently concerning a device which he developed during his period of Weather Bureau service. The device was an instrument which Mr. Rogers designed to record the duration of rainfall. Some of the correspondence on file in the Central Office on this goes back as far as 1912. In 1917 a patent was granted for this device. Mr. Rogers retired in 1944 (see TOPICS AND PERSONNEL for September 1944), but, like many other Weather Bureau "graduates," has an active interest in weather and Weather Bureau affairs. Since Mr. Rogers' most recent letter in this exchange of correspondence may be of interest to others in the Bureau, it is reproduced below.

"I am in process of cleaning house, as you might say, for passing on. The old 'duration of rainfall' device I once evolved did do a real job, and might serve us today, but was lost in the dim past, hence my letter.

"There was a 'working' model, and was clipped on the side of 'sunshine' magnet of Triple Register for a number of years, but evoked no comment, and was dropped. I was a perfectionist in those days, and 'eye obs' left much to be desired. Also someone must ever be alert to record start and end, which meant much guesswork. Many entries not in keeping with our standards of accuracy....

"...The grid was two sets of german silver wire, spaced perhaps one fiftieth inch apart - the drops would pass through the space, leaving the last little bridge across the underside, and this would go in a bit of steam. Only a few milliamp of current, and in the years it was in service was never cleaned or gave trouble. You will find the record on Columbia triple-register sheets sometime between 1917 and 1925 perhaps. We had a war and busy times then, with some real stresses- flu made me deaf in 1919, and I had all co-op stations in Missouri to inspect, check records, and serve our State Highway Commission officials who were testing pavements and weather - getting endless tables to check by - and I had to make these. Our O.I.C. was an old Army Sergeant, dressed up in O.O.C. raiment, but otherwise the same. Could not reduce barometer to sea level, when I had flu, and near death - had to go to office, walk a mile, sixteen below zero that morning, no fire in the office - no coal, and building closed, except our office, etc. That is why I became deaf, I think. Wonder is I did not die like others.

"The rain record was a heavy record when rain was falling, and thin tracing otherwise, and made beside sunshine ziz-zag line. You will be surprised at the number of hours rain actually falls in a 24-hour day as compared to our eye observations, though I am not sure this fact is important as a rule. However, no other work made in keeping station forms. One pen on triple register shows amounts in hundredths inch - and this perhaps is all rainfall data required for most purposes. Now one thing more.

"I was a weatherman for farmers. His work is one job after another all summer with weather

ever present to help or hinder. He needs a forecast to cover a job, take corn planting, plow, ordering land, and plant; rain means start over if he is not finished. Same with hay-mowing to haymow. In my last year 1943, I gave 'operational advices,' for entire State of Missouri, forecasts taboo - war. Worked with 'county agents.' In October these came to Columbia for big pow-wow, told me 'more #1 hay in our barns than ever known before. So Ag College started 'weather for farmers' service.... And now, my friends, I say thank you for the nice letter. It brought back some of my early earnestness for fuller service to my public - so long ago.

"I am almost 77 years old, more than I ever though I would last. Am on my own land, own home, not a care of any sort. Had three children, and this week the last one is coming home, and then all three will be living here beside us - wife and I, each in their own home. Can you beat that?"

☆☆☆ *Superior Accomplishment Awards* ☆☆☆

☆ *Jeff D. Ardoin* ☆

JEFF D. ARDOIN was awarded $300 in recognition of his exceptionally fine performance as Supply Officer in the Central Office Procurement and Supply Section.

Since joining the Procurement and Supply Section in February 1957, Mr. Ardoin has demonstrated outstanding ability in analyzing programs and procedures of the unit. Under his leadership and with the complete confidence and cooperation of the personnel under his supervision, the latest concepts in scientific inventory management have been introduced, resulting in greatly improved operations. In addition to his excellent work in the Central Office, Mr. Ardoin, on a recent brief detail to the National Weather Records Center, accomplished a remarkable job in disposing of surplus property and setting up new property and stock control systems.

☆ *Cecil D. Anderson* ☆

CECIL D. ANDERSON was awarded $100 in recognition of his very fine work as Charting Supervisor at the Forecast Center in Kansas City.

Under his capable leadership, the Charting Unit has been able to meet the demands of speed and accuracy placed on it, despite adverse circumstances which have existed because of a large personnel turnover. Mr. Anderson's high devotion to duty, the outstanding job he had done in training new personnel, and the long and difficult shifts he so willingly worked to provide adequate coverage during periods of personnel shortage were important considerations in granting his award.

☆ *Dominic Grady* ☆

DOMINIC GRADY, Meteorological Aid, was awarded $200 in recognition of his outstanding record of service at Atlantic City for over twenty-eight years.

Mr. Grady entered the Weather Bureau in February 1930 and has been stationed at Atlantic City since that time. His continuous identification with the Atlantic City office and his competent service and devotion to duty have contributed a great deal to the excellent reputation for public service enjoyed by his station. Through the years Mr. Grady has consistently shown the willingness and ability to assume additional responsibility whenever necessary to maintain the efficiency of the station or to provide service. The high regard in which he is held by his fellow workers, supervisors, the press, and business and industrial interests, as well as the general public, attests to the excellence of his work.

☆ *Matthew Lefkowitz* ☆

MATTHEW LEFKOWITZ, Meteorologist, was awarded $200 in recognition of his very fine work in assisting with the establishment and operation of the Newark ANDB Project.

Combining his excellent background of special projects experience with long hours of hard work, exceptional initiative and ingenuity, and an intense interest in the overall program of collection, reduction, and analysis of meteorological data, Mr. Lefkowitz has made a valuable contribution to an important Bureau program. His day-to-day competence, high devotion to duty, and the many significant recommendations he has made for improvement of the program typify the performance on which his award is based.

☆ *Vernon Hendrickson*

Ray Jensen ☆

VERNON HENDRICKSON and RAY JENSEN, Meteorologists, WBAS Fargo, shared an award of $500 in recognition of their exemplary service to the public during the tornado that swept through Fargo on June 20, 1957.

Messrs. Hendrickson's and Jensen's alertness in detecting the formation of the tornado and their promptness and efficiency in disseminating the warnings while the tornado travelled in view of the office and within striking distance of it are highly commendable. Their prompt and wide distribution of the warnings pro-

vided adequate time for the residents to seek shelter or to leave the threatened area. Undoubtedly hundreds owe their lives to the receipt of the timely warnings.

Mr. Hendrickson received $300 and Mr. Jensen, $200.

☆ *Howard Rexroad* ☆

HOWARD REXROAD received a $200 award in recognition of his highly competent performance as Aviation Forecaster at Boston.

In addition to his unusual skill in forecasting and in the performance of other assigned duties, Mr. Rexroad has consistently displayed initiative and alertness in the improvement of the forecast program at Boston, adeptness in analyzing procedural changes and offering suggestions which have helped the station carry out new programs more effectively, and an ability in dealing with others both within and outside the Bureau which has contributed greatly to the operation of the Boston office.

☆ *Charles O. Schick* ☆

CHARLES O. SCHICK was awarded $300 in recognition of his accomplishments as Chief of the Procurement and Supply Section.

Under Mr. Schick's direction the Procurement and Supply Section has assumed many new functions and a greatly increased workload with a minimum of increased staff. In addition while conducting normal operations, Mr. Schick has been instrumental in effecting great savings through the utilization of surplus from other government sources and by consistently insuring that the best possible product has been obtained at the lowest possible price. Mr. Schick's effective planning in carrying out his responsibilities has resulted in greatly improved efficiency in procurement and supply functions.

☆ *Dell H. Stangland* ☆

DELL H. STANGLAND, Meteorologist, was awarded $200 for sustained superior performance of duties at Missoula for over twelve years.

Mr. Stangland's excellent work includes the performance of duties normally assigned employees of a much higher grade. As a recent example, during the 1957 fire season when the office was short-staffed, Mr. Stangland assumed a heavy portion of the fire weather forecasting responsibility and performed very creditably during the entire fire season. In addition, whenever the need arises, he willingly takes over extra administrative and supervisory duties beyond the scope of his own work and consistently turns in a good performance.

☆ *Raymond A. Wilson* ☆

RAYMOND A. WILSON, Meteorologist, WBAS Fargo, was awarded $200 in recognition of his commendable action in connection with the tornado that struck Fargo on June 20, 1957.

Although off duty at his home in Moorhead when the tornado occurred, Mr. Wilson heard the warnings and followed the progress of the storm. When he learned that communications at the Fargo station were severed, he immediately telephoned WBAS Minneapolis to warn them of the tornado and its movement. This was two and one-half hours before Fargo was able to contact Minneapolis. In addition to his action in disseminating vital warning information, Mr. Wilson prepared an excellent account of the tornado which he has made available for research.

Length of Service Awards

30-Year Awards

Asheville, N. C. NWRC
Carl R. Byrd
Central Office
John L. Baldwin
Harold R. McBirney
Cincinnati, Ohio RFC
George R. Marth
San Antonio, Texas
Chester A. Suitor

20-Year Awards

Atlanta, Ga.
Claudine Wallace
Bismarck, S. D. WBAS
Alfred A. Skrede
Fort Worth, Texas RAO
Mamie L. Daniel
Jacksonville, Fla.
John D. Watson
Oklahoma City, Okla.
John E. Harrison
St. Louis, Mo. WBAS
Wesley W. Griffith
Penn State University, University Park, Pa.
Leon Rothenberg

10-Year Awards

Annette, Alaska WBAS
Edward Kinsloe
Asheville, N. C. NWRC
Raymond D. Crane
Mary A. Garren
George W. Hogan
Barrow, Alaska WBAS
Max Ungarook
Boston, Mass. Polar Operations
John F. Gilboy
Cape Hatteras, N. C. WBO
Lawrence L. Hendrickson
Central Office
Andrew A. Bucci
Allen B. Driscoll
Salvatore F. Domino
Thomas A. Lassiter
James Villarejo
Honolulu, T. H.
Shizue M. Chun
Frank E. Johnson
Thomas G. Sorenson

Unused Sick Leave

THE following list of employees have 1000 hours or more of unused sick leave.

Central Office
- Julius Badner
- Frank W. Burnett
- William T. Chapman, Jr.
- John R. Clark
- Dale O. Collins
- Jack D. Cox
- Edmund A. DiLoreto
- Marshall F. Grace
- Clyde L. Hughes
- John B. Hussar
- Ralph P. James
- Harold M. Jordan
- George M. Krahl
- Francis J. Lacny
- Charles M. Lennahan
- Vera Lewis
- Raymond M. Lumpkin
- Lynn L. Means
- Marvin R. Rogers
- Abe Rosenbloom
- Harlan K. Saylor
- Ben Singer
- Clarence D. Smith, Jr.
- David J. Stowell
- Joseph Vederman
- Chauncey A. Whittelsey

Denver, Colo. WBAS
- Glover L. Blinde
- Wayne S. Johnson

Dodge City, Kansas WBAS
- James V. Burchett
- John D. Gholson
- Ralph V. Hanlon
- Leslie R. Houser
- Mack Ohmart
- Welcome B. Orr

Eugene, Oregon WBAS
- Robert C. Holt

Fort Worth, Texas WBAS
- James H. Ferguson
- Harold E. Richards

Greenville, S. C. WBAS
- Lyle Hinton
- Wilton Rodgers

Midland, Texas WBAS
- William J. Ashcraft
- Troy V. Goodwin
- Gardner A. McGahen
- William M. Percy

Salt Lake City, Utah
- Melvin W. Graham
- Harry N. Weirauch

Question Box

Q. How long should a Substation Inspector keep old copies of inspection reports in his file? This includes WB Forms 530-2, 6055A, 6055B, etc.

A. Appendix I, Section I-F-39 authorizes disposal of inspection forms after two years.

RETIREMENTS

Kansas Byers

KANSAS BYERS, who devoted most of her adult life to the teaching profession, came to the Weather Bureau on August 23, 1945, by transfer from the National Archives. On May 31 retirement from her position in the Central Office Records Management Section brought to a close her government career of more than nineteen years' service.

A "Tar Heel" by birth, Miss Byers spent her girlhood in Ellenboro, North Carolina. She graduated from Davenport College in Lenoir, N. C., and received her A.B. and A.M. degrees in English at the University of N. C., as well as an A.M. in education at Columbia University, New York City.

Miss Byers taught English (college preparatory) at private schools in Pennsylvania, Maryland, and Virginia for more than twenty years and spent seven years as an English teacher at the Berlitz School of Languages in Washington. Her first government service dates back to World War I when she worked three years, first for the Department of Agriculture and later for the Federal Board of Vocational Education. She returned to government during World War II as a guide at the National Archives, and after three years with that organization, transferred to the Weather Bureau where she has served in various capacities in the Fiscal Section, in the Office of Administrative Operations, and in the Records Management Section.

While teaching at the Berlitz School, Miss Byers studied Spanish for pleasure. Her knowledge of Spanish, together with a previously acquired knowledge of French, was put to good use in her most recent Weather Bureau assignment, which involved the responsibility for securing translations of foreign language correspondence.

An active member of a number of cultural and social organizations, Miss Byers is presently a director of the University Women's Club and historian for her chapter of the DAR. This fall she plans to resume her study of Spanish and teach English on a part-time basis at the Berlitz School. Her grandnephew (born in January) and a grandniece (just a few weeks old) have a built-in baby sitter, and spending many pleasant hours with these children is among the plans she has for the immediate future. Miss Byers' interests are essentially literary, and her favorite diversion is drama-from Greek to present day. After nearly half a century devoted to teaching and government service, Miss Byers is launching her new era of living with a Cook's Grand Tour of Europe, accompanied by her sister and two grandnieces. They departed by plane on May 25 and returned by boat on July 11.

Friends may contact Miss Byers at 1525 New Hampshire Avenue, N.W., Washington 6, D. C.

Edna D. Weaver

EDNA D. WEAVER, Statistical Clerk in the Office of Meteorological Research, retired May 31 after nearly twenty-three years of government service.

A native Washingtonian, Mrs. Weaver attended Business High School and Droughon's Business

College. Her government service dates back to 1920 when she worked briefly as a card punch operator for the Census Bureau. Following this she was employed in private industry, and in 1934 she resumed her government service returning to work for the Census Bureau. Other prior government service included assignments with the Works Progress Administration, Bureau of Labor Statistics, and the Social Security Board. She transferred to the Weather Bureau in 1939 and has served as card punch operator, card punch supervisor, and statistical clerk.

Mrs. Weaver's plans for the immediate future include a trip to the West Coast and wintering in Florida. She will maintain her home in the Washington area, however, at 1516 North Nicholas Street, Arlington, Virginia.

Carl L. Wilson

CARL L. WILSON, Meteorologist at Parkersburg, retired May 31 after twenty-nine years of Weather Bureau service.

Mr. Wilson was born in Marion, Indiana, and is a graduate of Fairmount Academy, Fairmount, Indiana. He worked as a chemist and a metallurgist for many years and was manager of the Wilson Apiaries just prior to entering the Weather Bureau as a Junior Observer at Grand Rapids on June 1, 1929. He later served at Peoria and in 1937 transferred to Parkersburg.

Mr. Wilson's high devotion to duty and his fine work in the various phases of the station program at Parkersburg have won for him the admiration and respect of all with whom he has been associated. He is active in community and church affairs and has cultivated many interesting hobbies, including drawing, painting, and gardening. He has been studying portrait painting rather seriously, and after retirement plans to tour the famous galleries of Europe and continue his study of art. For the present friends may contact Mr. Wilson at 2417 Dudley Avenue, Parkersburg.

Willis E. Hurd

WILLIS E. HURD, who retired from his position as Meteorologist in the Climate and Crop Weather Division on May 31, 1944, died June 8 in Arlington, Virginia, at the age of 83.

Mr. Hurd was born at Newport, N. H. on February 21, 1875. He entered the Weather Bureau on March 15, 1906, transferring to the Central Office in 1910, where he served continuously until his retirement.

A well-known figure in Arlington County, Mr. Hurd made many friends and acquaintances in the daily pursuit of his two favorite outdoor hobbies, hiking and bird watching. He continued an active interest in weather after retirement and has bound volumes of his daily weather log in his library. Although he had no formal study in French, Mr. Hurd mastered the language by himself and made translations of a number of the Jules Verne novels.

Survivors include his daughter, Miss Rilma M. Hurd, of 3500 North 22nd Street, Arlington, and one brother.

Aels M. Lander

AELS M. LANDER, Meteorologist at WBAS Boeing Field, Seattle, died May 26.

Mr. Lander was born in Portland, Oregon, February 28, 1920. He graduated from Jefferson High School at Portland, and during his Weather Bureau career furthered his education by taking extension courses from Pennsylvania State University and residence study at the University of Washington. Mr. Lander entered the Bureau November 21, 1945, at Portland, following his release from the Air Force where he had served four years as a weather observer. In January 1951 he was recalled to active service and was granted military furlough until January 1952, at which time he returned to duty at Portland. In June 1952 he transferred to Roseburg as MIC, serving in this capacity until his transfer to Seattle in July 1956.

Mr. Lander's loyal and efficient service and the excellent manner in which he carried out his responsibilities earned for him the respect and admiration of all with whom he was associated during his career in the Bureau. He was a credit to the Federal Service and will be missed by his many friends and fellow workers.

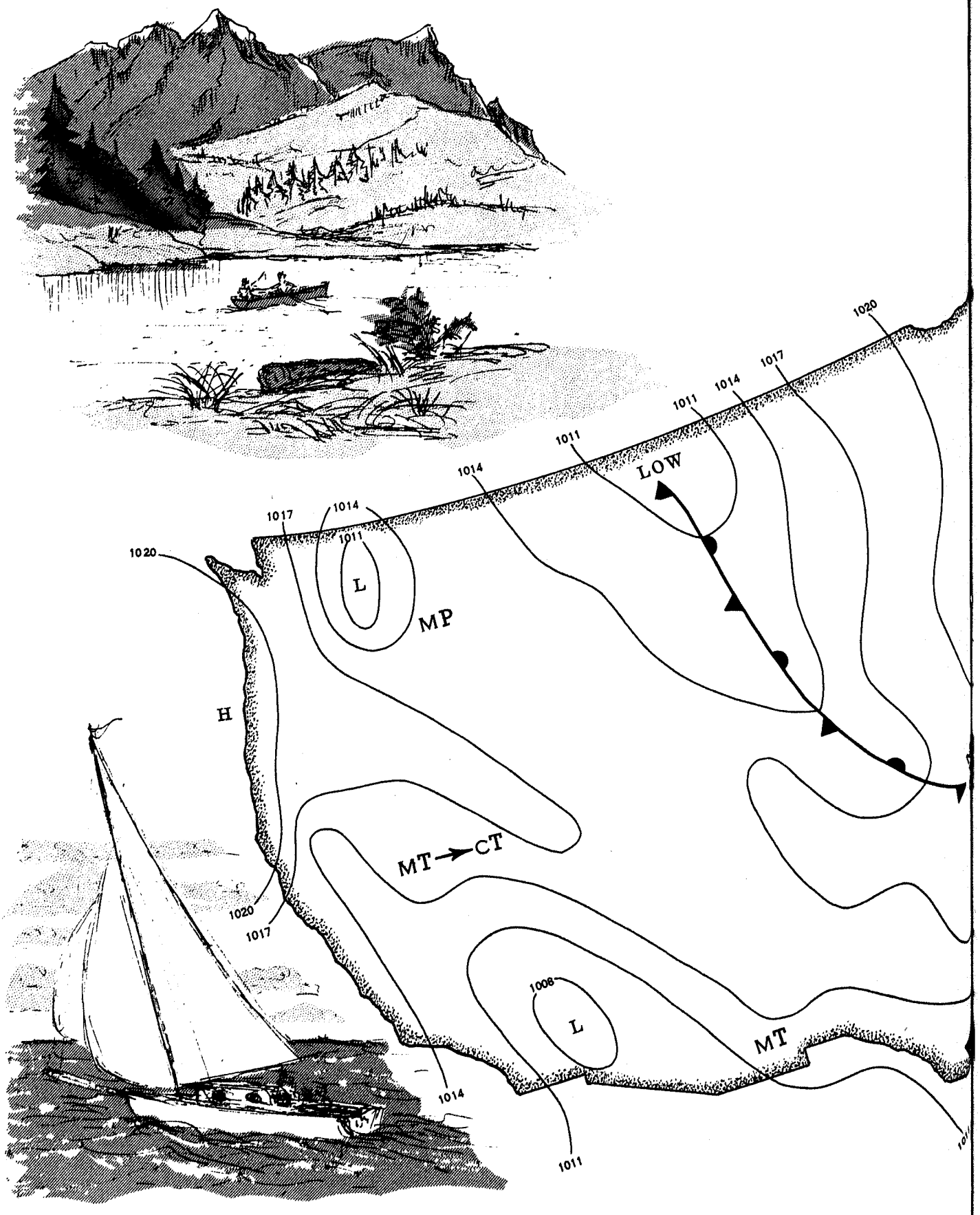
Mr. Lander is survived by his wife and four children who live at 8111 N. E. Going, Portland 18, Oregon.

Walter W. Thomas

WALTER W. THOMAS, who retired from the Bureau July 31, 1933, died May 1 in Spokane at the age of 88.

Mr. Thomas was born in Taylor County, West Virginia, on February 2, 1870. A Spanish-American War veteran, he entered the Bureau at Carson City in September 1900. A year later he transferred to Point Reyes Light, California, where he served for two years before accepting an assignment at Mount Tamalpais. He was Official in Charge at Lewiston from 1907 until his retirement.

Survivors include two sons, Lt. Col. Leonard L. Thomas, Niagara Falls, N.Y., and Walter A. Thomas, Portland, Oregon.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WEATHER BUREAU

TOPICS

AUGUST
1958

Chief of Bureau wishing D.M. Little a happy retirement.

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Volume 17 Number 8

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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.

Deputy Chief of Bureau Retires

DELBERT M. LITTLE, Deputy Chief of Bureau, retired July 31, bringing to a close an outstanding career of more than 40 years of distinguished public service.

Born in Boise, Idaho, on March 12, 1898, Mr. Little embarked on his Weather Bureau career in 1917 as an assistant observer in his home town. From his initial assignment he went on to Portland, Oregon, in 1920, where after five months' duty he resigned to enter private industry. Four months later, however, he returned to work for the Weather Bureau at Boise, remaining there until 1925, when he transferred to Ithaca.

In 1926 Mr. Little received his first taste of the then nascent aviation weather service, which he was later to guide through many years of significant growth and advancement. His assignment as head of the Medford, Oregon, station was short-lived, for he was already gaining recognition as a young man with great potential and was lured from Medford to Los Angeles by an offer to participate in the fruit-frost program under Floyd Young. As a specialist in fruit-frost work Mr. Little proved himself no less resourceful and effective, but the challenge of the aviation weather service induced him to return to this field in 1928 in charge of the Oakland Airport Station. At Oakland he was instrumental in organizing and developing the Pacific Coast Airways Services, including the operation in 1928 of the Guggenheim Model Airway Service between San Francisco and Los Angeles.

During the years he guided the airways service, he achieved a reputation that brought him increasingly to the attention of Central Office officials, and in 1934 he was selected to fill the post of Chief of the Aerological Division, where under his expert direction and with his active participation, great strides were made in the development and organization of aviation weather services as we know them today. Under the Bureau reorganization in 1940, Mr. Little was appointed Chief of the Station Operations Division, and in 1945 he was selected as Assistant Chief of Bureau for Operations, the position he held until 1955 when he was designated Deputy Chief of Bureau.

Delbert M. Little

For the past 30 years Mr. Little has been prominent in the establishment of domestic and international weather services and a leader in the development of a modern meteorological equipment program. He has fostered many improvements in upper air instrumentation, the development of radar for the detection and tracking of storms, and the perfecting of weather instruments for aviation, such as continuous wind and gust recorders, day and night cloud height indicators, and automatic visibility recorders.

Acting as a U. S. representative for meteorology at national, international, and world conferences has taken Mr. Little to Australia, Canada, England, Ireland, France, Germany, the Netherlands, and Switzerland. A review of his record reveals many commendations concerning his excellent work at these meetings and the high esteem in which he is held by his contemporaries.

"Cape Little" in the Antarctic was named in Mr. Little's honor

in 1953 in recognition of his contribution to the success of the Ronne Expedition which discovered it. "Cape Little" forms the southern entrance to Wright Inlet at Mount Tricorn.

Mr. Little has visited every Weather Bureau office in the United States except Tatoosh Island. He has flown over the Tatoosh station for a close look, but bad weather prevented his planned visits by boat. He has a standing invitation to visit there during his years of retirement.

Through the years Mr. Little has found time to become an Associate Fellow of the Institute of Aeronautical Sciences, serve as a member of the Committee on Meteorological Problems of the National Advisory Committee for Aeronautics since 1934, and is a member of the American Meteorological Society, the American Geophysical Union, and the Philosophical Society of Washington.

On July 18, a going-away luncheon was held for Mr. Little where his co-workers presented some "souvenirs" and "personal awards" in memory of Mr. Little's long service in the Weather Bureau. This was a "Gridiron" type luncheon.

During an informal reception held during the afternoon of July 22, hundreds in the Central Office said "good-by and good wishes" to Mr. and Mrs. Little. Dr. Reichelderfer presented Mr. Little with a going-away gift, a featherweight repeater shotgun, subscribed to by his many Central Office friends. Not knowing Mr. Little's ability with guns, some commented they were glad he would have the wilds of Idaho to find out how his new gun really worked.

An active outdoorsman, with camping, hunting, and fishing high on his list of hobbies, Mr. Little is looking forward to retirement as an opportunity to return to Idaho to devote considerable time to his favorite sports. He has a cabin on Payette Lakes and plans to divide his time between there and the new home he has purchased in Boise. Friends may contact the Littles at: 904 Braemere Road, Highlands, Boise, Idaho.

WB Appropriation for F. Y. 1959

APPROPRIATIONS provided the Weather Bureau to date are contained in two bills and total $41,158,000. This is an increase of $3,177,900 for programs specifically authorized by the Congress. Consequently, no funds are in present appropriations for relief of known staffing shortages in the field or to meet rising operational costs; therefore, the Bureau must continue to effect all possible economies. Programs or projects for which increases were provided follow:

1.	Reclassification of Civil Service positions to conform with Civil Service standards	$ 550,000
2.	Added contribution to Civil Service Retirement Fund	19,900
3.	Establishment of new airport stations at O'Hare International Airport, Chicago, Ill., Long Beach, Calif., Lansing, Mich., and Rockford, Ill.	220,000
4.	Establishment of an intensive agricultural weather service in the Mississippi Delta area	48,000
5.	Maintenance technicians for new radar, upper-air, and other equipment being installed during fiscal year 1959	500,000
6.	Maintenance and operation of three Air Force planes assigned to the National Hurricane Research Project, West Palm Beach, Fla.	680,000
7.	Radar staff for manning the new WSR-57 radars to be installed later this fiscal year	160,000
8.	Establishment of seven high altitude forecast centers	1,000,000
		$3,177,900

Funds have not been provided yet for this year's cost of the recent pay raise. This total amounts to nearly $3 million. The Bureau expects to submit a supplemental appropriation request later this fiscal year for the amount required.

In addition to operating funds summarized in the foregoing, funds were provided in the Establishment of Meteorological Facilities appropriation for the following:

1.	Construction of new living quarters for staff at the upper-air station at Yakutat, Alaska	$ 275,000
2.	Equipment and instrumentation for the three hurricane research aircraft headquartered at West Palm Beach, Fla.	1,300,000
		$1,575,000

IN June 1958, Dr. Wexler agreed to serve as a Member of the National Academy of Sciences - National Research Council Space Science Board under the Chairmanship of Dr. Lloyd V. Berkner.

AROUND THE WORLD FOR METEOROLOGY

TWO international meteorological conferences, close together in time, but far apart geographically, provided the occasion recently for Mr. Arthur W. Johnson to visit several Meteorological Services around the world. The World Meteorological Organization Regional Association for the Southwest Pacific (including Hawaii, Guam, and the Trust Territories) met in Manila in April, and 10 days later the WMO Executive Committee began its 10th Session in Geneva.

In the newly organized Office of International Activities in Washington, Mr. Johnson specializes in affairs of the World Meteorological Organization, so it was indeed a fortuitous set of circumstances which enabled him to work on both of the conferences mentioned, and to visit some of our many international contacts at their home locations. At the Manila Meeting Mr. Johnson was the United States delegate. Lt. Col. L. C. Schubert from Honolulu and Commander Homer McCrerey from Manila were available as advisors. On arrival in Geneva, Mr. Johnson joined the Chief of Bureau who was there as a Member of the WMO Executive Committee, and served as an Advisor along with Mr. P.H. Kutschenreuter.

The Regional Associations of the WMO (six in number) are made up of the Members of the Organization which operate meteorological networks on their own territory within the geographical boundaries of the Association. These Associations each meet approximately once every four years. This was the First Session of the Association for the Southwest Pacific since they last met in Australia in 1954.

The Session was attended by delegations from all of the Member countries, as well as observers from France, the Union of Soviet Socialist Republics, and several international agencies.

Members of Regional Associations discuss such things as the regional application of decisions made by Technical Commissions of the Organization, whose considerations are worldwide in nature. The Associations also consider any problems they wish which have regional application only. Among the most important items discussed were the establishment of a basic network for surface and upper air observations, the communications facilities and procedures for exchange of this information, and the codes to be used. Other items of interest were the procedures for collection of ship reports, the preparation of climatological atlases, the expansion of the WMO to include hydrologic responsibility, and the types of programs which could be conducted under the Expanded Program of Technical Assistance.

There was one semi-official evening meeting which considered off-Agenda items. At this meeting Mr. Johnson delivered a paper on collection of research reconnaissance data, its processing and use in research. This was based largely on techniques developed and used by the National Hurricane Research Project.

Mr. L. J. Dwyer, the Director of the Bureau of Meteorology of Australia, was elected to the presidency for the period until the next Session, perhaps four years hence. This position automatically makes Mr. Dwyer a Member of the WMO Executive Committee. Mr. J. Giovannelli, Director of the Meteorological Service of New Caledonia, was elected to the position of vice-president. At the final meeting of the Session, Mr. Giovannelli invited the next Session to convene at Noumea, New Caledonia.

After the Session in Manila terminated on April 18, Mr. Johnson took the opportunity to "observe the weather" in such places as Hong Kong, Bangkok, Rangoon, Karachi and Beirut, while en route to Geneva. The countries visited are members of the Regional Association for Asia, which is expected to convene in the Middle or Far East in the late autumn of this year. It was therefore particularly useful to visit with the Directors and staffs of the services, and to discuss items of mutual international interest. In Bangkok some time was spent with Jim Fellgren, who is acknowledged by all, Thailanders and Americans alike, to be doing an excellent job as American Meteorological Consultant to the Weather Service of Thailand.

At Geneva, the Executive Committee held its annual Session and discussed the usual problems, such as the budget and modifications to the technical and general regulations of the organization. In addition to the normal grist, the Committee had to consider decisions about the retention of the IGY Meteorological Data Centre, the distribution of the material from these centers, and examine all of the one hundred and one recommendations and resolutions of the Commission for Synoptic Meteorology which had held its Session in New Delhi since the previous Session of the Committee. One of the interesting developments in WMO circles is the proposal to expand the terms of reference of the Organization to include increased responsibility in the field of hydrology. Most of the proposals vary from little expansion to an arrangement roughly paralleling the division of responsibility in the United

States. Certain recommendations were developed by the Committee for consideration by the next Congress of the Organization in the Spring of 1959, when it is expected that the need for international treatment of hydrologic problems will be recognized to some extent as a function properly attributable to the WMO.

WMO Commission for Agricultural Meteorology

EDWARD M. VERNON, Chief of the Forecasts and Synoptic Reports Division, was recently nominated by Dr. F. W. Reichelderfer to serve as a Member of the World Meteorological Organization's Commission for Agricultural Meteorology. The Secretary of State has now approved this nomination.

Mr. Vernon is one of three United States representatives on this Agricultural Commission, the other two being Mr. W.E. Hiatt and Mr. Milton L. Blanc.

The problems of the Commission are manifold. It is responsible on the international level for determining requirements and recommending procedures for observations and evaluations of weather factors as they affect soils, plants, and animals. They advise on such subjects as conservation of natural resources, land utilization, methods of combating pests and diseases affecting agriculture, protection of agricultural products in storage or in transit against unfavorable influences of weather and climate, and weather forecasts and warnings for agricultural operations. Mr. Vernon's background will enable him to make valuable contributions to international agricultural meteorology and, in particular, to the problems of the supply of weather forecasts and warnings.

Annuities Payable to Widows and Widowers—P. L. 85-465

IF any of our readers know of a widow or widower who may be entitled to an annuity under the following-described law, they may advise them to submit an Application for Death Benefits to the Retirement Division, Civil Service Commission, Washington, D. C.

> Sec. 2. The unremarried widow or widower of an employee-
>
> (1) who had completed at least ten years of service creditable for civil service retirement purposes.
>
> (2) who died before February 29, 1948, and
>
> (3) who was at the time of his death (A) subject to an Act under which annuities granted before February 29, 1948, were or are now payable from the civil service retirement and disability fund or (B) retired under such an Act, shall be entitled to receive an annuity. In order to qualify for such annuity, the widow or widower shall have been married to the employee for at least five years immediately prior to his death and must be not entitled to any other annuity from the civil service retirement and disability fund based on the service of such employee. Such annuity shall be equal to one-half of the annuity which the employee was receiving on the date of his death if retired, or would have been receiving if he had been retired for disability on the date of his death, but shall not exceed $750 per annum and shall not be increased by the provisions of this or any other prior law. Any annuity granted under this section shall cease upon the death or remarriage of the widow or widower.
>
> (b) An annuity provided by section 2 of this Act shall commence on August 1, 1958, or on the first day of the month in which application for such annuity is received in the Civil Service Commission, whichever occurs later.

Former WB Employee Honored

THE following is quoted from a letter received recently by Mr. D. M. Little:

"On behalf of United Air Lines and the Society of Air Line Meteorologists, we would like to express our thanks and appreciation for your contribution to our brochure which was used to present Mr. Henry T. Harrison as a candidate for honorary recognition in the field of meteorology. As a result of this effort, he received the University Recognition Medal from the University of Colorado at the June Commencement Exercises held at Boulder, Colorado."

Tornado Echoes on Wichita's Radar Scope

RECENT experience with the Wichita, Kansas radar should be of interest to most Bureau employees, but particularly so to those who work with radar. The results emphasize once again the need for continuous watch of radar scopes during periods of severe weather.

Alexander Sadowski (a radar specialist in the F&SR Division of the Central Office) spent a week this past June using the radar at WBAS Wichita, Kansas, where he saw hooked echoes associated with the tornadoes that struck El Dorado on June 10 and Wichita on June 11.

On June 10, although no showers or thunderstorms were expected, he fired up the radar to take a look at a towering cumulus cloud to the north-northwest. At 1540CST the radar showed the rain to be 37 miles away. There was vigorous development of the "cauliflower top." As the echo moved in a general easterly direction with a speed of 17 knots, it increased in size and intensity. At 1643CST, a notch appeared on the far side of the echo. At 1650CST, a hook began to appear on the right, rear quadrant of the echo. With each sweep of the antenna (rotating at 4 revolutions per minute), the actual growth of the echo in a cyclonic sense to form the hook was observed. Illumination from the last sweep was still faintly visible as the new sweep moved across the echo, thus making it possible to see the growth of the echo with each sweep. The duration of an easily identifiable hook was the short time of about 15 minutes. It is obvious that the development of this hook might have been missed had not the radar been watched continuously.

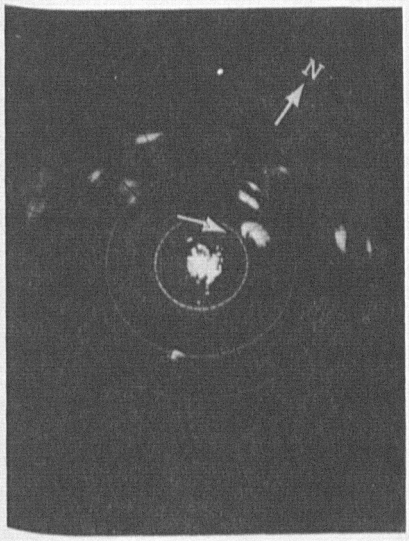


Figure 1 - Hooked Echo associated with El Dorado, Kansas, Tornado June 10, 1958. Radar Scope Photo at WBAS Wichita. Range - 20 N.M. between rings. Antenna elevation - 0°

While the hook was evident, the state police investigated but there was no tornado or funnel. It was raining with some hail in the area of the hooked echo. A warning issued for El Dorado at 1731CST advised that a severe storm with damaging winds, heavy hail, and funnel cloud would affect El Dorado within the hour. This was made even more effective by the radio announcer's addition of the following, "This is the real thing. Everybody take cover."

The tornado was not seen until about an hour after the appearance of the hook. On the outskirts of El Dorado the tornado dropped to the ground with a downward pumping action at 1755CST. It described a "U" shaped course, with the bottom of the "U" being a cut four blocks wide through the southern part of El Dorado. The tornado destroyed and damaged some 150 homes, injured 50 persons and killed 15 people. Property damage was estimated at $3 million.

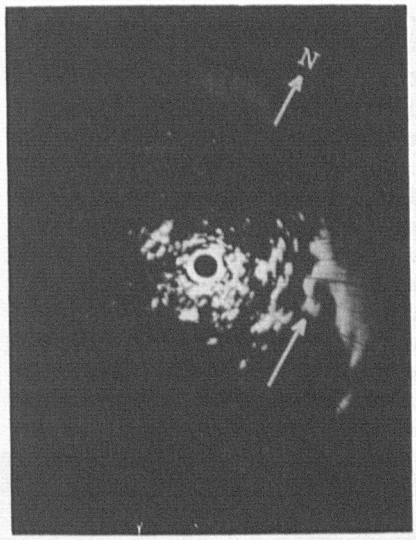


Figure 2 - Hooked Echo 12 N.M. ENE of station associated with Wichita, Kansas Tornado of June 11, 1958. Radar Scope Photo at WBAS Wichita. Antenna elevation - 1°.

On June 11th a hook was visible above the ground clutter just 5 miles northeast of Wichita Airport shortly after 2300CST. About 2305CST tornado warning sirens were sounded in Wichita upon the Weather Bureau's notification. At 2323CST, the first report of the tornado was observed. (Figure 2 is a photograph of Wichita's PPI scope about the time of the first report of the tornado.)

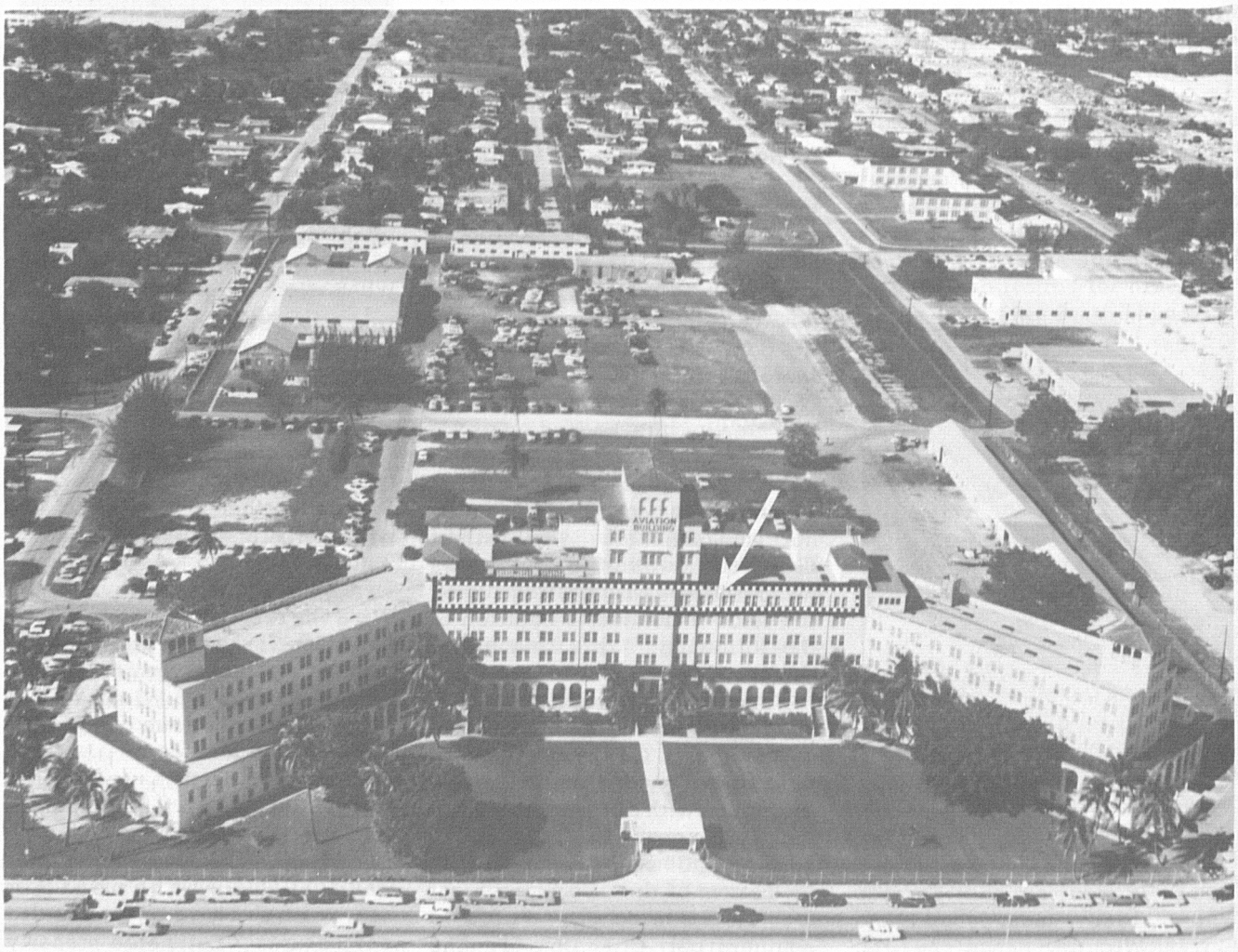
Greatest damage was in the residential area of northeastern Wichita. There were no casualties. People took whatever shelter was available - basements or nearby churches or other solid structures. Estimated property damage was about 1/4 million dollars.

Miami Hurricane Warning Center Moved

ON July 1, 1958 the Weather Bureau Hurricane Forecast Center was relocated to the Aviation Building in Miami, Florida, about four miles northwest of its former location in the Lindsey Hopkins Hotel. Major reasons for relocating the forecast center were the need for a suitable site for the new WSR-57 radar which will be installed later this summer and the need for additional space to accommodate the National Hurricane Research Project after the West Palm Beach phase is terminated. Space available in the Aviation Building is ideal for providing an efficient layout for the combined hurricane forecast center and hurricane research project.

In addition to ample space, the tower on the Aviation Building provides an excellent site for the installation of the new radar. There will be no obstructions in any direction, thereby making radar observations exceptionally valuable for storm warning purposes and for research. Part of the research work now being carried on at the University of Miami will be moved to the new location to take advantage of reception expected from the latest developments in radar.

The Navy Weather Central at Miami has taken space on the 4th Floor which will be occupied during September. This will provide an ideal arrangement to continue the excellent cooperation between the two services.



The WB Hurricane Forecast Center is now located on the top floor of the center wing. The Navy Weather Central will be located on the fourth floor of the south wing.

Jet Age Observations

THE Weather Bureau is rapidly preparing for the advent of the "jet age" in civilian flying. One of the first responsibilities in meeting new weather requirements is to provide the meteorological observations needed for operational use. To this end, an observational "airport system" has been devised and is now being implemented.

Basically, the new system is aimed at providing data on each meteorological parameter from the portion of the field where the pilot's need is greatest. The rotating beam ceilometer was developed to provide rapid measurement of cloud height at the middle-marker of the CAA's Instrument Landing System (ILS), where pilots normally break through marginal ceilings. The transmissometer was developed to provide the best possible measure of visibility at the usual "touch-down" point during an instrument landing.

Wind information is required at many points on the average airport, since strong winds may occur with or without low ceilings and visibility, and do occur with some frequency from almost any direction. A separate installation at each end of the runway to provide fully representative wind reports for landing and takeoff operations is not economically feasible. An installation near the center of the "runway complex" provides values that are almost always representative, and the Weather Bureau's new standards require exposure in this area. This exposure allows standardization as to height and greatly improves the representativeness of data over that obtained from rooftops and control towers.

Temperature data is important to jet engine operation, and a requirement for temperature measurements accurate within two degrees has been established for most military jet engines. Through research it has been found that temperatures measured over sod on the airfield proper provide the most representative data.

Profiting from this knowledge, the Weather Bureau is taking advantage of wind instrument relocations to also mount new hygrothermometers near the center of the airport. (A hygrothermometer is the name applied to an instrumental system providing remoted, direct-reading indications of temperature and dew point; it is slightly different than the telepsychrometer, which utilizes wet bulb temperatures, rather than dew points, as a measure of humidity.) Real benefits to meteorology will result from the standardized exposure, and climatologists will appreciate the fact that retaining a single exposure, regardless of several office relocations at an airport, will now be possible.

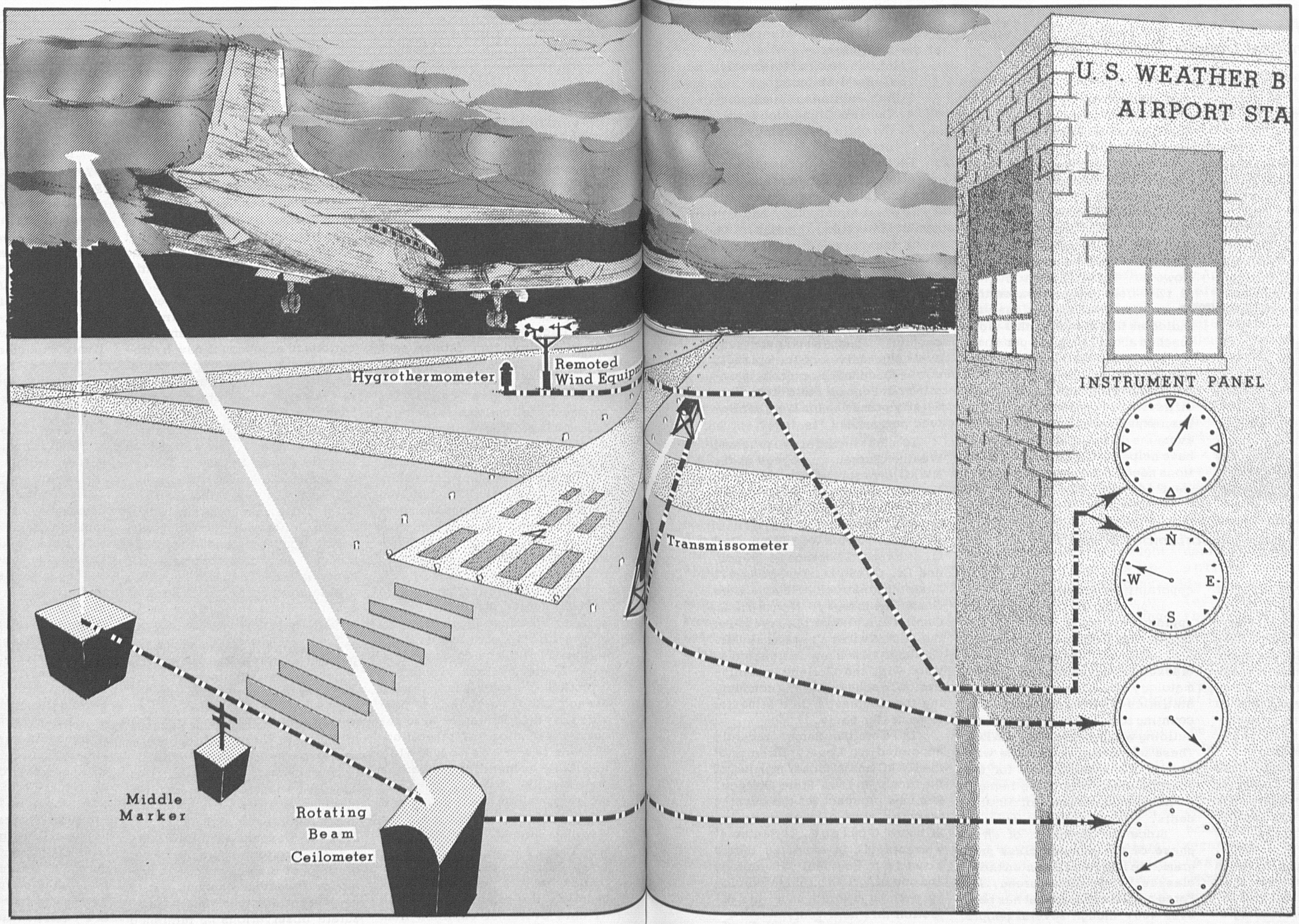
"Jet-Age" requirements for weather observations differ from conventional, piston driven aircraft requirements only in the urgency of their need. All improvements coming about because of imminent jet aircraft operation will also benefit aviation generally, and, of course, meteorological science as a whole. The deciding factor leading to formulation and implementation of the "airport system" was the need for eliminating "aborted" approaches and circling of the airport due to unreported weather changes. It is very important that timely, accurate observations be furnished a jet pilot before he begins a letdown from cruising altitude.

Implementation of the "airport systems" is proceeding at a rapid pace. By July 1959, 111 sets of end-of-runway equipment (transmissometers and rotating beam ceilometers) will have been purchased, and about 90 of them should be installed and in use, with the remainder on order or awaiting installation. One hundred and thirty-four hygrothermometers are now on order with delivery expected during the next six months, and funds have been allocated for remoting wind instruments at a large number of airports.

The complete airport system will also include devices for automatically sensing, coding, transmitting and displaying as much of the aviation observation as possible. The Instrumental Engineering Division has made very rapid progress in developments in this field, and the Bureau plans to provide units capable of relieving the observer of simple and tedious observing tasks. The observer's time will then be spent in manual evaluation of only those items requiring judgment, freeing him to enter more fully into the station service program.

Priority for installation of this new equipment and completion of an "airport system" where some components are already installed is being coordinated with the CAA, with advice from the airline industry. The major factor being considered is the number of instrument approaches on the ILS runway. Through this cooperation with CAA and the industry, the Bureau has gained their full support for the program. The present goal is a complete system at each ILS-equipped airport by the end of Fiscal Year 1963.

(See center spread.)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Experimental Doppler Radar Project

THE Doppler radar, described in TOPICS for May 1957, was installed at Wichita Falls, Texas, on February 15, 1958 and was then moved and put into operation again at Wichita, Kansas, on June 2, 1958. This season's operation was terminated July 18, 1958.

This has been a very fruitful season for the project. On April 2, 1958 a tornado struck Wichita Falls, Texas, and was within five to nine miles of the Doppler radar. Some unique data were obtained from this storm. Preliminary analysis indicates that particle speeds of about 280 miles per hour were measured. This is the first time that direct measurements of speeds in a tornado have ever been made. On June 10, when the trailer was at Wichita, Kansas, a tornado struck El Dorado, Kansas. Analysis of the data from this storm has not been completed. However, Robert L. Smith, who is the field project leader this season, informs us that analysis indicates that speeds in this storm reached about 200 miles per hour.

Attenuation is a serious problem with this low-powered 3-centimeter radar and considerable difficulty with magnetrons has been experienced this year. However, the difficulties encountered have helped to disclose modifications needed to improve the equipment for next year's operation.

Unique Educational Opportunities at the NWRC

IN 1952 the National Weather Records Center (NWRC) was established in Asheville, North Carolina. Two of the primary functions of the NWRC were and are to maintain and service the weather records of the United States and other areas, and to process meteorological (climatological) data for individuals, industry, and government.

More than 500 people have been employed at the Center at one time and at present more than 400 are employed at this facility by the U. S. Weather Bureau, the U. S. Air Force and the U. S. Navy. Many of these people have an earnest desire to further their formal training and thereby to increase their understanding of meteorology, climatology, and related fields and to enhance their opportunities for advancement.

To provide the opportunity for appropriate formal training, arrangements were made with the College in 1952 for evening classes in meteorology and climatology as well as mathematics, statistics and mechanized accounting to be offered in the Arcade Building which houses the NWRC. These arrangements continue with one of the requirements for the establishment of a class being a minimum enrollment of 10 students.

Since the inception of this phase of the evening class program, the total enrollment in these classes by Weather Bureau, Air Force and Navy personnel has been over 400, though several people have taken more than one course.

The courses pertaining directly to meteorology and climatology which have been offered personnel at the NWRC are:

1. Introduction to Meteorology
2. General Meteorology
3. Introduction to Climatology
4. General Climatology
5. Synoptic Meteorology Laboratory
6. Methods in Climatology

Although approval has been obtained to offer courses in both Synoptic Meteorology and Dynamic Meteorology, prospective enrollments have never been large enough to justify giving them. The heartening fact about this, though, is that many of those persons at the NWRC who reach the stage where they can successfully take these two courses, avail themselves of the splendid correspondence program maintained by Pennsylvania State University primarily for Weather Bureau personnel.

To maintain the above program, Weather Bureau employees at the NWRC have served unselfishly on the staff of the college as teachers. Among these have been Horace S. Carter, Harold L. Crutcher, Morton W. Bailey, Carl O. Erickson, Lawrence E. Truppi, and Dr. Oskar M. Essenwanger. Assistant instructors have been Gemo Yakubovsky, Norman L. Canfield, and Robert L. Frye. For the past several years, Mr. Crutcher has been designated to work with the College administration in scheduling and conducting these classes on a semester to semester basis.

Dr. Gerald L. Barger, recently appointed as Deputy Director of the NWRC and a former member of the faculty at Iowa State College, is a new prospect for the evening teaching staff of the Asheville-Biltmore College. If interest warrants, it is expected that a course in Regional Climatology and one in Agricultural Meteorology will be offered under his direction this next year.

The Asheville-Biltmore College is a community spirited

institution and qualified NWRC staff members are more than willing to assist with needed instruction; thus, convenient educational opportunities in meteorology and related fields are available to all the several hundred NWRC employees.

Newspaper Article

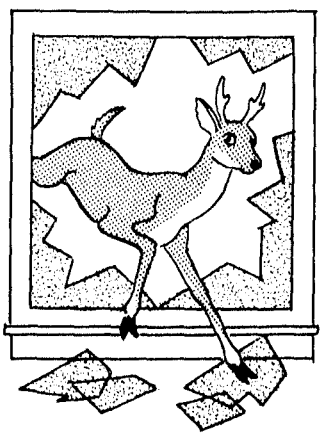
THE following item was sent in by Jerome E. Wolff, MIC, WBAS Casper, Wyoming. The article appeared in the May 27, 1958 issue of the Casper Tribune-Herald, and is reprinted with their permission.

"Antelope Kicks Hell Out of Weather Bureau

"A pet antelope, which has been adopted by the Weather Bureau, the Civil Aeronautics Administration, and other personnel at the Air Terminal, kicked over her heels Sunday—and the results were disastrous.

"According to Jerome Wolff, chief forecaster, the antelope, Gertie, was peacefully munching clover in the Weather Bureau yard. A boxer, name unknown, darted into the yard and yapped at Gertie who reared her hind legs.

"Monday, county workmen replaced the front window of the Weather Bureau. Gertie hasn't been seen since. Her 'owners' think she has a guilty conscience."



Experimental Probability Forecasts in Los Angeles Area

IN November 1957 forecasters at WBAS Los Angeles began issuing experimental probability rainfall forecasts for the local metropolitan area. Forecasts of this nature had been first tested out experimentally during the preceding season by forecasters at WBAS San Francisco who also participated again during the 1957-58 winter season. West Coast offices were selected to try out this type of forecast because of the definite rainy season which occurs in that area and also because certain preliminary statistical studies had already been made at those two offices. The rain index forecasts were purposely kept rather simple with the local forecasts for each forecast period containing a brief statement describing the chance of rain in percentages, i.e., 0%, 10%, 20%, 30%, etc. Advance publicity on the program was obtained through an appropriate press release which was distributed by radio stations and newspapers in the metropolitan area.

A sample forecast that might have been issued under this program would read "Cloudy today, high near 55°, moderate rain tonight, low near 47°. Clearing with little change in temperature tomorrow; rain probability 40% today, 80% tonight, 30% tomorrow." This forecast would indicate that there is only a slightly better than even chance that the rain will hold off until sunset today, while the weather pattern makes rain fairly certain tonight (between sunset and sunrise). There would be some chance of the rain continuing into tomorrow morning with probable clearing by afternoon.

Because the rainy season ends by April in the Los Angeles area, the rain probability index was discontinued at the end of April. On that date a press release was distributed from WBAS Los Angeles, through local newspaper and radio channels, requesting comments on the usefulness of the rain index feature in the local forecasts. About 75 written replies were received as a result of the press release. An important fact about these replies is that only one of the 75 persons who took the trouble to reply expressed disfavor with the probability feature. Most of the replies indicated full understanding of the use of the probability index and expressed a desire to have it resumed next fall. There was no indication that any of the writers felt the Bureau was "hedging" on the forecasts.

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 for participants, see TOPICS May 1957.

Assignment XVI: General Aspects of Upper Atmospheric Physics, by S. K. Mitra, on pages 245 thru 259 of Compendium of Meteorology.

About the Assignment: At the present time, little is known of the relationship which may exist between upper atmospheric events and surface phenomena. However, with aviation and projectile operations at higher and higher elevations, meteorology will be called upon to give service in this region which has previously been reserved for other branches of geophysics. This assignment includes information about the atmosphere up to orbiting elevation.

QUESTIONNAIRE
Assignment No. XVI

(To be answered by participants after reading assignment.)
(For complete information, see TOPICS May 1957.)

Col. 61 The first indication of important temperature variations in the stratosphere was from
1. meteors
2. sound
3. noctilucent clouds
4. sounding balloons

Col. 62 A rise in temperature above 80 km. is expected due to strong absorption of energy by
1. O_3
2. CO_2
3. N_2
4. O_2

Col. 63 The maximum proportion of ozone to air by volume is found near
1. 25 km.
2. 35 km.
3. 45 km.
4. 55 km.

Col. 64 If x is the zenith angle of the sun, atmospheric ionization densities are generally proportional to
1. $\cos^3 x$
2. $\cos^2 x$
3. $\cos x$
4. $\sqrt{\cos x}$

Col. 65 The most prominent atmospheric tidal effect is produced by
1. the moon because of its greater tide-raising force
2. the moon because of a resonance effect
3. the sun because of its greater tide-raising force
4. the sun because of a resonance effect

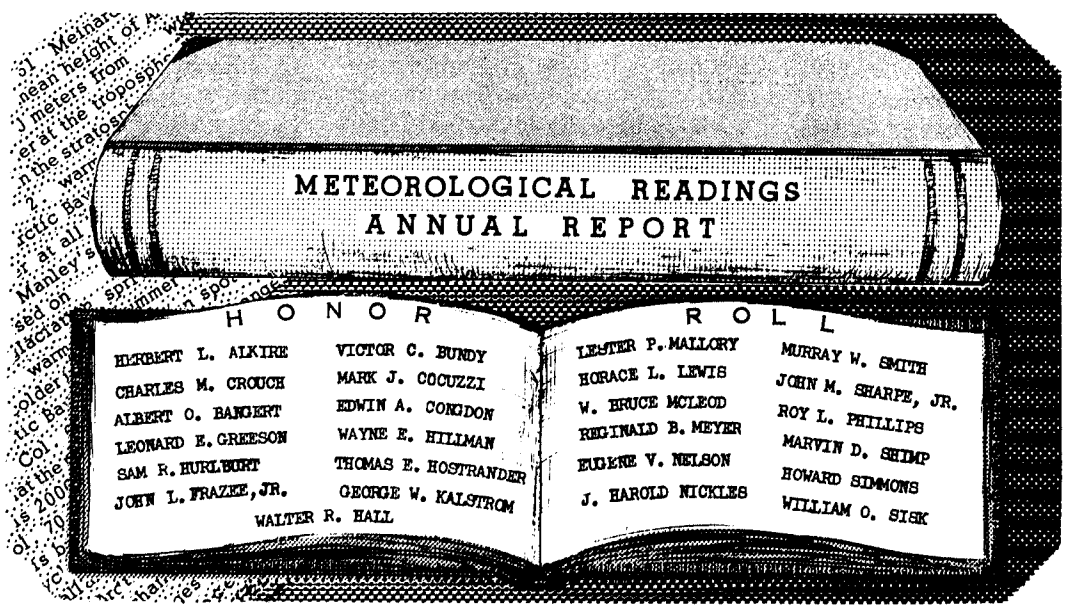
Col. 66 Approximately how much meteoric material burns up in the atmosphere every day?
1. 45 grams
2. 450 grams
3. 45 kilograms
4. 450 kilograms

Col. 67 Atmospheric pressure is of the same order of magnitude as that found in an ordinary electric bulb at
1. 25 km.
2. 50 km.
3. 100 km.
4. 150 km.

Col. 68 If the atmosphere were in isothermal equilibrium which gas would have the greatest partial pressure at 50 km. provided they all had equal partial pressures at the surface?
1. He m = 4
2. N_2 m = 28
3. O_2 m = 32
4. CO_2 m = 44

Col. 69 Theoretically what temperature would be needed in the "cone of escape" for helium to escape from the atmosphere?
1. 10 K
2. 100 K
3. 1000 K
4. 10000 K

Col. 70 What altitude at the earth's poles would be required for perpetual sunlight?
1. 250 km.
2. 500 km.
3. 750 km.
4. 1000 km.



ALTHOUGH the Meteorological Readings Program is in its 16th month, the period for completion of the first 12 assignments has just ended. Congratulations to the 25 participants listed in the above Honor Roll for making perfect scores on all these assignments!

Much of the credit for making this program successful goes to the 700 employees who are now regular participants. The geographical distribution of this group has not materially changed from that published in A Six Months Report, TOPICS, December 1957. GS-7's make up the major part of

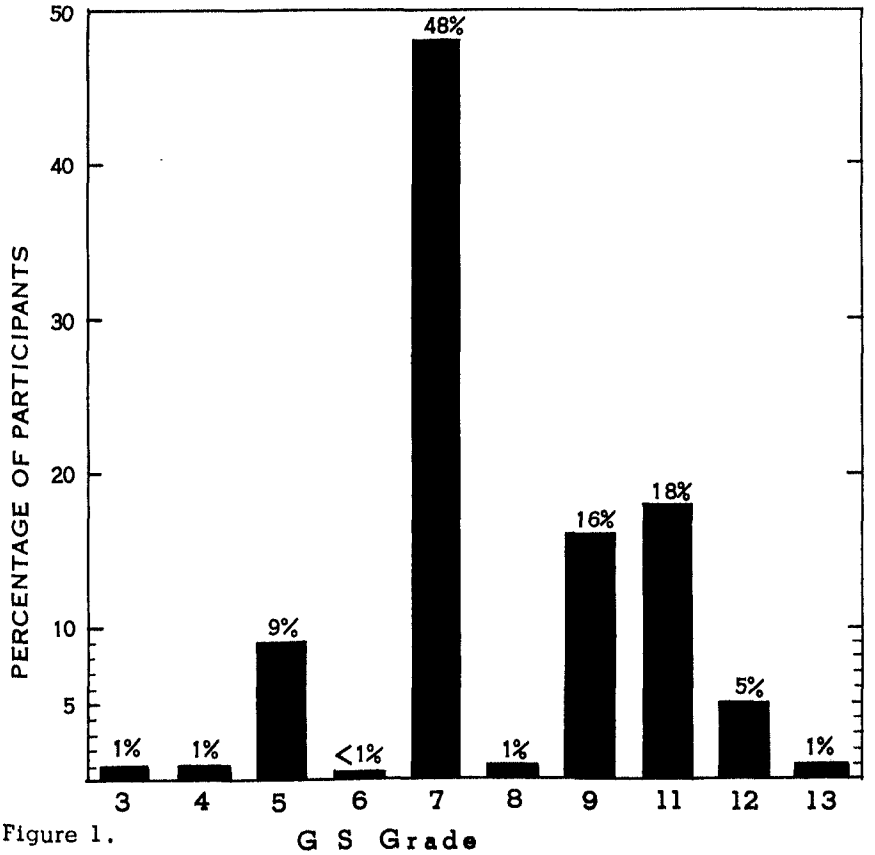


Figure 1.

the group as indicated in Figure 1.

An attempt is being made to alternate articles of seasonal, practical, and theoretical interest. The reviewers try to eliminate questions on outdated material as well as ambiguous ones. With the exception of an occasional question involving some mathematical manipulation, formula substitution, of graphical interpretation, all questions can be answered directly from the text.

Those who wish to punch rather than mark the IBM Answer Cards may do so.

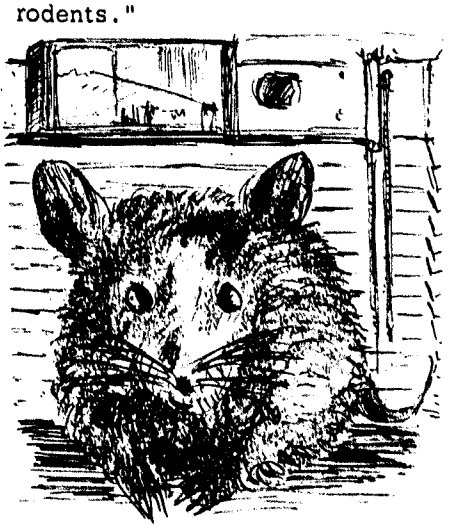
Everyone is still welcome to start these assignments any time. Instructions are in TOPICS, May 1957. Questions or suggestions should be sent to the Central Office Training Section.

JEROME H. CODINGTON, WBAS Houston, Texas won first prize in the recent AMS lapel-pin design contest. Mr. Codington's prize was a fine barometer.

Another Odd Reason for Missing Data

A. P. RICHTER of the Weather Bureau Research Station, Las Vegas, Nevada, came across a most unusual hygrothermograph chart recently. For the benefit of TOPICS readers who may sometime encounter the same problem, Mr. Richter's report is quoted below:

"The WBRS at Las Vegas, Nevada recently received an unusual hygrothermograph chart from a climat station on the Nevada Test Site. Both the temperature and humidity races displayed odd features. The temperature trace indicated instantaneous temperature changes of as much as twenty degrees, chiefly towards lower temperatures. The humidity trace also indicated instantaneous changes which gave plateaus of extremely high humidity; in several cases 100 percent was indicated for periods as long as six hours. After careful study it was decided these effects could not be attributed to A-bomb tests or other odd phenomena of the Site. Several corners of the chart were frayed and the appearance of the chart in general prompted a phone call to the maintenance personnel at the Test Site. Thus it was learned that a Woodrat common to this area had invaded the instrument shelter and was feasting on the charts and the hairs of the humidity element. He had even attempted to consume the tension spring on the temperature linkage as evidenced by gnaw marks on the spring and explaining the idiosyncrasies of the temperature trace. In the future instrument maintenance personnel on the Test Site will be briefed on the latest exterminating methods of trapping rodents."



IT'S AWFUL DRY IN HERE

WB Participation in Scout-O-Rama

ON Saturday, May 24, the Los Angeles Council of the Boy Scouts of America sponsored a Scout-O-Rama in the Los Angeles Coliseum. A total of 460 exhibition booths jammed the floor of the big bowl with 20,000 Scouts in attendance. An estimated 80,000 persons viewed the displays which carried out the theme, "Preparing for Tomorrow."

The Los Angeles WBAS acted as a cooperating partner for two of the Boy Scout Troops. Mr. G. F. Grafton served as technical advisor to Westchester Troop 927, and Mr. J. A. Aldrich assisted Westchester Troop 588.

Troop 927 displayed and demonstrated the following instruments: Radiosonde ensemble, sling psychrometer, hygrothermograph, rain gage, weather vane, anemometer, single register, mercurial barometer, and a #28 teletypewriter machine (not working and not furnished by the Weather Bureau). The weather vane and mercurial barometer were made by Explorer members of the Troop. The highlight of the display was a projector and screen built into a single unit by the Scouts which was used to show colored pictures demonstrating cloud types.

Troop 588 displayed and demonstrated the following instruments: Radiosonde and parachute, hygrothermograph, sling psychrometer, rain gage, weather vanes, anemometer, and 8-point wind indicator and buzzer. Some of the weather vanes were made by Troop members.

Courtesy of Robert W. Keller-Photographer

Troop 927 Booth - Mr. Grafton, kneeling left, and Mr. C.A. Woodburn, Explorer Advisor, standing extreme right, plus a number of Explorer Scouts and one Boy Scout.

Employee Suggestion Box

Emerson G. Dickey $15
Greensboro, N. C.
Administrative Operations Division has distributed fiscal time tables to all stations as an aid in figuring future pay periods. This was the result of a suggestion recommending pay-period numbers on government calendars which could not be adopted due to differences in pay-periods among the Departments.

Leo A. Sergius $10
Los Angeles, Calif.
F&SR Division had adopted the suggestion recommending the discontinuance of forwarding copies to RAO's of weekly fire-danger reports. Some filing space will be saved at RAO's and it will eliminate the mailing of an extra piece of correspondence.

Elmer R. Nelson $25
Hydrologic Services Div., CO
Hydrologic Services Division adopted the suggestion that a special form be printed for river and rainfall telephone messages. Two forms (612-24A and 612-24B) have been printed to be used at field stations to log incoming calls of river and rainfall data. This will save time and increase efficiency and eliminate the need for RAO's to make up their own forms.

Sylvester E. Decker $15
Escanaba, Mich.
Office of Climatology has adopted the suggestion that when corrections to published weather data are issued they should either be printed on one side of the sheet only, or two copies provided, so that an entire corrected sheet can be substituted for the original sheet, or corrected sections can be cut out and pasted onto the original sheet. This will be an improvement when certain corrections are made to published data.

Clarence A. Woollum $15
Washington National Airport
O&SF Division has made available plans for a map storage rack as suggested by Mr. Woollum. Some stations have made use of these plans thereby bringing about an improvement in map storage facilities.

Henry G. Resendez $25
San Antonio, Texas
O&SF Division adopted the suggestion that form WBAN-20 and 21 be revised to include space for high speed wind data. This revision will be incorporated in the next printing of the forms. Errors should be reduced since the data on the forms should assist employees in punching and checking cards.

Ivan W. Brunk $15
Chicago, Ill.
Administrative Operations Division adopted the suggestion recommending that a special publications list be used by field stations for school children and others. WB Form 038-8 has been prepared and is expected to facilitate the ordering of WB publications for weather science study.

Earl F. Myers $75
Louis I. Murillo
Woodrow Silvers
NWRC Asheville
NWRC Asheville recently adopted the use of a "data roll reader" which had been developed as a group effort by these three men. This reader will facilitate the extraction of data from long rolls of wind, temperature and radiation charts. These charts were formerly unrolled on long tables and would often drop to the floor thereby causing torn and messy charts, and slowing down the work. The reader eliminates this problem. In addition, savings were made by constructing the readers rather than purchasing them locally. Mr. Silvers is associated with the AWS while Messrs. Myers and Murillo are WB employees.

LeRoy F. Hafer $10
O&SF Div., CO
Administrative Operations Division adopted the suggestion recommending that when comments and initials are required on correspondence, they be placed on the file copy rather than the routing slip. This eliminates the possible loss of information due to the loss of the routing slip.

Edward Sable $10
Boston, Mass.
Office of Climatology adopted the suggestion recommending the revision of the time heading on Form 612-13 and 612-14 from "Stnd. Time in use ___" to "Stnd. of time in use ___." Many observers understood the original wording to call for a Yes or No answer whereas inclusion of the word "of" now makes it plain that we want to know which standard time is used at the station.

Herbert S. Lieb $15
Public Information Office, CO
Administrative Operations Division recently adopted the suggestion recommending there be a centralized procurement of duplicating machine supplies for CO units. Bulk buying will save money and storage space will be saved in the respective offices.

Niilo E. Koski $10
Guayaquil, Ecuador
F&SR adopted this suggestion recommending the use of air mail rather than regular mail for sending the 30 day outlook to the Pacific area. Information of a more current nature will become available under the new method.

Erwin E. John $15
Minneapolis, Minn.
F&SR Division adopted this suggestion recommending a two figure time group in the FT's rather than a four figure group. A certain amount of the forecaster's time as well as teletypewriter time will be saved in addition to simplifying operating procedures.

Fred R. Maher $15
Indianapolis, Ind.
Office of Climatology adopted the plan of giving more publicity to the availability of published summaries of hourly observations. ("Climatography of the United States.") Notice of availability of this series will be placed in the LCD Supplement immediately beneath Table E. Time spent in extracting hourly data will be eliminated now that the information is being made available to users.

Gerard A. DeMarrais $15
Idaho Falls, Idaho
Training Section of the CO has adopted this suggestion that the Bureau use the facilities of the National Science Foundation to expand its scholarship program. It is planned to publicize announcements of the program and assist qualified candidates to make application.

Irwin Kaplan $15
Off. of Met. Research, CO
Administrative Operations Division adopted this safety suggestion which recommended that small eye-level windows be placed in the doors of the Old Annex building in the Central Office to prevent accidents.

Harold E. Lami $15
Mobile, Ala.
Administrative Operations Division adopted the suggestion recommending the elimination of the annual report of the "Physical Inventory of Aerological Supplies." Manual Chapter E-5003 has been revised to include this.

Length of Service Awards

40-Year Awards

Central Office
John R. F. Keefe
Pomona, Calif. WBO
Charles C. Allen

30-Year Awards

Albuquerque, N.M.
Robert S. Murray
Central Office
Alice H. Haynes
John R. Swartz
Columbia, Mo. WBAS
Monroe A. Lanham
Denver, Colo. WBAS
Clarence G. Gilbert
Fargo, N. D. WBAS
Ralph W. Shultz
Lander, Wyo. WBAS
Norbert G. Ribble
Lubbock, Texas
Henry C. Snyder
New York, N.Y. WBAS
Louis Landau
Oakland, Calif. WBAS
Edmund P. Norwood
St. Louis, Mo. RFC
Phillip Light
Seattle, Wash. WBAS
Harold D. Lindquist

20-Year Awards

Baltimore, Md. WBAS
David G. Fordham
Boston, Mass. WBAS
John H. Bonzagni
Central Office
Wesley Irvin
Lynn L. Means
Jerome Namias
Denver, Colo. WBAS
Glover L. Blinde
Galveston, Tex. WBAS
Ernest M. Stewart
Grand Junction, Colo. WBAS
Albert L. Congdon
Harrisburg, Pa. WBAS
James W. Knepp
Kansas City, Mo. RFC
Lewis P. Hahn
Lake Charles, La.
Herman O. Walton
New York, N.Y. WBRAO
Domenic J. Gaudioso
New York, N.Y. WBAS
Joseph Cinex
Quintero, Chile
Urban A. Wacker
Salt Lake City, Utah WBAS
Philip Williams, Jr.
San Juan, P. R.
Carroll A. Elford
Seattle, Wash. WBAS
Richard F. Greene
Victoria, Texas
Loren F. Jones

10-Year Awards

Alert, N.W.T.
Charles L. Havens
Allentown, Pa. WBAS
John L. Costello
Asheville, N.C. NWRC
Ray F. Caudle
Lillian S. Glosson
Bessie S. Piercey
Boston, Mass. AWP
Domenic H. Campana
Central Office
Marie B. Dryer
Henry Tabak
Dayton, Ohio WBAS
Melvin R. Summer
Detroit, Mich. WBAS
Dale N. Ellis
Elko, Nevada WBAS
George E. Bostic
El Paso, Texas
Walter E. Kennymore, Jr.
Greensboro, N.C. WBAS
Richard A. Colwell, Jr.
Hilo, T. H.
George N. Nii
Honolulu, T. H.
Hisao Y. Urcia
International Falls, Minn. WBAS
Malcolm J. Bauman
Kansas City, Mo. RFC
Herbert J. Thompson
Lihue, Kauai, T. H.
Hiroshi Haruki
Los Angeles, Calif. WBAS
Edgar L. Sessions
Midland, Texas
Richard E. Wilson

Montgomery, Ala.
Allane E. Wilson
Newark Project, N.J. AMB
Andrew Caporaso
Oak Ridge, Tenn.
Paul J. Rhodes
Port Arthur, Texas
Ernest L. Smith
St. Paul Island, Alaska WBAS
Buel J. Stevenson
Salem, Oregon WBAS
Robert A. Stuwe
Salt Lake City, Utah WBAS
George V. Dunmire
San Juan, P. R.
William J. Thompson
Scottsbluff, Nebr. WBAS
Bill B. Anderson
Seattle, Wash.
Manley L. Malphrus
Seattle, Wash. FI
Loren F. Bedford
Tatoosh Island, Wash. WBO
Donald R. Billman

RETIREMENTS

Paul S. Cook

PAUL S. COOK, a veteran of nearly thirty-eight years of Weather Bureau service, retired from his position as MIC at Lake Charles on July 31 because of disability.

A Hoosier by birth, Mr. Cook moved with his family at an early age to Texas. He attended Texas and Louisiana elementary schools and Shreveport, Louisiana High. In 1919 he completed a course of study at Hall's School in Columbia, Missouri, in preparation for the Naval Academy entrance examinations. He qualified for admission to Annapolis, but due to personal reasons he was unable to accept the appointment.

Mr. Cook joined the Weather Bureau in his home town of Shreveport as an Assistant Observer on September 1, 1920. Five years of competent service brought promotion to Observer and transfer to Dallas. He went into aerological work in 1929 as a Meteorologist at Groesbeck. He later served at Galveston from July 1931 to October 1932 and as Official in Charge at Fort Worth from 1932 to 1940 when he accepted the MIC position at Lake Charles, which he held until the time of his retirement.

Mr. Cook plans to make his home in Memphis, Tennessee, where friends may contact him at 3798 Faxon Avenue.

Norbert G. Ribble

NORBERT G. RIBBLE, Rawinsonde Specialist at Lander, retired July 31 after completing 30 years of Weather Bureau service.

A native of Iowa, Mr. Ribble graduated from Iowa City High School and attended the University of Iowa. He entered the Weather Bureau August 1, 1928, as a Junior Observer at Sioux City and later served at Des Moines and Cheyenne before transferring to Lander in 1939.

An active member of numerous civic and fraternal organizations, Mr. Ribble has been in Boy Scout work for 36 years, as scoutmaster, troop committeeman, and institutional representative; he has been a member of the Masonic Lodge, the Royal Arch Lodge, the Knights Templars, the Knights of Pythias, and the Odd Fellows for nearly 25 years, having served as an officer in all except the Masons.

Mr. Ribble pursues many interesting hobbies, among them the art of cutting and polishing gems, at which he is an expert. He possesses the largest private collection of minerals and gems in the State of Wyoming, has been a member of the Wyoming Gem and Mineral Society for 18 years, and is currently serving a third term as State President. Other hobbies cultivated by Mr. Ribble include hunting, fishing, woodworking, photography, stamp collecting, and gardening. (He grows 110 varieties of African violets and 25 varieties of iris.) He anticipates no difficulty in expanding his hobbies and other interests into full-time pursuits after retirement.

Mr. and Mrs. Ribble plan to maintain their residence in Lander where friends may continue to contact them at 362 Popo Agie Street.

Deaths

William C. McConnell

WILLIAM C. McCONNELL, Instrument Maker in the Central Office Instrumental Engineering Division, died June 26 of a heart attack at his home, 1308 Allison Street, N.E., Washington, D. C.

A native Washingtonian, Mr. McConnell was born December 5, 1901. He entered government service as a messenger with the Treasury Department in 1917, transferring to the Census Bureau in 1918, where he served as a machinist until 1926. He accepted an assignment as Instrument Maker in the Weather Bureau in September 1926 and served continuously in the Instrument Division until his death.

Mr. McConnell is survived by his wife, Marion, of the home address, and a daughter, Mrs. Raymond F. Lein, of Brookmont, Maryland.

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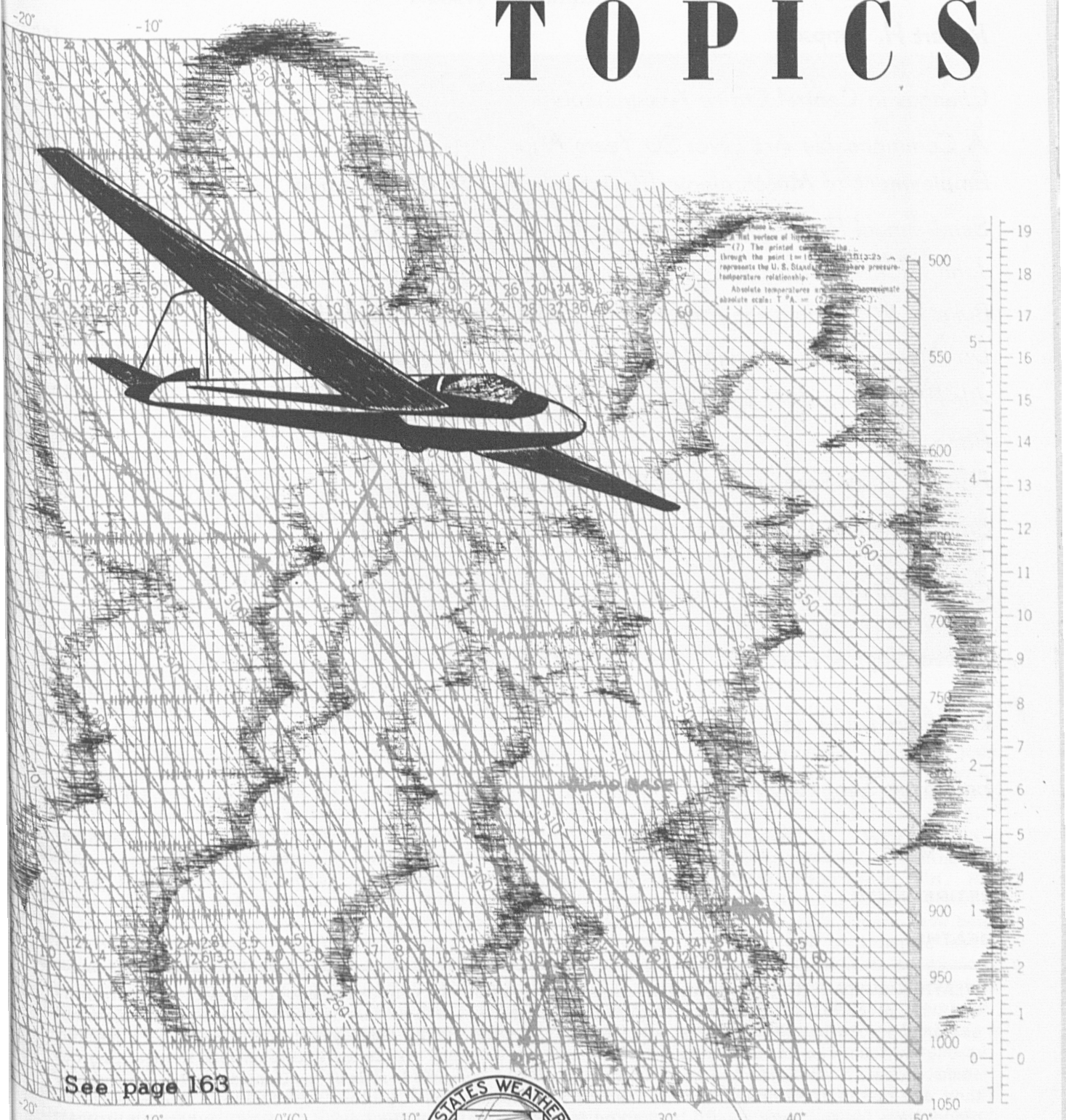
SEPTEMBER
1958

WEATHER BUREAU

TOPICS



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1 - 1958
WEATHER BUREAU

Volume 17 Number 9

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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.

DIRECTOR OF NHRP

Robert H. Simpson

ON April 16, 1940, Mr. Robert H. Simpson entered on duty with the Weather Bureau as Junior Observer in Meteorology at Brownsville, Texas, thus deciding upon science as his future career with music as an avocation, rather than the reverse.

Mr. Simpson was born in Corpus Christi, Texas in 1912 and received his early education in Texas schools, graduating with honors from the Corpus Christi High School in 1929 and the Southwestern University in 1933 with the degree of Bachelor of Science. He was a member of the Scholarship Societies of the South. He later earned his Master of Science degree in physics at Emory University, Atlanta, Georgia and, as a Weather Bureau scholarship student, did graduate work in meteorology at the University of Chicago in 1943 and 1944.

Early in life Mr. Simpson, showed a desire to learn how other people in the world lived and to visit foreign areas in his quest for knowledge. In the summer of 1933, he earned his passage to Europe as a musician on board the S. S. Franconia, a cruise ship, and spent some time touring England, France, and Belgium on bicycle. Fluctuations in the international money markets resulted in a net loss of about a third of Mr. Simpson's funds. Consequently, he and his companions traveled by bicycle instead of utilizing the customary transportation facilities. We understand that the trip was accomplished with very little capital and, in fact, he returned home with $1.50 more in his pocket than he had when he started. He earned his return passage to the United States by playing in the orchestra on the S.S. Aquitania.

Upon his graduation from Emory University, he turned to the teaching profession accepting a position as teacher of science, mathematics and music at the Crockett, Texas High School. He then moved to Fort Stockton, Texas to take on the job of band director and chemistry and physics teacher at the Fort Stockton High School. Following this, he returned to his home town of Corpus Christi as Director of Instrumental Music for the Corpus Christi Schools which included the job of band director and orchestra leader for the senior band and orchestra. It might be mentioned that although Mr. Simpson gave up his music career in favor of science, he has not lost interest in music, but has pursued it actively as an avocation. He has been active in choral singing and has been director of several church choirs.

After teaching for five years, Mr. Simpson joined the Weather Bureau in 1940 and since that time has served the Bureau at Brownsville, Texas; Swan Island, West Indies; New Orleans, La.; Chicago, Ill.; Miami, Fla.; Honolulu, Hawaii; Washington, D.C., and Palm Beach, Fla. His experience and primary interest in the Weather Bureau have been in the field of synoptic meteorology and weather prediction. His particular specialization has been in tropical meteorology, especially in tropical cyclones (hurricanes, typhoons, etc.). Mr. Simpson's particular interest in hurricanes dates back to his childhood in Corpus Christi, when the hurricane of 1919 put the low-lying areas of the city under 16

feet of bay water. One member of his family was drowned in this storm.

Mr. Simpson's first experience with hurricane forecasting was at the New Orleans Forecast Center. He also served at Miami with the late Grady Norton. In 1947, his interest in hurricane research led him to plan and participate in a series of special hurricane research flights through and over the great hurricane of September which swept over Florida and Louisiana and incapacitated both the Miami and New Orleans Forecast Centers. On one of these flights, he had an experience that would have dampened the enthusiasm of many many persons. The Air Force B-50 in which the flight was made caught on fire while in the hurricane and was barely able to limp back to base. Since that time, he has made a large number of flights into and around hurricanes. As a result of these flights which included some from Guam in 1951, and from Bermuda in 1953 and 1954, Mr. Simpson became interested in more detailed study of the violent core of the hurricane by aircraft, a study now being made in the National Hurricane Research Project.

In 1945, Mr. Simpson was loaned by the Weather Bureau to the U. S. Air Force to assist in establishing a Graduate School in Tropical Meteorology at Panama. He performed this assignment in a manner that brought a commendation from the Director of Training for this work.

In 1947 and 1948, he served in Washington, D.C. as Special Assistant to the Deputy Chief of Bureau. From 1948 to 1952 he was assigned to Honolulu where he led in expanding and modernizing the Weather Service in the Hawaiian Islands proper, and incorporating the Trust Territory Stations into the Weather Bureau's Pacific Program. He was also instrumental in bringing to fruition a dream of meteorologists by establishing a weather station on Mauna Loa, an active volcano nearly 14,000 feet high and the highest peak in the Islands.

In 1952, he returned to a staff planning post in Washington and from this position directed the design of the National Hurricane Research Project which is now based at West Palm Beach, Florida. This is the largest research project that the Weather Bureau has operated. In his capacity as Director, Mr. Simpson has had to display among other qualities his innate drive to get things done, to expedite when possible and to improvise when necessary. Such characteristics have stood him in good stead in the complex problems of instrumentation, planning, coordination of aircraft reconnaissance and direction of the main lines of research.

During his Weather Bureau career, his love of travel has been put to good use. In February of 1949, he travelled to New Zealand and Australia as a Weather Bureau representative at the Pacific Science Congress. In December of 1949, he travelled to Tokyo as the Weather Bureau representative at the Joint Meteorological Committee Meeting being held there. In 1951, he returned to Tokyo for another session of the Joint Meteorological Committee Meeting. In June of 1951, he was a Weather Bureau representative at the Eastern Caribbean Hurricane Conference of Region IV of the World Meteorological Organization held at Port of Spain, Trinidad in the British West Indies. In September of 1953, he visited Bermuda and took part in hurricane reconnaissance flights with the 59th Weather Reconnaissance Squadron. In October of 1954, he traveled to Tokyo as a Weather Bureau representative at the UNESCO Symposium of Tropical Cyclones. In October of 1957, he represented the Bureau at the Pacific Science Congress in Bangkok, Thailand, following which he visited other Meteorological Offices throughout Asia and Europe to discuss research into hurricanes and other phases of tropical meteorology.

Mr. Simpson is a member of the American Meteorological Society, American Geophysical Union, Washington Academy of Science, and Pacific Science Association. He served as a U.S. member of the Commission for Synoptic Meteorology of the World Meteorological Organization and is currently the chairman of the American Meteorological Society Committee on the promotion for research on severe storms. He has written numerous articles which have been published in the various meteorological journals.

Although in his work Mr. Simpson had developed the reputation of watching neither the clock nor the calendar, he finds time to enjoy his current hobbies of sailing, camping, and music.

Changes in Central Office Assignments

Deputy Chief of Bureau: Mr. R. C. Schmidt, Chief District Meteorologists, Washington National Airport, will serve as Acting Deputy Chief for the next few months. His detail to this position was effective August 11. Mr. Schmidt brings to the Central Office long experience as district and aviation weather forecaster, and he will carry on the duties of the office until December.

Assistant to Chief for Forecasting Services: Mr. Paul Kutschenreuter plans to attend a university during the next year under a Weather Bureau scholarship. Many of the problems in

the field of forecasting that were being coordinated by Mr. Kutschenreuter will be taken over by Mr. Schmidt.

Director of Aviation Weather Services: Mr. N. A. Lieurance has been appointed to this new position. The position will consolidate and expand working relationships in the aviation field with the new Federal Aviation Agency, other Federal and State Agencies, and with organizations having direct interests in the Bureau's aviation programs.

Chief of Division of Observations and Station Facilities: Mr. A. K. Showalter has been selected as successor to Mr. Lieurance.

Coordinator of International Activities: Mr. Gordon Cartwright has been selected as head of this new office which will handle the coordination of all Bureau matters in the ICAO and WMO fields.

A Commendable Act Over 30 Years Ago

IN this day of so much automatic, electronic, and remoted observational equipment, we sometimes forget the courage often displayed by our employees years ago when the maintenance of continuous basic observational programs required much personal effort. Recently, Mr. B. L. Wiggin, MIC, WBAS Buffalo, N. Y. brought our attention to the following article on the first page of the Buffalo Evening Times dated December 8, 1927. The main headline was "84-MILE GALE AND BLIZZARD GRIPS BUFFALO: ONE KILLED." The second column article pertaining to Mr. Keller (now MIC, WBAS Syracuse, N.Y.) is headed "Weather Man Risks Life to Install Instruments" and states:

"Andrew P. Keller, an observer at the Weather Bureau, risked his life this morning in order to insure official recording of today's storm.

"Early this morning when the gale was 84 miles an hour, the anemometer cups were blown from the observation tower on top of the New York Telephone Building. When the observers reported for duty there was only a part record and it was discovered that the measuring instruments had been blown away.

"Keller, in a nonchalant manner, took new anemometer cups from the office of the Weather Bureau, stepped onto the roof of the telephone building and calmly mounted to the top of the observation tower, while a 70-mile wind howled about him. The staff swayed in the wind but he succeeded in installing the new instruments.

"Meteorologist James H. Spencer said Keller's deed was necessary albeit risky and he characterized it as a sterling display of courage."

Employment of Meteorological Graduates and Student Trainees

IN May of this year each of the regional administrative offices in the States was authorized to employ up to 10 college graduates. This special recruitment program was undertaken to obtain students graduating from universities with degrees in meteorology to fill professional vacancies. So far 18 meteorological graduates have accepted appointment.

Augmenting the graduate recruitment program, the Bureau's Student Trainee Program was continued this summer on a fairly large scale, with a total of 53 students employed for the summer. Twenty of these students originally entered the program in 1956, and five were Bureau employees on LWOP attending meteorology schools. The remainder received their first contact with the Bureau this summer, and it is expected that the majority will be back next year. Two students who have been in the program since 1956 entered on full-time duty as meteorologists. These employees are in addition to the 18 appointed under the graduate recruitment program.

Semi-annual Report from the Pennsylvania State University

THE following semi-annual report from the Pennsylvania State University shows the enrollment of Weather Bureau employees in their correspondence courses during the period January 1 to July 1, 1958. The total number of registrations were 566. Of this total:

145 completed one or more courses

23 dropped out

Major enrollments were:

181 in the three Synoptic Exercises

148 in General Meteorology

41 in Dynamic Meteorology

THE following appeared in the April issue of National Safety News and is reprinted with their permission.

"You can see the world in an automobile — the way you drive decides which world."

THE SOARING SOCIETY of AMERICA, Inc.

BOX 71 • ELMIRA, NEW YORK

UNITED STATES REPRESENTATIVE OF F.A.I. FOR MOTORLESS FLIGHT THRU THE NATIONAL AERONAUTICS ASSN.

ADDRESS REPLY TO:
1530 Belleville Way
Sunnyvale, Calif.

2 September, 1958

Chief, U.S. Weather Bureau
Washington 25, D.C.

Dear Sir:

This is written, on behalf of the pilots and officials of the recently concluded 25th Annual National Soaring Competition at Bishop, California, to express our gratitude for the outstanding services rendered at the contest by the United States Weather Bureau.

We are indebted in particular to Mr. Elvyn Pye, MIC,WBAS, who was assigned to Bishop out of Yuma, Arizona, to Mr. George Kornbrust, MIC at Bishop and to Mr. John Aldrich, FAWS supervisor at Los Angeles.

In the majority opinion of all competing pilots and others connected with the contest, the 25th was the most successful soaring contest ever held in the history of the U.S. National Competition.

We flew over 23,000 miles, made 6 flights over 300 miles in distance and 14 flights over 250 miles. We broke 2 international records.

The greater part of the credit for the outstanding success of this meet belongs to the flawless weather predictions made by the U.S. Weather Bureau team.

I recall one instance in particular: Mr. Pye pointed out during our morning pilot's weather briefing that the lift would be good over most of the Owens Valley. However, he said, we should start earlier than usual in order to have sufficient time to make the round trip to the announced goal before thunderstorms predicted to occur en route about 4;00 PM would develop. The better pilots took off at once - and got back in record time. At precisely 4:10 PM a gigantic thunderstorm let go exactly where it was predicted to occur - and at least five pilots were forced to land in the valley in the rain! Suffice to say all subsequent flights were more closely integrated with Mr. Pye's recommendations!

Again, thank you so much.

Stanley A. Hall

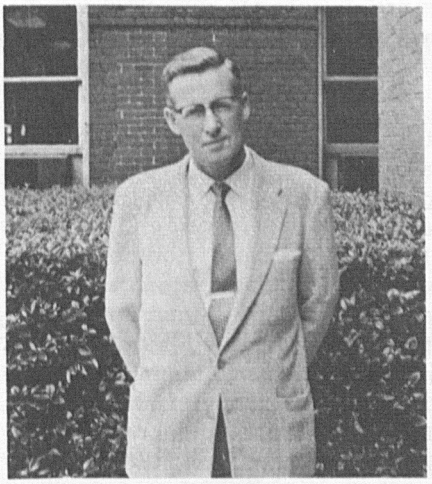
Stanley A. Hall
Contest Director

John Aldrich Participates in World Soaring Contest at Leszno, Poland

JOHN H. ALDRICH, Supervising FAWS forecaster at Los Angeles, accompanied the U. S. Soaring Team to the World Soaring Contest at Leszno, Poland during June and served as meteorological consultant for the U. S. Team. An account of Mr. Aldrich's travel to and from Poland and his participation in the World Contest follows:

"I departed from Edwards AFB May 28 via MATS to McGuire AFB, New Jersey with members of U.S. Soaring Team. On May 29 we attended State Department briefing and a reception for the team at the Polish Embassy in Washington. We departed McGuire AFB May 30 via MATS for Frankfurt, Germany; fuel stops permitted brief visits to International Aviation forecast offices at Gander, Newfoundland and Shannon, Ireland. In Frankfurt it was possible to visit the German Weather Service Headquarters in nearby Offenbach as well as their International Office and MATS AWS office at the airport. Considerable climatological data and general information on Poland weather were obtained at the AWS Technical Support Division in Frankfurt. Travel to Poland was via Amsterdam where I was able to visit the Netherlands IAFS. We arrived at Poznan, Poland June 10 and proceeded to Leszno by train.

"The Polish Weather Service sent two forecasters, two communicators, two chartists, and an airplane pilot from Warsaw in addition to the observing personnel regularly assigned. Early morning airplane ascents were made on contest days. Upper-wind reports were received from about 12 Polish stations up to about 8000 feet, and RAOB soundings were received from two East German stations. The only other upper-air data were coded 700



and 500 millibar analyses. Surface charts were plotted each three hours from 1 a.m. to 10 a.m. All material was in metric units; winds were in m.p.s. except at briefings where they were given in kilometers per hour. One of the Polish meteorologists spoke fairly good English and was very helpful to the meteorologists who made frequent visits to the weather station.

"Polish meteorologists had had considerable previous experience in soaring meteorology in the Leszno area and presented a good detailed weather briefing. While official languages were to be Polish and French, it was necessary for the Polish meteorologist to repeat in English for the translation into French. A few details, of course, did not verify completely, but I felt that the Polish meteorologists did a fine job, and I was unable to improve on their forecasts.

"Weather during the contest was described as very unusual for the area for June being more typical of April with rain on numerous days and several heavy thundershowers. Only six contest days were possible during the two-week period, although excellent soaring weather is characteristic of the period.

"With 62 sailplanes entered from 22 countries, the leading U.S. pilot ended up in 9th place. Naturally we wanted to win, but so did 21 other countries, and competition was keen in all phases. We certainly gained much in experience and knowledge. Leading entries were from West Germany, Poland, England, and Czechoslovakia.

"There is a great amount of interest in soaring meteorology in Europe, and I feel that I learned much in discussions with the various meteorologists as well as attendance at the meteorological sessions held in conjunction with the contest.

"The atmosphere at the contest was one of complete friendliness among all members of all groups present. The only barrier was language which was partially overcome by extensive use of signs and limited use of other languages. This led, of course, to some amusing but good-natured incidents (Czech for "yes" is usually pronounced "no"). Bulletins and announcements were made in from three to five languages.

"Having earlier obtained a Czech visa, I arranged to travel from Leszno by truck with a Canadian pilot who was towing his French glider to Paris by road through Czechoslovakia. The Czechoslovakian meteorologist at the contest, Dr. Jiri Forchgott, was waiting for us at Prague Airport where he showed us through the forecast center.

"On arrival in Paris July 3, I learned that the next available seat on MATS from Paris to the United States was July 9. M. Gerbier who was at the contest in Leszno conducted me on a tour of the French Meteorological Service central office. I also visited the French IAFS office at Orly Field

while in Paris. The IAFS office at Idlewild Airport, New York and the Central Office were visited briefly enroute back to Los Angeles.

"Despite some difficulties and inconveniences such as a few leaks in our tents, and some raw, chilly weather, it was a great and enjoyable experience. The opportunity to accompany the U.S. team is very much appreciated."

Bulletin W Supplement Project at NWRC Nearing Completion

By Raymond H. Smith

COMPLETION of the historical weather information publication series entitled "Climatic Summary of the United States - Supplement for 1931 through 1952" is scheduled for fall of 1958. To date 43 of the 45 units are in print, and the remaining two are in their final stages at the National Weather Records Center at Asheville, N. C. The two units still to be finished are: Texas, the Hawaiian Islands and Puerto Rico and the Virgin Islands.

This publication appears under the general title "Climatography of the United States No. 11," being known operationally as "Bulletin W Supplement" since it is supplemental to the "Climatic Summary of the United States - Bulletin W, 1930 Edition."

Data from 8,569 cooperative stations, transferred to some five million punched cards for processing, were required for the Supplement. The observers who man these cooperative stations are located in all of the 48 states and in the territories of Alaska, Hawaii, Puerto Rico, and the Virgin Islands. Many observers can point with pride to continuous periods of record extending over the half-century mark, in many instances without the loss of a single day of record. Data from these cooperative stations are used to fill in gaps between first order Weather Bureau station locations in connection with climatological studies and are often more representative of "natural" weather conditions than are observations from city and airport locations. The latter are not published in the Supplement.

The Bulletin W Supplement includes 22 years of monthly and annual precipitation totals, together with averages for the available periods of record ending with 1930 and for the period beginning with 1931. Tabulations are also available for Mean Snowfall, Mean Temperature, Mean Maximum Temperature, Mean Minimum Temperature, and Highest and Lowest Temperatures, both monthly and annually. The Station Index and History provides a concise current resume of pertinent information from on-the-spot details furnished through State and Territorial Climatologists. Additional information explaining changes in station location also have been extracted from notations written into individual station records, and a state map showing locations of stations currently reporting is included in each supplement.

Almost continuous recordings of precipitation amounts covering a century or more, all within a comparable area, may be obtained by combining historical climatological data available in three publications. Initial years of each record can be obtained from Bulletin W, 1930 Edition; continuation through 1952 is now available in the Bulletin W Supplement; and finally, data from 1953 up to the present may be secured by reference to "Hourly Precipitation Data," a publication started in October 1951 at the National Weather Records Center in Asheville, N. C., or to "Climatological Data."

In addition to their use in preparation of voluminous data for the Bulletin W Supplement, the punched cards from this deck are being utilized in at least two major projects at NWRC and the Weather Records Processing Centers located in San Francisco, California; Kansas City, Missouri; and Chattanooga, Tennessee. One of these projects involves a specialized weather tabulation from electronic computing machines designed to establish ultimately a nation-wide network of Climatological Bench-Mark stations. This network is to include stations having long periods of record under unchanging exposure, primarily for the study of long range climatological trends.

Departures of monthly temperatures and precipitation from a 25-year mean (1931-1955) also are being obtained by use of reproduced Bulletin W cards shipped to each of the Weather Records Processing Centers from the National Center in Asheville. The new Division Averages prepared in the WRPC replace the State Averages previously published and provide a comparison among areas which are more climatologically similar. Beginning January 1956, the Division Averages appear in "Monthly Climatological Data" for each state.

Over five years have been required to assemble, edit, and print the 42 units in this publication series. Texas with 661 stations is the largest of the entire series. California, just recently off the press, is the second largest with 589 stations.

A total of 2,408 pages, size 8 $\frac{1}{2}$ x 11 inches, was required to print the 43 units. A total of 2,720 pages will be filled by the time the last of the series is in

printed form. Reprints of Florida, New York, and North and South Carolina Supplements have been made to meet demands while available copies of the first printing for several other states have been exhausted.

Because of special considerations, variation has been made in the period of record for both Alaska and Hawaii. In the case of the Alaska Supplement the years of record included are from 1919 through 1952. For Hawaii the years of record include 1922 through 1952. This is to pick up where the original Bulletin W for these areas ended and to provide a continuous record to date.

One of the all-important tasks associated with the preparation and verification of material for use in Bulletin W Supplement is that of editing and revising information contained in both the 1930 Edition, and the Supplement. Revisions are to be issued periodically as an aid in keeping monthly and annual mean values of both publications up to date.

At this time 104 sections of the 1930 Edition to Bulletin W have been completely corrected and reprints made. Three others are now in the reprinting process. Correction sheets for 23 Bulletin W Supplements have been issued and at least six more are scheduled for the last half of 1958.

Copies of the Bulletin W Supplements, as well as other similar publications, are available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

Dr. Albert Miller's Assignment in Santiago, Chile

DR. ALBERT MILLER, the Weather Bureau meteorologist with the Civil Aeronautics Administration Technical Assistance Group in Santiago, Chile, is nearing the completion of a very successful two year assignment in that country.

Dr. Miller has had considerable success, as an advisor to the Chilean Weather Service, in inaugurating a modernized program within that Service. By his capable efforts and a very successful working relationship with Mr. Mattassi, Director of the Chilean Meteorological Service, he has proven to be an outstanding good will ambassador.

One of the most important results of his efforts was his presentation of a nine months course in meteorology for a group of 13 Chilean meteorologists. The course consisted of seven hours per week of theoretical meteorology, six hours of meteorological laboratory, five hours of mathematics, four hours of physics and five hours of English. Upon graduation, the top four students were selected for scholarships in the United States sponsored by the International Cooperation Administration (ICA). These four are now at the Pennsylvania State University continuing their study in meteorology. It is felt that these 13 graduates will provide the Chilean Service with sufficient meteorologists for the near future. Dr. Miller is planning another such course to start in 1959 to train not only civilian meteorologists but also Chilean military personnel. He assisted in the introduction of the machine methods (IBM punch cards) in the Climatological Section of the Chilean Weather Service. His advice was followed regarding organization of the Forecast Offices of the Chilean Service. He acted as liaison officer in the successful operation of the three IGY radiosonde stations in Chile, jointly operated by the U. S. Weather Bureau and the Chilean Air Force. Dr. Miller helped initiate negotiations for the continuance of these three stations, plus the formation of a new station on Juan Fernandez Island. He also prepared an Observer's Manual of 150 pages written in Spanish. 850 copies were printed and have been distributed to all Weather Stations in Chile and to seven other South American countries. Dr. Miller has inaugurated both lecture type and correspondence courses for observers. He helped make arrangements for two instrument technicians to study instrument repair in Argentina. These men will become the nucleus of an Instrument Repair Section. Among other activities on which his advice was sought was the organization of a meteorological library for which books are now being purchased and catalogued and the Library made a member of the U.S. Book Exchange. The Synoptic Section of the Chilean Service has started an analysis of the entire Southern Hemisphere on a daily basis.

The above is just a sample of the many varied activities that Dr. Miller has been engaged in while working with the Chilean Weather Service. He has shown exceptional ability in his work with the Chileans to improve the organi-

zation of the Weather Service and to establish training programs. His resourcefulness and patience have contributed to the success and progress of the meteorological activity of the Civil Aviation Division.

Dr. and Mrs. Miller are very cooperative, well liked and have had no difficulty in adjusting themselves to foreign assignment. They both speak Spanish and Portuguese fluently. Dr. Miller has expressed the desire to stay in Chile until he is satisfied with the progress and future of this program. Under these conditions, he will take home leave in the United States in December 1958, and then return to Chile for another two year tour of duty.

Air Force Award at Springfield

LARS M. CHRISTENSEN, MIC at WBAS Springfield, Illinois has received the Certificate of Recognition from the Ground Observers Corps of the Air Defense Command of the United States Air Force. The award was in recognition of Mr. Christensen's assistance in formulating a Severe Weather Watch Program and coordination of the completed plan with other U. S. Weather Bureau offices in the Springfield Air Defense Filter Center area of responsibility.

Bond Drive

JOHN A. CUMMINGS, MIC, Charleston, S. C., reports the following:

"During the early part of the discussion of Government Employees pay raise a number of us pledged to increase our bond allotment by at least half of the pay raise. Some even agreed to use all their increase for this purpose.

"As a result of this we have raised our participation rate from 60% to 93% and the dollar rate from 4.0% to 9.1%.

Foreign Area Section of the Office of Climatology

CLIMATOLOGICAL information on all areas outside the United States is of interest to the Foreign Area Section of the Office of Climatology which was established mainly to support the requirements of other government agencies on a reimbursable basis. Routine inquiries on the climate of the world are also handled by this staff and supported by Weather Bureau funds.

Some of the principal projects of the section include:

a. Bibliographies. Under contract to military and other agencies, continual surveys are made of published reports on the meteorology and climatology of foreign areas. Bibliographies are available for some portion of each continent, as well as the polar regions. About 20 were issued last year and averaged 40 pages. One of the largest (473 pages) covered Greenland and was an annotated bibliography to 469 references. The more important bibliographies have been deposited in the Weather Bureau Library and copies are now being sent to the National Weather Records Center at Asheville, N. C.

b. Microcarding. Articles are selected from periodicals and monographs for microcarding to supply agencies with a library of selected reference material. Often it is necessary to prepare extended English summaries of scientific papers published in foreign languages. About 120 sources were microcarded last year, and over one-half of these were in a foreign language. Copies of the microcards are not available for public distribution; however copies of nearly all of the foreign language translations or English abstracts have been deposited in the Weather Bureau Library.

c. Weather Data annotation. Climatological data from foreign countries are abstracted and information on the location, climatological elements, time of observation, length of records, etc., are placed on cards. These "Climatic Data Cards" provide a source for a quick and simple reference. Last year about 60 Climatic Data Cards were prepared while revising the data contained in some of the U.S. Navy Hydrographic Office Sailing Directions. Over 5000 data cards are already available; while some 500 sources have their data comprehensively indexed.

d. Research projects. Details of foreign climates or climatological relationships are investigated to satisfy the specific needs of the contracting agencies for these data. A recent example is the "Climate of the Eurasian Northland." This covers the dynamic and aerological climatology, the surface climate and the climatic changes of this area in 104 pages of text, charts and tables.

e. Translations. Articles, and occasionally books on foreign climates are translated from Russian, German, French, Italian or Spanish sources. In addition to the microcard translating, 50-60 translations and extended summaries of German, French, Russian, Italian and Spanish articles were done during the past year, as well as the book "The Heat Balance of the Earth's Surface" by M. I. Budyko (258 pages).

f. Data acquisition and Foreign Correspondence. Correspondence with foreign governments regarding the exchange or acquisition of climatological data are initiated in the Foreign Area Section. These data are acquired for special summaries requested by contracting agencies or for use in the Daily Series of Synoptic Surface and 500 mb Weather Maps of the "Historical Series."

The Northern Hemisphere program is a world-wide project in which 37 countries around the globe, record and transmit daily (by radio) surface, upper air and radiosonde data to the United States. Tabulations of this data are eventually received, microfilmed and filed in the National Weather Records Center, Asheville, N. C. This data is used at Asheville to construct the present series of Northern Hemisphere daily (published) weather maps with its companion data tabulation series. The Foreign Area Section is an intermediary in the distribution of forms (some 1400 annually) to the cooperating countries. In addition, a number of foreign meteorological services furnish us with publications containing climatological material. These are deposited in the Weather Bureau Library.

g. Climat Messages are originated in the Foreign Area Section for broadcast throughout the World. Climatic surface and upper air data are collected from the U.S., Canada, Alaska, Mexico, Pacific Islands, Weather Ships, Central America, and the Caribbean area. These are edited and assembled for broadcast in the CLIMAT and CLIMAT TEMP international monthly broadcasts. The data are then transmitted to the National Weather Records Center, Asheville, N.C. for publication in the World Meteorological Organization publication "Monthly Climatic Data for the World." The Domestic Area Section and the Foreign Area Section cooperate in the handling of these data.

h. Inquiries. Questions concerning foreign climates are answered in the Foreign Area Section. These range from questions from school children studying World Geography to requests from the State Department concerning air conditioning requirements in foreign areas. Individuals and firms engaged in foreign commerce require advice on climatological information in foreign areas for the shipment of goods, the planning of factory sites, the development of oil fields or pipe lines and a host of related activities.

Employment Policy Complaints

IN previous issues of TOPICS (September 1955, 1956 and 1957), the President's Executive Order No. 10590, Department of Commerce Administrative Order 202-2 (amended) July 27, 1955, and the Weather Bureau s program implementing the President's Policy were presented. In the past year no formal complaints have been filed and this is viewed as an indication of full compliance with the President's Policy.

At this time the Weather Bureau's program is being restated for the information of all employees as an awareness of the policy and action to be taken when complaints occur must be maintained.

Weather Bureau employees or applicants for Weather Bureau employment who are citizens or owe allegiance to the United States may file complaints regarding personnel actions that adversely affect equal economic opportunity if such actions are based on race, color, religion, or national origin.

Complaints in writing may be filed by the individual or duly constituted organizations acting for the individual with the Deputy Employment Officer for the Weather Bureau, the Regional Employment Policy Officer, the Employment Policy Officer for the Department of Commerce, or the President's Committee on Government Employment Policy. Complaints of discrimination must:

1. State if the discrimination is thought to be based on race, color, religion, or national origin.

2. Identify the specific action or personnel matter leading to the complaint, and approximate dates.

3. Name the official responsible for the action, if known.

4. Furnish information on the position(s) involved - title, grade, and location.

5. Present all factual information available to support the complaint, including dates, names of individuals involved, incidents and circumstances.

A complaint should not be filed in lieu of a reply to a "letter of charges." If disciplinary action is thought to be based on discrimination, the proper procedure is to reply to the "letter of charges" and subsequently file the complaint (within 45 days of the action or within 10 days of a discharge action). In such cases it will be helpful if a copy of the reply to charges is attached to the complaint.

All complaints will be investigated initially by the Regional Employment Policy Officers or the Deputy Employment Policy Officer. If satisfactory explanations or adjustments are not accomplished within the Bureau, complaints will be referred successively to the Employment Policy Officer, Department of Commerce, and the President's Committee on Government Employment Policy, for further investigation, hearings, review, recommendations and final decision.

Employees are urged to discuss tentative complaints informally with supervisors and personnel officers before submitting formal charges. Well-founded complaints must be adjusted as fairly and promptly as possible.

On other occasions the cause for complaint may not arise from discrimination, and in such cases the responsible Employment Policy Official will refer the complaint

or grievance to the appropriate personnel official.

Ordinarily complaints originating in the field service will be forwarded to the Regional Employment Policy Officer and those in the Central Office will be submitted to the Deputy Employment Policy Officer, although complaints may be sent directly to the Commerce Department Employment Policy Officer, or the President's Committee on Government Employment Policy.

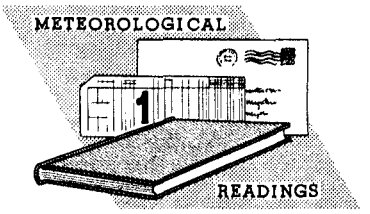
Regional Employment Policy Officers will be guided by Administrative Order 202-2 (Amended), July 27, 1955, Section 5, in referring unsettled cases.

All complaints must be in writing, and as stated above must be filed within 45 days of the specific personnel action complained of, except that a complaint involving a discharge action must be made within 10 days of the effective date of such action, unless the complainant is prevented from filing within the time limits by circumstances beyond his control. A complaint will not be subject to these specific time limits if it is concerned with a continuing discriminatory practice.

The Regional Employment Policy Officers are the Regional Administrative Officers, the Director of NWRC Asheville, N.C., the MIC's at Pacific Islands and San Juan. The Deputy Employment Policy Officer is Chief Administrative Services Division.

Operation Alert 1958

A number of letters have been received at the Central Office commending local Weather Bureau employees for their participation in the first two phases of this years Civil Defense Operation Alert Exercise. We want to take this means of thanking each one who has contributed in this way to his state or community.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment No. XVII: Hydrometeorology in the United States by Robert D. Fletcher and The Hydrologic Cycle and Its Relation to Meteorology - River Forecasting by Ray K. Linsley, on pages 1033 through 1054 of the Compendium of Meteorology.

About the Assignment: It is suggested that Linsley's article be read before Fletcher's in order to benefit from the introductory remarks concerning the various fields of hydrology and their relation to the hydrologic cycle before directing attention to the specialized field of hydrometeorology. More detailed information on hydrometeorology and its application to actual problems is contained in Applied Hydrology by R. K. Linsley, M. A. Kohler, and J. L. H. Paulhus, McGraw-Hill, New York, 1949, pp 1-242, 405-443, 542-604, 630-641.

QUESTIONNAIRE
Assignment No. XVII
(To be answered by participants after reading assignment.)
(For complete information, see TOPICS May 1957.)

Col. 61 What is the "snow line?"

1. a contour of constant elevation determined by geographic location
2. the lower limit of the snow pack
3. the height of the 32F isotherm
4. the contour height above which the snow never melts

Col. 62 How much storm runoff will occur in the Monocacy River at Jug Bridge, Md., if:

Antecedent Precipitation Index = 2.5 inches
Week of Year = 45
Storm duration = 72 hours
Storm Precipitation = 4 inches

1. 1 inches
2. 2 inches
3. 3 inches
4. 4 inches

Col. 63 Basic data for a river-forecasting service include all the following except

1. river stages
2. precipitation depths
3. air temperatures
4. relative humidities

Col. 64 For a given area, Fletcher found that maximum point-rainfall depths vary as the

1. square of the intensity
2. sq. root of the intensity
3. sq. of the duration
4. sq. root of the duration

Col. 65 Reduction in peak rainfall depths (per degree of latitude) for areas of approximately 2000 sq. mi. between 30°N and 60°N latitude is approximately

1. 2 percent
2. 4 percent
3. 6 percent
4. 8 percent

Col. 66 In general, spillover is of greater importance with

1. non-orographic rainfall for small drainage basins
2. non-orographic rainfall for large drainage basins
3. orographic rainfall for small drainage basins
4. orographic rainfall for large drainage basins

Col. 67 No practical hydrometeorological use of the precipitation intensity equation as discussed by Showalter is made because measurements are lacking for the required

1. atmospheric densities
2. vertical velocities
3. humidity distributions
4. precipitation rates

Col. 68 What is the amount of precipitable water between 1000 and 700 mb. assuming a dew point

at 1000 mb of 16°C, saturation and a pseudoadiabatic lapse rate?

1. 0.6 inch
2. 0.8 inch
3. 1.0 inch
4. 1.2 inches

Col. 69 Depth-Duration-Area values as presently determined are most accurate for

1. short-duration storms for small areas
2. short-duration storms for large areas
3. long-duration storms for small areas
4. long-duration storms for large areas

Col. 70 The mean annual evaporation from a USWB Class A pan is 50 inches. The mean annual evaporation loss from a nearby lake could normally be expected to be

1. 20 inches
2. 35 inches
3. 50 inches
4. 65 inches

Visibility—Types and Programs

RECENT advances in meteorological measuring and reporting techniques have resulted in the use of new terminology in presenting visibility. These new terms differ from ordinary visibility in that they are estimates of what a pilot will see rather than what is visible to an observer on the ground.

In order to assist observer briefers in pointing out to pilots the differences between the various terms currently in use a brief synopsis of each is presented here.

Prevailing Visibility is the horizontal distance at which targets of known distance are visible over at least half of the horizon. This estimate is determined by an observer on or close to the ground viewing buildings during the daytime and ordinary city lights at night. Under low visibility conditions the visibility estimates are usually made at the control tower site. Prevailing visibility is reported in the body of the aviation weather reports in miles and fractions of miles. If a single value does not adequately describe the visibility additional information is reported in remarks.

Runway Visibility is the horizontal distance a stationary observer near the end of the runway is able to see an ordinary light (about 25 candle power) at night or a dark object against the horizon sky in the daytime. Runway visibility is determined by a transmissometer (a photoelectric device calibrated in terms of a human observer) and is reported in miles and fractions in the remarks portion of the aviation weather report. A meter in the control tower gives the CAA traffic controller a continuous indication of the runway visibility. This program is now in effect at most airfields equipped with transmissometers but is gradually being replaced by runway visual range.

Runway Visual Range is the horizontal distance along the runway a pilot touching down can expect to see the high intensity (over 10,000 candle power) runway lights. This, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft will see. Runway visual range (RVR) is also determined by a transmissometer located adjacent to the touchdown point of the instrument runway and is reported in hundreds of feet. RVR is simply an indication of the horizontal visual guidance along the runway a pilot can expect to have during his flare, touch-down, and roll-out. RVR is horizontal NOT slant visual range. RVR is now furnished to the CAA tower controllers at EWR, DCA, IDL, and BOS by a direct-reading meter and is continuously available under any weather conditions. These meters will soon be replaced by computers which will provide digital display and also offer other operational advantages. RVR provides an additional operating minimum at fields equipped with the specified navigational aids. At the present time the RVR minimum at EWR is 2000 feet and at DCA 2600 feet, both regardless of the reported ceiling and prevailing visibility. At IDL and BOS the RVR minimum is 2600 feet with a 200 foot ceiling.

Approach Light Contact Height is based on the SLANT VISUAL RANGE of a pilot. Approach light contact height (ALCH) is given in terms of the altitude in feet on the glide path at which a pilot on final approach can expect to establish visual contact with the approach lights. ALCH is computed from measurements made by a transmissometer, a rotating-beam ceilometer, an illuminometer, and from the intensity setting of the approach lights. ALCH is at present in use only at Newark Airport, N.J. where the Airways Modernization Board Approach Visibility Project has been conducting an operational evaluation program. At the present time there are no operating minimums based on ALCH.

ALCH is given out by the CAA traffic controller to pilots as they cross the outer marker for a straight-in ILS approach to runway 04 at EWR. Because of variations in the sensitivity of pilots' eyes under various conditions as well as variations in the weather conditions, two values of ALCH are given out. The upper of these values is the altitude above the ground by which 20% of the pilots will be able to see 500 feet of the approach lights, the lower value is the height by which 90% will be able to see them. These heights as well as the spread between them will vary with the slant visual range, which is

determined from measurements of horizontal visibility, cloud height, brightness of the pilot's surroundings and approach light intensity. The ALCH program is being carried out so that a pilot can be told how good (or poor) the slant visual range will be during his approach and will therefore aid him in deciding if he should leave altitude and attempt an approach. While ALCH values are at present being computed manually, an electronic computer will be available later this year to compute and display the ALCH values.

Summing up in general terms-

Prevailing visibility represents what an observer can see looking around the horizon.

Runway visibility represents what an observer near the end of a runway can see.

Runway visual range represents what a pilot on the runway can see when looking down the runway.

Approach light contact height represents the altitude at which a pilot will be able to see the approach lights.

Employee Suggestion Box

Leonard G. Pardue $50
Miami, Fla.
F&SR adopted, in CL 9-57 dated April 17, 1957, the use of a statement that would give assurance to areas under no threat of a hurricane within certain periods. A statement of this type is of benefit to the public as an assurance in carrying out their day to day responsibilities.

Warren W. Winden $55
Yuma, Arizona
O&SF has adopted the suggestion recommending the discontinuance of the 0300Z and 1500Z pibals at WBAS Yuma, Arizona. Since rawinsonde observations are made at those hours at a nearby station, manpower and supplies will be saved as well as avoiding duplication of effort.

NEW MIC'S

Huntsville, Alabama

BAKER B. WILLIAMS of the Oklahoma City WBAS has been selected for assignment in charge of the new station to be opened at Huntsville. He is 43 years of age, entered the Bureau on December 5, 1941, at Atlanta and later assignments were at Augusta, WBAN Analysis Center, and Birmingham. He has been at Oklahoma City since September 1956. From March 1942 to January 1946 and from November 1951 to October 1953, he was on active military duty as Staff Weather Officer and Commander of Base Weather detachment.

Lake Charles, La.

HARRY ARMSTRONG of the District Forecast Unit at Atlanta, Georgia, has been selected for reassignment in charge of the Lake Charles station. He is 55 years of age, entered the Bureau September 6, 1927 at Atlanta, and had subsequent assignments at Macon, Louisville, Mobile, and Jacksonville. In September 1943, he was reassigned to Atlanta as District Forecaster.

Long Beach, Calif.

CARL A. CARPENTER, now MIC at WBAS Las Vegas, Nevada, has been selected for reassignment in charge of the new station to be opened at Long Beach, California, in October. Mr. Carpenter is 53 years of age and began his career in the Bureau on September 16, 1922. His service includes assignments at Spokane, Seattle, Juneau, San Francisco, Baker, Salt Lake City, Billings, Kansas City, San Diego, and Las Vegas.

RETIREMENTS

Genie S. Bartlett

GENIE S. BARTLETT, Meteorological Aid in the Office of Climatology, retired August 31 after nearly 29 years of service.

A native Georgian, Mrs. Bartlett graduated from Talbotton, Georgia, High School and attended Georgia State College for Women at Milledgeville. Her government service dates back to 1920 when she worked for the Census Bureau for two years. She returned to duty with Census in 1930 and was later employed by the Agricultural Adjustment Administration, Social Security, and the Railroad Retirement Board before accepting her first assignment with the Weather Bureau as a Statistical Clerk on May 8, 1942. She served as a Statistical Clerk in various sections until 1954, and from 1954 until the date of her retirement as Meteorological Aid in the Office of Climatology.

In her work Mrs. Bartlett compiled and organized meteorological information, much of which furnishes the basis for articles in the Weekly Weather and Crop Bulletin National Summary, Weatherwise, and Science Newsletter. She is author of an article which appeared in these publications and co-author of two others. Her compilation of facts and references, filling over two volumes, is constantly used by the entire Office of Climatology. Mrs. Bartlett was recently awarded $200 in recognition of her sustained superior performance of duties.

Mrs. Bartlett and her husband will make their home in Plant City, Florida.

Oliver C. Cox

OLIVER C. COX, Electronic Technician, Brownsville, Texas,

retired August 31 because of disability.

Mr. Cox was born February 22, 1922, in Greensboro, North Carolina, and attended public schools in Big Spring, Texas. Before joining the Weather Bureau in 1951, he was associated with Pan American Airways for seven years and worked briefly as a maintenance technician for CAA. He served as Electronic Technician at El Paso and Dodge City, transferring to Brownsville in 1956, where he remained until his retirement.

Mr. Cox's mailing address is Route 2, Box 498A, Brownsville, Texas, c/o Mr. W.E. Davis.

Paul A. Miller

WITH a career of 33 years in the Weather Bureau behind him, Paul A. Miller, Meteorologist in the O&SF Division, retired August 31 and is now enrolled at Purdue University to further his education in preparation for a new career as college professor.

Born in Alexandria, Indiana, on February 3, 1901, Mr. Miller graduated from Elwood, Indiana High School in 1918 and attended Purdue University. He embarked on his Weather Bureau career on June 4, 1925, as a Junior Observer at Macon, Georgia. From his initial assignment he went on to Davenport in 1926, and in 1927 was introduced to aviation weather service as Official in Charge at the newly established Moline Airport Station. His good work at Moline was rewarded in 1929 with his promotion to Meteorologist and transfer to Washington to establish the airport station at Bolling Field. In 1930 he was selected to head up the Airways Section of the Aerological Division, remaining in charge of this work until 1941 when he was appointed Chief of the Special Services Section in the SR&F Division. He served as Assistant Regional Director at Atlanta from 1943 to 1946 returning to Washington at that time as Executive Officer to assist in the administration of the Arctic Project. From 1947 to 1950 he served as MIC at Indianapolis, and in 1950 he came back to the Central Office, this time as a staff employee in the Plans and Program Management Office. While serving in this capacity he was awarded the Department of Commerce Silver Medal in 1953 for his contribution to the Aviation Forecast Reorganization Program. Since 1955 Mr. Miller has acted as Special Projects Coordinator in the O&SF Division.

Mr. Miller is presently pursuing courses in science leading to a B.S. degree and has ambitious plans to complete work for his M.S. and possibly a D.Sc. While attending Purdue, he will carry out research for the University's Department of Agronomy, and after obtaining his degree he plans to teach. Friends may contact Mr. Miller at 402 South 29th St., Lafayette, Indiana.

Sabie P. Di Bacco

SABIE P. DI BACCO, Meteorological Aid, National Weather Records Center, Asheville, died of a heart attack August 15 at the age of 48.

A native of West Virginia, Mr. Di Bacco graduated from Elkins High School and attended West Virginia University at Morgantown and Davis and Elkins College in Elkins. His career in government began in 1933 with the U.S. Forest Service. He was also employed by the Federal Works Agency before joining the Weather Bureau on June 19, 1943, as a Meteorological Aid at the Elkins Checking Station. He later served as an observer at WBAS Elkins, and when that station was closed in 1954, he left government service to return to private industry. Mr. Di Bacco returned to duty with the Weather Bureau in January 1956 at the National Weather Records Center.

Mr. Di Bacco was preceded in death by his wife. He is survived by seven children.

Lorenzo C. Walker

LORENZO C. WALKER, Photostat Operator in the Administrative Operations Division of the Central Office, died August 14, following a brief illness.

Mr. Walker was born May 15, 1891, in Arlington, Virginia, attended Washington elementary schools, and graduated from Armstrong Technical High in Washington. He entered government service in 1910 as a Photostat Operator for the Library of Congress, serving continuously in this capacity until 1935. In 1943 he accepted an assignment with the Weather Bureau as a clerk in the Extended Forecast Section. A year later he transferred to the Statistics Division, and in 1945 commenced his duties as Photostat Operator. In 1952 he was granted a cash award of $240 for his excellent work and outstanding production.

Mr. Walker's cheerful disposition and the very competent manner in which he performed his duties earned for him the respect and admiration of all with whom he was associated during his career in the Weather Bureau. He will be missed by his many friends and co-workers in the Central Office.

Survivors include Mr. Walker's widow, who lives at 1110 Columbia Road, N.W. in Washington, five daughters, and two sons.

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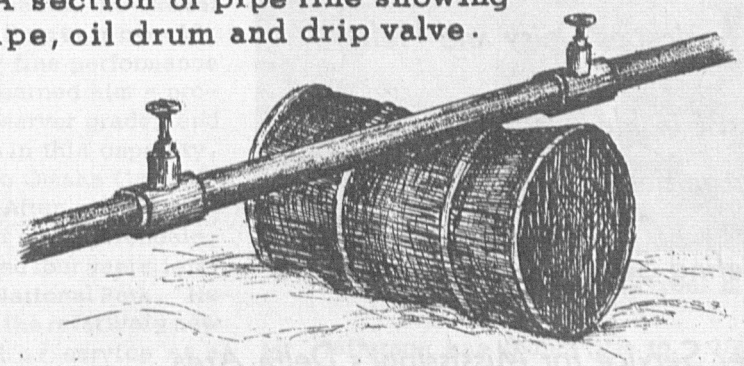
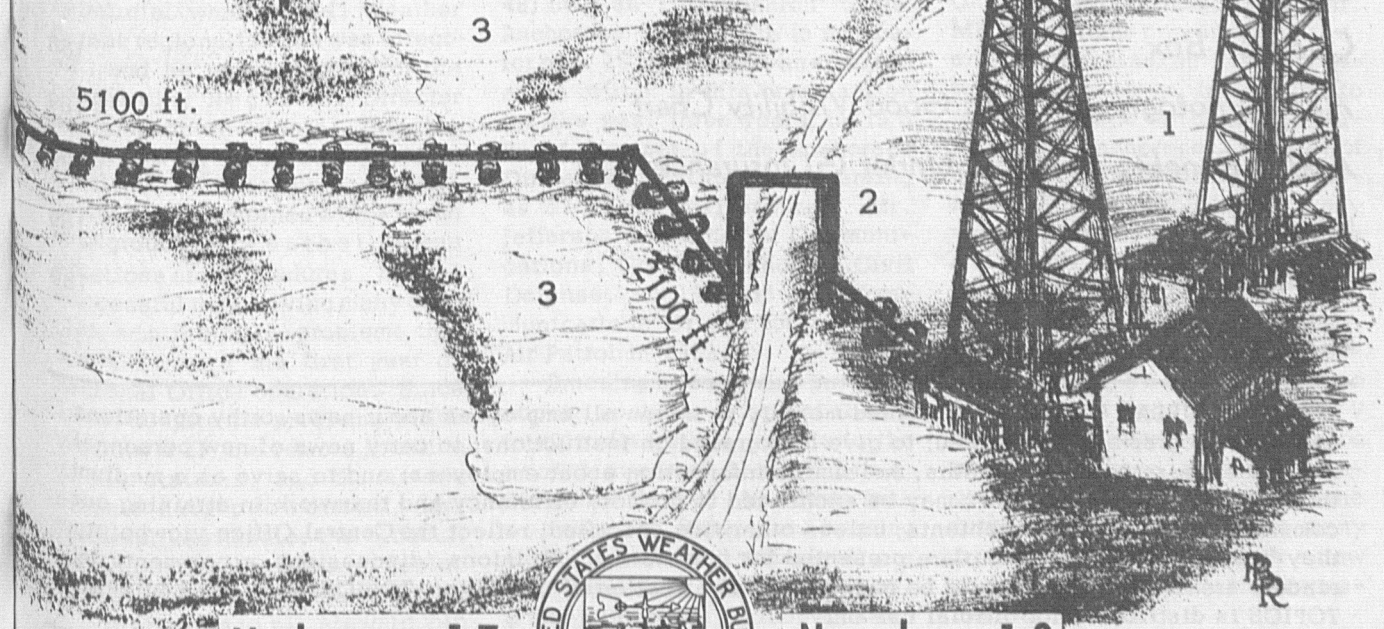
OCTOBER
1958

WEATHER BUREAU

TOPICS



A section of pipe line showing pipe, oil drum and drip valve.



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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.

Regional Administrative Officer Retires

Glen Jefferson

GLEN JEFFERSON brought an outstanding career of 40 years' Weather Bureau service to a close on September 20 when he retired as Regional Administrative Officer at Anchorage, a post he has held for the past 15 years.

Born in Casey, Iowa, Mr. Jefferson moved with his parents at an early age to Nebraska. He entered the Bureau at the Drexel kite station on September 10, 1918. His very fine performance at Drexel soon earned him a promotion to the observer grade, and after three years in this capacity, he transferred to Omaha City Office in 1923. After one year in Omaha he moved on to Ellendale, North Dakota, and four years later to Yellowstone National Park. He was assigned to the relatively new aviation weather service as a forecaster in Omaha in 1929. In this and subsequent assignments at Chicago as forecaster and principal assistant, and in Atlanta as Airways Supervisor, he gained wide experience which proved beneficial when in 1941 Weather Bureau regionalization was effected, and he was selected for the challenging Regional Director assignment at Atlanta. Bringing to this newly created position qualities of leadership and managerial skill, combined with a broad background in Weather Bureau practices and procedures, he was successful in resolving many complex administrative problems that arose during the first year of Regional Office operation. Since 1943, despite the problems which World War II, the remote location of his stations, and the severe climate have presented, Mr. Jefferson has handled the difficult directorship of the Alaskan Region in an outstanding manner.

In addition to his stewardship of a well-administered region,

Mr. Grubb pinning 40-year pin on Mr. Jefferson

Mr. Jefferson has found time to participate in community activities, and to cultivate many interesting hobbies. He is an honorary member of the American Red Cross, Anchorage Chapter, and served as Chairman in 1947-48; he is an "Old Monarch" of the Anchorage Lions Club (a member for over 10 years) and has served as an officer in this organization for the past three years; he is a Board Member of the Anchorage Dinner Club and presently serving as Secretary-Treasurer. Mr. Jefferson was Chief of Communications, Greater Anchorage Civil Defense, in 1954-55 and Communications Officer for the Civil Air Patrol in 1952.

Breeding and showing purebred cocker spaniels is one of Glen's favorite diversions, and he is the proud owner of a champion, Stocklore Dowry. An active outdoorsman, fishing and hunting (both big game and waterfowl) are also high on his list of hobbies. Other interests include amateur radio (Station KL7NT), photography, and do-it-yourself projects too numerous to mention.

Mr. and Mrs. Jefferson were guests of honor at a buffet dinner at the Westward Hotel in Anchorage on the evening of September 19. Mr. R. C. Grubb, Assistant Chief of Bureau (Administration), MICs and other personnel of several of the Alaskan stations attended this party, in addition to regional office and airport employees at Anchorage. A letter of appreciation from the Chief of Bureau to Mr. Jefferson for his many valuable contributions to a more effective weather service was read by Mr. Grubb, and Mr. Mac Emerson, as Master of Ceremonies, read congratulatory messages which had been received from present and former Region V employees who were unable to be present at the dinner. In expressing their best wishes for the future, Mr. Jefferson's many friends presented him with a new camera to add to his after-retirement enjoyment.

Always a versatile individual,

Mr. Jefferson is commencing a new career in Anchorage, following a much-deserved vacation in the States. While serving as a member and chairman of the Eyesight Conservation Committee of the Anchorage Lions Club, he became interested in optics to the extent that he has been seriously studying the science for the past year or so, and when he returns to Anchorage, he will be affiliated with a local optical service. No doubt he will approach this new endeavor with the same enthusiasm which has so characterized his Weather Bureau service these many years. Friends may continue to contact the Jeffersons at: Post Office Box 80, Anchorage, Alaska.

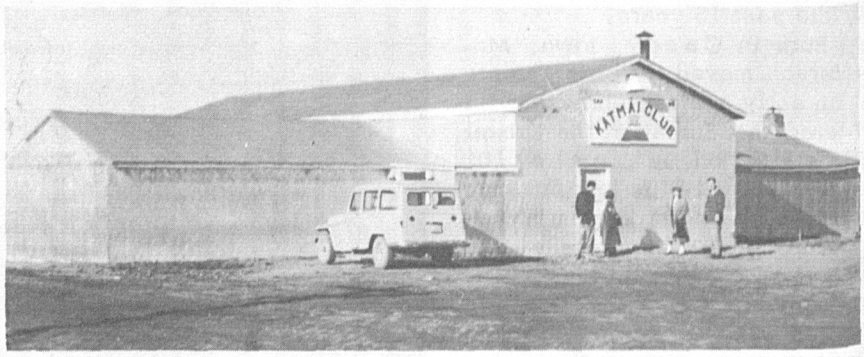
CAA—WB Recreation Hall, King Salmon, Alaska

THE finest CAA-WB "rec-hall" in Alaska, the "KATMAI CLUB," was dedicated September 27 at King Salmon, the result of hard work, ingenuity, and CAA-Weather Bureau cooperation over the last four months.

"I hope this is the first of such facilities we will be invited to help inaugurate," Regional Administrator(CAA) Allen D. Hulen told 200 guests gathered in the 75 x 85-foot building. "This is the kind of recreation facility we should have at many of our remote stations, and this whole project shows the kind of initiative and ingenuity that CAA people are capable of. I can't praise the builders of the KATMAI CLUB too much for their willingness to work hard for the good of the station and their community and for their ingenuity in using abandoned, surplus buildings as basic structures for this fine club."

Mr. Hulen considered the occasion of high importance in personnel morale, and arranged for a group of CAA officials from Anchorage to attend. Mac A. Emerson, new Regional Administrative Officer of the Weather Bureau for Alaska, was among the guests and added his warm congratulations on the functional excellence and the attractiveness of the club.

William Johnson, Station Manager, who had been the "straw boss" during construction of the club, turned it over formally to Tom McDonald, Meteorologist in Charge of the King Salmon Weather Bureau Station, president of the club, for operation. Guests from



Naknek, air service operators on the airport, visiting construction groups and military officials also attended. Later parties will include still others from the community who were unable to attend the opening because of space limitation.

Only three speeches lasting a total of five minutes marked the opening. The guests saw a sample of the kind of movies to be shown hereafter at the club through the new cinemascope projector with a screen 25 feet wide. A dinner of roast beef, ham, potato salad, baked beans and salads was served, and all the refreshments were "on the house." The new club starts with a cash operating fund of about $4,000 on hand, Johnson reported. The old club, a makeshift arrangement in a surplus building, now is used temporarily as a school room, until the construction of an additional room on the new, colorful, one-room school. There are 35 school children at the station, from six Weather Bureau families and some 30 CAA residents.

Most of the KATMAI CLUB is surplus material. An old garage building formerly used by a construction company is basis for the center section measuring 25 x 75 feet, and with a ceiling of 12 feet. This contains the dance floor, bar, movie projection room and toilets. Another surplus building, once used as the CAA commissary, and which was made of a Yak hut, was cut in two and made into the two wings that flank the center section. These measure 20 x 25 feet, and one contains the kitchen, the other the lounge. Outside the kitchen on a small patio is a brick barbecue, and outside the lounge, overlooking the Naknek River, is a larger, paved patio.

Exterior walls of the building are of corrugated and dimpled aluminum siding. Headbolt heater outlets are provided in the parking space.

The large room is painted in salmon and light brown with maroon wainscotting. The dance floor is hardwood, and the rest of the club is floored with tile. The kitchen is in yellow and white with ample cabinets, electric stoves, refrigerator and individual lockers for all club members. The lounge features tasteful

furniture, a new pool table, and the beginnings of a library. Walls of the lounge are of interesting grainglo plywood paneling.

Johnson was loath to name workers on the project, since everybody on the station had a part in the work during the four months it took to build the club. There were a few specialists, however, such as Jim Parmalee, who built the barbecue; Jim Blair and Bob Wermers, who were the painters; John Cooksey, who built the fireplace; Ed Kline, indirect lighting expert; Edwin Anderson, chief carpenter; and Mike Boslet, projectionist and electronic music-maker. The men take credit for the tasteful color, decor, and, at the opening, the women were not inclined to correct them. The color is exceptionally pleasing.

For four months, four to five employees worked daily during off-duty hours. Most of the lumber came from abandoned surplus buildings which station personnel salvaged. Use of certain other surplus materials was authorized by CAA. However, the club bought a considerable amount of materials and furnishings to furnish the interior with funds raised from club activities.

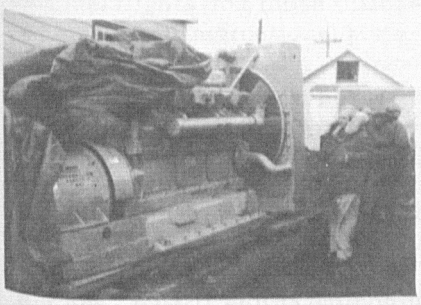
Attending the opening from Anchorage were Mr. and Mrs. Hulen, Mr. and Mrs. Emerson, Mr. and Mrs. Wilburn Hanson (co-pilot), Mr. and Mrs. George S. McKean, Mr. and Mrs. Robert T. Williams, Mr. and Mrs. Virgil E. Knight, Mr. and Mrs. Jennings Roberts, Mr. and Mrs. Frank Richter, Mr. and Mrs. Charles L. Planck, and Mr. and Mrs. Ralph Westover.

The Barrow Gas Line

OIL seepages near Cape Simpson, Alaska, were observed for many years prior to establishment of Naval Petroleum Reserve No. 4 in 1923. A series of explorations were conducted and the first test well, Umiat No. 1, drilled in 1947.

South Barrow test wells were started in 1948 and gas was actually discovered in the Barrow area in 1949. The gas lies about 2500 feet below the surface and has a steady well pressure of 1,000 pounds per square inch from wells No. 4 and 5.

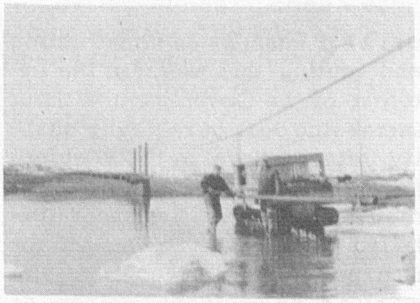
The first suggestion for use of natural gas at Barrow was a memo dated March 9, 1955 from the Regional Administrative Officer, Anchorage, Alaska, in which he outlined the desirability of a study for the construction, operation and maintenance of a municipal utilities facility ... to provide electric power and natural gas for heating ... that will fulfill all existing ... needs.



New 250 KW Generator being installed at hospital in Barrow village.

On April 24, 1956, a meeting of interested agencies (Public Health Service, Department of Health, Education and Welfare; Bureau of Indian Affairs, Department of the Interior; National Bureau of Standards and Weather Bureau) was held in Washington, D.C. and a general agreement reached for utilization of natural gas at Barrow. However, this meeting only "opened a door" to the project and much had to be done to obtain waivers, clearances, authorizations, and an engineering survey complete with plans and specifications before a contract could be awarded. Among these were permission of (1) the Senate Armed Services Committee for Civilian Use of the Natural Gas, (2) the Air Force for the contractor operating at Barrow to do any work in connection with the project, (3) Air Materiel Command for use of certain equipment, (4) the U.S. Navy for use of surplus materials necessary to the trunk line and distribution system.

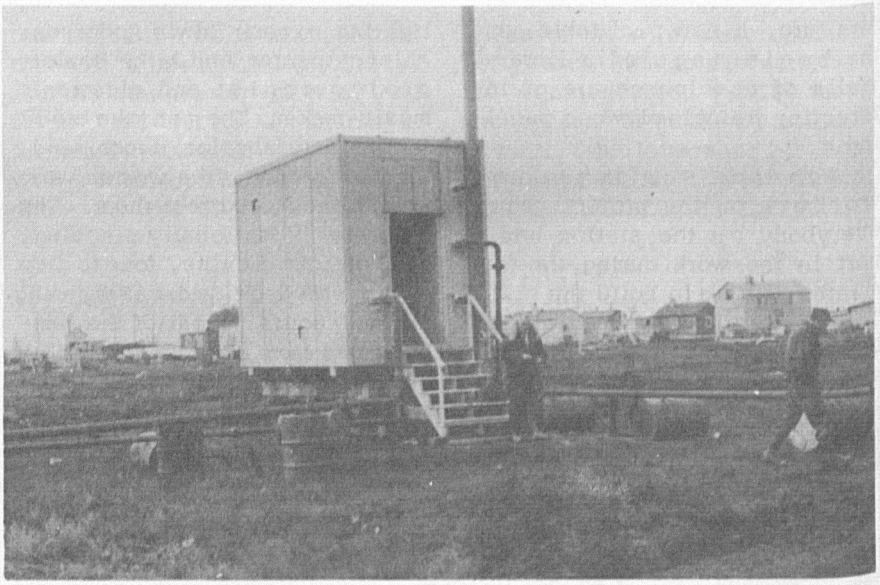
At a multi-agency meeting in Washington on April 17, 1957, a memorandum of understanding was executed for agency cost participation covering an engineering survey. This memorandum also established the Weather Bureau as the contracting agency. In June 1957 a contract was awarded the Guy B. Panero Co., New York, N. Y., for a feasibility survey, including construction plans and specifications. The report of this survey was favorable, and a construction contract was awarded to the Thorgaard Plumbing and Heating Co., Seattle, Washington on March 14, 1958.



Constructing suspended line across Nerravak Lagoon.

The nature of the terrain in the Barrow area is such that it was imperative that most of the construction work be completed before the annual thaw or vehicles would be immobilized and equipment could not be moved. An unusual feature of the contract auth-

Because of the terrain the line had to be built on the surface.



Pressure reducing and safety control station.

orized changes in construction and routing that were in the interest of the Government without increasing cost or reducing quality, after approval by the Resident Engineer. Mr. Frank Efner, Bureau of Indian Affairs, was detailed to the Weather Bureau for the period of the contract and served as Resident Engineer at Barrow. All of the pipe and most other material required for the line were provided from Navy Department surplus through the assistance of Capt. A. S. Miller, Director, Naval Petroleum Reserve.

On July 10, 1958 Weather Bureau facilities began the use of natural gas, and on July 25, 1958 the line was ready for final inspection. This inspection was made on August 5, 1958, by C. O. Schick, Chief, Procurement and Supply Section, Mr. Glen Jefferson, Regional Administrative Officer, Anchorage, Alaska, and representatives of the contractor.

With the completion of the natural gas facility other utility problems can be solved, the first being electricity. The Weather Bureau purchased a 250 KW generator that was delivered on the annual supply trip of the North Star and is now in the process of installation. This will permit the four agencies to have ample power for all requirements for years to come.

While this project was not the largest ever undertaken by the Weather Bureau, it probably was one of the most difficult from a contracting point of view because of the magnitude of complications and problems all requiring precise coordination not only with participating but also other agencies, suppliers, and organizations to insure completion in a minimum of time. These contracts were what are known as target-ceiling type and the final cost to the Government agencies for both the engineering survey and construction was 80% of the maximum funds established for the project.

Service to International Aviation

DURING the past few years, several Weather Bureau offices (other than those designated as International) have received requests to service international flights and apparently there has been confusion as to the proper course of action. This article clarifies the responsibilities of the Weather Bureau regarding the provision of service to international flights and suggests to those offices not designated as international offices, procedures for handling requests for service received from international carriers.

The U. S. is one of the 73 contracting States of International Civil Aviation Organization. In accordance with Annex 3 (International Standards and Recommended Practices-Meteorology) to the Convention on International Civil Aviation, the U.S. maintains three types of International Meteorological Offices. They are the Main Meteorological Office (MMO), the Dependent Meteorological Office (DMO), and the Supplementary Meteorological Office (SMO). In brief, the responsibilities of these offices are as

follows: the MMO prepares forecasts, supplies meteorological information and briefing to aeronautical personnel, and supplies meteorological information required by an associated dependent or supplementary meteorological office. The DMO prepares forecasts under the guidance of a main meteorological office, supplies meteorological information and briefing to aeronautical personnel and supplies meteorological information required by an associated supplementary meteorological office. The SMO supplies aeronautical personnel with meteorological information received from a main or dependent meteorological office and supplies meteorological reports otherwise available.

The following have been designated as International Meteorological Offices by the Weather Bureau:

MMO

WBAS New York (Idlewild)	WBAS Miami
WBAS San Francisco	WBAS Anchorage
WBAS Honolulu	WBAS San Juan

DMO

WBAS Baltimore	WBAS El Paso*	WBAS Philadelphia
WBAS Boston	WBAS Houston*	WBAS Pittsburgh
WBAS Brownsville*	WBAS Jacksonville	WBAS Portland (Ore.)
WBAS Buffalo	WBAS Los Angeles	WBAS Seattle
WBAS Burlington (Vt.)	WBAS Milwaukee	WBAS Tampa
WBAS Chicago (Midway)	WBAS New Orleans	WBAS Wake Island
WBAS Cleveland	WBAS Newark	WBAS Wash., D.C. (WNA)
WBAS Detroit	WBAS New York (La Guardia)	

SMO

WBAS Cold Bay
WBAS Canton Island

*Partially implemented

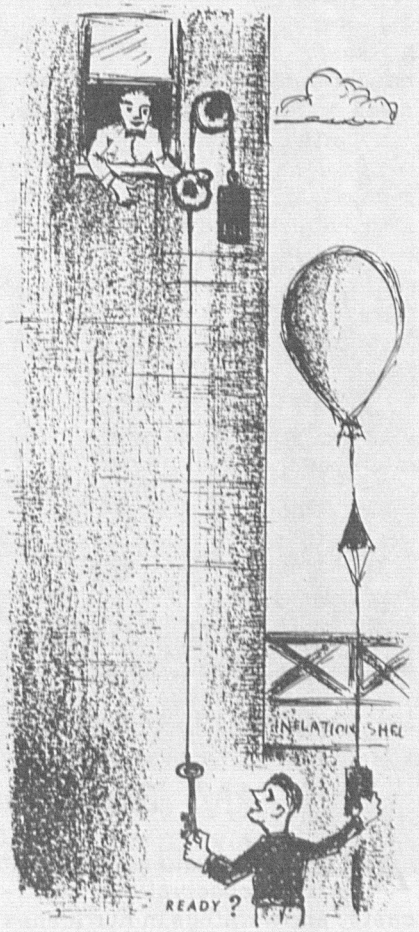
Under the Convention on International Civil Aviation, the Weather Bureau is obligated to provide meteorological service for international flights from those offices designated as International Meteorological Offices, i.e., those listed above. Of course, all offices, even those not designated as International Meteorological Offices, will provide all necessary information for utilization in transmissions to aircraft in distress.

Requests for service on international routes received by stations not appearing on the above list should be forwarded to the Central Office. However, when an international flight diverts to a station not on the above list, and before continuing, requests pre-flight meteorological service, the request should be relayed preferably to the appropriate MMO, or to the nearest DMO, detailing the information required. If the service concerns only domestic forecasts and observations, which are available, the flight should be briefed in the same manner as any domestic flight.

Balloon Runs Away with Key

KEYS have been lost before in various ways, but we believe that this is the first time that one was snatched by a balloon. It happened while a balloon was being released for a RAWIN run. The key in question was to the Inflation Shelter tied to a piece of aluminum to keep it from being lost. The observer put the key in his pocket for safe keeping, but because of the length of aluminum, part of it stuck out. During the release, the string brushed the observer, came in contact with the key and away it went.

The technician reported a very strong signal. The observer, when last seen was looking for a piece of railroad track to tie to the spare key.



Supporting Charitable Fund Drives

VOLUNTARY health and welfare agencies are a traditional and significant part of the American scene, playing an important part in the alleviation or prevention of social, personal, and health problems, and thereby making all of our communities better places in which to live. This fall the city in which each of you lives is conducting a United Givers, Community Chest, or other unified type of drive for funds to support these agencies. It is hoped that all Weather Bureau employees will respond by giving to their local drives as generously as means will permit.

Seventh Advanced Study Group

MEMBERS of the Seventh Advanced Study Group which began their 16-week course at the Central Office September 2, 1958 are the following:

Raymond L. Belknap, Central Office

Escal S. Bennett, WBO Cincinnati, Ohio

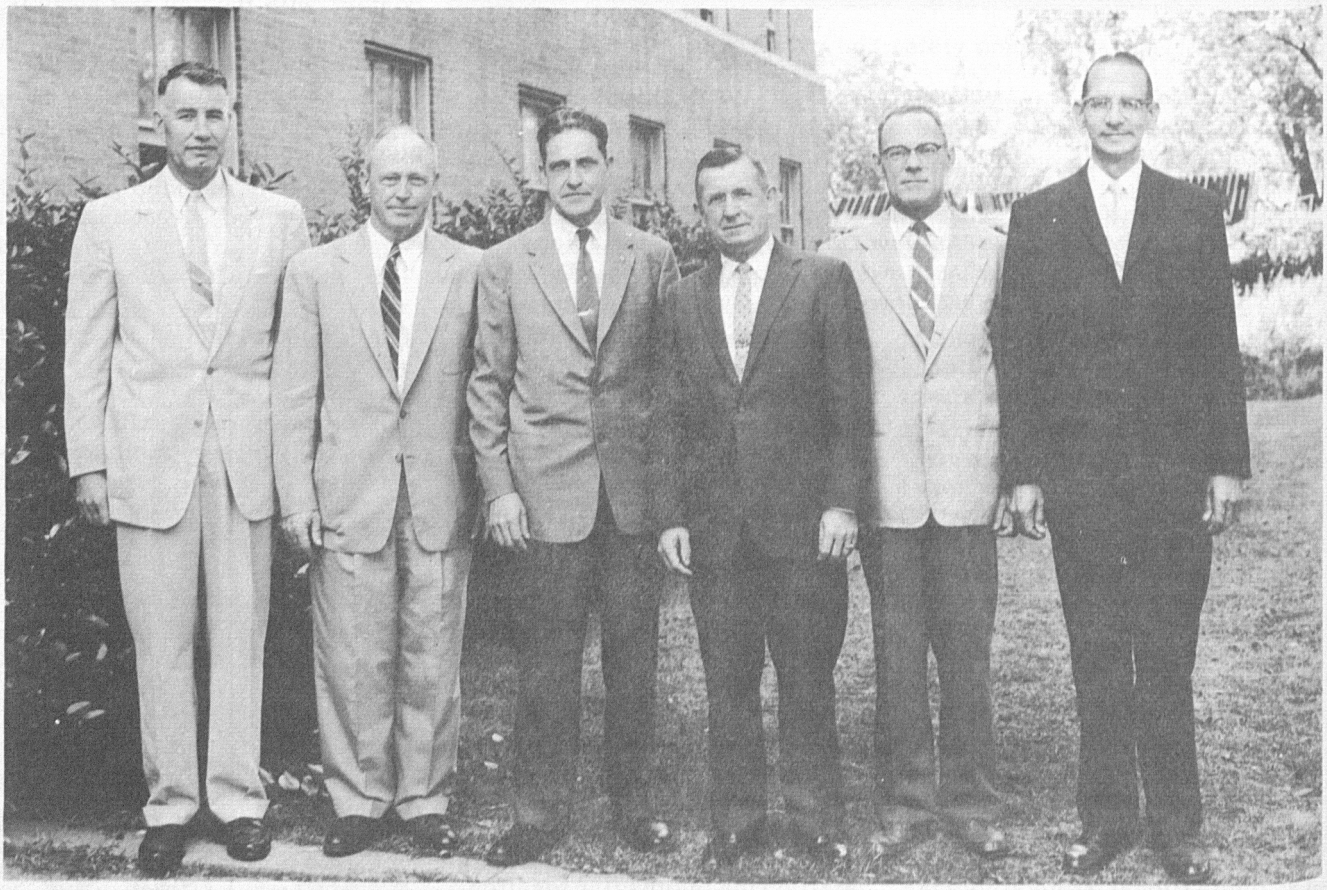
John W. Hamilton, WBAS Oklahoma City, Oklahoma

Philip W. Kenworthy, WBAS Minneapolis, Minnesota

Lloyd H. Magar, WBO Sacramento, California

Gilley T. Stephens, WBAS Memphis, Tennessee

The curriculum for this group has been expanded to include a course in radar meteorology.



Left to right—L.H. Magar, J.W. Hamilton, G.T. Stephens, E.S. Bennett, R.L. Belknap, P.W. Kenworthy

Bureau Performance in Hurricanes Daisy and Helene

ALL personnel who participated in the observations, forecasts, and warnings in hurricanes DAISY and HELENE have every reason to be proud of a job well done. The fact that no lives were lost in the very severe hurricane, HELENE, although approximately 400 miles of the South Carolina

and North Carolina coasts suffered hurricane winds and high water, attests to the effectiveness of the Weather Bureau service in this case.

Of special interest in these storms was the effectiveness of radar in tracking them when they came near the Coast. In a fine example of interagency cooperation, radar stations of several other agencies in addition to those of the Weather Bureau participated in tracking the storms.

In hurricane DAISY, the eye of the storm was detected some 150 miles southeast of Hatteras by our radar there. As it moved northward, the tracking of the storm was relinquished to the NACA radar at Wallops Island, Virginia; further north, the storm was tracked by the radar of the Naval Underwater Sound Laboratory at Fishers Island, New York. Finally it was detected by the Bureau station at Nantucket and tracked to 150 miles east of that point before contact with it was lost. The Air Defense Command Station at North Truro, Massachusetts, also assisted during the latter part of the storm.

In hurricane HELENE, stations of the Air Defense Command at Charleston, South Carolina, and Wilmington, North Carolina, simultaneously tracked this storm from a point about 150 miles off the Coast. Then as it passed northward, the tracking was turned over to the Bureau station at Hatteras, and finally when the storm moved offshore and headed eastward, fixes were obtained from the CAA radar at Norfolk, Virginia, and the Air Defense Command Station at Cape Charles, Virginia.

Radar meteorologists from the Central Office who participated in the tracking operation at the Air Defense Command, NACA, and ADC and Navy stations, included D.W. Holmes, R.D. Tarble, R.L. Smith, and R.E. Wyett. Photographic research data were gathered during the entire period of both storms.

In general, public and press reaction to the warnings with both storms has been excellent. An example is the following editorial taken from the BOSTON GLOBE, following the passage of hurricane DAISY and it is reprinted with their permission.

"Nailing a Hurricane

"The deflection of Daisy that spared the Cape is as shrouded in mystery as Daisy's own Caribbean gestation. Why hurricanes do what they do is as unfathomable as the sex of their nomenclature.

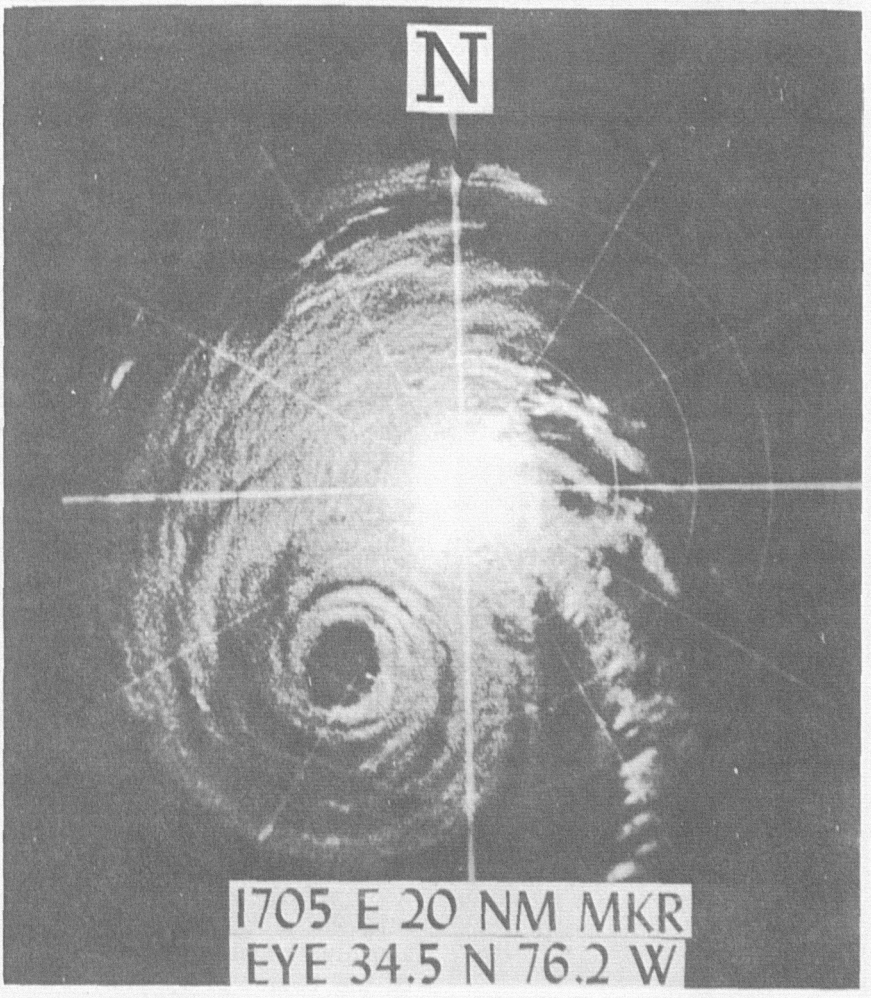
"But meteorologists are doing better with hurricanes than psychologists with women (or men?).

"And it seems to us that the Weather Bureau here in Boston did just about as exact a job of plotting and announcing Daisy's course as the present stage of the science and the appropriations allowed this agency permit. No one in New England needed to go in ignorance of the windy visitor.

"Thank you, Mr. Tenenbaum.

"And thank you, WHDH, for a clean coverage of the storm.

"We had, incidentally, an object lesson in why forecasts are difficult. The plotted course of the storm on Thursday evening promised a close brush of Cape Cod. That it might veer eastward was, of course, with the recognized possibilities. But the Weather Bureau could not gamble with lives and property and it didn't.



Hurricane HELENE, as it appeared on the radar at Hatteras.

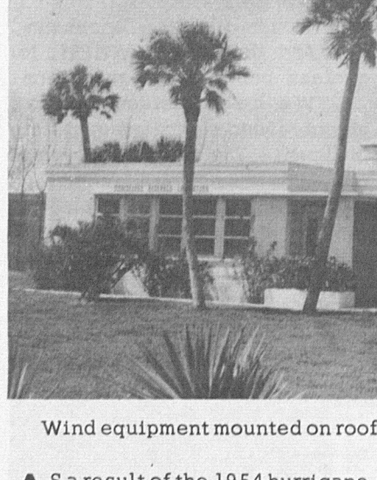
CHURN Substations Assist in Hurricane Forecasting

Wind equipment mounted on roof of lab building, Marineland, Fla.

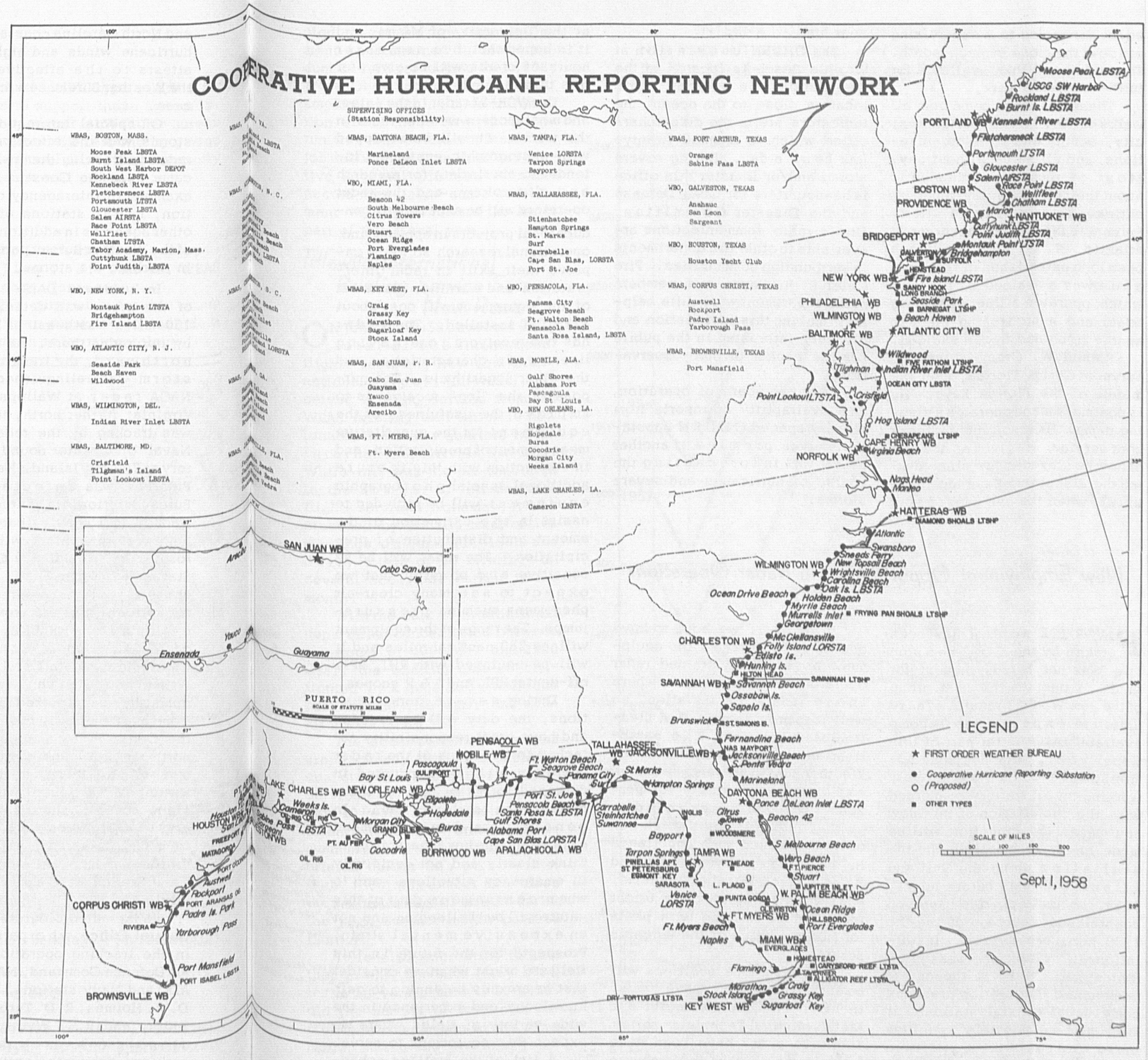
As a result of the 1954 hurricane season when great devastation was wrought upon Eastern areas of the United States, efforts have been made to strengthen the hurricane reporting network along the Atlantic and Gulf Coasts. Over one hundred substations have been established at intermediate points between regular Weather Bureau stations so that no length of coast line over twenty-five miles long would be without a hurricane reporting substation.

This Cooperative Hurricane Reporting Network is called CHURN for short. The equipment at a typical CHURN substation includes special direct reading wind speed and direction instruments with an indicator located conveniently within the observer's home; an aneroid barometer and a rain gage. These instruments are placed at sites near the coast line and are maintained principally by the Substation Inspectors.

The Observer makes one observation each day around 7:30 a.m. local standard time. Additional observations are made when a storm is impending and reports are requested by a forecast center through the supervising officer. As appropriate, these special reports are entered on teletypewriter circuits 7021 or 7072. Reports from several CHURN substations along a stretch of coast line give substantiating evidence of the course of a storm. Forms on which observations are record-



Close up of wind equipment



ed are forwarded to a supervising office at the close of each month. These data are then available for further research work.

These observers come from all walks of life, private companies, city, county and state organizations, and all serve without pay. Most of them are enthusiastic about their observing and reporting duties. For instance, Harry Fulcher is the CHURN observer at Atlantic, N. C. His family has been long established in that area and owns a seafood company which operates a fleet of fishing boats and a processing plant to handle fresh and frozen seafood.

Roland W. Craig is the observer at Craig, Florida, near the middle of the Florida Keys. He is postmaster and operates a fishing camp. He also runs a charter boat service. He gives an account of how he stayed at his place during the disastrous Keys hurricane in 1935 when the eye passed very near him.

The CHURN substation at Virginia Beach is located at the fire station. In addition to its location close to the ocean, the indicators are in the dispatchers' office which is manned twenty-four hours a day. During severe storms and/or disaster this office is headquarters for Civil Defense and the Disaster Committee. Direct radio communications are available to other fire departments in surrounding communities. Fire Chief E. B. Bayne and members of the department were quite helpful in making this installation and are very interested in the public service aspect of their observations.

After two years of operation, the availability of reports from closely spaced CHURN substations gives promise of another useful tool in forecasting the course of hurricanes and severe storms.

New Employment Opportunities in Radar Operations

FAVORABLE action has been taken by the Congress on the Weather Bureau request for funds to operate the first group of the new WSR-57 radars. These units are expected to become available in the latter part of this fiscal year. The Regional Administrative Offices are actively working on all matters connected with the installation of this new equipment. Special effort will be made to try to complete the installation along the Gulf and Atlantic Coasts before July 1, 1959, so as to provide improved coastal radar coverage during the 1959 hurricane season. Installations in the interior of the United States will follow, although, if unexpected installation problems come up at coastal stations, it may not be possible to follow these installation priorities exactly.

In general, we hope to have continuous coverage of the equipment by specially trained radar operators at each station where these radars are installed, as well as to provide a Station Electronics Specialist. The establishment of this program in the Weather Bureau presents a unique employment opportunity for personnel who are interested in getting into this field which has of late assumed such importance in the Bureau's Severe Storm and Flash Flood Warning Programs, and which holds such a bright future in connection with plans for modernization of the Bureau's services.

Initially, the positions will be established at the GS-9 grade, in both the Meteorologist and Meteorological Technician series. Tentative plans have been made for a four weeks' training course at the University of Miami, and it is hoped that five semester hours of credit will be given for this training.

The WSR-57 radar is the latest and most modern weather radar in the world. It will be equipped with photographic equipment intended to obtain data for research and climatology, and the radar operators will be expected to conduct local projects in applied and operational research so as to improve their skill in radar interpretation and warning. Each set of the equipment will cost about $125,000 installed. The radar has two receivers, one having linear gain characteristics and the other logarithmic. The purpose of the "log" receiver is to improve the usefulness of the equipment for the quantitative measurement of precipitation, and in connection with this feature additional special photographic equipment will be included to assist in the estimation of the amount and distribution of precipitation. The radar will be so sensitive and powerful that we expect to see many clear-air phenomena such as pressure-jumps. The range of the equipment will be 250 nautical miles and it will be equipped with RHI, PPI, off-center PPI, and A & R scopes.

During severe storm situations, the duty will be arduous and have great responsibility attached to it. Much of the radar operation will be conducted in darkened rooms so that the radar display can be clearly seen. In general, the duty will demand employees who have the ability to think clearly and act decisively in emergency situations, and to whom continuous duty of this nature will be challenging and not an excessive mental strain. Prospects for the future in this field are bright when we consider that we are only beginning to gain knowledge and experience in the wide variety of fields where we expect this equipment to serve.

A list of the stations sched-

uled to get the new radar equipment is contained in Memorandum 0-4.23 dated June 26, 1958, "New Observational Equipment." Employees wishing more information about these new job opportunities may obtain copies of the job description from their respective Regional Offices. It is expected that large-scale recruitment will begin toward the latter part of this fiscal year.

Idlewild International Briefing Service Sets New Record

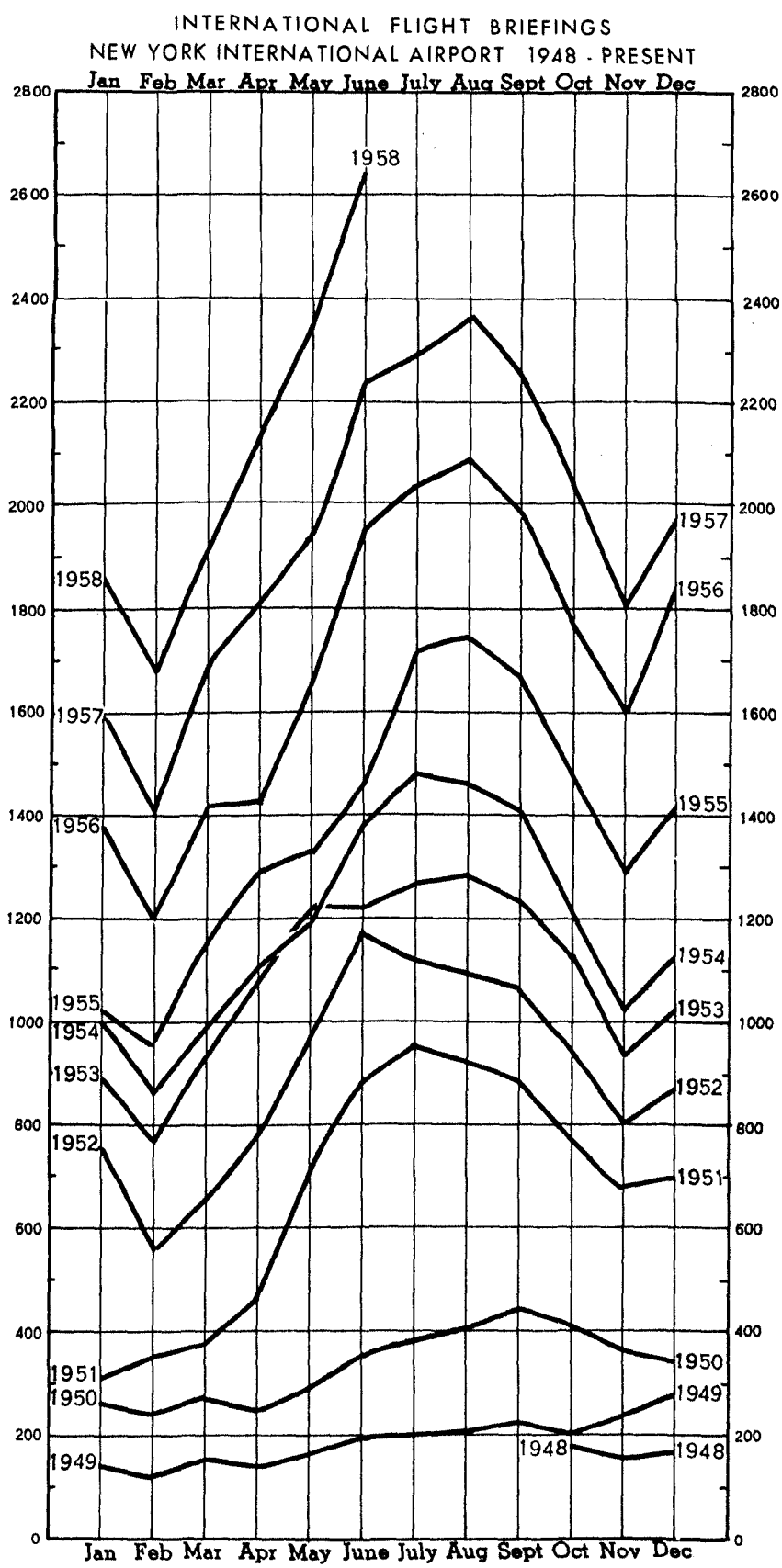
ON June 28, 1958, a record daily total of 108 international flights departing New York International Airport (Idlewild), received briefing service from the WBAS briefing unit which is now located in its new quarters in the International Arrivals Building. While this was the all-time high in the number of international flights serviced in one day, it was preceded by a daily total of 102 briefings on June 21, 1958 and daily totals of 98 briefings on several occasions earlier in the month.

With the bulk of international departures concentrated between the hours of 1800GMT and 2100 GMT, the briefing unit is confronted by a huge daily workload peak during the early and mid-afternoon hours.

The accompanying table and graph clearly trace the phenomenal growth of international traffic serviced at Idlewild during the past 10 years. Of particular significance is the fact that the minimum monthly number of flights briefed during this past winter (Feb. 1958) was almost four times the maximum number briefed during the peak summer month in 1950 (Sept.).

It is also interesting to note that at only one time (May 1954) in the 10-year period 1948-1958, did the number of briefings decrease in comparison to the same month during the previous year.

(See table on next page)



INTERNATIONAL FLIGHT BRIEFINGS
NEW YORK INTERNATIONAL AIRPORT

Year	Average Number Per Day	Maximum Number in One Day	Total Number in Year
1948	5		500
1949	6		2200
1950	11		4000
1951	22		8000
1952	29		10000
1953	36	52	13000
1954	39	70	14300
1955	45	70	16500
1956	56	97	20400
1957	64	96	23500
1958*	76*	108*	27500**

*Up to Sept. 30
**Estimated

New Agricultural Weather Service for Mississippi's Delta Area

ON October 1, 1958, the Weather Bureau's pilot project in specialized agricultural weather service for the Delta area of Mississippi began limited operations. On that date, a Weather Bureau Agricultural Service Office opened at the Delta Branch Experiment Station at Stoneville, Mississippi, WBAS Jackson issued its first "Agricultural Weather Forecast for the Delta Area" at 5:00 a.m., public and agricultural weather service teletypewriters began clicking in the newsrooms of key radio stations throughout the intensive agricultural area of Northwestern Mississippi, and ten observers in a newly established agricultural weather observation network phoned their observations to the forecast center at Jackson. This teletypewriter network has send-receive drops at WBAS Jackson, WBAS Memphis, WBASO, Stoneville, and WBO Vicksburg. It constitutes a Weather Bureau "first" in that it is the first time a "local" public service loop has been expanded to an "area" loop covering several cities not previously served by the Bureau.

At the Agricultural Service Office, John A. (Jack) Riley, Jr., Research Agricultural Meteorologist, has a fourfold task to accomplish. He will serve as a consultant to agricultural research and extension workers in the Delta, provide direct liaison services between the weather forecasters at Jackson and agricultural interests, conduct an educational program to show Delta farmers how to let weather and weather information work for them in their day-to-day operations, and work with the Experiment Station staff in preparing agricultural interpretations of the 5-day forecasts and the 30-day outlooks when the expected weather is significant to agricultural operations.

Mr. Riley begins this important assignment with a broad service background in meteorology and its applications to agriculture. While stationed at Des Moines, Iowa, he worked with plant pathologists of the U. S. Department of Agriculture in developing techniques for forecasting outbreaks of late blight of potatoes in the North Central States. Mr. Riley has also completed studies on the relationship of soil temperature to corn yields in Iowa. His training includes the "A" course in meteorology at Massachusetts Institute of Technology, a B.A. degree in geology and geography from the University of Kansas City, academic work in agriculture from Iowa State College and the University of Maryland, and studies in modern methods of weather forecasting and agricultural meteorology sponsored by the Weather Bureau.

When the program is fully implemented, WBAS Jackson will issue agricultural weather forecasts three times daily throughout the crop season. Observations from the ten substations in Mississippi's Delta area will be used internally in assessing forecast accuracy and developing objective forecasting techniques and will also be made available to the public over the special teletypewriter circuit. Observations at these stations include daily 8:00 a.m. reports of maximum and minimum temperature, precipitation, evaporation, and total daily wind movement.

This experimental agricultural weather service project of the Weather Bureau is being conducted with the cooperation of the National Cotton Council and other agricultural interests in the Mississippi Delta region.

The Weather Bureau plans to explore the possibilities of continuing this experimental program in later years under cost-sharing agreements between the Federal Government and the State Government of Mississippi. Meteorologists and agricultural experts will be watching developments in this program with great interest in order to evaluate the extent similar programs might be carried out in other regions where comparable agricultural weather problems exist.

Public Service Award Presented to Commonwealth Edison

THE Commonwealth Edison Company of Chicago was presented a public service award July 22, 1958, for its cooperation from 1952-1958 in supplying a radar set at Midway Airport, Chicago to aid in warning the public of severe weather. The award was presented to Mr. John W. Evers, President of Commonwealth Edison, by Mr. J. R. Fulks, Meteorologist in Charge of the Weather Bureau at Chicago, on behalf of Dr. F.W. Reichelderfer, Chief of Bureau.

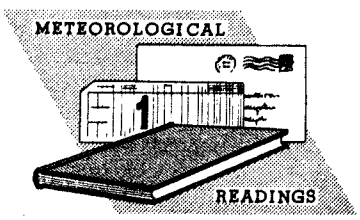
Mr. Fulks pointed out that the radar did much to aid the Bureau in tracking and forecasting the intensity and movements of rainfall, thunderstorms, squalls, and other severe weather during the years it was maintained by the Edison Company. He also cited the Edison Company for cooperation and assistance in the reporting of storms by its offices and stations, which are a part of the Bureau's reporting network around Chicago.

The Commonwealth Edison radar, recently replaced by a Bureau-owned set, was located in the Weather Bureau Airport Station at the Old Terminal Building, Midway Airport.

The presentation ceremony was held in the Edison Building, 72 West Adams Street. In addition to Mr. Evers, the Edison Company was represented by Mr. R. V. Dondanville, Research Manager, under whose supervision the radar equipment was supplied to the Bureau, and Mr. R. T. Purdy, Superintendent of Power

Left to right—John E. Hovde, Ivan W. Brunk, Joe R. Fulks (Weather Bureau); R. V. Dondanville, John W. Evers, R. T. Purdy (Commonwealth Edison Co.); Robert O. Reinhold (Weather Bureau)

Supply and in charge of the committee that sponsored the research of which operation of the radar was a part. Others from the Weather Bureau were Mr. John E. Hovde, assistant in charge at Chicago; Mr. Ivan W. Brunk, Supervising Public Service Meteorologist, and Mr. Robert O. Reinhold, Chief Airport Meteorologist, Midway Airport.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment No. XVIII: Forecasting Ocean Waves, by W. H. Munk and R. S. Arthur, and Ocean Waves as a Meteorological Tool, by W. H. Munk on pages 1082 through 1100 of the Compendium of Meteorology.

About the Assignment: Two principal methods of ocean wave forecasting have emerged since World War II. Both give comparable results in general, but like most forecasting techniques it is difficult to determine in advance which is best for a given situation.

The assigned article presents one method while the other may be found in HO publication No. 603, Observing and Forecasting Ocean Waves, by Pierson, Neumann, and James, which is available at many stations.

For information on maritime observations, see Weather Bureau Training Paper No. 14, Observing and Reporting Sea and Swell.

QUESTIONNAIRE

Col. 61 Determination of storm distance by the frequency analysis method is based on the time rate of change of the wave
1. period
2. height
3. velocity
4. direction

Col. 62 Waves approaching shore break when the depth is approximately
1. 1/3 of the wave height
2. 2/3 of the wave height
3. Equal to the wave height
4. 4/3 of the wave height

Col. 63 A storm surge speed depends mostly on
1. water depth
2. wave height
3. wave period
4. wind speed

Col. 64 As swells decay, what changes take place in wave period and height?
1. Both increase
2. Both decrease
3. Period increase, height decrease
4. Period decrease, height increase

Col. 65 Waves with periods of 15 minutes would be classified in this article as
1. forerunners
2. swell
3. storm surges
4. tidal waves

Col. 66 What effect would an opposing wind have on the swell arrival?
1. Earlier and lower
2. Later and higher
3. Earlier and higher
4. Later and lower

Col. 67 Significant waves are not satisfactory for the detection of storms at sea principally because
1. Observations are lacking
2. these waves may move too slow
3. observations require special instruments
4. these waves not always generated

Col. 68 What parts of the wave spectrum are most useful for storm tracking?
1. short-period
2. long-period
3. optimum band
4. significant wave period

Col. 69 What storm situation might be suspected with waves of four feet and 12 sec. period observed at La Jolla, California?
1. local storm
2. Coastal Fronts
3. Gulf of Alaska
4. Southern Hemisphere

Col. 70 What transient state wave would be, generated by a wind of 50K acting for a period of 20 hours, according to Munk's diagram?
1. 10 ft 8 sec
2. 20 ft 9 sec
3. 40 ft 10 sec
4. 60 ft 15 sec

CORRECTION

Correction to Meteorological Readings Honor Roll - TOPICS August 1958.

Include Mr. James A. Harman in the list of individuals with perfect scores on the first twelve Meteorological Readings Assignments.

Scientific Talent Search Test—1958

ALL the answer sheets for the Scientific Talent Search Test administered last June have been graded, rechecked for accuracy, and the participants informed of their scores. The large number involved (every third Weather Bureau employee took the test) severely taxed our grading and processing facilities. Additional information on the test will be announced soon.

Question Box

Q. Where can I obtain information on the use of Fax Map AXUS 2 (Precipitable Water Analysis) in day-to-day local area forecasting?

A. WB Manual Chapter IV-B-51, Facsimile Transmissions. Included in this chapter is a discussion of the Fax Map showing Precipitable Water.

Aerial Photograph Makes Good Visibility Chart

CAM Beecroft of WBAS Sacramento reports the following action in making revised visibility charts for his station:

"Recently we acquired an excellent large aerial photograph of an area covering some 350 square miles surrounding this station. This chart is mounted on a section of four-by-four foot masonite, suitable for posting on our quarters wall behind the observational console. The scale of the photo is about one inch to the mile and is a very clear picture. On this large chart we have entered outer check points to seven miles by means of concentric circles. The check markers now in use have been labeled and their exact location pin-pointed. The concentric circles are scaled from seven miles down to one mile. To depict inner markers (under one mile) concentric circles are again entered on a second blown-up chart (photo shows one square mile and measures eighteen inches by eighteen inches) and all current check points labeled. The scale on the smaller chart runs from one mile down to zero. The smaller chart has been placed in one corner of the large chart."

Other stations may have good aerial photographs available and want to prepare similar charts. If so, they may be used in lieu of the expanded scale charts required by Par. 2110 of Circular N. Note that a separate chart to include the entire range of visible objects is still required, however.

Added Benefits Available Under GI Insurance

A new provision for increased total disability income may be added to National Service Life Insurance policies (GI Insurance), beginning November 1, 1958, for a small additional premium cost.

In brief, policyholders who become totally disabled from any cause before reaching age 60 and while the rider is in effect, will receive an income of $10 a month for each $1000 face amount of the policy. (A similar provision for benefits of $5 a month per $1000 face amount is currently available.)

Payments under the clause begin after the total disability has existed for six consecutive months and continue for the duration of the disability, regardless of its length.

No payment may be made for disabilities incurred after a policyholder reaches age 60, and no premium charge is made for the benefit after that date.

The premium cost for the new provision will vary according to the policyholder's age, type of policy, and face amount. For a policyholder at age 40 with a $10,000 policy, it is tentatively estimated that he will pay about $1.60 a month extra for the rider. If he should become eligible for benefits, he would receive $100 a month.

A medical examination will be required to obtain this coverage.

The new protection will not be available until November 1, 1958. Applications will not be accepted until October 27, 1958. Complete information may be obtained at any Veterans Administration office. In Washington, D.C., information can be obtained by calling code 118, ext. 2047 or 2322.

NEW MIC'S

Rockford, Ill.

LAUREL W. DAHLIN, now in charge of the Marquette, Michigan office has been selected for transfer as MIC of the new airport station at Rockford.

Mr. Dahlin is 52 and began his Weather Bureau service on January 3, 1928. His assignments have been at Minneapolis, St. Paul, Chicago, return to Minneapolis, Duluth, and since June 21, 1953 as MIC at Marquette.

Las Vegas, Nevada

REID B. GARDNER, at present in charge of the Flagstaff, Arizona WBAS, will be the new MIC at Las Vegas WBAS.

Mr. Gardner is 45 years of age, entered the Bureau on October 6, 1937 and has served at Modena, Las Vegas, Great Falls, Salt Lake City, Northway, Ely, and since July 22, 1951 has been MIC at Flagstaff.

CORRECTION

Lake Charles, La.

The article which appeared in the September issue of TOPICS regarding the selection of a new MIC for Lake Charles, La. is hereby corrected to indicate that Joe D. Worrell, presently a member of the Lake Charles staff has been selected for this position.

Mr. Worrell is 52 years of age, entered the Bureau at Knoxville, Tenn. in December 1939, and held subsequent assignments at Memphis and Jacks Creek, Tenn. prior to his assignment at Lake Charles in December 1949.

RETIREMENTS

James H. Ferguson

JAMES H. FERGUSON, Supervising Forecaster, WBAS Fort Worth, retired September 30, bringing to a close a career which started as assistant at the Groesbeck, Texas, kite station 38 years ago.

Mr. Ferguson entered the Bureau shortly after graduation from Groesbeck High School in 1920.

He was promoted to observer in 1923, and three years later he accepted transfer to Washington to work in the Aerological Division. While stationed in the Central Office from 1926 to 1930, he attended night school at George Washington University, completing two years of college work toward his B.A. degree which he received in 1932 at Southern Methodist University. He later took graduate work at Texas Christian University and Texas A. & M. From 1930 to 1936, Mr. Ferguson served as Airways Forecaster at Dallas, and in 1937 he transferred to Fort Worth as Supervising Forecaster, where during the past 21 years he has attained an enviable reputation in forecasting.

A Mason and Knights Templar, Mr. Ferguson was for many years a member on the drill team of the Worth Commandery which has won numerous state and national competitions. He is also a member of the American Meteorological Society, National Association of Weather Forecasters, and the Rotary Club. Included in his hobbies are golfing, collecting antiques (furniture and glass), and do-it-yourself projects.

No firm plans for the future have been revealed by Mr. Ferguson, but one who has displayed enthusiasm and interest in his work such as he has for the past 38 years will undoubtedly continue to maintain a close association with the science of meteorology.

Mr. Ferguson will continue to make his home in Fort Worth where he can be contacted at 4105 Bilglade Road.

Anthony A. Hock

ANTHONY A. HOCK, Printing Supervisor, WBO New York, retired September 30 after 30 years of government service.

A native New Yorker, Mr. Hock studied printing at the New York Trade School. He served with the Navy during World War I, and, returning from the military in 1919, worked as a printer in private industry for several years. Joining the Weather Bureau on July 29, 1929, he spent his entire career in the Bureau as a printer at WBO New York.

Mr. Hock is looking forward to retirement as an opportunity to devote more time to fishing, gardening, and traveling. He plans to spend some time in Florida this winter but will maintain his residence at 19 South Elm Street, Hicksville, Long Island, New York.

Charles B. Nichols

CHARLES B. NICHOLS, Photographer-Platemaker-Pressman, National Weather Records Center, Asheville, retired September 30 after more than 37 years of service with the Bureau.

Mr. Nichols was born in Columbus, Ohio, on August 15, 1903. He attended Kirkwood, Georgia, High School and commenced his printing career in Atlanta as a press feeder in a local printing shop. Entering the Weather Bureau as a messenger boy at Atlanta on March 16, 1920, he served progressively as minor observer, under observer, printer, senior printer, and hand compositor. His service was continuous at Atlanta except for one year spent in private industry in California. With the change from hand composition to photo-offset processes, and closing of the printing plant at Atlanta in 1948, Mr. Nichols transferred to Chattanooga as a process plate maker. When printing facilities were further consolidated in 1954, he accepted an assignment in Asheville, serving there until his retirement.

Mr. Nichols has returned to Atlanta where he will make his home at 98 Warren St., N. E.

Victor V. Phillips

VICTOR V. PHILLIPS, a veteran of nearly 33 years of Weather Bureau service, retired from his position as Meteorologist in Charge at Wichita on September 30 because of disability.

Through the years "Vic" has exhibited leadership, dedication to public service ideals, and exceptional drive and ability that have led to many unique accomplishments. Entering the Bureau on May 5, 1923, as a laborer in his home town of Groesbeck, Mr. Phillips later served as assistant at Macon and as Official in Charge of the Brownsville, Texas station which he established in 1929. He interrupted his career in the Bureau in 1930 and for two years he was with Pan-American Airways, organizing and developing a weather reporting system along the air routes that were being established from Brownsville to the Canal Zone. Returning to government employment in 1932, he opened a new station at Pueblo, serving there as OIC until 1934. Subsequent assignments included Atlanta, Winslow, and Concordia. On June 20, 1942, he was selected to head the station at Wichita, where he has made a major contribution to a more effective weather service for the past 16 years, furnishing timely weather advices to the general public, as well as providing aggressive leadership and training to those under his supervision.

A pioneer in the development of local storm warning networks and a man who has grown and developed in understanding of what a meteorological public service program should be, Mr. Phillips' excellent work has been recognized on numerous occasions by the public he has served. He received the Kiwanis Citizenship Award for his outstanding work during the disastrous flood of April 1944, as well as many expressions of thanks and appreciation for the splendid manner in which he and his staff handled both the 1944 and 1951 flood emergencies in Wichita. His proposal in 1956

that newspaper mats be provided by the Weather Bureau for distribution to the press to assist with the tornado educational program resulted in widespread publicity for the Bureau's tornado forecast and warning program. His contribution was recognized with a $100 award by the Bureau and an additional $50 award for second place in the Department of Commerce quarterly suggestion contest.

The Weather Bureau enjoys an excellent reputation in the Wichita area because of Mr. Phillips' day-to-day service to the press, radio and TV stations, industrial interests, and the general public. For many years he provided outstanding liaison with the National Flying Farmers Association, attending conventions and accompanying them on flights as their weatherman. Illness the past two years has forced him to curtail these activities.

Always deeply concerned for the welfare of his fellowman, Mr. Phillips spearheaded a drive for funds to aid four Weather Bureau employees in Topeka whose homes were flooded while they remained on duty during a flood emergency in 1951. Total contributions to this worthy cause amounted to almost $7,000. Another of his projects is Hilltop Manor in Wichita, a mutual housing association of 400 units which he formed shortly after World War II to provide veterans an opportunity to own low-cost housing.

Mr. Phillips has also found time to participate in community activities and to cultivate many hobbies and other outside interests. He is a Mason and a member of the Wichita Midian Shrine's "Million Dollar Band." Woodworking is a favorite hobby which he has perfected to the degree that after retirement he plans to engage in fine cabinet making and construction of luxury kitchens. The "Victor" rain gage for weather hobbyists was designed, patented, and manufactured by him and has been sold throughout the country.

Mr. Phillips has retired because of ill health and his many friends and acquaintances are hoping that release from the responsibilities of his position, combined with rest and medical attention, will be instrumental in effecting a complete recovery for him. Mr. and Mrs. Phillips and their teen-age daughter, Emily Ann, will continue to make their home in Wichita where friends may contact them at 1441 Lieunett Street.

Jesse W. Smith

JESSE W. SMITH, Meteorologist in Charge, WBAS Tallahassee, retired August 31, bringing to a close a career which started as messenger boy at Birmingham more than 44 years ago.

Mr. Smith was born in Woodstock, Alabama, May 11, 1896. He commenced his Weather Bureau career following graduation from Birmingham High School in 1914 and a year later transferred to Montgomery with promotion to observer, serving there until 1930, except for one year of military service in the Signal Corps during World War I. He spent the winter of 1930-31 in the Central Office as a student forecaster and upon completion of this detail, Mr. Smith went to Winnemucca as Official in Charge, remaining there until 1938 when he accepted an assignment as forecaster at Oakland. He has been Meteorologist in Charge at Tallahassee since the station was established in October 1939.

After retirement, Mr. Smith expects to devote considerable time to developing a residential subdivision in Tallahassee. He is being assisted in this project by his son, Bill, who teaches meteorology at Florida State. Other plans include fishing, hunting, and traveling. Friends may continue to contact the Smiths at 209 Lovelace Drive, Tallahassee.

Charles F. Crum

CHARLES F. CRUM, Meteorological Technician, WBAS Augusta, Georgia, died suddenly on September 3, 1958 at the age of 48.

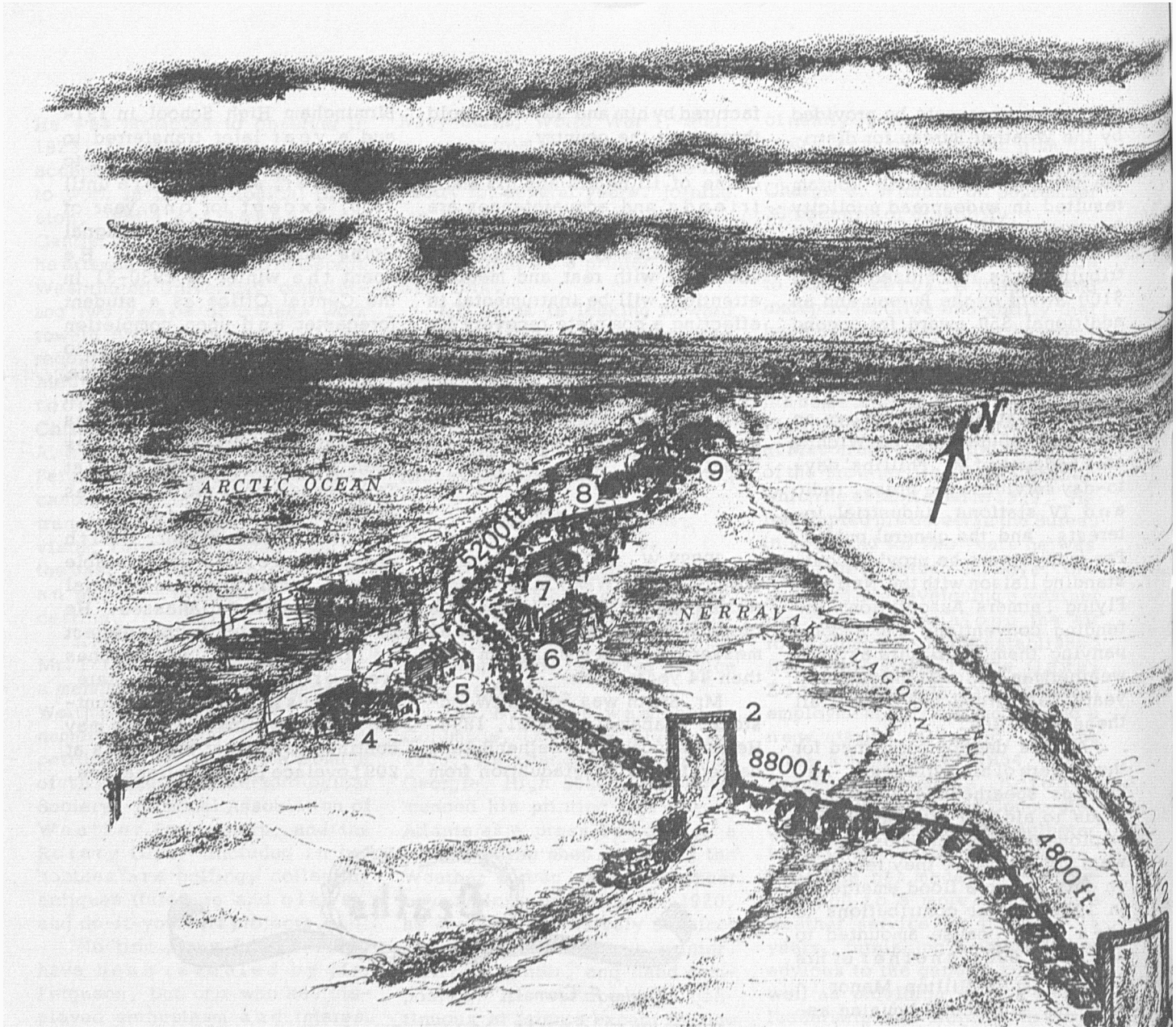
A native of Indiana, Mr. Crum attended High School in Cristobal, Canal Zone, where he spent his boyhood, and the University of North Carolina. He was employed by the Panama Canal, Section of Meteorology and Hydrology, for about 15 years before accepting employment in the Weather Bureau at Augusta, Georgia on March 8, 1948. All of his Weather Bureau service was at the Augusta station.

Besides his wife, Mrs. Mary Carawan Crum, 2430 Wheeles Road, Augusta, Georgia, he is survived by his mother in Jacksonville, Florida and a brother in Miami, Florida.

Joseph A. Grace

JOSEPH A. GRACE, former Personnel Officer at Fort Worth, died September 22 in Dallas. Mr. Grace retired on disability July 18, 1957, after more than 20 years of service. An article on his retirement was published in September 1957 TOPICS.

Mr. Grace is survived by his wife who resides at 1618 Grand Avenue, Fort Worth, and three sons, and a daughter, all of the home address.



THE BARROW GAS LINE

See page 177

LEGEND

1 Gas wells.
2 Road crossings. (Pipe overhead)
3 Dry lake.
4 USWB area.
5 PHS and BIA area.
6 Pressure reducing valve station.
7 Alaska Communication Service area.
8 Browerville area.
9 National Bureau of Standards area.

WEATHER BUREAU

TOPICS

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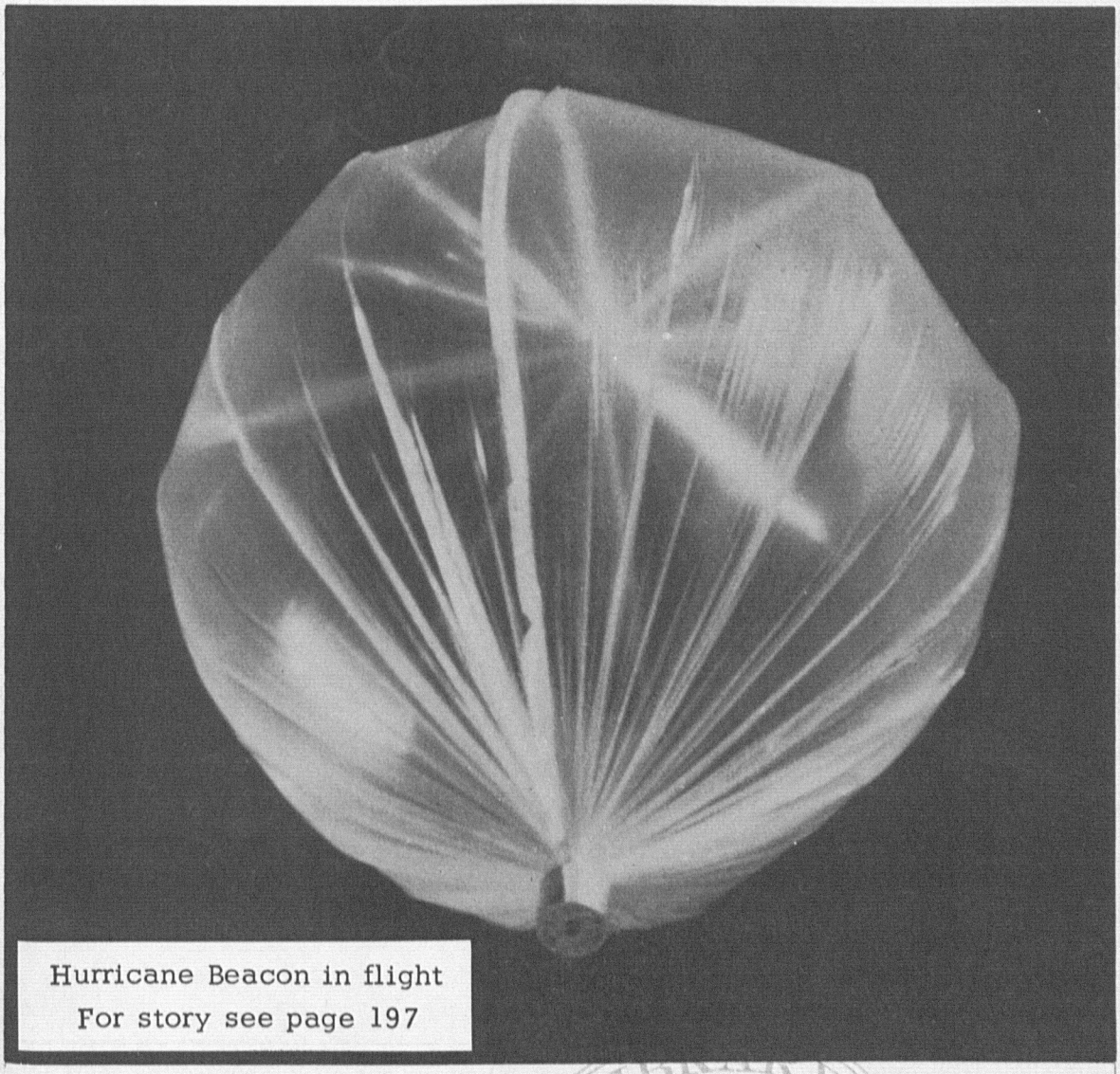
1958



Hurricane Beacon in flight
For story see page 197

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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.

Meteorologist in Charge

Nels E. Johnson

NELS JOHNSON brings to his new position as Meteorologist in Charge, Pacific Supervisory Office, Honolulu, a broad background in meteorological work in the Pacific and other parts of the world, both in the Air Force in World War II and in the Weather Bureau. While at the Central Office he was directly concerned with Pacific operations. He also served for a time as Chief of the Philippine Rehabilitation Program.

Mr. Johnson is a native of New Jersey, born November 23, 1917. He received his AB degree from New Jersey State Teachers College in 1940 and then took a year of meteorology at MIT in 1940-41. He served briefly in the Weather Bureau office at Newark, New Jersey from June to September 1941, then entered on active duty with the Army Air Corps. During his career in the Air Force he attended the General Staff and Command School at Leavenworth, Kansas. He served the latter part of his Air Force career with the Air Transport Command and during this period traveled in South America, Africa, India, China, and Europe. He rose to the rank of Major by the end of the War and subsequently to Lieutenant Colonel.

Upon termination of active duty with the Air Force in 1946 Mr. Johnson went to work at the Central Office in Overseas Projects. He served with the Philippine Rehabilitation Project the latter part of 1948 and early 1949. He subsequently became Chief of the International Section and

participated in numerous international conferences of the International Civil Aviation Organization and World Meteorological Organization, in capacities ranging from advisor to head of delegation. He also served as Weather Bureau/CAA liaison representative for several years. In spite of his very busy schedule and frequent travels, Mr. Johnson maintained an interest in further education and took a series of courses in statistics and administration.

Nels and Virginia Johnson have two young sons. The Johnsons took an active part in garden club activities while living at Falls Church, Virginia during the past several years and were successful in raising some prize-winning chrysanthemums. It is assumed that their new assignment will give them an opportunity to extend this hobby in the garden spot of the Pacific. The Johnsons recently also became interested in the Cub Scouting program and were active in civic affairs especially in the Poplar Heights Citizens Association and the cooperative community swimming pool project established in their area at Falls Church.

Mr. Johnson is a professional member of the American Meteorological Society, National Geographical Society, American Association for the Advancement of Science, and American Geographical Society of New York. He took an active part in the Monument Toastmasters Club of the District of Columbia, a unit of Toastmasters International.

Changes in Commerce Officials

SINCLAIR WEEKS' resignation as Secretary of Commerce was effective November 10, 1958. His successor is Admiral Lewis L. Strauss, former Atomic Energy Commission Chairman.

Mr. Frederick H. Mueller, former Assistant Secretary for Domestic Affairs, has been appointed to fill the vacancy created by the departure of Under Secretary of Commerce Walter Williams.

Under Secretary of Commerce for Transportation Lewis S. Rothschild resigned effective November 1, 1958. As of date of publication no successor has been named.

Reduction in Raob Errors

WE are happy to report that during the first 6 months of 1958 there has been a significant decrease in the number of baseline errors. A tabulation for the past 18-month period follows:

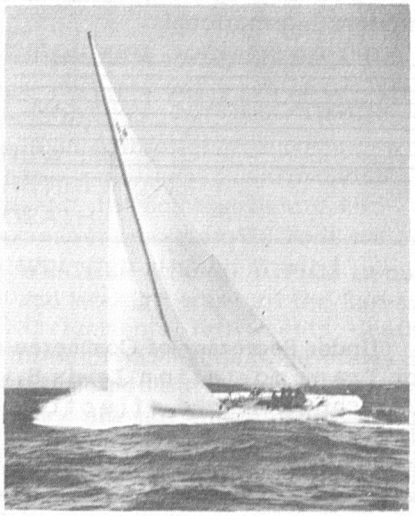
Jan.- June 1957 ----- 68 errors
July - Dec. 1957 ----- 64 "
Jan.-June 1958 ----- 32 "

These are errors of the type that affect the accuracy of the entire observation, and result in the loss of radiosondes and man hours. The cooperation of all raob personnel in making this reduction possible is greatly appreciated.

WB Reports Assist in "Columbia" Victory

THE contribution of the weather information supplied by WBAS Boston to the victory of the "Columbia" in the America's Cup races at Newport, R.I., has been gratefully acknowledged by both the owner and the skipper, who have written as follows:

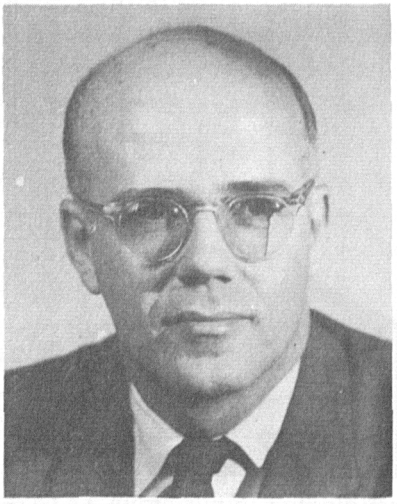
"The forecasts of direction, velocity and time of wind and the passing of fronts were more accurate by far than any other weather information I have been able to receive," and "To the Weather Bureau and most excellent forecasters with much appreciation."



Dr. Frank A. Gifford Named Member of Advisory Committee on Reactor Safeguards

DR. FRANK A. GIFFORD, JR., has been appointed a member of the Advisory Committee on Reactor Safeguards by the Chairman of the U. S. Atomic Energy Commission.

He is Meteorologist in Charge of the Oak Ridge Office, U. S. Weather Bureau (assigned to the Commission's Oak Ridge Operations). The appointment is for a four-year term beginning September 17, 1958.



The Advisory Committee on Reactor Safeguards, a group of scientists and engineers who are not members of the Commission's staff, was established in September of 1957 by amendment to the Atomic Energy Act of 1954. The Committee's primary functions are to review safety studies and facility license applications referred to it, and to advise the Commission with regard to the hazards of proposed or existing reactor facilities and the adequacy of proposed safety standards.

Dr. Gifford, a native of Weehawken, New Jersey, has been associated with atomic energy meteorology programs since 1952 and has been in charge of the Oak Ridge Weather Bureau Office since 1955. Since working with the atomic energy programs, Dr. Gifford has been carrying out research on theory and prediction of atmospheric diffusion and transport in connection with reactor site selection studies and hazards evaluations.

He has been author of several technical papers related to atomic energy and meteorology, and his most recent was a paper presented in August at Oxford, England, at the International Symposium on Atmospheric Diffusion and Air Pollution.

Dr. Gifford was graduated from New York University with the degree of Bachelor of Science in meteorology. He received his master's and doctor's degrees in meteorology from Pennsylvania State University. He is a member of the American Meteorological Society, American Astronomical Society, Scientific Research Society of America, and the International Mars Committee.

Tornado Activity in Southern New England

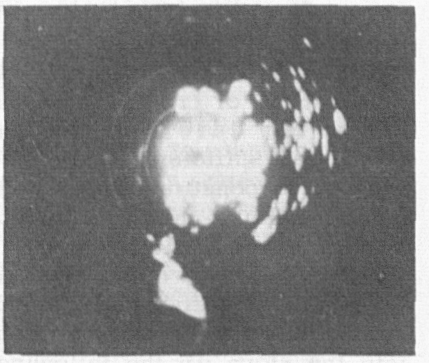
CHARLES C. CLARK of Worcester, Mass., sends the following article on tornado activity in Southern New England:

"On the afternoon of September 7, 1958, a weak instability line, followed shortly by an active cold front, passed through southern and central New England. The Worcester radar picked up the instability line forming over west-central Massachusetts at 1230E. This line pushed steadily eastward developing to the south and dissipated over Rhode Island. The cold front was first picked up on radar at 1300E, some 30-40 miles west of the instability line.

The front also developed to the south through Connecticut. One very strong cell developed over southwest Connecticut and moved east-northeastward increasing in size and intensity. At 1528E, a "J" hook developed on the northwest side of the cell. Pictures were taken of this cell and at 1542E a fine picture was obtained showing a handle of the northwest side of the cell. Also, upon close inspection, a small appendage was noted on the west side of the echo. Radar tops at this time, ranged from 31-35,000 feet. Plotting this appendage out (203/33) places it directly over the Windham Airport in Connecticut. This was apparently the tornado that caused damage at the Windham Airport.

"According to Mr. Pack, State Climatologist for Connecticut, 'Destructive winds apparently first touched the ground a few hundred yards west of Route 89 in the southeast corner of the town of Mansfield. The storm's path, estimated at not more than 100 yards wide, moved about east-northeast to the Windham County Airport and continued for a short distance along Route 6 in the town of Windham. Total path length as judged by damage was of the order of one mile, possibly slightly longer. The storm was accompanied by very heavy rain which, in addition to the suddenness of the storm was blamed by eyewitnesses for the failure to definitely see a funnel cloud.'

"This tornado at Windham, Connecticut, while not on the size of western storms, still did damage. I believe this is the first actual tornado picture taken in New England on Weather Bureau radar. The set here at WBAS Worcester is a WB #1, and the picture was taken on the 50-mile range, 1 micro-second, and at 3/4 gain. The cell is about the only echo in the picture, the rest being ground clutter."



Radar picture of thunderstorm cell with a small tornado on west side taken at WBAS Worcester, Mass.

Testing the Hurricane Beacon

SOME tropical meteorologists believe that the circulation in the center of a hurricane is such that a floating balloon once launched would be retained within the eye. It was further reasoned that if a small radio transmitter could be suspended from the balloon, one could use radio direction finding methods to track the storm while still far from land.

In a cooperative effort of the NHRP and the Air Force's Geophysical Research Directorate at Cambridge, Massachusetts, a hurricane beacon system was designed and built. The initial package was completed during the summer of 1957, after the last hurricane of the season. The 1958 hurricane season offered the first opportunity for full-scale tests of the beacon under actual hurricane conditions. The beacon drops were made from the TB-50 aircraft flown on the Hurricane Project by the Air Weather Service. The following is extracted from the report of Carl Reber, Operations Manager, NHRP, on the results of the sometimes frustrating but eventually encouraging tests. We believe they will be of interest to others.

"On the morning of September 4, Mr. Gentry and I, flying in B-50 No. 007, with Mr. Payne of GRD in the rear section of the aircraft to monitor the beacon signals, proceeded at 6,000 feet for the first drop of a hurricane beacon into a tropical storm. At that time Tropical Storm Ella was located in the Gulf of Mexico, at approximately 23.4 N, 87.8 W. Captain Newkirk was the aircraft commander, and Captain Jordan was flying as first pilot.

"After making several penetrations of the storm, which had a weak and rather ill-defined central area, Mr. Gentry selected the point to drop the beacon. Watching through the window in the bomb bay, I observed and photographed with the hand movie camera the falling away of the bomb-like casing containing the transmitter, balloon and helium tank for free-air inflation of the balloon. As the "bomb" fell away, I observed the small pilot parachute and the large parachute to open in rapid succession. By that time the device was out of my visual range, and the pilot began a left turn so we could view it out of the side windows. We observed that the balloon failed to inflate and the entire transmitter, balloon and parachute assembly settled on the surface of the sea a few minutes after release.

"Despite the set-back encountered with the drop into Ella, we made our plans to drop another beacon in the first suitable storm, which turned out to be Fifi. Meantime, the GRD crews had rechecked all of their equipment to locate the possible reason for failure on the Ella drop.

"For the Fifi drop we agreed to use one of the balloons which is designed to float around 14,000 feet. With the bomb in B-50 No. 007, Mr. Simpson, Mr. Krizan

and Mr. Payne undertook to make the drop into Fifi on the morning of September 8. In this test the balloon was seen to come out of the casing as intended and to inflate, after which the casing dropped into the sea. Also, the radio signals were heard but failed for some reason after about 10 minutes.

"Recorded data and visual observations of tropical storm Fifi on this date indicated the storm was sufficiently well developed to constitute a fair test of the theory that the beacon should remain within the eye. However, because of the gradual weakening of Fifi we abandoned our plans to make another drop into the storm on the following day.

"Our next opportunity for tests of the hurricane beacon came with Hurricane Helene. On September 24, with Helene up to full hurricane force, we had our best opportunity to date to test the theory of whether a balloon would remain within the eye of the storm. As in the previous test, the beacon released and inflated as intended. During the inflation process, the balloon and attached transmitter continued to descend before reaching its lowest level and then going through a sinusoidal altitude variation pattern before becoming stabilized. However, the radio signal was not heard. Because the eye of the storm was relatively free of clouds, we were able to follow the balloon visually for some 25 minutes.

"Encouraged by the floating tests of the drop into Helene, we prepared for another drop into the storm on the 25th. On this day, the eye of the storm presented a beautiful sight. The sun was 50 degrees above the western horizon, causing the east wall of the eye to be illuminated as brightly as a snow bank, and the west wall to appear dark and ominous.

"This time, we realized our best results. The radio transmitter, now set to be on continuously instead of the normal one minute out of six, came through loud and clear. Between the multitudinous tasks which the flight meteorologist must handle, I was able to record D/F bearing at intervals of one or two minutes. While flying within the eye and at distances of up to 60 miles from the eye, the radio signals continued to give us reliable bearings. Finally, at the end of one hour and 50 minutes of continuous transmission, the batteries began to give out from the continuous drain and the signal faded away.

"During the almost two hours we recorded the signal, we recorded enough D/F bearing to demonstrate to our own satisfaction that the balloon continued to remain within the eye of Helene, and well away from the eye wall.

"Our next task is to improve on the equipment, so further tests can be made to prove conclusively that the beacon will remain in the eye for extended periods and will give us storm position information over distances well beyond the range of land based radar."

A subsequent plot of the D/F bearings obtained on September 26 shows that the balloon and beacon assembly completed almost two complete circles within the eye during the tracking period. Also, radar film from stations along the Carolina coast shows an object, believed to be the beacon, circling within the eye of Helene some hours after the radio signals were lost. The speed and path described by this object rules out the possibility that it was an aircraft.

Safety Awards Presented to Weather Bureau

THE Aviation Division of the Ohio State Safety Council presented an Award of Merit to each of the First-Order Weather Bureau Stations in the State of Ohio in recognition of their outstanding contribution to operational aviation safety.

Mr. C.E.A. Brown, Chief, Division of Aviation for Ohio, made the presentations at a seminar held in the Grand Ballroom of the Hotel Carter in Cleveland on the evening of September 16, 1958.

Present to receive the awards

for their various stations were: Mr. R.C. Robinson, Akron; Mr. H. N. Burke, Cleveland; Mr. T.R. Gillam, Dayton; Mr. H.S. Kenney, Columbus; and Mr. E.S. Bennett, Cincinnati. Mr. D.E. Coleman, Toledo and Mr. C. Barton, Youngstown were unable to attend.

The Wind Never Blows at Barter Island

ASCENSION number 451 attained an altitude of 71,000 feet and touched down 300 yards from point of release still operating O.K. when retrieved. This was the 2330Z Raob of August 14. Archie Shaw was on Raob and Raymond Gentry was on Rawin. They walked out, watched it land and retrieved it. The instrument suffered no apparent damage although the balloon had burst and it came down with nothing to restrain the fall.

Winds at Barter Island average 12.5 mph and the fastest mile frequently exceeds 70.

Selection of Appropriate Fire Extinguishers

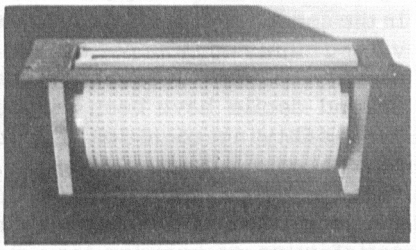
ALL stations should be supplied with adequate fire fighting equipment.

Extinguishers of the carbon dioxide, dry chemical, and/or vaporizing liquid type, all provide preliminary, and in some instances complete control on all types of fires. Further, since they are not subject to freezing, they may be installed in the inflation shelter.

Where adequate protective equipment of this nature is not currently available, requisitions to procure should be prepared and forwarded through appropriate channels.

Extinguishers are available through the Federal Supply Service.

Displaying Pressure Tables



A device for displaying pressure tables has been brought to the attention of the Central Office. Since it may be of interest to some stations, a description follows:

Mr. C. R. Sauer of WBAS Rapid City, S. Dak., has made a neat and convenient pressure reduction table display which consists of a drum positioned between two end supports. This assembly is mounted behind a face plate of one-eighth inch masonite. The drum, constructed of sheet aluminum fastened to turned wood disks, is fourteen and one-eighth inches long by six and one-half inches in diameter. The inner surface of the face plate is chamfered along a horizontal slot to allow positioning the drum closer to the front. A disk attached to the drum extends through the face plate, allowing the drum to be rotated from the front.

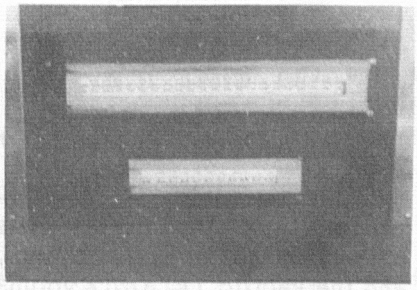
Pressure reduction tables are mounted on the drum, and the station pressure argument is fixed on the face plate, while the temperature argument is a part of the tables on the drum. The horizontal slot in the face plate is large enough to expose two rows of the tables, to allow for interpolation.

Mr. Sauer has also constructed a similar device for conversion of altimeter setting to station pressure. This drum is smaller—eight inches long, and two and three-quarters inches in diameter.

While the Weather Bureau does not plan to construct such a device, it does represent a handy method devised by one station for displaying the present types of pressure reduction tables.

A pressure reduction computer which has been under development in the Central Office for some time is planned to be issued within the next year. The computer will be a circular slide-rule for computing both sea-level pressure and altimeter setting. When it is placed in use, the present types of sea-level pressure reduction tables will become obsolete.

We understand that some other stations have made devices serving the same purpose, some of them employing the chart rolls from electronic tube testers.



Practice Forecast Program Results

THE question was recently raised as to whether there were enough "winners" in the Practice Forecast Program. Some employees may feel that the sending of four top participants to Kansas City each year for an evaluation and development detail is the main purpose of the program. We would like to point out that the Kansas City detail each year is just a very small part of the overall Practice Forecast Program even though this project is very important to the four selected and to the Weather Bureau.

Practice Forecast Program results are furnished all members of the Central Office Placement Board and all Regional Administrative Officers. These complete listings are referred to routinely when promotions and transfers are considered. This is the main value of the program. Participants, employees, and the Bureau all profit when this additional information is used as an aid in making placement decisions. Such information is, of course, used in conjunction with all other known facts about the individual.

The program furnishes daily practice under competitive conditions. This practice plus the remedial action made possible by the quarterly detailed results benefits all participants and not just a few who might be selected for special training or special jobs.

The names of those in the first decile are published each year in TOPICS so that their outstanding work in the program may be recognized. Consistently good work in the second and third deciles is valued highly and four participants who have never been above the second decile have been sent to Kansas City in recognition of good work over a number of years. Those participants in the third decile or above generally have the satisfaction of knowing they did as well as the average of official forecasters for the verification stations. Even those participants in the fourth and fifth deciles can point to their record as proof of above average ability.

After taking part in the program, a more tolerant and understanding view of official forecasting problems often results among below average participants who formerly thought it would be quite easy to beat the official forecaster. Quite a number of participants who finished in the sixth, seventh, and eighth deciles conducted a self-analysis and forecast evaluation that enabled them to determine areas of weakness which, over a period of time, could be corrected with diligent study and practice. Such participants show an improving trend in their results and this trend shows the employee has promise. Even those finishing in the ninth and tenth deciles have benefited if the results show them that forecasting is not their strongest field and that one of the many other useful fields of meteorology may offer more progress and happiness.

In recognition of their accomplishment, the names of participants who finished in the first decile for 1957 are listed below by rank:

1. Eggleston, J. H.	Lake Charles, La.	12. Falkowski, E. F.	Flint, Mich.
2. Foster, R. J.	Toledo, Ohio	13. Kennedy, W.E.	Cleveland, Ohio
3. Gilbert, L.R.	Columbus, Ga.	14. Hayes, W.P.	Syracuse, N.Y.
4. Van Den Brink, C.	Des Moines, Iowa	15. Schilling, J.T.	Knoxville, Tenn.
5. Johnson, W.S.	Denver, Colo.	16. Krueger, D.W.	Milwaukee, Wis.
6. McCoy, C.R.	Syracuse, N. Y.	17. Blandino, G.	Milwaukee, Wis.
7. Larson, L.B.	Walla Walla, Wash.	18. Lawrence, J.F.	Fresno, Calif.
8. Eaton, E.L.	Atlanta, Ga.	19. Haigh, H.V.	Des Moines, Iowa
9. Sedlak, R.V.	Cleveland, Ohio	19. Harris, E.	Chicago, Ill.
10. Rauch, Rd M.	Bismarck, N.D.	21. Gress, E.F.	Milwaukee, Wis.
11. Cross, H.E.	Houston, Texas	21. Overgard, G.B.	Moline, Ill.

The Scientific Talent Search Examination of 1958

LAST June, 1387 Weather Bureau employees from all parts of the continental U.S., Alaska, and the Pacific Islands voluntarily took the Scientific Talent Search Examination.

The examination consisted of five parts which were assigned various weights based on past results with other groups outside the Weather Bureau. All questions were multiple choice with a selection of four answers. Weather Bureau scores for each part of the test and the weighting factors used are as follows:

Verbal Abilities: Weighting Factor: 1.0; High: 95; Low: 15; Mean: 58.1. (Unweighted score: The same.)

Quantitative Reasoning: Weighting Factor: 1.4; High: 140; Low: 0; Mean: 90.8. (Unweighted, High: 100; Low: 0; Mean: 64.9.)

Mathematical Formulation: Weighting Factor: 2.0; High: 184; Low: 0; Mean: 46.8. (Unweighted, High: 92; Low: 0; Mean: 23.4.)

Spatial Visualization: Weighting Factor: 1.0; High: 100; Low: 0; Mean: 71.0. (Unweighted score: The same.)

Hypothesis: Weighting Factor: 1.3; High: 130; Low: 0; Mean: 66.6. (Unweighted, High: 100; Low: 0; Mean: 51.3.)

The overall score for the examination was obtained by adding the scores for these five parts and dividing by 6.7, which is the sum of the weighting factors. Thus, the final grade is on the scale of 0-100. Overall score results for the Weather Bureau were: High 90; Low 5; and Mean 49.7.

Top Scorers in the examination are being notified of their selection for a special self-development program. A description of this program will appear in a later issue of TOPICS.

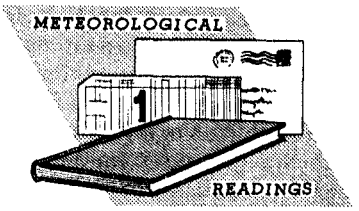
A Touch of the Old West

IN the following memorandum *from San Angelo*, a touch of the "Old West" still remains.

"Authorization for rental of a Post Office Box for the Weather Bureau in San Angelo is requested.

"The reasons for this request are as follows: Our rural mail box attests the markmanship of our West Texas motorist some five times. The last time, just recently, six pieces of mail, including our supply of Local Climatological Data, were punctured by a rifle shot. (Our checks were in the box at the time, but they were lying flat and, luckily, escaped perforation.)"

A downtown Post Office Box to prevent recurrences of official mail being punctured by bullets was authorized.



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment No. XIX: Geological and Historical Aspects of Climatic Change by C. E. P. Brooks, on pages 1004 through 1018 of the Compendium of Meteorology.

About the Assignment: There can be no doubt about the fact that important climatic changes have taken place in the past. The details concerning these changes are not so clear but many ideas and factual relationships are available. This type of information, together with theories of climatic change, is included in this assignment. Recommended extra reading: Climatic Change, by Harlow Shapley Trends in Climatology, by Helmut E. Landsberg, Science, Vol. 128, No. 3327, October 3, 1958.

QUESTIONNAIRE
Assignment No. XIX
(To be answered by participants after reading assignment.)
(For complete information, see TOPICS May 1957.)

Col. 61 What type of weather was characteristic of the advances during the "Little Ice Age?"

1. cold winters and cool springs
2. cold winters and mild springs
3. mild winters and cool springs
4. mild winters and mild springs

Col. 62 What indicates that European rainfall is less now than during the sub-Atlantic climatic stage?

1. tree ring records
2. condition of the peat bogs
3. lake level records
4. condition of the vineyards

Col. 63 What type of climate prevailed in Europe during the Climatic Optimum?

1. cool and dry
2. warm and dry
3. cool and humid
4. warm and humid

Col. 64 What important conclusion is based on the pre-Cambrian and other early glacial deposits?

1. the sun is a variable star
2. the sun is not a variable star
3. the earth is cooling
4. the earth is not cooling

Col. 65 What glacial advance in North America took place at the time of the Riss in the Alps?

1. Wisconsin
2. Illinoian
3. Kansas
4. Nebraskan

Col. 66 Which of the following factors was most important to the reduction of the average world temperature due to surface elevation in the Quaternary?

1. decrease of temperature
2. increased cloud amount
3. increased area of snow and ice
4. increased evaporation

Col. 67 What parts of the solar radiation cycle did Simpson consider conducive to glaciation?

1. maxima
2. minima
3. near the maxima
4. near the minima

Col. 68 According to Zeuner, what combination of elements of the earth's orbit leads to glaciation

1. small obliquity, high eccentricity, and winter in aphelion
2. small obliquity, high eccentricity, and summer in aphelion
3. large obliquity, low eccentricity, and winter in aphelion
4. large obliquity, low eccentricity, and summer in aphelion

Col. 69 What deflected the storm tracks south to make the

present desert areas of the Sahara the main centers of population?

1. southward extension of ice sheet
2. topographic changes in East Africa
3. continental drift
4. northern hemispheric winter during aphelion

Col. 70 On what evidence is the high latitude warming during the Jurassic epoch based?

1. salt beds
2. corals
3. tree rings
4. glaciers

A Chain of Events Set in Motion by the Passage of a Hurricane

WE print below, by permission of the Editor of the Manchester Guardian, a letter from a bricklayer in Barbados to his employers.

"When I got to the building, I found that the hurricane had knocked some bricks off the top. So I rigged up a beam with a pulley at the top of the building and hoisted up a couple of barrels full of bricks. When I had fixed the building, there was a lot of bricks left over. I hoisted the barrel back up again and secured the line at the bottom, and then went up and filled the barrel with extra bricks. Then I went to the bottom and cast off the line. Unfortunately, the barrel of bricks was heavier than I was, and before I knew what was happening the barrel started down, jerking me off the ground. I decided to hang on and halfway up I met the barrel coming down and received a severe blow on the shoulder. I then continued to the top banging my head against the beam and getting my fingers jammed in the pulley. When the barrel hit the ground it bursted its bottom, allowing all the bricks to spill out. I was heavier than the barrel and so started down again at high speed. Halfway down, I met the barrel coming up and received severe injuries to my shins. When I hit the ground I landed on the bricks, getting several painful cuts from the sharp edges.

"At this point I must have lost my presence of mind, because I let go the line. The barrel then came down giving me another heavy blow on the head and putting me in the hospital. I respectfully request sick leave."

Use of Colored Teletypewriter Ribbons

FOR several years some of our larger field stations have been using different colors of teletypewriter ribbons to identify data received on the various circuits serving the office. Although the different colored ribbons are listed in the Stock Catalog we feel this information should be called to the attention of all stations, some of which might want to use the colored ribbons. Offices with as few as two circuits will find a second color of value for identifying data on the display clips or in the files. A supply of the five colors (black, blue, green, purple and red) is maintained at each Regional Office and orders on your regular stores requisition form for any or all colors should be placed with them.

Forecasters' Forum

Skill-Less Forecasts

Dear Sir:

Some meteorologists nowadays are issuing "forecasts" for single days and up to five years in advance. Some people think well enough of these "forecasts" to pay money for them and to base decisions on them.

Such predictions have been made for presidential inaugurations, for bowl football games, and other public events. On those occasions when these predictions verify, the publicity releases are embarrassing to those who claim you can't forecast the weather day by day for more than two or three days ahead.

"... the issuance of detailed day-by-day weather forecasts for more than two or three days in advance is misleading and is not justified by present meteorological knowledge." (Statement on Weather Forecasting, American Meteorological Society, July 1, 1957.)

While these two viewpoints seem to collide head-on, I wonder whether the disagreement is over the meaning of the word "forecast". The meteorologist who issues the "forecast" may use the Merriam Webster definition of "forecast" which is, "A prophecy or estimate of a future happening or event." However, other meteorologists insist that skill distinguishes forecasts from climatological estimates of future weather. The fuss is over the basis of the estimate and not necessarily over its accuracy.

Can the weather be foretold accurately for a single day months or even years in advance? The truth is that in carefully selected cases it can be predicted years in advance with accuracy of 90 percent or greater. There is nothing mysterious about such predictions. All that is needed is about 25 years of data and a few hours

of time. A high speed computer is not required although it could perhaps be used to shorten the work.

I will now show how to make a skill-less forecast for Pasadena, California for next January 1, the date of the famous Tournament of Roses parade and Rose Bowl football game.

First, I count the number of times rain has occurred midnight to midnight for the past 25 years. I use December 31, January 1, and January 2 to give me more representative data, but yet recent enough to minimize the influence of changes in climate that take place very gradually. Traces are not counted because they are too light to cause disaster, and anyhow, they are counted as either rain or no rain in various verification systems.

I count nine days with measurable rain in the 75 year days. This means that a forecast of no rain every time would be right 88 percent of the time. Because the parade and game both take place during the daylight hours, I can obtain even greater accuracy by forecasting only for the 12-hour period between 6 a.m. and 6 p.m. A count shows that it rained only eight times in the 75 year days of data. The probability of no rain during the 12-hour period then becomes 89 percent. Some of you may be interested in a further breakdown into 6-hour periods. Beginning with midnight to 6 a.m., the 6-hour probabilities are 96, 92, 92 and 93 percent. Certainly there is nothing wrong with the accuracy of a no-rain forecast for Pasadena on New Year's Day for 1959, 1960 or 1963. But many meteorologists would feel guilty if they issued a climatological outlook for New Year's Day 10 months in advance and called it a forecast. Are not forecast users likely to ask, "Who cares about skill when you can make 89 percent accurate forecasts without skill?"

Of course, the climatological estimate of weather for a specific date is not new in the Weather Bureau. Some employees have been giving outlooks to individuals upon request. A recent example is an estimate of the weather probabilities for Inauguration Day, Jan. 20, by M.L. Waggoner ("Presidential Inauguration Day Weather," Weekly Weather and Crop Bulletin, Jan. 14, 1957, p. 8). The probability of fair weather for Inauguration Day (8 a.m. to 8 p.m.) is 75 percent, high enough for a rather confident forecast by some.

Not having on hand any controlled use test results, I cannot know what are the economic, psychological, and physiological benefits of the skill-less but accurate forecast, nor how it compares in value with the skillful forecast. Speculation would only lead to "wordshed."

I want to suggest that climatological prediction can be a useful product. What is the nature of the roadblock in our minds or feelings which makes us feel guilty about issuing 89 percent accurate estimates of future weather?

What we need is a new name for the climatological outlook. We want to save the word "forecast" for skillful predictions if we can. The word "outlook" is colorless and hackneyed. Personally I like "Weather Preview."

Here is a Weather Preview for New Year's Day 1959:

"New Year's Day will likely be fair again this year in Pasadena with only an 11 percent chance of rain. The temperature at dawn will be about 40 degrees warming to about 65 degrees by early afternoon. Sunshine is likely most of the day.

"This preview of New Year's Day weather is based on a careful study of the past 25 years. Forecasts for New Year's Day will be issued beginning Dec. 30. Watch for them."

I believe that this preview would make the front pages of Los Angeles newspapers if given a timely release on our press circuit. Similar previews could be issued for Memorial Day in Indianapolis for the auto races, and for major holidays and other events in which there is great public interest. It is surprising how little people know about the weather probabilities for a particular day. Perhaps such previews of coming weather would be useful to many people, and enhance the good opinion they have of the Weather Bureau.

R. B. Meyer
WBAS
Los Angeles, Calif.

Proper use of such Qualifying Terms as Westerly, Northerly, etc.

THE words "westerly" "easterly" "southerly," and the like are perfectly legitimate meteorological terms when used to indicate the direction from which winds are blowing. Perhaps we should restrict terms of this type to use in describing wind directions.

On some occasions lately these modifying terms have been used in describing movement of pressure systems, hurricanes, etc., in a way that might be quite confusing.

One such use in a meteorological discussion was as follows "....hurricane _____ which now seems to be moving northward slowly is expected to turn westerly to ....." Another instance that I recall "... the path of the low will curve to a more northerly course ....."

From the reasoning in the text it appeared that in both cases the "erly" suffix was intended to mean

"ward" or the direction toward which the system was to move. Since this is quite different from the accepted meaning of the terms westerly, northerly, etc., such usage might well be avoided.

Emil Kurtz
District Forecaster
Los Angeles, Calif.

Employee Suggestion Box

Mortimer Buchwald $10
Asheville, N. C.
O&SF Division has adopted the suggestion that certain changes be made on adiabatic charts when computations are made for CPD blocks and maximum and extrapolated altitudes. This will improve neatness and aid in verification and correction. There will be nominal savings at NWRC due to ease and accuracy in transcribing these data. Change 2 of Cir. P will incorporate these changes.

Kenneth R. Clark $15
Sioux Falls, S. Dak.
O&SF Division has adopted the idea of discontinuing Form 1131 "Report of Differing Ceiling Measurements." A short memo can be used when the infrequent cases of differing ceilings occur and will save printing and stocking the form.

Robert E. Corbin $10
Winslow, Arizona
F&SR Division has furthered the use of a list of Spanish phrases and contractions with English equivalents for distribution to stations in the Southwest. This will assist users, especially pilot briefers in translating observational remarks from the Mexican stations.

C. Benjamin Carnahan $15
Salem, Oregon
Administrative Operations has adopted this worthwhile proposal whereby strips of reflectorized tape are applied to the edges of the doors to serve as a warning to motorists approaching from the rear that a door is open. This may reduce the possibility of injury to the occupants or damage to the vehicle.

Henry J. Paul $25
Baltimore, Maryland
Leonard G. Pardue $25
Miami, Fla.
F&SR Division adopted the suggestion of having teletypewriter tapes precut at those stations having local public service loops for use in distributing safety rules in emergency situations and other pertinent information at times of unusual atmospheric disturbances. This should save considerable time since station routine would not be interrupted by requests for information during extremely busy periods. (March 1958 TOPICS)

Margie M. Tucker $15
OMR, Central Office
OMR has adopted the use of a form letter for requesting publications for the WB library, especially those on a free charge or exchange basis. Library service is improved and considerable time saved in typing by the use of this form.

Ralph S. Wolbach $10
O&SF Div.
O&SF Division adopted the suggestion that hot air hand and face driers be installed in a recently constructed Weather Bureau building. Elimination of paper towels and related accessories are expected to result eventually in economy and offset the initial installation costs as well as create more sanitary conditions.

Henry R. McQueen $25
Battle Creek, Mich.
F&SR has adopted this suggestion recommending the use of abbreviations which would indicate the situation clearly when a maximum or minimum temperature equals or exceeds a record previously established. Use of these new abbreviations will help considerably in eliminating confusion as to whether a previous record has been exceeded or only equaled and whether the record is for so early or late in the season or for the particular month.

Rheinhart W. Harms $10
Ft. Wayne, Ind.
A suggestion recommending that a ceiling balloon partly filled with warm water be used to melt frozen rain from the receiver of a rain gage so that it will drop into the gage where it can be measured. Adoption has been put into effect by means of item II in Memorandum of May 6, 1958 to all weather reporting stations.

Dolores Contreras $15
RAO Ft. Worth
The Fort Worth Regional Office has adopted this suggestion to eliminate carbon copies of cancelled Certificates of Authority to Take Weather Observations (Form 1190) in RAO Ft. Worth. A savings in filing space will result.

Allen D. Stedry $35
St. Joseph, Mo.
F&SR adopted this suggestion which resulted in a double postal card (WB Form 613-1) which will assist observers in replying to stations reactivating the local storm warning networks. By merely tearing off one portion of the card, the volunteer observer signs his name indicating his willingness to serve as an observer. A considerable amount

of time will be saved in correspondence, filing, posting, etc., at the many offices having networks by the use of these cards rather than letters or memoranda.

Grady McKay $10
Asheville, N.C.
Office of Climatology has adopted the suggestion of installing a "double punch and blank column" device on the Alwac III-E computer at NWRC. This device will detect double punched cards or those having been left blank.

Roy L. Anderson $15
Great Falls, Montana
O&SF Division adopted the suggestion that headings be placed on RADU messages. Geographical areas are now included such as Central Plains, Gulf Coast, etc. These headings have aided users of these data.

Eulafoye Thomas $15
WRPC Kansas City
Administrative Operations adopted the suggestion of padding WB Form 910-9 on the right side rather than the left side. This will assist employees stamping the return address on the pad since there will be no problem of having to fold the sheet all the way back.

Elmer R. Nelson $15
Hydrologic Service, CO
Hydrologic Services has adopted the suggestion of discontinuing WB Form 650-7 when flooding occurs but no flood losses resulted. This will save time at field stations which have to prepare the report even though no losses resulted.

Robert O. Werlein $25
Madison, Wis.
A suggestion which resulted in the transmission of stability index on RAWARC whenever the index is negative. This accomplishes the transmission somewhat earlier than had previously been done on "C" as far as Raob stations on RAWARC circuits are concerned.

Beulah L. Taylor $65
NWRC Asheville
NWRC Asheville has adopted this suggestion to eliminate the back gang punching of Weather Bureau and Navy land raob punch card data with a resultant savings of approximately $1,500 in machine and personnel time.

Marion A. Crosby $15
NWRC Asheville
NWRC Asheville adopted this suggestion for a new form "Record of Long Distance Call" for use in the NWRC. The form provides space for entering data when phone calls are received requesting publications, copies of record, etc. It will also serve as a reminder for the person taking the call to record the name of the caller, firm name and address, and other pertinent information.

James A. Lunny $15
RAO New York
Administrative Operations Division adopted the suggestion recommending that certain leased lines by the Telephone Co. be marked on Form 400-12 "For telemetering purposes." Tagging of lines by the Telephone Co. will tell lineman to call the Bureau before working on the lines. Technician's time and outage periods should be reduced by this method.

Length of Service Awards

40-Year Awards

Panama
Edward H. Marx
Salt Lake City, Utah
Samuel D. Green

30-Year Awards

Austin, Texas
Hoye S. Dunham
Caribou, Maine WBAS
George L. Courville
Central Office
John C. Hagan
Michael F. Morgan
Cleveland, Ohio WBAS
David Bruce
Columbus, Ohio WBAS
Howard S. Kenny
Harrisburg, Pa. WBAS
Arland W. Ewing
Helena, Mont. WBAS
Henry C. Slenes
Lakeland, Fla.
Warren O. Johnson
Louisville, Ky. WBAS
Kenneth O. Anderson
New York, N.Y. RAO
Anthony A. Hock
Samuel Smith
San Francisco, Calif. WBAS
Ralph T. Hanna
Lyle B. Rasey
Winslow, Arizona WBAS
Dorsey P. Marting

20-Year Awards

Alpena, Mich. WBO
Elton M. Gard
Asheville, N.C. WBO
Isabella L. Lewis
Asheville, N.C. NWRC
Dorothy W. Rembert
David H. Stancil
Atlanta, Ga.
Robert S. Allen
Bismarck, S. D. WBAS
William A. Muldoon
Bristol, Tenn.
J. Lloyd Branson
Central Office
Raymond L. Belknap
George F. Brewster
Ira D. Boyle
John L. Ford
Maurice Kasinoff
Gilbert D. Kinzer
Donald A. Mathews
Vaughn D. Rockney
Honolulu
Elmer M. Chadsey
Kansas City, Mo. RAO
James L. Ripps

Lander, Wyoming WBAS
Robert J. Ewers
Little Rock, Ark.
George C. Martin
Lynchburg, Va. WBAS
Dewitt T. Jackson, Jr.
Newark, N.J. WBAS
Carl Boethling
New Orleans, La.
Robert F. Hasling
New York, N.Y. RAO
Evelyn M. Rice
Orlando, Fla.
Wilbur F. Pearson
Pendleton, Ore. WBAS
Glenn M. Lee
Phoenix, Ariz. F I
Donald T. Van Osdol
Portland, Ore. WBAS
Edward W. Nelson
Raleigh, N.C. WBAS
Paul J. Bowers
San Diego, Calif. WBAS
Lester Epstein
Sioux Falls, N.D. WBAS
John D. Quinn

10-Year Awards

Amarillo, Texas
Fred C. Rennke
Antarctic
Charles F. Fopay
Asheville, N.C. NWRC
Rachel W. Babb
Lucille T. Gamache
Boston, Mass. AWP
Hugh J. Greenan
Burrwood, Fla.
James L. Smith
Central Office
Lalah B. Kohl
Hazel M. Lawrence
Vincent S. Murino
Austin H. Nagle
Josephine A. Snyder
George R. Toney, Jr.
Charleston, S.C. WBAS
Polly Black
Great Falls, Mont. WBAS
Earl F. Robinson
Houston, Tex. WBAS
Fred O. Robinson
Kansas City, Mo. RAO
Mary F. Rutherford
Kansas City, Mo. WRPC
Donna L. Fishman
Kansas City, Mo. WBFC
Harry A. Gordon
La Guardia Field, N.Y.
James P. Dillon
Miami, Fla. WBO
Dorothy W. Mixon
N.Y. International Airport
Vincent J. Nunziata
Norfolk, Virginia AWP
Joseph T. Brady
Oklahoma City, Okla.
Eula A. Depuy
Omaha, Nebr. WBAS
Paul H. Hagerty
Salt Lake City, Utah WBAS
Glade H. Gerber
Jack B. Hardman
San Juan, P.R.
Edward R. Miller
Sault Ste. Marie, Mich. WBAS
Francis V. Arny
Seattle, Wash., PWP
Jack D. Kelly
Max E. Silver
Sheridan, Wyo. WBAS
James K. Tyrrell
Tampa, Fla.
Robert R. Hill

NEW MIC'S

Flagstaff, Arizona

Paul W. Sorenson has been selected to succeed Reid B. Gardner as Meteorologist in Charge at WBAS Flagstaff, Arizona. He is presently serving as Meteorologist at the Flagstaff station.

Mr. Sorenson entered the Bureau as Observer at WBAS Salt Lake City, Utah in October 1942. Other assignments include Observer in Charge at Coalville, Utah and Flagstaff, Arizona.

Wichita, Kansas

W. Gordon Wylie, now a forecaster at Honolulu WBAS, has been selected to succeed Mr. Victor V. Phillips as MIC at Wichita.

Mr. Wylie is 43 and began his Weather Bureau career on October 18, 1937 at Fresno. Subsequent assignments were at Burbank, Los Angeles, (Scholarship at UCLA), Seattle and Honolulu, where he has been a forecaster since August 1950.

RETIREMENTS

Grace W. Carter

A career of more than 40 years of dedicated public service came to a close on October 31 when Grace W. Carter retired as Head of the Central Office Travel Unit, a position she has held for the past 22 years.

A native of Mississippi, Miss Carter graduated from Biloxi High School and took teacher training at Wiggins and McHenry, Mississippi Normal Schools and Tulane University. She taught in the Mississippi public schools from 1908 to 1918 but gave up this profession to enter government service during World War I. She was employed by the War Department from September 1918 to June 1920 and came to the Weather Bureau by transfer on July 1, 1920. Miss Carter served as a statistical clerk and examiner in the Climatological Division until 1936 when she became Travel Officer.

Exhibiting a personal interest in assisting employees with their travel problems and a consistent willingness to go beyond the requirements of her position to help, Miss Carter has performed her duties in a most outstanding and dedicated manner. The official record contains many commendations testifying to the excellent manner in which she has served the Bureau, and in addition, Weather Bureau travelers have frequently expressed their appreciation for her assistance by personal letters, telephone calls,

or in person. Although the volume and complexity of her tasks have steadily increased through the years, the excellence of her work has remained constant, the needs of individuals and groups of travelers have been more than adequately met, and all travel arrangements have been accomplished with a view to effecting maximum economy to the government. Her loyal and extremely competent service and high devotion to duty were officially recognized in 1956 with a well-deserved Award for Superior Performance.

Miss Carter pursues many interesting hobbies, among them stamp collecting, painting, photography and, of course, traveling. She plans to maintain her residence in Washington after retirement where friends may contact her at 1365 Kennedy St., N. W., Apartment 302, Washington 11, D. C.

Alice H. Haynes

ALICE H. HAYNES, Meteorological Aid in the Domestic Area Section of the Office of Climatology, retired October 31 after more than 30 years of Weather Bureau service.

A native Virginian, Mrs. Haynes attended Chatham (Va.) Episcopal Institute and the University of Richmond. She entered government service as a clerk-typist in the Climatological Division on January 7, 1918, serving in this capacity until August 1919 when she resigned to devote full time to her career as a homemaker. In March 1930 she returned to the Bureau and has served continuously since that time in numerous assignments as clerk-typist, statistical clerk, and meteorological aid.

Mrs. Haynes' plans for the immediate future include trips to Florida and Mexico City. She will maintain her home in the Washington area at 2130 North Pierce Street, Arlington, Virginia.

Susie M. Leonard

SUSIE M. LEONARD, Placement Officer in the Personnel Management Division, retired October 16 because of disability after more than 22 years of dedicated public service.

Because of her personal modesty and desire for anonymity, there is little in the official record to reflect the important part Mrs. Leonard has played in the activities of the Bureau through her participation as a member of the Personnel Division. Yet there have been few projects involving the area of personnel management during the past several years to which she has not made some significant contribution. Possessing a great deal of tact, the utmost consideration for the feelings and ambitions of employees, and an ability to negotiate effectively with operating officials, she has assisted importantly in the formulation and implementation of personnel plans and programs. Those who have had the pleasure of working with her from day to day are well aware of Mrs. Leonard's familiarity with all phases of the personnel process and her unusual knowledge of Civil Service rules, regulations, and directives which she has employed so efficiently to facilitate the work of the Personnel Division. All who have had occasion to seek her assistance have found her sympathetic, understanding, and helpful at all times no matter how difficult or time-consuming their problems might have been. Her excellent work and cheerful devotion to duty have won for her the respect and admiration of her co-workers, supervisors, and all she has served during her career in the Weather Bureau.

A native of Alabama, Mrs. Leonard graduated from Marshall County (Alabama) High School and attended business college in Birmingham. Her first government service dates back to June 1927 when she worked briefly for the Veterans Administration in Washington. She returned to Birmingham and private industry in August 1927, remaining there until 1936 when she reentered the Federal Service. She came to the Weather Bureau by transfer from the Veterans Administration on June 14, 1937, and has been employed in the Personnel Division during her entire Weather Bureau career. She will be greatly missed by all with whom she has been associated for the past 21 years.

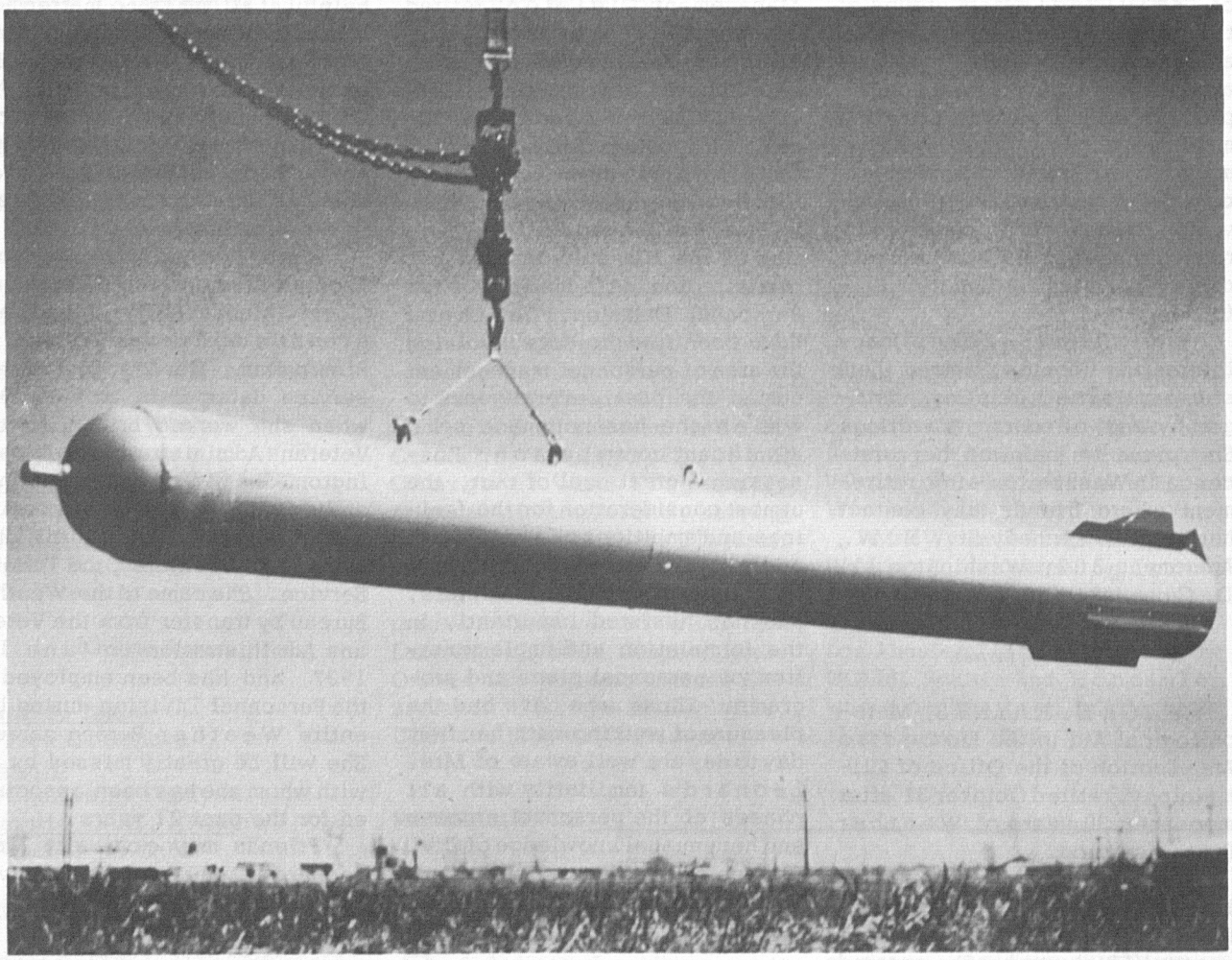
Friends may contact Mrs. Leonard at 1100 West Lawn Drive, Falls Church, Virginia.

Clarence F. Hand

CLARENCE F. HAND, Meteorologist at Williamsport, Pa., at the time of his retirement October 31, 1956, died October 9 of a heart attack at the age of 60. (See November 1956 TOPICS for an account of his service.)

Mr. Hand's two sons are employed as Meteorologists in the Central Office. Leonard is in the Weather Bulletin Unit of F&SR Division and James in the Severe Local Storms Research Unit of OMR.

Other survivors are his wife and a daughter, Mrs. A.W. Marker, with whom Mrs. Hand is staying for the present at 607 Hopping Road, Belford, New Jersey.

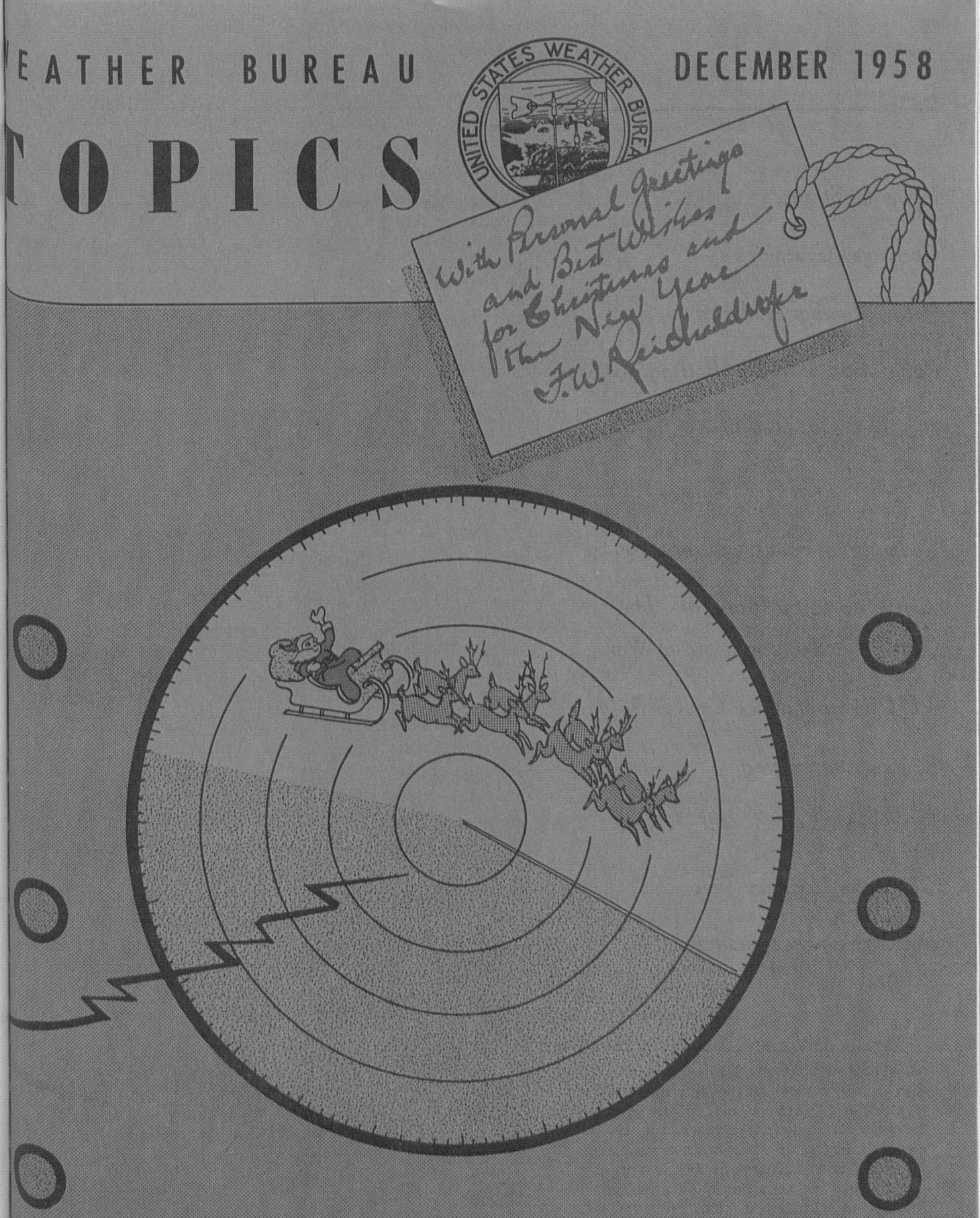


Hurricane Beacon package ready for loading into bombay of aircraft

EATHER BUREAU

TOPICS

DECEMBER 1958



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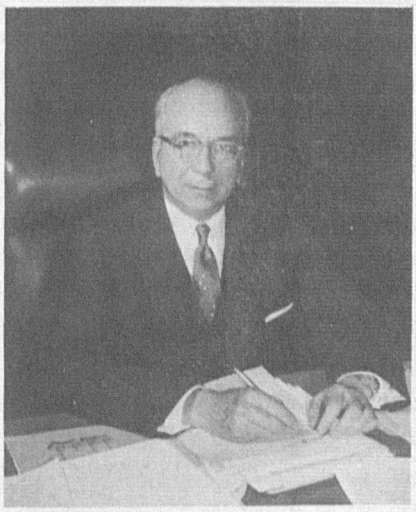
WEATHER BUREAU TOPICS is published monthly to inform all employees about newsworthy operations and work programs of the Bureau; to give background on instructions; to carry news of new personnel assignments, retirements, deaths, and similar information about employees; and to serve as a medium through 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.

MEET THE SECRETARY OF COMMERCE

Lewis L. Strauss



SECRETARY OF COMMERCE Lewis L. Strauss was born in Charleston, West Virginia, on January 31, 1896 and was educated in the public schools of Richmond, Virginia. He has received many honorary degrees from colleges and universities among them the Medical College of Virginia, Case Institute, and New York University, to name but a few.

The Secretary's business career began in 1919 when he was associated with the banking firm of Kuhn, Loeb & Co., New York; in 1929 he became a partner. This association continued until 1946. During this period he was a director of various business enterprises in addition to serving as consultant and financial advisor to the Rockefeller family. Mr. Strauss is President of the Board of Trustees of the Institute for Advanced Study and a trustee of the Sloan-Kettering Institute and an official of many other organizations.

His initial government service (1917-1919) was as Secretary to Herbert Hoover in relief operations in Belgium and elsewhere overseas, and in the U. S. Food Administration. Being a Naval Reserve Officer he was called to active duty in February 1941 and served with distinction until May 1946, attaining the rank of Rear Admiral.

In 1946 Mr. Strauss was appointed as a member of the first Atomic Energy Commission and served in this capacity until April 1950. During the period from 1950 until 1953 when he was appointed Chairman of the AEC (1953-1958) he served as consultant to the Joint Congressional Commission on Atomic Energy.

In recognition of outstanding services, Mr. Strauss was awarded the Distinguished Service Medal and the Legion of Merit with clusters and in addition holds decorations from France, Belgium, and other allied governments.

Christmas Gratuities

WITH the Christmas season approaching we call attention again to the Department's policy concerning the acceptance of gifts and gratuities.

The friendly spirit and good will toward both the employee and the Bureau that are represented by any gift offered to an employee by any person or firm with whom we have official relations is of course very much appreciated and we are happy that people feel that favorably toward us. In most cases nothing more than an expression of that friendly spirit is intended but since the possibility of intent to influence might exist in some situations the Department has quite properly established the policy that gifts may not be accepted by any employee. If such a gift or gratuity is received it must be returned to the sender, with a letter expressing thanks and explaining the Department's policy on the matter. The following is an example of an appropriate letter which may be useful as a guide.

I have received the gift you so kindly sent me, and I want you to know that I greatly appreciate the spirit in which it is offered. A regulation of the Department of Commerce, however, provides as follows:

"Gratuities--No officer or employee of the Department may, either individually or as a member of a group, directly or indirectly, ask, accept, or receive any gift, favor, service, loan or entertainment, which might reasonably be interpreted as tending in any degree to influence the performance of his official duties, from any person whom he may reasonably expect to be affected by the performance of his official duties, or with whom he has had, or reasonably may expect to have official relations."

Under the circumstances I have no alternative but to return the gift. Let me assure you again, however, that your thoughtfulness, and the sentiment behind it, are sincerely appreciated.

The foregoing regulation applies to all employees of the Department not only at Christmas time but at all times, and in all parts of the world. The only

exception recognized is for advertising matter which has negligible commercial value and which is distributed to or available to the general public without charge.

Strict compliance with this regulation is extremely important in protecting the Department from public embarrassment and criticism.

Offer Weather Bulletins

THE following article appeared in the August 1958 issue of "Management Methods" and is reprinted with their permission. This is a rather unusual means for distributing local forecasts, but we thought it might help develop new ideas on reducing local telephone calls.

"A firm that keeps its employees posted on the weather finds the cost nil, the gratitude high. 'We figured the weather is important to everyone,' says a spokesman for the firm, 'particularly in the summer when most people like to plan outdoor weekend activities.'

"The company has designed a 'weather board' which carries weekly forecasts on a day-to-day basis. Forecast information is obtained from the local office of the U. S. Weather Bureau. The information not only helps employees plan personal activities, but enables them to plan their clothing and work transportation in advance."

Publication of WB's "Batting Average"

SINCE the inauguration of the Local Forecast Verification Program, a number of MIC's have written to the Central Office regarding the publication of monthly verification scores.

The general public has always had a great interest in the verification of the forecasts made by field stations. The publication of the monthly results from WB Form 650-10 would in many cases help to make the public aware of the degree of reliability of the service. In turn the publication of the averages would serve as a strong incentive to local Weather Bureau personnel to maintain the local forecast service at a high level of accuracy.

The decision on whether or not to publish the local forecast verification score is left to the MIC. Details should be worked out with the editors of local papers. One note of caution should be observed. Before releasing the material, the entries and computations on the Form 650-10 should be carefully checked. Publication should not be delayed beyond the third day of the following month.

The data may be published in any way desired. The following is suggested as a possible format:

WEATHER BUREAU "BATTING AVERAGE"
January 1959
(Forecasts Issued at 8:00 A.M.)

Average variation between Forecast and Observed Temperature:

"Today" Forecast	3.0°F.
"Tonight" Forecast	2.4°F.
"Tomorrow" Forecast	3.5°F.

Percent of "Hits" on Precipitation (or No Precipitation) Forecasts:

"Today" Forecast	93%
"Tonight" Forecast	89%
"Tomorrow" Forecast	81%

The ratios derived from the contingency table data are expressed by such terms as "threat score" and others not readily understood by the average reader unless an adequate explanation is included. It is suggested that these ratios not be used.

The Central Office will appreciate newspaper clippings and copies of any comments received from stations deciding to publish the local forecast verification scores.

Program Accomplishment Report

WHILE our experience to date is too limited to permit any comments concerning the probable accuracy of estimates submitted on Form 051-6, the following table for the month of October may be of interest:

Average No. Domestic Pilots Briefed Per Station	1845
Average No. Gen. Public Briefings Per Station	3143
Greatest total Domestic Pilots Briefed (WBAS Houston)	13,800
Greatest total General Public Briefings (WBO New York)	50,000

CAgM-II Meeting - Warsaw

MILTON L. BLANC, principal delegate, and WILLIAM E. HIATT, delegate, have just returned from three weeks in Warsaw, Poland, where they attended the Second Session of the World Meteorological Organization's (WMO) Commission for Agricultural Meteorology (CAgM).

CAgM is responsible in the WMO organization for promoting meteorological developments and standardizing methods, procedures, and techniques in the application of meteorology to problems in agriculture. This includes conservation of natural resources; selection of growing areas, suitable crops, and introduction of improved varieties and breeds; combating of unfavorable weather and climate; combating pests and diseases; protection in storage and transit; and the issue of forecasts and warnings for agricultural purposes.

The agenda covered a wide range of practical and technical problems in agricultural meteorology and provision was made for two meetings during which scientific papers were read and new instrumental developments were discussed.

Some of the delegates at the opening plenary meeting.

The Session was well attended and all problems were attacked in a spirit of friendly endeavor to achieve useful results. A total of 50 delegates and observers represented 33 member nations. This was a welcome increase over the 20 member nations represented at CAgM-I in Paris in 1953. A total of 12 Resolutions and 10 Recommendations were passed in Plenary and 11 Working Groups were established to carry on the work of the Commission between Sessions. Five of the groups will assist in the preparation of material for a Guide to Agricultural Meteorological Practices to be published by the WMO with target date late 1961 or early 1962. Other groups will prepare WMO Technical Notes on such subjects as the application of meteorology to the forecasting and control of apple scab, methods of frost protection, forecasts for forest fire service, and agroclimatic classifications.

On the deck of the Lake Steamer at Gizycko.

Poland, as the host country, provided excellent facilities for the Session. The preliminary preparations and the conduct of all meetings, tours, and special functions were of the highest quality. All meetings were held in the Palace of Culture and Science. Facilities for simultaneous translations in English, French, Polish, and Russian were provided

for all plenary meetings. One of the working committees also met in this room and used these translation facilities. The other met in a separate room and used consecutive translations in the same languages.

A scientific tour in northeastern Poland was arranged and conducted for the Session. This was a four-day, 1,000 kilometer circuit by bus eastward to the primeval forests at Bialowieza, northward to Augustow, through the Mazury lakes to Mikolajki (including a portion of the trip by boat), westward to Biskupiec, and return to Warsaw. Opportunity was given for photographing scientific and human-interest scenes en route.

Living accommodations in the Grand Hotel were first class and food at the hotel and elsewhere was excellent. Although the immigration and customs formalities on entering and leaving the country were more strict than in other countries visited (opportunity was afforded for brief visits in the Netherlands, Belgium, Denmark, and Western Germany) they were not excessively so. Once in the country there were no unusual restrictions and courtesy and friendliness were general. English is spoken or understood by many and no serious difficulties were experienced in getting about the city.

Second National Conference on Agricultural Meteorology

ONE of the most striking aspects of meetings on agricultural meteorology is the interest and enthusiasm of the people in attendance, and the New Haven meeting was no exception. There was no chit-chat in the halls during the sessions; everyone seemed intent on not missing a word.

Nearly all sections of the United States and parts of Canada were represented by the approximately 125 people present. Most were agriculturalists and foresters who were concerned with the application of meteorological information to their own problems. These problems included such nationally important topics as:

1. The estimation of evapotranspiration from meteorological data. (There is a good possibility that the meteorologist can forecast evapotranspiration from a good sized field more closely than the soil or plant scientist can measure it.)

2. The delineation of Climatic Zones for various kinds of agricultural production. (It is apparent that much time and money is being wasted by attempts to grow crops in areas where the plants do not "want" to grow.)

3. The relation between weather factors and certain crop diseases and pests. (Man has yet to win his ancient battle against insects and disease.)

4. The climatic aspect of land capability classification. (How and to what extent does climate limit the use that may be made of a given land area?)

5. The dependence of land management practices on meteorological conditions. (The ramifications of this topic are nearly endless.)

6. Meteorological instruments and exposures for the measurement of agriculturally significant parameters. (There is very little corn grown on asphalt roofs "umteen" feet above city streets.)

Some of these agriculturalists and foresters are very "weather-wise." Many have had considerable meteorological training and are well aware of the possibilities and limitations of meteorology. All meteorologists would do well to give some thought to the six topics listed above because it is fairly evident that most of us have a rather poor understanding of what the agriculturalist needs from meteorology. For instance agriculturalists need meteorological measurements that, in general, the Weather Bureau does not make. This does not mean detailed micro-measurements, but rather those which describe the general physical environment of crops and animals. They need climatological analyses designed to answer specific questions. They need probability forecasts which have been made by meteorologists who are throughly aware of present and pending agricultural activities and aware also of the weather problems associated with those activities.

Some instances of points made and questions raised during the meeting may be of interest.

a. Dr. F. A. Brooks, University of California, suggested that the Weather Bureau compute and disseminate daily values of potential evapotranspiration. There was agreement that this should be done, but no agreement as to which method of computation should be used.

b. Dr. E. W. Hewson, University of Michigan, made the point that climatology deserves far more attention and that agricultural climatology is one of the foremost areas where progress can be made.

c. The interest in radiation prompted the suggestion that the Weather Bureau publish hourly radiation data, and that outgoing nighttime radiation be measured.

d. There was an implication that some of the agricultural colleges were ready to install and operate general agro-meteorological observing stations, but they expect recommendations from the

Weather Bureau as to instrumentation and procedures. It is apparent that Weather Bureau work on the development and testing of agro-meteorological instruments should be expanded and accelerated.

e. Dr. Mather emphasized the point that potential evapotranspiration can best be considered as a climatic measure - an inverse of precipitation, and that it does not take account of advected energy.

f. There was much concern with detailed measurements for determining the vertical transport of heat, water vapor and carbon dioxide. Instrumentation problems are formidable and evoked considerable discussion.

g. A number of people were concerned with techniques for the modification of microclimate and with an evaluation of the effects of the modification.

The papers and discussions at this meeting emphasized the research aspects of agro-meteorological problems more than the observations and services required by the farmers. It seemed a little surprising that there was so little emphasis on the effects of various weather elements on various plants during the different phenological periods of the plant. The kind of weather a plant "wants" during each stage of its growth remains as one of the large gaps in knowledge of agricultural meteorology.

Agriculture is one of the most important industries, and it is evident that it is not getting the meteorological service it needs. A few people in the Weather Bureau are working hard to bring about an improvement, but many seem unaware that an improvement is needed. At any rate, mutual understanding must precede improvement and cooperative meetings such as this one at New Haven provide a common meeting ground for the development of an improved service to agriculture.

A Record to be Proud of--The 1958 Hurricane and Tropical Storm Warning Service

WITHOUT a doubt, the hurricane and tropical storm warning service provided the public in 1958 was extremely effective. While the number of hurricanes and tropical storms which affected or threatened the United States and Puerto Rico was greater than average and the total property damage amounted to many millions of dollars, the only loss of life reported was the death of a man in North Carolina in an automobile accident during Hurricane Helene. No single feature can be spot-lighted as being responsible for this remarkable record. There were many activities which contributed to the effectiveness of the warning service some of which were initiated or increased during the past few years. It was the teamwork and special efforts of a large number of Weather Bureau employees as well as the cooperation of a number of local, state, and national government agencies which made this record possible. A few of the many ways in which Weather Bureau employees contributed follow:

1. Pre-season hurricane preparedness meetings of Weather Bureau officials and local and state government representatives to develop organized plans for appropriate actions to be taken in times of threatened or actual hurricanes and tropical storms.

2. Extra time spent and effort put forth by field station employees in making special surface and upper air observations.

3. Organization of a cooperative hurricane reporting network along with the installation of special observation instruments at the reporting locations.

4. Development of improved procedures for use of radar in detecting and tracking hurricanes and detail of radar meteorologists to various strategic radar sites to augment radar observing capabilities.

5. Improved methods for forecasting the movement and intensity of tropical storms and hurricanes through research and studies by the National Hurricane Research Project and by researchers and forecasters in the field and at the Central Office.

6. Better public understanding of the warnings and advisories resulting from improved format and terminology of advisories and local statements.

7. Exercise of outstanding skill and judgment by hurricane forecasters at critical times.

The Chief of Bureau sends the following note of appreciation:

"Every Weather Bureau employee concerned has my grateful appreciation for making this record possible."

F. W. Reichelderfer

WB Correspondence Course Program

THE Weather Bureau is developing a series of correspondence courses to provide improved knowledge of the meteorological science and to develop professional ability. These courses cover material not adequately treated in university correspondence courses. Academic credit is granted by the U.S. Department of Agriculture Graduate School for a small enrollment fee.

The first of this series is the course in Modern Methods of Meteorological Analysis and Prediction. This is an advanced

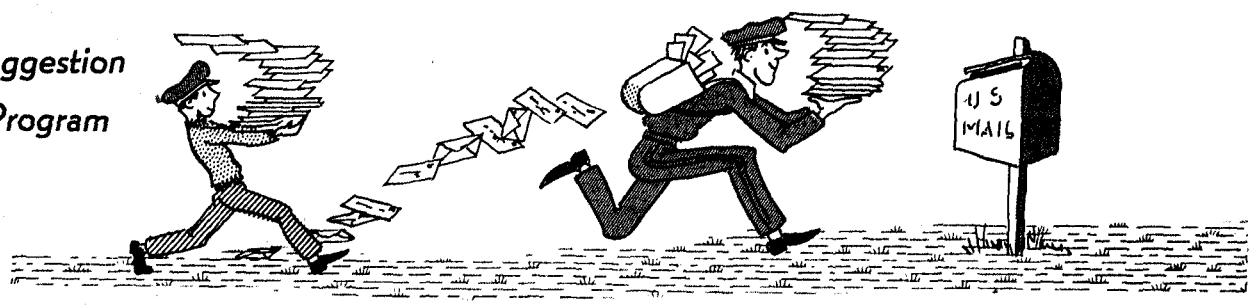
course designed to provide the practicing field meteorologists with a better understanding of some of the techniques and concepts that are of importance in present-day analysis and forecasting. Careful reading of selected meteorological literature and the specially prepared course notes is required. Laboratory exercises acquaint the student with the practical application of some of these methods. The eight lessons are hemispheric synoptic map analysis, predicting motion and development of waves in the westerlies, numerical weather prediction, large-scale vertical motion and divergence, isentropic analysis, the jet stream and other features of the upper wind field, statistical prediction methods, and forecasting tornadoes and severe thunderstorms. Approximately sixty weeks are allowed for completing the course.

Each participant is assigned an instructor who grades the completed lessons and offers constructive criticism on the laboratory work. Verification material is returned with each corrected lesson. A comprehensive examination which must be proctored by an academic official is given at the end of the course.

Since the course began in the spring of 1957, three groups have been enrolled totaling 261 meteorologists. Of this number, 43 have completed the course and 17 have withdrawn, so that current enrollment is 201. The enrollment is limited by the number of instructors available but it is anticipated that all who are qualified for the course will be given the opportunity to participate.

Work is now proceeding on the preparation of two other courses of this series, one on extended-range forecasting and the other on radar meteorology.

Suggestion Program



DURING Operation Paperwork (October 1956) and the "Suggestion Drive" in May and June of this year, the response was overwhelming and a total of approximately 2000 additional suggestions were made during these two drives. Each year the Central Office receives approximately 500 employee suggestions and originally it was our hope that the normal flow of suggestions could continue to be handled and at the same time make significant progress on processing the additional 2000 suggestions resulting from the special drives. Experience has shown, however, that 600 to 700 suggestions annually are about the maximum that the various Central Office organizational units can process satisfactorily. Consequently, a huge backlog still remains to be processed with little hope of eliminating it in the near future unless we resort to a drastic streamlining of our processes.

Accordingly, it has been decided to send a concise report giving the basic reason for each non-adoption rather than a longer explanation of the various reasons which entered into the final decision. These reports will be brief statements to the effect that it has been found that the cost of implementing the suggestion would be greater than the results would justify, that time is not available to carry out the work necessary to implement it, that the suggested procedure was not found to be an improvement over the procedure already in use, or whatever other finding made it inappropriate to adopt the suggestion. By so doing we hope that within a short time you will receive a report (many of them adoption reports, we hope) on every suggestion which you have submitted which has not already been answered.

In the meantime we hope that you will carefully consider the pros and cons of each idea for improvement that you wish to submit as a new suggestion. Talk it over with your supervisor so that he can help you make it as adoptable as possible or, if appropriate, show you how it would not be as much of an improvement as expected. Then send it through him so he can add his endorsement, and through the RAO so that interested persons there can add their support or comments. Final decisions should then be reached much more quickly and accurately and suggestions will thereafter probably be answered within days or weeks rather than months. If the change you suggest is one which your MIC or the Regional Administrative Officials can make on their own responsibility and they decide to make the change the suggestion will be already "adopted" when it reaches Central Office and there will be nothing left to do but send you your award, thereby speeding up the process still further.

Fruit-Frost Service MIC Receives Award

THE winter of 1957-58 was one of the most severe to visit the fruit and vegetable areas of Florida during modern times. For valuable service during this critical period, the Florida Fruit and Vegetable Association has given its Distinguished Service Award to Mr. Warren O. Johnson, MIC of the Florida Fruit Frost Service of the Weather Bureau.

The citation appearing in the Certificate of Award reads as follows:

FOR DISTINGUISHED SERVICE
TO FLORIDA AGRICULTURE

Under the leadership of the above named meteorologist, the Federal-State Frost Warning Service rendered exceptional services to all segments of Florida Agriculture during the critical period of the 1957-58 season, in recognition thereof this Association does hereby tender this citation.

Courtesy of The Tampa Tribune

Left to right—Warren O. Johnson, Roy Vandegrift, Jr., President, Florida Fruit and Vegetable Association; W. J. Klein, Vice-Pres. Allis-Chalmers Manufacturers, Milwaukee, Wisconsin.

Obeah on Coconut Tree

THE following appeared in the Daily Gleaner, Kingston, Jamaica, B.W.I. by Morris Cargill; M.P., and it is reproduced with their permission. "Obeah" is a form of black magic, strictly illegal but still practiced on the island in the country parts.

"A few days ago a worker on

my farm reported what he considered a very peculiar state of affairs. Hanging from a coconut tree, he said, was a white tin can tied to a piece of cloth that looked like a red curtain. He was certain that it was a new kind of obeah and would I please come and investigate it right away.

"When I arrived at the coconut tree I found that the 'white tin can' was in fact a white plastic box roughly six inches long and high by about 4½ inches wide marked 'Signal Corps, U.S. Army Radiosonde AN/AMT-2D' made by Northeastern Engineering Inc. The serial number is K17949. The 'red curtain' was a red paper parachute about four or five feet in diameter. The equipment had obviously been dropped by a high-flying plane or balloon and had arrived at my coconut tree completely intact.

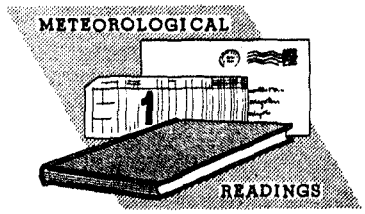
"I know little or nothing about electronics so I can't give a very intelligent description of the neat works inside. But it contains a cardboard battery made by the Burgess Battery Company of Illinois and something that looks like a barometer, as well as a small transmitter. There is an aerial on the outside.

"I don't know whether this information is of any use to the U.S. Army Signal Corps. I can return the white plastic box, but I fear that the parachute has been given to one of the children on my farm, as he wanted it to make a kite.

"Has anyone else found one of these things?

"I haven't, by the way, any objection at all to having these things dropped on my farm, provided they don't fall on anyone's head; but I wish the Signal Corps would make two small additions to their equipment. If they would paint a little grinning face on each side with the motto "Death to anyone who steals coconuts" it would help me with my praedial larceny problems....

"But all this is small stuff, I expect that in a few years we shall be finding bits of space vehicles, or even boxes full of green little men from Mars."



Introduction: Meteorological Readings is an organized program of reading assignments for all Weather Bureau personnel who wish to participate. For more introductory information for participants, see TOPICS May 1957.

Assignment No. XX: Solar Energy Variations as a Possible Cause of Anomalous Weather Changes by Richard A. Craig and H. C. Willett, and The Atmospheres of the Other Planets by S. L. Hess and H. A. Panofsky, on pages 379 through 397 of Compendium of Meteorology.

About the Assignment: Current space developments are arousing new interest in cosmical meteorology. It may soon be possible to resolve some of the basic unknowns that are mentioned in the first article. A practical need may also appear in the not to distant future for the type of information in the second article.

QUESTIONNAIRE

Assignment No. XX

(To be answered by participants after reading assignment.)

(For complete information, see TOPICS May 1957.)

Note: Answer true-false questions on the answer card indicating 1 if true and 2 if false.

Col. 61 Present evidence indicates no relationship between the gross weather variations in the northern and southern hemispheres.

1. True
2. False

Col. 62 Fluctuations in the ultraviolet solar radiation would have most immediate effect in the upper atmosphere

1. True
2. False

Col. 63 What is the basis for computing the Martian interhemispheric flow?

1. cloud movements
2. temperature distribution
3. Red Spot rotation
4. ice cap variations

Col. 64 The low sunspot activity between 1672 and 1704 is associated with a period of climatic stress

1. True
2. False

Col. 65 What do calculations of Jupiter's temperature indicate about its greenhouse effect?

1. no effect
2. half that of earth's
3. the same as earth's
4. greater than earth's

Col. 66 There is a correlation between the great Red Spot's speed of rotation and Jupiter's distance from the sun.

1. True
2. False

Col. 67 A Weather Bureau—MIT Extended Forecast Project determined consistently significant lag correlations between certain parts of the general circulation.

1. True
2. False

Col. 68 Mars has an atmospheric circulation very similar to Earth's

1. True
2. False

Col. 69 Koppen and Walker have suggested a relationship between low tropical temperatures and sunspot maxima

1. True
2. False

Col. 70 Methane and ammonia in the atmosphere of the major planets are used in estimating their temperatures

1. True
2. False

RETIREMENT

Norbertine S. Overholt

NORBERTINE S. OVERHOLT, Nurse in the Health Unit of the Central Office since 1947, retired November 30 after more than 36 years of government service.

A native of Massachusetts, Mrs. Overholt graduated from St. John's High School in Peabody and the Carney Hospital School of Nursing in Boston. She commenced her career in 1915, spending three years as a private duty nurse. In 1918 she joined the Army Nurse Corps, serving in France during World War I for 15 months. Upon discharge from military service, Mrs. Overholt entered the Federal Service as a nurse with the Veterans Administration. She came to the Department of Commerce in 1928 and was employed for 19 years in the Office of the Secretary before joining the Weather Bureau in 1947.

Mrs. Overholt was recently honored by the District of Columbia Chapter of the American Red Cross for outstanding achievement in the Washington Regional Blood Donor Program for the year 1957. She was one of the "Honor Roll" recruiters, who by conscientious efforts, inspired and stimulated members of their groups to achieve 100% or more of their annual quota. In addition to her work in government, she has been very active in the American Legion and the Legion Auxiliary and has done considerable volunteer work in assisting veterans and others with their medical and hospital needs.

Mrs. Overholt hasn't revealed her plans for the future except that she will maintain her residence at 3904 Franklin Street, Kensington, Maryland, and is looking forward to retirement as an opportunity to accomplish many projects for which she hasn't been able to find sufficient time during her busy career.

Deaths

William H. Bierbower

WILLIAM H. BIERBOWER, Meteorologist in Charge, Agricultural Weather Project, Wenatchee, Washington, died of a heart attack November 22 at the age of 42.

A native Texan, Bill entered the Bureau as a Junior Observer at Del Rio in 1937 shortly after graduation from San Antonio Junior College. He was stationed at Waco from 1940 to 1942 and attended classes at Baylor University, completing his work for a B.S. degree in 1942. He was called to active duty with the Naval Reserve as an Apprentice Seaman in August 1942. After receiving his commission in December 1942, he served as Executive Officer aboard the U.S.S. SC-1000, a sub chaser on escort and convoy duty in the Gulf of Mexico and the Caribbean, and later attended a one year's course in aerology at the Naval Academy Post-Graduate School, followed by tours of duty as Aerological Officer at Naval Air Stations in Hawaii. Upon his discharge from the military service as a Lieutenant in February 1946, Bill returned to duty with the Weather Bureau as Meteorologist at Austin, Texas. In October 1947 he was detailed to the Central Office Personnel Division, and while working in this assignment he was selected for the Management Intern Program. Upon successful completion of this program, he accepted transfer to Washington as an Organization and Methods Examiner in the Plans and Program Management Office. In November 1949 he transferred to Salt Lake City as Administrative Officer, serving in this capacity, with the exception of one year as Aviation Forecaster at WBAS Salt Lake City, until June 1957 when he commenced his present assignment. He also participated in the Third Advanced Study Group in the Central Office from September to December 1956.

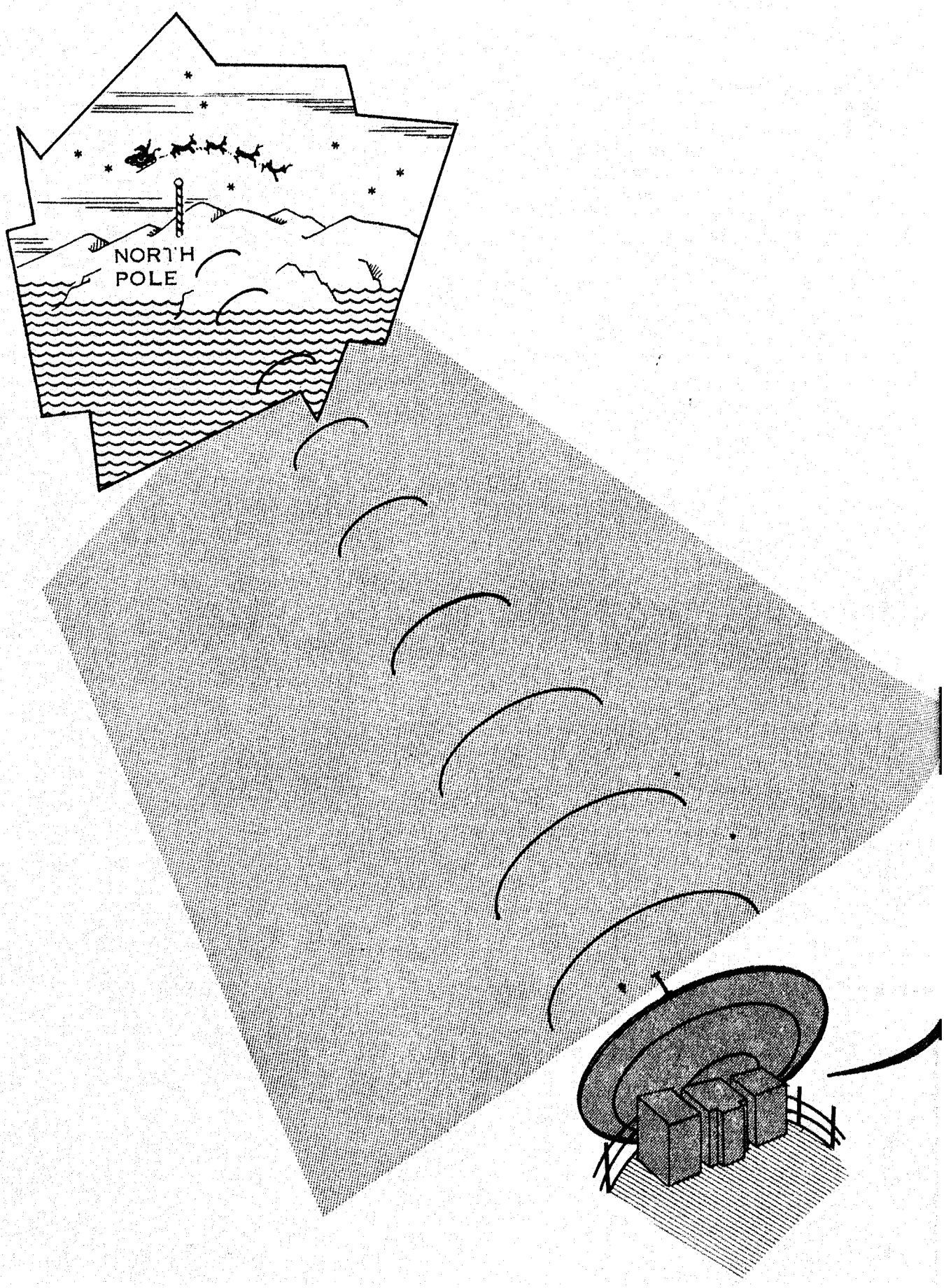
Mr. Bierbower's technical competence, cooperativeness, and genuine interest in his work are well known to all with whom he was associated during his Weather Bureau career. He has represented the Bureau most creditably in a variety of difficult assignments, and combining a warm, pleasant personality with a high degree of professional skill, he earned an enviable reputation and the admiration of a host of Weather Bureau colleagues.

Mr. Bierbower is survived by his wife; a daughter, Barbara Jean; and a son, William, all of the home address, R.R. No. 1, Box X-10B, Wenatchee, Washington.

Jesse W. Smith

JESSE W. SMITH, who retired as Meteorologist in Charge at Tallahassee on August 31, 1958, (see October 1958 TOPICS), died October 30 at the age of 62.

Mr. Smith is survived by his wife of 209 Lovelace Drive in Tallahassee, a son, a daughter, and three grandchildren.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