

WEATHER BUREAU TOPICS

1956

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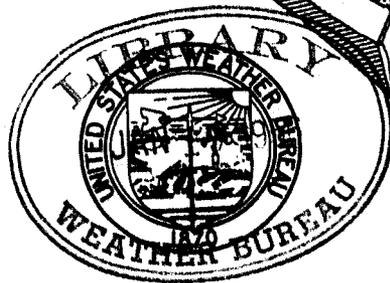
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National Oceanic and Atmospheric Administration Weather Bureau Topics and Personnel

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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.

Employment Ceilings

RECENTLY it was necessary to reestablish the employment ceilings for the Bureau which had been suspended temporarily while recruitment lagged behind new program needs. These ceilings limit the number of employees that can be carried on the pay rolls of the Bureau. Consequently, some authorized positions at field stations and the Central Office must be held vacant from time to time. Since we all dislike having vacancies on our staff we believe some explanation is in order as to why ceilings are necessary.

At the beginning of each fiscal year the Bureau is required to prepare a detailed spending plan apportioning its appropriation in a manner which will insure that it will last throughout the year. Strict adherence to the apportionment is required by law. Consequently it is necessary to establish controls over the rate of spending of the Bureau's funds. Several methods exist whereby the Bureau might control personal service costs. In the final analysis, however, personal service costs are dependent upon the number of people carried on the pay roll and experience has shown that these costs can be controlled most effectively through employment ceilings.

The number of authorized positions generally exceeds the employment ceilings for several reasons. Positions are authorized

to meet the longer term program needs of the Bureau whereas the ceilings are established on the basis of the current financial situation. Furthermore, some

spread between the employment ceiling and the total number of authorized positions is needed in order to allow for unavoidable delays in filling vacancies and to

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provide some flexibility in recruiting and placing personnel. Every effort is made to set employment ceilings which will be equitable throughout the Bureau, and to plan ahead so the employment level will not be subjected to fluctuations that could cause

separation of employees.

Indications are that employment within the Weather Bureau is approaching the level which can be supported. Although field employees generally are not directly concerned with the employment ceiling we believe that

you will be interested in knowing that the recent reestablishment of ceilings is for the purpose of maintaining employment at a level consistent with program requirements as related to present and prospective appropriations.

Letters to the Editor

NUMEROUS comments have been received in response to the article "Strategy in Working With People" in the November issue and all have been very complimentary. Some of the replies are in the form of a discussion of the article and one of the first of these is quoted below:

"Mr. Crouch's article published in the November TOPICS was as excellent as your hope that it would be read by all employees, even though it must have been delivered to and prepared for those primarily at the executive level. If your hope that the article was widely read within the Bureau became a reality, perhaps it would be well to shift the emphasis of Mr. Crouch's remarks, since in our case we are not all executives, or even supervisors.

"In effect, Mr. Crouch said, 'The happy worker is the good worker,' and almost in so many words with his reference to 'peace of mind' in the first paragraph. To be 'good' workers then, we must like the work we are doing, which in itself would be a measure of happiness. But the only way we can determine whether or not we like our work is to ask ourselves — or to have someone else ask us. If we accept then that enjoying one's work will help us to do a better job, the problem for many of us becomes a very personal one,

and yet this self-examination is mentioned in the article only at the very end, and then only as 'self-control' which is certainly an important, though not complete reference to the root of the problem as it might present itself to the majority of the Bureau's employees. For this reason the emphasis might be shifted from supervision of others to supervision of ourselves.

"From an employer's standpoint, there is nothing more tragic than a person trying to do a job he doesn't like, and nothing more satisfying than seeing a person actually enjoying doing his job well. Admittedly, there are many workers between the two extremes, but even these could improve their surroundings, or themselves, by trying to determine just what type of work they would really like to do. It's almost a paradox that so many people try to live the lives of a person about whom they know so little! If those discontented or dissatisfied (and therefore unhappy) with their jobs would ask themselves: 'What would I really enjoy doing to earn my living?' 'What can I do best?' 'What do I know the most about?' — they might be surprised to find out that the answer to all these questions is the same thing! An observer continually complaining about his job may earn his living taking observations and the hundred and one other tasks assigned

to him, but he likes photography better, he's more interested in it, he takes infinitely more care of his equipment at home than he does of the instruments in the shelter, and odds are he takes better pictures than he does observations. Yet he shortens his life, doesn't do his work as he should, and continues to be unhappy simply because he hasn't learned to supervise himself!

"Self-supervision and self-questioning can be valuable for employees at all levels. From time to time we should take stock of ourselves, our jobs, and our like or dislike of it. The answers to the questions above must not be allowed to sink within us where they can't be aired; they must be kept readily at hand where they can be referred to often. All too frequently we read and hear of instances where these answers are too deeply imbedded in a person's self-pity; then the opportunity of self-questioning has passed and we must pay someone to ask the questions to us — usually a psychiatrist.

"Through frequent exercise of this method of self-appraisal we too 'are likely to reap a reward beyond our hopes,' as Mr. Crouch puts it. One of the resultant blessings might be a beginning toward eventual categorization of our worries — specifically; those that should be left at home, and those that should not be carried from the office to

our homes. Many of us try to do two jobs at once and failing at this, end up with a wife plagued with office troubles, an employer thrust into playing an unwanted role of a 'Mr. Anthony,' and most importantly, an unhappy employee vainly trying to solve his problems at the wrong place and the wrong time.

"At the beginning of this letter I was guilty of sharply condensing Mr. Crouch's article; now I must do it to myself — it's old, time tested though not time worn, and extremely simple — 'To thine ownself be true'."

Very truly yours,

(Signed) William M. McMurray
Meteorologist, NWRC

Mr. McMurray's suggestion that the emphasis of Mr. Crouch's remarks might well be shifted from the executive to the working level brought to mind an article clipped from the house organ of Capitol City Savings and Loan Company of 2010 Rhode Island Avenue, N.E., Washington, D.C., several months ago. This article is directed to the employee and questions him regarding his interest in and adjustment to his job. Capitol City Savings and Loan kindly gave permission for reproduction of that article in TOPICS.

HOW TO GET AHEAD IN YOUR JOB

"Maybe your job already seems as exciting as tennis, handball, golf, canasta, scrabble, or poker. If not, here's a quiz you'll find interesting and helpful. It was devised by Alex Lewyt to point the way to greater interest in your work and, subsequently, greater progress. Give yourself 10 points for every honest 'yes,' then look for your score at the bottom.

Do you know why your job is important?

You can't enjoy your work

unless you have a feeling of importance . . . and the mere fact that you are drawing a salary means you are entitled to that feeling. The unexpected absence of a mailroom boy, file clerk, or secretary can create small but costly bottlenecks that affect a company's entire operation. If you don't know just how your job fits into the end results of production or service, corner your supervisor and have him explain it in detail.

Do you really welcome responsibility?

Most people don't, so management is always on the lookout for employees who are eager to take on new responsibilities and who are willing to make decisions. Accepting responsibility implies the ability to follow through on assignments without bothering the boss with minor details. Ask questions when you must, but first decide whether they are really necessary.

Does the clock often creep up on you?

If the clock catches you off guard at quitting time, your interest in the job is already high. If, on the contrary, you watch the clock and start getting restless 20 or 30 minutes before closing hour, you don't enjoy your work nearly as much as you should and can. To make time fly toward the end of the day, deliberately select some tasks that will keep you busy right up to the sound of the whistle.

Are you aiming for a better job?

While you are leveling your sights, don't be afraid to set them high. Since up-grading yourself is a matter of gradual progress, however, it is better to concentrate on the job just one step ahead. Learn as much about its duties and responsibilities as possible, offer to help out the person who holds it when you can. If a vacancy occurs and you're moved up, first master the new

job and prove your efficiency in it, then shoot for the next higher position.

Do you always manage to keep busy?

Idle workers are death to the profits of your company and hence to your own security. Management tries to prevent this, but most employees sooner or later find themselves with time on their hands. If it happens to you, don't try to cover up by pretending to be busy. Use the spare time to help some fellow-employee . . . who will love you for it. Or ask your supervisor for an extra assignment. He will respect you for it.

Are you 100 per cent loyal to your company?

It may be human if you aren't, but putting yourself first certainly won't increase your chances of getting ahead. Complete and unselfish devotion to duty, makes you a marked worker. In the Army, medals are awarded for it; in the world of business and industry it can, and usually does, lead to promotions.

Do you bone up on improving yourself?

Hundreds of new vocational testbooks are written every year, some of them pertaining to your type of work. For the price of one of these (or a trip to the library), you can let the experts bring you up to date on latest methods, newest shortcuts, and improved ways of getting a job done quickly and well. Try to read at least one such book a year.

Do you accept criticism cheerfully?

Sometimes we learn by trial-and-error, sometimes by book study, but always we profit most by the help, suggestions, and criticism of those who know more than we do. So don't be touchy if your work is criticised. Welcome all the suggestions you can get. Offer counter-proposals, if you

think they are better . . . but in the show-down, let your boss have his way. Chances are just about 100 to 0 that he knows what he's talking about.

Do you ever keep notes on your performance?

This is the best way to discover the truth about your consistency as a worker. Try it for a month, comparing the last three weeks with the first and evaluating quality as well as quantity. This in itself can become a game, and you'll be surprised how quickly such self-appraisal can be the incentive for increased efficiency. Do you share your knowledge with others?

Sooner, or later, most workers discover easier and quicker ways of handling certain phases of their jobs . . . and a surprising number keep it to themselves. They seem to have the notion that it makes them superior to fellow-employees and sets them apart in the eyes of management. Actually, management wants the important jobs to go to those who gladly share their skills and special know-how.

Your Score

40 and under . . . You're in a bad way and should bend every effort

Editorial Note

THE Editor of TOPICS takes this opportunity to thank those employees in the Central Office and at field stations who have so kindly contributed interesting articles during the past year, and to express appreciation to the many other people who have taken time to send compliments.

In submitting your experiences you have helped our efforts to personalize TOPICS.

We hope that in the year to come you will continue to submit ideas, articles and suggestions, so we can continue to make TOPICS a "looked-forward to" publication.

toward taking a greater interest in your work.

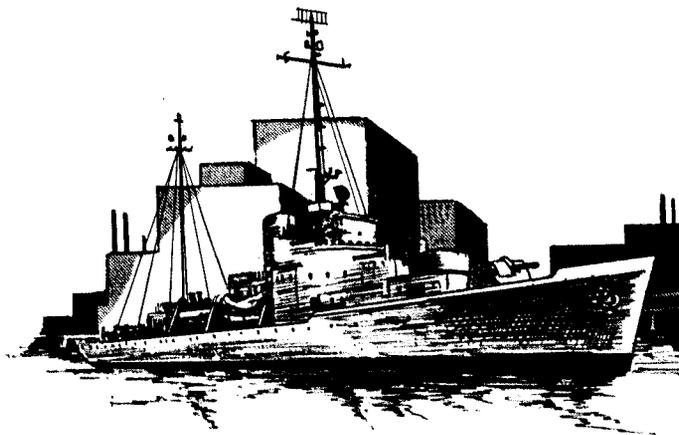
41 to 60 . . . Average, though much too low for real success.

61 to 80 . . . Better than most, but

still room for improvement.

81 to 100 . . . Congratulations!

You're interested, you're happy, and you're headed for better things.



Gulf of Mexico Weather Program

PLANS are being made to establish several merchant-ship raob programs in the Gulf of Mexico.

The first, aboard the S.S. CARL SCHMEDEMAN, a vessel of Panamanian registry, is expected to begin early in January. This vessel is a bauxite (aluminum) ore carrier operating between Corpus Christi and Jamaica, B.W.I. The second, aboard the S.S. SALINAS, a vessel of Liberian registry, is expected to begin late in January. This vessel is a tanker operating between Houston and Coatzacoalcos, Mexico.

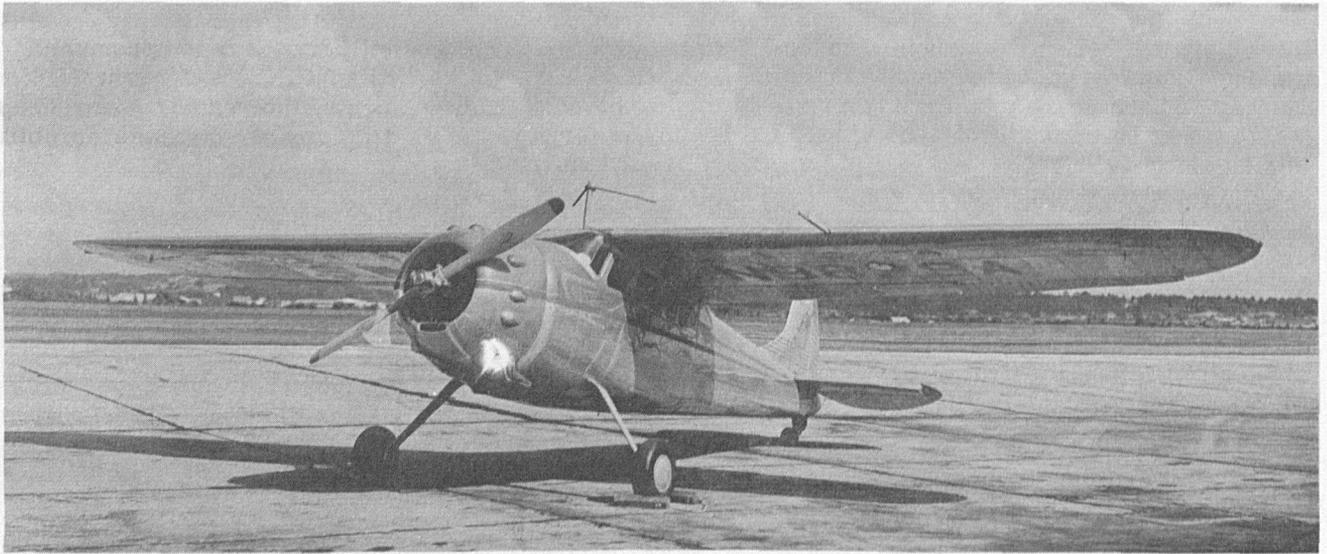
The observational programs aboard these vessels consist of surface synoptic observations at 0000, 0600, 1200 and 1800 GCT and radiosonde observations at 0300 and 1500 GCT. Two Weather Bureau employees will be assigned to each vessel. Lightweight Vaisala-type radiosonde equipment of Finnish design and manufacture will be used.

A Gulf Weather Project (GWP)

has been established, with headquarters at the WBO, Houston, to administer the program. Mr. Millard E. McKinnie, Marine Meteorologist at Houston, has been named Supervisor. Mr. Francis V. Perry and Mr. E. Wilbur McCullum of the Atlantic Weather Project will assist in making the installations on the ships and in training other Weather Bureau employees in the special Vaisala techniques.

Plans are also going forward for the third such program aboard the M.S. JAKKULA, an oceanographic vessel operated in the western Gulf of Mexico by the Texas A&M Research Foundation. In this case, it is planned that one of the observers will be a Weather Bureau employee, the other an employee of the Foundation.

These observational programs are a part of a larger plan to increase the amount of upper-air, surface and radar data from the Gulf of Mexico and adjacent coasts.



The Weather Bureau Airplane

IN 1946 the Weather Bureau asked for authority and funds to acquire and operate several small aircraft but was not successful in this endeavor. The Weather Bureau appropriation language for the fiscal year 1947 authorized the transfer, without cost to the Bureau, of one aircraft from the military services and authorized the expenditure of Weather Bureau funds to pay for its operation.

The only small aircraft available for transfer from the military was a "Norseman" which was accepted by the Bureau in the Fall of 1947. The limitations of this aircraft, its high operating costs, civil service requirements for a pilot, economics, and a rapid expansion of feeder-line and bush pilot operations in Alaska made it advisable to discontinue its use.

The Weather Bureau appropriation for fiscal year 1950 authorized "...maintenance and operation of aircraft, and purchase of one for replacement only;". With this authority bids for a new aircraft were issued with the successful bidder required to take the Norseman as

a trade-in. The Cessna dealer in Anchorage submitted a bid requiring the lowest cash payment since he was in a position to allow a larger trade-in for the Norseman. On January 20, 1950 the Cessna currently in use was ordered and delivery was taken on April 26, 1950.

Since that time the airplane has logged a little over 1700 hours, has been to all but 11 first-order stations in the continental United States, and has been within a few thousand feet of 10 of these 11 stations but lack of landing facilities was in most cases the cause for not stopping. Stations like Tatoosh Island, Stampede Pass, Mt. Shasta, etc., will have to wait many years for a visit by air unless a helicopter is used.

The Weather Bureau Cessna (N9829A) cruising at 60% of power has a true airspeed of about 140 miles an hour. It burns 13 gallons of gasoline per hour, which gives a little more than 10 miles on a gallon of gasoline. There are, of course, those unusual situations when a considerable variation from this average occurs. Day by day operating ex-

penses are about $8\frac{1}{2}\text{¢}$ per mile and the total operating cost including storage, scheduled preventative maintenance, major overhauls, etc., average out to about another 6¢ per mile.

The aircraft is used for a multitude of purposes and permits performance of certain functions not possible by any other means. It has been used to monitor and review aviation weather services available to pilots, both in the air and on the ground. It has been used for checking and calibrating, by actual flight, Weather Bureau instrumental equipment. It has provided a means of getting many Weather Bureau personnel, forecasters and observers, into the medium with which they are continually dealing but had never experienced in flight. More than 50 Washington officials, including the Chief of Bureau and Deputy Chief of Bureau, have made trips in the Weather Bureau Cessna. Mr. Little has logged more passenger miles than anyone else (over 300 hours). Mr. Brotzman ranks second with over 160 hours. In addition to Weather Bureau personnel, two Department of

Commerce officials have accompanied Weather Bureau employees on field trips in the airplane.

Since the purchase of this airplane it has been possible to get more Washington officials into more stations than was possible previously. There have been a few instances where the visit by the Weather Bureau aircraft was the first time that an official of the Central Office had ever visited the station. Usually once a year representatives from several divisions of the Central Office travel together in the Weather Bureau airplane to the four Regional Offices in the continental United States as a means of observing and coordinating the work of the Regional Offices.

At 42 stations the airplane has been used for familiarization purposes of one type or another: sometimes to offer forecasters an opportunity to observe the terrain of their forecast area; several individuals concerned with river forecasting have been flown over all or part of their

river district; aerial snow surveys have been made; storm damage observed and photographed from the air; and in-flight study of unusual meteorological phenomena, particularly clouds.

Another important aspect of this operation is that it provides Weather Bureau employees with an opportunity to observe and experience first hand the problems of a pilot. Only by actual experience can one learn to appreciate the pilots' needs for accurate and complete observations. It is usually quite educational and enlightening to a forecaster who makes a trip forecast and then goes with the airplane making the flight.

When in flight, weather broadcasts are monitored for adequacy and completeness, and pilot reports are submitted whenever appropriate. Follow-up on these pireps is a check on the adequacy of dissemination processes and has been helpful in some cases in eliminating bottlenecks.

Courtesy or Curtness

IT'S time to take the hourly observation. The weather is bad. There is a great deal of material which must go on the local weather teletypewriter circuit to the local newspapers, radio and TV stations, to meet their deadlines. Your telephone is ringing. You've been on the job for nearly a full shift. In comes a pilot, not too familiar with our self-help briefing aids, and apparently in a big hurry. You don't know who he is. Maybe he's a private flyer - maybe he's the pilot for the President of the United States. You don't know - you're terribly busy - you're the only man on duty. This is a situation well known to many a

harassed Weather Bureau employee.

What you must do next is pretty well defined. There are priorities and you have to observe them. How you go about performing the priority task without developing high blood pressure - either in yourself or a potentially irate customer - is more difficult.

In spite of the almost uniformly courteous attitude of Weather Bureau personnel, specific complaints occasionally reach the Central Office. Often they arise from simple misunderstandings. Sometimes they reflect dissatisfaction with what is construed as a "short" answer

The process of planning a trip into the field starts several weeks prior to the actual departure from Washington. During this interim period all divisions are furnished with a copy of the proposed itinerary and invited to make suggestions to those making the trip on any specific problems which should be taken up at a particular station and/or suggest changes in the itinerary in order that particular problems may be discussed at stations not on the temporary list. Upon receipt of the replies from the divisions, the final itinerary is prepared and the stations and Regional Offices concerned furnished copies. The usual amount of time allotted a station is one to two hours. For best use of this time, stations are invited to prepare a list of topics to be discussed during the visit. Of course, an exact schedule is awfully hard to maintain, but, except for a few instances of being "weathered-in", most trips have worked out about as planned.

to an inquiry. For example, a pilot complained recently that upon visiting a weather station during a particularly busy period, he waited for a lull before asking for the latest reports. In reply the pilot was told, "They are posted on the desk. Read them yourself."

The pilot who wrote this complaint is prominent in a National flying organization. The incident prompted him to insert an editorial in their National publication. There was an exchange of official correspondence and a personal contact or two, before understanding replaced misunderstanding. Probably a little more courtesy and less

curtness would have forestalled the entire episode. For example, it would have been more helpful to say - "Sorry, I have to take an observation right away. I'll be with you as soon as I can. Help yourself to the information on the display until I can help you." In any event, an offer to help the pilot as soon as possible would have been in order.

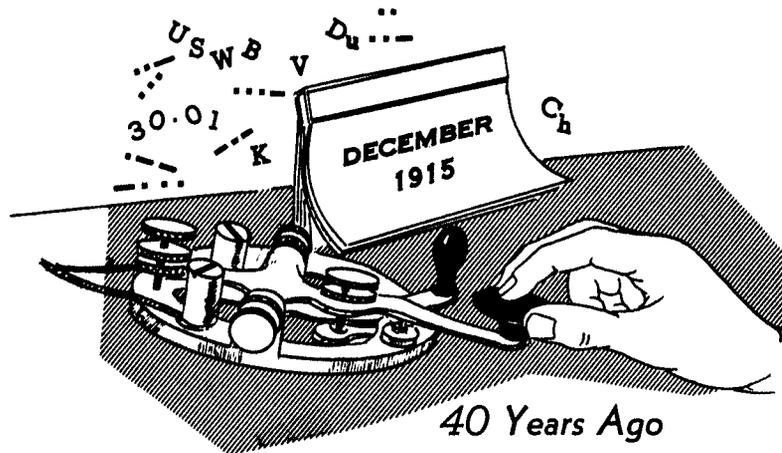
Anyone may be caught up in a situation such as this. It may happen to you. If you try to put yourself in the customer's position and visualize his problems, with the incomplete understanding he often has of our problems, you will have gone a long way toward eliminating these infrequent but harmful situations. There will always be complaints, but courtesy rather than curtness will eliminate most of them. And always remember that the public regards government employees as "public servants" so let's play the role patiently, helpfully and with a smile even when it comes hard.

Radar

Publication Available

A few copies of Air Weather Service Technical Report 105-97 "The Use of Radar in Weather Forecasting with Particular Reference to Radar Set AN/CPS-9" are available for distribution to stations having need for the publication. This publication was supplied to all radar stations and forecast centers a few years ago as Massachusetts Institute of Technology Technical Report No. 20 bearing the same title.

Copies may be had upon request to the Central Office Library. A radar station not having a copy is encouraged to request one.



THE 40th anniversary edition of QST magazine, official organ of The Association of Amateur Radio Operators, contained a reprint of their first issue, dated December 1915. From the reprint of this issue of 40 years ago we quote the following item:

ARLINGTON NOTES

"Shortly after the 10:00 p.m. time signals, NAA sends weather bulletins in code letters and figures to express weather conditions along the eastern coast of the United States and the Great Lakes.

In case you have lost the key letters used they are given below:

- U. S. W. B. United States Weather Bureau
- S Sydney
- T Nantucket
- DB Delaware Breakwater
- H Hatteras
- C Charleston
- K Key West
- P Pensacola
- B Bermuda
- Du Duluth
- M Marquette
- U Sault Ste. Marie
- G Green Bay
- Ch Chicago
- L Alpena
- D Detroit
- V Cleveland
- F Buffalo

The first three figures denote the barometric pressure in inches as (001 - 30.01) or (959 - 29.59). The fourth figure represents the

direction of the wind:

- 1 North
- 2 Northeast
- 3 East
- 4 Southeast
- 5 South
- 6 Southwest
- 7 West
- 8 Northwest
- 0 Calm

The last figure gives the force of the wind on the Beaufort Scale.

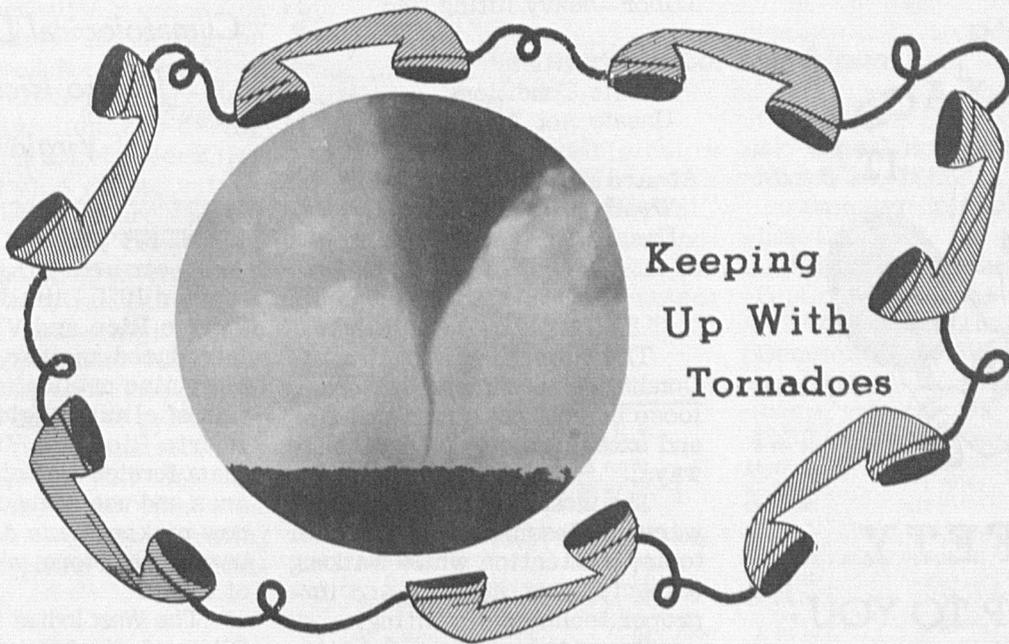
Beaufort Scale of Wind Force	
Number and designation.	Miles per hour.
0 Calm	0 - 3
1 Light air	8
2 Light Breeze	13
3 Gentle Breeze	18

Examples of Code:-

U. S. W. B. S 00355 T 93472
 United States Weather Bureau
 Sydney, 30.03, south, fresh breeze,
 28 miles per hour; Nantucket,
 29.34 west, light breeze, 13 miles
 per hour.

4 Moderate breeze	23
5 Fresh breeze	28
6 Strong breeze	34
7 Moderate gale	40
8 Fresh gale	48
9 Strong gale	58
10 Whole gale	65
11 Storm	75
12 Hurricane	90 & over

Wind force greater than 9 is given by a word instead of figures.



AS a part of the overall plan to improve the Weather Bureau's service to the general public relative to severe weather conditions, two major communications facilities are being established. The first is the Internal Rarep and Warning Coordination Teletypewriter System (RAWARC) described in Central Office Memoranda dated August 3 and November 8, 1955, and TOPICS for October 1955.

The second facility is an interphone system to be used for immediate dissemination of tornado reports and warnings, coordination between radar stations when the same echoes are simultaneously observed by two or more stations, and coordination between first order stations and forecast centers relative to the issuance of warnings and advisories. This facility will be installed about February 1 at radar stations and forecast

centers in areas most subject to tornadoes.

Appropriate switches will be installed at WBO Kansas City, which will be on all four circuits, for connecting two or more circuits together so that stations on any circuit can talk directly to any other station on the system.

Further instructions will be issued by memorandum to the stations concerned. Comments and recommendations will be appreciated by the Central Office.

Climatology of the United States

A new publication series called "Climatology of the States" has been designed to accommodate climatological publications of a monograph type. The series will reflect climatic conditions and trends (as distinguished from more or less current data). Thus, it will not include routine publications such as Local Climatological Data and Climatological Data.

The series numbering will comprise a double set of figures (11-25, 20-41, 50-30, etc.), the first figure designating the publication and the second the state. Series numbers now assigned to established publications and contemplated summaries are:

- 10 Climatic Summary of the United States, 1930 Edition (Bulletin W)
- 11 Climatic Summary of the

United States, (Bulletin W Supplement)

- 20 Climatological Substation Summaries
- 30 Summary of Hourly Observational Data (5-year summaries)
- 40 Climatic Guides for (city name)
- 50 Climatic Charts of the United States
- 60 Climate of the States



SAFETY IS UP TO YOU!

A study of SF 92's (Supervisor's Report of Accidents) for the period July 1, 1953 to June 30, 1955 revealed some interesting facts which we believe are worth thinking about.

During the two-year period there were 156 accidents, including 52 "Lost Time" accidents, where the employee lost one day or more from work, and 104 "First Aid" accidents, where the lost time was less than one day.

A breakdown of all accidents for the two-year period by types of activities and an indication as to whether caused by an unsafe act or unsafe conditions is tabulated below:

Office Activities		
Unsafe Conditions	14	
Unsafe Act	22	
Observations		
Unsafe Conditions	13	
Unsafe Act	25	
Weather Conditions	14	
Installation & Maintenance		
Unsafe Conditions	3	
Unsafe Act	26	

Labor—heavy lifting, etc.	17
Shop Activities	
Unsafe Conditions	2
Unsafe Act	11
Aboard Weather Ships	
Weather Conditions	3
Unsafe Act	6
Total	156

The most frequent Unsafe Conditions were improper storage, loose boards, newly waxed floors, and extension cords in passage ways.

The most frequent Unsafe Acts were carelessness in using power tools, inattention while walking (especially on stairs), and improper technique in lifting.

The safety experts and statisticians tell us that all accidents are due to an unsafe condition or an unsafe act, but we cannot dismiss the fact that Weather Bureau observers face adverse weather conditions in the line of duty, with full awareness of a calculated risk. These we have listed as due to "Weather Conditions".



Climatological Data Puerto Rico and Virgin Islands

UNDER printing date of November 18, 1955 the September 1955 Climatological Data Puerto Rico and Virgin Islands introduced another in the series of routine publications. Separation of climatological data from Puerto Rico and Virgin Islands from foreign data of the Caribbean area and use of machine methods now makes these data available in published form with a minimum of delay.

The West Indies and Caribbean Climatological Data will continue to be published, but will not contain the data for Puerto Rico and the Virgin Islands as heretofore. It is expected that the great lag in the distribution of the West Indies and Caribbean CD in the past will be considerably reduced under the new plan.

Mr. Steves, Supervising Climatologist, Weather Records Processing Center, Chattanooga, and Mr. Smedley, Climatologist at San Juan, deserve a pat on the back for their special efforts in bringing about this publication.

Award for 24-hour Service

RADIO station WKY, Oklahoma City, Oklahoma last month received the National Safety Council's Public Interest Award for Exceptional Service to Farm Safety. The award was presented in Chicago on November 27, 1955 during a meeting of the National Association of Television and Radio Farm Directors.

The National Safety Council awards are noncompetitive and are conferred for recognized

outstanding activities in connection with farm safety. Radio Station WKY received its award "for featuring the true farm accident stories of five farmers during National Farm Safety Week, for 24-hour service giving safety directions during severe weather conditions, for five programs, 249 spots and 884 references."

Continuous broadcasting service throughout the night hours during severe weather conditions associated with tornadoes, hurricanes, etc., can be of great help in warning dissemination. We hope field officials will constantly be alert to stress this point when developing emergency operating plans for use during warning situations.

Awards

CASH awards for sustained superior performance were recently given to several Weather Bureau employees.

Roy E. Lundquist, Hydrologist in Charge of the River Forecast Center in Cincinnati since its inauguration in 1946, has been awarded \$300 for his outstanding leadership and technical accomplishments at this center.

Under Mr. Lundquist's leadership the new forecast center and improved river and flood forecasting techniques proved to be most successful. His staff contributed greatly to this result, but they have said that much of the credit for their individual contributions belongs to Mr. Lundquist because of his guidance and inspiration. The Cincinnati office has proved to be a very effective training ground in modern river forecasting methods, both for the Bureau employees who have worked there and then gone on to responsible positions in the several

Phases of the Moon

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, 10:21 a.m.,
March 20, 1956.

Summer Solstice, 5:24 a.m.,
June 21, 1956.

Autumnal Equinox, 8:36 p.m.,
September 22, 1956.

Winter Solstice, 4:00 p.m.,
December 21, 1956.

PHASES OF THE MOON

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
☾ Last Quarter	4 22 41	3 16 08	4 11 53	3 08 06	3 02 55	1 10 13	1 08 40	1 08 40	1 08 40	27 11 25	26 18 02	25 01 12
● New Moon	13 03 01	11 21 38	12 13 36	11 02 39	10 13 04	8 21 29	8 04 37	8 04 37	8 04 37	4 04 24	2 16 43	2 08 12
☽ First Quarter	20 22 58	19 09 21	19 17 13	17 23 28	17 05 15	15 11 56	14 20 46	14 20 46	14 20 46	11 18 44	10 15 09	10 11 51
○ Full Moon	27 14 40	26 01 41	26 13 11	25 01 40	24 15 26	23 06 13	22 21 29	21 12 38	20 03 19	19 17 24	18 06 44	17 19 06
☾ Last Quarter												
● New Moon												
☽ First Quarter												
○ Full Moon												
☾ Last Quarter												
● New Moon												
☽ First Quarter												
○ Full Moon												
☾ Last Quarter												
● New Moon												

River Forecast Centers and for representatives from meteorological and hydrological organizations of foreign countries.

The handling of flood emergency situations by the Cincinnati office has been highly commendable throughout, with the very accurate predictions made during the major Ohio River flood of February and March 1955 a characteristically outstanding example.

Max L. Caldwell, recently promoted to GS-11 Forecaster at Anchorage, Alaska was awarded \$200 for exceptional service to his station during the past year.

In addition to his own observational work, Mr. Caldwell very capably filled in for the Supervising Observer who was ill, covered shifts left vacant by other sicknesses and resignations, and participated actively in the station forecasting program. This additional work was performed at great personal inconvenience; and yet Mr. Caldwell also found time to

complete a correspondence course in Meteorology. Our hats are off to Mr. Caldwell; his inspiring performance and unselfish devotion to duty are a credit to him and to the Weather Bureau.

Charles A. Burley of the National Weather Analysis Center, Suitland, Maryland received a cash award of \$200 for sustained superior performance during the past year.

In addition to plotting synoptic charts with an engraver's precision, Mr. Burley does his work so quickly and efficiently that he often finds time to voluntarily assume additional duties. He has always considered it a personal obligation to assist new personnel and because of this has aided materially in the training progress of new men.

Ann G. Rawlings of the Kansas City Regional Office has been selected for a \$200 award because of her outstanding work

as a GS-7 Placement Officer.

Throughout her thirteen years in the Bureau Miss Rawlings' work has been most commendable; but during the past two years when Regional Offices, as well as stations, have been working with reduced staffs, her ability to carry a very heavy work load and at the same time maintain a high quality of performance was particularly noticeable and valuable. By her careful attention to all available information concerning the qualifications and abilities of employees throughout the region and her understanding of the requirements of jobs, she has contributed greatly to the best possible selection and assignment of employees, and has been able to help them make the best choice with respect to available assignments.

Miss Rawlings has been in the Kansas City Regional Office since 1943, having transferred at that time from the Central Office where she had worked for a year.

HARRIS J. RAINEY, messenger attached to the Central

Mail Room in the Central Office, Washington, D. C., has received a \$200 cash award for sustained superior performance during the past year. Actually, Mr. Rainey's excellent work can be traced back to his very first Weather Bureau performance rating. From that time to the present, he has always been given the highest rating in recognition of his ingenuity, initiative, and willingness to take on added responsibilities, above and beyond the normal requirements of his job.

Mr. Rainey was born October 16, 1917 in Upper Marlboro, Maryland, and attended Pomonkey High School from 1931 to 1933. He worked at various jobs, both in private industry and for the Government, until 1944, when he was called to active duty with the U. S. Army. Mr. Rainey served 3½ years, rising to the rank of Technical Sergeant before being honorably discharged from the service in June of 1947. He then went to work for the State Department until February of 1949 when he accepted his present Weather

Bureau position. In November of 1950, Mr. Rainey was recalled to active duty, this time emerging as a Master Sergeant, in January of 1952. He then applied for reinstatement to his Weather Bureau position. It is apparent that Mr. Rainey has applied the same high standards of conduct and devotion to duty to his Army service that he has always applied to his Weather Bureau career.

MAX UNGAROOK, mechanic at Weather Bureau Office, Barrow, Alaska has once again demonstrated that he is an unusual person. Winner of a meritorious service award in 1951 for saving a fellow employee's life on the Alaskan tundra, (see Topics for April, 1950), Mr. Ungarook has received a cash award of \$200 for the initiative, versatility and ingenuity he has displayed in the performance of his job at Barrow, Alaska during the past year. Mr. Ungarook, a native of Alaska, has been with this organization since November 7, 1947.

New Assignments

JOSHUA Z. HOLLAND, Scientific Services Division Research Meteorologist, and Weather Bureau Civil Defense Coordinator, transferred to the Atomic Energy Commission on January 2, 1956 to serve as full-time Secretary to the Commission's Advisory Committee on Reactor

Safeguards. Dr. Wexler, our Director of Meteorological Research, is a member of this committee and Mr. Holland has been his alternate. Studies of reactor hazards by Mr. Holland have materially influenced many of the analyses subsequently accepted by the A.E.C. making him the

logical choice for the newly established position of Secretary of the Committee.

Mr. J. J. Davis has been chosen to carry on Mr. Holland's work as Civil Defense Coordinator, and to make plans for the closer integration of this work with the Weather Bureau's own Emergency Planning Activities.

NEW METEOROLOGISTS IN CHARGE

Concordia, Kansas

BERTON B. GREEN of the Wichita Station has been selected as meteorologist in charge of Concordia, Kansas. He has been in the Bureau since July 2, 1928,

and his assignments have been at Abilene, Roswell, Shreveport, Boston, Norfolk, New Haven, New York, Roanoke (in charge) and Wichita.

WBAS, Fort Wayne

RHEINHART W. HARMS, GS-11 Principal Assistant at Hartford, has been selected for transfer to Fort Wayne as GS-11 MIC, succeeding Mr. Robert C.

Borders.

Mr. Harms is 39 years of age and entered the Weather Bureau in July, 1946, with assignment to the HYPO Project at Kindley Field, Bermuda. His earlier weather experience was gained in the Air Force after having acquired intensive military training in meteorology. He is a graduate of the Wisconsin Institute of Technology at Platteville, Wisconsin. Subsequent assignments in the Weather Bureau were in the Marine Section at New York for the period June, 1948, to June, 1949, at which time he was transferred as MIC of Bridgeport, Conn. In April, 1955, he was transferred and promoted to GS-11 Principal Assistant at WBAS Hartford.

WBO, Lancaster

BERNARD N. WHITE, formerly assigned at Milwaukee, has entered on duty as Meteorolo-

gist in Charge at WBO, Lancaster, Pennsylvania. Mr. White has been in the Bureau since August 1927, serving at Charleston, S. C.; Pittsburgh, Pa.; Little Rock, Ark.; and as Principal Assistant at the New Orleans Tabulation Unit prior to transferring to Milwaukee in March of 1949.

WBAS, Los Angeles

GEORGE W. KALSTROM, District Forecaster at the Los Angeles WBAS, has been selected to succeed Mr. Jack C. Thompson as MIC of that station. Mr. Kalstrom has been in the Bureau since October 5, 1937, and his assignments have been at San Diego, Burbank, Chicago (Weather Bureau Scholarship in Meteorology), and Los Angeles. He has been District Forecaster at the latter station since June 1, 1947.

WBAS, Madison

STEPHEN J. RIGNEY of the St. Louis WBAS has been selected to succeed Mr. Joos as MIC at Madison. Mr. Rigney entered the Weather Bureau on January 6, 1947, as a Professional Intern at Washington National Airport and his subsequent assignments were at San Francisco (FAWS and IAFS), Scottsbluff (Principal Assistant), and St. Louis (Aviation Forecaster).

WBAS, Valdosta

ROY J. McCLURG, currently serving as Forecaster at Oklahoma City has been selected for transfer to the MIC position at the new station being established at Valdosta, Ga. Mr. McClurg has been with the Bureau since May 1923, having served at Saginaw, Michigan; Moorhead, Minn.; and Tulsa, Oklahoma, prior to his assignment to Oklahoma City in 1944.

RETIREMENTS

Trafford G. Dimick

TRAFFORD G. DIMICK, Meteorological Aid, Burlington, Vermont, who is presently on sick leave, will be retired on account of disability effective January 1, 1956.

Mr. Dimick was born on July 19, 1910 at Hinesburg, Vermont. He was graduated from the Burlington High School in 1928. After working briefly as assistant to the Secretary of the local Y.M.C.A. in Burlington, he entered the Weather Bureau as a Minor Observer May 12, 1930. Except for eighteen months of military service in the Aerology Branch of the Navy during World War II, his entire 25 year period of service was spent at the Weather Bureau station in Burlington.

He is an enthusiastic outdoorsman with hunting and fishing

his chief interests. He was an observer of the old school and was noted for the outstanding accuracy of his observational forms. It was jestingly said at the Burlington station that "Trap" only made one error a year — on the day before hunting season opened!

Mr. Dimick may be reached after retirement at his home at 34 University Terrace, Burlington, Vermont.

John T. Lindgren

JOHN T. LINDGREN, Meteorological Aid in the Hydrologic Services Division in the Central Office, retired December 27 because of disability.

A native of Washington, Mr. Lindgren attended the McKinley Technical High School in Washington, D. C., graduating in 1916. In March of 1918, he enlisted in

the Army and served as an assistant pharmacist in the Army's Medical Department until he was honorably discharged in July of 1919. Except for a six year period, from 1928 to 1934, when he had his own business, Mr. Lindgren has worked for the Government. He first worked for the Treasury Department, then transferred to the Department of the Interior, and in October of 1942 transferred to the Weather Bureau. Mr. Lindgren spent the majority of his Weather Bureau career in the Hydrologic Services Division, where his technical competence and jovial personality made him a valuable asset to the Hydro-meteorological Section.

Friends who wish to contact Mr. Lindgren can reach him at 5315 Macomb Street, N.W., Washington 16, D. C.

Eugene F. Sweeney

EUGENE F. SWEENEY was born in Washington, D. C., on September 18, 1900. He graduated from Emerson Institute in Washington and attended George Washington University. He started his career in the Bureau at the age of 16, receiving his probational appointment in the Central Office as messenger boy on October 12, 1916. In 1926 he resigned to engage in work with private industry. He returned to the Bureau in 1930 and served continuously in the Central Office until he took leave without pay for a year on account of illness. At the end of the year he applied for disability retirement which was approved effective December 7, 1954.

During his service in the Bureau Mr. Sweeney was assigned to a number of divisions in the Central Office where he acquired a broad knowledge of functions of these divisions and of the operations of the Bureau as a whole. His duties took in such tasks as reorganizing the Bureau's climatological archives with records dating back to 1820; installing a property accountability system for the Bureau, which was later adopted by the Department of Commerce; special work in the Office of Special Assistant to the Chief of Bureau; Bureau rep-

resentative on the Federal Fire Council and on the National Safety Council.

On August 24, 1943, Mr. Sweeney was assigned in Charge of the General Services Section. This position was established incident to transfer of the administration and maintenance of buildings occupied by the Bureau, to the Public Buildings Administration. He was responsible for coordinating with PBA those matters of operation, maintenance, repair and upkeep of office quarters occupied by the Bureau in buildings under the control of the Public Buildings Administration. He handled the numerous and complex problems that confronted him in an outstanding manner. In fact, in 1953 he was given an Outstanding Efficiency Rating and the quality of his services can best be summarized by the following comments made by his Division Chief at the time: "The work accomplished through his efforts is of a remarkably high quality considering the means at his disposal. His performance is truly astonishing. He is normally concerned with ten to twenty projects at all times and he has a positive genius for making simultaneous progress on all jobs. In eight years I have never seen the man waste time—

even seemingly casual conversations turn out to have a purpose. He is one of the best men I have known in an emergency. He has great ability for improvising and the courage and good judgment to be unconventional when the occasion requires. Cooperation is his stock-in-trade and he practices it 100% upward, downward and outward."

In addition to his official duties he was active in civic and social organizations. He was an active member of the Wood Acres Maryland Citizens Association for many years, serving on the Executive Committee for ten years; delegate to the Montgomery Civic Federation and to the Glen Echo Maryland Fire Board; member of the Kappa Sigma National Fraternity, serving as Vice President for two years; and Honorary Life Member of the Washington Canoe Club where he spent many years in aquatic sports. A number of years ago Mr. Sweeney composed the George Washington University football song which they still sing at their games.

His retirement means the loss to the Bureau of a competent, efficient and loyal worker. He will continue to reside at his home, 5708 Harwick Road, Wood Acres, Maryland.

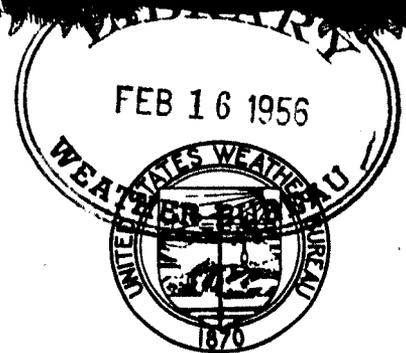
WEATHER BUREAU

FEBRUARY
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TOPICS

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Volume 15

Number 2

topics of individual concern to staff members, and since the Personnel Office of the Bureau is remote from most field offices, the MIC must accept the responsibility for consultation and sympathetic, but realistic, guidance. In managing the station program, arrangements should be made within classification regulations for employees to perform duties of higher grade positions under proper supervision for training purposes and career development. Frequent appraisals of performance should be made in discussion with each employee so he does not begin to worry about "how am I doing." The employee who never knows how he stands with his "boss" is generally not a happy one. Proper recognition of special abilities and the reporting of these abilities to proper authorities must never be neglected. If an employee excels in a particular phase of the work and gets recognition for this excellence, he is encouraged to strive for excellence in other phases of his job. Reporting special abilities to the Regional and Central Offices may point to just the right man for a particular assignment.

The MIC should also keep as familiar as possible with the rights and privileges of civil service employees, the benefits provided them or their families under the retirement system, the new insurance program and the benefits of the Employees' Compensation Commission so that he may counsel and advise them as occasions warrant. He should be cognizant of the prevailing general welfare of each employee and his family and offer assistance in personal problems that are interrelated with the job. In other words, that great personal characteristic called empathy is required to fully meet the responsibilities of an MIC to his staff.

Dr. Harry Wexler Appointed Senior Scientist for IGY Antarctic Program

THREE major appointments for the U. S. International Geophysical Year were announced on December 22, 1955, by Dr. Detlev W. Bronk, President of the National Academy of Sciences, and Dr. Joseph Kaplan, Chairman of the U. S. National Committee for the International Geophysical Year. Dr. Edward O. Hulburt, retiring director of research at the Naval Research Laboratory, was appointed Senior Scientist for the USNC-IGY. Dr. Harry Wexler, Director of Meteorological Research, U. S. Weather Bureau, was appointed Chief Scientist for the U. S. IGY Antarctic program. Mr. Albert P. Crary, head of the U. S. Antarctic Glaciology program, was appointed Deputy Chief Scientist of the Antarctic program.

As Chief Scientist for the U.S. Antarctic program, Dr. Wexler will be responsible for carrying out the overall scientific program

of geophysical research to be taken by American scientists on the Antarctic continent during 1957 and 1958. In addition to meteorology and glaciology, there will be investigations in oceanography, geomagnetism, aurora and airglow, ionospheric physics, seismology, gravity, and cosmic rays. The studies will be made at five U. S. bases, on a series of over-snow traverses, and from ships and aircraft during the two-year period.

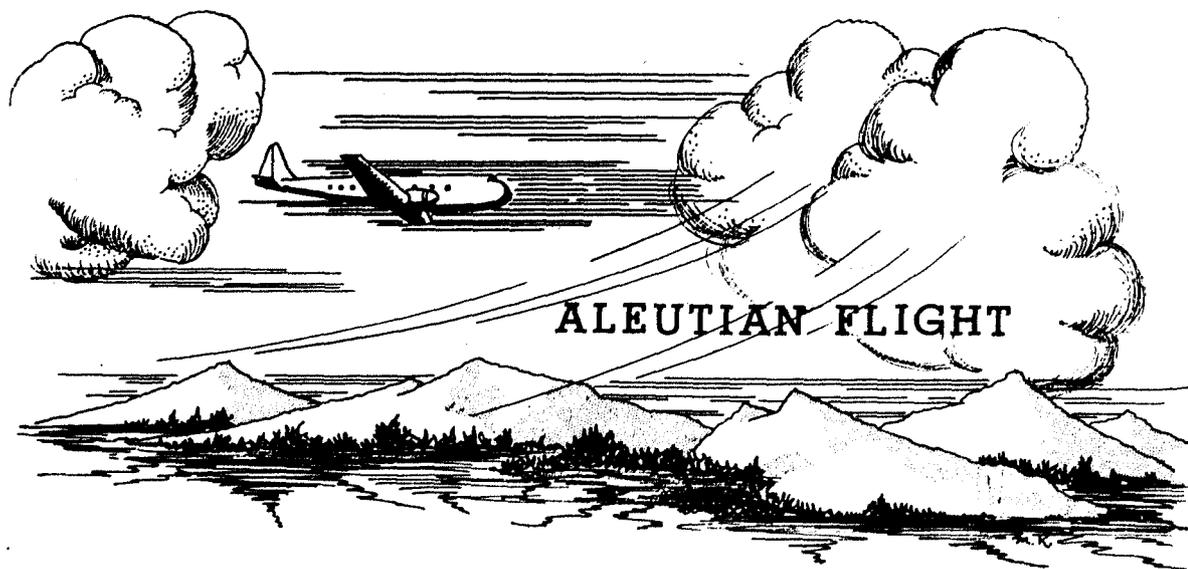
About twenty positions for Weather Bureau personnel are available in the IGY Antarctic program. Research meteorologists, analysts, rawinsonde observers and technicians, and chartmen are needed. Information was given in TOPICS for November, and anyone may write to the Central Office for additional details.

Weather Bulletin Unit Established

BEGINNING February 1, 1956, some of the national weather summaries transmitted on Service C have been prepared by a new unit at Suitland, Maryland which has been designated as the Weather Bulletin Unit. This three-man unit is supervised by Mr. Robert M. Ferry, who was previously assigned to the Extended Forecast Division. At the present time, three of the AP transmissions which had been prepared at Chicago, Atlanta, and New York are originating from the Weather Bulletin Unit. An important ultimate objective of the new unit will be a weather "watch" to keep abreast of all

newsworthy weather developments in order to issue timely weather releases for distribution over press and radio wires. Experiments are currently being made by the unit with the hope that a weather summary can be developed which will prove helpful to television stations for their weather shows in cities where there is no Weather Bureau facility for briefing.

Comments concerning the unit's activities or proposal of material the unit might be in a position to prepare should be forwarded to the Central Office, attention of SR&F Division.



ALTHOUGH flying has been the chief means of transportation in Alaska for many years, it is still marked with ruggedness and a bit of pioneering. Early in December Miss Jessie M. Lippincott of WBAS Anchorage accompanied a flight along the Aleutian Chain. Her report of the flight tells of landing strips sliced out of the sides of mountains, an aerial mail drop, a GCA approach, and a 24-hour delay due to strong surface winds with gusts as high as 76 knots.

"On December 8 I departed with Reeve Aleutian Airways (RAA) Flight 3, to Adak, with intermediate stops. DC-3 type equipment was used.

"On take off from Merrill Field conditions were 25 hundred scattered and 4 thousand broken. We climbed to cruise on top, breaking out of the clouds at 6 thousand, as forecast. We were cleared to cruise at 8 thousand until let down at Cold Bay, our first stop. Several good examples of lenticular alto-cumulus type clouds were noted at about cruising level over the Alaska-Aleutian Range, near King Salmon.

"At Cold Bay, I talked with Mr. Tom McDonald, in charge

of the Weather Bureau, as he met the plane. After take off from Cold Bay we then cruised at approximately 1 thousand feet, below all clouds. The route then took us along the north side of the Aleutian Chain, over the Bristol Bay and Bering Sea. Our first landing after Cold Bay was at Cape Sarichef, which is a single runway airport on the southwest end of Unumak Island. Enroute to Dutch Harbor our next stop, we flew through some light snow showers and a little freezing drizzle. The airport at Dutch Harbor is situated so that a northerly wind of over 10 knots can cause very tricky wind conditions at the runway. The airport was sliced out of the side of one of the mountains that rise sharply to heights of 25-27 hundred feet. These mountains form an unusually well protected harbor, open to the north. However, with strong winds from any direction, very turbulent conditions will prevail at the airport.

"After Dutch Harbor we flew on to Umnak, where the airport is located on the southeast end of the island. It is completely unprotected from any winds or flow from the southeast through

southwest. After leaving the airport we flew to the southwest end of the island where we made a mail drop to the village of Nikolski. This is a village of sheep herders, that tend about 5000 head of sheep. After the mail drop was completed we climbed to 8000 feet to cruise to Adak. We were again flying above an overcast, the top of which was 6000 feet. While in the cockpit the crew pointed out some of the volcanoes, which were identified by the bulges they made in the clouds and the turbulent conditions of the clouds to the lee of these bulges. There are several active volcanoes along the route but they were all obscured by the clouds during the flight.

"At Adak a GCA let down was made. An extra headset was plugged in for me and I was able to listen to the GCA and pilots conversation.

"The morning of December 10th Capt. Baker and I checked with the Navy Aerology office to get a weather briefing. Winds at that time were SSE 45 kts with gusts to 60, with conditions forecast to hold like that most of the day. Capt. Baker was doubtful about take off because of extreme

turbulence and the probability that several scheduled landings enroute would be inadvisable with such winds. There was a deep low centered about 300 miles WSW of Adak at this time with indications of a continued ENE movement. Capt. Baker canceled the flight after a Navy plane on take off reported extreme turbulence from the surface to six thousand feet, and the Navy ordered no more Navy aircraft to depart until conditions improved. The wind shifted to the SW at 1700 BST. At this time the aircraft was further secured and spoilers were put on the wings. Gusts to 76 kts were recorded after the wind shift.

"The next morning winds had diminished to 20-25 kts ceilings were 20-22 hundred with breaks, the visibility 2 miles with snow pellets. RAA Flight 4 departed at 0900 BST. After take-off we climbed to 15 hundred feet and flew to Atka, which is located on

Nazan Bay which is somewhat sheltered by low hills from the southwest winds. Showers of snow and snow pellets were observed in the area. After take-off from Atka we climbed to 9 thousand to cruise to Umnak. Several cumulus and a few cumulonimbus build ups were observed and photographed. From the air at Umnak the crew pointed out the airport used during the summer. It is on the north shore of the island and is used to avoid the fogs that frequently blow in off the Pacific. Landings were made at Dutch Harbor and Cold Bay. At Cold Bay the wind given to the aircraft for landing was SE 10, while at the ramp it was obvious winds were at least 20-25. This was discussed with Mr. McDonald, MIC at Cold Bay, and he told me that steps were being taken to have the anemometer raised to correct this.

"On the flight from Cold Bay to Kodiak, the crew pointed out

several airports and passes they often used. Landing was accomplished at Kodiak, then on to Anchorage. It was dark by this time but some patches of low stratus or fog could be seen below us. Just out of Kenai we ran into a cloud deck at 35 hundred feet. We picked up quite a bit of propeller and windshield ice, but de-icing equipment took care of it nicely. We broke out of the cloud layer at 28 hundred feet while over Turnigan Arm, and landed at Merrill Field at 2015 AST. After landing I briefed the duty forecaster on conditions enroute, especially between Kenai and Anchorage.

"To me the trip was very worthwhile and I feel I have a much better picture of the terrain and type operation along the Aleutian Chain. The crew seemed pleased to have a forecaster along and said they would like to take more on such flights.

Civil Service has a Birthday

SEVENTY-THREE years ago on January 16, 1883, the present Civil Service Act, also known as the Pendleton Act, was signed into law by President Chester A. Arthur. Although merit and fitness were prime considerations in making job appointments when our government was new, these factors gradually became subordinated to the question of party loyalty. By 1829 the Spoils System practice of making appointments had become so predominant that it was the generally accepted policy that "To the victor belong the spoils!"

Every change in administration resulted in mass removals of government workers and their replacement by friends of the incoming administration. This practice eventually became a



public scandal and was criticized by President Lincoln during his administration. Public criticism resulted in some effort to regulate appointments but it was not until the assassination of President James A. Garfield in 1881, by a disgruntled office seeker, after four months in office that the country was sufficiently aroused to take positive steps to establish a real merit system.

Civil service reform became an important election issue in 1882 and candidates were elected to office who promised such reform. Both Senate and House quickly concurred in the Civil Service Act and it was promptly signed by President Arthur.

The passage of the Civil Service Act marked one of the most important steps in the growth of our government. In the beginning only 10 percent of the jobs in the Executive Branch were in the competitive service. Today 85 percent of all jobs in the Federal government are in the competitive service, and 73 years after its enactment the Civil Service Act remains the keystone of our modern, comprehensive Federal career service.

The Extended Forecast Section

THE Extended Forecast Section of the Scientific Services Division was moved from the Old Main Building at 24th and M Streets, N.W., to Suitland, Maryland in September 1955. This was done because operational and research considerations made it desirable for the Section to be close to the Joint Numerical Weather Prediction Unit, National Weather Analysis Center, and Climatological Services Division.

Prior to this move, the Extended Forecast Section had been in the Old Main Building of the Central Office since May 1941. Previously it had been at the Massachusetts Institute of Technology where it was established as an operating unit in August 1940. The basic methods used by the Section were developed at the Massachusetts Institute of Technology between 1935 and

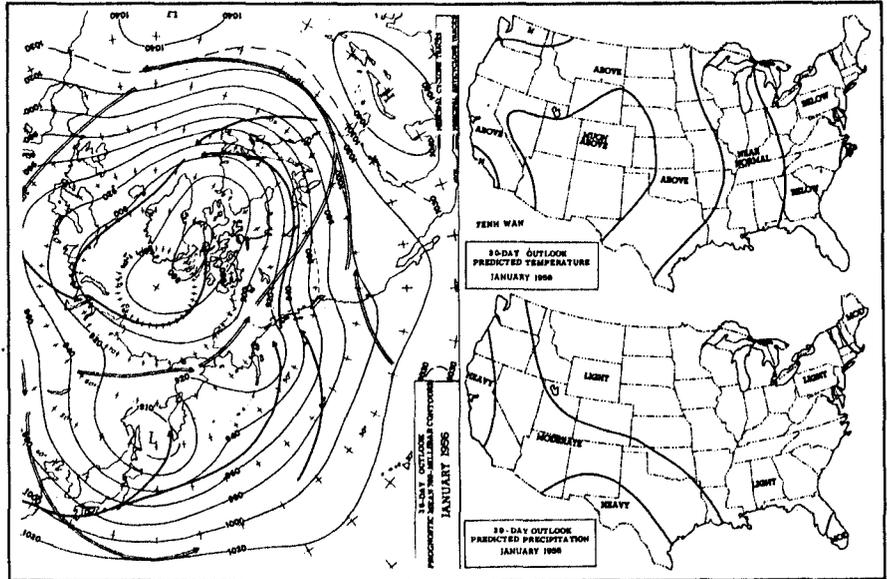


Figure 2. Thirty-day forecast material transmitted over facsimile network consisting of 30-day prognostic 700 millibar chart with predicted storm tracks and the predicted U.S. surface temperature and precipitation anomalies.

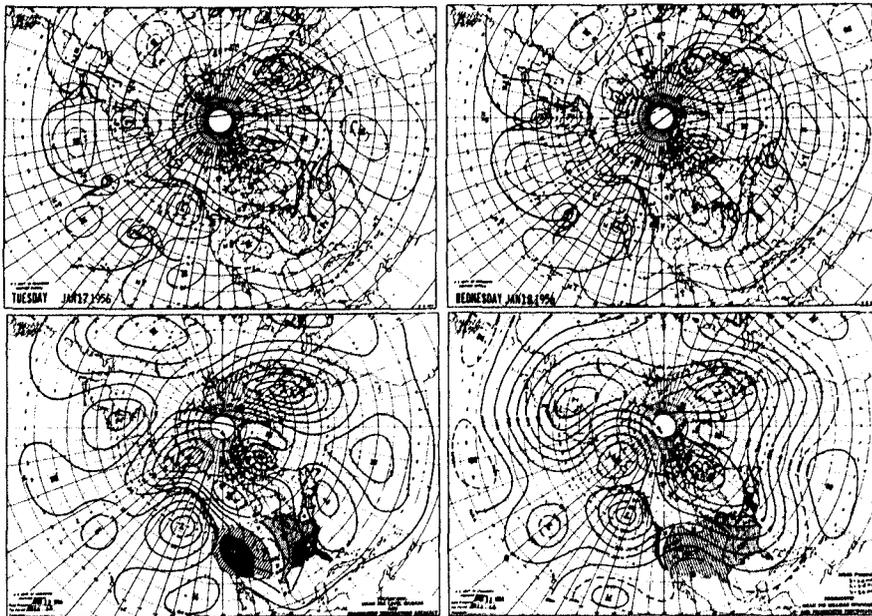


Figure 1. Five-day forecast material, part A transmitted over facsimile network consisting of the last two daily sea level prognostic charts and the 5-day mean prognostic sea level and 700 millibar charts with predicted temperature and precipitation anomalies.

1940 in cooperation with the U.S. Weather Bureau and the Bureau of Agricultural Economics and with the help of Bankhead-Jones funds from the Department of Agriculture.

The Section's primary functions are to prepare 5- and 30-day forecasts and to conduct research designed to improve extended-period forecasting. Some 46 members of the Section including meteorologists, meteorological aids, statistical clerks, and clerical personnel, as well as personnel and machines of the Meteorological Statistics Section contribute directly or indirectly to the twice-weekly issuance of five-day forecasts and twice-monthly issuance of thirty-day outlooks.

The five-day forecasts are currently prepared on Monday and Thursday for issuance early Tuesday and Friday of each week.

During the coming spring the number of forecasts will be increased to three and they will be prepared on Sunday, Tuesday and Thursday for release Monday, Wednesday and Friday. On forecast days, work begins on the forecast early in the morning and before the official forecast is completed late that evening, the entire professional staff has had an opportunity to make comments and criticisms through an hour-long forecast discussion. After the discussion, the final official forecast is prepared for distribution as guidance material for the use of district forecast centers in making five-day forecasts for specific areas. On the following morning this material is distributed in coded form or in contracted plain language over Service "C" teletype circuit and in graphic form over the facsimile network. A sample of the material is shown in Figure 1.

The 30-day Outlook obtained its start as a result of military

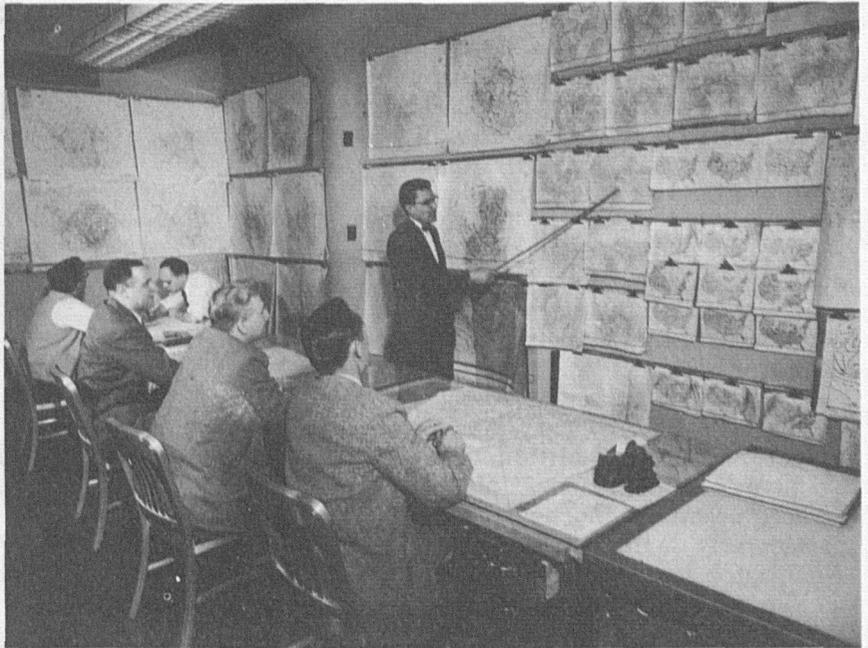


Figure 4. Scene of the five-day forecast room used for preparation of forecasts, forecast discussions, post-mortems, daily map discussions, and intra-sectional seminars. Mr. C. M. Woffinden conducting discussion.

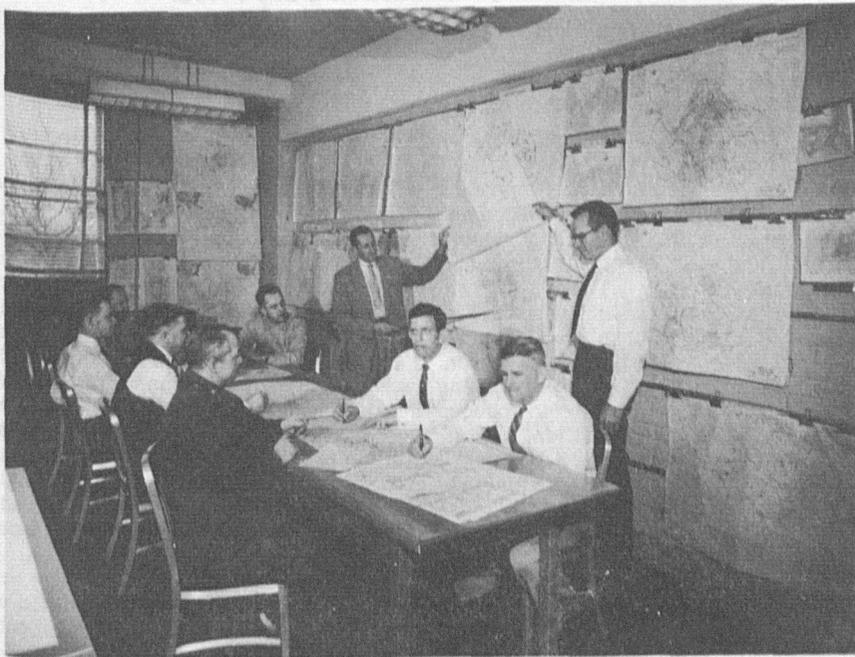


Figure 3. Classroom. Mr. H. F. Hawkins, Jr., and Mr. R. A. Green, instructing.

requirements during World War II. With the outbreak of the war, the military services requested assistance in long-range forecasting and as a result organized research on 30-day forecasts was begun in March 1942. In 1947 the first experimental Average Monthly Weather Resume and Outlook appeared in printed form. Because of public demand, these forecasts became available to the public through subscription in July 1948. Today, in addition to the twice-monthly printed format, the worded outlook is transmitted over Service "C" teletype circuit and three prognostic charts are transmitted over the facsimile network (Figure 2). In addition, the radio, press, and television give the Outlook considerable coverage.

The new quarters of the Extended Forecast Section are located on the second floor of Federal Office Building Number 4, along with the U.S. Navy and Air Force

Weather Centrals. The Section has approximately 6,000 square feet of floor space which is divided quite effectively into separate offices for performing the following functions: Special extended forecasting classes for Air Force Officers and Weather Bureau personnel (Figure 3), 30-day forecasts, 5-day forecasts and discussions (Figure 4), plotting, map reading, statistical computations, I.B.M. machine operations, research (Figure 5), and seminars. All rooms have been equipped with new gray metal furniture and in addition, the "built-in" air conditioners make working conditions more pleasant particularly during those typical Washington summer days.

To all of you who may visit the Central Office, and particularly to those who have visited the old quarters, the Extended Forecast Section extends a cordial invitation to visit the new location in Suitland.



Figure 5. A view of one of the Section's six research rooms. Mr. J. S. Winston (rear desk) and Mr. C. R. Dunn.

RECENTLY the Civil Service Commission requested a comprehensive report on training activities by all Federal agencies. The part of the Weather Bureau's report under the heading "Supervision and Executive Development" is being reproduced here since only limited information on this phase of the Bureau's training activities has previously been distributed.

Supervision and Executive Development:

(a) A course called "Basic Supervision" is available for Weather Bureau supervisors, and it is based upon a Weather Bureau Training Manual of the same title. This course is available as a 20-hour course or a 40-hour course.

Training Programs

So far, it has been given to two groups of supervisors in the Central Office and to one group of field station supervisors called together for the course at a Regional Office.

The course is given primarily by means of directed discussion, although some of the topics such as organization, delegation of authority, creative thinking and work improvement are introduced by short lectures. In addition, demonstrations of group creative thinking and role-playing are conducted with class participation.

(b) The Weather Bureau participates in the Civil Service Intern programs. It has been quite successful in having its candidates selected.

(c) A course which might be called a highlevel orientation course, but which is designed toward executive development is the Central Office Familiarization Program. The purpose of this course

is to familiarize promising GS-12's and GS-11's with Central Office functions, methods and people.

The basic plan of the program includes orientation of the participant by attendance at staff meetings and planning conferences, and also a review of the general organizational structure, administrative problems and functions, and the technical activities of the Weather Bureau. A second, concurrent phase of the program consists of assignments to the various Divisions, which begin with consultation with the Division advisor, followed by participation in selected work cases for the Division. A regular series of conferences are organized with the Personnel Division on the subject of supervision and personnel policy.

Training is accomplished by:

(1) Work assignments in each Division, which will give the participant

a knowledge of the scope of functions of the Division and manner in which the functions are carried out.

(2) Individual counseling at the Division level and in the Plans and Program Management Office, Assistant Chief, Budget, and Chief of Bureau levels, aimed at career development.

(3) Encouragement of related study by invitation to evening professional meetings and seminars, and also meetings on management, personnel, etc.

One of the guiding principles of the course is that the members are sufficiently advanced and mature and interested to dig a great deal for themselves, that is, that the course is not a pre-digested, milk-feeding course, given as a one-shot informational hypodermic.

The pilot course, August 1 through December 20, can be summarized briefly as follows:

The backbone of the course has been the meteorological reading and laboratory course in advanced methods of meteorological analysis and forecasting. However, there were a number of lectures attended by the group:

The Storm Surge Course (one of the group was project leader in the organization of the Storm Surge Program);
Seventeen lectures on extended forecasting;

Two lectures on forecasting research by Dr. Tepper;

Three lectures on Statistics by Messrs. Brier and Enger;

One lecture by Dr. Bolin on Numerical Weather Prediction in Stockholm;

One lecture on the Automatic Procurement and Processing of Data Program by Mr. Ferguson Hall.

Several lectures in a Civil Defense Orientation Course (given for meteorologists selected for assignment to FCDA Regional Offices).

There were also some informative trips:

To AROWA (as part of this trip, the Group also visited: WBAS, Norfolk; WBO, Hatteras; WBO, Cape Henry);

The Geophysical Research Directorate of the Air Force Cambridge Research Center (as part of this trip, the Group also visited: Blue Hill Observatory; WBAS, Boston; and the ANDB Project at Newark).

In addition, many placement conferences and various other staff conferences, research conferences, etc., were attended. At the end of the course, all Central Office divisions were visited for an intensive review of their programs.

On the basis of experience with the pilot program, the next Advanced Study Group will be conducted along the following lines, beginning on February 6, 1956:

Curriculum: The first two months will be devoted to a graduate level laboratory course in modern methods of meteorological analysis and prediction.

The basic schedule provides for one day of orientation in each of the Central Office Divisions. A Division advisor is appointed permanently in each Division.

At the end of the orientation period, the participant selects one or two Divisions for more concentrated study for the remainder of the program.

At the end of each week the participant is required to submit a written report to the Training Section. This report consists of a discussion of significant training experiences and observations and may include any other topics of particular interest to the participant.

The total length of the program varies with each candidate but generally is six to eight weeks.

(d) In the realm of executive development, the Weather Bureau conducts a continuous training program at the Central Office. One way in which this is done is by job rotation through special assignments at the "third floor" level. By this means, promising men are placed in close daily contact with the top echelon, including the Chief of Bureau, his Assistant Chiefs and Planning and Budget staffs. In these "rotation" positions they are given various urgent problems to work upon and coordinate.

Another means of executive training is exemplified by the "project leader" concept. Since the Bureau has limited executive staff, various individuals at the Central Office are given a project (often new program) to coordinate in all its varying aspects. In effect, this means that the project leader has the responsibility of getting cooperation and directing the over-all planning and implementation of the project. These assignments have formal status and carry delegation of authority within defined broad limits, directly from the Chief of Bureau, by means of a memorandum to the project leader and all Division Heads.

(e) Another means of executive development is through invitation of middle echelon executives to the Chief of Bureau's top staff conferences from time to time. This affords excellent opportunities to observe and participate in policy decisions.

(f) A pilot program which included certain aspects of executive development was completed in December 1955, and plans for placing the program on a continuing basis have been completed. This program is a sort of staff college and is designated as "The Advanced Study Group." The objective of the program is to give selected employees

GS-13 and above (some GS-12's may be admitted later) an opportunity to become better acquainted with the latest technical developments in meteorology, in preparation for doing a better job of technical leadership. Intrinsic is the implication that technical executive development will be an important result of the training.

The third month will consist of selected lecture-discussions on special meteorological topics, plus assignment of ad hoc problems and group visits to various meteorological projects, such as AROWA and GRD. The special meteorological topics will include:

- Concepts of hydrology;
- Climate change and trends;
- Flow of water vapor through atmosphere;
- Seiches;
- New ideas on the general circulation;
- Discussions on hurricanes and severe storms;
- Problem of energy in the atmosphere (in connection with atomic explosions);
- Cloud physics—precip. mechanisms.

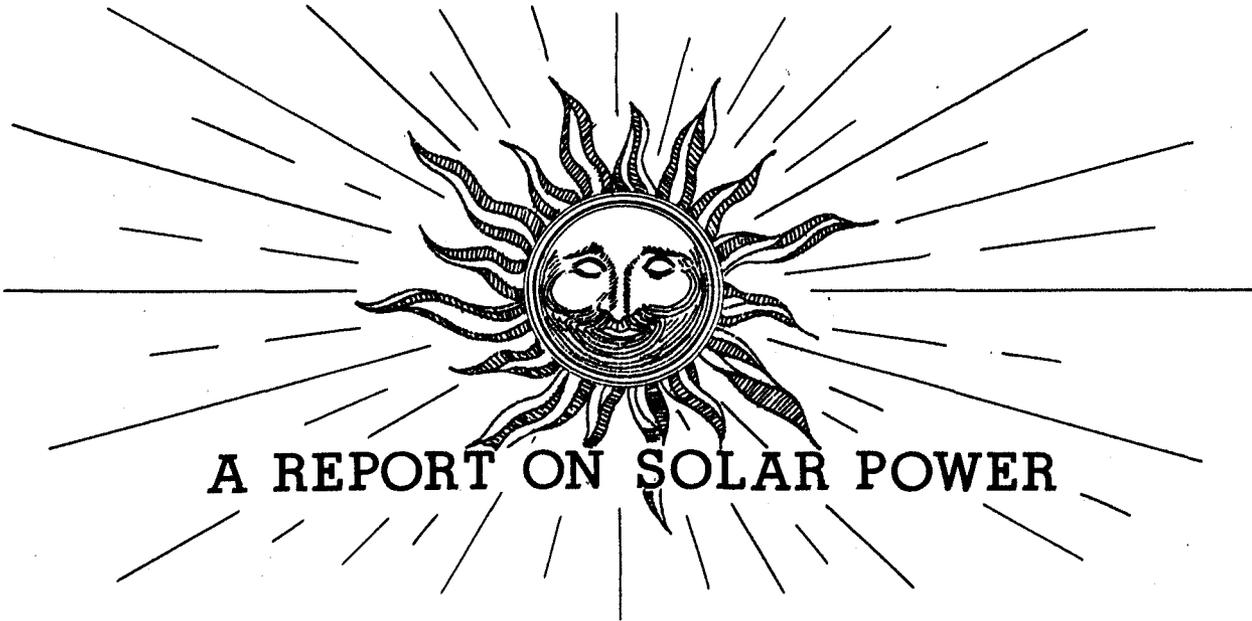
Miscellaneous lectures will be made available on request by the group. The first week of the fourth month will be devoted to a course in Basic Supervision. During the remainder of the fourth month, ad hoc problems will be continued, and in addition selected lecture-discussions and demonstrations should be given on leadership problems, perhaps on such things as getting responsible officials to accept authority, and the like.

Participants in the program will be:
Harry Downs, WBAS, Seattle
J. C. Eberhardt, WBAS, Salt Lake City
G. N. Brancato, WBAS, Baltimore
Oscar Tenenbaum, WBAS, Boston
Reinhart C. Schmidt, WNA
Walter R. Davis, Miami

25 Million Callers

CHICAGO, Jan. 30 (UP)—Chicago's most popular telephone number in 1955 was not that of a blond or a brunet.

It was WEather 4-1212 to which nearly 23,000,000 calls were made to hear a phonograph record of the hourly weather report.



A REPORT ON SOLAR POWER

SCIENTISTS from all sections of the world met in Tucson and Phoenix last fall for the purpose of discussing the engineering and scientific principles relating to the use of solar energy. Dr. Sigmund Fritz and Louis R. Jurwitz, Weather Bureau specialists in solar radiation, attended the meetings as representatives of the Bureau. Dr. Fritz has given us the following report on the meeting.

The demands for power are accelerating rapidly as standards of living improve. Expanding world populations together with increasing per capita consumption indicate that conventional fuels will become scarce and expensive in the foreseeable future. Consequently the search for new, inexhaustible power supplies has been intensifying.

The utilization of solar energy as this inexhaustible supply has long been an attractive goal. To explore the practical possibilities of solar power, an international group of over 700 businessmen, engineers and scientists met in Arizona from October 31 to November 5, 1955. The "Conference on Solar Energy—the Scientific

Basis" met in Tucson; and the "World Symposium on Applied Solar Energy" was held in Phoenix.

At Tucson, the basic scientific background was set with a paper on the physics of the extraterrestrial solar spectrum, followed by a talk on the transmission of solar energy through the Earth's atmosphere. A discussion of the basic scientific and engineering principles and problems in the utilization of solar energy completed this first session.

For the next day and a half, the participants met in smaller groups to listen to talks on all phases of solar energy utilization. Solar heating in agriculture, solar house heating, high temperature solar furnaces, solar cooking stoves, hot water heaters, water distillers, solar powered engines, artificial algae culture for food and fuel, the solar battery and thermoelectric devices for power generation—these and other types were discussed fully by the scientists engaged in these fields of research. In several applications, data from the Weather Bureau solar radiation network were used to investigate particular problems. In still other cases,

a need was indicated for additional types of solar radiation measurements not routinely available.

On November 2, the meeting moved to Phoenix. Many of the same topics were discussed there, but this time the engineering and economic problems were stressed by contrast with the basic scientific problems which had been featured in Tucson.

From the scientific point of view, solar energy can be made to do all the things mentioned earlier. But in most places, the cost of the initial investment plus the maintenance and operation costs of solar devices is at present greater than the cost of utilizing conventional fuels. In some underdeveloped areas, however, where sunshine is plentiful but where fuel is expensive, certain uses of solar energy may be economical now, especially, if initial capital expenditures can be provided. Moreover even in the United States, it is likely that conventional fuels will increase in cost eventually as supplies gradually dwindle. At the same time, the cost of solar devices should decrease as better methods are introduced

into this relatively new field. The recent advent of nuclear energy may however offer severe competition to solar energy as a power source.

Among the uses which seem most immediately promising, are solar furnaces, and solar house heating. A solar furnace is usually a large parabolic mirror which concentrates the sun's rays from a large area onto a small area. At the focal point where temperatures may exceed 3000°C. refractory material may be placed which can then be melted with high purity since no other combustion products are involved. This specialized use of solar energy is being expanded, and France plans to add a 200 ft. diameter furnace to its present supply of furnaces.

By contrast, the use of solar energy for house heating in some areas is attractive because houses use heat at relatively low temperatures, so that heat losses are not large. The main problem in house heating with the sun is storage of energy. Obviously enough energy must be stored for nighttime use. But more difficult is the longer period storage required

by a run of successive cloudy days; storage of heat for long periods becomes too expensive. It was suggested at the meeting, that the most economical arrangement would be to provide storage of solar energy for a few days, with a conventional heating system taking up the load on long runs of cloudy days. By this system about 80% of the heat load might be met with solar energy. Although fuel costs would obviously be greatly reduced, the need for two heating systems would require high initial cost.

A public exhibit was provided at Phoenix. The Weather Bureau provided two panels which displayed our solar radiation network, (Map back, September 8, 1955) the types of data available from the network, and the instruments used in it. Many operating solar devices were displayed. Among the most interesting was an Italian pump which pumped water continuously using solar energy as "fuel". Much attention was attracted by the "solar battery" display in which telephones, small radios and motors were powered by the sun.

In summary, the feeling seemed

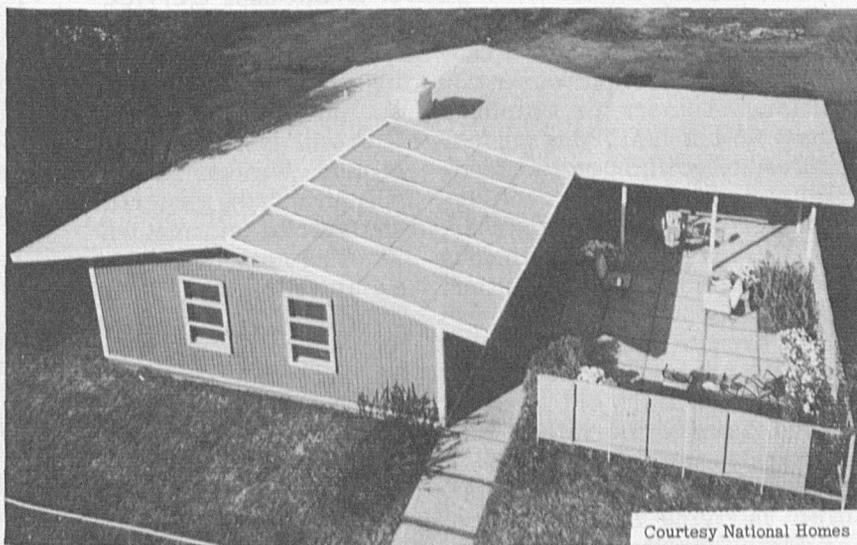


The Solar Battery supplies power for telephone communication.

to prevail that at present although the economic factors are generally unfavorable toward solar energy use, in some applications and in some areas of the world solar energy utilization is practical now. Moreover, it was felt that additional research will surely improve the competitive position of solar energy even in such highly industrialized countries as our own. To this end, plans were announced for the establishment of a new privately-financed solar laboratory in Arizona.

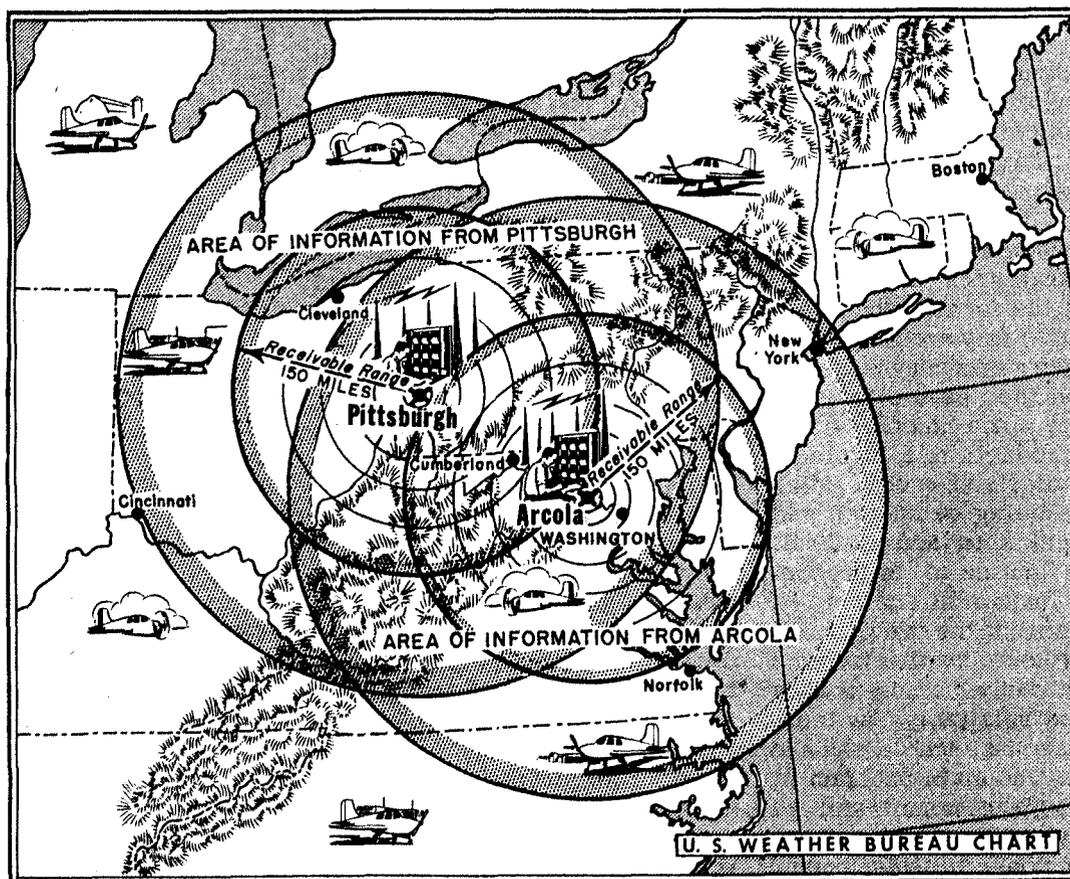
Octogenarian Sets Record for Continuous Cooperative Weather Observations

ON December 31, 1955, Mr. F. O. Alin, cooperative weather observer at Fullerton, North Dakota completed 58 years of weather observations without missing a day. We believe that this is a nation-wide record for continuous cooperative weather observations. If anyone reading this article knows of someone with a comparable observational record please let us know.



The Solar House Design is based on solar radiation data.

CAA-WEATHER BUREAU AVIATION BROADCAST SERVICE



More Stations to Provide Continuous Aviation Weather Broadcast Service

THE outstanding success of the continuous aviation Weather/NOTAM broadcast service on the Arcola, Virginia, L/MF radio range over the past 14 months has paved the way for establishing this type service at 21 other locations in 1956. As stated in previous articles, this is a joint Weather Bureau-CAA program which is planned to develop ultimately into a network pattern that will provide broadcast service for practically all of the country.

A big vote of thanks and appreciation is due the Instrument Division for developing recorder-repeater equipment to meet the

unusual requirements of the broadcast and to the staff at Washington National Airport for keeping a steady flow of vital flying weather information going out on the broadcast and operating the recorder-repeater equipment. Together, they have proved that continuous broadcasts for general aviation, particularly private and business pilots, are practical and effective. A detailed survey of pilots in the area of receivability of the Arcola broadcast showed rather conclusively that they believe it represents a significant development in flying safety service.

Future broadcasts will operate on the same principle as Arcola,

but instead of the Bureau furnishing the special recorder-repeater equipment and operating it, the CAA will assume these responsibilities. Weather Bureau stations will furnish the required forecast and warning information.

The next broadcast will be established in Los Angeles in February. The remaining twenty broadcasts planned for 1956 will be implemented as rapidly as possible in succeeding months. These will be at:

- Albuquerque, New Mexico
- Atlanta, Georgia
- Boston, Massachusetts
- Chicago, Illinois
- Cincinnati, Ohio

Cleveland, Ohio
Denver, Colorado
El Paso, Texas
Fort Worth, Texas
Indianapolis, Indiana
Kansas City, Missouri
Memphis, Tennessee
Minneapolis, Minnesota
New Orleans, Louisiana
New York, New York
Oakland, California
Pittsburgh, Pennsylvania
Portland, Oregon
Seattle, Washington
St. Louis, Missouri

The following extract from a recent Department of Commerce news release tells how these broadcasts will work:

"Specially designed tape recorder and repeater equipment is used which contains up to twelve individual units, each unit reporting in succession separate bits of useful information. After the latest information is recorded on the tapes, the equipment is

switched to broadcast and the information is automatically transmitted from the individual tapes in succession. The entire broadcast cycle takes from 4 to 6 minutes, following which the equipment automatically goes back to the beginning and repeats the cycle.

"Fresh weather reports are placed into the broadcast at least once each hour. If the weather changes or an important navigational notice is issued at any time, the individual tape dealing with that portion of the broadcast can be changed without disturbing the remainder of the broadcast.

"The information given on the broadcast covers an area extending out to about 250 miles from the station. The broadcast can usually be heard for distances up to 150 miles and is transmitted on a standard aviation frequency used in air navigation, which is readily available to pilots and

flight personnel whether in flight or on the ground preparing for flight.

"The ultimate plan involves a flying weather broadcast network totaling 88 continuous broadcasts on low and medium frequency radio ranges which is designed to give service coverage for the entire United States.

"The voice broadcast will not disturb the radio range signals used for air navigation even though they are retransmitted simultaneously on the same channel. If the radio channel is needed for emergency communications with a certain aircraft, the broadcast can be cut off and the channel used for ground-to-plane communications."

On page 28 is a map diagram showing how the overlapping pattern of the Arcola and Pittsburgh broadcasts will serve pilots in that area.

Service A Weather Teletypewriter System

THE following information item was recently distributed to all Weather Bureau Aviation Liaison Officials with the suggestion that they pass it on to their respective state directors of aviation.

"Do you know that you can have the benefits of a weather teletypewriter in your own operations office?

"The Weather Bureau will issue letters to airport and flight service operators authorizing the local telephone company to install a receive-only connection to the Service A aviation weather teletypewriter system. While costs may be an obstacle in some cases, there probably are many operators that could benefit greatly

from such an installation, even in those cases where there is a local weather station.

"A connection to the Service A system will provide reports from several hundred stations each hour, as well as detailed forecasts of area and terminal weather, and expected winds aloft conditions. The Weather Bureau will furnish explanatory charts and posters to Service A subscribers so interpretation of the various reports and forecasts becomes an easy matter for any pilot willing to spend a little time on brushing up.

"The basic Service A weather teletypewriter circuit is provided by the AT&T Company under contract to the CAA. Receive-

only connections to non-government offices are, therefore, supplied through your local telephone company. Their charges are approximately \$30.00 per month for the machine rental, plus a monthly line charge of \$1.60 per line-mile from the nearest Government send-receive teletypewriter installation. There is no charge by the Government.

"Interested persons should address their inquiries to Chief, U.S. Weather Bureau, Washington, D. C."

Perhaps there are some flight service operators at your own field or nearby airport that would find this service an advantage, but are not aware that private drops on Service A are available.

Wide Distribution on Radar Publication

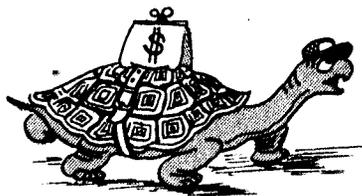
MASSACHUSETTS Institute of Technology Technical Report No. 20, "The Use of Radar in Weather Forecasting with Particular Reference to Radar Set AN/CPS-9," is being given wide distribution to field stations and Central Office units. The distribution of this article, which is an excellent treatment of radar in relation to forecasting, is in accordance with the program outlined in the Chief's Memo of November 30, 1955 (Wider distribution of publications for Weather Bureau Forecasters).

The general availability of this article will eliminate the need for requesting this item from the Central Office Library, which was recommended in the January 1956 TOPICS when only a few copies of this article were on hand. Any unfilled requests will be taken care of by the current distribution.

Helpful Hint from WBAS, Charlotte

YOU may be interested in our experience with a rubber mat in front of the briefing display cabinet. During the first few months of operation in our new quarters the rubber tile floor in front of the display cabinet became very dirty and the janitors could not seem to keep it clean. The tile was wearing rapidly. We finally prevailed on the airport manager to install rubber matting 3 ft. wide and 10 ft. long in front of the counter.

Now the dirt remains on the matting and is not tracked all over the office. In addition, the cushioning effect makes standing at the counter less tiring.



Pay Lag

OCCASIONALLY a new employee will have financial difficulty at his first station because he was unaware of the pay lag which may amount to as much as a month for this first check. This can result in embarrassment not only to the new employee but also to the station and may reflect unfavorably on the Weather Bureau

in the local community.

The official interviewing new applicants has an opportunity to advise the applicant of this pay lag so he can report to his first station, if selected, with the necessary funds. As a reminder of this it might be helpful to make a note on your station WB Form 6006's (Interview with Applicant).

Distribution of Weather Reports

DISSEMINATION of weather information has been one of the leading topics for discussion in the last few years and many new wrinkles have been ironed into our operating procedures. None of these wrinkles, however, is more unique than a method of forecast dissemination used from about 1881 to near 1900. Linn's Weekly Stamp News has kindly given permission for us to reproduce parts of an article by Mr. J. F. McGee which describes the procedure of hand stamping the weather forecast on incoming first class letters, U. S. covers and newspaper wrappers. Quoting from his article, "Apparently all of these weather reports on covers were in combination with the receiving hand stamp, as is evidenced on the Lansing, Michigan type, which is illustrated.

"... On June 18, 1881, the P.O.D. authorized the delivery of forecasts by mail to newspapers, postmasters, railroads, steamship lines, colleges, public schools, to mention a few of the known recipients.



"... I presume these weather reports covered the week ahead, as they were of such volume that they were mailed in a War Department wrapper, which has the 1¢ official postage stamp imprinted on it.

"This wrapper has the printed notice on its front, 'IMMEDIATE. Signal Service Weather Report. By the authority of the Post Office Department, June 18, 1881. This report will be treated in all respects as letter mail.'

"The U. S. Department of Agriculture took over the weather forecasting from the Army in 1891. Apparently its weather reports also covered the week ahead, as they were mailed in a special newspaper wrapper. It had the same printed notice on

the front as the Army had. However, in place of the postage stamp there is a large double circle inscribed, 'U. S. Department of Agriculture. Weather Bureau. Official Business.' In the center is the warning of \$ 300 penalty for private use."

A preliminary search of Weather Bureau files did not reveal the order for either inaugurating or ending the stamping of the weather report on mail.

Minimum Salary-Meteorologist GS-5

THE minimum rate of compensation under Section 104, Public Law 783, 83rd Congress for GS-5 meteorologists (Series 1340) has been raised to \$ 4345 the sixth step of grade GS-5 effective the first day of the first pay period after December 3, 1955.

The increase is applicable throughout the continental United States, including Alaska, and in foreign countries. As in the case of the commission's action in previously raising rates for engineers and certain physical scientists, other territories and possessions are specifically excluded because there appears to be no real recruitment problem based on entrance salary in these areas.

CORRECTION

In the January issue of TOPICS, page 11, "Phases of the Moon", the following note should have been included:

"The times specified for the Equinoxes and Solstices are 75th Meridian Time."



Publications Corner

THE following publications have been issued during the month of December 1955 and January 1956:

Aviation Series No. 12—Tips on Weather for VFR Flight. 1955 illus. 8 pages. 5¢

Approximate Times of Sunrise and Sunset, 1955.

Climatic Summary of the United States. No. 5. Colorado. Supplement for 1931-1952. 1955. 62 pages. 35¢.

Climatic Summary of the United States. No. 41. Wisconsin. Supplement for 1931-1952. 1955. 50 pages. 30¢.

General Aspects of Fog and Stratus Forecasting. AWS Manual 105-44. 1955. 106 pages.

Letter Supplements: 5514, Notes about Weather Bureau Publications; 5515, Tornado Facts; 5601, Notes About the Daily Weather Map; 5602, Notes on Severe Local Storm Warning Networks.

Manual of Card Punching (WBAN). 6th edition. 1956. 84 pages.

Manual of Card Punching (WBAN). 6th edition. Change 1. 1956. 18 pages.

Manual of Operations, Internal

Weather Bureau RAREP & Warning Coordination System (RAWARC) 1955.

Manual of Radar Meteorological Observations. Change 1. 1956.

Storm Warning Facilities Chart Eastern Florida. 1956.

Terminal Forecasting Reference Manual: Bethel Intermediate Airfield, Bethel, Alaska. 1955. 8 pages. 10¢; Municipal Airport, Elko, Nevada. 1955. 16 pages. 10¢; Hector Airport, Fargo, North Dakota. 1955. 17 pages. 10¢; Lincoln Air Force Base, Lincoln, Nebraska. 1955. 6 pages. 10¢; Standiford Field, Louisville, Kentucky. 1955. 9 pages. 10¢; Portland City Airport, Portland, Maine. 1955. 8 pages. 10¢; Municipal Airport Springfield, Missouri. 1955. 15 pages. 10¢.

Weather Bureau Publications Lists: Part 1. Selected List of Publications; Part 2. Selected List for Weather Science Study.

Weather "Normals" and Normal Weather. Reprinted from Weekly Weather and Crop Bulletin National Summary, January 31, 1956.

Awards

Lewis E. Johnson

LEWIS E. JOHNSON has been granted a cash award of \$ 300 in recognition of his outstanding accomplishments during the past two years as foreman of the Printing Section. Under his direction a complete physical reorganization of the plant was made for the purpose of streamlining production processes and arranging straight-line production flow. In addition each job was analyzed to determine the most economical

means of production, and assistance was given to other Divisions in designing formats in order to improve the product and at the same time reduce cost.

In addition to the improvements brought about in the Washington plant, Mr. Johnson played a principal part in developing the plans for consolidating the field printing plants at Kansas City and Chattanooga with the plant at Asheville with resulting economy

and improved procedures. The field and Central Office improvements are estimated to have reduced costs by approximately \$ 100,000 even though output during the same period has increased approximately one third.

Superior performance awards were recently given to four members of the Fort Worth Regional Office Clerical Staff.

Aliene B. Beckham

Aliene B. Beckham, Personnel Clerk, was awarded \$ 100 for the high quality of her performance during the past year. For the second consecutive year, Mrs. Beckham has been rated "outstanding" because of her competence, self-reliance, and cooperation. Her presence in the Fort Worth Regional Office adds strength to the Personnel Unit since Mrs. Beckham has, on occasion, very capably filled in as Placement Officer and Personnel Officer.

Annie Ruth Kolbohn

Annie Ruth Kolbohn, Property and Supply Clerk, also received \$ 100 for exceptional performance. For the past two years, Mrs. Kolbohn has received an "outstanding" performance rating in recognition of her initiative and competence. Her enthusiasm and interest are not confined to her own job, but extend to all phases of the Procurement and Supply function. Consequently she has acquired a comprehensive picture of the operation of her unit as a whole, and is therefore able to do her own job more efficiently. Because of her excellent accounting background and talent for systematic procedure, Mrs. Kolbohn's contribution to the efficient functioning of the Fort Worth Regional Office has been considerable.

Ruth J. Bozenhard

Ruth J. Bozenhard received \$ 100 for consistently superior performance as secretary to the Regional Director. In addition

to turning out an exceptional amount of work of the highest quality, Mrs. Bozenhard also makes herself available weekends, holidays or evenings to handle occasional emergency situations for the Regional Director.

Ila B. Smith

Ila B. Smith, accounting and fiscal clerk, was presented with \$ 100 for sustained superior performance during the past year. Her thorough knowledge of fiscal accounting, and bookkeeping ma-

chine operation has proved to be invaluable in the instruction of new employees. Mrs. Smith's versatility and cooperative attitude are a definite asset to her unit since she can be counted upon in emergencies to help clear up a backlog of work in any phase of the accounting or fiscal function.

The Fort Worth office is indeed fortunate in having the services of four such capable and dependable ladies.



Henry J. Hasselvander

ON January 22 Henry J. Hasselvander, tabulating machine equipment specialist at NWRC Asheville, died after a brief illness. He was forty-five years of age and had worked for the Government for over 16 years; 13 as a Bureau employee and 3 years as an assistant project supervisor on the Weather Bureau WPA project at New Orleans. This project was the forerunner of mass records processing which has since grown to become the Asheville Weather Records Center.

Mr. Hasselvander received his Weather Bureau appointment in 1942 at New Orleans, and held several positions of responsibility

there until 1952 when he was transferred to the NWRC at Asheville, N. C. Here he became Tabulation Project Planner on the Climatological and Tabulation Projects Planning staff in 1953 and in 1954 was reassigned to the job last held.

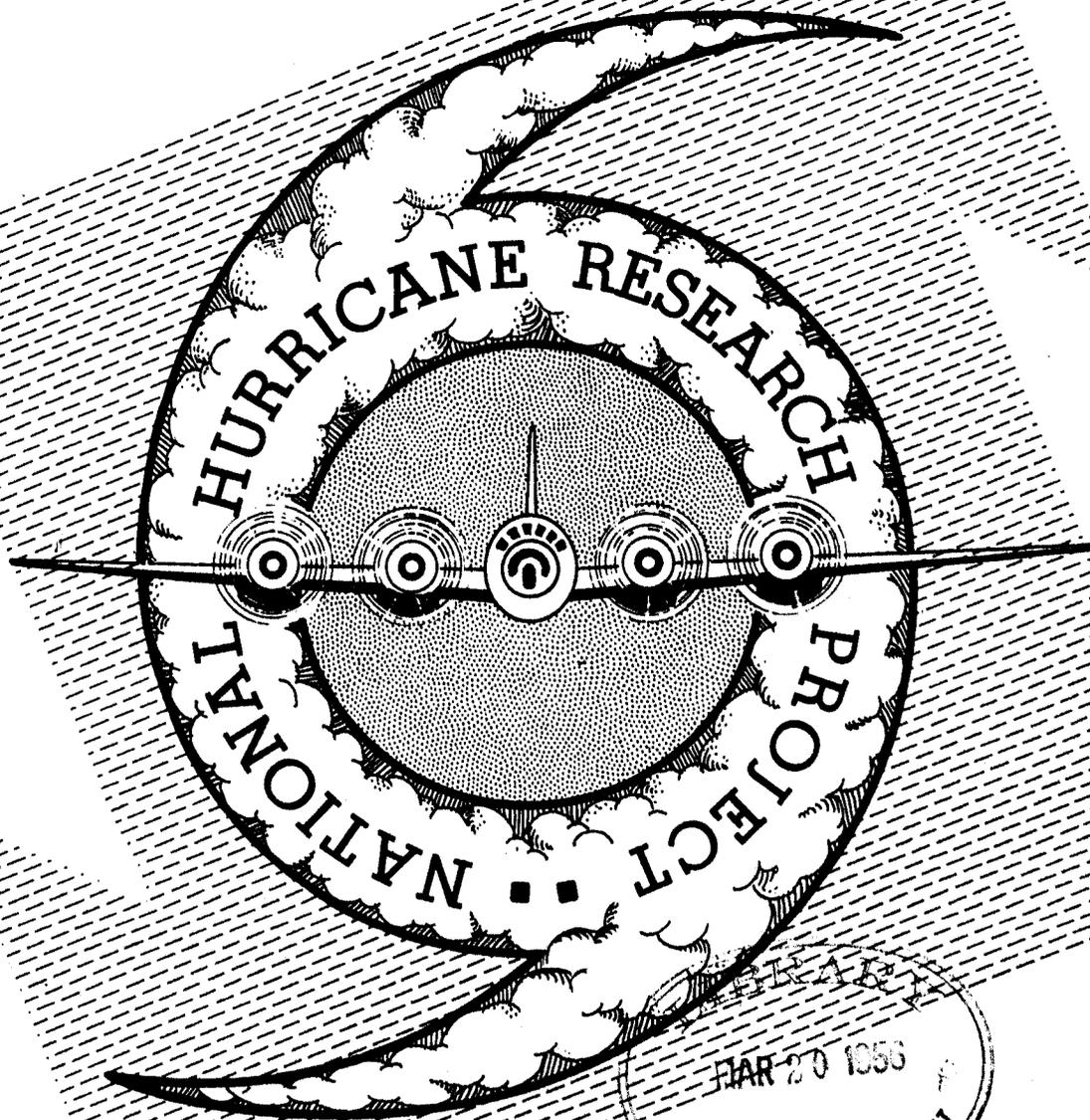
Mr. Hasselvander was a native of New Orleans and attended Warrenton Easton High School in that city. Before becoming associated with the Bureau in 1938, he worked for IBM as a customer relations man. He is survived by his wife Eleanora and two sons who live at 136 Barnard Street, Asheville, North Carolina.

WEATHER BUREAU

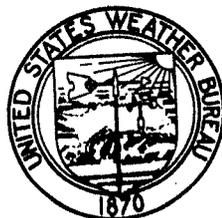
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TOPICS



Volume 15



Number 3

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.

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The

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Hurricane

Research

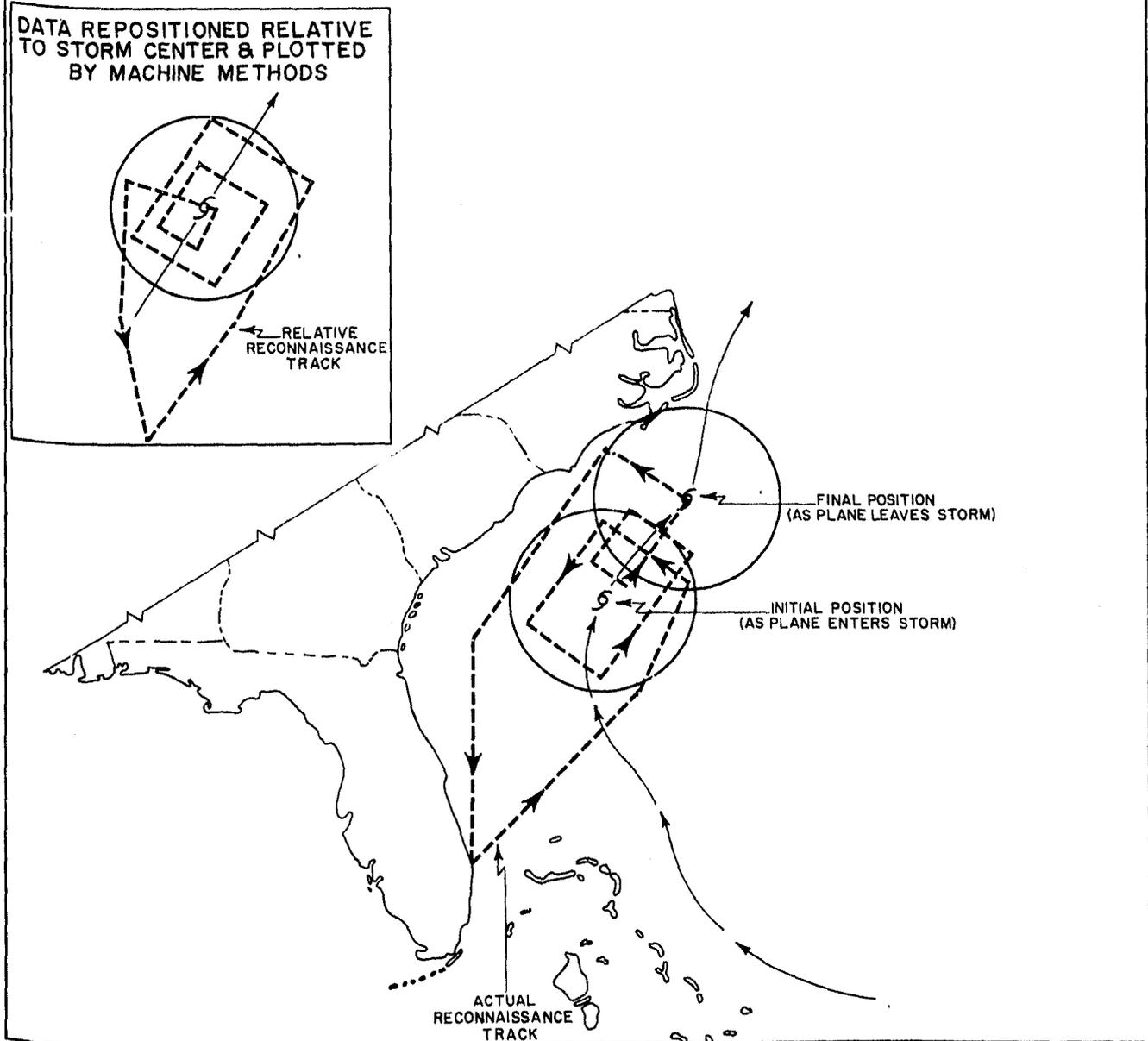
Project

THE cover of this issue of TOPICS will be easily recognized as a design based upon the weather map symbol for a hurricane. This emblem will identify publications, etc., of the National Hurricane Research Project in general. The emblem emphasizes aircraft because of the great importance of aircraft reconnaissance in the data collection program.

The October 1955 issue of TOPICS contained a rather complete outline of the organization of the hurricane project, and a discussion of plans for data collection, processing, and research. Since that time considerable additional progress in planning has been made, and our purpose here is to report briefly on the status of this activity. Through arrangements with the Department of Defense, three aircraft have been made available for use in hurricane research reconnaissance. These will be flown by the Air Force under the operational control of the Air Weather Service, and are presently being especially modified for purposes of the project under a contract of the Weather Bureau. Two aircraft

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COLLECTION & PROCESSING OF DATA FROM A MOVING HURRICANE



Research aircraft will fly reconnaissance tracks similar to those pictured above. By machine computation methods the data will be repositioned, making it quasi-synoptic with respect to the storm center.

will be of the B-50 conventional propeller-driven type and will be used for reconnaissance up to altitudes of about 25,000 feet. The third aircraft is a B-47 jet bomber which can be used for the higher altitudes, in the vicinity

of 40,000 feet. All of these aircraft will be equipped with automatic navigation equipment and rather elaborate meteorological instrumentation. There will be a capability of recording observed information in punch card form

while still in flight, to facilitate quick analysis upon return to base of the aircraft.

Generally speaking, the aircraft will be equipped with three basic recording systems. A digital data processing unit will

be installed for the automatic recording on punch cards of nine elements of significant information. Certain elements for which an analogue (continuous) trace is needed will be recorded on special recorders and will be flown on the B-50 aircraft. All aircraft will have as a basic data back-up record, a photo panel which will carry almost all items of significant aircraft, navigation, and meteorological information. This will be photographed at intervals to be adjusted by the flight meteorologists, but to be coincident with the card punching system.

Additional rawinsonde stations are being established in the West Indian area. Negotiations through diplomatic and technical channels have continued with the various governments concerned. The first of these cooperative international stations opened at Guadaloupe on February 21, 1956. Various construction, supply and training arrangements are continuing so that the remaining stations can open before the beginning of the hurricane season. In addition to these stations, a considerably increased effort is being made by services already operating upper air stations in this general area. The over-all network will comprise some 28 rawinsonde stations, a more extensive upper air data collection effort than has ever been made heretofore in tropical areas.

Other phases of data collection are proceeding satisfactorily, with installation of new and modified radar sets at significant points. In particular, San Juan, Puerto Rico, and Nantucket, Massachusetts will have strategically located radar installations before the beginning of the 1956 hurricane season. Recording wind equipment is being procured for installation at coastal Weather Bureau stations in the hurricane belt. Arrangements for rocket photography and

dropping "hurricane beacons" in the hurricane eye are proceeding satisfactorily.

With all of this emphasis on data collection, arrangements are being made for the procurement of special IBM tabulating and computing equipment for processing of research data. It is expected that through use of this equipment, it will be possible to make plot-outs of separate elements of data, and to reposition the data to make it more or less synoptic with respect to the storm center.

In addition to the phases of the Hurricane Project already mentioned, the tasks assumed by the various Central Office operating divisions and field stations are proceeding according to schedule. The Office of Climatology has made considerable progress on compilation of hurricane data packages. They have completed the assembly of data pertaining to each of the hurricanes of the last season and are now working on hurricanes of previous years. They are also working on studies of climatological trends in hurricane tracks. The Office of Meteorological Research has its studies of hurricane induced water levels well underway. They are also investigating climatological trends in general circulations affecting hurricanes.

The Hydrologic Services Division has made considerable progress in its studies of storm surges and their effects on coastal installations. This work is being done in cooperation with the U.S. Corps of Engineers who are endeavoring to find ways and means of reducing hurricane damages resulting from hurricane induced high water. A special unit has been set up in the Forecasts and Synoptic Reports Division for the purpose of studying the procedures used in hurricane alerts and warnings.

In addition to the tasks being undertaken by the various government units and organizations, contracts have been awarded to a number of universities and private consultants. These include the relationship of sea surface temperatures to the behaviour of hurricanes, the investigation of spiral precipitation bands associated with hurricanes, tropical forecast procedure development, investigations relative to the formation and intensification of tropical cyclone vortices using hydrodynamic models, use of numerical methods for the prediction of subtropical flow patterns in hurricane movements, cloud physics associated with hurricanes, studies of the effects of wind on coastal waters, and studies of water levels in the Gulf of Mexico.

The hurricane problem is a big one, but with the constant concerted attack being made upon it, utilizing not only the resources of the Weather Bureau but other government agencies, private individuals, universities and foreign governments, we are hopeful that important progress will be made in the next few months.

All of the above activity points to the opening of the Research Operations Base, which will be the field headquarters for the National Hurricane Research Project, from which point the operational and other features of hurricane research will be coordinated. The first few staff members will report to Florida for advance preparations about mid-April. The exact location of the field headquarters is still under negotiation. However, our next report of progress in TOPICS should be written from the new field headquarters, and should announce the beginning of the large data collection program, and in effect the beginning of direct hurricane research by staff of the Project.



SOME RESULTS OF OUR INCREASED APPROPRIATIONS

IN approving increased appropriations for the Weather Bureau, Congress made it quite evident that emphasis was to be placed on improved hurricane and tornado warnings for the public. Considerable progress has been made on planning better operating procedures for this year, on contracting for new and improved instrumental equipment and on designing basic research projects. Although reports on several new projects have appeared in TOPICS during the past few months, the following performance summary through the end of 1955 may be of interest in showing briefly what has been done with our increased funds. This outline follows a tentative spending plan prepared last July for new program items:

1. Activities Transferred from the Military (S&E Funds): National Weather Analysis Center: Transfer of activities from the military was completed during December 1955. The NWAC is now operated entirely by Weather Bureau staff.

Northern Hemisphere Maps: This represents transfer of that portion of the Northern Hemisphere Map program which had been financed by the military. Action was completed August 1, 1955, at which time the project had been moved to the National Weather Records Center, Asheville, and placed under the supervision of the Climatological Services Division.

Weather Service in Trust Territory: Salaries were trans-

ferred from Working Funds to S&E Funds on July 1, 1955. The Climatologist recently assigned to Honolulu is making a survey trip of the area.

Transfer of Upper Air Military Stations to Weather Bureau: About 80 positions have been authorized to cover personnel needs of stations transferred from the military. Seven stations were transferred by the end of 1955—Portland, Me.; Topeka, Kans.; Albany, N. Y.; Jacksonville, Fla.; Norfolk, Va.; Fort Worth, Texas; King Salmon (Naknek), Alaska. Eleven additional stations are scheduled for transfer by June 1956; and eight more next fiscal year. Military field units have been very cooperative and helpful.

2. New Program (S&E) Additional Upper-air Observations From Existing Stations During Hurricanes and Severe Storms: Arrangements have been made to secure additional upper-air observations in this country, Canada, the Pacific, Cuba, Mexico, and the Caribbean Islands during storm threats. Instructions have been issued as to who should request and/or make special observations, how they should be transmitted, along with general information regarding these special observations.

Special Ocean Weather Observations from Merchant Ships: This project has been expanded to cover two categories (a and b) and responsibility for the work is divided among Forecasts and Synoptic Reports Division, Office of Meteorological Research, Ob-

servations and Station Facilities Division, and Instrumental Engineering Division.

(a) Additional observations from merchant ships: Arrangements have been made for ships to report in full WMO code. Most ships are now doing this; some are still unable to do this because of need for additional instruments. Contracts have been issued to secure 0600Z weather reports from U. S. ships having only one radio operator.

(b) Weather and oceanographic equipment: Orders have been placed for aneroid barometers, marine barographs, motor driven aspirator psychrometers, hand psychrometers (marine type) and psychrometric tubes (replacements). These orders have not as yet been filled.

Storm Surge Forecasting: The storm surge forecast program started late with a lack of know-how and little or no experience in this field, but appears to be going ahead quite successfully. Issuance of storm tide height forecasts by Washington National Airport, Miami, and New Orleans began the past season and plans for extension of this work on a routine basis at other offices are going forward. Work on development of techniques and design of new methods continues. Some high water gages have been obtained and remote reading gages are under development. These remote reading gages may prove suitable for installation on Texas Towers. Training in storm surge forecast work has been given in

conferences held at the Central Office and lectures (by members of staff of Woods Hole Institute) at several field stations. A research project in storm water level studies is being conducted at the Central Office.

Improved Communications for Collection of Basic Data and Dissemination of Warnings: A new Weather Bureau teletypewriter system is about 80 per cent installed. Facsimile drops have been installed at 13 Gulf and Atlantic stations. Plans for an interphone system of five circuits to be installed in 46 Weather Bureau offices in the main tornado area of the Middle West for coordination of radar scope readings and severe weather warnings were completed. Installation of automatic telephone-answering devices was made at additional field stations. A study of their usefulness under varying conditions is now under way.

Hurricane Educational Program: Written and visual material has been prepared as part of the Weather Bureau's educational program.

Upper-Air Soundings in the Atlantic: Observers have been assigned to two A. H. Bull Company ships (JEAN and AMELIA) to take upper-air soundings.

Upper-Air Observations in the Gulf of Mexico: Contracts have been negotiated for merchant ship raob programs on three vessels—the SCHMEDEMAN, SALINAS, and JAKKULA.

Severe Storm Research: New research programs for the Weather Bureau have been developed and contracts let for hurricane, tornado, and basic research with University of Chicago, Miami University, Florida State University, New York University, Texas A&M, Oklahoma A&M,

St. Louis University, Gulf Consultants, Woods Hole Oceanographic Institution, Scripps Institution of Oceanography, and Eastern Air Lines. (Information about the Hurricane Project may be found in another article in this issue of TOPICS.)

Restoration of Stations to 24-hour Operation, Reestablishment of Key Stations, and Other Staffing Adjustments (Central Office and Field): Nine new stations have been established—Erie, Flint, Thomasville, Lancaster, Worcester, Raton, Waterloo, Valdosta, and Cold Bay. Five have been restored to 24-hour service—Athens, Grand Junction, Green Bay, Scranton, and Cordova. Two River Forecast Centers have been established at Hartford, Conn., and Augusta, Ga., to provide a modernized river forecast coverage for as much of the hurricane belt as possible. Fruit-frost forecast service has been arranged for Maricopa, Arizona. Central Office staff adjustments have been made primarily for additional work caused by new S&E programs. Approximately 235 positions have been added to field, regional and Central Office staffs, with the majority of positions being added to stations having radar or rawin equipment.

3. New Program under Other Than S&E Funds:

Weather Bureau Cooperation with Corps of Engineers for Hurricane Studies Under P. L. 71, 84th Congress: Funds have been transferred to the Weather Bureau by the Corps of Engineers for a portion of the work proposed for study by the Bureau. Employees have been selected and very intensive work has begun on two items: (a) Correlation of hurricane characteristics with excessive rainfall and development of

improved quantitative rainfall forecasting methods for use in connection with general hurricane forecasting activities. (b) Special wind analysis pertinent to determination of wave and tidal effects at specific locations involved in engineering studies such as Narraganset Bay, Rhode Island. This analysis will be used to provide design estimates by the Engineers for protection from storm tides. Emphasis has been on the latter project.

Establishment of Facilities Program: The appropriation for this program is a multiple year item and includes amounts necessary for facilities for the hurricane and tornado research programs. Plans for instrumentation and construction for the hurricane and tornado research programs have been developed, including establishment of facilities for operation of eight cooperative upper-air stations in foreign countries in the Caribbean, instrumentation of reconnaissance aircraft and surface stations, contracts for services, etc. Arrangements for facilities for those stations transferred from the military to the Weather Bureau have been completed and plans for facilities in future transfers are well advanced. Contracts have been let for cable, wind recorders and plastic domes for upper-air stations and final specifications for radar, upper-air observing, end-of-runway and other relatively new equipment have been brought to a point where orders can be placed. Construction of balloon inflation shelters at two upper-air stations has been completed. Modification of upper-air and radar equipment for the Hurricane Research program is completed.

West Coast Floods of December and January—A Repeat Performance

IN December 1937, a great storm moved in from the Pacific. In 2 1/2 days it produced floods in the Sacramento Valley and other streams in northern California and western Oregon which had not been equalled since the historic floods of 1862. More than 18 inches of rain fell in two days.

Another storm, similar in many respects, brought major flooding in February 1940. About this time, the type of storm which gives apprehension to the meteorologists and public alike on the West Coast, was given special recognition by George R. Stewart, in his novel "Storm", the principal character (i.e. the storm) being named "Maria".

Again in both November and December 1950, there were two separate storm events and two major floods in the area although the occurrence of major flood producing storms of this type is considered to be rare during November and December. The more frequent occurrence is in January, February or March.

In mid-December 1955, the developing pattern over the Pacific began to give concern to the forecasters on the West Coast. It could be another December 1937. The last half of December gave proof. Between the 15th and the 28th it rained every day. During this period, Blue Canyon, Calif., recorded over 35 inches of rain, or 70 per cent of its average annual total.

The floods that resulted were well publicized in the news of the day. They were to the West Coast what the floods caused by Diane were to the East. The storm, another "Maria", was no respecter of the season. Pre-Christmas

week saw many left homeless. As if this were not enough, heavy rains set in again in January. Broken and softened levees, some partially repaired, presented critical problems. This time heavy rains also caused floods in the Los Angeles area.

The occurrence of daily rains for long periods in December required a number of revisions in the flood forecasts. Inadequacy and failures in communications presented handicaps, but in general it can be said that the forecasts were good and resulted in considerable savings. In addition to the public forecasts, much valuable advice was given to Civil Defense, Red Cross, Corps of Engineers, and others to help them in flood control and protection activities.

Full credit cannot be given in the short space to all Weather Bureau personnel who worked hard and well during the emergency and gave up time from their families during the Christmas period.

The Sacramento WBO issued about 800 river forecasts during the high water of December and January—forecasts for nearly 50 points in the Sacramento and San Joaquin Basins, including those at levee breaks. In addition, forecasts of the flow hydrograph for the upper Sacramento based on expected precipitation and Shasta Dam releases were made almost daily from December 23 through January 27 for the Bureau of Reclamation.

In late December, Floyd E. Hug, river forecaster, and later,



Official Photograph from Division of Highways, Sacramento, Calif.

Feather River levee break as of December 25, 1955, Yuba City is visible in upper left corner, Marysville in upper right.

MIC Lloyd H. Magar, flew by helicopter over flooded areas, by courtesy Corps of Engineers. These flights, at low levels, permitted a much greater comprehension of the flood situation, particularly around the levee breaks.

River District operations formerly carried out at the City Office in San Francisco were transferred to the WBAS not more than two months before the floods. MIC R. C. Counts had this to say: "The neophyte river forecasters of this office were fearful that the worst might come to pass when the San Francisco River District Office was recently transferred here. IT DID." Fortunately, the "neophyte" forecasters had in the few weeks busily studied river forecast procedures, had traveled over the District and, when the floods came, handled themselves with credit. In addition to issuing forecasts for a record flood in the Russian and Pajaro Rivers, and for floods in the other streams in the District, the San Francisco

Office served as a clearing house for flood advisories for all of the West for the FCDA and the Red Cross.

Streams in the Fresno River District reached some of the highest flows of record. Broken weirs and levees, destruction of a radio river gage and failure of communications created problems. Radio amateurs helped out and Robert A. Baum of the Fresno WB put his portable short wave radio equipment to use at the office.

Reno, Nev., was hit by a disastrous flood in November 1950. There was no established river district office serving the area at the time but MIC C. E. Shepherd called for precipitation reports from cooperative observers and issued warnings based on the meager facilities at his command. Reno subsequently was established as a river district office and Mr. Shepherd had fortified himself with a reporting network and forecast procedures. His forecasts in 1955 paid dividends. Damage in Reno was much less

than in 1950, although the flood of 1955 was of equal proportions.

The Eel River Basin received probably as heavy or heavier amounts than any of the areas. MICE. E. Anderson is well versed in the rampages of the Eel. Communication landlines to the mountain areas in the Basin are practically nonexistent and that is where Mr. Anderson's hobby as radio amateur pays dividends. Investigations are underway as a result of receiving floods in the Eel and the Klamath to utilize radio communications more fully in this area.

It is interesting to note that the flooded Marysville-Yuba City and Palo Alto areas were selected as a pilot project to study the reaction of the public to disasters and to warnings. This work was undertaken by Stanford Research Institute for the Committee on Disaster Studies of the National Research Council. The Sacramento Weather Bureau Office and Western Area Hydrologic Engineer, J. van de Erve, have furnished help in this project.

Well Informed Public is Grateful

DURING the 1955 hurricane season, Weather Bureau Offices at Raleigh and Baltimore provided frequent and widespread distribution of hurricane information which resulted in numerous commendations from public officials, newspapers, radio and television stations, and grateful citizenry. Prior planning made possible the excellent dissemination. Mr. Charles B. Carney, Meteorologist in Charge at Raleigh, North Carolina, had previously reached an agreement with several local radio stations to make available via FM the Weather Bureau's direct broadcast to all other radio stations in the area wishing to

relay the live broadcasts to the public.

The Weather Bureau determined the initiation, the frequency and the termination of the broadcasts. Also, the length of the transmission was at the discretion of the meteorologist. The service was initiated by the Weather Bureau releasing its proposed schedule on the radio press wires. The location of the storm resolved the frequency of broadcasts. When the threatening hurricane was well out to sea, broadcasts were made once every three hours. As the storm approached North Carolina, the tempo increased to once every two hours and finally,

to hourly broadcasts. With the passage of the center, the frequency of the broadcasts decelerated until the storm no longer threatened the area.

The initial success of the FM relay system resulted in rapid expansion from North Carolina to South Carolina and Virginia. The name, Civil Defense Radio Network (CDRN) was given to the voluntary and non-exclusive radio relay method which involved an estimated 100 stations.

In Baltimore, Maryland, Mr. G. N. Brancato, Meteorologist in Charge of the Weather Bureau Airport Station, arranged a warning dissemination method using

the telephone company conference plan to make a taped radio broadcast. The procedure was to provide the telephone company with all the details about the proposed arrangement on the duration and on the frequency of broadcasts. The conference operator assumed all responsibility for calling the radio stations to determine which ones were interested. The time involved was small. The communication cost was apportioned to the subscribers and the broadcasts were limited to three minutes duration. This resulted in a very nominal fee per station. In accordance with FCC regulations pertaining to this type of distribution procedure, the warning messages were taped by "beeper" service for rebroadcast. Since many stations were unable to use direct radio broadcasts because of previous commitments, the tape recordings were preferred.

In view of the public acclaim in North Carolina and Maryland, other stations in the hurricane area may want to investigate the possibility of incorporating similar arrangements into their hurricane warning system. Proposals for carrying out distribution programs on a state-wide basis should be coordinated with the Central Office before final commitments are made.

NACA Appointments

APPOINTMENTS for 1956 to the technical committees and subcommittees of the National Advisory Committee for Aeronautics have been completed. The following members have been appointed from the U. S. Weather Bureau:

Reappointments:

Dr. F. W. Reichelderfer	Chmn. Subcommittee on Meteorological Problems, Committee on Operating Problems (ex officio)
Dr. Harry Wexler	Subcommittee on Meteorological Problems
Dr. Ross Gunn	Subcommittee on Meteorological Problems
Dwight B. Kline	Subcommittee on Icing Problems

In the planning of scientific laboratory research programs in aeronautics, the Main Committee of the NACA is assisted by twenty-eight technical subcommittees comprising more than 400 specialists whose collective talents represent leadership in nearly every branch of the aeronautical sciences.

These men, serving their country in their personal and professional capacities without pay, are selected because of their technical knowledge, demonstrated ability, and leadership in their special fields.

They assist the NACA by

initiating research programs, by advising upon problems within their technical fields, by reviewing current research throughout the nation, by recommending new areas of research, and by coordination of research programs.

In brief, the purpose of NACA committees is to anticipate the research needs of aviation and to supply the military services and the aircraft industry with basic research information and design data to make possible superior performance and effectiveness of American aircraft and missiles.

Interdepartmental Research Committee on

Weather and Agriculture in the Great Plains

THREE Weather Bureau men have been selected as participants on a joint research committee on weather and agriculture in the Great Plains. This interdepartmental committee was set up as a result of the Great Plains Agricultural Conference held in Denver, May 31 - June 2, 1955. Dr. G. L. Barger, Area Climato-

logist, Ames, Iowa; Mr. Robert Schloemer, Climatological Services Division, Suitland, Maryland and Mr. James M. Beall, Synoptic Reports and Forecasts Division, Washington represent the Weather Bureau in this joint effort designed to expedite research in the field of weather variation as it relates to long range planning for the

farmers and ranchers in the Great Plains. The first meeting was held early in October.

This group will have its next meeting in the Southern Great Plains during early March where they will be able to meet with Land Grant College representatives and local leaders of the area.

Department's Eighth Honor Awards Ceremony

REMARKS of Secretary of Commerce Sinclair Weeks at Eighth Annual Honor Awards Program in Commerce Department Auditorium at 3:00 p.m., Tuesday, Feb. 14, 1956:

"It is indeed a pleasure to be here today to celebrate the Department's Eighth Honor Awards Ceremony. I look forward with keen anticipation to this annual presentation of awards to my associates for their outstanding contributions to the nation, the public service, and the Department. I am both proud and happy to participate in this ceremony which gives public and well-deserved recognition to so many of our Commerce family.

"Under the Government Employees' Incentive Awards Act, which became effective December 1, 1954, and which revitalized the entire incentive awards program in the Federal Government, there has been increased interest, use, and support of the various kinds of incentives throughout the Department.

"For example, in one bureau 81 employees were given awards for superior accomplishment last fiscal year, whereas in just the first half of this year the same bureau has already recognized 115 employees with such awards. In another bureau, 232 suggestions were received and 49 adopted last year and, in just the first half of

this year, the number of suggestions received was 347 and the number adopted 39.

"While our record shows marked improvement, I am firmly convinced that our employees can, through their diligence and competence, make even further contributions to the task of improving government operations. Wide participation is essential if we are to derive full benefit from the ingenuity and inventiveness of our employees. This participation can be obtained only if all levels of management and supervision understand its importance, encourage it, and ensure that it is promptly and properly recognized.

"As I have said here on two previous similar occasions, I shall continue to do everything in my power to animate the spirit of individual initiative in this Department, to invite employees to contribute their ideas on improvements and economy, and to appropriately recognize superior service. However, the accomplishment of these things depends largely upon the supervisors. I must depend upon them for the motivation and identification of worthy employees throughout our far-flung organization.

"This matter of leadership is so important today in my opinion. The attitude of management at all levels must be one which

convinces employees that there is interest in their well being as human beings and considers their contributions for improvement important, no matter how small it may be.

"Also there is a much broader responsibility in this field of leadership—broader than the awards' program, the Department's program, or the Government's program. The whole world is looking to this country for leadership. What can you and I do to help provide it? Where should we start? I believe we must start with ourselves—with you and with me. As old Sam Jones used to say, 'If you want to get the world straightened out, start with yourself and you'll have one rascal out of the road'.

"So let's you and I do everything possible to create an atmosphere in the Department of Commerce that offers the greatest encouragement to initiative, responsibility and enthusiasm for doing things better. Let's be sure the Department's leadership merits confidence, for with confidence comes cooperation, and through cooperation we bring out the best that there is in man and woman.

"In conclusion, I extend my sincere appreciation and thanks to all of you here today for what you have done and for what I am sure you will do in the future to help me in the discharge of my duties."

Department of Commerce Silver Medal Awards

TWELVE Weather Bureau employees and one former employee (now with the Atomic Energy Commission) were selected for the Department of Commerce Meritorious Service Silver Medal

Award this year. The four award winners in or near Washington received their medals in a Washington ceremony on February 14, and the other nine will be presented their awards at their sta-

tions at a later date. These employees were selected for this honor in recognition of their outstanding accomplishments.

Richard A. Brintzenhofe

James N. Hosey

RICHARD A. BRINTZENHOFE and JAMES N. HOSEY, Meteorologists at Scottsbluff, Nebraska, received Meritorious Service Medals for their highly competent performance during a tornado emergency at their station last June 27. Thanks to Mr. Brintzenhofe's initiative in following up and verifying a tornado rumor, and the promptness and effectiveness with which he and Mr. Hosey alerted adjacent communities to the potential danger, the Scottsbluff area was prepared for the tornado when it struck.

Despite the risk involved, Mr. Hosey and Mr. Brintzenhofe kept the community informed of the tornado's path and progress until it got so close to their station that they were forced to leave. Their performance in this emergency was most commendable, and has been credited with keeping the loss of life in the Scottsbluff area to a minimum.

Charles B. Carney

CHARLES B. CARNEY, MIC at Raleigh, N. C. received his award for exceptionally competent direction of his station's activities, particularly during hurricanes "Connie" and "Diane". Although the state was hit hard by both storms, no deaths due to the hurricanes were reported.

Since Mr. Carney has been at Raleigh, his leadership, technical proficiency and planning ability have been convincingly demonstrated. Under his direction, the Raleigh station's relations with the press, radio, and TV have been excellent.

The well-organized effectively executed warning system supplied by Mr. Carney and his staff during

the two hurricane emergencies resulted in what has been reported as the greatest mass distribution of warnings ever achieved by any one Weather Bureau office. For this outstanding public service, the Raleigh station received commendations from public officials, newspapers, radio and television stations and grateful citizens of North Carolina.

Samuel Deitch

SAMUEL DEITCH was presented his medal for more than forty years of distinguished public service. For the past twenty-three years, Mr. Deitch has been MIC at Atlantic City, N. J. Since this area includes a large summer recreational section whose peak season coincides with the hurricane season, his responsibility to the businessmen and vacationers

is very great. The many commendations and awards for outstanding meteorological service he has received through the years clearly indicate that he has given excellent service to the community.

For example: in 1927, he was publicly commended by Coney Island businessmen, in 1945, by businessmen of Ocean City, Maryland, in 1948 by the American Red Cross and in 1955, by a New Jersey newspaper, all for outstanding weather service during emergency situations.

Mr. Deitch's service to others has not been confined to professional service. Charitable organizations, religious groups, fund raising campaigns for schools and underprivileged children, and the local civic improvement organization have all benefited from Mr. Deitch's boundless energy and keen interest in their problems.



Samuel Deitch

Secretary Weeks

Dr. Reichelderfer

Secretary Weeks presented the Silver Medal and Dr. Reichelderfer presented the Meritorious Service Award Certificate to those present at the Awards Ceremony.

John Hamilton

JOHN HAMILTON was granted an award on the basis of his very effective work as MIC Goodland, Chief Airport Meteorologist Des Moines, and MIC Oklahoma City over the past several years. In each of these assignments he demonstrated outstanding ability in the forecasting, technical leadership, and public relations aspects of these jobs.

In Oklahoma City his plan of combining unusually careful study of storm indications on the radar scope, telephone calls to obtain first-hand reports from the area indicated, and special attention to the public relations aspects of issuance of the warnings, provided an outstanding tornado service during 1955 which won enthusiastic praise from the community. While in Des Moines, he inaugurated a new radar program in 1954 which resulted in improved and more accurate public warnings. During the June floods of 1954 the Des Moines Airport Station, under his management, did an excellent job of warning the public days in advance as to the flood heights expected, which resulted in great property savings and safeguarding of life. As MIC at Goodland from 1949 through 1951 he very successfully headed an experimental (at that time) type of program in which a local office prepared forecasts for a large portion of a state. In addition to these particular accomplishments his work in all respects has been outstanding.

Joshua Z. Holland

JOSHUA Z. HOLLAND'S award was principally for his work from 1948 to 1953 as MIC at Oak Ridge and for the year 1955 when he was in charge of the Bureau's program for furnishing meteorological service to the Federal

Civil Defense Agency. The Oak Ridge office had the responsibility for providing atmospheric diffusion forecasts and other meteorological service to the atomic energy plant. Although there was little precedent for this specialized service Mr. Holland saw to it that the needs were served in an exceptionally able manner. In addition he and his staff performed a prodigious amount of applied and basic research which has received worldwide distribution and recognition.

In the FCDA assignment he was in charge of establishing and disseminating procedures for forecasting radioactive fallout and for coordinating this work with FCDA. This involved numerous conferences with FCDA officials and, during the test alert in the Washington area, briefing of top officials including the President, on expected fallout conditions. He carried out these responsibilities, also, with considerable credit to himself and the Bureau.

Mr. Holland recently transferred to the Atomic Energy Commission.

Martin R. Hovde

MARTIN R. HOVDE, recently retired as MIC, Minneapolis, Minnesota received a Meritorious Service Award in recognition of his long and distinguished career as a climatologist and meteorologist. TOPICS for Dec. 1955 contains a resume of his career.

Roy E. Lundquist

ROY E. LUNDQUIST, Hydrologist in Charge of the River Forecast Center in Cincinnati, received his medal for his excellent work in the field of Hydrology and River Forecasting. Because of the importance of his contribution he has been given a cash award (see TOPICS for

January 1956) as well as the Silver Medal.

Harold J. Monroe

HAROLD J. MONROE was presented his award for exceptional performance of his duties as communications and observational supervisor at WBAS San Juan. By encouraging careful attention to efficient rawinsonde procedures, and developing a keen competitive spirit among the observers, Mr. Monroe greatly contributed to the reduction of San Juan's error record, and to the substantial increase in altitudes reached during rawinsonde flights.

During the relocation of the San Juan station last summer, Mr. Monroe's mechanical ability and willingness to work many extra hours greatly aided the relocation operation.

Carl M. Reber

CARL M. REBER was awarded his medal for outstanding performance as Assistant Chief of the Central Office Domestic Aviation Section. Mr. Reber has made a number of important contributions to aviation liaison and service development. For example, he worked out the plans for assigning an aviation meteorologist in each state the responsibility of liaison with the state aviation director. He also aided in developing a clearer understanding of flight weather problems among pilots and meteorologists by his participation in the preparation of a "Training Course for Pilot Briefers", the "Pilots' Weather Handbook" and other technical aids. (See TOPICS June 1954.) He is currently writing a series of aviation weather articles for pilots.

Mr. Reber frequently volunteers to help out on special assignments and in emergency

situations. In February 1955, the Director of the Bureau of Safety Investigation of the Civil Aeronautics Board praised Mr. Reber's performance of a special assignment for their organization. Numerous other letters have been received from sources outside the Bureau commending Mr. Reber's work.

Stanley Schworm

STANLEY SCHWORM, MIC at Richmond and "Dean of Weathermen" (see TOPICS for May 1953) received his award for over a half-century of dedicated public service. Mr. Schworm has long been considered one of the better Section Directors in the Bureau, and is still active in all his duties despite his years.

Mr. Schworm was one of the first to participate in a special frost warning service for tobacco interests, one of the earliest active participants in coordinating a 24 hour snow warning service with a State Highway Department, and one of the first to give radio broadcasts direct from a Weather Bureau office. He was also responsible for starting Climatological Summaries for long-record substations to facilitate the answering of requests for climatic information. Loyalty, faithfulness

and competence have marked Mr. Schworm's service throughout his more than 54 years in the Bureau.

Harold Van Dyke

HAROLD VAN DYKE was selected for this award because of his highly competent performance as Supervisory Meteorological Aid at Wake Island. Since taking over as Supervisor in September 1953, Mr. Van Dyke has been credited with improving the interest and enthusiasm of the observers at Wake Island and introducing and maintaining observational techniques and procedures. The resulting improvement in performance and methods has reduced the rawinsonde error record at Wake to an average of three per month, raised the rawinsonde altitude average to over 23000 meters for the past quarter, and improved the quality of surface observations.

This accomplishment was achieved in spite of a high employee turnover and the consequent necessity of frequently training new men. During this time, Mr. Van Dyke also successfully repaired and calibrated the radio-sonde ground equipment at Wake Island with only telegraphed instructions to guide him. For this

accomplishment which saved the Bureau about a thousand dollars, he received a letter of commendation from the Chief of the Instrument Division.

Bernard Wiggin

BERNARD WIGGIN was chosen for this award because of his very effective work over the years, particularly in providing meteorological service for sailplane operations. Since before World War II, Mr. Wiggin has been developing forecasting methods applicable to soaring operations, and in the last 15 years has become an outstanding authority in this field. Since 1939, he has furnished forecasts for all the Annual National Soaring Contests held at Elmira, N. Y. In 1946 he was awarded the "Warren E. Eaton Memorial Soaring Trophy for the most outstanding contribution to the art or science of motorless flight." In 1954, he was manager of the American International Soaring Team which competed in the World Championship Gliding Contest at Camphill, England. By his technical leadership, Mr. Wiggin has also developed a very effective weather service for the Buffalo area in the ten years since he has been MIC.



FAN MAIL

RECENTLY the following letter was received in the Cen-

tral Office and is quoted as an item that might be of interest to field stations:

"Our Association represents 469 firms. Approximately one-half of this number includes businesses that are allied to the home building industry.

"A number of our contractors depend quite heavily upon the service rendered by the local Weather Bureau. In our industry it is most important to know

weather conditions several days in advance in order to properly plan various projects.

"We wish to take this opportunity to thank you and the United States Weather Bureau for the splendid service afforded us by the many stations located around the country.

"We merely wish to express our sincere appreciation for your splendid work."

Design Production and Supply of Weather Plotting Charts

THE blank outline base maps used for the entry of observational data, the construction of analyses, and the preparation of forecasts are as indispensable to the meteorologist as the instruments and devices by which he measures or interprets basic weather elements. This has been the case throughout the history of meteorology. The quantities of maps that daily become a part of the weather picture are in higher figures than those that apply to maps used for any other purpose.

Some 300 Weather Bureau field stations use manuscript plotting charts. No two of these stations have identical requirements. At some there is no more than occasional need for a blank map, and almost any type of chart will serve the purpose. At others, the station requirements include many varieties—some specially designed—and involve quantities in excess of 30,000 individual copies per year. Several hundred blank maps in 20 varieties are used each day at the National Weather Analysis Center. The Bureau's over-all annual manuscript map requirements total more than two million copies in more than 100 varieties. All of these charts are printed at, and distributed from, the Central Office.

Production and supply of these two million maps are basic functions of a continuing program that must provide also for the development of new base maps as required and revisions to existing charts as time permits. It is a primary objective of this program to provide the most suitable weather plotting charts that it is practical to produce.

This is not a project for which an operational staff has been specifically established. It is

administered by the Codes and Maps Section of the Forecasts and Synoptic Reports Division and is carried on through the cooperation of many different sections and units of other divisions, each contributing toward some phase of the program. There are draftsmen, compositors, photographers, negative strippers, lithographers, pressmen and laborers of whom the production and supply of these maps requires from 20 to 100 per cent of their working hours.

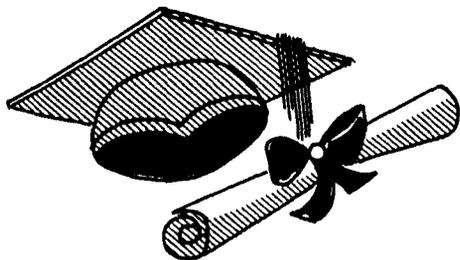
Each manuscript map has been designed to meet some meteorological requirement. In some cases a unique requirement, such as a base upon which to plot reports from planes flying hurricane reconnaissance; in other cases a general requirement, such as a base suitable for use by field stations in the Midwest for plotting 6-hourly reports. In the matter of design there are international standards, adopted by the WMO, that cover projections, scales, colors and certain minor specifications. Such features as area, orientation and density of station network are decided on the basis of the requirements of the people who use the maps, e.g., the forecast centers. It is because of the wide geographic distribution of our forecast centers and the various types of specialized forecasts that make up the Bureau's over-all service program that the large variety in base maps is necessary.

As in any program of broad scope the interdependent steps in map production and supply must be kept closely coordinated to insure timely distribution of appropriate charts to all users. We have no storage facilities. Stockpiling is not feasible. Therefore, it is necessary to schedule the printing of each map in ad-

vance, then print, package and send the copies out with no delay and a minimum of handling, meanwhile getting ready for the next press run. Manuscript maps are printed on a one-color offset press having a sheet-size capacity of 28x40 inches. They are forwarded to stations by mail under a special franking privilege which keeps the cost of distribution considerably lower than comparative express or freight charges.

The various charts are mailed periodically, at spaced intervals, to all users in quantities commensurate with individual requirements through a production and supply schedule monitored by the Codes and Maps Section. This system works efficiently provided accurate information as to actual map requirements for each station is available. Therefore, it is the responsibility of each Meteorologist in Charge to keep the Central Office informed regarding any changes in the station map requirements so that our supply schedule can be adjusted accordingly. Also, it should be remembered that manuscript maps are not kept in stock, so in the event of diminishing supplies the Central Office should be notified at least 30 days prior to depletion. Our schedule is sufficiently flexible to provide for an emergency supply within that length of time.

Whatever the future may hold in the way of further developments in electronic processing of weather data, it seems extremely likely that the "principal tool of the forecaster" in its present form will be in general use for some time to come. And the stations that keep us informed will get the maps they need, when they need them.



Oceanography and Meteorology Scholarships

FELLOWSHIPS and research assistantships in oceanography and meteorology are available to qualified graduates in physics, chemistry, geology, meteorology, biology, and engineering for 1956-1957. The fellowships include the United Gas Fellowship in Engineering Oceanography, \$3000, and the Dow Fellowship in Chemical Oceanography, \$2000. Graduate assistantships in these fields, in meteorology, and in physical, biological, geological and meteorological oceanography provide as much as \$2400 each.

Ocean Cowboys

THE following report of difficulties encountered in the raob program aboard the merchant-ship SS Emilia, which plies between Puerto Rico and Baltimore and Philadelphia was made by Messrs. Holly B. Trimm and A. J. Treat, who made the patrol in early December.

"Enroute from Baltimore to San Juan, among the many items of cargo, the ship was transporting several head of dairy cows. The cows were loaded on the after deck (which is also our release deck), with a shelter made from heavy lumber to corral and protect them. During a storm that was

Fellows and assistants take standard curricula leading to graduate degrees in oceanography or meteorology. They also take additional graduate work in basic science or in engineering. Duties with the department consist of aiding in the program of oceanographic research sponsored by various government agencies and by industry.

Fields of emphasis include ocean waves and wave forces, water level problems, interaction between ocean and atmosphere, marine meteorology, ocean thermal structure, radar meteorology, agricultural meteorology, micro-meteorology, and weather analysis.

A \$500 scholarship and student assistantships are also available for undergraduates working toward the B. S. in meteorology.

Applications should be submitted by March 30, 1956. Most awards will be announced April 15, although additional openings are expected to occur after that date. Further information may be obtained by writing to the Head of the Department of Oceanography, College Station, Texas,

encountered the first night out, the shelter collapsed, releasing the cattle all over the deck. This is the first time in the history of ocean weather that no radio-sonde was taken due to cattle stampede."



AMS Workshop

THE D. C. Branch of the AMS, under chairmanship of Newton A. Lieurance, held a three-day Workshop in stratospheric analysis on February 1-2-3 in Washington, D. C. The purpose of the Workshop was to discuss in a seminar atmosphere the latest meteorological knowledge of the lower stratosphere. The agenda included a review of the accuracy and limitations of current and planned observing techniques and a review of the various research efforts concerning forecasting and analysis in the lower stratosphere. The proceedings of the Workshop were recorded and it is planned to publish them in pamphlet form or as a monograph.

Over 160 registrants from Government and private industry attended the Workshop. They came from Japan, Alaska, and Newfoundland, as well as from points within the United States. The Workshop consisted of four lecture sessions and two lab periods. Major Hugh Ellsaesser of Air Weather Service was Chairman, assisted by Messrs. William Haggard, Roger Allen, Frank Burnett and Jeff Davis of the Weather Bureau, Cdr. Jones of the Navy and Major Romo of the Air Weather Service.

The following agencies cooperated in providing speakers, workers and facilities for this Workshop: Air Weather Service, U. S. Navy, U. S. Army, The Rand Corporation, General Services Administration, Department of Labor, and The Dictaphone Corp.

Weather 1212 Sets New Records

IN the ten cities where recorded weather forecasts are made available by the telephone companies to those who dial the correct weather number, over 178 million calls were recorded in 1955. This is an increase of more than 26 million calls over the previous year, and averages over 339 persons using the automatic telephone weather forecast service every minute of the day and night.

During the year New York city set a new all time high with a total of 32,584,421 calls, an increase of more than 2 million calls over the previous record

established by Detroit, Michigan in 1954; Detroit was second high in 1955 with 30,660,038 calls. The highest day was recorded at the New York city installation on September 19 when 406,899 calls were received as Hurricane "Diane" threatened the city; Washington, D. C. was second high with 395,486 calls on August 12 as Hurricane "Connie" came along. As Hurricane "Diane" swept northward on September 19, 1955 a new high day total for all 10 installations was established with a total of 2,359,987 calls for the latest weather information.

City	Annual Total	High Day	Monthly Average	Daily Average
Baltimore	9,157,110	102,710 (Aug. 12)	763,092	25,088
Boston	5,800,815	73,883 (Sept. 19)	483,401	15,893
Chicago	22,932,215	359,257 (July 27)	1,911,018	62,828
Cleveland	19,010,337	159,408 (March 22)	1,584,195	52,111
Detroit	30,660,038	231,199 (March 22)	2,555,003	84,000
Milwaukee	11,762,957	92,858 (July 26)	980,246	32,227
New York	32,584,421	406,899 (Sept. 19)	2,715,368	89,272
Philadelphia	14,440,026	144,644 (Sept. 19)	1,203,335	39,562
Pittsburgh	6,537,943	50,248 (Jan. 27)	544,829	17,912
Washington DC	25,505,459	395,486 (Aug. 12)	2,125,455	69,878
	<u>178,391,321</u>			<u>488,771</u>

Items of Personal Interest

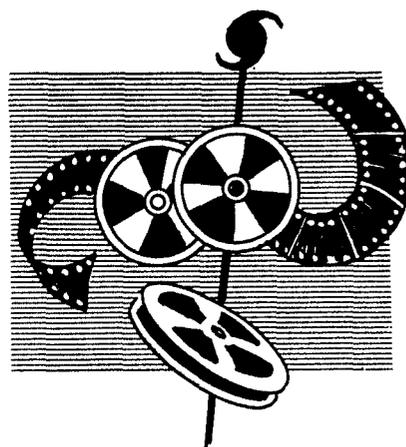
Newton A. Lieurance

NEWTON A. LIEURANCE, Executive Assistant to the Deputy Chief of Bureau, was recently selected for promotion to the grade of Captain in the U. S. Naval Reserve.

C. A. Woollum

C. A. WOOLLUM, Technical

Assistant at Washington National Airport, was one of 14 Scouters selected from more than 14,000 voluntary Scout Leaders of the National Capital Area Council to receive the highest honor that Scouting confers on a voluntary leader—the Silver Beaver. Approximately 12 awards are made each year at ceremonies held in the National Guard Armory before some 5,000 friends of Scouting.



Hurricane Data Packages

for two Storms

Available at NWRC

TO aid in the research on hurricanes, a project to make data on these storms available in a usable and organized fashion has been undertaken. Data pertinent to selected storms are separated from the chronological archives and recombined in hurricane data "packages". The first two of these data packages are for hurricanes CONNIE and DIANE of 1955, and have been completed at the National Weather Records Center. They contain a total of 55 rolls of microfilm.

The packages are available for sale to all research groups for the cost of reproduction of the microfilm (\$4.00 per roll), and may be ordered in whole or in part. An index of the film in these packages may be obtained from the Climatological Services Division.

Present plans call for the preparation of similar packages for storms IONE and JANET of 1955 and HAZEL of 1954. This will be a continuing project and we hope to produce approximately five packages per year for major hurricanes, either of the year involved, or of historic interest.

SAFETY RULES LIFTING & CARRYING

THE National Safety Council has determined that many injuries caused by lifting and carrying heavy materials might have been avoided by a better understanding of the proper techniques in lifting. The following are some of the basic rules suggested by N.S.C.

Do not lift awkward or especially heavy materials by yourself. Get someone to help.

Make a trial lift of the object, to determine if you can lift it without strain.

Look over the ground or floor for obstacles and tripping hazards. Inspect the object you're going to lift for sharp corners, nails, and other things that might cause injury.

Set your feet solidly, somewhat apart. Sometimes it may be best to get down on one knee.

Crouch as close to the load as possible. Do not get into a full squat, but bend your legs

Keep your back straight, but bend at the hips so you are over the load. The object is to do the work with your leg muscles and not with the weaker back muscles.

To change the position of a load when carrying, rest it against something for support. Do not try to adjust your grip while you support it—the object may fall or cause you to strain yourself.

Get a firm grip on the object, hands on diagonal corners. If necessary, lift one end slightly to get a hand under it. To lift, straighten your legs and swing your back into a vertical position.

In setting objects down, bend your legs and the trunk of your body at the waist. The purpose again is to make the leg muscles, and not the back muscles, do the work. Keeping the legs straight and arching the back to set something down can result in a back injury.

1000-Hour Sick Leave Club

MEMBERSHIP in the "1000-Hour Sick Leave Club" is growing. Since our last announcement in September 1955 TOPICS, we have received notification of so many new members that it was decided to resume publication of their names. If additional employees at your station are eligible for membership in the "Club", please let us know and their names will be included in a future issue of TOPICS.

Albuquerque, N. M., WBAS

E. O. Mox
E. P. Richards

Amarillo, Tex., WBAS

I. I. Layton

Astoria, Ore., WBAS

R. H. Janson

Atlantic City, N. J., WBO

D. Grady
I. I. Zellon

Buffalo, N. Y., WBAS

B. Kolker
B. L. Wiggin

Burlington, Iowa, WBAS

H. W. Curtis

Central Office

L. Alestock

Charleston, S. C., WBAS

A. L. Gale
W. R. Hall
T. L. Ogilvie
S. K. Parrish
W. H. Ulsh

Chattanooga, Tenn., WBAS

H. E. Pritchard, Jr.

Cheyenne, Wyo., WBAS

L. G. Clapp
D. W. Comstock
L. W. Gearhart
A. H. Hosick
A. R. Lowery
M. Steinberg

Chicago, Ill., WBO

A. A. Arbanas
G. C. Williams

Chicago, Ill., WBU

J. Badner
C. B. Johnson
J. M. Porter

Columbus, Ohio, WBO

L. T. Pierce

Denver, Colo., WBAS

R. K. Leatherwood

Galveston, Tex., WBAS

E. M. Stewart

Honolulu, T. H., PSO

R. L. Fox

Honolulu, T. H. WBAS

E. L. Banken

Huron, S. Dak., WBAS

C. A. Englund

Indianapolis, Ind., WBAS

R. H. Powell
C. T. Watson

Kansas City, Mo., WBRO

J. C. Ofenloch
A. G. Rawlings

M. M. Wiss

Lander, Wyo., WBAS

I. L. Gee

Lihue, T. H., WBAS

R. H. Burnz

Marquette, Mich., WBO

A. J. LaCombe

Memphis, Tenn., WBAS

D. Benton

Miami, Fla., WBO

E. L. Manak
L. G. Pardue

Minneapolis, Minn., WBAS

J. W. Bottomley
W. J. Halluska
C. G. Peterson
J. M. Stone
G. C. Voelker

Newark, N. J., WBAS

C. Boethling

New Orleans, La., WBO

G. L. Canaday
R. F. Hasling
D. S. Hill
H. B. A. Peterson
G. L. Smith

New Orleans, La., WBAS

W. O. Sisk

Philadelphia, Pa., WBAS

G. C. Holladay

Pittsburgh, Pa., WBO

L. M. Maxwell

Raleigh, N. C., WBAS

P. J. Bowers

C. B. Carney

W. B. Chappell

R. M. Evans

D. E. Reynders

Rochester, Minn., WBAS

K. F. Anderson

Salt Lake City, Utah, WBRO

H. A. Wright

San Antonio, Tex., WBAS

A. A. Duff

L. F. Windt

San Francisco, Calif., WBO

M. P. Bergerson

L. Billones

San Francisco, Calif., WBAS

J. A. Brown

E. H. Chappell

M. J. Cocuzzi

R. C. Counts, Jr.

R. T. Hanna

D. L. Jorgensen

J. M. Lanning

M. McGurrin

J. H. Morgan

A. G. Oertel

B. N. Ramsden

L. B. Rasey

H. E. Root

C. L. Smalley

V. M. Sproge

R. L. Weaver

R. V. Wilgus

Seattle, Wash., WBO

E. L. Phillips

J. J. Strachila

South Bend, Ind., WBAS

M. S. Stein

E. F. Striker

St. Louis, Mo., WBO

H. F. Wahlgren

St. Louis, Mo., RFC

B. M. Belanger

P. Light

Topeka, Kans., WBO

A. D. Robb

Truk, T. T.

J. G. Norris

Vicksburg, Miss., WBO

W. H. Hammond

E. Sherrill

H. H. Walrath

Wichita, Kans., WBAS

H. A. Crumrine

State Climatologist Assignments

DURING the past year the number of State Climatologist positions has increased considerably as the climatological program has been expanded. Since we felt that perhaps employees Bureau-wide would be interested in the recent selections made for these positions, the following personnel assignment information is offered:

Nathan Kronberg, WBAS Columbia, S. C., was promoted to State Climatologist for South Carolina in September 1955, and is located at the Columbia Airport Station.

Clarence E. Watson, Territorial Climatologist for Alaska, located at Regional Office, Anchorage, was transferred to that position from Omaha, Nebr., in August 1955.

David Smedley transferred from the Scientific Service Division of Central Office to WBO San Juan, P. R., as Territorial Climatologist for the West Indies and Caribbean, effective in January 1955.

Leland T. Pierce, State Climatologist for Ohio, is located at the WBO Columbus. Mr. Pierce had often expressed his desire to devote his full time to climatology, and the arrangement was completed in July 1955.

Lothar A. Joos, formerly MIC at Madison, Wis., was assigned as State Climatologist for Illinois in November 1955, and is located at Champaign.

Horace Carter, State Climatologist for Georgia, is located at the University of Georgia at Athens. Mr. Carter is also MIC of the Athens WBAS. State climatological work for Georgia was transferred from Atlanta to Athens in September 1955.

Dr. David I. Blumenstock was reinstated in the Weather Bureau as Climatologist for the Pacific Trust Territories in October 1955, with headquarters at PSO Honolulu, T. H.

Hugo V. Lehrer, State Climatologist for Oklahoma at WBAS Oklahoma City, transferred from NWRC Asheville, N. C., in November 1955.

Richard Blood, after indoctrination in Climatological Services Division, went to Austin, Tex., as State Climatologist in December 1955. The State Climatologist's Office for Texas was formerly located at Houston.

L. A. Schaal, State Climatologist for Indiana, transferred from the Kansas City WRPC in January 1956. Mr. Schaal is located at Purdue University, Lafayette, where the office has been transferred from Indianapolis.

Nelson Kauffman, Pennsylvania State Climatologist, is located at WBAS Harrisburg, where he transferred from the Hydrologic Services Division of the Central Office in January 1956.

Paul Kangieser, formerly State Climatologist at Boston, transferred to WBAS Phoenix, Arizona as Arizona State Climatologist in January 1956.

Dr. A. Boyd Pack was appointed in January 1956 as State Climatologist for southern New England and is headquartered at WBAS Windsor Locks, Conn. His area, consisting of the States of Connecticut and Rhode Island, was formerly a part of the New England section.

Howard H. Englebrecht was transferred from San Francisco to WBAS Baltimore in January 1956, with assignment as Delaware-Maryland State Climatologist.

He will maintain close working relations with the University of Maryland.

Paul Waite, formerly at WBAS Kansas City, was assigned as Wisconsin State Climatologist in February 1956, with headquarters at the University of Wisconsin at Madison.

Robert F. Dale, State Climatologist for California, is located at WBO San Francisco where he was reassigned from the San Francisco WRPC in October 1955.

William T. Hodge, State Climatologist for South Dakota, is located at Huron, S. Dak., and was formerly assigned at WBAS Rapid City. He has been at Huron since September 1955.

Arthur Kantor will enter on duty as New Jersey State Climatologist at Trenton within the next few weeks.

Robert E. Lautzenheiser of WBO Chicago will soon go to Boston as Climatologist for northern and central New England.

NEW CAM

WBAS, Kansas City

HAROLD C. McCOMB, at Columbia, Missouri, has been selected for transfer to the Kansas City WBAS as Chief Airport Meteorologist.

Mr. McComb is 49 years of age and entered the Weather Bureau June 16, 1941, as a Junior Observer at Des Moines, Iowa. In May 1942, he was transferred to Buffalo, N. Y., as Assistant and in June 1944, to Columbia, Missouri, as Official in Charge.

Mr. McComb is a graduate of Iowa Wesleyan College. In recent years he has completed courses in Meteorology at St. Louis University and Penn State University.

NEW MIC'S

WBAS, Sheridan

WILLIAM L. TROXLER of the Missoula, Montana, station has been selected for transfer to Sheridan in charge, succeeding Mr. Don K. Halligan. Mr. Troxler is 30 years of age and entered the Weather Bureau on March 22, 1946, at Ogden, Utah as an Observer. He transferred to the Salt Lake City WBAS four months later and remained there as an Observer until August 1951. He then transferred to WBAS Missoula, with promotion to GS-7. He has been engaged in Observer-Briefer duties up to the time of accepting his new assignment. He has attended the University of Utah and in addition has ac-

quired the forecaster and observer courses given by the Air Force.

WBAS, Columbia

JAMES D. McQUIGG, Principal Assistant at Omaha, Nebraska, has been selected for transfer to Columbia, Mo., as MIC and State Climatologist.

Mr. McQuigg is 35 years of age and entered the Weather Bureau January 7, 1946, as an Airway Forecaster in the P-2 grade at Kansas City. In July 1947, he was transferred to Des Moines as Special Services Forecaster and in March 1951, was made

Official in Charge at the Des Moines Airport Station. From September 1951, to March 1953, he was separated for military service, and was then restored to duty in the Climatological Services Division of the Central Office. In December 1954, he was transferred to Omaha.

Mr. McQuigg is a graduate of Cornell College at Mt. Vernon, Iowa. In 1942 he took the Army course in Meteorology at the University of Chicago and was assigned as Weather Officer until 1946. His military assignment in 1951-53 was as Commanding Officer of a weather detachment.



Dr. John Patterson

DR. JOHN PATTERSON, Controller of the Canadian Meteorological Service from 1929 to 1946, died February 22, 1956. His death marks the end of a distinguished career in meteorology that began with his graduation at the University of Toronto in 1900 where he was awarded a Gold Medal in Physics.

After attending Cambridge University in England, Dr. Patterson became Professor of Physics at the University of Allahabad in 1902 and soon after became Imperial Meteorologist to the government in India.

In 1910 he joined the Meteorological Service of Canada to take charge of its research section, becoming controller in 1929.

Dr. Patterson pioneered many upper air and instrumental investigations in Canada. In 1930

he was elected President of the American Meteorological Society. In 1931 he prepared the Polar Year program in Canada. He was President of the British Empire Meteorological Conference in 1935. He was prominent in the activities of the International Meteorological Organization from 1929 onwards, and was well known around the world at technical conferences of the IMO and ICAO. He became President of the IMO Commission on Instruments and Methods of Observations in 1946.

On his retirement as Director in 1946 the Patterson Medal was founded by the Canadian government as a permanent recognition of the great services performed by John Patterson for Canada. During his long and active career Dr. Patterson was the author of many technical papers and the

recipient of many honors and awards in the field of science and government.

Dr. Patterson's many friends in the Weather Bureau will long remember and treasure the experiences of working with such an able and understanding colleague, who did such an outstanding job over a long span of years in advancing the work of international meteorology.

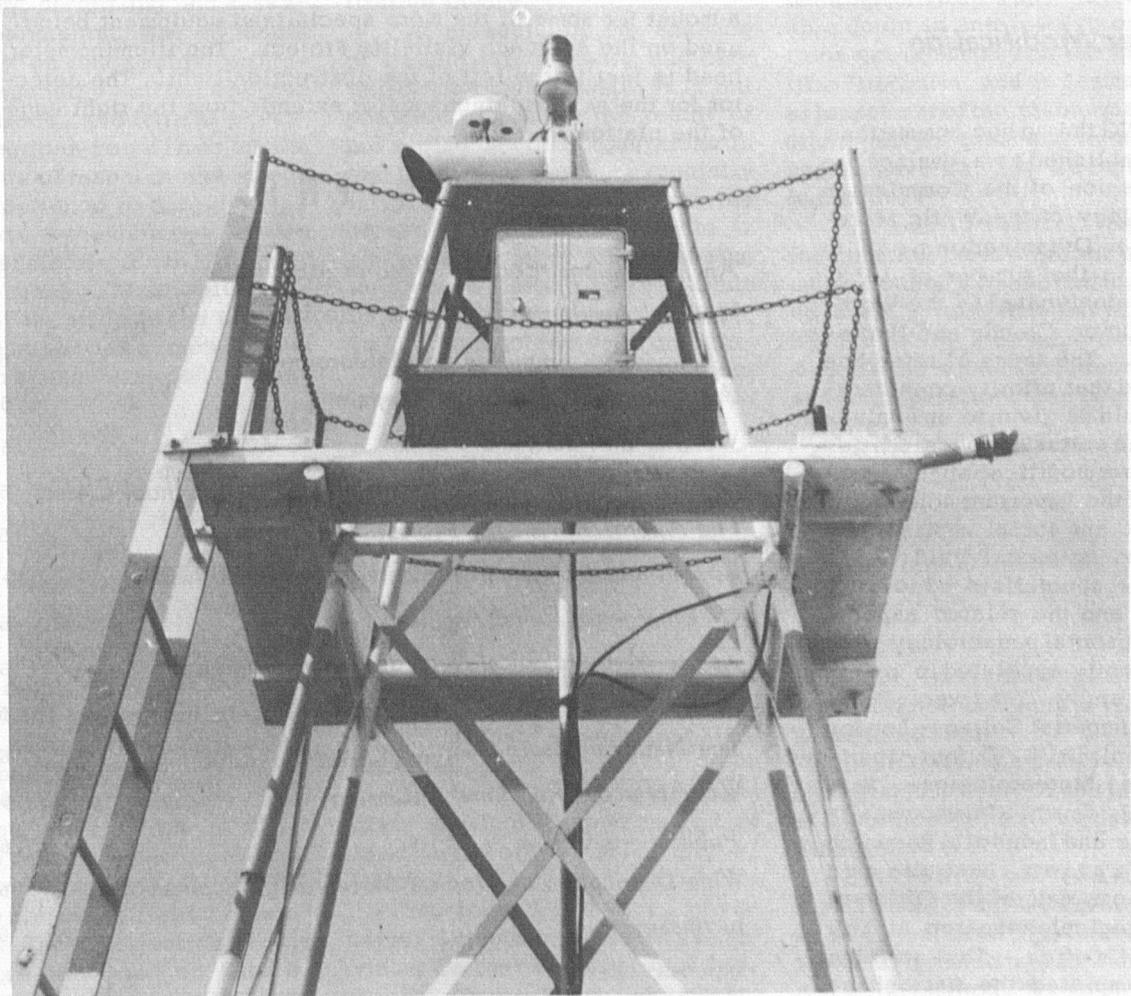
Carlos Nieves

CARLOS NIEVES who retired from the WBO San Juan October 31, 1950 (See TOPICS Nov.-Dec. 1950) after thirty-three years of service, died February 7 in San Juan. He was 68 years old. Mr. Nieves is survived by his wife Dolores and two daughters, who live at H-98, Caserio Puerta de Tierra, San Juan, Puerto Rico.

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.

An International Look at Weather Modification

AMONG the ad hoc committees established as a result of the first session of the Commission for Aerology of the World Meteorological Organization held in Toronto in the summer of 1953, was one designated as the Working Group on Clouds and Hydrometeors. The terms of reference specified that priority consideration should be given to an evaluation of the status and possibilities for weather modification in recognition of the important scientific, economic and social implications of this controversial field.

Four specialists in cloud physics and the related aspects of experimental meteorology were subsequently appointed to undertake this study. They were: F. H. Ludlam, Imperial College, London (Chairman); Dr. L. Dufour, Institut Royal Meteorologique, Belgium; E. J. Smith, Commonwealth Scientific and Industrial Research Organization, Australia; and Ferguson Hall of the Office of Meteorological Research at the Central Office. This working group completed the first phase of its mission on August 22, 1955. Because of the topical interest of the subject, the WMO Secretariat decided to publish the entire report as soon as possible, and prior to its submission to the next session of the Commission.

The report, "Artificial Control

ABOUT THE COVER

The transmissometer tower at Newark Airport also serves as a mount for some of the more specialized equipment being used on the Approach Visibility Project. The illuminometer head is just to the left of the obstruction light. The detector for the sky brightness meter extends from the right edge of the platform.

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of Clouds and Hydrometeors" (WMO Technical Note No. 13), is one of the more comprehensive surveys on the subject of cloud seeding that have been published to date. The survey, 76 pages in all, is in several parts consisting of an outline of current knowledge concerning the physics of clouds and precipitation, a review of experiments in cloud modification, and a section dealing with designing, performing and assessing experiments. The emphasis is mainly on fundamental principles, reasonably well documented observations, and logical physical deductions together with a consensus of research and evaluation experience to date.

Efforts are underway to obtain copies for circulation to interested field offices. Meanwhile, because of the widespread interest in the possibilities of cloud seeding, the essential conclusions

from this authoritative study are quoted in the following paragraphs. In the words of the authors, "Our summary of the present situation is as follows:"

"On a number of occasions, seeding from aircraft has beyond reasonable doubt led to a modification of clouds and a release of precipitation by processes for which there is a satisfactory qualitative, but not yet a quantitative theory.

"At present, in the absence of a quantitative theory and certain climatological data, it is not possible to predict the result of protracted seeding operations in any particular place, especially if they are carried out from the ground. Nevertheless, there is some justification for supposing that where certain special kinds of cloud frequently occur, skillfully conducted seeding operations might result in a local net

increase in precipitation of economic benefit. At present this supposition can be justified only in respect to simple supercooled orographic clouds, and cannot yet be extended to include places where other, more complex cloud systems are predominant and provide most of the natural precipitation.

"In our opinion, a net increase of precipitation has not been demonstrated beyond reasonable doubt in any seeding operations yet described in the scientific literature, and it seems that at least most of the claims made in other publications and in newspapers have not had adequate foundation.

"At least several years of fundamental investigations and of meticulously planned and analyzed seeding experiments will be needed before a reliable assessment of the economic potential of seeding operations can be made."

National Academy of Sciences Appoints Advisory Committee on Meteorology

AS a result of earlier requests from the Department of Commerce and the Weather Bureau, the National Academy of Sciences has appointed an Advisory Committee on Meteorology to work with the Weather Bureau as well as other government agencies with problems in the field of meteorology. The first meeting of this Committee was held on April 3, 1956 with Dr. Detlev W. Bronk, President of the National Academy of Sciences, acting as Chairman. The purpose of the meeting was to organize the committee and to discuss in general terms ways for advancing meteorology as a science. The following persons were invited to the first meeting as

members of the committee:

Dr. L. V. Berkner, geophysicist, President, Associated Universities, Inc.

Dr. H. R. Byers, meteorologist, Head of Department of Meteorology, University of Chicago.

Dr. Hugh L. Dryden, physicist, Director, National Advisory Committee for Aeronautics.

Dr. Carl Eckhart, physicist, Director of Marine Physical Laboratory, Scripps Institute of Oceanography.

Dr. Paul E. Klopsteg, physicist, Consultant to the National Science Foundation, formerly Associate Director.

Dr. Thomas F. Malone, mete-

orologist, Director of the Travelers Insurance Company's Weather Research Center.

Dr. C. G. Rossby, meteorologist, Director of the Institute of Meteorology, University of Stockholm.

Dr. John von Neumann, mathematician, Commissioner, A. E. C., formerly Research Professor at the Institute for Advanced Study, Princeton, N. J.

All were able to attend except Drs. Rossby and von Neumann.

Dates for future meetings of this committee have not been determined, but it is planned to publish a resume of the meetings in TOPICS.



Agricultural Development Program

BY Senate Resolution 82 at the last Congress the Secretary of Commerce and the Secretary of Agriculture were asked to report to the Senate Committee on Agriculture and Forestry respectively on progress in agricultural meteorology since 1940 and the requirement of forecasting services to the nation's farmers. A copy of this report (Senate Document Number 97) will be forwarded to Weather Bureau stations.

The first of what is hoped will be a nation-wide series of agricultural meteorology seminars was held in Davis, California March 19-23, 1956. This meet-

ing was jointly sponsored by the Weather Bureau and the University of California.

The Weather Bureau has worked with the North Central Group of Land Grant Agricultural Colleges Technical Committee on Weather and Agriculture over the last three years to foster a closer cooperation between the agricultural research scientists and the Weather Bureau. This group has set up cooperative studies on rainfall probabilities using punch card techniques. The Committee has set up requirements for instrumentation for agricultural research and has examined the

existing Weather Bureau first order network of observation stations for suitability of data for use in agricultural research.

The Weather Bureau has been represented on an inter-departmental committee to expedite research on the problems of relating weather to economic hazards of farming in the Great Plains.

Immediate plans call for the changing of the frequency and time of release of the five day forecasts to three times a week early enough so that they can be distributed to the farmer at his breakfast hour. Tentative date for this change is June 1, 1956.

We foresee that an expanded program of service to agriculture will require more agriculturally and meteorologically trained people. With this in mind we hope to send a selected group of employees to school for one semester to take courses in agricultural meteorology. In addition we hope to have additional seminars on agricultural meteorology over the entire country patterned after the Davis meetings during the next few years.

Weather on Radio and TV

THE Connecticut Valley Branch of the American Meteorological Society was host to a National Conference and Workshop in Radio and Television Presentation of Weather in Hartford, Connecticut on March 3-4, 1956. Sponsored jointly by the American Meteorological Society and the National Association of Radio and Television Broadcasters this conference was attended by representatives from radio and television stations, airlines, universities, the Weather Bureau and other government agencies. The purpose of this conference was to bring together representatives of

the meteorological profession and the radio and television industry to discuss problems involved in the effective communication of weather information. From discussions between these groups and from an exchange of ideas among meteorologists actively engaged in this work, it is believed that progress can be made toward the goal of better and more useful weather broadcasts and telecasts.

Approximately 100 people participated in the several panel discussions and open forums and there was a free interchange of viewpoints by the conferees.

Among the more widely known radio and television broadcasters who attended were Clint Youle (Chicago), Jim Fidler (Cincinnati), Harry Volkman (Oklahoma City), Francis Davis (Philadelphia), Don Kent (Boston), Ken Newendorp (Fort Wayne), Don True (Amarillo), Howard Tupper (Schenectady), Howard Taft (Fort Worth). In addition two Canadian representatives attended the conference as observers.

Dr. T. F. Malone, Director of the Travelers Weather Service, served as Program Chairman. Highlights of the meeting included addresses by the Governor of Con-

necticut, the Honorable Abraham Ribicoff, by Dr. F. W. Reichelderfer, and by Mr. Layne Beaty, Chief, Radio and Television Section, Department of Agriculture.

One point brought up concerned the relative merits of glamorizing TV weather presentations by use of "entertainers" as contrasted to professional meteorologists. Most of those present felt that where a professional meteorologist could present weather information in an interesting manner this would hold the listener's interest more than a presentation by a non-meteorol-

ogist however well skilled in techniques of telecasting.

John McDonald (WSM Nashville) President of the National Association of Radio and Television Farm Directors stressed the importance of using terminology in broadcasts and telecasts which the man in the street will clearly understand. (Somewhat the same idea is expressed in Central Office Memorandum to First Order Stations, 0-5.34, dated January 11, 1956.)

Several participants stressed the importance of crediting the source of weather information

used on radio and TV programs. Others mentioned the need at the radio and TV stations for up-to-date weather data. Even in cities having local public weather circuits forecasts are at times out of step with current weather developments. (Note: MIC's in the 52 cities where such circuits are now operating should check on this at frequent intervals.)

The conference ended with enthusiastic endorsement of the proposal that additional conferences of this type be held in other geographical locations.

District of Columbia Scientists take over High School Classes

ON March 15 and 16, about 1,000 scientists in the Washington, D. C. area participated in a mass science presentation program in the public and private schools in the area. The unprecedented program went into action while over 400 junior and senior high school science teachers were away from their classes and attending sessions of the fourth annual convention of the National Science Teachers Association in Washington.

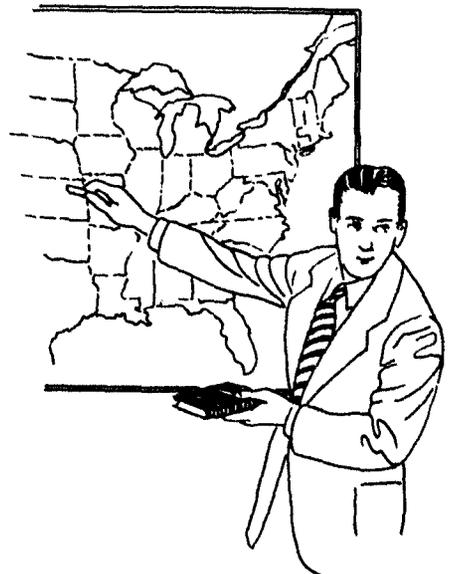
The objective of the program was to have scientists and engineers discuss their special fields of activity with students in the class rooms of more than 100 schools participating in the two-day program. The science "substitutes" did not try to carry on the teachers' regular class sessions but rather discussed the various branches of science in which they work.

Members of the Weather Bureau from several units in Washington took part in the project, including Ferguson Hall, T. P. Gleiter, Albert Carlin, Robert

Culnan, and A. K. Showalter. Other government agencies also participated with Dr. Allen V. Astin, Director of the Bureau of Standards and Dr. Alan T. Waterman, Director of the National Science Foundation as examples of the more prominent government representatives. Local universities, industrial concerns and privately employed engineers and scientists also responded to make up the "substitute" teaching staff.

Scientists participating emphasized that science isn't an ivory tower occupation and that it is often interesting work and at times a lot of fun. Some scientists brought along films, slides and items of equipment for use in their class presentations. In setting up the project it was hoped that some of the students might obtain a greater awareness of the importance of science to the nation's welfare and that greater numbers of students could be interested in pursuing scientific courses in schools and colleges. With the growing shortage of qualified scientific personnel in the

United States, Weather Bureau field officials are encouraged to assist schools in their areas in developing science teaching by furnishing materials, publications and guidance to school teachers and educators when feasible.



The Approach Visibility Project

ALMOST every observer has had the rather disturbing experience of reporting a ceiling and visibility in which he had a high degree of confidence, only to have a pilot report a few minutes later that, in the pilot's opinion at least, conditions were not as reported. The conscientious observer then carefully makes another observation, and frequently finds that his previous observation still seems to be correct. Incidents of this type serve to impress upon us that pilots are concerned with what they can see from the cockpit. Such incidents are frequent enough to show that ceiling and visibility reported in the conventional manner frequently do not give the pilot the information he desires. The problem has become more acute in recent years as authorized landing minima have been lowered, and is being intensified still more with the advent of jet operations.

Since the beginning of meteorological service to aviation the Weather Bureau has continually been striving to improve the quality of the observations. In recent years our efforts have been aided by the Air Navigation Development Board.

In 1952 the Air Navigation Board awarded a contract to the Sperry Gyroscope Company for making approximately 500 approaches during conditions of low visibility or both. The approaches were to be made at MacArthur Field, Long Island, N. Y. As a part of the program both the airplane and the ground station were equipped to measure all parameters thought to be pertinent and comments of the pilots during approach were recorded. Two pre-production models of the Weather Bureau's newly developed rotating-beam ceilometer and a transmissometer, as well as visibility targets and standard lamps were among the instruments installed.

A Weather Bureau station was also established which took observations in the conventional manner as a control.

The MacArthur Field project gave quantitative data showing that observations taken in the conventional manner are not representative of conditions experienced by a pilot during his approach and landing. But using the data collected in the airplane and on the ground the Sperry researchers concluded that it should be possible, using only measurements made on the ground, to estimate the visibility of an approaching pilot. The parameters required are:

1. Transmissivity as measured by the transmissometer.
2. Cloud height at the middle marker of the ILS system as measured by the rotating-beam ceilometer.
3. Illumination.
4. Brightness of the horizon.

These measurements are combined in a semi-empirical manner to arrive at an estimate of the height on the glide path from which the pilot can be expected to see the approach lights, the threshold lights or other identifiable object during his approach.

The next logical step was to give the method which Sperry had developed a test under actual operating conditions. That is now being done at Newark Airport. The drawing on pages 64 and 65 shows schematically the operations at Newark.

The Project's operations are housed in a temporary building which was erected near the CAA Tower. The instruments for measuring the meteorological parameters are located near the touchdown point on the ILS runway, except that the rotating-beam ceilometer is located in the ap-



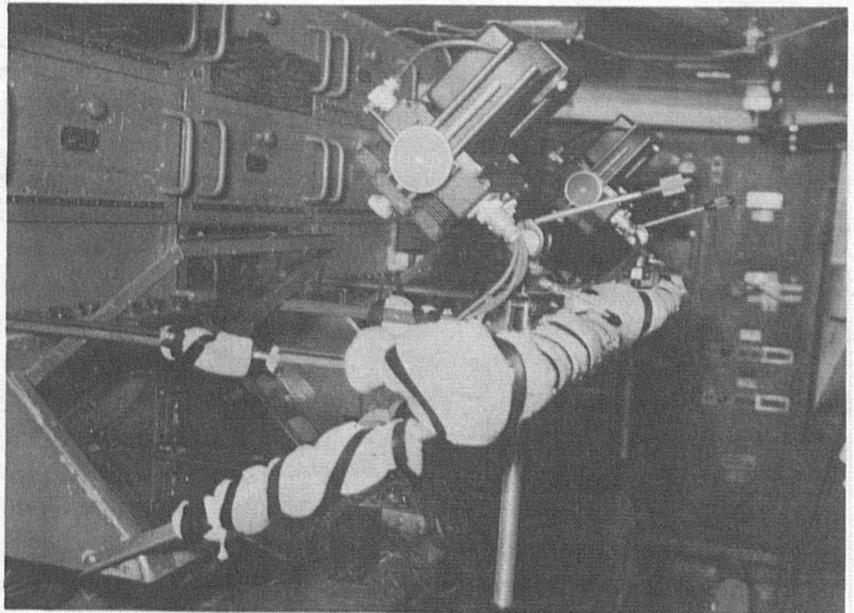
Matthew Lefkowitz obtaining the basic information for computing threshold contact height.

proach zone a little beyond the middle marker of the ILS system. The illuminometer head is mounted on top of the transmissometer projector tower and the detector for the sky brightness meter is on the same tower, looking in the same direction as the approaching pilot looks. Measurements from all instruments are recorded continuously in the project building except the scope of the rotating-beam ceilometer is photographed only when low clouds or fog is present.

The measurements from these instruments are combined graphically using the semi-empirical method developed by the Sperry Gyroscope Company so as to give an estimate of an approaching pilot's threshold contact height. The threshold contact height is the height on the glide path from which the pilot can expect to see the green threshold lights or, under certain daytime conditions, it is the height from which he will see the surface of the runway.

For each approach made under low ceiling-visibility conditions the meteorologists on duty compute graphically the estimated threshold height. This estimate is transmitted over direct wires to the CAA Control Tower, where it is displayed in digital form on edge lighted lucite wafers. At about the time the approaching pilot is over the outer marker of the ILS he is given the estimate of his threshold contact height along with the other landing information routinely given him at that time.

The portion of the operation which has been outlined thus far is in the nature of a service to the pilot. We are giving him some information he has not been receiving and it is the type of information which aviation interests



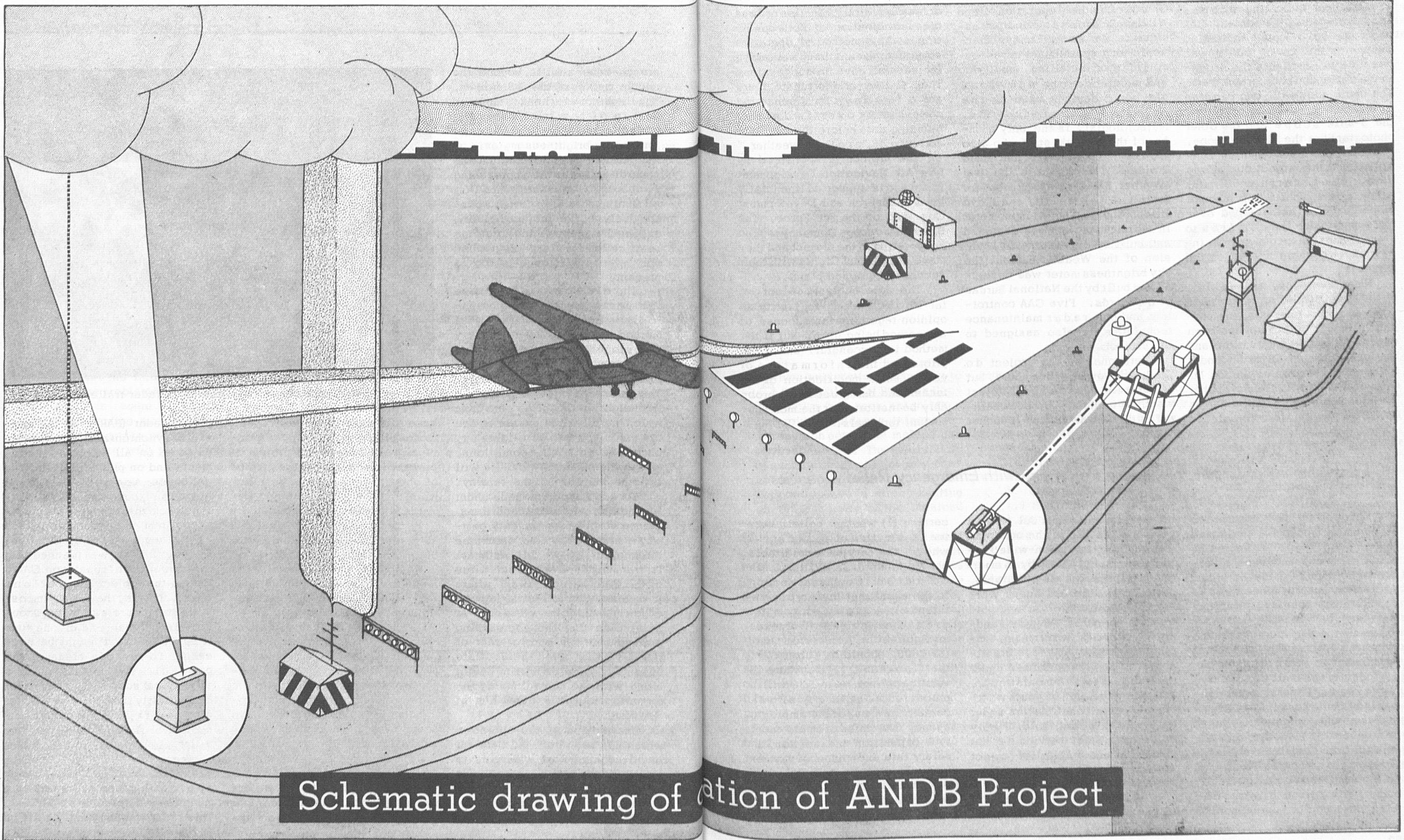
Remotely controlled cameras in radar trailer.

have told us will be very useful to the pilot. However, the principal purpose of the project at present is to evaluate the method of obtaining the information. We want to know if the method developed on the basis of the data collected at MacArthur Field can be applied generally. In order to obtain the data required for evaluation of the method the pilot is requested to report when he does sight the threshold. His instructions are to report "lights" if he sees the green threshold lights or "runway" if he determines the threshold by any other means, for example, the markings on the runway, or the contrast between the runway and its surroundings. Approximately half of the pilots have cooperated by reporting as requested.

The instant the pilot reports "lights" or "runway" the CAA controller assigned to the project pushes a button which photographs the scopes of the precision ap-

proach radar (PAR). At the same time synchronizing marks are placed on all recording instruments and on photographs of the ceilometer scope. The actual elevation above ground and distance from the threshold are determined from the radar photograph after development of the film.

Originally it was planned that there would be a repeater on CAA's PAR in the project operations room. It was, however, impossible to procure a repeater scope for this purpose and at one time it appeared that it might be necessary to abandon plans of the project. Photographing CAA's operational scope would have been a possibility if an IFR room existed at Newark, but the operational scopes of the PAR at Newark are under a hood in the tower, hence photographing them was out of the question. However, the precision approach radar at Newark is a military surplus type MPN-7. This radar was originally built on



Schematic drawing of operation of ANDB Project

a trailer and indicating scopes were included in the trailer. CAA had long ago remoted indicating scopes to the tower, but it was possible to reactivate the scopes in the trailer and photograph them. The photo shows the two cameras in the trailer, one photographing the 3-mile scope and the other photographing the 10-mile scope. The cameras are remotely controlled from the project operations room. The bizarre peppermint candy effect results from sponge rubber padding being taped over the supports for the cameras to prevent maintenance men from injury on the sharp angles of the supports.

N. A. Lieurance, of the Office of the Deputy Chief of Bureau, has taken an active interest in the project, although the project has been carried out by the Observations and Station Facilities Division under the general direction of Gordon D. Cartwright. D. R. Harris of that Division is project leader. Charles G. Knudsen is Meteorologist in

Charge of the field operations, and William E. Eggert is principal assistant. James A. Lunny, electronic technician, has the responsibility of installing, modifying and maintaining the numerous electronic devices used on the project. Matthew Lefkowitz, meteorologist, is the only member of the Newark staff who also worked on the MacArthur Field Project. The project is the first Weather Bureau assignment for Irwin J. Buchwalter and Floyd Hildebrandt. The illuminometer in use on the project was designed and built by the Instrument Division of the Weather Bureau, the sky brightness meter was designed and built by the National Bureau of Standards. Five CAA controllers and one radar maintenance technician are also assigned to the project.

Personnel on the project do not keep regular office hours, but rather work whenever "project weather" occurs. "Project weather" is defined as ceiling 1000 feet

or less or visibility 2 miles or less or a combination of both conditions. This method of operation sometimes means long work days for several days in succession. Then if they are fortunate there are a few days for discharging compensatory overtime and for reducing data before the next occurrence of "project weather."

The project is sponsored by the Air Navigation Development Board and is supported financially by the Research and Development Command of the Air Force. The Sperry Gyroscope Company is also cooperating in the project and they make occasional flights with their specially equipped plane.

The data analysis is not yet far enough along to justify an opinion regarding the success of the method being used. But if the method is successful, and if the pilots find the information of value, some modification of the techniques being used will probably be instituted at the more important terminals.

Establishment of Credit for Service Performed with Emergency Relief Agencies

IT is important that information concerning service performed in Emergency Relief Agencies be recorded in the Employee's Personnel Folder and on the Individual Retirement Record, since there is a possibility that such employment may be creditable for service and retirement purposes. The material published in the Federal Personnel Manual (Chapter R5-23) indicates that all direct service in regular Federal establishments or in the District of Columbia government, paid from funds allotted by the Work Projects Administration, Civil Works Administration, or Federal Emergency Relief Administration, is creditable if the person concerned received a regular appointment as

a Federal employee. All service performed as part of the administrative force on Nation-wide Projects sponsored solely by an emergency relief agency is creditable. Persons who served under Work Projects Administration and paid from the so-called "Supply Fund" are considered Government employees and the service is creditable. All service performed under the National Youth Administration, with the exception of youth workers who were beneficiaries under the program, is creditable. Purely relief or project service is not creditable and work relief project workers are not considered employees of the Government.

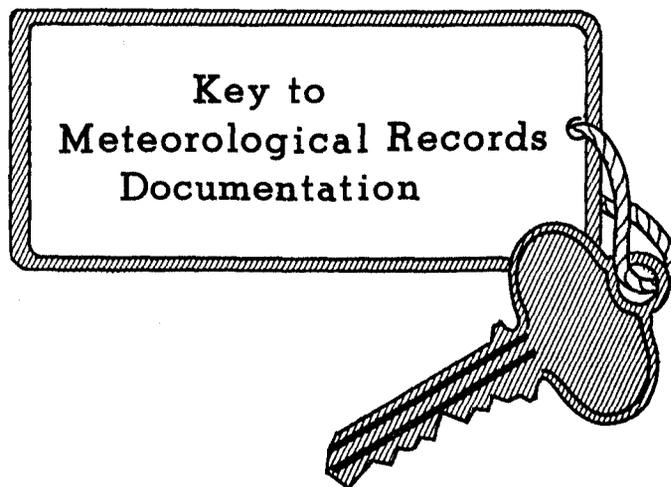
The employee who is interested in obtaining information con-

cerning (1) whether certain service is a matter of record and (2) whether the service is creditable, should forward an inquiry to the Central Office Fiscal Section. In the event that the employee intends to establish complete credit for retirement purposes, an Application for Service Credit (SF 2803) should be submitted to the Central Office where the verification of service will be processed. The inquiry should contain the name of the employing agency, the dates of employment, type of position and location, and salary rate and manner of payment (annual, daily or W.A.E.). Approximations are acceptable if definite information is not available.

The inquiry will be acknowledged and the individual employee will be advised concerning whether or not the service claimed

by him has been verified and creditability established. The offices maintaining the employee's Folder and Retirement Record

will be furnished with the proper information for inclusion on those records after the individual case has been completed.



Key to Meteorological Records Documentation

A new publication series Key to Meteorological Records Documentation has been established to provide guidance information to research personnel making use of observed data. The availability of such material will not only conserve valuable time but will undoubtedly have a direct bearing on the accuracy of the obtained results.

There has long been a need for information of this type; in fact, the absence of such guidance has frequently resulted in the necessity for a detailed investigation of historical facts as an adjunct to the pursuit of a specific research project. The unfortunate feature is that although the research project eventually is completed the historical investigative study does not become documented. Therefore, any other person doing similar research is forced to make his own search of the historical events.

This series envisions a complete set of historical documents which will serve to make the observed data (climatological

records) more intelligible. The decimal series has been used for numbering different parts of the series so that additional portions may be added as this becomes necessary.

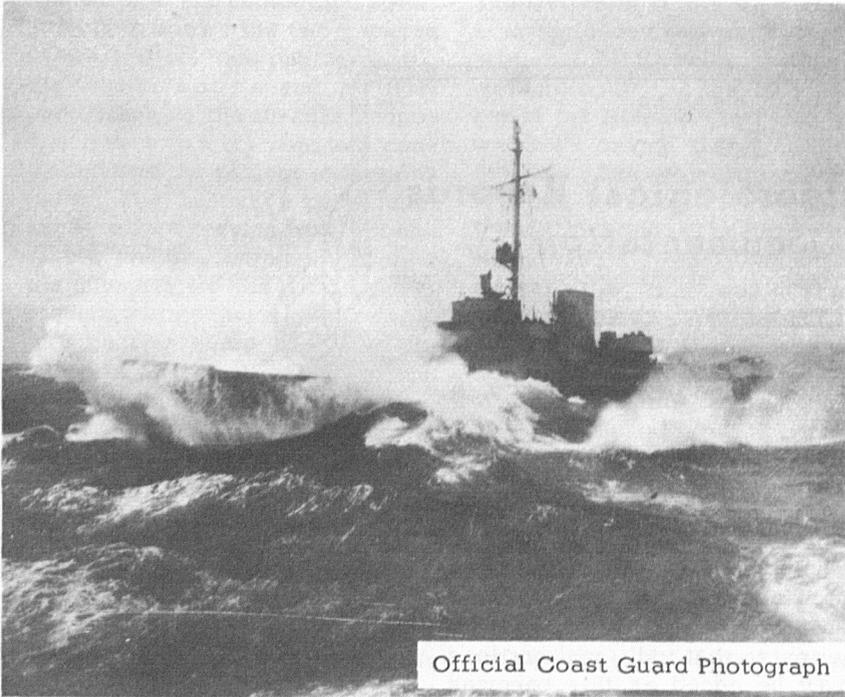
The new publication series will include:

1. Station Histories.
 - 1.1 Substations.
 - 1.2 First and Second Order Stations.
 - 1.3 Ocean Vessel Stations.
2. History of Observational Recording Forms.
 - 2.1 Substations.
 - 2.2 First Order Land Stations.
 - 2.21 Surface.
 - 2.22 Upper Air.
 - 2.3 Ocean Vessel Stations.
 - 2.31 Surface.
 - 2.32 Upper Air.
3. History of Observational Techniques by Observed Elements.
 - 3.01 Altimeter Setting.
 - 3.02 Barometric Pressure.
 - 3.03 Clouds and Obscuring Phenomena.
 - 3.04 Hydrometeors-Miscellaneous.
 - 3.05 Igneous meteors.

- 3.06 Litho meteors.
- 3.07 Luminous meteors.
- 3.08 Precipitation.
- 3.09 Relative Humidity.
- 3.10 Temperature.
- 3.11 Sunshine and Solar Radiation.
- 3.12 Thunderstorms.
- 3.13 Tornadoes.
- 3.14 Visibility.
- 3.15 Wind.
4. History of Publications.
 - 4.1 Climatological.
 - 4.2 Other

Undoubtedly many persons in the Weather Bureau have made very thorough investigations concerning some of the above items. Therefore, we would like to encourage these people to write their findings in a form suitable for publication as a part of the Key to Meteorological Records Documentation series. It is hoped that in this way the Weather Bureau may accumulate a complete set of guides which can easily be kept up to date by logging changes as they occur.

Marine Services



Official Coast Guard Photograph

ONE of the oldest service programs of the Bureau is that relating to forecasts and warnings to marine interests. Among the primary functions assigned to the Weather Bureau at the time of its establishment in 1891 was that of providing forecasts and warnings to merchant shipping and commerce on the Great Lakes and inland waterways. Recent advancements in ship design and increased shipping over the high seas and the importance of the merchant fleet in National Defense has necessitated increased emphasis on the part of the Bureau in providing a more timely and more adequate marine service. In line with this, Newton A. Lieurance, Executive Assistant to the Deputy Chief of Bureau, has been given the responsibility for coordinating the various facets of the marine program and leadership

of the overall efforts of the Bureau in this field.

Marine forecasts, warnings and advisories are provided by the Bureau's several field forecast centers and coastal offices. This is a general service designed to meet the basic needs of marine interests for coastal, inland waterways and for shipping on the high seas. The service is designed to provide the meteorological information to meet the basic requirements of the industry as a whole and not to provide direct operational advices to individual companies.

The Weather Bureau forecasts, warnings and advisories are provided to the marine industry through the radio broadcasts of the Navy, Coast Guard, and various commercial facilities, such as RCA, Mackay, etc. Offices, such as New York and Boston, have

teletypewriter loops or special telephone facilities to distribute this information locally to companies or individual operators. These basic forecasts and warnings provided by the Weather Bureau are in turn passed on to the individual ships of the company through that company's own facilities.

The collection of observations from the merchant fleet operating on the high seas is a cooperative one whereby the various shipping companies provide without cost to the government shipboard weather observations for use in the analysis of weather maps and in determining the climate of the oceans. These observations are in two forms, synoptic and climatological. All shipboard observations are recorded on a standard form which is mailed to the Weather Bureau at the end of each voyage to become a part of a world-wide climatological library. In addition, these observations are transmitted in a standard meteorological code to specified weather offices through the ship's communications facilities for use in preparing current weather maps and forecasts. In this regard, the Bureau pays message charges to get these observations to their destination. In some cases, the Bureau pays the company for overtime put in by operators when transmitting these standard observations outside the regular working day.

In support of the cooperative shipboard observational program, which currently embraces some 800 ships flying the U. S. flag and operating in all oceans of the world, the Weather Bureau provides some of the basic weather instrumentation including its

calibration and maintenance. It is expected that within the next two years all of these cooperative ships will be equipped with Weather Bureau-owned precision aneroids, microbarographs and aspirated psychrometers. This equipment will be distributed to the various marine centers as it is received from the manufacturer. In addition to instrumentation, the Weather Bureau provides the basic observational forms, blank weather maps for the use of the ship's crew and instructions to the crew on the techniques of weather observations and the use of Weather Bureau forecasts and warnings. This service is handled through the facilities of the Bureau's various marine centers. The major marine centers are located at New York, New Orleans and San Francisco and have general responsibility for this service at other port locations (Houston, Los Angeles, Seattle and Honolulu) where ship visits are carried on along the Atlantic,

Gulf and Pacific Coasts respectively.

Recently the Maritime Administration has initiated a program of modifying a number of Liberty ships to be operated under contract by various shipping companies. The Weather Bureau is cooperating in this program by providing and installing shipboard meteorological instruments on the SS Benjamin Chew and the MS Thomas Nelson. These ships will be operated by a commercial shipping company between East Coast ports and Europe. The basic installation consists of a precision aneroid, microbarograph, sea water temperature system, anemometer and rain gage. The barometer and microbarograph will be connected to a plenum system, including an air tight case to provide for exposing the instruments to the true air pressure outside the flying bridge. The sea water temperature system is of the remote electrical type with the sensing element exposed

to the unmodified sea water within a few feet of the surface. The exposure will be against the hull plates below the water lines with remote reading indicators in the chart room or flying bridge. These ships are expected to go into regular service sometime within the next 30-60 days. Mr. Willard Shinnors, formerly MIC of Winslow, Ariz., recently assigned to the Central Office, is the Project Leader on this program under Mr. Gordon Cartwright, Chief of the O&SF Division. The experimental aspects of this program will continue for about one year. Mr. Shinnors will conduct a number of tests and studies during the actual voyages.

Future plans call for the development of techniques and procedures for forecasting sea and swell, training for personnel engaged in marine forecasting in the application of the principles of oceanography and improvements in meteorological training at the Merchant Marine academies.

The National Weather Analysis Center

APPARENTLY some field personnel are not aware of the changes that have been made in the Analysis Center during the last twelve months. Prior to these changes the unit was known as the WBAN Analysis Center. WBAN was a joint operation of Air Force, Navy, and Weather Bureau personnel. However, about March 1, 1955, the Analysis Center moved from the Central Office Old Main Building of the Weather Bureau at 24th & M Sts., N. W., Washington, D. C., to the Census Bureau Building (Federal Office Building No. 4) in Suitland, Md. which is about 12 miles southeast of the Central Office. At the time the move was

made the name of the unit was changed but military personnel continued to take part in the operation. "The Analysis Center" is now officially known as the National Weather Analysis Center (NWAC, pronounced nay-wak).

As of July 1, 1955, the Weather Bureau was authorized to take over the complete operation of NWAC. However, several months were required to gradually replace Air Force and Navy personnel with civilian Weather Bureau personnel. The replacement program has been completed and NWAC is now in fact a Weather Bureau project with all civilian analysts and chartists.

The service rendered by the

NWAC to the Air Force and Navy has not been curtailed from that formerly supplied by WBAN. The service has actually been expanded to include not only complete northern hemisphere analyses of the sea level and of several upper level charts but also extended area prognostic charts. All of the FAX transmissions originate in the NWAC although two maps a day (72-hour prognostics for the 1000 and 500 millibar levels) are furnished by the Air Weather Service of the Air Force. Also transmitted are the 5-day forecast charts prepared by Extended Forecast Section twice a week and the 30-day forecast charts prepared twice a month.

WB Antarctic Personnel Returning

AT the time of writing the U. S. Navy's Operation Deepfreeze I, in support of the U. S. National Committee's International Geophysical Year program in Antarctica, is in its last phases. Both bases, the IGY main base at Little America V, and the Air Operations Facility at Hut Point, McMurdo Sound, are established. The Icebreaker USS Glacier is making the final reconnaissance of possible IGY bases in the Knox Coast and Weddell Sea regions. The base at Little America will house 70 men over the coming Antarctic winter. Men of this group will be in a position to travel to and build the IGY base in Marie Byrd Land, for which already some preliminary caches of material have been laid. This base is to be started in October 1956 prior to the arrival of the scientific staff in December. The 93 men at Hut Point will be available to support the airlift and air-drop operation which is scheduled to establish an IGY base at the South Pole. Stations on the Knox Coast, Weddell Sea, and in the vicinity of Cape Adare are also being provided for, and these will be established by ship in December 1956.

As has been explained in previous articles in TOPICS (Oct., Nov. 1955, Feb. 1956) meteorology is an integral part of the IGY plan. The Weather Bureau has been given responsibility by the U. S. National Committee for the IGY for the U. S. meteorological activities in the Antarctic during the period of the IGY. Six Weather Bureau employees have already taken part in base-laying operations as representatives of the U. S. National Committee. Their work consisted of helping to se-

lect base sites, looking after the caching of the IGY scientific equipment, and observing meteorological operations. Four of the men, Edward F. Goodale, Ernest A. Wood, Morton J. Rubin, and Kenneth N. Moulton, are already home or on their way home.

Chesney E. Twombly and Howard O. Wessbecher are to remain in Antarctica over the winter to supervise the transportation and installation of scientific equipment at the bases in Marie Byrd Land and at the South Pole respectively.



Boat from icebreaker U. S. S. Edisto approaching beach at Cape Hallett to remove cache-laying party.

In order to fulfill its responsibility for the meteorological program, the Weather Bureau has already begun procurement of the necessary personnel. There are still some positions available in the following categories: meteorologists, observing personnel, rawinsonde observers, electronic technicians, and map plotters. It is expected that Weather Bureau personnel will be stationed at six of the seven bases, with the majority of the group at the main base

at Little America V. There are two separate tours of duty; November 1956 to March 1958, and November 1957 to March 1959. Indoctrination and training periods of several months prior to each tour of duty are contemplated. (Selection of personnel for next year's operations will be made by May 1956.) For further information regarding these positions, write to Chief, Personnel Management Division in the Central Office.



THE publications that are listed in this column have been issued during February and March. Those items which list prices are for sale by the Superintendent of Documents:

Air Weather Service, Technical Report 105-93. A Description of Some Methods of Extended Period Forecasting. (Reproduced by special permission of AWS.) 1956. 92 pages.

Aviation Series: No. 13, Fronts - Their Significance to Flying; No. 14, Weather Reports From Pilots - How In-Flight Reports Help Others; No. 15, Aeronautical Climatology - Low Ceilings and Visibilities. 1956. 8 pages. 5 cents.

Circular P, 6th edition. Reprint of consolidated changes 1-10. 1956.

Circular P., Addendum. 6th edition. Reprint of consolidated changes 1-8. 1956.

Climatic Summary of the United States, Supplement for 1931-1952; No. 11-16, Michigan. 1956. 56 pages. 30 cents; No. 11-33, South Carolina. 1956. 30 pages. 20 cents; No. 11-34, South Dakota. 1956. 44 pages. 25 cents.

Eastern Air Lines Scientific Report No. 2. Further Studies on the Relation Between Upper Level Flow and Surface Meteorological Processes. 1956. 141 pages.

Floods - Part II; Storms - Part IV (Hurricanes and Other Tropical Storms). Reprints from Federal Disaster Insurance. Staff Study of the Committee on Banking and Currency, U. S. Senate, dated Nov. 30, 1955.

GRD Geophysical Research Paper No. 23. Forecasting Relationships Between Upper Level Flow and Surface Meteorological Processes. 1956. 188 pages.

Letter Supplements: 5604,

Summary of Tropical Storm and Hurricane Occurrences, 1956, 2 pages; 5605, CAA Weather Bureau Aviation Broadcast Service, 1956, 1 page; 5606, Flood Losses in Major River Basins of the United States (1924-1955). 1956. 1 page; 5607, Some Outstanding Tornadoes Since 1900. 1956, 2 pages; 5608, Can Nuclear Explosions Modify Hurricanes? 1956. 4 pages.

MIT Technical Report No. 20. The Use of Radar in Weather Forecasting with Particular Reference to Radar Set AN/CPS-9. 1956. 74 pages.

Minutes of the 1956 Interdepartmental Hurricane Warning Conference. 1956. 28 pages.

Technical Paper No. 15 - Part XV, Alabama. Maximum Station Precipitation for 1, 2, 3, 6, 12, and 24 Hours. 1956. 56 pages. 35 cents.

Technical Paper No. 25. Rainfall Intensity - Duration Frequency Curves. 1956. 59 pages. 40 cents.

Tornadoes; What They Are and What to do About Them. 1956. 4 pages. 5 cents each. \$3.75 per 100.

United States and Foreign Coast Stations Accepting Ships' Weather Observation Messages. 1956. 8 pages.

Weather Bureau and Cooperative Upper Air Stations. 1956. 2 pages.

Weather Forecasting Services for Agriculture. Senate Document 97. 1956. 8 pages.

Weekly Weather and Crop Bulletin Reprints: How Cold Is It? 1956. 2 pages; Weather and the Navigation of the Sea. 1956. 2 pages.

Wind Barometer Table and Wind - Barometer - Weather. 1956. 2 pages.

Wide Distribution of Tropical Meteorology Publication

AIR FORCE Surveys in Geophysics No. 76, "The Practical Aspect of Tropical Meteorology," by C. E. Palmer et al is being given wide distribution to field stations and Central Office units. This article is a comprehensive treatment of tropical analysis problems. It is being distributed to all first order stations in the southern United States and in tropical regions and selected forecast offices in other areas. There will be approximately one copy for every four meteorologists at each of these stations.

REMEMBRANCE

Philip Ayres Dales, Sr.

PHILIP AYRES DALES, SR., Telegraphic-Typewriter Supervisor in the Communications & Bulletin Unit at Suitland, Md., retired on February 27 because of disability. Mr. Dales was appointed in 1942 and has spent his entire 13½ years of service in the Bureau's communications section.

A native of Washington, D. C., he graduated from the District's Central High in 1913. He also holds a BA cum laude from Connecticut's Wesleyan University, and a BD from the Episcopal Theological Seminary in Alexandria, Va. For a number of years before coming to the Weather Bureau, Mr. Dales was a Rector in the Episcopal Church.

Friends who wish to contact Mr. Dales can reach him at 6523

Persimmon Tree Road, Bethesda, Maryland.

Alvin Green

ALVIN GREEN, clerk in the Publications Unit, Washington, D. C. retired on March 16 because of disability. He has worked for the Bureau since 1943, all of his service being in the Washington area. A native of Texas, Mr. Green graduated from Anderson High School in Austin, and after coming to Washington attended Howard University for two years. He is a veteran of the first World War and has been a member of the Elks Club for a number of years. Mr. Green's address will be 255 Rock Creek Church Road, N. W., Washington, D. C..

Francis J. Spade

FRANCIS J. SPADE, Observer in Charge of the Weather Bureau station at Park Place, Pa., who has been on sick leave, retired

because of disability, effective February 29, 1956. Mr. Spade was born at Danville, Pa. Dec. 20, 1904, and attended Danville High School. He worked for the State Highway Department and later for Cox's Engineering Company of Hazelton, Pa. until 1931 when he became a Federal employee with the Lighthouse Service, which later became the Bureau of Air Commerce and then CAA. He transferred to the Weather Bureau Jan. 16, 1943, when the Bureau took over several stations and associated observational work from the CAA, as Observer in Charge at Park Place where he worked until his retirement. Mr. Spade received a twenty-five dollar award in October 1950 for his suggestion to supply an extra set of binder posts to make it possible to file in one binder original Forms 1001 C and B for one year rather than six months, thus making for greater efficiency.

Mr. Spade is a member of the

Elks in his home town of Danville. He may be reached at 212 Bloom Street, Danville, Pa.

Arkas E. White

ARKAS E. WHITE, MIC at WBO Trenton, N. J. voluntarily retired on March 31, 1956, after nearly forty-five years of continuous Weather Bureau service. He began his career in 1911 as an assistant observer at Lincoln, Nebraska and saw service at Springfield and Peoria, Illinois, and Washington, D. C., before his assignment to the Upper Air Research Station at Royal Center, Indiana in 1919. He was transferred to Lansing, Michigan in 1929 where he remained until his assignment as MIC of Trenton in 1939.

A native of Indiana, Mr. White attended Mitchell High, and holds a B.S. from Marion College. He also attended Indiana University and Michigan State. Mr. White lives at 818 Edgewood Avenue, Trenton 8, New Jersey.



Nellie G. Angel

NELLIE G. ANGEL, Telegraphic-Typewriter Supervisor in the Communications and Bulletin Unit at Suitland, Md. died suddenly of a heart attack, March 24. She was born in Richmond, Virginia and received her education at St. Joseph's Academy and St. Patrick's Academy in Richmond. Miss Angel came to work for the Bureau in 1942 in the Coding and Communications Unit of the Central Office and advanced until she reached a supervisory position. She is survived by her father, three sisters and a brother.

Carl Richard Erickson

CARL R. ERICKSON, former GS-7 Meteorologist at WBAS Phoenix, Arizona, who was given disability retirement in 1954, died March 3 at Phoenix at the age of 46. A native of Idaho, he was a graduate of U.C.L.A. and had worked for the Bureau for thirteen years. In 1945, he was sent to Phoenix after having previously served at San Diego, Las Vegas, and Los Angeles. Mr. Erickson was a member of the American Guild of Organists, and played the organ in the Asbury Methodist Church. He resided at 4501 N. 17th Drive, Phoenix, Arizona.

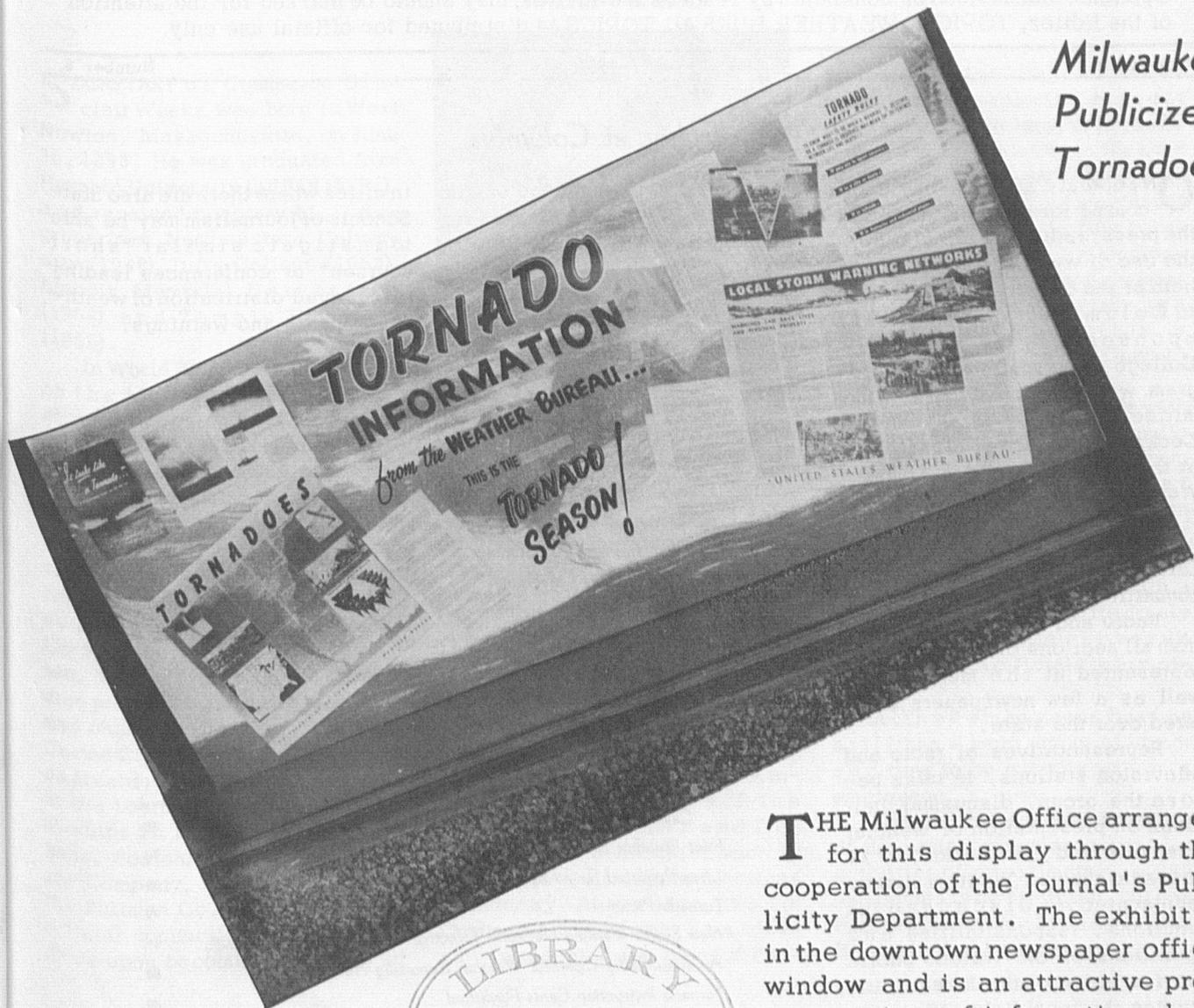
Lloyd D. Vaughan

LLOYD D. VAUGHAN, MIC at WBO Walla Walla, Washington died suddenly of a heart attack March 26, in his sixty-second year. A native of Ohio, he received his appointment to the Bureau November 1, 1926 at Sandusky. He subsequently served at Columbus, Ohio, Valentine, Nebraska, and in October of 1942, was transferred to Walla Walla as MIC. Mr. Vaughan had been a member of the American Meteorological Society since its inception in 1919 and was the current Secretary of the Rotary Club of Walla Walla. He resided at 1041 Boyer Avenue, Walla Walla, Washington.

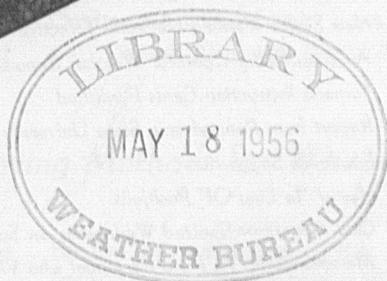
TOPICS

MAY 1956

*Milwaukee
Publicizes
Tornadoes*



THE Milwaukee Office arranged for this display through the cooperation of the Journal's Publicity Department. The exhibit is in the downtown newspaper office window and is an attractive presentation of information about tornadoes and storm warning networks.



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.

Workshop at Columbia

ON February 25 a one-day short course for representatives of the press, radio and television in the use of weather forecasts was held at the University of Missouri in Columbia. The course was sponsored by the University's College of Agriculture. The program was developed by a committee headed by Dr. Wayne L. Decker, professor of climatology at the University and a former Weather Bureau employee. Harold C. McComb, former MIC at Columbia and now CAM at Kansas City, was also a member of the committee.

Radio and television stations from all sections of the state were represented at the meeting, as well as a few newspapers scattered over the state.

Representatives of radio and television stations, in talks before the group, discussed their ideas on presentation of weather forecasts and information on TV and radio shows. Weather Bureau representatives discussed the functions, responsibilities and operations of the various public service units of the Bureau, including the local field office, the state service center, the district forecast center, the SELS Center and the extended forecast section.

Each session included a discussion period in which the various problems involved in the terminology and distribution of weather forecasts were freely and frankly discussed. Work-

shops such as this and the one at Hartford on March 3-4 (Topics for April 1956) can be of much help in bringing about better understanding between newsmen and broadcasters on the one hand and WB forecasters on the other. MIC's

in cities where there are also State Schools of Journalism may be able to instigate similar "short courses" or conferences leading to improved distribution of weather forecasts and warnings.

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MEET THE SECRETARY OF COMMERCE

Sinclair Weeks



SECRETARY of Commerce Sinclair Weeks was born in West Newton, Massachusetts, on June 15, 1893. He was graduated from Harvard University in 1914 (A. B.), and received honorary LL.D degrees from Northeastern University (1948), Tufts College (1953), Lincoln Memorial University (1954) and Temple University (1956).

In World War I he saw service on the Mexican border with Pershing's troops and in France with the 26th Yankee Division. Secretary Weeks was a Captain in the 101st Field Artillery.

The Secretary's business career began in 1914 and has included association with the First National Bank of Boston, Mass., as junior officer; Reed and Barton Corporation, silversmiths, Taunton, Mass., where he was elected vice president and later president and chairman of the board; and United Carr-Pastener Corp., first as president and then as chairman of the board. He has held directorships in the First National Bank, Boston; Gillette Safety Razor Company, Pacific Mills, and the Pullman Co. He severed his official connections with these firms upon becoming Secretary of

Commerce in 1953.

Paralleling his rise in the banking and manufacturing worlds, Secretary Weeks, like his father, served as Alderman in Newton, three terms as Newton's Mayor 1930-1935, and U. S. Senator from Massachusetts (his father was Secretary of War).

Some of his achievements include the establishment of a new Bureau of Foreign Commerce to increase two-way trade with the world, and a Business and Defense Services Administration to strengthen the defense functions of industry. At the same time the Commerce Department has taken part in planning the biggest Fed-

eral-aid shipbuilding program in peacetime, an enlarged airport program and the largest highway program in our history. He has strengthened the various scientific agencies of the Department and has improved reporting services on patents and on employment, sales and other timely economic data. The Secretary has made a record reduction in the cost of operating the Department.

The Secretary's day starts with a pleasant two and one-half mile walk from his home in Georgetown to the office. Then things start moving as the Secretary works in his shirt sleeves. A battery of telephones is on his desk, one of the phones is equipped with a head-set so he can write freely and at the same time converse and confer with officials in his office.

Although he keeps busy he still has a keen sense of humor and time to be friendly with his employees.

Keeping tab on the commerce of the nation and overseeing the activities of approximately 45,000 employees is no small job, but one that the Honorable Sinclair Weeks finds all in the day's work.

Time-Saving Methods for Warning Dissemination

IN the September 1952 issue of TOPICS, an article, "Dissemination of Special Warnings", presented the possibilities of Western Union's duplicating and addressing service in the distri-

bution of warnings. The Meteorologist in Charge of the Weather Bureau Office at New York City discussed his use of the service for the distribution of practically all types of weather warnings and

advisories; namely, small craft and storm warnings, cold waves, freezing rain, heavy snow, etc.

Approximately four years have elapsed since the article appeared describing the arrangement with

Western Union and the benefits. Some Weather Bureau offices are still burdened with long warning distribution lists which can be materially reduced by employing the system without eliminating distribution of warnings to essential recipients. This follow-up article is presented to again call to attention the highlights of the service. For a more complete explanation the referenced article should be read.

The method has proved to be a great time-saver in the dissemination of warnings when time is at a premium. During periods of threatening severe weather, the saving can be effectively applied to other urgent duties.

When the method is inaugurated to replace the laborious individual phone calls to the recipients on the warning list, the saving of time realized is quite great. Also, after a few years usage, statements like the following quotation from the aforementioned article are common. "... and it is hard to see how we would be able to disseminate warnings without the use thereof."

Another advantage of the arrangement is that the number of recipients can be increased considerably without adding work at the local Weather Bureau office. Anyone willing to pay the small fee for the Western Union service can be listed to receive the warn-

ings.

In cities where the Western Union office is not open 24 hours daily, the service can be used during that portion of the day when the office is open.

Another method of warning distribution is being employed at Bridgeport, Connecticut. A local manufacturer's association assumes the responsibility for contacting other industrial concerns in the area. Similar associations exist throughout the country. Local officials are encouraged to investigate the possible utilization of these additional means of warning dissemination.

Novel Method of Furnishing Emergency Weather Bulletins to Radio Stations

THE following paragraphs are quoted from a letter recently sent in by the MIC of a local WBO who has succeeded in arranging to have three local radio stations share his broadcasts through use of a single set of broadcasting equipment:

"You may be interested in our method of handling special cold wave bulletins and warnings under the new setup. The operation is so simple and effective that we look back at our old arrangements as being highly inefficient. In addition to the three broadcasts per day, while a recent severe cold wave situation was developing, we also prepared 'follow-up' interim bulletins at times about midway between the regular broadcasts. In each case, we merely phoned the radio stations and indicated that a special bulletin on the cold wave would be

issued over the microphone at a specific time. The bulletins were taped by all three stations and were broadcast repeatedly as a public service feature.

"As a part of the new program, we started a rather novel experiment on January 30 in which we automatically supply temperature and humidity values to the three radio stations twice each hour. The three radio stations then give at least the current temperature at each half-hour station 'break', and more frequently when temperature extremes are occurring. The operation is handled as follows: At the WB, we have a time clock with a chime which prompts our men to give the values at specific intervals. Our broadcast amplifier is left on continuously, and each radio station leaves a speaker on the broadcast line continuously. Supplying the data

(over the microphone) requires only a few seconds, and all three radio stations get the data simultaneously in the one operation.

"We have found that this innovation has reduced our Weather Bureau telephone load markedly. In cold wave conditions, for example, 90 per cent of the telephone inquiries are for temperature only. Recently we had a very severe and prolonged cold wave. With the three radio stations giving the current official temperature at practically every program change, the telephone at the Weather Bureau was relatively quiet. We have found that the radio stations are sold on this temperature reporting because the public response has been excellent. Also, they like it because the operation takes practically no air time."

50th Anniversary Celebration

THE 50th anniversary of the establishment of the Weather Bureau Office at Burlington, Vt. was celebrated on March 29, 1956 by inviting the public to attend "open house" at the station. The day was proclaimed "Weather Bureau Day" by Mayor J. Edward Moran of Burlington.

Despite bad weather a large crowd turned out to inspect the station's facilities, services, and equipment. A carefully selected route through the offices, large visual aids, and the use of tape recorders facilitated the handling of the visitors with no serious interference to the normal station routine.

Messages of congratulations were placed in the local newspapers by firms commending the station on the good service which it has rendered to the community during the past 50 years. Congratulatory messages were also received from Governor Johnson of Vermont and U. S. Senator George B. Aiken. Two television programs on WCAX-TV and several radio programs featured the occasion.

Robert E. Helbush, Meteorologist in Charge, commented that: "All of us here at the Weather Bureau thoroughly enjoyed the festivities and some of the local staff have even jokingly suggested that we begin plans for our 100 year celebration. Among other things, it gave us a chance to personally greet and briefly converse with some of the numerous friends and well-wishers of the Bureau with whom we have had only telephone contact all these years. We believe that those who visited us not only found an interesting program, but that our guests went away with an appre-

ciation of some of the problems we face and of the complexities of weather forecasting and observing." (Editorial Note - We

also offer our congratulations to Mr. Helbush and his staff for planning a good public relations program.)



Present MIC and Frank E. Hartwell of Bolton, Vt. discussing some of the changes in weather observing and forecasting techniques during the past 50 years. Mr. Hartwell, who drove over from Montpelier, Vt. to be a guest at the celebration, was in charge of the Burlington office from 1919 to 1930.

Technical Supervision in Action

OVER the past several years, frequent mention has been made of the need for positive technical supervision by supervisors in the field service. In most instances, little has been said specifically about how this important function should be performed. There are several different aspects to technical supervision, such as positive leadership and participation in the daily forecast activities, assistance in conducting "post mortems" of interesting weather situations, and the stimulation of interest in technical literature. Of all these, the last mentioned is in many ways the most difficult, because personnel on rotating shifts cannot easily participate in group studies, and the higher fatigue level is a significant deterrent in sustained outside study. This problem was discussed by a meteorologist in charge at a recent conference. His comments are presented below as a matter of interest to all stations. This is a suggested way of stimulating professional interest. Do you have a better one?

"Toward the end of each year it has been my custom to review the activity of the station during the past year and to make plans for the activity during the coming year. At the end of 1954 it appeared that many things had been accomplished which had improved operation and service and also some had either been left undone or neglected. One area of neglect was that of in-station training. Just to show what I mean—I had been noticing for a long time that publications coming from the Central Office, such as journals and other meteorological literature circulating among the stations

often were not even touched. Well, what did that indicate? It indicated that probably the fellows either didn't have time or they didn't have the inclination to read some of the things to find out what was being done in meteorology. They might have said, 'Half of that "stuff" is way above us.' Well, actually, there is no better way for them to climb up than to expose themselves to a little of that 'stuff'. Anybody can read!

"I was a little bit amused not long ago to see a memorandum from the Central Office which said, in effect, 'We don't know whether or not it is an advantage to circulate the Meteorological Abstracts.' I think the Meteorological Abstracts are the most important things that are circulated. Usually a lot of us don't have time to read the whole paper but a brief digest such as the Meteorological Abstracts makes it possible to keep abreast of developments. To find out that there was some question about circulating the Abstracts astonished me but to realize that they weren't read made me start thinking. I therefore selected training as a station project for concentrated effort during 1955.

"Training required at a station that is operating efficiently needs no concentration on routine, but rather concentration upon greater understanding of the general field of meteorology, or in other words, training toward greater professional stature. How was this to be accomplished in a station where generally only one employee was on duty at a time, occupied by mostly routine duties? The answer it was felt, lay in a cooperative effort which would capture the individual's interest and

kindle his enthusiasm toward the desired end. A station forecast study for the group was selected as the tool for this program.

"Incidentally, I would like to drop a note here about large stations. Well, this MIC wants to know, 'How does experience at a five-man station have anything to do with me? Actually, studies in supervision have shown that a five-man outfit or a six-man outfit is the most efficient as far as group effort is concerned. So, if you have a large station perhaps five-man groups with a supervisor over each group would work best for this purpose. They could work in parallel on a project or they could each have a little project. You could have competition between them. At any rate, the idea is this, and you mustn't lose sight of it: What is the individual going to get out of it?

"Now getting back to our station, we had a seminar to discuss a station forecast study. The use of this nomenclature (seminar rather than station meeting) elevates the meeting in the employee's mind from a discussion of station problems and routines to a consideration of a scientific problem—a semantic trick to add prestige to the program. Such minor things sometimes are the keys to success in stimulating group interest and participation. At the seminar the men bought the idea of a station forecast study on the basis that they would individually benefit from it. Instead of assigning the forecast study to an individual, thus singling him out, one might say, to get ahead, each individual was assigned the study without a limit to what each might contribute to the program. Thus each individual could con-

tribute to the program according to his talent and energy. This appealed to the ambitious nature of each individual, especially as the project was of a non-routine nature.

"Essentially we are trying to get men to think, and to form ideas of their own about meteorological problems. The scientific method is especially good for this.

"Let's stop here to review the concept of the scientific method. First of all, we have to have observations on which to base the scientific method. From these observations we draw a hypothesis. In other words, we make a mental picture or a model in our minds of what processes are taking place in nature. Now I think that is probably the hardest thing to do. That is where the thinker comes in. After the hypothesis is made you can start collecting independent pertinent data and arrive at experimental verification. (If the experiments tend to prove your hypothesis, then your hypothesis has an additional authority and you can go on from there. There may still be some weak points in it, but you have made a step forward in what is called the scientific method.)

"How does this apply to the station forecast study? First a problem is selected. Our group chose a study of the local winds to aid in the wind forecast for the Agricultural Bulletin. The next step is an investigation of what has been done already along this line. That means making a review of the meteorological literature concerning local winds. The group participates in this by assignment. The MIC or supervisor must read and assign papers according to the degree of difficulty of the paper and the background and ability of the individual in the group. Thus the less advanced are not discouraged and the more advanced receive satisfaction. This is a good place for the MIC

to evaluate the principal assistant or supervisor concerning his ability to understand the group. This step is of such importance as to receive special review and discussion by the MIC and principal assistant before the assignments finally are made. Mistakes at this point will frustrate personnel and lower morale rather than achieve the results desired. However, throughout the program, the individual, including the principal assistant, should be made to feel that he is making the decisions and originating the ideas. Dogmatism has no place in a cooperative effort of any type. If the individual feels he has a part in the program by getting his ideas accepted, you will have an eager participant, as if by magic.

What we tackled first was the mountain wave. I selected that and turned the bibliography on the mountain wave over to the principal assistant and told him that I would like to have him evaluate the men according to their intellectual backgrounds and their interest range and assign the bibliography to individuals in the station but cautioned him, 'Let's talk over the assignments before you finally make them.'

"Fortunately, there is a wide range of talent at my station. Those with better backgrounds and abilities were assigned the more difficult papers and those with less background something less difficult. Then we called the men in and had a seminar. Each one of them got up and made a little report of what they had read and they got great satisfaction out of it. They got the satisfaction of not only reading a piece of scientific information but of getting up and telling the other fellows about it. When we got through I asked the principal assistant to try and relate what had been said to our problem. After his discussion I added a little, and that is as far as we have gone.

"We have not progressed in our station beyond the bibliography. Well, you might say, when is your deadline? When are you expecting to finish your project? I don't know. It might be ten years from now. It doesn't matter. The whole thing is that I am trying to get these fellows stimulated. I am trying to create intellectual curiosity in them.

"I think the response has been fine and I'll tell you what the rest of the program will be. After we have reviewed the literature we'll have the men get together and give them a little lecture about forming the hypothesis, and then try to get them to create a little model of how they think nature affects our area. That will be a big challenge to them, I think, and a lot of fun, if we ever get to that point. We may jump over and have a little bit of that as we go on so they can visualize where we are going. After we get a model, we move on to verification. Of course, you all know we now have in modern meteorology electronic means of working the data which removes much of the routine once the thinking has been done.

"So much for methods. What about results? Let me talk about a few. The cooperation we have received from Bureau officials has demonstrated to our men the team spirit of the Weather Bureau. When a top regional official visited us I told him what we were doing and he said, 'I have just the thing for you.' He sent me a whole outline of the scientific method and its application to a station forecast study that had already been prepared. It gave me a big shot in the arm. One of the Bureau's top staff members sent me a memo from Washington saying, 'Any time you need anything just let me know.' When the men read that they felt we were going someplace. We've got the background and the resources of the Weather Bureau

behind us. Our men know that the officials up the line are going to give us all the support they can. When you get cooperation like that, it makes you feel mighty good.

"As a result of our forecast study the fellows are going to become more conscious of scientific literature. They are going to visualize where they fit into the whole program of meteorology. After our seminar on the mountain wave some of them said, 'Well I think I need a little more training in this field.' Even the fellow with the most background said, 'You know that was pretty tough; I am a little bit weak on my calculus.' Well, he probably hasn't had his calculus books out and shined off since the war. It would be a good thing for him to start shining. Attitudes like this will help men in the stations understand more about the science of meteorology. I am not trying to build research scientists, but I want to make the men understand what the research scientist's problem is, and appreciate what he is up against; to make him able to use the results of research, not balk at them.

"I have heard it said, 'There isn't any relationship between theory and practice.' Well, there is nothing so ridiculous as that, because after all, practice is nothing but theory in action. Actually, man started out by just observing things. It was a long time after he observed things before he began to formulate hypotheses. These hypotheses formed the building blocks on which our present civilization rests. Today meteorology is no different than atomic energy or anything else. It just needs thinkers, that's all, and we hope to stimulate thinking by our station studies."

The National Hurricane Research Project

THE Research Operations Base of the National Hurricane Research Project was transferred to West Palm Beach, Florida, beginning April 16, 1956, and operations there are now in full swing.

During the period when the headquarters for the Project were in Washington most of the work of the staff was spent in planning and preparing for the operations of the Project. Many experts were consulted on various phases of the Project during this period. Not only is the National Hurricane Research Project a cooperative effort among many agencies of Government, Universities, and Research Institutes, but advisory panels in synoptic and dynamic meteorol-

ogy, instruments, storm surges, and cloud physics have been established in order that the best possible expert advice on the conduct of the Project may be obtained. Some of the experts whose services have been available have contributed to meetings of advisory panels, and some of the others have visited the Project headquarters individually for discussions with Project personnel. Many of these experts will also visit the Research Operations Base from time to time during the next thirty months to advise with the Project personnel. The following is a list of non-Weather Bureau experts who have assisted in the advisory work:

L. M. Allison	National Bureau of Standards
Charles Bates	U. S. Navy Hydrographic Office
Werner Baum	Florida State University
John C. Bellamy	Cook Research Institute
Tor Bergeron	University of Upsala
F. A. Berry	Advisory Committee on Weather Control
R. R. Braham	University of Chicago
Horace R. Byers	University of Chicago
Jule Charney	Institute of Advanced Study, Princeton
George Cressman	Air Weather Service
Robert M. Cunningham	Geophysical Research Directorate
J. L. Dennis	General Precision Laboratory
H. E. Finnegan	U. S. Coast and Geodetic Survey
Robert Fletcher	Air Weather Service
John Freeman	Gulf Consultants
J. J. George	Eastern Air Lines
George A. Guy	Air Research and Development Command
William Hakkarinen	National Bureau of Standards
Henry C. Houghton	Massachusetts Institute of Technology
Luna Leopold	Geological Survey
Myron G. H. Ligda	Texas A and M
Edward Lorenz	Massachusetts Institute of Technology
Joanne Malkus	Woods Hole Oceanographic Institute
J. S. Marshall	McGill University, Montreal
H. J. Mastenbrook	Naval Research Laboratory
W. A. Maxim	Wright Air Development Center
James E. Miller	New York University
Walter H. Munk	Scripps Institution of Oceanography
Gerhard Neumann	New York University

E. Palmen	University of Chicago
George Platzman	University of Chicago
A. C. Redfield	Woods Hole Oceanographic Institution
Robert Reid	Texas A and M
Herbert Riehl	University of Chicago
R. E. Ruskin	Naval Research Laboratory
Vincent Schaeffer	Munitalp Foundation
S. Shefter	Signal Corps
Leon Sherman	University of California at Los Angeles
Jerome Spar	New York University
Victor Starr	Massachusetts Institute of Technology
Henry Stommel	Woods Hole Oceanographic Institution
V. E. Suomi	University of Wisconsin
H. L. Weickmann	Signal Corps
Arnold Wexler	National Bureau of Standards
Raymond Wexler	Harvard University, Blue Hill
Hurd C. Willett	Massachusetts Institute of Technology

Bonds

ALTHOUGH the Bond Campaign is now completed, pledges for the Payroll Savings Plan will be welcomed at any time. As a matter of self-interest, all Weather Bureau people are urged to keep the Plan in mind—discuss it with those who are now participating—review your savings for the past year or two—compare—are you satisfied? Remember there is a deduction to fit your budget! (Results of the recent Campaign will be announced in the June issue.)

Substation Climatological Summary Program Receives Favorable Comments

WE are highly gratified with the progress of the Substation Climatological Summary Program, under which substantial records of past weather are published for other than first-order stations. To date, 61 of these summaries have been published and many more are in various stages of completion. That is, summaries are now available for readily fulfilling requests for up-to-date climatological data at 61 locations from which condensed data were not heretofore published.

This program, very well received generally, is conducted

at comparatively little cost to the Bureau. Typical community acceptance of the summaries is expressed in a letter to our State Climatologist, Raleigh, N. C., from the Manager, Fayetteville, N. C., Chamber of Commerce, which reads in part: "We have had much favorable comment on this summary and are rather amazed at the number of people who desire copies of it." In another case, the local newspaper at Anderson, S. C., requested the typed formats of the Anderson summary for reproduction in the paper. The Greeley, Colo., Chamber of Commerce

published a very attractive summary which had the tables and text superimposed on a colorful sketched background of local scenery which included eight photographed views of the immediate vicinity.

Besides Chambers of Commerce, cooperators thus far include Merchants and Businessmen's Associations, State Development Boards, State Industrial and Employment Planning Committees, Universities, and State and Community Departments and Offices of Agriculture, Education, Development, and Planning.

Outstanding Rawinsonde Records

AS a result of an article which appeared in the December 1955 issue of TOPICS, several other outstanding records, for consecutive number of observations to the bursting point of the balloon, have been revealed. These are as follows:

Bismarck, N. D. - 131 - (Oct. 11, 1954 - Dec. 15, 1954).

Boise, Idaho - 53 - (Feb. 9 - Mar. 7, 1955).

Boise, Idaho - 58 - (April 22 - May 20, 1955).

Boise, Idaho - 64 - (July 24 - Aug. 25, 1955).

Lihue, T. H. - 82 - (Oct. 12 - Nov. 21, 1954, also eight other periods since 1951, each exceeding 49).

San Juan, P. R. - 124 - (May 22 - July 23, 1954).

San Juan, P. R. - 191 - (Oct. 5, 1954 - Jan. 6, 1955).

San Juan, P. R. - 228 - (Sept. 9, 1955 - Jan. 2, 1956).

Santa Maria, Calif. - 140 - (April 26 - July 3, 1953).

Observers at the above stations are commended on these outstanding records.

Early Issuance of Hourly Precipitation Data for

California, Oregon and Nevada, Dec. 1955

AS a result of prompt, vigorous action by many people—recorder observers, other government agencies, River District offices, Weather Bureau offices, the Area Engineer, the San Francisco Weather Records Processing

Center, the Salt Lake City Regional Office and, last but not least, the National Weather Records Center—the above three bulletins for December 1955 were printed on February 3, 1956.

This is a truly remarkable

record. Checked data for the disastrous rains in late December were thus available in printed form 34 days after the end of the month.

Similar action will be taken in the future whenever unusually heavy, widespread rains occur.

Pilot Weather Briefing by TV

SOMETHING new has been added to pilot weather briefing at Billings, Montana. MIC Ralph E. Gumpf and his staff now use TV for briefing pilots on a closed circuit that extends from the WBAS to the Flight Service Building. The TV circuit was installed and is maintained by H. H. Henrickson & Sons, a local firm, as a service to pilots at the Billings Municipal Airport. The Flight Service Building is the focal point for serving pilots in general aviation at Billings, and of course weather briefing was needed to make it complete. H. H. Henrickson and Sons proposed and sponsored the TV circuit for this purpose.

The TV briefing service was

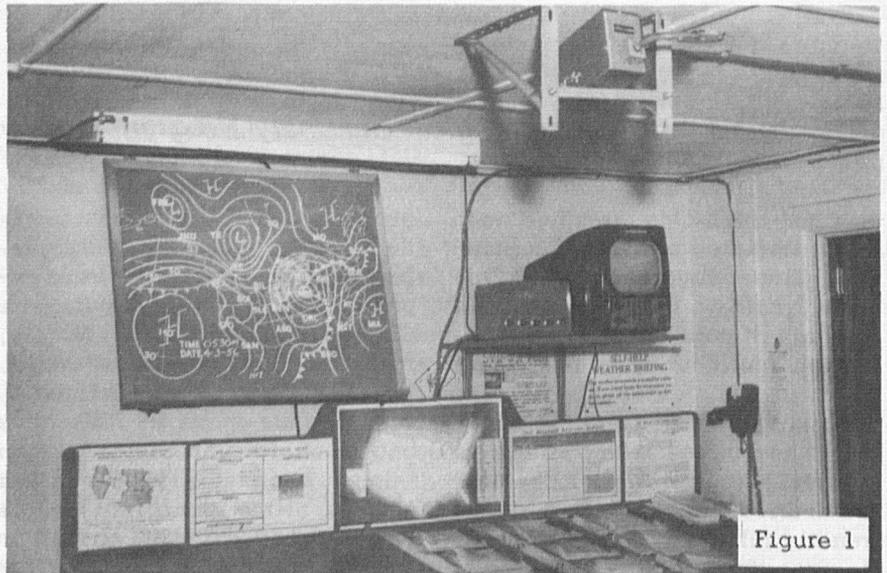


Figure 1

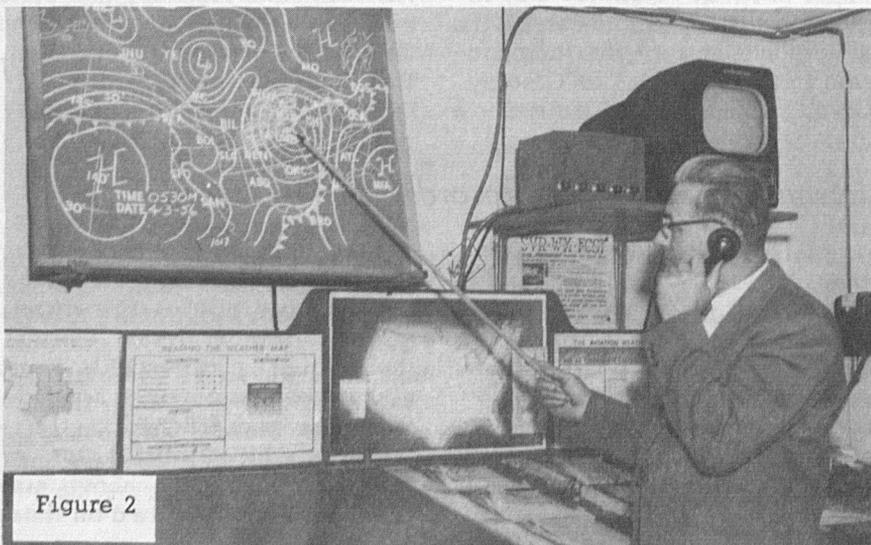


Figure 2

started early in April and will operate experimentally for six months after which it will be evaluated for possible continuance as a regular service. Mr. Gumpf and his staff, the Henrickson Company, and the TV company spent many hours on the project preparatory to inaugurating the service. Tests were made on projecting teletypewriter weather information but these did not work out satisfactorily. A TV blackboard map was decided the more practicable method for portraying significant weather features.

The accompanying pictures give a fairly complete account of

the project. The first picture shows the TV camera suspended on a bracket mounted on the ceiling, the blackboard weather map with a special lighting fixture on the wall above the standard briefing counter, the TV camera control panel and monitor receiver, and the direct line telephone. The second picture shows Mr. Gumpf pointing out significant weather features on the blackboard map as he talks to a pilot on the direct line telephone. The third picture shows the pilot, Robert Henrickson, receiving the briefing in the Flight Service Building.

Television needs to be thoroughly explored as a possible method for rendering many types of weather service and the project at Billings offers an excellent

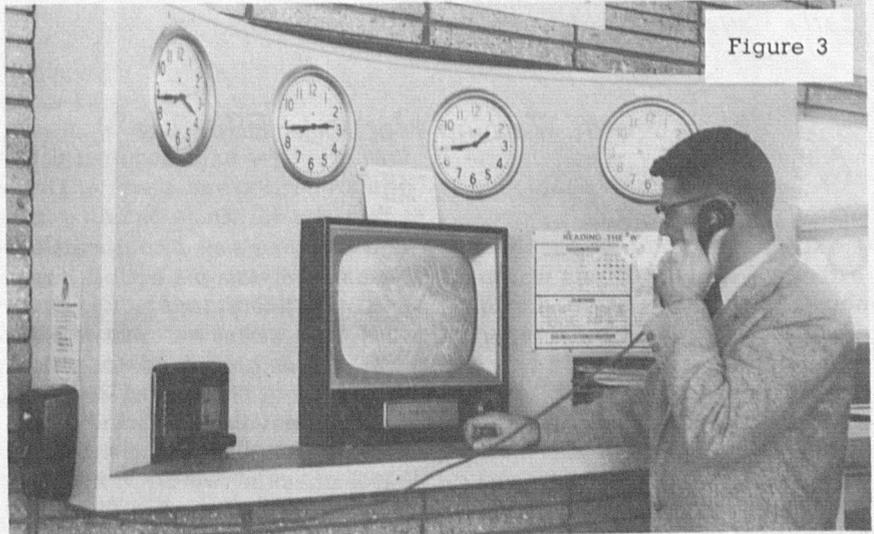


Figure 3

opportunity to test its use in serving pilots. The Henrickson's are to be congratulated for their foresight and service-mindedness in

sponsoring the project and Mr. Gumpf and his staff are to be commended for the time and attention they are devoting to the project.

Lives Reported Saved by Tornado Forecasts

THE following quotations from newspaper articles describe the serious tornadoes in Michigan and Texas are indicative of lives saved by the tornado forecasts:

"Thirty residents of a trailer camp, alerted by radio, had moved into the basement of the camp owner (near Grand Rapids, Michigan). They emerged to find their trailers ground into junk."

"The tornado alert sent from the office of the United States Weather Bureau undoubtedly saved

many lives. Numerous residents of the stricken areas said they were on the lookout for tornadoes as a result of the warnings."

"A Red Cross nurse said radio warnings repeatedly told of the impending storm. Many took to their cellars, she said. She related how in one family, a mother and her child, huddled in the basement and were unharmed while three members of the same family stayed upstairs and were killed."

"Residents of Bryan, Texas,

town of 20,000, alerted by a radar tornado-spotter, escaped without a single scratch yesterday as a major twister destroyed or damaged more than 200 homes and half a dozen commercial buildings. The warning possibly prevented mass injuries at the Austin High School, only a short distance from the main path of the tornado. School authorities kept the children in the halls of the building, although it was time for school to end for the day."

Tornado Picture

NOT many stations can claim better timing of the showing of the new film "TORNADO" over a TV station and the occurrence of a tornado--almost made to order. The picture was shown on WBTV, Charlotte, N. C., Tuesday evening, April 3rd. On Wednesday SELS issued a forecast of thunderstorms and possible tornadoes

over a band from "Charlotte to Elizabeth City, N. C.," On Thursday morning THE CHARLOTTE OBSERVER carried a 5-column headline "IT CAN HAPPEN HERE" and a large picture of a recent tornado funnel cloud on the first front page of the paper. Sure enough, on the following day SELS issued a forecast for severe thunder-

storms and possible tornadoes just touching the Charlotte area--and a tornado did occur 15 miles southeast of the airport. Only one house was destroyed, and no injuries resulted.

Incidentally the TV station had very favorable comments on the picture and many requests to show it again.

New Storm Warning Networks Effective

OKLAHOMA CITY reports that the new community storm warning networks were used to distinct advantage along with radar reports, during a recent 24-hour severe weather period. The following extracts are from Oklahoma City's report:

"Severe weather forecasts were distributed and radar surveillance was continued. A line of severe thunderstorms developed rapidly in the western part of State and this information was relayed to all sections of Oklahoma concerned. Oklahoma City contacted Alva police to check on a strong echo 5 miles from Alva. Twenty minutes later the police detected a funnel 7 miles from Alva. Warn-

ings were issued to localities downstream from the echo. As the line of thunderstorms moved eastward, the storm warning network at Enid was contacted for information about two strong echoes. A tornado developed from the echo north of Enid. Later the Highway Patrol checked two strong echoes near Oklahoma City and damaging wind warnings were issued for threatened areas.

"A new line of thunderstorms began to develop south of us and bulletins were issued. Storm warning networks in the area were alerted for hailstorms and strong winds. A funnel was reported and warnings were issued downstream."

Amateur Radio Operator Weather Reporting Nets

METEOROLOGIST in Charge, A. R. Lowery of WBAS, Cheyenne, Wyoming and A. W. Cook of WBAS Denver, Colorado, have added a valuable forecasting aid at their stations through the cooperation of Radio Amateur Operators in their respective areas. These amateurs have organized weather nets consisting of between 20 and 25 operators and each morning a weather report from each of these operators is placed on the net, collected by the net control station, and then relayed to the Weather Bureau. Most of the operators report faithfully according to a report of activities of the Colorado Weather Net covering the 5-month period

October 1955 through February 1956. During the period a total of 1,654 reports were received by the Weather Bureau.

In addition to providing daily reports from sparsely populated WB-CAA reporting point areas, the weather nets also serve as a valuable aid in emergencies and severe weather situations.

It would appear that many stations, especially those located west of the Mississippi, would welcome this additional source of weather information. We should encourage these stations to inquire of local amateurs as to the possibility of establishing similar nets in their area.

If You See a **TORNADO FUNNEL CLOUD**

Call Collect, Omaha Weather Bureau Office

ATLantic **5436** or JACKson **0677**

Please report the following immediately:

1. The location of the **TORNADO** or severe local storm and its direction of movement, if possible.
2. The time the tornado was observed.
3. Any other unusual weather conditions.
4. Your name.

Tornado, Instruction

Cards Furnished

OMAHA reports that billfold-size Tornado Reporting Instruction cards have been furnished for distribution to network observers through the courtesy of a public-spirited citizen associated with a local printing company.

The instructions are printed on heavy cardboard and can be carried in a wallet, or posted beside a telephone. Many private organizations have reproduced the Tornado Safety Rules, but this is the first time to our knowledge that outside interests have assisted in furnishing material for the severe local storm warning network program.

Report from Pennsylvania State University

THE semi-annual report from Pennsylvania State University which covers the period, July 1 to December 31, 1955, shows that the total number of registrants in meteorological correspondence courses is 530, and of this total:

138 have completed one or more courses during the last six months.

336 have completed 1 to 23 lessons during the last six months.

32 have not submitted a lesson during the last six months.

Employee Suggestion

AN employee has constructed a thumb-tack and plywood-board device as an aid to the planning and scheduling of annual leave, and has submitted the idea as an employee suggestion for use at other stations. The device appears to be quite attractive and useful and might prove to be of real interest to other offices. We have no way of knowing, though, whether methods now in use are not entirely satisfactory and whether the proposed idea would be a great enough improvement to justify the time and effort it would take to make the boards, so we are making use of this TOPICS article to submit the idea to all offices for consideration. Unless the response indicates a very great need for such a device they would not be constructed or purchased on a mass basis but rather each office would have to make its own. The device is described below.

The board was made of ply-

wood about 10 x 24 inches, covered with two coats of white enamel, and then rows and columns marked off with india ink. Each row is for a different month, and thirty-one columns are provided, one for each day. Each resulting square represents a separate day of the year. Each employee is represented by map tacks or thumb tacks of a separate color. As each employee's schedule for annual leave is agreed upon, a thumb tack of his color is put on the board for each day of scheduled leave. This graphic record of scheduled leave helps in planning additional leave, avoiding conflicts in schedules, and avoiding loss of leave unused at the end of the year.

If one of these devices is put into use in your office (or some modification of the idea, prompted by this suggestion) please let the Central Office Awards Committee know so that proper credit may be given to the suggester.

Use of "In Lieu Of" Positions

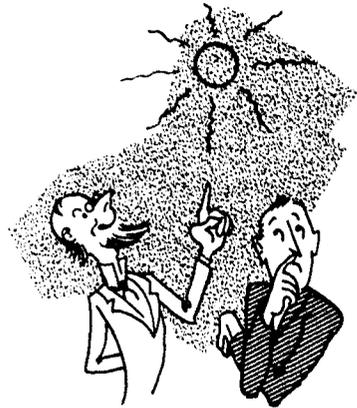
IN a number of instances, the Bureau has found it necessary to establish Meteorological Aid positions "in lieu of" Meteorologist positions. In other cases "trainee" positions have been established at a grade lower than that of the authorized position. In view of the number and variety of questions concerning the use of "in lieu of" Meteorological Aid positions, we feel that the basic principles involved in this practice should be clarified.

1. The absence of qualified people does not of itself change the requirement for meteorological service where it has been previously recognized in Weather Bureau policy.

2. We can establish Meteor-

ological Aid jobs only where it is possible to do Meteorological Aid type work.

From principle number 2 above it is evident that the Meteorologist in Charge must necessarily assign these "in lieu of" people to appropriate work for which they are qualified. This will naturally shift the briefing load (where weather interpretations are required) to the professional staff and the observing work to the observers. The Meteorologist in Charge must therefore exercise a delicate sense of balance or the result will be that of having employees making weather interpretations for which they are not qualified either by virtue of training or experience.



Odd Apparition

Spotted Wednesday

on South Whidbey

By Ed Jones

EDWIN A. JONES, former MIC at Boise, Idaho, has been operating a small farm on Whidbey Island in Puget Sound, Washington, since his retirement about 5 years ago. In addition to his farm work and community activities, he finds time to write occasional feature articles for the local weekly—The Whidbey Record. The following was published January 27, and summarizes the general reaction to a particularly wet and disagreeable winter on the Island:

"Wednesday forenoon, January 25, observant citizens of South Whidbey were treated to an unusual sight. What looked like an orange-colored disk rose in the east and slowly followed a rising path westward, reaching almost due south by noon. Through the thin clouds, it emitted considerable light and several persons claimed they felt warmth from it.

"The first impression by many was of a flying saucer. 'No,' said Mr. John Oldtimer, of Sewage Beach, 'I have seen this strange object many times before. It used to appear here frequently, especially in summer. It is called 'the sun,' and in many localities

on the earth's surface it is a phenomenon so common folks grow tired of it.

"Since Mr. Oldtimer is considered a bit cracked, his fantastic explanation is relegated to the same category with his yarn about the time Saratoga Straits froze over. The Whidbey Record

gives it space solely because of its policy of fairness to the opinions of everybody, great and small.

"This writer has a theory and readers can take it or leave it, as they choose. It seems to him reasonable that this apparition could be one of the 'Great Balls

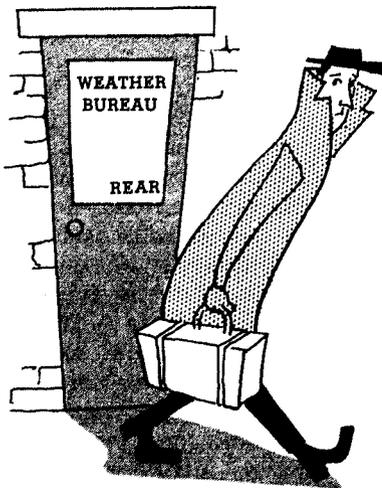
of Fire!' —so commonly featured in smart conversation these days."

Since then, however, conditions have improved considerably, according to Mr. Jones. He writes that they have just completed a period of three rainless days—the first such period since February 1.

Memorandum: To Field Personnel who Visit the Central Office

IN the corridors of the Central Office one often hears a dia-

NOT THIS! . . .



logue that runs something like this:

First Speaker: "Say, did you see So and So, the MIC from Such and Such Station?"

Second Speaker: "Why no. Is he here?"

First Speaker: "Not now. I understand he left yesterday."

Second Speaker: "Too bad. I'm sorry I didn't get to see him. There are some matters I should have discussed with him while he was here."

The reaction of the second speaker indicates how important it is that the arrival of visitors from field stations be made known to all Central Office officials.

Therefore, it is requested that visitors register at the Information Desk immediately upon arrival. This applies to everyone, including those who have visited the



Central Office previously and feel that they know their way around.

The Information Clerk will notify the Chief's Office and will direct the visitors to the Personnel Officer who will schedule an itinerary appropriate to the purpose of the visit.

RETIREMENTS

Guy M. Bailey, Jr.

GUY M. BAILEY, JR., Meteorological Aid at WBAS Boston, Mass., retired April 16, 1956 because of disability.

Mr. Bailey was born on January 13, 1915 at Gray, Maine. From 1933 to 1935 he attended the College of Engineering at New York University after graduating from George Washington High School in New York City. Before enlisting in the Navy in October

Publications Transmittal Slip Available

IN many cases requests for climatological data may be satisfied by the use of a Weather Bureau publication (see note at beginning of paragraph C-0455, Weather Bureau Manual, Volume III). Such procedure reduces or eliminates considerable correspondence at field stations, the National Weather Records Center,

and the Central Office. For this purpose a simple transmittal slip, WB Form 038-6 "Publications Transmittal Slip", has been printed and distributed to all Regional Offices. The new forms are 4 1/2" x 6" and are made up in pads of 100 each. They may be obtained from the Regional Office by usual requisition.

1943, he was associated with Slawson & Hobbs, real estate managers in New York City, the New York City Board of Transit, and the New England Shipbuilding Company at South Portland, Me.

He returned to the New England Shipbuilding Company after his discharge from the Navy in 1944 and worked there until the time of his appointment in the Weather Bureau May 1946 at Caribou, Me.

In November 1947 he transferred to WBAS Boston, where he served until his retirement.

Friends who wish to contact Mr. Bailey can reach him at 3 Pierce Avenue, Everett 49, Mass.

Deaths

L. H. Copeland

L. H. COPELAND, cooperative observer at Millport, Ohio for the past fifty-seven years died recently at the age of eighty. His father established the station in 1892 and passed the work on to Lawrence in 1899 when his eyesight began to fail. Lawrence carried on the work until a few months ago when ill health forced him to retire. His son Edwin is now carrying on the work and intends to pass the job on to his son when the time comes. The contribution that the Copeland family has made and continues to make to their community and Government is outstanding and entitles them to the grateful thanks of all who use the climatological data they have recorded so faithfully for the past sixty-four years.

William C. Haines

WILLIAM C. HAINES who retired from the Bureau May 31, 1948 (See Topics for June 1948) at St. Louis, Missouri, died on April 7, at the age of 69. Burial was in Arlington National Cemetery, Washington, D. C.

Mr. Haines entered the Bureau in June, 1912 at Houston. After assignments in Galveston, Jacksonville, San Juan, and New York City, Mr. Haines was transferred to Washington. In 1926 when Admiral Byrd was organizing the Arctic expedition to be based at Kings Bay, Spitzbergen, "Bill"

volunteered to accompany the expedition and serve as meteorological observer and adviser. Surface observations and two pilot balloon observations a day were taken, and on the basis of these and weather reports received by radio from Europe, the North Atlantic, and North America, he prepared charts and advised the expedition's fliers with respect to weather over the regions which they proposed to explore.

Admiral Byrd commended Mr. Haines highly for his contributions to the success of this expedition and in 1928 when he was organizing his first Antarctic expedition he made a special request that Mr. Haines again accompany him. In 1933 Mr. Haines made a third trip, this time with the responsibility for organizing the meteorological services in "Little America" and its auxiliary stations for Byrd's second Antarctic expedition. For his work during these polar assignments, Mr. Haines was awarded two gold medals from Congress and one from the U. S. Navy. As a final tribute to Mr. Haines, Admiral Byrd and a number of other men who had been on polar expeditions with Mr. Haines, attended the funeral service and served as honorary pallbearers.

At the time of his retirement as Meteorologist, Mr. Haines had more than 35 years of Bureau

service. He is survived by Mrs. Haines, a son and daughter whose address in St. Louis is 7734 Wise Avenue.

Julius C. Hayden

JULIUS C. HAYDEN who retired from the Bureau September 16, 1925 (see Topics November 1925) died April 23 in Millbrae, California at the age of 88. He was a weather observer from 1889-1925, first with the Army Signal Corps and then with the Bureau until his retirement. During this time, he saw service at Tucson, Arizona, Point Reyes, Mount Tamalpais, and the Farralone Islands in California. He spent the last sixteen years of his career at San Francisco.

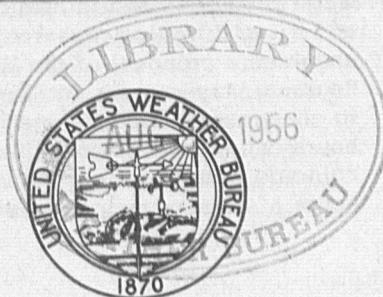
Robert D. Schmoeger

ROBERT D. SCHMOEGER, General Supply Clerk in charge of the regional warehouse at Kansas City, Missouri, died of a heart attack March 28. His service with the Bureau began in 1948 when he transferred from the Veterans Administration to the Regional Office Property and Supply Unit. Mr. Schmoeger, a veteran of World War II, was born May 27, 1924 in Peoria, Illinois and had lived in Kansas City for nineteen years. He is survived by his wife, Virginia.

WEATHER BUREAU

TOPICS

JUNE 1956



Volume 15

Number 6

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.

**WMO Executive
Committee Meets**

EACH year the Executive Committee of the World Meteorological Organization meets at the headquarters in Geneva to approve the program and budget of the Organization for the following year within the limitations of the 4-year budget program approved by the WMO Congress. This year's session was held during the period April 17-30. The Committee consists of directors of Meteorological Services of 15 WMO member states and territories, including Dr. F. W. Reichelderfer, Chief of Bureau. Dr. Reichelderfer, accompanied by N. A. Matson from the International Section of the Bureau, attended the 1956 session.

The meteorological program for the International Geophysical Year occupied much of the attention of the Committee. Plans were developed for setting up an IGY meteorological data center in the WMO Secretariat. This center would collect IGY observational data from all countries, arrange to have the data published, principally on microcards, and provide the publications and microcards at cost to all who wish to use them. Arrangements for financing the unit will, however, be subject to approval of member states and territories, which approval will be sought at once so that the data center can be operating prior to the beginning of the IGY on July 1, 1957. The Committee also took

ABOUT THE COVER

Main entrance to the Weather Bureau exhibit. See pages 91, 92 and 93 for story and pictures.

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steps to promote international cooperative effort in development of water resources and in arid zone and humid tropics research. It endorsed a proposal of the WMO Regional Association for Europe to change the worldwide standard hours of upper air observations to coincide with the main standard hours of surface synoptic obser-

vations, to be effective by the beginning of the IGY. Final approval for this major change will, however, have to come from the WMO Members. The Committee also dealt with a variety of lesser items and approved a budget for calendar year 1957 of \$425,000. The next session will be held in the autumn of 1957.

Under Secretary of Commerce for Transportation

Louis S. Rothschild

LOUIS S. ROTHSCHILD was administered the oath of office as Under Secretary of Commerce for Transportation by Secretary of Commerce Sinclair Weeks on March 2, 1955.

From June 1953 to March 1955 he served first as Chairman of the Federal Maritime Board and then as Administrator, Maritime Administration. Previous to his Maritime appointment, Mr. Rothschild was Chairman of the Board of the Inland Waterways Corporation.

As Maritime Administrator Mr. Rothschild initiated a \$400,000,000 ship building and repair program to restore work in the industry and to halt dissipation of essential skills. Also under his direction, the Maritime Administration undertook improvements in the National Defense Reserve Fleet and experimental work in merchant ship and propulsion machinery design. He effected material savings in the administration of the

maritime agencies.

Since his appointment as Under Secretary for Transportation, Mr. Rothschild also has been named to the following three posi-



tions by President Eisenhower: Chairman of the Air Coordinating Committee, Member of the Commission on Government Security,

and member of the National Advisory Committee for Aeronautics.

Mr. Rothschild was born in Leavenworth, Kansas, March 29, 1900. He received the degree of Ph. B., from Yale University in 1920. He is President of Rothschild and Sons, Inc., a century-old retail business originally started in 1855 by his grandfather. The firm now operates a group of stores in Missouri, Kansas, and Oklahoma.

Mr. Rothschild is a Director of the Central Surety and Insurance Corporation, and has had wide civic interests, having served as chairman of the City Planning Commission of Kansas City, Missouri. He was also a member of the Jackson County Planning Commission; Vice President and Director of Menorah Medical Center; Vice Chairman and Director, Midwest Research Institute, and past Vice President, Chamber of Commerce.

Pilots Like New "Key" Card-State Aviation Director Tosses Bouquet

WHEN the Director of the South Carolina Aeronautics Commission ran a special item in a recent issue of the Commission's aviation NEWSLETTER, calling attention to the value of the KEY TO AVIATION REPORT cards that have been distributed by the thousands, he proceeded to pay a compliment that we think will be appreciated by briefers and forecasters who, perhaps too often, hear only of complaints rather than compliments.

"Enclosed with this Newsletter you will find a weather key card. The Weather Bureau is

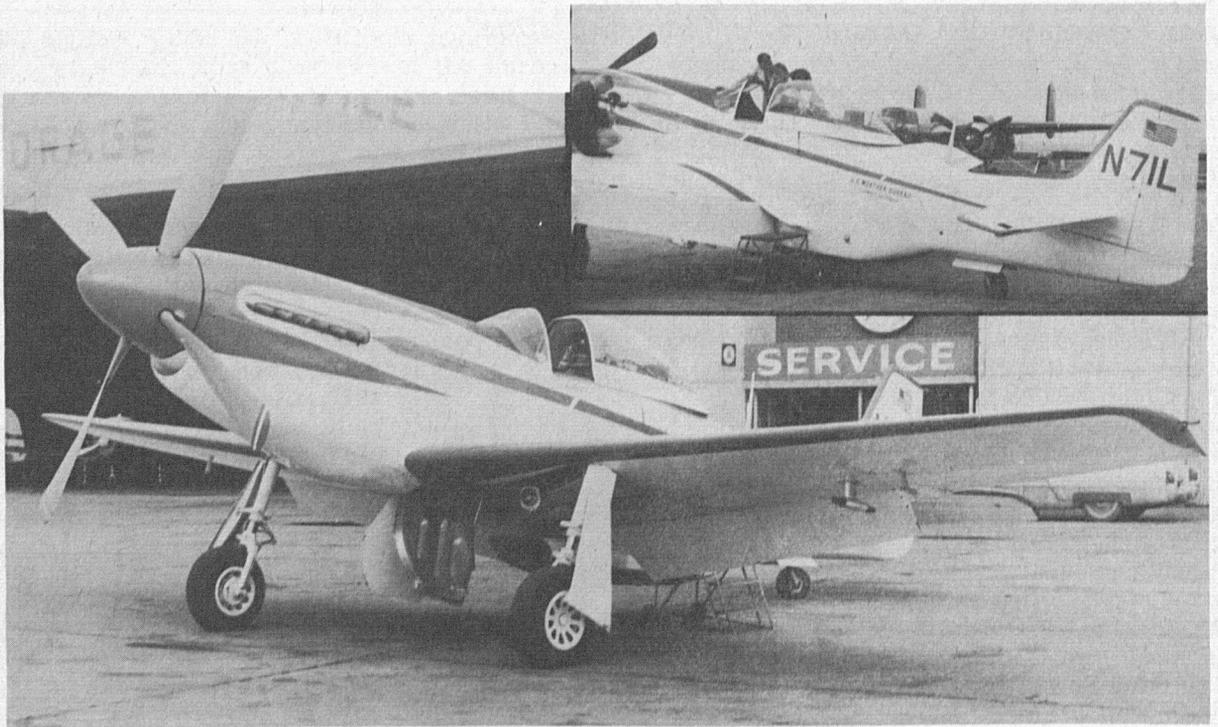
giving you this as another example of its excellent program of service to aviation. Don't just lay it aside with the idea you will give it some future attention—study it and learn the meaning of the symbols and teletype sequence reports. Then retain it for future use; if you're an aircraft owner put it in the dash compartment and review it occasionally to refresh your memory.

"And here's to the fellows of the weather service; we don't know what the Weather Bureau does for these boys in infusing such an 'esprit de corps' in them, but

we've never known of a case whereby answers to questions of conditions, etc., wasn't responded to with a cheerful and helpful spirit. Next time you consult with your weather man in getting your trip planned, thank him for the service he and his fellow workers are rendering us."

The card KEY TO AVIATION WEATHER REPORT was the result of an employee suggestion (R. E. Carter) and appears in the Employee Suggestion Box, page 97, in this issue.

+++++



Tornado Research Airplane Project Underway

A SPECIALLY instrumented aircraft is serving as an observational platform for providing some of the much needed facts about the causes and characteristics of tornadoes and their environmental conditions. This possibility has been considered on a number of occasions over the last several years in discussions of ways for strengthening the Bureau's severe local storm research, observational and forecasting programs.

The first indications that an intrepid pilot experienced in severe storm flying might be interested in collecting data in the vicinity of tornadic conditions occurred at the October 1955 meeting of the American Meteorological Society at Oklahoma A & M College. Mr. James M. Cook of Jacksboro, Texas, in a discussion with Messrs. C. F. Van Thullenar,

D. C. House and R. G. Beebe, offered to enter into an arrangement whereby the Bureau would instrument his World War II Mustang (F-51) for reconnaissance of potential severe local storm areas. Further discussions with Mr. Cook at the Central Office within the next few weeks resulted in a contract for a flight investigation this season. The objectives of this research as stated in the contract are: "To make observations of temperature and humidity gradients in both the horizontal and vertical plane, as well as other meteorological elements required by the Weather Bureau which are within the scope and performance of the airplane".

Mr. Alton A. Duff, Instrument Technician at San Antonio, Texas, was immediately assigned to the project and the tedious work of instrumenting the F-51 with some

500 pounds of airborne equipment began in early January. The equipment includes a vortex thermometer loaned by the Navy, a modified version of the Weather Bureau infra-red hygrometer, a VGH (velocity, gust, height) recorder furnished by the NACA, several cameras, a special recording altimeter, an electric field meter, a voice recorder and the required associated gear. The first fully instrumented flight was made on April 26. Over two dozen flights, counting test, calibration and reconnaissance missions, have been made as this issue of TOPICS goes to the printer. The airplane is now based at Kansas City Municipal Airport. Operational guidance and data reduction are under the technical supervision of the SELS Center.

□ □ □ □ □ □ □ □ □ □ □ □



Left to right - Van de Erve, Hagan, Alexander, Kresge, Vernon, Boyle, Brozman, Altman, Davis, McBride, Hiatt, Gibson, Brandstetter, Divver, Mac Connell, Anderson, Chidley, Peridier, Laird, Shafer

Meeting of Weather and Civil Defense Planners

HOW the combined facilities of the Federal Civil Defense Administration and the Weather Bureau, U. S. Department of Commerce, can best serve the public in times of natural disasters was the subject of a two-day conference at the FCDA National Headquarters in Battle Creek, Michigan, May 22-23, 1956.

Top officials from both agencies were on hand to review weather warning and civil disaster plans for the next 12 months. Protection of lives and property through effective use, distribution and understanding of storm and flood warnings before, during and after natural disasters was the theme of the conference. The experiences during last year's hurricanes, floods and tornadoes were reviewed with the view of establishing further improvements in telecommunication facilities

and developing faster and more effective warning procedures.

On December 1, 1955, the Weather Bureau assigned meteorologists to each of the seven FCDA Regional Offices in the United States to interpret and apply all weather forecasts and warnings. In February 1956 the radio-active fallout upper wind forecasting service was expanded to blanket the entire United States.

At the present time the Weather Bureau supplies, twice daily, the Federal Civil Defense Centers all over the country with upper level wind information for use in determining areas which would be affected by radio-active fallout from enemy nuclear explosions. All severe weather and flood warnings are channeled directly to Civil Defense as soon as prepared in Weather Bureau offices.

In addition to the seven meteorologists assigned to the FCDA

Regional Offices, the Weather Bureau was represented by Hydrologic Engineers from the field, and flood warning experts, storm forecasters and planning officials from the Weather Bureau's Central Office in Washington, D. C.

The Conference Agenda was proposed by the Central Office early in April and concurred in by FCDA at once. It was designed to give maximum interchange of actual operational information. As a result, Weather Bureau officials acquired further understanding of the FCDA requirements for meteorological data, and FCDA in turn became more familiar with the Weather Bureau operations. Numerous questions were resolved during the two-day meeting. The reaction in both Battle Creek and Washington is that the conference was very worth while.

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Storm Surge Conference

A CONFERENCE of Weather Bureau field personnel involved in storm surge forecasting and research was held in Washington, D. C. during the week of May 21-25, 1956. Topics discussed during the meeting included a general review of the Central Office storm surge forecast development program, and a description of certain basic research studies being carried on at universities and oceanographic institutions under Weather Bureau sponsorship. Field storm surge specialists also reported on the progress of development work being carried on at their respective stations.

Specialists from other governmental organizations, including the Hydrographic Office of the U. S. Navy, Coast and Geodetic Survey, and Corps of Engineers of the U. S. Army were present at the meetings. Lectures were given by these groups on recent developments in wind wave and

swell forecasting, tide predictions, and protection of certain coastal areas by the construction of wave and tidal barriers. A visit was made to the Beach Erosion Board Wave Generator installations in Washington.

Observations to be obtained with newly instrumented aircraft by the National Hurricane Research Project were described in detail; and operational problems, forecast terminology, and coordination of forecasts and warnings were discussed. The meeting concluded with a group discussion of plans for next year's work.

Field personnel in attendance at the conference included: Anthony E. Tancreto, Boston; Robert E. Lynde, Providence; Abraham S. Kussman, New York City; G. Cleveland Holladay, Philadelphia; Harry S. McGrail, Atlantic City; Henry J. Paul, Baltimore; Robert A. Hoover, Washington National Airport; Aubrey D. Hustead, Norfolk; Eugene J. DeVeaux, Charleston; David G. Fordham, Jacksonville; William McGehee, Miami; Clifford E. Bond, Mobile; W. Clyde Conner, New Orleans; James G. Taylor, Galveston.

Graphing Winds-Aloft Data

A sharply-pointed red pencil is an excellent tool for graphing winds-aloft data on the new plastic graphs (F545-0 and F546). The red marks can readily be washed off the boards with water after all necessary information

has been extracted from the curves. This will eliminate the smudging that frequently results from the use of ink, or the accumulation of eraser particles under the scales when an ordinary pencil is used.

59 Years for Triple Register

RECENTLY triple register No. 97 was replaced after being in continuous service at Huron for 59 years. This seems to be quite a record and we are wondering if any of the other stations can better it. We have the original invoice

in our files so we are sure that the same instrument was here the entire period. A rough calculation shows that it has registered almost six million miles of wind going past the station in that time.

Bond Campaign

RESULTS of the Bond Campaign to date have been encouraging. However we are still far from our goal. Currently 203 new pledges have been received. This increases Weather Bureau participation from 34% to 38%. Region I has the highest percentage of participation—54%; while Region II has achieved the greatest percentage increase—5% (from 37% to 42%). The Central Office continues on the low end although participation was increased from 27% to 34%, which is the greatest since World War II.

Supervisors and other keymen are urged to continue their efforts, especially with those who have not previously participated.

Frost Warning Season Ends

THE current Florida Frost Warning Service season is over now, and Meteorologist Warren O. Johnson tells us the season was a success. The following excerpts of letters he received will give you an idea. "We wish to thank you for the excellent service you are giving us. As large acreage farmers, your accurate weather forecast is one of the most valuable services we have."; Vandergrift-Williams Farms, Inc. "I want to thank you for the invaluable service you render in predicting weather conditions.... It is unbelievable that anyone can be as good as you are."; James Farms. "You and your staff are doing a magnificent job in this weather forecasting and we deeply appreciate this service."; C. P. Heuck, County Agent, Fort Myers.

THE WEATHER BUREAU EXHIBIT

ONE of the most complete exhibits ever assembled to show the functions of the Weather Bureau was officially opened to the public on June 6 by the Secretary of Commerce and Chief of Bureau.

This exhibit, occupying some 4600 square feet of floor space in the lobby, foyer and auditorium of the Department of Commerce Building, Washington, D. C., will be open daily through June 28. Already, thousands of people, ranging from high officials in Government to school-age children, have visited the exhibit to learn what the Weather Bureau does and how its services contribute to the well-being of the Nation. Visitors see modern instruments used for weather observing and reporting, the various steps in processing data, and examples of weather and flood forecasts, climatological publications, other Bureau activities, and how these services benefit the public.

One section of the exhibit displays the latest in observing equipment—an automatic weather reporting station and various equipment used for end-of-runway observations, upper air observing, and radar weather surveillance.

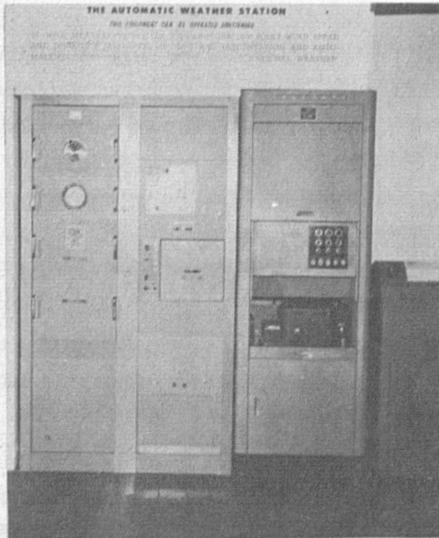
Facsimile weather charts are on display and a Service A drop

provides the information needed to keep a standard pilot briefing display up to date. Two Service C machines and a local Public Service Loop teletypewriter are also shown. A direct line to the automatic public weather forecast telephone, WEather 6-1212, is available for visitors interested in the Washington area weather. Also provided is a direct line to the Weather Bureau Bulletin Unit on which visitors may call to learn the weather conditions in any part of the United States.

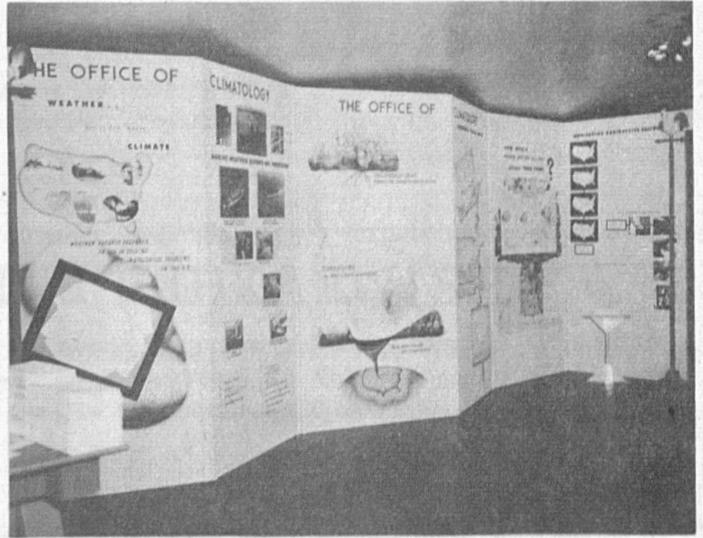
Numerous poster panels explain the functions of Weather Bureau field stations and how they represent the "backbone" of the Weather Bureau. Other panels explain the operations of the National Weather Analysis Center, the Arcola-type continuous aviation weather broadcasts, the severe weather and hurricane forecasting service, river and flood forecasting services, and the vast and comprehensive climatological program. Two novel and interesting exhibits are push-button models, operated by the visitor, showing a miniature tornado and the other the operation of a pressure jump network reporting system. There is a continuous showing of Weather Bureau films (hurricane and tornado) on a self-contained projector which has a 21-inch screen.

More than twenty manufacturers of meteorological equipment responded to the invitation to exhibit their products which are on display in the lobby. A list of commercial exhibitors follows: Alden Electronic & Impulse Recording Equipment Co.; Bendix Radio; Dewey & Almy Chemical Co., Div. W. R. Grace & Co.; The Eppley Laboratory, Inc.; Friez Instrument Div., Bendix Aviation Corp.; Specialty Engineering & Electric Co.; W. & L. E. Gurley; H-B Instrument Co.; Minneapolis-Honeywell Regulator Co.; Molded Latex Products, Inc.; Muirhead Instruments, Inc.; Pickard & Burns, Inc.; Precision Thermometer & Instrument Co.; Radio Corp. of America, RCA Victor Division; Radio Corp. of America, Tube Division; J. B. Rea Co., Inc.; Specialty Battery Co.; Times Facsimile Corp.; Wallace & Tiernan Products, Inc.; Weksler Thermometer Corp.; Charles W. Lienau & Co.; Microcard Corp.; Davidson Transfer & Storage; Instrument Corp.; and Western Union Telegraph Co.

To view the entire exhibit requires several hours. We hope the pictures accompanying this article will give an indication of the scope of the Weather Bureau exhibit.



Control panel indicators and transmitting equipment for new automatic weather station.



One of several displays prepared for the exhibit.

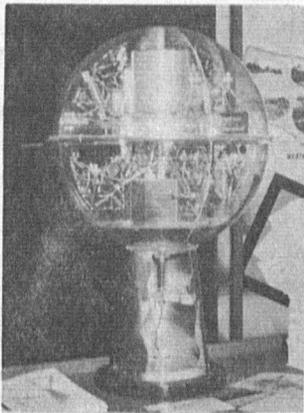


Left - Rotating-beam ceilometer projector and detector. Behind the radar console are the telephones over which visitors could ask for their home town weather or dial WE 6-1212 for the local weather.



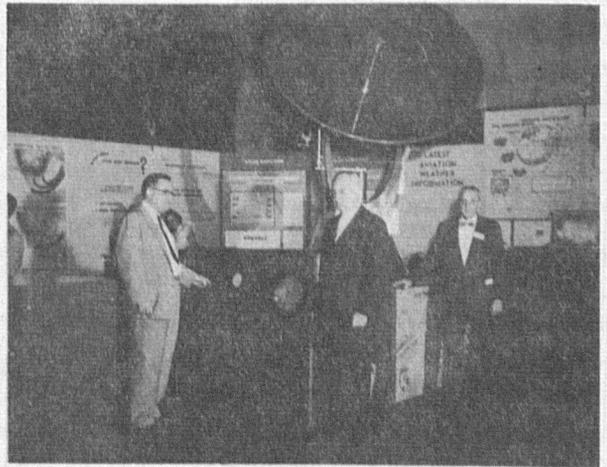
← Dr. Reichelderfer and Mr. Weeks, Secretary of Commerce discussing Satellite model.

→ Center - model radar.
Right foreground - rawinsonde display of radiosonde instrument, balloon, theodolite and chart of upper air cross-section.



← Model of Satellite to be carried aloft by rocket during 1957-58 as part of the U.S. program for the International Geophysical Year.

→ Mr. Little, Mr. Thickstun and Mr. Schick by the model III radar.



← Observers' console containing solar radiation and wind recording equipment, barograph and precision aneroid barometer.

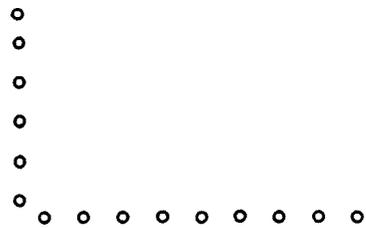
→ Dr. Wexler and Mr. Rothschild, Under Secretary of Commerce for Transportation.



TECHNICAL PUBLICATIONS ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

THE technical papers listed below have been produced by the Physical Research Division. Many are available in American Meteorological Society publications. Reprints of others

are in very short supply. However, if there are articles of particular interest, the Weather Bureau Library will do its best to provide them.



<u>Title</u>	<u>Where Published</u>	<u>Title</u>
1. The electrical charge on precipitation at various altitudes and its relation to thunderstorms. (Gunn)	Physical Review, V. 71, 181-186, Feb. 1947	13. Thunderstorm electricity, U. of Chicago Conference. (Gunn)
2. In-flight icing of highly electrified aircraft. (Gunn)	J. Aeronautical Sci., V. 14, 527-528, Sept. 1947	14. Evaporation, temperature and thermal relaxation time of freely falling waterdrops. (Kinzer and Gunn)
3. Electric field intensity inside of natural clouds. (Gunn)	J. Applied Physics, V. 19, 481-484, May 1948	15. Cloud modification experiments. (Coons and Gunn)
4. First partial report on artificial production of precipitation - Stratiform clouds - Ohio, 1948. (Coons, Gentry and Gunn)	Bull. Amer. Meteor. Soc. V. 29, 266-270, May, 1948	16. Precipitation electricity. (Gunn)
5. Second partial report on artificial precipitation - Cumuliform clouds - Ohio - 1948. (Coons, Jones and Gunn)	Bull. Amer. Meteor. Soc. V. 29, 544-546, Dec. 1948	17. A vertical shaft for the production of thick artificial clouds and the study of precipitation mechanisms. (Gunn)
6. The terminal velocity of fall for water droplets in stagnant air. (Gunn and Kinzer)	J. Meteor. V. 6, 243-248 August, 1949	18. The electrification of cloud droplets in non precipitating cumuli. (Gunn)
7. Electronic apparatus for the determination of the physical properties of freely falling raindrops. (Gunn)	Rev. Sci. Instrs. V. 20, 291-296, April, 1949	19. The electrification of small air bubbles in water. (Whybrew, Kinzer and Gunn)
8. The free electrical charge on thunderstorm rain and its relation to droplet size. (Gunn)	J. Geophys. Res., V. 54, 57-63, March, 1949	20. Raindrop charge and electric fields in active thunderstorms. (Gunn and Devin)
9. Third partial report on artificial production of precipitation - Orographic Stratiform Clouds - California - 1949. (Coons, Jones and Gunn)	Bull. Amer. Meteor. Soc. V. 30, 255-256, Sept. 1949	21. Clouds. (Gunn)
10. Fourth partial report on artificial production of precipitation, Cumulus Clouds - Gulf States - 1949. (Coons, Jones and Gunn)	Bull. Amer. Meteor. Soc. V. 30, 289-292, Oct. 1949	22. Electric field meters.
11. Mechanical Resonance in freely falling raindrops. (Gunn)	J. Geophys. Res. V. 54, 383-385, Dec. 1949	23. Measurements of the electricity carried by precipitation (Chapter VIII) (Gunn)
12. Free electrical charge on precipitation inside an active thunderstorm. (Gunn)	J. Geophys. Res. V. 55, 171-178, June, 1950	24. Electric field regeneration in thunderstorms. (Gunn)
		25. A 3000 cubic meter cloud chamber. (Gunn and Allee)
		26. Diffusion charging of atmospheric droplets by ions and the resulting combination coefficients. (Gunn)
		27. Measurements of the electrification of spheres by moving ionized air. (Phillips and Gunn)
		28. Statistical electrification of aerosols by ionic diffusion. (Gunn)

Produced by Physical Research Division



<u>Where Published</u>	<u>Title</u>	<u>Where Published</u>
U. of Chicago Press, 1950	29. Systematic electrification of mist and light rain in the lower atmosphere. (Gunn)	J. Geophys. Res., V. 60, 23-27, March, 1955
J. Meteor. V. 8, 71-83, April, 1951	30. Systematic electrification of precipitation by ionic diffusion. (Gunn)	Scheduled for publication by Amer. Acad. of Arts and Sciences
Compendium Amer. Meteor. 235-241, 1951	31. Net electrification of natural cloud droplets at the earth's surface. (Webb and Gunn)	J. Meteor. V. 12, 211-214, June, 1955
Compendium Amer. Meteor. 128-135 1951	32. Droplet electrification processes and coagulation in stable and unstable clouds. (Gunn)	J. Meteor. V. 12, 511-518, Dec. 1955
J. Appl. Phys., V. 23, 1-5, Jan. 1952	33. Raindrop electrification by the association of randomly charged cloud droplets. (Gunn)	J. Meteor. V. 12, 562-568, Dec. 1955
J. Meteor., V. 9, 397-402, Dec. 1952	34. Initial electrification processes in thunderstorms. (Gunn)	J. Meteor. V. 13, 21-29, Feb. 1956
J. Geophys. Res., V. 57, 459-471, Dec. 1952	35. The hyperelectrification of raindrops by atmospheric electric fields. (Gunn)	Scheduled for publication in J. Meteor.
J. Meteor. V. 10, 279-284, August, 1953	36. Measurements related to the fundamental processes of aerosol electrification. (Woessner and Gunn)	J. Colloid Sci., Vol. 11, 69-76, Feb. 1956
Encyclopedia Americana, 1953	37. Electric field intensity at the ground under active thunderstorm and tornadoes. (Gunn)	Scheduled for publication in J. Meteor.
Rev. Sci. Inst., V. 25, 432-437, May, 1954	38. Continuous Generation of a Cloud for Laboratory Investigations. (Phillips and Woessner)	J. Meteor. V. 9, 370-373, Oct. 1952
Thunderstorm Electricity, edited by H. R. Byers, 1953	39. An experimental analysis of the effect of air pollution on the conductivity and ion balance of the atmosphere. (Phillips, Allee, Pales, and Woessner)	J. Geophys. Res. V. 60, 289-296, Sept. 1955
J. Meteor., V. 11, 130-138, April, 1954	40. Laboratory measurements of the capture efficiency and growth of raindrops. (Kinzer and Cobb)	Scheduled for publication in J. Meteor.
Bull. Meteor. Soc., V. 35, 180-181, April, 1954		
J. Meteor. V. 11, 339-347, Oct. 1954		
J. Meteor., V. 11, 348-351, Oct. 1954		
J. Colloid Sci., V. 10, 107-119, Feb. 1955		

Superior Accomplishment Awards

Iva B. d'Alpuget

IVA B. D'ALPUGET, secretary to the Chief of Forecasts & Synoptic Reports Division in the Central Office was presented a Superior Accomplishment Award of \$200 in recognition of her highly competent work during the last ten years. For the greater part of this period, Mrs. d'Alpuget has been rated either "excellent" or "outstanding". In 1950, she was commended by the Assistant Chief of Bureau (Operations) for her work at an ICAO Conference in Paris; and again, as a U. S. Delegation Secretary during the recent IMO-WMO conference in Paris, she was commended by State Department officials for her outstanding performance. In her present job, her thorough knowledge of the current activities of the F&SR Division has been of invaluable assistance to the smooth functioning of the division. As a further indication of her interest in her work and loyalty to the Bureau, Mrs. d'Alpuget has accumulated 1109 hours of sick leave.

S. Thomas Andersen

S. THOMAS ANDERSEN, MIC at WBO Burns, Oregon was awarded \$100 for very competent performance during his nine years as MIC at Stampede Pass, Washington. This station is at the summit of the Cascade Range at an elevation of 3960 feet and, because of heavy snows, can be reached by vehicle only about four months of the year. During the other seven to eight months, supplies have to be brought in on foot using sleds,

skis, or snowshoes. Despite the supply and isolation problems and the problems resulting from rather rapid employee turnover, Mr. Andersen conducted a very creditable observation program. The exceptional cooperation he extended to CAA employees in the maintenance of their equipment, representatives of the Bonneville Power Administration, Army Engineers, and maintenance employees of the telephone and power and light companies, also greatly contributed to the good reputation of the Stampede Pass station.

Santoro R. Barbagallo

SANTORO R. BARBAGALLO, Communications Analyst in the Synoptic Section of the Central Office received a Superior Accomplishment Award of \$200 for highly competent analysis and planning in connection with the successful revision of meteorological schedules on the Service O Teletypewriter System to conform with WMO-GSM-I recommendations and for very competently handling the consolidation of the New Orleans Weather Bulletin Unit with the Miami Weather Bureau Communications-Editing Unit.

Maurice P. Bergerson

MAURICE P. BERGERSON, Meteorologist (Climatologist) at WBO, San Francisco has been given a Superior Accomplishment Award of \$200 for very competent overall performance during 1954-55. Among his more important contributions are: his effective

handling of responsibilities beyond what would normally be expected of an employee in his position, his good judgment and sound decisions in connection with the handling of administrative matters, his work in supervising the preparation of the California Weekly Weather and Crop Bulletin and preparing the textual write-up, and his excellent work on the substation history project for his station.

Kenneth L. Hein

KENNETH L. HEIN, Tabulating Equipment Operator at WRPC, Chattanooga was given a Superior Accomplishment Award of \$50 for developing and perfecting a plan for mechanically determining freeze data for inclusion in Climatological Data Annuals. His accomplishment has increased the speed and accuracy of this operation thereby resulting in a substantial annual savings to the Bureau in both time and money.

James C. Hunter Lynn L. Means

JAMES C. HUNTER, District Forecaster at Washington National Airport, and Lynn L. Means, Analyst, NWAC were each presented with Superior Accomplishment Awards of \$100 for their alertness in recognizing that emergency weather conditions were developing. This permitted the alerting of the threatened areas to the impending flood danger contained in a storm located off the South Carolina coast on the night of October 13. Working independently, both Mr. Means

and Mr. Hunter concluded that a revised forecast was urgently required. After a telephone consultation, Mr. Means and Mr. Hunter agreed on a plan of action which included notifying the River Services Section so that the flood warning could be discussed with them before release, and the preparation of the necessary flood warnings and alerts for field stations and the press. Their prompt action was credited with considerably lessening the loss of life and property damage from this storm. The excellent results stemming from the cooperation of these two men during this emergency was a fine example of what superior teamwork between the NWAC and the District Forecast Center can accomplish.

William H. Metivier

WILLIAM H. METIVIER, analyst assistant at NWAC, Washington, D. C. was presented a Superior Accomplishment Award of \$100 for very competent performance of all phases of his job. Because of his thorough knowledge of the work, his ability to plan ahead to prevent possible bottlenecks in the workload, and his speed and accuracy, Mr. Metivier has at times been called on to handle special assignments requiring extra talent and ability. His willingness to work overtime, to voluntarily assume additional duties when he sees the need, and his willingness to assist others in learning new procedures or help them over rough spots, has elicited favorable comment from his supervisors and other members of the NWAC staff.

Kenneth C. Murray

KENNETH C. MURRAY, Aviation Forecaster, WBAS, Albany, N. Y., was given a Superior Accomplishment Award of \$100 for his very competent performance during the last several years. His

Cont'd. on page 98

Employee Suggestion Box

Bruce M. Benton Budget & Management Div. Washington	\$15	A suggestion which resulted in improved lighting being installed in Central Office Administration Building.
William H. Brown, Jr. NWAC Washington	\$35	Eliminate encoding and transmitting of isobars in Canadian Surface Analysis to reduce work load and save teletype time.
Albert V. Carlin Training Section Washington	\$75	A suggestion to hold "dry runs" for training and to check communications in connection with emergency procedures in the issuance of storm warnings which led to a "hurricane drill."
Richard E. Carter Santa Maria, California	\$50	A suggestion which led to preparation of the pilots' information card, which has been given national distribution. This aid gives pilots the "Key to Aviation Weather Reports" and other helpful information in a convenient form.
Robert A. Collins Albany, N. Y.	\$15	Revise WB Form 530-2, Substation Inspection, to consolidate required information on front of form.
Harold W. Ebel Peoria, Ill.	\$15	A suggestion, adopted by the CAA, to add an item to their Flight Plan, Form ACA-398, encouraging pilots to report unanticipated weather encountered in flight.
Miss Agnes B. Erkens Budget & Management Div. Washington	\$25	Assign responsibility for screening all incoming communications (particularly multiple address issuances) to one person in each office who will determine routing. This will result in a saving of time in many offices where formerly every communication was read by all employees regardless of subject matter.
Fred B. Flocken Training Section Washington	\$25	Use tachistoscope in training map plotters to develop perceptual skills.

Employee Suggestion Box (Cont'd.)

Miss Julia M. Ford Baltimore, Md.	\$10	Eliminate waste in use of forms by using blank tissues for copies of printed forms that serve only temporarily and are destroyed on receipt of approved file copy.
Mrs. Rose M. Fries RAO Kansas City, Mo.	\$15	Reduce the work load in connection with preparation of budget estimates by eliminating necessity for computing number of travel days and average daily travel cost in estimating travel requirements from S&E funds.
Sigmund Fritz Met. Physics Section Washington	\$15	Direct attention to special articles on the back of the Daily Weather Map by a notice in the margin of the map.
Harold C. Harvey Pomona, Calif.	\$15	Provide insulated protective covers at certain exposed terminals on electronic equipment where 110 or higher voltage is present, for protection of personnel and reduction of damage to equipment.
John M. Hull Portland, Oregon	\$15	Eliminate WB Form 1062, Weekly Means Work Sheet, since data are available directly from WB Form 733-1.
George E. O'Daniel RAO Kansas City, Mo.	\$15	Furnish a copy of Form TA 631-0-1, "Explanation of Teletypewriter Weather Reports," when copies of weather records are requested for use by persons outside the Weather Bureau. This will eliminate many follow-up requests and possible court appearance to explain symbols. r
Willard W. Shinnars Ob. & S. F. Div. Washington (Formerly Winslow)	\$50	Use of radio-telephone communication between Winslow and Show Low, Arizona, instead of telephone service, which resulted in more satisfactory service at an annual saving of \$780, as well as a saving in time.
Michael Sunray Curacao, Netherlands Antilles (Formerly Honolulu)	\$15	Purchase wooden rain gage supports for the Hawaiian area in Honolulu to secure a product better suited to the local climate and to effect a saving in the cost of transportation.

Superior Accomplishment Awards
(Cont'd.)

conscientiousness, diligence, and cooperativeness along with the quality of his pilot briefing and ability to successfully perform numerous supervisory duties and take over in the MIC's absence, have greatly contributed to the commendations received by the station during this period. In the training of SAWRS and Tower cooperative observers, Mr. Murray has developed a method of translating observational manuals into easily understandable terms and has instilled into these men a pride in their work which has produced excellent results. In addition, his on-station maintenance of radio sonde ground equipment, frequently on his own time, has many times prevented an interruption in the Albany raob program and saved the cost of calling in an electronics technician.

John M. Williams

Howard A. Slauenwhite

JOHN M. WILLIAMS, MIC at WBAS Rochester, N. Y., and Howard A. Slauenwhite, WBAS Portland, Me. (formerly General Service Meteorologist at Rochester) were each awarded \$100 for highly competent performance during the Hurricane "Connie" emergency in the Rochester area. While alone on the midnight shift August 13-14, Mr. Slauenwhite carefully followed the path of Hurricane "Connie", and when it became obvious that it was veering toward the station, he notified Mr. Williams. By setting in motion the plan for distribution of warnings which had been well worked out in advance, they quickly got the information to Civil Defense officials, the Coast Guard, boat owners, other special interests and the general populace so that all possible precautions were taken before the onset of the damaging gales and unprecedented storm of August 13 on Lake Ontario.

1000-Hour Sick Leave Club

Allentown, Pa., WBAS

J. K. Temperley

Asheville, N. C., NWRC

M. W. Burley
C. L. Mitchell, Jr.

R. E. Out

E. M. Ritchie

E. J. Saltsman

A. E. Shaw, Jr.

L. Smith

J. W. Tresner

G. Yakubovskiy

Austin, Tex., WBAS

T. L. Cassell

L. H. Donahue

H. S. Dunham

G. M. Fugate

R. M. Gardner

W. Weaver

Baltimore, Md., WBAS

H. L. Alkire

G. N. Brancato

H. J. Paul

Billings, Mont., WBAS

R. E. Gumpf

H. F. Huennekens

Boston, Mass., WBAS

M. E. Earley

O. Tenenbaum

Casper, Wyo., WBAS

J. Prelec, Jr.

Central Office, JNWP

C. L. Bristor

L. E. Hopp

Chattanooga, Tenn., WRPC

B. H. Chapman

Cincinnati, Ohio, WBO & RFC

J. R. Burke

E. T. Clapp

W. R. Long

Columbia, Mo., WBAS

W. H. Barth

Gordon R. Barnes

Dayton, Ohio, WBAS

W. S. Reid

Daytona Beach, Fla., WBAS

W. E. Unger

Duluth, Minn., WBAS

A. Ahola

K. A. Nicolson

W. G. Porvaznik

Fresno, Calif., WBAS

C. Garrison

Goodland, Kans., WBAS

W. J. Fitzgibbons

Grand Junction, Colo., WBAS

A. L. Congdon

Houston, Tex., WBAS

N. E. Spence

Kansas City, Mo., RAO & RFC

L. P. Hahn

R. E. Johnson

D. B. Tudor

W. J. Ziegler

Miami, Fla., WBAS

R. C. Hardy

W. C. Knoph

R. L. Redus

Montgomery, Ala., WBAS

R. O. Crosby

Orlando, Fla., WBAS

L. A. McDonald

Phoenix, Ariz., WBAS

W. J. Hammond

Raleigh, N. C., WBAS

A. V. Hardy

San Juan, P. R., WBAS

R. G. Carman

R. L. Higgs

A. Maldonado

O. Perez

Sioux Falls, S. Dak., WBAS

E. V. Nelson

J. D. Quinn

Springfield, Ill., WBAS

D. C. Horton

St. Louis, Mo., RFC

R. N. Craig

Tallahassee, Fla., WBAS

V. B. Cotten

T. M. Fleming

W. G. Groves

C. R. Hays

J. W. Smith

Topeka, Kansas, WBAS

J. T. Arnold

G. E. Brokaw

Youngstown, Ohio, WBAS

C. Barton

Z. J. Lincoln

We have noticed that 6 of the 7 employees at Austin, Texas and 5 of the 6 employees at Tallahassee, Florida have over 1000-hours of sick leave. If any other station has a comparable record, please let us hear from you.

NEW METEOROLOGISTS IN CHARGE

Astoria, Oregon

ELDON A. BRACKETT, Forecaster at Astoria, has been selected to succeed Mr. Marting as MIC at that station. Mr. Brackett was appointed February 3, 1941, and has been stationed at Spokane, Olympia, Hoquiam, Klamath Falls, Siskiyou Summit and Port Angeles, being in charge at the latter four stations. In February 1953, he was transferred to Astoria.

Walla Walla, Washington

LESTER B. LARSON of the Lewiston, Idaho station has been selected to fill the vacancy as MIC at Walla Walla. Mr. Larson entered the Weather Bureau April 22, 1946, at Billings, Montana. On December 1, 1946, he was transferred to Lewiston. Prior to entering the Bureau he served for over 4 years in the AAF as weather forecaster.

Winslow, Arizona

DORSEY P. MARTING, now MIC at Astoria, Oregon, has been selected to succeed Willard W. Shinnars as MIC at Winslow. Mr. Marting has been in the Bureau since October 10, 1929, and his assignments have been at Evansville, Roseburg, Oakland, Denver (Aviation Forecaster) and Astoria.

RETIREMENTS

Walter M. Weld

WALTER M. WELD, Meteorologist at WBO Denver, Colorado, voluntarily retired March 31. He first came to work for the Bureau in 1909 as a messenger at Grand Junction, Colorado, subsequently served at Yellowstone Park, Wyo.; Spokane, Wash.; Wagon Wheel Gap, Colo., and was assigned to Denver in 1921 where he remained until his retirement. Mr. Weld was born in Grand Junction, Colo., in 1891 and attended Fruita Union High School in Fruita, Colorado, and Hoels Business College in Grand Junction, Colo. His current address is P. O. Box 2402, Denver 1, Colorado.

Floyd D. Young

FLOYD D. YOUNG, Western Special Projects Director at Los Angeles, retired April 30 after more than forty-six years of Bureau service. Early in his career, Mr. Young became interested in

fruit-frost work and pioneered in the development of minimum temperature forecasting for the fruit-growing industry. Over the years, he published many articles on the numerous problems involved in protecting crops from unfavorable weather conditions. Because of his ability as a scientist and his public relations skill, Mr. Young has long been considered a leader in the field of fruit-frost forecasting, and we know he will maintain his interest in the years ahead.

He began working for the Bureau at Key West and had short assignments at Portland, Oregon and Davenport, Iowa, but most of his service has been in California in connection with fruit-frost work. In 1943, he was selected as Regional Director of the Los Angeles region and handled the responsibilities of this position for seven years while continuing to remain active in the field of

fruit-frost forecasting. In 1950, when the Los Angeles region was consolidated with the Seattle region, Mr. Young became Western Special Projects Director with responsibility for the fruit-frost and fire-weather forecasting services west of the Mississippi River.

For the nearly forty years that Mr. Young has been giving weather advice to fruit growers in this area, he has compiled a remarkable record of accuracy and has earned the grateful thanks of the fruit-growing industry for the hundreds of millions of dollars worth of crops his services have been instrumental in saving. He has been a member of the American Meteorological Society since 1920 and has held the office of Vice President. Mr. Young and his wife plan to spend the greater part of his first year of retirement on a cruise in the Pacific.



Robin E. Spencer

ROBIN E. SPENCER, Assistant Chief of Office of Climatology, died suddenly on Sunday, June 3. Mr. Spencer first came to work for the Weather Bureau in 1919 at North Head, Washington, and subsequently served at Bismarck, North Dakota; Moorhead, Minnesota; Indianapolis, Indiana, and Washington, D. C.

In the Central Office, Mr. Spencer served as Assistant Chief of Station Operations Division, a special assistant to the Chief of Bureau, and since 1949 was As-

sistant Chief of the Office of Climatology.

Mr. Spencer was born in Ogden, Utah, December 23, 1896, and served in the Army Medical Corps in the first world war. He attended the University of Chicago, George Washington University, and Massachusetts Institute of Technology.

He was a member of the Authors League of America, American Geophysical Union, and American Meteorological Society.

Mr. Spencer was the author

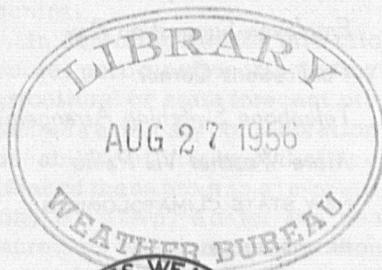
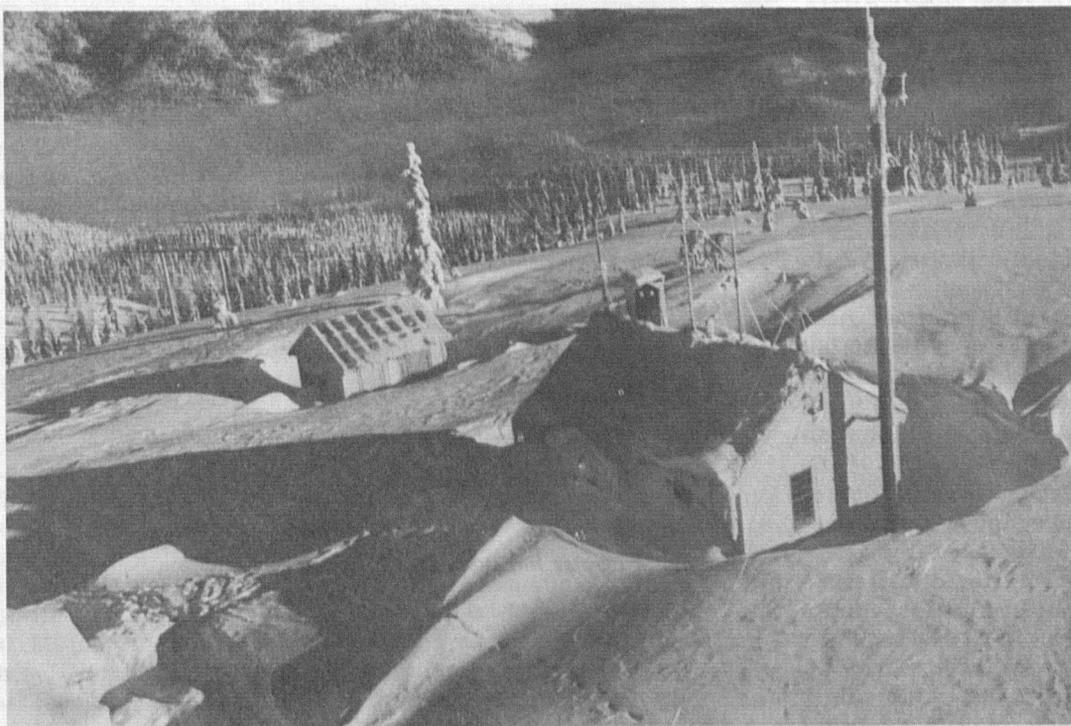
of four novels. One of his novels entitled "The Lady Who Came to Stay" (1931) was later adapted into a play. His other three novels were: "The Incompetents" (1933); "Felicita" (1937); and "The Death of Mark" (1938). He had a wide acquaintance within and outside of the Weather Bureau, won by his friendly personality and his broad interest in science and literature.

Mr. Spencer lived at 4606 Porter Avenue, S. E., Suitland 23, Maryland.

WEATHER BUREAU

TOPICS

JULY 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.

Weather Bureau

**Appropriation Bill
for Fiscal Year 1957**

PUBLIC LAW 604, approved by the President on June 20, 1956, provided appropriations to the Weather Bureau for fiscal year 1957 of \$35,400,000 for Salaries and Expenses, and an additional \$2,500,000 for Establishment of Meteorological Facilities. While the Salaries and Expenses appropriation (general operating funds) includes an increase of \$1,250,000 over fiscal year 1956, it must support severe storm research projects and programs which were authorized by the Bureau in 1956. Of the total appropriation for Salaries and Expenses, it is estimated \$25,305,400 will be required for salaries of full-time and part-time employees, or an increase of approximately \$1,350,000 over fiscal year 1956. While this increase in the salary roll may appear ample to cover further increases in Weather Bureau staff, it should be pointed out and emphasized that little, if any, increase in Bureau employment can be authorized in fiscal year 1957 because the Bureau must pay full-year salaries to those employees who were on the rolls for only a part of the year in 1956. Possibly this can be best illustrated by the fact that the Bureau employment during the past twelve months increased by approximate-

(Cont'd. on page 104)

ABOUT THE COVER

Weather Bureau Office at Stampede Pass, Washington with emergency power house and instruments in the background, northeast from the lookout tower. For story and pictures see pages 106 and 107.

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THE UNDER SECRETARY OF COMMERCE

Walter Williams

UNDER Secretary of Commerce Walter Williams was born in Monroe County, Iowa, on December 30, 1894. He attended public schools in Seattle, Washington and received a B.S. (Chemical Engineering) degree from the University of Washington. He also received an honorary LL.D. degree from Parsons College, Fairfield, Iowa.

Mr. Williams taught school at Kirkland (Washington) High School from 1916 to 1918. During World War I he was in the Air Service and Chemical Warfare Service. He has been associated with Continental, Inc., Seattle (mortgage banking firm) since its incorporation in 1921, and its president since 1927. He was a member of the Board of Directors of Paramount Fire Insurance Company; president of Seattle Mortgage Bankers Association from

1928 to 1929; president of Seattle Real Estate Board in 1932; president of Mortgage Bankers Association



tion of America in 1934. On January 28, 1953, Walter Williams took office as the Under Secretary of Commerce.

The Under Secretary's civic activities have included: President, Seattle Chamber of Commerce 1938-1939; President, Seattle Rotary Club 1941; Chairman, Washington State Defense Council 1941-1945; President, Seattle War and Community Chest 1945-1946; Member, Board of Trustees, International Y.M.C.A.; State Chairman, National Foundation for Infantile Paralysis 1948-1949; Member, Board of Trustees, Committee for Economic Development 1943, elected Chairman CED May 20, 1948-1950; Member, Council of International Chamber of Commerce 1948; Chairman, Executive Committee of the President's National Conference on Fire Prevention 1947; President, Seattle Young Men's Christian Association 1951; Member, Board of Directors, International Y.M.C.A.

Agricultural Meteorology Institute

DURING the period July 9—August 24, 1956, the Weather Bureau and the University of Maryland will jointly conduct as a pilot project an Institute of Agricultural Meteorology. The curriculum will include studies of micrometeorology, applications of short and long range forecasts, and problems of agricultural forecasts and climatology. In addition, there will be survey courses on soil physics, plant pathology and physiology, animal growth and disease factors, and other subjects related to the problems of weather and agriculture. The University of Maryland will award a certificate showing the satisfactory completion of the course.

This institute will be of most direct and immediate benefit for the programs at the stations from

which the personnel were selected. There will be longer-range benefits to the Bureau as a whole since the men participating this summer will be needed in the Bureau's expanding Agricultural Meteorology program. It is hoped that similar training programs can be held in other sections of the country.

In selecting men for this pilot course, participation in a "going" agricultural or state forecast program was a primary consideration. The ability of stations that have either of these programs in operation, or planned for the near future, to spare a man for about ten weeks was another important consideration. Educational and experience qualifications of forecasters at these stations were then considered before final se-

lections were made.

The men selected for this first program are: John Baldwin, Office of Climatology; Mart G. Baldwin, WBAS Harrisburg; Gerald T. Beall, WBAS Minneapolis; Robert R. Dickson, NWRC Asheville; Donald B. Dunlap, WBAS Philadelphia; Percy N. Eland, WBO Topeka; James A. Harman, WBAS Omaha; Dale R. Harris, WBO Pomona; Robert F. Hasling, WBO New Orleans; Gordon Hundebly, WBO Sacramento; Ray L. Kistler, WBAS Phoenix; Oliver H. Newton, WBAS Brownsville; Henry J. Paul, WBAS Baltimore; Lee L. Stinson, WBAS Denver; Harry L. Swift, Public and Agricultural Forecast Section; Vincent J. Valli, WBAS, Hartford.

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(WB Appropriation Bill Cont'd.)
ly 600 employees, but that pay-
ment for only about 300 man-years
was required in that fiscal year.

A comparison of supporting
expenditures for fiscal years 1956
and 1957 follows:

	Fiscal Year 1956	Fiscal Year 1957
Travel	\$ 514,500	\$ 406,700
Transportation of things	725,200	710,400
Communication services	2,226,100	2,179,600
Rents and utility services	746,800	728,100
Printing and reproduction	130,200	130,500
Other contractual services	1,008,300	1,791,800
Supplies and materials	3,729,300	3,662,600
Equipment	991,100	430,600
Refunds, awards, and indemnities	2,500	2,200
Taxes and assessments	<u>45,800</u>	<u>52,100</u>
	\$10,119,800	\$10,094,600

TRAVEL

Transfer of employees in
connection with the expanded
program, along with the require-
ment to operate a number of
upper-air stations formerly fi-
nanced by the Department of De-
fense, required a high expenditure
in fiscal year 1956. The number
of transfers and the travel costs
are expected to be reduced in
fiscal year 1957 together with
transportation of things.

TRANSPORTATION OF THINGS

An increased amount of sup-
plies and materials are expected
to be transported in 1957 but at
the same time the transportation
of household goods in connection
with employee transfers should be
materially reduced. The net
change is a small decrease in
1957.

COMMUNICATION SERVICES

Principal areas requiring ex-
penditures are: (1) Local tele-
phones \$300,000, (2) Postage
\$106,000, (3) Collection of marine
weather reports \$330,000, (4)
Telephone, telegraph, cable, and
radio tolls \$272,000, (5) TWX
tolls \$60,000, (6) Longline tele-
phone and teletypewriter facilities

including the Denver-Washington
circuit, the severe storm-hurri-
cane teletypewriter circuit, local
pony circuits, and other related
facilities \$750,000, (7) Facsimile
\$280,000, (8) Tornado and inter-
phone circuit \$82,000. A slight
decrease in communication costs
in 1957 is the result of rerouting
of circuits and the elimination of
duplicate facilities.

RENTS AND UTILITY SERVICES

The rental of statistical tabu-
lating machines used by the three
Weather Records Processing Cen-
ters, the National Weather Records
Center at Asheville, N. C., and
the statistical unit in the Central
Office accounts for \$328,100 of the
total 1957 estimate. The balance
is for the rental of office and
storage space and for the procure-
ment of electric power and other
utility services.

PRINTING AND REPRODUCTION

Work by the Government
Printing Office for publications
such as the Monthly Weather Re-
view, research and technical
papers, instructional circulars,
cloud charts, and related publi-
cations plus the procurement of
machine tabulating cards and
forms account for this item.

OTHER CONTRACTUAL SERVICES

Maintenance of office ma-
chines, installation of instru-
mental equipment, maintenance
and storage of motor vehicles,
maintenance of Weather Bureau
buildings plus facilities, con-
tracts for research, meteoro-
logical services, subsistence
and medical services overseas,
and group life insurance for em-
ployees account for the total ex-
penditures for other contractual
services.

SUPPLIES AND MATERIALS

Meteorological instruments,
\$2,586,000, constitute the major
portion of supplies and materials.
Operational supplies, such as
teletypewriter paper, ribbons,
facsimile paper, ozalid and Brun-
ing duplicating supplies, micro-
film, and related items account
for an additional \$500,000 while
helium for the Bureau's upper-
air program costs approximately
\$350,000.

EQUIPMENT

This class of expenditure is
for office equipment, instru-
mental equipment, and for motor
vehicles.

REFUNDS, AWARDS, AND INDEMNITIES

Expenditures are for awards
under the Incentive Awards Pro-
gram and payment of tort claims.

TAXES AND ASSESSMENTS

These expenditures are for the
payment of the employer's share
of social security taxes on sal-
aries of employees subject to the
Social Security Act.

The appropriation for the
Establishment of Meteorological
Facilities (\$2,500,000) is for the
improvement of observational
facilities (radar and end-of-run-
way equipment) and for housing
facilities overseas, principally in
Alaska.

Changes in the Local Climatological Data Supplement

PLANS have been completed for expanding the data published in the Local Climatological Data Supplement beginning with the issue for July 1956. The present tables A, B, C, and D will be continued and the present tables E, F, and G will be changed as follows:

Table E - OCCURRENCES OF WEATHER BY HOUR OF DAY - will show the frequencies of occurrence, for each hour of the day, of 9 major weather types, and total cloud cover, wind speed and relative humidity at various class

intervals.

Table F - OCCURRENCES OF WEATHER BY WIND DIRECTION - will indicate the simultaneous occurrences of wind direction with 9 major weather types, together with ceiling and visibility, at various class intervals.

Table G - MEANS FOR SYNOPTIC HOURS - will show the monthly averages of sky cover, station pressure, dry- and wet-bulb temperature, relative humidity, dew-point, and wind direction and speed for each of the 6-hourly synoptic observations.

In addition, a new Table H will be printed on the reverse side of the supplement. This table will contain for each hour of the day the data previously published for the synoptic hours only.

We believe the new tables E and F outlined above will have considerable value to the rapidly expanding heating and ventilating industry. Table H (hourly observation data) to a large extent will eliminate the need for the special preparation of copies of hourly records so often requested.

New Issue of Monthly and Annual Climatological Data Bulletin

BEGINNING with data for January 1956, a new monthly and annual Climatological Data bulletin will be issued. This will be the Pacific CD, containing climatological data for stations in the Pacific Ocean area (mostly in the Trust Territory), and will include only 5 of the principal stations in the Hawaiian Island group. The Hawaiian CD will continue to be published, but will

not contain data from those Pacific stations outside of the Hawaiian Islands.

The Pacific CD will be the 47th of the Climatological Data bulletins to be published. Due to irregular mailing schedules from some of the Island stations, publication of this new CD will be about 6 months late. The first issue, that for January 1956, will be issued sometime in July.

Public Service Award

THE Weather Bureau Public Service Award has been issued to Richard H. Elkington, radio announcer at Muskegon, Michigan. The citation on the Award reads: "During the severe storm on the night of May 12, 1956 you helped keep the public informed of current developments by direct broadcasts from the Weather Bureau Office at Muskegon, Michigan. You also voluntarily assisted Weather Bureau personnel in carrying on

essential functions. Your action resulted in greatly improved service."

In making the recommendation for the Award, the Meteorologist in Charge at Muskegon reported that Mr. Elkington made broadcasts over a rival station as well as his own, and also performed miscellaneous duties "like another Weather Bureau employee" during the night he spent at the station.

Trade Magazine Publicizes Local Storm Warning Program

SEVERAL officials have encouraged companies who cooperate in the severe local storm warning program to print articles in employee magazines and newsletters. The most recent example was at Omaha where the Northwestern Bell Telephone Company published an interesting article about the tornado forecast and warning program in its monthly magazine (35,000 circulation). Mr. Stapowich reported that his purpose in suggesting the article was to acquaint Telephone Company employees with the program and with the need for rapid communications.

Other officials may want to encourage cooperative organizations, such as electric and telephone companies, to prepare similar types of articles. An important benefit from this kind of publicity is that excellent cooperation can be expected from those who are well acquainted with, and become interested in, severe local storm warning activities.

Cool Off at Stampede Pass

WHEN we think of Weather Bureau offices, most of us envision the rush and noise associated with the meeting of deadlines at the average airport installation. At the other extreme, we do have stations where deadlines are at a minimum, where time and its slow passage can become a problem, where silence, except for the hum of radio and equipment and pounding teletypewriters, can be monotonous and complete. Such a station is the one at Stampede Pass, Washington. The station is located on the Saddle Ridge (elevation 3958 feet) and most VFR flights across the Cascades in the State of Washington are made directly over the station. The range divides the headwaters of the Green and Yakima Rivers. These rivers provide a fairly low flight in each direction, so the one big obstacle is this ridge with the Stampede station sitting on a ridge about a thousand feet in elevation above the highway.



Front door of the Living Quarters in mid-March 1956, from the top of the large drift. Mr. Foster is strapping on a pair of skis.



South side of the office in early March shows the large drift atop the office roof. (Note: This is the same building as shown on the cover.)

The roads leading to the station are usually closed by snow in October and are not open until June. During the summer months, all necessary supplies and food are stocked at the station in preparation for the long winter ahead when the only means of bringing material into the station is by backpack. The weekly mail, which averages about 16 lbs., is the biggest item brought in on a routine basis.

Three men are assigned to the station and work a regular shift of eight hours for five days, after which they get the usual two days off. The office is kept open from 4 in the morning until 8 o'clock at night. The man with two days off can devote himself to housework in the bachelor quarters, indulge in skiing, or make a trip to the "outside".

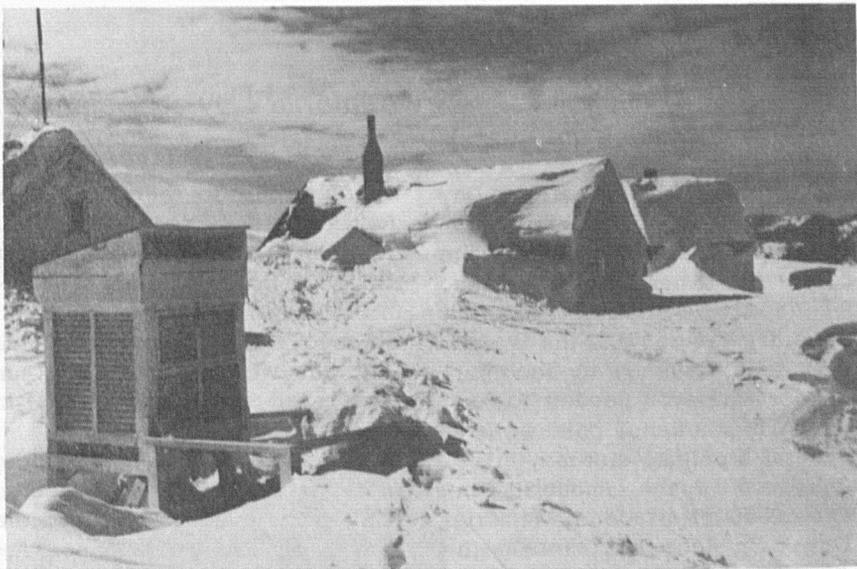
From the Weather Bureau station to Martin the nearest point on

the railroad, which is about 2½ miles, a trip can be accomplished in about an hour and one-half, while the return trip takes about two hours. During the winter, these trips, of course, must be made on snow shoes and unfavorable conditions can increase the time of the trip proportionately. Though these three men are only about 45 miles from Seattle as the crow flies, they might just as well be 4500 miles as far as accessibility to Seattle is concerned.

One bright spot in their daily routine is the contact which they have by radio with the pilots flying in the vicinity of the station. The CAA has installed equipment in the station and the Weather Bureau personnel operate it as an air-to-ground channel of communication similar to that furnished at many INSAC's with the exception that they do not handle

flight plans. It is also a bright spot in the pilot's day when he can call the station and obtain necessary weather information. It is more desirable and much safer for a pilot coming up the valley to call the station and get a current report on ceiling, visibility, and winds rather than to investigate the situation in flight. If the station is reporting "zero-zero", the pilot knows it is impossible to cross the ridge and can take appropriate action at once rather than to fly all the way to the ridge and then have to turn back. Winds sometimes blow past the station at a velocity higher than the cruising speed of some airplanes. At times, gusts of over 100 miles per hour are observed at the station.

Without a snow shovel and the brawn to make it operate, activities at the station would soon come to a standstill. At one time during the winter of 1955-1956, the snow measured 17½ feet deep which made it necessary to tunnel for access to doorways and to obtain light through the windows. In an hour or so, the wind can fill these man-made holes in the snow, and there is nothing the observer



Left to right, WBO, thermoscreen, WB Living Quarters and old Forest Service House in early March 1956. The relatively small drift is seen to be higher than the floor of the thermoscreen.

can do but to get out his snow shovel and start digging.

For someone interested in outdoor sports, this station has many possibilities, especially during the summer months when the Cascades are at their beck and call for fishing, hiking, hunting, berrying, etc.

During the past winter, the station was manned by Mr. George

Foster, in charge, Mr. Max Baumgartner, and Mr. Harley Lillienthal. Comfortable furnished quarters are provided (except for bedding and linens) for the three employees. No quarters are available for employees' dependents. Salary deductions for the quarters are about \$109.00 per annum. The cost of food is borne through a common fund.

Radiological Course

DURING the week of June 4-8, 1956, Alexander Sadowski of the Emergency Warning Section attended the FCDA's Instructors Course in Radiological Monitoring given at the National Bureau of Standards, Washington, D.C. As one of his duties concerns the role of Federal Civil Defense Agency in the distribution of the Weather Bureau's warnings, Mr. Sadowski was recommended as the Bureau's representative. The ultimate objective of the Department of Commerce's participation

in the program was to develop a practical course in monitoring which can be given to selected individuals in the various Bureaus and Agencies who will eventually be assigned to monitoring teams.

The material covered in the course can be separated into the following three basic categories. The instructions commenced with a treatise on nuclear physics to explain the various types of radiation emitted by atomic bombs. The second phase of learning covered the principles of the con-

struction, the laboratory methods of calibration, and the maintenance of the radiological instruments which required laboratory procedures centered about Material Testing Laboratory. The course culminated with the use of instruments in detecting radioactive samples, making a radiation survey, decontamination exercises, measuring dose rate of radioactive material, and plotting of fallout patterns.

Memorial Day at Indianapolis

THE following story of Race Day activities at WBAS Indianapolis was prepared by WBO Chicago for release to news wire services.

"Special situations call for special measures and the Weather Bureau is ready to send personnel wherever needed to meet either emergency conditions or special problems that may arise. An example is the famous Indianapolis 500 mile race on Memorial Day. On Race Day there is the special problem of making aviation forecasts for an estimated 800/1000 pilots in excess of those normally served by the Weather Bureau at Indianapolis. These pilots land on various fields in the vicinity of Indianapolis and require briefing immediately after the race as to the weather condi-



Messrs Harris and Stewart preparing for crowd in tent at Weir Cook.

tions en route to their various destinations. To aid the staff at Indianapolis on Memorial Day this year Eugene Harris was detailed from the Weather Bureau at Chicago. The program for Race Day was well set up by Wallace Bertrand, the Meteorologist in Charge at Indianapolis.

"A mimeographed copy of the latest weather map was prepared along with a description of the general aviation weather. Attached to this were specific forecasts for all points within several hundred miles of Indianapolis. Three teams of two forecasters each took care of the briefing from three different points. Two forecasters remained in the Weather Bureau office. Two were in a tent at the north end of Weir Cook Airport and two were at Shanks Airport north of the city. There was a amateur radio communication between all points with a seventh forecaster at the Weather Bureau handling the radio. Mimeographed copies of the latest aviation weather reports were flown to Shanks Airport by the CAP and taken by automobile to the forecasters at Weir Cook Airport. These late reports were given to each pilot along with forecasts and the mimeographed copy of the weather map.

"With these aids the three teams of forecasters briefed sev-



Joseph Cselsi and son and James R. Tracy who operated portable transmitter at Weir Cook WBAS.

eral hundred pilots following the race. On Memorial Day the situation was complicated by scattered thunderstorms and a late afternoon squall line. With sundown the rush subsided. The real rush began after daybreak the following day with five forecasters working almost continuously from 6 a.m. to 3 p.m. briefing pilots. There were complicating factors again on this day in the form of low ceilings, thunderstorms and another squall line. While all this was going on not only did the routine work of the station continue, but the workload was further increased by local floods."

MIC Takes Trip Around the World

A pleasure and educational trip around the world by airplane was completed by Mr. and Mrs. H. J. Thompson the latter part of May. Mr. Thompson is the MIC at Milwaukee, Wisconsin.

Visits were made to the Weather

Bureau Offices at Honolulu and Wake Island, and also the following meteorological offices in foreign countries: Tokyo, Singapore, Bangkok, Calcutta, Benares, Lucknow, New Delhi, Agra, Cairo, Beirut, Istanbul, and Shannon.

Mr. Thompson commented "that the trip was very instructive from educational and cultural standpoints. However, I am glad to be home, and back to my work."

A New Recording Rain Gage

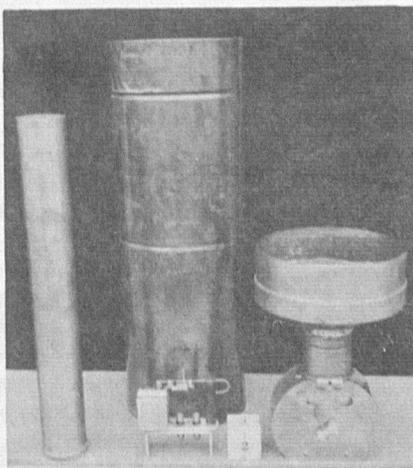
A convenient method of obtaining synchronized river and rainfall records has been developed by the U. S. Geological Survey.

The device shown on accompanying photograph consists of a tipping bucket mechanism designed for attachment to a standard 8 inch non-recording rain gage and a counter-stylus assembly which can be mounted on a water-stage recorder. It operates on 9 to 12 volts direct current and records each 1/10 inch of precipitation on the margin of strip-type water-stage recorder charts. The rain gage may be removed to an improved exposure, if required.

The tipping bucket mechanism clamps to the sleeve of the rain gage collector and is suspended inside the overflow can with the measuring tube removed. A two wire connection is required between the tipping bucket and counter-stylus assembly.

Each tip of the bucket produces a short electrical impulse actuating a counter dial which registers the tip and in turn, the counter "jogs" the stylus 1/16 of

an inch. There are 5 "jogs" to the left, then, the stylus reverses and 5 "jogs" to the right complete the cycle. The entire record is confined to a continuous 5/16th



inch strip along the edge of the chart. Power may be obtained by use of an AC Transformer or by dry cells. The precipitation collected in the overflow can, may be measured at various intervals as a check on accuracy of the record.

As a rust inhibitor for protection of the counter parts, small sheets of "VPI" crystal coated paper are fitted inside the cover of the counter. The crystals are expected to emit a vapor which combines with moist air and renders it non-rust forming. It should be effective until coating disappears. The paper lining can be replaced easily, and is inexpensive.

The Geological Survey has installed a number of these instruments at stream gaging stations operated by that agency. The Bureau has installed, also at Geological Survey river gage houses, about a dozen in southern Florida in connection with the radar-rainfall project operated in cooperation with the University of Miami.

This instrument serves as a means of obtaining a continuous record of precipitation at points not otherwise easily accessible. The gage is serviced usually once a month when the field engineer visits the site to service the river gage and remove the chart.

National Safety Council Award goes to "The Flight Decision" Film

THE National Safety Council has announced selection of THE FLIGHT DECISION as the leading safety film in the general classification for the year 1955. Their Bronze Plaque will be presented in Chicago, October 23, 1956.

THE FLIGHT DECISION is the pilot safety film released by the National Association of State Aviation Officials (NASAO) and

AOPA Foundation, Inc. It contains an excellent portrayal of the role of weather and weather advisory services in flight safety. About half of the footage deals with this aspect, using the facilities and personnel of the Weather Bureau station at Boise, Idaho to depict the weather side of the story. Weather Bureau personnel at Boise had a large part in preparing material for the

film and credit is given to the Bureau in the film itself.

The film has been shown to local aviation groups (including the CAA Aviation Safety Agents) throughout the country by Weather Bureau field offices and the NASAO. An excellent response has been accorded this film in aviation circles.



Roy L. Fox, MIC, center, and award winners (left to right), Ingram, Johnson, Mrs. Chun, Kimura, Busniewski and Steiner.

Superior Accomplishment Awards

Raymond B. Busniewski

RAYMOND B. BUSNIEWSKI, Radiosonde Supervisor and Principal Assistant at Hilo, Hawaii was given a Superior Accomplishment Award of \$200 for his important contributions to the improvement of station operating procedures and to Hilo's successful participation in special projects.

Among the many improvements introduced by Mr. Busniewski was a system of records control which substantially improved the quality of the work output and the design

and construction of work benches and storage cabinets which greatly improved balloon inflation techniques.

Mr. Busniewski also supervised an air sampling and microclimatic weather recording project along the slopes of the Mauna Loa Volcano. This project required the training of local residents in the techniques of weather observing and a maximum of cooperation with several branches of the military. The success of this project was

due in great measure to Mr. Busniewski's ability as a teacher and liaison man.

Shizue M. Chun

SHIZUE M. CHUN, Secretary, Pacific Supervisory Office, Honolulu was given a Superior Accomplishment Award of \$100 for her outstanding performance during 1954-55. Mrs. Chun's outstanding performance covered not only her regular duties but included other duties assigned because of increased workload and turn-over

in the clerical staff. She accepted the additional work and responsibility and continued to render outstanding service with undiminished enthusiasm, loyalty, and devotion to duty that was most commendable.

Mrs. Chun's acceptance of the additional workload during this period resulted in the saving of several thousand dollars to the Government since she made it possible for the office to maintain its clerical responsibilities without added staff.

Robert S. Ingram

ROBERT S. INGRAM, Aviation Forecaster at WBAS Honolulu was given a Superior Accomplishment Award of \$200 for outstanding performance during 1954-55. His superior technical knowledge and ability as a forecaster, and his pleasant and courteous treatment of pilots requesting information has greatly contributed to the effectiveness of his station's forecasting and pilot-briefing programs.

Mr. Ingram has shown great initiative in assisting in introducing streamline analysis techniques and has made many useful suggestions which have led to an improved verification program. One of his suggestions was to apply streamline analysis techniques to the problem of general island forecasts. He has developed his own skill in streamline analysis to a point where he now instructs staff members who have not had previous training in this work. Mr. Ingram continues to experiment with and develop streamline concepts to the continuing good of the forecast operation.

Bill L. Johnson

BILL L. JOHNSON, Administrative Officer PSO Honolulu, was given a Superior Accomplishment Award of \$100 for highly competent work during 1954-55. The award

was approved on the basis of Mr. Johnson's thorough knowledge of Bureau programs and needs in the Pacific area and of regulations applicable thereto, his ability to assist those under him to do their best possible work, and his ability to get jobs done even when emergency or urgent situations made the accomplishment of a task especially difficult. His supervisor has said of him that: "He knows the answers concerning most of the questions dealing with his work. Those answers that he does not have, he knows how to go about obtaining quickly and effectively. He is a "can do" person and one who has the knack of breaking difficult tasks down into point by point logical and easier steps. The number of tasks, many of them involved, which Mr. Johnson is able to accomplish in a work week is amazing." Innumerable problems which have come up in connection with the Trust Territory observational program, the special Mauna Loa air sampling program, maintaining staffs at the various stations, and other unusual and new phases of the work have either been solved or made much easier through Mr. Johnson's ability to develop and implement procedures for dealing with them. Despite the heavy load of individual duties he carries, and the trying conditions under which he has to operate at times, Mr. Johnson manages to keep his composure and he is never too busy to drop what he is doing to aid someone in need of assistance.

Akimichi Kimura

AKIMICHI KIMURA, observer on the Pacific Weather Project, was given a Superior Accomplishment Award of \$100. His supervisor reports that despite his being a comparative newcomer to the Bureau, Mr. Kimura is one of the fastest, most accurate, and neatest workers he has had the pleasure of working with. No matter

what additional job he is given, Mr. Kimura can be depended on to do more than is required in less than the anticipated time.

While ashore between trips he has volunteered to assist the Honolulu PSO in their administrative work, and his performance was such as to elicit the following comment from the MIC: "He is a very meticulous worker, has the ability to comprehend instructions and, probably more significant, the ability to figure out the requirements of a job and get it done. We enjoy having him work around the office, for he is always pleasant and cheerful and, at the same time, he gets things done effectively without a lot of fanfare and commotion." He has also been complimented by the Commanding Officer of an Ocean Station vessel for his pleasant and courteous manner aboard ship.

James W. Steiner

JAMES W. STEINER, MIC WBAS, Hilo, Hawaii was given a Superior Accomplishment Award of \$300 for outstanding performance during 1954-55. Under his direction, the observational programs have been maintained at a high level of performance, an effective briefing and adaptive forecast program has been carried out, and most cooperative relationships between the Bureau, the local civil government, airline personnel and other government agencies, have been maintained. During an international cooperative research study in cloud physics in the Fall of 1954, ("Project Shower"), Mr. Steiner and his staff were called on for assistance and were commended by the participating scientists for their excellent cooperation. In connection with a special observing and air sampling program along the slopes of Mauna Loa which necessitated the acquiring and training of part-time employees, Mr. Steiner's dependability, enthusiasm, ability to

analyze a problem, see it through, and to direct and lead people, greatly contributed to the success of the program. The Bureau's agricultural forecast service to sugar and pineapple plantations and factories in the Honolulu area has also benefited greatly from Mr. Steiner's efforts and abilities.

Raymond Robinson

RAYMOND ROBINSON, MIC, WBAS Akron, Ohio was given a Superior Accomplishment Award of \$200 for nearly twenty years of extremely competent direction of his station's activities. During these twenty years, the station has acquired a reputation for increasingly competent and efficient service and the Bureau's prestige in the area has been increased accordingly. Mr. Robinson's planning, management, and public relations skill, together with the competence of the other station personnel, are responsible for the high quality of the work performance and for the public confidence in the Akron station. In 1953, during the relocation of the Akron station, Mr. Robinson's advance planning so as not to disrupt public service, observations, and personnel schedules, and his tactful handling of the public relations aspects of the move, considerably lessened the confusion which generally accompanies such an operation. By writing letters to civic groups, newspaper editorials, and articles for radio and TV educational programs he attempts to prepare the public for weather emergencies. He encourages his staff to follow his example in keeping abreast of the latest meteorological developments. Mr. Robinson has also been responsible for the design and construction of a variety of improvements for more efficient station observations.

(Cont'd on page 113)

Employee Suggestion Box

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|--|------|---|
| O. Kenneth Anderson
Louisville, Kentucky | \$15 | A suggestion to reduce the volume of telephone calls from students. See the article which follows this list. |
| John O. Baker
Annette, Alaska | \$20 | Extension of a practice applied to ceilometer and radiosonde recorder charts whereby all graphic chart paper rolls will be printed with a line in the margin of the last several feet of the roll to indicate the end is nearing. Specifications on all future orders will provide for such a line, and loss of record due to paper running out should be reduced considerably. |
| Nathan M. Barrey
Bridgeport, Conn.
(Formerly Pendleton, Ore.) | \$15 | A suggestion which led to a change in the mailing of punched cards to the WRPC's. Under the new procedure when the first mailing of the month is for three days or less, it will be held and included with the next weekly mailing, thereby saving postage and time in preparation of cards for mailing. |
| Everett W. Carlson
Nashville, Tenn. | \$15 | Laminate WB Form 610-11, "Civil Defense Fallout Winds," so that entries can be made with china-marking pencil and erased. A small saving can be realized on cost of printing, requisitioning, inventorying, etc., in connection with stocking the forms. |
| Harry F. Choun
Kansas City, Mo. | \$15 | Suggestion for constructing a lighter-weight concrete base for instrumental equipment installations, which had been used successfully in Kansas City. Possibility of a more suitable base for certain installations and savings in the cost of construction. |
| Earl B. Clark
RAO, Ft. Worth, Texas
(Formerly Little Rock, Ark.) | \$35 | Eliminate unnecessary computing of dew points for raob levels which are not transmitted. Instructions to this effect will be incorporated in the next revision of Circular P. |

- | | | |
|--|------|--|
| Charles W. Kearney
Norfolk, Va.
(Formerly Yakutat, Alaska) | \$20 | A suggestion which led to inclusion in Circular P instructions to record the statistical value of relative humidity instead of "MB" in the relative humidity column of WBAN-31A, which will result in a savings of time in station and RAVU verification. |
| Leonard G. Pardue
Miami, Florida | \$25 | A suggestion which has resulted in steps being taken to develop a revised reporting procedure for tabulating hurricane data, whereby statistical information will be compiled for each storm and for the season and published with the climatological report of the storm. |
| Andrew D. Robb
Topeka, Kansas | \$20 | Print the name of the state in capital letters in the "Place" column of National Summary of Climatological Data "Storm Data and Unusual Phenomena" table for ease in reference use. |

Reducing Telephone Calls

Recently, O. K. Anderson, MIC at Louisville, Kentucky, was awarded \$15.00 for his suggestion for reducing the volume of telephone calls from local students. Mr. Anderson had observed that, when teachers passed out weather study assignments, all of the students in the class were calling the Weather Bureau for the same information. This not only consumed considerable station time but tied up the public telephone for a period of one or more hours

(Awards Cont'd.)

Melvin L. Fields

MELVIN L. FIELDS, Shipboard Observational Supervisor, Pacific Weather Project was given a Superior Accomplishment Award of \$200 for very competent performance over a number of years. His competence, leadership, and initiative during 61 ocean patrols and in the performance of responsible shore jobs between trips have

to the exclusion of all other interests. Accordingly, he wrote letters to all school supervisory personnel requesting that their teachers designate one student of each class to get the necessary information for the use of all. He reports that the reaction to his request has been quite favorable and has resulted in a considerable decrease in calls from students.

It may be that other stations have encountered this same problem and would be interested in this partial solution to the general telephone problem.

greatly aided operations of the Pacific Project. Aboard ship, he has repeatedly demonstrated his ability to establish and maintain friendly working relationships between his crew and shipboard Coast Guard personnel. He has done an excellent job of training new observers. His thorough knowledge of observational instructions, shipboard obser-

vational techniques, cooperative working arrangements with Coast Guard vessel personnel and his over-all understanding of the objectives of the various Pacific Ocean meteorological programs add further to his value to the Project.

Robert J. Schmidli

ROBERT J. SCHMIDLII, Meteorologist at WBAS Milwaukee, was given a Superior Accomplishment Award of \$200 for highly competent performance during 1951-55. In addition to doing a very commendable job on his regular shift, Mr. Schmidli regularly reports for work early to take care of extra work or to be available in case of a sudden increase in workload.

During the relocation of the Milwaukee Station in June of 1955, his assistance to the electronics technician, largely on a voluntary overtime basis, enabled the Station to accomplish the move at least a week earlier than had been anticipated. Mr. Schmidli's competence, exemplary team spirit and devotion to duty are most commendable.

Myrtle Wagner

MYRTLE WAGNER, Statistical Clerk at the Extended Forecast Section for the past fifteen years, was given a Superior Accomplishment Award of \$200 for highly competent performance. In addition to performing her regular duties with unusual efficiency, she has made suggestions outside the scope of her duties which have led to improvements in operations. One of her suggestions, for a quick check method of testing the correctness of processed tabulations received from the IBM Machine Tabulation Unit, has resulted in saving considerable time as well as making an important contribution to the accuracy of final plotted charts. She has also developed short cut methods of checking for use in research. Miss Wagner is considered a highly valuable member of her Section.



Publications Corner

THE publications that are listed in this column have been issued during April and May. Those items which show prices are sold by the Superintendent of Documents.

Aviation Series: No. 16. Aeronautical Climatology - Thunderstorms. 1956. 8 pages. 5¢; No. 17. Severe Weather Forecasts - Their Importance to the Pilot. 1956. 8 pages. 5¢.

Circulars P and O Evaluation Examination. 1956. 16 pages.

Climatic Summary of the U.S. Supplements for 1931-1952. No. 11-31. Michigan. 1956. 72 pages. 40 cents.

General Summary of River and Flood Conditions. Reprint from CD National Summary. Vol 6. No. 12. 1956. 8 pages. 10 cents.

Heating Degree Days. Reprint from Weekly Weather and Crop Bulletin. January 16, 1956. 2 pages.

Manual of Radar Meteorological Observations. 2nd ed. 1956. 32 pages.

Manual for Radiosonde Code (WBAN) 1st ed. 1956. 64 pages. 70 cents.

Objectives and Basic Design of the National Hurricane Research Project. Report No. 1. 1956. 8 pages.

Origin and Development of Weather Bureau Severe Local Storm Warning Network Program. 1956. 8 pages.

Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas from 10 to 1000 Square Miles and Durations of 6, 12, 24 and 48 Hours. Hydro. Report No. 33. 1956. 64 pages. 40 cents.

Substation Histories: Arizona. 1956. 104 pages. 50 cents; Arkansas. 1956. 84 pages. 45 cents; Illinois. 1956. 72 pages. 35 cents; Kansas. 1956. 108 pages. 50 cents; Louisiana. 1956. 72 pages. 35 cents; Min-

nesota. 1956. 60 pages. 35 cents; Montana. 1956. 108 pages. 50 cents; Nebraska. 1956. 92 pages. 45 cents; Nevada. 1956. 56 pages. 30 cents; New Mexico. 1956. 112 pages. 30 cents; North Dakota. 1956. 44 pages. 25 cents; Oklahoma. 1956. 112 pages. 50 cents; Oregon. 1956. 104 pages. 50 cents; South Carolina. 1956. 40 pages. 25 cents; South Dakota. 1956. 60 pages. 35 cents; Utah. 1956. 92 pages. 45 cents; Wyoming 1956. 76 pages. 40 cents.

Summary of Severe Local Storm Research Conference, December 14-16, 1955, Washington, D. C. 1956. 8 pages.

The Practical Aspects of Tropical Meteorology. Air Force Surveys in Geophysics No. 76. 1956. 120 pages.

United States and Foreign Radio Coast Stations Accepting Ships' Weather Observation Messages. 1956. 8 pages.

Telephone Switching Arrangement

THE Supervising Public Service Meteorologist at Chicago has supplied the following details concerning a type of telephone arrangement which may have application at other stations. Prior approval for the installation should be obtained from appropriate Regional Administrative Offices. His letter is quoted in part.

"The special telephone switching arrangement at this office has been of benefit in selecting the number of trunk lines to be answered at any one time. This installation is called a 'group splitting circuit' by the telephone company. It consists of a two-position switch and signal light.

When the switch is in one position, calls to the public number, WAbash 2-1346, will spill over to the next number, WAbash 2-1347, if the first is busy and the second is not busy. When the switch is in the other position, the light is on, and callers to the first number will hear a busy signal if that number is busy. It is understood that the switch controls the 'hunt' feature of the telephone exchange office. When the switch is in the on position, it is not possible to use the second trunk line for outgoing calls with our equipment, but it is understood that it is now possible to provide for such an installation."

More Weather Via Radio

BASED on the November 1955 rendition of WB Form 1040, direct radio originations are now made in 209 Weather Bureau stations. This is an increase of 13 offices as compared to the previous year. The encouraging part of the picture is the fact that participating radio stations now total 699, which is 58 more than last year. In other words, "simulcasts" have been increasing. Obviously, there is a physical limit past which the number of direct radio broadcasts from a given Weather Bureau station can not go. However, the number of stations which can share an origination on a simultaneous basis is limited only by the number of stations in the vicinity and it is this "sharing" principle which we hope will continue to spread.

NEW STATE CLIMATOLOGISTS

Gainesville, Fla.

KEITH D. BUTSON, State Climatologist for Florida. Mr. Butson is at the University of Florida at Gainesville. The State

Climatologist's office for Florida has been transferred from Jacksonville to Gainesville.

Columbia, Mo.

JAMES D. MCQUIGG, State

Climatologist for Missouri. Mr. McQuigg is also Meteorologist in Charge of the Columbia station. The State Climatologist's office for Missouri has been transferred from St. Louis to Columbia.

RETIREMENTS

Walter F. Feldwisch

A little over 45 years ago, on March 13, 1911, Walter F. Feldwisch reported for duty as an administrative clerk at the Mount Weather Observatory, Virginia. Thus began a career of long and faithful service which is ending this month at Honolulu, Hawaii.

Between these two space-time points were other assignments to Peoria, Illinois; Cape Henry, Virginia; Evansville, Indiana; North Head, Washington; Raleigh, North Carolina; Richmond, Virginia; and Springfield, Illinois. Also between the designations of Administrative Clerk and retiree, Mr. Feldwisch has borne the titles of assistant observer, observer in charge, first assistant, meteorologist in charge and climatologist.

For the past 34 years he has

worked almost exclusively in the field of climatology and for the past 20 years he has served as Climatologist for Hawaii. He has the distinction of having served as Climatologist for Hawaii longer than any of his predecessors and also in having had a longer continuous "overseas" assignment than any other person in the Weather Bureau, past or present.

Another of his distinctions is that he has written all of the Monthly Weather Summaries for the 81 monthly Climatological Data publications issued for his section from July 1949 through March 1956.

Mr. Feldwisch has been known for his frankness and forthrightness in dealing with people and problems, his devotion to the Bureau and his attention to duty.

At the time of his retirement he had over 1120 hours of accumulated sick leave to his credit and had had only two vacation trips "back to the Mainland" in the past 20 years.

For a few weeks after officially locking the door on the records storage vault in the Honolulu "Climat" office for the last time, Mr. Feldwisch will be at home at 2639 Manoa Road, Honolulu, Hawaii. Thereafter, he and Mrs. Feldwisch will take an extensive tour of the Mainland before settling down. Los Angeles, Springfield, Illinois, New Orleans and Jacksonville are just a few of the points on their itinerary and it's quite possible that they will visit the Nation's Capital.

Stanley Schworm

STANLEY SCHWORM, Meteorologist in Charge at Richmond, retired on June 30 after having completed 54 years and 21 days of service. He has the distinction of having longer service than any other Weather Bureau employee, past or present, since retirement at age 70 became mandatory. Only one other employee, Mr. Patrick Conner who retired in 1930 as Official in Charge in

Kansas City, had longer service (by about five months) but he did not retire until he reached the age of 75. Except for the mandatory retirement rule Mr. Schworm might well have accumulated much more service, for he appears much younger than his years, his hearing, eyesight, agility, and general health are those of a much younger man, and his enthusiasm and participation in station work and responsibilities were still at

a high pitch to the day of his retirement.

Mr. Schworm entered the Bureau in 1901 at Portland, Maine when only 15 years old and served at some twelve stations before becoming Official in Charge at Richmond ten years ago. He has held assignments in Montgomery, Escanaba, Jacksonville, Binghamton, Trenton, Indianapolis, Hartford, Eastport, Boston, Charlotte and Parkersburg as

OIC, and finally Richmond.

It was during a ten year stay at Hartford that Stanley Schworm met and married Ida M. Rolston. They had four children, twin boys, a girl and another son—and six grandchildren. Daughter Phyllis followed in her Dad's footsteps for awhile, serving as a meteorological aid at WBAS La Guardia and at WBAS Richmond before her marriage.

Somehow during those busy

years when he was raising a family and moving from place to place for the Bureau, Stanley Schworm managed to earn the equivalent of three years of college through correspondence courses and night schools.

Today the man who began his career as a messenger boy is as much at home conducting a seminar on Climatology at the College of William and Mary, or discussing allergies and the weather with

Medical College of Virginia physicians, as he is in discussing the weather in the office.

In 1953, Mr. Schworm was presented with an award for fifty years of service and in February of 1956, he was given the Department of Commerce Silver Medal for Meritorious Service. Stanley Schworm has indeed come a long way since that November day in 1901 when he began his career with the Bureau.

Bess W. Voorhees

BESS W. VOORHEES, payroll clerk in the Fiscal Section of the Central Office, retired April 30, after more than thirteen years of Bureau service. A native of Benezetta, Pennsylvania, Mrs. Voorhees holds an A. B. from Lawrence College in Appleton, Wisconsin, and taught school in Minnesota and Wisconsin from

1913-1918 before coming to Washington. From April of 1918 until December 31, 1919, she was employed by the War Department. From 1921-1936 she assisted in the management of a family interior decorating business, in Washington.

In 1942, she came to work for the Bureau in the SR&F Division,

transferred to Station Operations Division in 1945, and in 1947 was reassigned to the Records Management Section. In 1950 she became a Pay Roll Clerk in the Fiscal Section and remained there until her retirement. Mrs. Voorhees' home address is 6368 Ridge Drive, Washington 16, D.C.

Charles C. Williford

CHARLES C. WILLIFORD, MIC at Springfield, Missouri since 1932, voluntarily retired May 31, after more than thirty-five years of service. Over the years, "C.C.," as he is known to his friends and radio audience in the "Ozarks," has greatly contributed to the popularization of radio weather broadcasting. His informal style of weather broadcasting attracted such a large radio audience in the Springfield area that Williford was called to the Central Office in 1941 to assist in the organization of radio weather broadcasting activities for the Bureau. A pamphlet entitled "Notes by Weather Bureau Broadcasters" came out of Williford's three month stay in Washington, and was distributed for use as a guide by Bureau officials engaged in broadcasting weather information. In 1945, he received a

meritorious promotion in recognition of his distinctive service "in pioneering in the development of techniques for presentation by radio of weather information in a form most understandable and usable." "C.C.'s" technique consisted of dressing up his weather reports with homespun philosophy, "Ozark" lore, fatherly advice, and tips on everything from fishing to gardening. In 1950, Mr. Williford was named "Master Conservationist" by the Missouri State Conservation Commission in recognition of his contribution to the public understanding of sound conservation practices.

"C.C." was much in demand as a speaker and entertainer and his versatility seemed limitless. Over the years he has many times been master of ceremonies for banquets and social events, com-

mencement speaker, beauty contest judge, visiting preacher, cornerstone dedicator, and dedicator of bridges; and could be counted on to speak extemporaneously if called upon at any gathering.

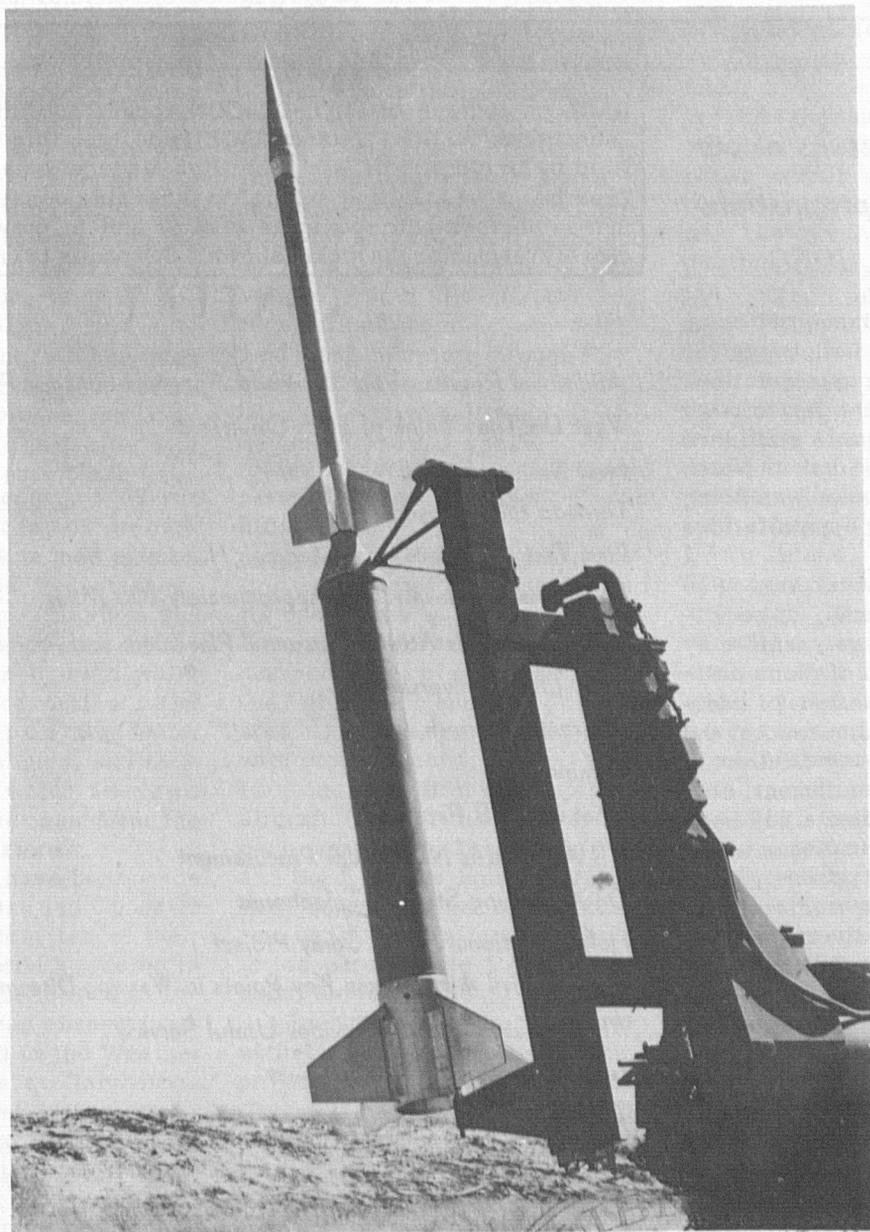
Perhaps the most dramatic day in Mr. Williford's career was May 10, 1943 when a flood evacuation warning he gave to residents of White River Valley enabled all the inhabitants to escape what turned out to be the most severe flood ever to hit this area.

An ardent sportsman, "C.C." was a familiar figure at all major sports events, and it was while attending a horse show with Mrs. Williford that he became ill and later suffered a mild stroke from which he is now convalescing at his home, 2303 Roanoke Street, Springfield, Missouri.

WEATHER BUREAU

TOPICS

AUGUST 1956



Volume 15

Number 8

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.

Additional Results of our Increased Appropriations for F. Y. 1956

SINCE the July issue of Topics discussed the allocation of our 1957 fiscal year appropriation, this is an appropriate time to bring up to date the summary published in the March 1956 issue which showed what the Bureau was doing with its increased appropriations for F. Y. 1956.

In general, Fiscal Year 1956 was a year of planning, to be followed as closely as possible by the implementation of plans calling for the establishment of additional stations and networks, the procurement and installation of instrumental equipment, etc. Action on some projects has been completed; final implementation of others depends primarily upon installation of instrumental equipment on which delivery has not yet been made by the manufacturer. Results from research contracts with universities and others look promising but need evaluation.

The transfer of certain activities from the military has been completed with the exception of the transfer of basic upper air observations to the Weather Bureau. Seven stations were transferred by the end of 1955, and ten more (San Diego, Shreveport, Jackson, Miss., Winnemucca, Dayton, Tucson, Montgomery,

ABOUT THE COVER

NACA photograph of NIKE-DEACON rocket combination on Terrier Launcher at Wallops Island NACA Facility. This two stage rocket fired by University of Michigan High Altitude Research Laboratory. Experiment was "falling sphere" to determine density. The Weather Bureau photographic rocket is similar and in outward appearance closely resembles the rocket shown. See pages 122 and 123 for story.

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Ala., Salem, Oreg., Seattle, Santa Maria) by June 30. Transfer of the remaining stations is planned during F. Y. 1957.

Much of the work proposed under New Program (S&E) has been accomplished, but slow delivery of instrumental equipment has delayed implementation of some projects.

Special Ocean Weather Observations from Merchant Ships: When instrumentation is completed, messages in full WMO code will be furnished by approximately 850 merchant ships, with reports from 120 additional vessels during the hurricane season. Contracts have been let for standardizing equipment for these ships, but only very limited quantities had been received as of June 30. More accurate and complete ships' messages are expected after this standardized equipment is in use. Storm Surge Forecasting: Warnings of high water levels are now furnished routinely in coastal areas threatened by hurricanes and other storms. Storm surge forecasters have compiled considerable data as to high water levels experienced during past storms, developed high water forecasting techniques, and made surveys of high water damage occurring along the coast after the passage of such storms.

Arrangements have been made whereby the Coast and Geodetic Survey is to remote ten of their tide gages to recorders located in Weather Bureau offices or in locations where these observations will be available to the Weather Bureau. Gages at Galveston, Pensacola, Miami, Charleston, Norfolk, Baltimore, Atlantic City and New York City will be remoted to nearby Weather Bureau offices. The tide gage at Lewes, Del., will be remoted to the Philadelphia Weather Bureau office with the Philadelphia Electric Company paying the very high line charges in return for being allowed to have

a recorder in their office. Tide gage observations from the Woods Hole Oceanographic Institution are available when requested by the Boston Weather Bureau Airport Station. A tide gage for installation on the Texas Tower is on order. Improved communications: The new Weather Bureau Severe Weather (RAWARC) teletypewriter system has been completely installed and is in operation.

Upper-Air Soundings in the Atlantic and the Gulf of Mexico: The surface and upper-air sounding programs aboard two A. H. Bull Company ships in the Atlantic and on three ships in the Gulf of Mexico are in full operation and negotiations are under way to extend these contracts through F. Y. 1957. The programs on the Bull Line ships out of Baltimore may be moved to two other vessels whose routes are farther at sea for longer periods of time (New York-Puerto Rico).

Severe Storm Research: The National Research Project has moved its operations to the Research Base at West Palm Beach where daily analyses of weather over the Gulf of Mexico and Caribbean area are being conducted along with other research tasks. Modification of the first of the project aircraft (one of the B-50's) has been completed. The second B-50 and the B-47 are being equipped with meteorological instrumentation at General Precision Laboratories and should be available about September 15.

The initial test in connection with the rocket reconnaissance project was held off the Virginia Capes May 8 when two instrumented rocket nose cones were dropped from an aircraft and located and retrieved by destroyers, thus proving the feasibility of recovering instrument-carrying rockets from rough seas. A second test has been recently made utilizing an actual rocket but the nose cone was not found. Work

on the hurricane beacon has progressed but the beacons are not yet ready for testing. The first report of the National Hurricane Research Project was published in March and Reports No. 2 and No. 3 in July.

Universities and research organizations have indicated that important progress has been made on the tasks assigned to them under contract with the U. S. Weather Bureau. The work contemplated on these contracts has been mostly completed. Final reports will be submitted in the next few months.

Weather Bureau Cooperation with the Corps of Engineers for Hurricane Studies under P. L. 71, 84th Congress: Intensive studies have been made to supply background information necessary for engineering planning for protective works at such places as Narragansett Bay, Rhode Island; New Bedford, Mass; Stamford, Conn.; Long Island, Delaware Bay, Chesapeake Bay, Lake Pontchartrain, etc. These studies involve detailed analyses of the hurricane surface wind field over land and water surfaces. A detailed summary is being published of all the rainfall situations in connection with hurricanes for the period 1900-1955. Studies are being made of the relationships of anomalies in the surface pressure pattern and moisture transport in the lower atmosphere to subsequent rainfall. Interim reports are nearing completion on hurricane frequency, forecasting, and warning services.

Establishment of Facilities Program: Contracts were let for 39 new-type weather surveillance radars (31 for the Weather Bureau and 8 for the Navy) with delivery expected to start about June-July 1958. Contracts were also let for end-of-runway equipment and transmissometers were becoming available by the end of F. Y. 1956. A survey was completed to deter-

mine the points at which telepsychrometer equipment is needed to reduce the time required away from the office or where present exposures are poor and use of this equipment will result in better observations.

Rapid progress was made in the establishment of eight new upper-air stations in the Caribbean (Guadeloupe, F. W. I.; Curacao, N.A.; Sabana de la Mar, D.R.; Kingston, Jamaica; Grand Cayman, B. W. I.; St. Andres Island, Colombia; Merida, Mexico; St. Maarten, N.A.) with observations beginning in February at Guadeloupe and in early June at Curacao. It is expected that observations from Kingston, Grand Cayman, Sabana de la Mar, Merida and St. Maarten will begin in the near future with St. Andres following somewhat later. This

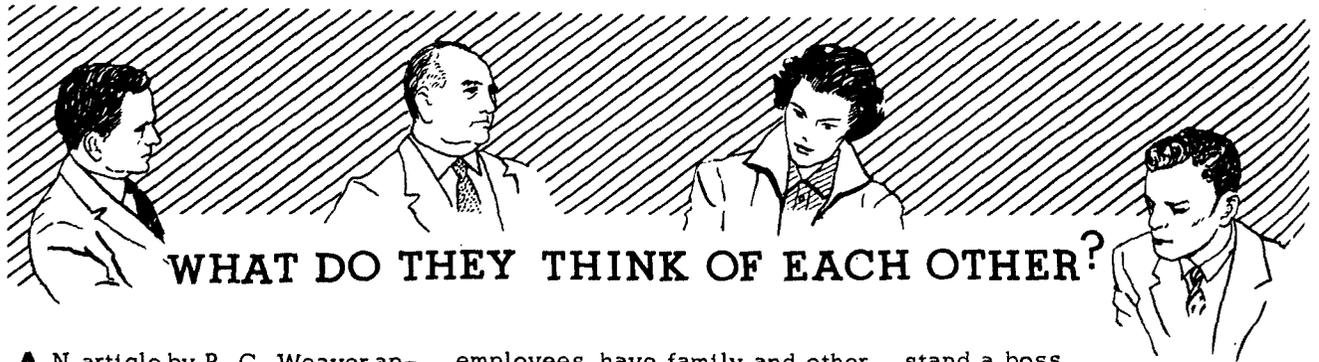
program involved construction or modification of buildings and associated structures at all points, most of which has now been completed, with the exception of St. Andres and St. Maarten, which are expected to be finished about the middle of September 1956.

Plans have been completed in collaboration with the Coast Guard, CAA, and the Air Weather Service for locating wind equipment, including new recorders, at about 40 points along the Gulf and Atlantic coasts representative of open-water conditions, to provide accurate surface wind data for the Hurricane Research Program. As a corollary of arrangements for installing this wind equipment along the Gulf and Atlantic coasts, conferences with CAA and the military regarding standard exposures for wind

equipment at airports resulted in the prospect that action to establish national standards for such exposures will be developed.

Rapid progress has been made in the construction of radiosonde inflation shelters in the United States, both at Weather Bureau points where new shelters were needed, and at stations transferred from the military. In a few cases, the transfer program has required that consolidated office and inflation shelter buildings be constructed so that the program can be carried on to maximum advantage.

All plans for instrumentation of the Tornado Research Network in northern Texas and southern Oklahoma have been made. Most of the instrumentation has been completed.



AN article by R. G. Weaver appearing in the January-February, 1956 issue of the Journal of American Society of Training Directors presents an interesting approach to employee-supervisor relationships:

"One of the most widely neglected areas of industrial education is employee understanding of supervisors. The average supervisor is bombarded with courses, speeches, and pamphlets all calculated to help him understand employees. The result is that the supervisor today understands employees better than ever. He knows that employees need recognition and praise; he knows that

employees have family and other troubles that reflect in their work. He knows that the employee needs to save face. In fact there is just about one remaining thing that the supervisor cannot understand about employees - Why, after all this effort on his part don't the employees understand him? ! . . .

For better understanding of the supervisor, the employee should remember:

1. He is 'people' too. He has feelings just as you have.
2. He has as much right to a nagging wife and other personal problems as you do.
3. He has a boss, too. You're not the only one who has to under-

stand a boss.

4. You have only one boss, but he may have twenty or thirty employees to understand. Meet him half-way.

5. Study your boss. Use the best approach on him. Maybe you can't change him, but you can find a way to work with him.

6. Don't bother him with unimportant matters. Do seek his help when you need it.

7. Listen when your boss talks. You'll understand him better and he'll like you more.

8. He really isn't a boss. He is trying to be a good supervisor.

9. Don't expect too much."



New Retirement Bill

THE new Civil Service retirement law which becomes effective October 1, 1956 increases substantially annuities and survivor benefits. Information in detail regarding the provisions of the new legislation should be available soon and will be forwarded to all stations. In the meantime, a few of the highlights may be of interest.

The increase in annuities will average from 20% to 25% higher and family survivorship benefits have been increased by as much as 150%.

Under the new law annuities will be computed on the bases of 1 1/2% for the first five years of service, 1 3/4% for the next five years and 2% on all years above 10. Employees in the very lowest salary brackets can still use the 1 percent-plus \$25 formula for any or all three computations if this formula is more generous. The average salary on which computations are based is the average annual salary for the highest five year period. Maximum annuity may not exceed 80% of average salary.

As mentioned before, family survivorship benefits are greatly increased. Should an employee die, his widow will receive one-half his earned annuity each year but not in excess of 40% of his salary at time of death. Each child under 18 will also receive \$600 annually. The total annual payment to the children in the family, however, may not exceed \$1800 or 40% of the employee's salary, whichever is the lesser. Should both parents die, payments to each child would be increased to \$720, with a \$2160 maximum annual payment in any one family.

For the first time provision is made for dependent husbands and children of women employees who die and who were divorced from their husbands.

Employees who retire for disability will receive either at least 40% of their average salary or the amount obtained after increasing their total service by the period between the date of their separation for disability and the date he or she attains the age of 60, whichever is less. In no event would disability retirement be less than that to which the employee was entitled on the basis of years of service.

The new legislation permits voluntary retirement after 30 years of service at age 55, or older, with a reduction of one percent in the annuity for each year under 60. This is a substantial decrease in the present 3 year percent reduction for each year under 60. Also employees involuntarily separated after age 55 with 20 years or more service will receive an annuity reduced by only 1 percent for each year under 60. If the latter employees were between ages 50 and 55, 2% would be deducted for each year under 55.

The regular retirement age for full annuities remains the same - age 60 after 30 years of service and 62 after 15 years of service. Age 70 remains the mandatory retirement age.

Under the new law an employee upon retirement can qualify the wife or husband, as the case may be, for a one-half survivorship annuity by taking a 2 1/2% deduction in the first \$2400 of his annual annuity and 10% on any amount above that. The present deduction is 5% on the first \$1500, and 10%

on the remainder.

The new law permits an employee to designate a survivor annuity in a lesser amount than one-half his earned annuity. In that event deductions are taken only from so much of the earned annuity as is necessary to provide for the designated survivor annuity.

To help meet the cost of the increased benefits provided by the new legislation employee contributions will be increased from 6 to 6 1/2% of the basic salary effective the first pay period beginning after September 30, 1956.

The President has authorized the extension of the employment of employees who reach the mandatory retirement age of 70 between July 31 and October 31 to October 31, to permit them to become eligible for retirement under the provisions of the new law.

Tornado Film Praised

A survey of Weather Bureau offices receiving prints of the film "Tornado" showed that an estimated audience of 30 million people viewed the film during the months of March and April, 1956. The showings and attendance varied from a relatively limited number in New England to numerous presentations with large audiences in the Mid-West. On February 27, 1956, the first public showing of the film was at Shreveport, Louisiana over Television Station KSLA with an estimated viewing audience of 160,000.

Response was unanimous that the film is excellent. Comments of MICs which accompanied the replies were helpful and most appreciated.

First Test in Project to Photograph Hurricanes from Rockets at an Elevation of Approximately 100 Miles

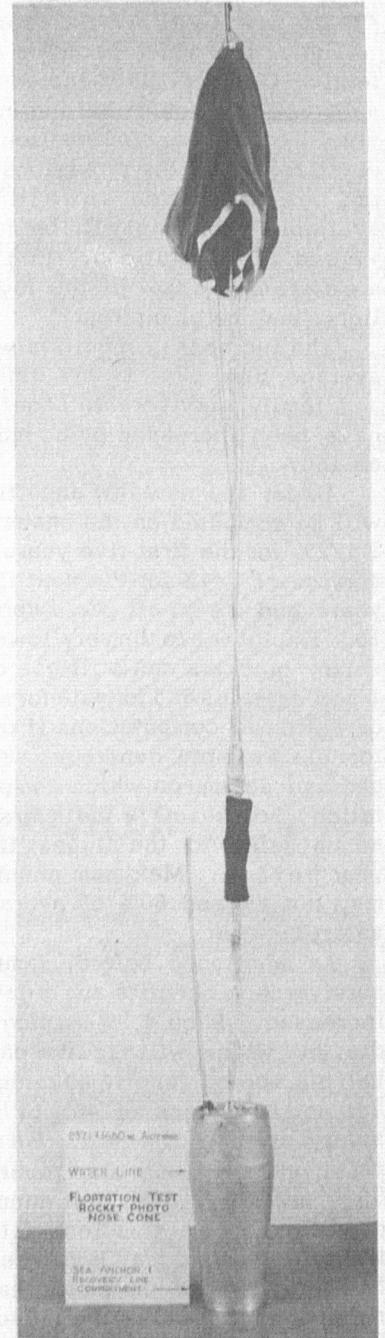
ONE phase of the National Hurricane Research Project's data collection program will be an attempt to obtain comprehensive photographs of the entire cloud system associated with hurricanes. This will be done by mounting cameras on two stage NIKE-CAJUN rockets which will carry them approximately to 100 miles altitude where they will obtain pictures covering a radius of approximately 800 miles.

Early in May the first dress rehearsal to test the recovery techniques for retrieving the rocket carrying cameras from the ocean were tried out off the coast of Virginia. For this test P4Y2 aircraft from Navy Research Laboratory dropped two rocket nose cones from an altitude of approximately 18,000 feet about 100 miles off the coast of Wallops Island. These two rocket nose cones parachuted to the sea surface where they floated until recovered by the destroyers of the U. S. Navy. A super constellation from the airborne early warning squadron at Patuxent river base, Maryland, acted as the communication link between the National Advisory Committee for Aeronautics of Wallops Island and the destroyers. For the purpose of this test, the USS ROSS was designated as a guard ship and the two nose cones were dropped within sight of this ship. The USS WREN, about 23 miles distant at the time of the first drop, acted as recovery ship and moved in through rough seas to recover the nose cones, depending only on the signals being emitted from the

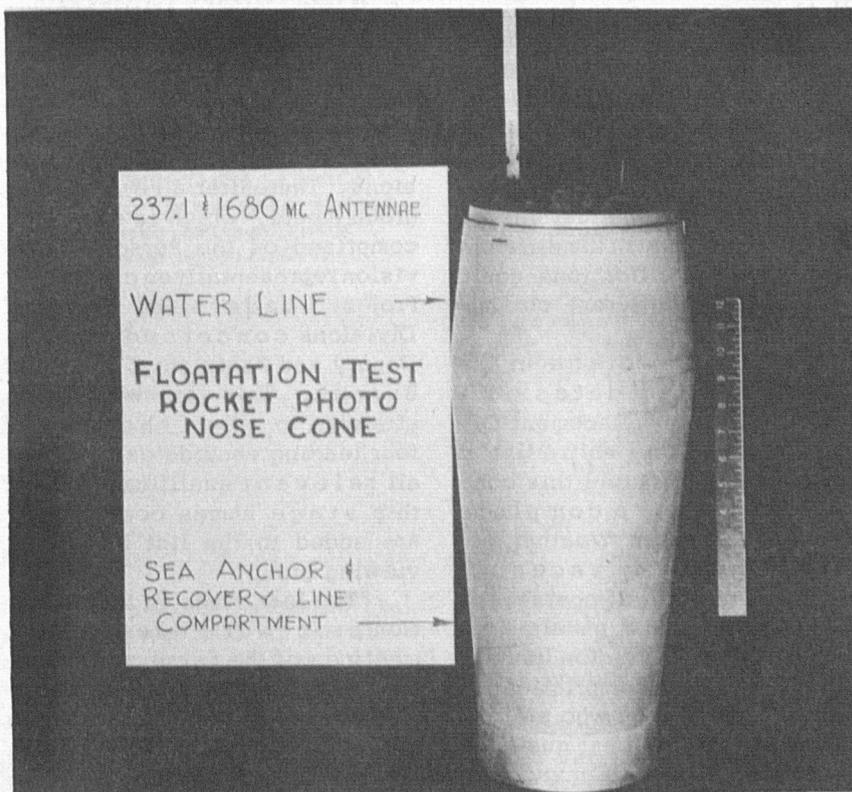
nose cones to guide her to their location.

During the test, Mr. Robert H. Simpson, Director, National Hurricane Research Project, was on board the super constellation and Mr. A. W. Youmans, Business Manager for the Project, was on board the USS WREN. The USS WREN departed from Norfolk harbor early in the morning of May 7. During the day of May 7, the destroyer took part in training maneuvers with other units of the fleet. These maneuvers were carried on in cloudy, foggy weather with visibility being, at times, reduced to partially zero. During the night a cold front passed and the morning of the eighth found the weather clear and the seas rough. The wind was northerly, approximately 30 knots, with seas ranging from 8 to 15 feet.

The rough seas were somewhat disconcerting to the civilian personnel on board the destroyer, who in addition to Mr. Youmans, included representatives from several other agencies who were interested either directly or indirectly with the Project. Several members of the group were observed leaning over the rail and were observed to react rather violently at the mention of food. The first nose cone was dropped from the P4Y2 plane at approximately 10:45 p.m. A momentary signal was received from the cone and then it abruptly ceased. However, a bearing was obtained from the first signal enabling the ship to proceed in the direction of the cone. As the ship approached



closer to the floating cone the signals were again picked up and the cone was later retrieved. It was discovered that a broken antennae had considerably weakened the signal which was being emitted. However, when the signal from the first cone was apparently lost the second cone was dropped at 11:21 p.m. from 15,000 feet over the same spot as the first. A strong signal was immediately received from the cone. The signal lasted until the cone hit the surface of the sea and then was received intermittently as the nose cone reached the tops of the waves. The ship proceeded toward the cone homing on the signals being emitted. The cone was recovered at 12:30 a.m. just an hour and nine minutes after being dropped. This test proved conclusively that the floating rocket nose cones equipped with the cameras can be recovered from moderate to rough seas without too much difficulty. The second test, which consisted of an actual firing of one of the rockets equipped with the cam-



eras, took place late in July. Results of this and additional

tests will be reported at a later date.

Visiting Officials Attend Personnel Placement and Promotions Meeting

ABSTRACT of opening remarks by Dr. F. W. Reichelderfer at a meeting of the Personnel Placement and Promotions Board attended by visiting officials held May 17, 1956:

"In any organization people are the most important consideration. For many years the Central Office has regarded the placement and promotion function as a most important responsibility. The Weather Bureau's personnel, its officials, its supervisors all along the line, and its new employees represent the greatest potential for accomplishing our mission in public service. Success in personnel selection and placement

including equitable action fair to all employees in placement and promotion, is essential to the success of the Weather Bureau, and is the first and most important step in solving our basic problems.

"Several of our senior Central Office officials have specialized in the study of this important subject. We have always tried to employ the most modern and most useful practices and techniques for selecting and promoting personnel. Over the years, various methods recommended by leading authorities in personnel administration have been used.

"Throughout the past 15 years,

the senior officials responsible for personnel administration have given constant attention to developments in personnel administration. They have tried to carry out the selection and promotion functions in a completely fair and unbiased manner, free from all personal influences and political pressures that had nothing to do with the qualifications of the candidate, and based on a candidate's over-all merits in comparison with the qualifications of other candidates.

"The meeting we are now attending is the final stage in the several steps taken in selecting the best all-round candidates to

fill the vacancies at hand. At best, personnel selection methods are imperfect. In the last analysis, it is almost impossible to see and evaluate all qualifications of the individual. The problem, as you know, is complicated by changes in the qualifications of the individual, and in the different ways these qualifications could be used under different circumstances.

"As the first stage in the selection of candidates to fill new vacancies the Placement Officer considers the entire list of eligibles. In principle this consideration means a complete search of the entire Weather Bureau roster for every vacancy. In actual practice, of course, the placement lists and panels kept by the Personnel Division usually permit the quick compilation of 10 to 20 candidates who are believed to be the best qualified persons for the particular vacancy. In effect this procedure actually constitutes, within practical limits, a review of the entire roster whenever a vacancy is to be filled.

"Placement Office specialists then examine the qualifications of each candidate in detail so that the Personnel Officer and other members of his staff concerned can review and comment. At some stage in the placement or promotion procedure the recommendations of the immediate supervisor and the MIC are obtained, and also the recommendations of the Regional Administrative Officer and the Chief District Meteorologist if they are directly or indirectly concerned in the particular case.

"Recommendations of qualified men to fill the vacancy are welcome at all stages from anybody within the Weather Bureau.

"After the Personnel Division has completed its work on the list

of eligibles, other administrative officials of the Central Office with special knowledge of possible candidates or job requirements are sometimes brought into the initial Personnel Division discussions. Thereafter a reviewing group meets, which is usually comprised of the Personnel Division representatives concerned, Project Leaders and Heads of Divisions concerned, and the Deputy and Assistant Chiefs of Bureau. This reviewing group attempts to select the three or four leading candidates based on all relevant qualifications. At this stage names occasionally are added to the list by the reviewing group.

"The last stage in the selection procedure takes place at meetings of the Personnel Placement and Promotion Board, such as the meeting you are attending today. The composition of the Board varies somewhat from time to time depending upon what offices are directly concerned in the cases at hand, but the policy is to include all who are directly concerned and available in Washington. Board decisions are reached, as they will be today, by open discussion and oral vote. Usually there is unanimous agreement on the candidate selected. In a few cases the discussion may raise points that cannot be resolved until a later meeting.

"In sizing up the proceedings today, visitors should not overlook the much more extensive work and review that has been carried on in the preceding steps. In general, we like to regard placement and promotion meetings as open sessions and anyone who is directly interested may attend. However, experience has shown that decisions on selections sometimes can be reached only after discussing detailed personal qualifications. Some members of

the Board may be reluctant to discuss their views frankly if they think other members attending may repeat expressed views after the meeting to people not present. For these and other reasons all present at Board meetings are asked to regard comments on all candidates as confidential information, irrespective of whether the comments are favorable or unfavorable.

"An attempt is made to consider every candidate as a new applicant, whose qualifications are to be reviewed anew, without prejudice resulting from previous discussions at Board meetings. Evidence of strong personal prejudice for or against a candidate would make a member of the Board ineligible for voting on that candidate.

"The Board is aware that some of the placements and promotions are misunderstood by field personnel, and in a few cases even viewed with suspicion. Inevitably there are promotions and placements that turn out to be poor selections, but I think these are relatively few. I can say without reservation that I have never attended a placement conference in which we did not aim to select the best qualified candidate without any prejudice or favoritism whatsoever.

"I believe that the decisions of the Board have been made with every purpose (a) of serving the best interests of the public; (b) of being fair to the employee; and (c) of advancing the best in meteorological services by the Weather Bureau. I personally would welcome any suggestions employees may have that would contribute to still further improvement in the policies and procedures now being used in the promotion and placement of our personnel."

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Sixty-fifth Anniversary



HEADQUARTERS
AIR WEATHER SERVICE
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

26 JUN 1956

Dr. F. W. Reichelderfer
Chief, U. S. Weather Bureau
Department of Commerce
24th & M Streets, N. W.
Washington 25, D. C.

Dear Dr. Reichelderfer:

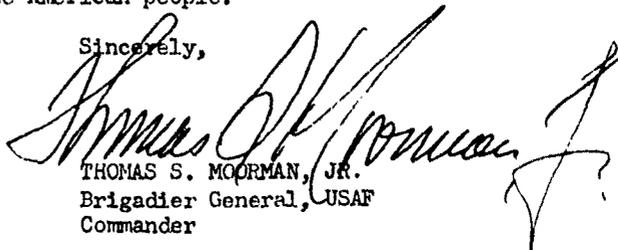
It is with sincere personal pleasure that I take this opportunity, on my own behalf and that of the Air Weather Service, to extend to you and the personnel of the United States Weather Bureau our very best wishes on the occasion of the sixty-fifth anniversary of the Bureau.

As a younger meteorological agency, the Air Weather Service has always been and will continue to be grateful to the Weather Bureau for the trails you have blazed before us and proud of the cooperative association we have shared throughout the years.

Little need be said with regard to the importance of our mutual mission. The strong feelings of regard and appreciation shared by the members of our sister organizations serve as a tribute to and an example of good intergovernmental agency cooperation.

I am therefore happy for this occasion to emphasize the continuing success of our association and to wish for you and all members of your Bureau all success as you mark another milestone in the years of service to the American people.

Sincerely,



THOMAS S. MOORMAN, JR.
Brigadier General, USAF
Commander

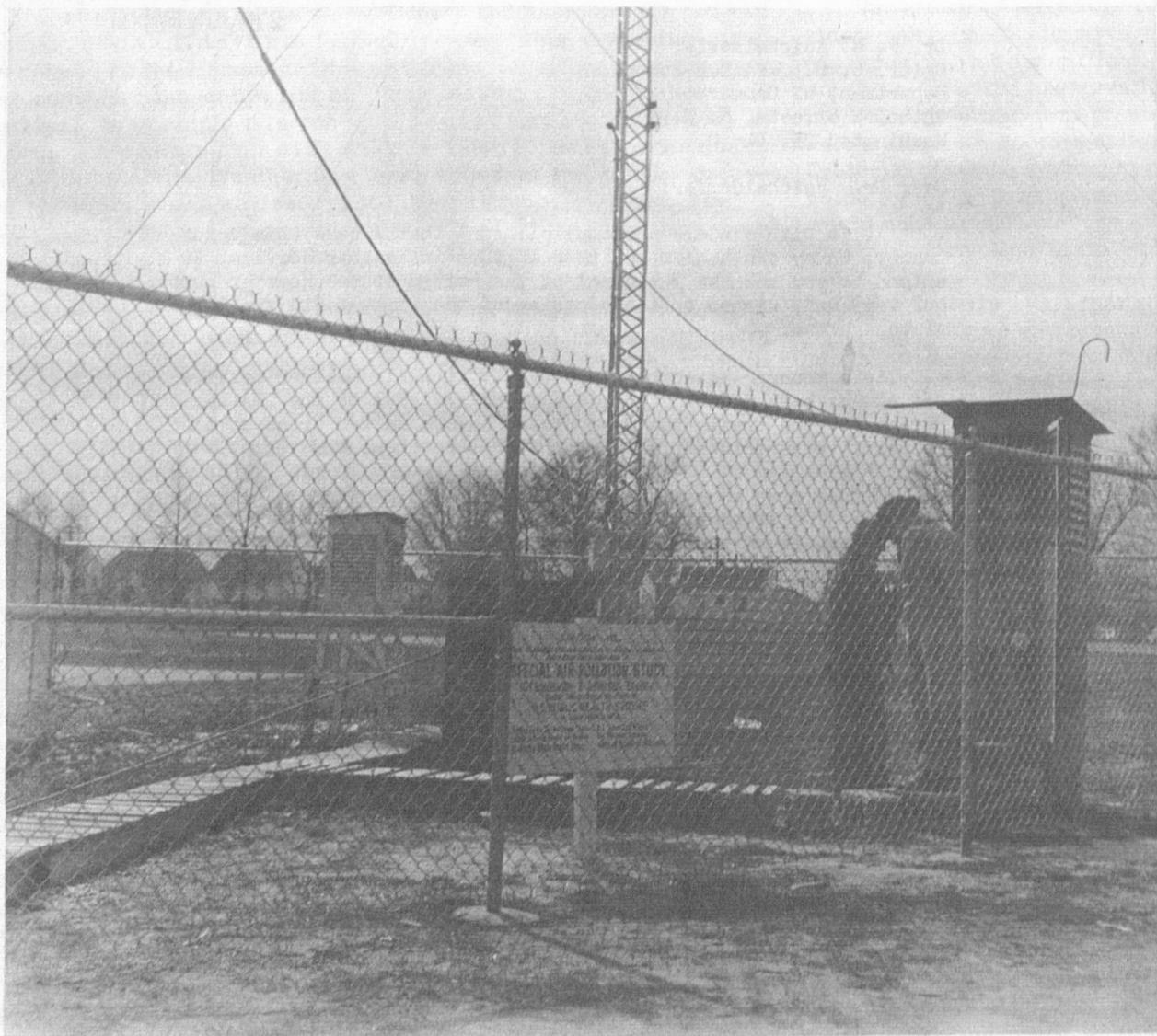
A Breath of Fresh Air

WE wonder how often you have remarked, "I think I'll step out and get a breath of fresh air." Such a remark tacitly assumes that the air we breathe is actually going to be fresh. It has been long recognized that this may not always be the case. As early as

1303 a decree was passed in England forbidding the use of bituminous coal because it polluted the air.

With the increasing industrialization of the last century, more and more attention has been focused on the material released

into the atmosphere. Much work has been done in the United States in cities such as St. Louis and Pittsburgh. The pollution problem at Los Angeles was for a while a favorite target of comedians' jokes although the seriousness of the problem has re-



Photos show the combined meteorological and air sampling station in Leland-Taylor Park in Louisville, Ky.

duced the number of jokes that are being made about the California smog.

On July 14, 1955, the President approved Public Law 159 to provide research and technical assistance relating to air pollution control. This law authorizes a five-year program of research and technical assistance into the factors affecting air pollution.

The Department of Health, Education, and Welfare, through the Public Health Service, is empowered to call upon other federal agencies to assist it in research on air pollution. It was, therefore, only natural that the Weather Bureau was called upon to provide assistance and information and to develop research programs for the study of the dispersal of air pol-

lution. The Weather Bureau has set up a research station at the Robert A. Taft Sanitary Engineering Center of the Public Health Service at Cincinnati, Ohio. This station is engaged in research to relate the various meteorological factors with levels of air pollution and to study the overall problem of the air pollution of various sections of the United States. Work is going forward on development of criteria that describe conditions favorable for high levels of air pollution, with a view to forecast applications. The Office of Climatology is also studying the relation of standard meteorological variables to air pollution in order that more benefit can be derived for conventional meteorological records in the study of urban air pollution.

When a special urban air pollution study was established by the Public Health Service at Louisville, Kentucky, the Weather Bureau simultaneously established a research station to work with this group. Wind, temperature, humidity, and other recording equipment is in operation at several locations about the city. A downtown television tower has been equipped with wind-measuring instruments at the 525-foot level, and will have temperature-measuring equipment at this and lower levels. It is expected that studies of a similar nature will be initiated in other urban areas.

Recognizing that one of the areas of greatest interest is the West Coast, the Weather Bureau has set up a research station in Berkeley, California, to work with the California Department of Public Health and the Public Health Service in evaluation of air pollution problems. Of particular interest is the analysis of the natural and added constituents of the atmosphere in that area. A large number of air sampling observations are being taken to determine, among other things,

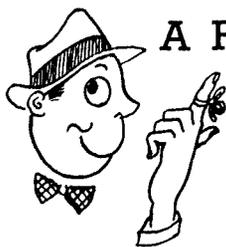


ozone, oxides of nitrogen, and particulate matter in the atmosphere. These measurements are then correlated with meteorological factors and derived trajectories to identify the source regions for the various contaminants.

In common with many other programs, this one has felt the current shortage of trained meteorological personnel. Positions at GS-5 through GS-11 are available in research at the various stations mentioned. Employees interested in such assignments should write to the Division of Personnel Management through their Meteorologist in Charge. Further, meteorologists not now employed by the Weather Bureau but interested in work of this nature should be encouraged to write to the Chief of Bureau stating their interests.

Maintenance of the purity of the atmosphere is becoming one of the most important problems of our present day industrialized world. When we speak of air

pollution, we include both natural and man-made contaminants. There is little that man can do about the contaminants produced by volcanoes, salt spray, etc. On the other hand, much can be done to reduce contaminants released in combustion of fuel, atomic energy operations, erosion of dust from arid areas, etc. The great smog episodes of Donora, Meuse Valley, and London have shown that the release of man-made material in the atmosphere must not be permitted to overburden the air in local areas. It is the responsibility of the meteorologist to define the dilution capacity of the atmosphere under various conditions. The engineer, hygienist, physician, and legislator can then undertake to assure that the output, from whatever source, will not exceed the capacity of the atmosphere. Of all the natural resources upon which man depends for his very life, pure air to breathe is certainly one of the most vital.



A Reminder!

AN employee may apply for cancellation of the waiver of life insurance previously filed by him through executing SF-51, Request for Insurance. If he meets the requirements stated below, he will acquire coverage:

1. He is under age 50 on the date he requests insurance.
2. At least one year has elapsed between the effective date of his last waiver and the date of his request for insurance.
3. He submits satisfactory

medical evidence of insurability to the Office of Federal Employees' Group Life Insurance.

Any Regional employee who is eligible for cancellation should so advise the appropriate Regional Administrative Office.

Any Central Office, overseas, Washington National Airport, Arctic employees and employees in Grades GS-5 and above in NWRC, Asheville, N. C. should advise Personnel Operations of the desire to cancel the waiver.

What is a WB Patron?

R. C. COUNTS, JR., MIC at San Francisco, recently sent us the following creed. It is prepared and distributed by the San Francisco Post Office as a part of the public relations training given new employees. The seven points apply equally well to Weather Bureau employees and patrons, or for that matter to anyone engaged in public service work.

What is a Postal Patron?

1. A postal patron is the most important person ever in this office - in person - by mail - or by telephone.

2. A patron is not dependent on us - we are dependent on him.

3. A patron is not an interruption of our work - he is the purpose of it. We are not doing him a favor by serving him - he is doing us a favor by giving us the opportunity to do so.

4. A patron is not an outsider of our business - he is part of it.

5. A patron is not cold statistics - he is flesh and blood human, with feelings and emotions like your own and with biases and prejudices.

6. A patron is not someone to argue or match wits with - no one ever won an argument with a customer.

7. A patron is someone who brings us his wants - it is our job to handle them profitably - to him and to ourselves.

(The above should be the creed of every postal employee who comes into contact with the public.)

Are you sending your suggestions through your supervisors and the Regional Administrative Office? Supervisor endorsements may help get your ideas adopted.

WB Announces New Radar Procurement

AT a press conference in the Central Office on July 31, Mr. D. M. Little, Deputy Chief of the Weather Bureau, and officials of the Raytheon Manufacturing Company, Waltham, Mass., met with representatives of the press to announce that the Weather Bureau had awarded a contract totaling \$3,800,000 to the Raytheon Company under which 39 new-type weather radar sets would be built. Eight of these are being purchased for the Bureau of Aeronautics of the U.S. Navy and will be used by that agency at Naval installations in the U.S. and abroad. Delivery is scheduled to begin early in 1958.

Approximately 15 of the units will be installed along the Gulf and Atlantic Coasts for hurricane detection and tracking and for general weather search. Some of the remainder will be used in major metropolitan areas that are subject to severe local storms. The others will be distributed east of the Rockies to improve the present radar coverage. One of the units is planned for mountain-top remote-control operation at some point in the Appalachian mountains where flash floods and water supply are major problems.

The new equipment will be considerably more flexible in installation than the APS-2 radar in that the operating console can be separated by as much as 2000 feet from the antenna and associated components. This will allow much better siting than has been possible with the APS-2 equipment where the maximum allowable distance is 80 feet. Owing to its high cost the new equipment will be installed only at places where a virtually "perfect" exposure is possible, i.e.,

no obstruction above the antenna in any direction. Some of the features of the new equipment are as follows:

1. Wavelength 10 cm; peak power output 500 kw; pulse lengths 1/2 and 4 microseconds.

2. Presentation -- 12-inch PPI, 7-inch RHI, 7-inch A and R.

3. Maximum range -- PPI, 250 nautical miles; RHI, 100 miles and 70,000 feet of height; A, 250 miles; R, any 5 or 25 mile portion of the A scope can be selected and expanded to the full width of the A scope. The PPI scope will be provided with optional off-centering.

4. Sensitivity time control (has the effect of making storms of equal intensity appear of equal brilliance on the PPI scope regardless of range -- important for rainfall and intensity measurements) and calibrated step receiver gain control.

5. Two IF amplifiers will be provided, one having linear and the other logarithmic gain characteristics. The latter is provided to minimize "saturation" of the scopes with echoes of great intensity.

6. A 7-inch PPI repeater will be provided with each radar for photographic purposes. This repeater will have independent range, focus, and video and receiver gain controls, and can be operated on one of the IF amplifiers while the master console is operated on the other, or both can be operated on the same IF amplifier at the same time. This feature has the effect of allowing continuous photography for operations and research without changing either the video or receiver gain of the scope being photographed while normal observations are

taken at the console. The repeater can be installed up to 2000 feet from the console.

7. Additional repeaters can be installed on the equipment to serve additional offices but such are not being purchased with the equipment. We expect to be able to obtain suitable repeaters for this purpose from stocks excess to the needs of the Defense Department.

8. The repeater scope for photography purposes will have arrayed around it various devices which will automatically identify the pictures without attention by the operator. A 24-hour electric clock, veeder counter to indicate picture frame number, devices for indicating antenna tilt, long or short-pulse, receiver gain setting, and to indicate which IF amplifier is in use, will be included in the field of view of the camera. Range mark display will be unique for each range so no identification of range will be required.

9. The antenna will be a 12 foot dish operated in a radome. The transmitter and local oscillator assemblies will be mounted on the antenna, thus reducing the length of the RF transmission line to a minimum and eliminating the need of a rotating joint in the transmission line. The antenna control mechanism, modulators, major power supply, etc., will be in a small house not more than 100 feet from the antenna. Width of the conical beam will be about 1.8°.

10. The equipment will be provided with numerous meters to indicate performance of various components, and test points conveniently located for making measurements. In addition, spe-

cial equipment for on station testing, such as noise generator, synchroscope and standing-wave slotted line will be provided.

11. The equipment will operate on 208 - 220 volts, 50 - 60 cycles, three-phase power. This will obviate the use of a motor

generator as is necessary with the APS-2.

Instructions are now being prepared to the Regional Administrative Offices for site surveys for the equipment. Specific places for the installations will not be announced until the site surveys

have been completed and analyzed. Engineering work is now in progress on the development of remote repeating systems that will enable us to provide radar information to several Weather Bureau offices in a metropolitan area from one well located radar site.

On Answering Station Telephones

FREQUENTLY Central Office representatives upon visiting stations are asked what should be done with respect to answering telephones when there are other priority tasks to be performed at the same time. This is particularly true of stations having only one employee on duty for extended periods. In general, the following is about as close as one could approach giving a uniformly satisfactory answer as it may apply from station to station and from circumstance to circumstance.

There is no single answer applicable to the question of answering the telephone(s) at a busy WB station - the circumstances vary too much from place to place

and from time to time. Obviously, the telephone should be answered promptly whenever possible. Frequently, however, priority work on the station may interfere and make it impracticable to do so. If the work at hand is sufficiently compelling - completing and filing a special observation, standing by to go on the air with a radio weather script, completing the local forecast at the last minute before deadline, etc. - the telephone may have to wait until the task is complete. The duty employee might ask himself at such a time: "Does the deadline work I am doing now affect a larger or more significant service area than the answering of the telephone

might entail and, if so, would answering this call prevent my accomplishing the task at hand?" If the answer to both of these questions is "yes", he should not answer the telephone (nor take it off the hook); if "no" he should answer it.

On the other hand, never forget that every time a ringing phone goes unanswered in a public service office like a WBO, the taxpayer at the other end of the line is likely to be saying to himself: "Those fellows are not on the job" and you may be adding a public relations problem to your work-load.

There is no easy solution.



Helena National Forest Spray Project

forecasts were for aerial spraying of insecticides for the control of spruce budworms. The requirements for spraying were rather exacting and included the following conditions. Spraying could be done only with winds of 6 mph or less, temperature under 68°F. and dry foliage on the trees.

The preliminary forecast was issued at 10:00 a.m. for the period of 4:00 a.m. to 9:00 a.m. of the following day. Just prior to midnight, the FAWS unit furnished Helena with a general outlook for the forecast period. A final discussion of weather conditions for the ensuing day's operations was held with the Forest Service rep-

resentative at about 3:30 a.m.

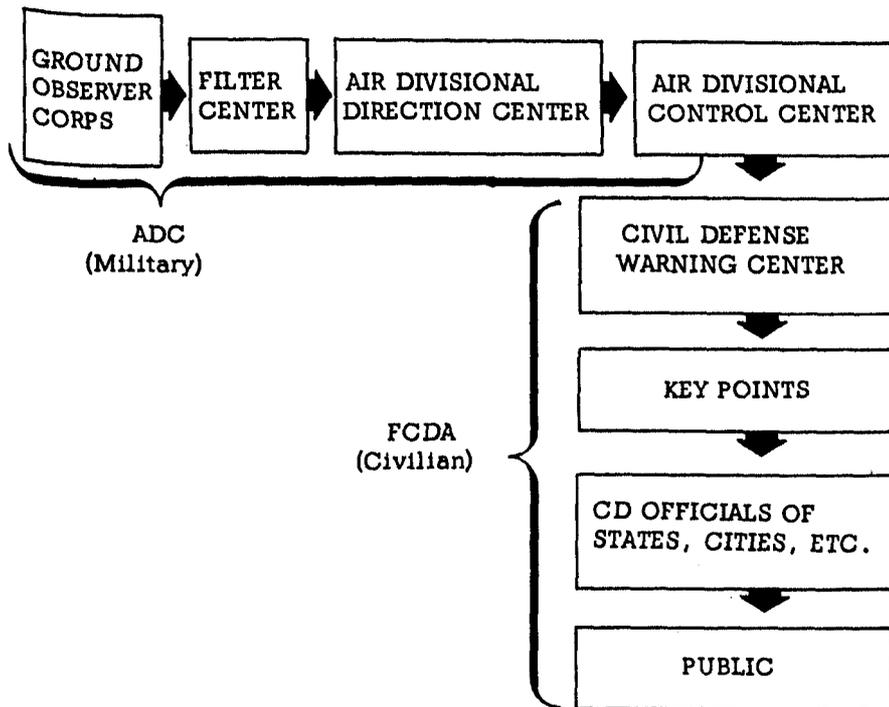
Approximately 260,000 acres of infested timber were sprayed at a cost of about \$260,000. According to Mr. R. A. Dightman, MIC at Helena, the planning of operations a day in advance made possible by the specialized forecasts enabled the U. S. Forest Service spray program to operate efficiently at actual savings of about \$25,000 due to reduction in standby time and overtime, elimination of flights under adverse conditions, and elimination of duplication. Preliminary studies by field entomologists indicate a 98% kill of the spruce budworms as a result of the project.

WBAS, Helena, Montana, assisted by the Great Falls FAWS Unit, furnished an interesting and challenging series of forecasts to the Helena National Forest Supervisor during the period of June 22 to July 9, 1956. The

Federal Civil Air Defense Key Points in Warning Dissemination

ONE hundred and forty-eight Weather Bureau Offices answered the questionnaire on the "Use of Civil Air Defense Warning Key Points for Warning Dissemination" (0-5.34 memo dated April 13, 1956). Thirty-one of the offices reported that they were utilizing thirty-eight Civil Air Defense Warning Key Points.

The replies disclosed that there is some confusion of the functions of the Ground Observer Corps (civilian volunteers) and Key Points (Federal Civil Air Defense personnel). The following flow chart shows the movement of information in the Civil Air Defense organization:



The duty of the Ground Observer Corps is to relay information into the organization; whereas, in contrast, the responsibility of the Key Point is to disseminate warnings of either approaching en-

emy aircraft or of natural disasters. The functions of the Key Points readily lend themselves as an additional channel for the distribution of severe weather warnings.

WB Operated TVOR Provides Useful Service

UNDER a cooperative arrangement with the Minnesota Aeronautics Commission the WBAS at St. Cloud, Minnesota handles

air-ground communications in connection with the Terminal Omni-range (TVOR) recently installed there by the aeronautics

commission. Although this TVOR has been in operation only a short time it already has served a very useful purpose.

On June 18 a radio weather advisory from WBAS St. Cloud to a VFR pilot en route to Minneapolis was instrumental in averting a dangerous situation when the weather ahead began to deteriorate rapidly. The pilot made a safe landing at St. Cloud minutes before the weather closed down.

St. Cloud is one of several Weather Bureau stations that provides weather information directly to pilots via air-ground communications. Other stations in this category are Santa Maria, California; Stampede Pass, Washington; Victoria, Texas; Norfolk, Nebraska; and Meacham, Oregon.

Veteran Weatherman

THE Meteorologist in Charge of the Madison, Wisconsin, station forwarded a newspaper clipping which reads as follows:

"Rupert Batz, 65, Sun Prairie, 'dean' of the Madison meteorology team at the municipal airport, today begins his 27th year of service.

"Batz is particularly proud of his 26-year record of never missing a day of work because of illness or any other cause.

"Batz has spent his entire career as a 'weatherman' in Madison. He began work as a meteorologist on June 11, 1930. Batz is a veteran of World War I and was a vice-president of the former Farmers and Merchants bank of Sun Prairie."

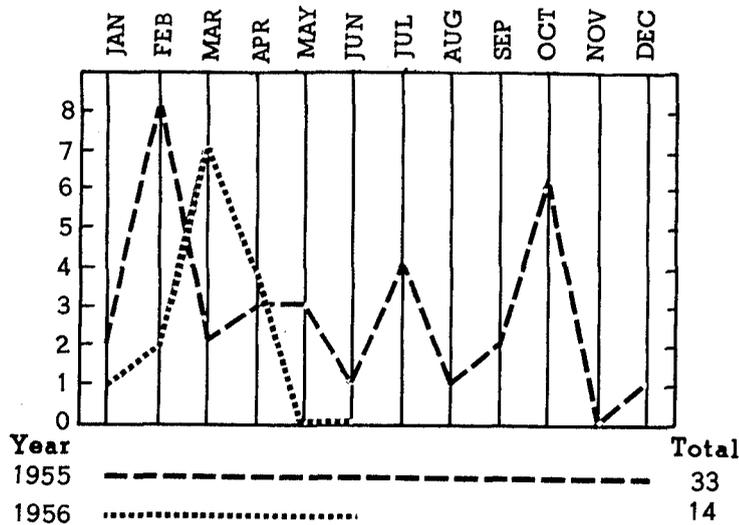
The MIC added: "Mr. Rupert Batz has reached another milestone in his WB career. His stamina and vitality amaze all of us. We wonder again if any other WB employee can match his 26-year record of never missing a day's work because of illness or other cause."



"Lost Time" Accidents

OUR record of lost time accidents as reported on SF 92, "Supervisor's Report of Accidents" indicates an improvement during the first six months of 1956 as compared with the same period in 1955. A few more no-lost-time-accident months like May and June

of 1956 will put the Weather Bureau in the running for the Department's annual Safety Award. But, lest we become over confident, note that there were more accidents in the last half of 1955 than in the first six months. Let's see if we can change that this year.



Long Serving Barometer

S. E. DECKER, MIC at Escanaba, Michigan, who believes the history of Mercurial Barometer No. 575 worthy of mention, sent in the following:

"The item in "Topics" for June, 1956 concerning the long period of service of the Huron, S. D. triple register, prompts me to call attention to Mercurial Barometer No. 575 at Escanaba. This in-

strument reported for duty December 10, 1898, a few weeks after the station was reopened. (The original Signal Service Station opened May 19, 1871 and was closed March 29, 1888.) No. 575 was listed as Extra from December 10, 1898 until March 4, 1918 when it was promoted to Station Barometer. It served actively in this capacity until August 3, 1954

when it was reduced to Extra again. This was not because No. 575 had become unserviceable but rather due to replacement of the extra instrument by a newer, cleaner and more easily read barometer at a time when the cistern of 575 had become dirty, making it difficult to set. So the new instrument was given the top spot, but No. 575 is still on hand to take over as the station instrument in case the newer model should falter.

"During its period of service No. 575 has seen the office moved 5 times, but except in 1936-37 it has hung in almost the same spot from 1910 down to the present time. It has served under 8 different MICs, one of whom went on to become a Regional Director (V. E. Jakl), and was read by numerous assistants, two of whom (at least) later served as District Forecasters.

"Unfortunately we have no record as to whether 575 had prior service at some other station before its assignment at Escanaba."

New River District

IN July the eighty-ninth River District was established in the Bureau's River and Flood Forecasting and Warning Service. The new River District Office is WBAS Buffalo, New York, and its District is the Great Lakes drainage area from, but not including, the Genesee River Basin westward to the New York-Pennsylvania State Line.

Previously, this area was not included in any river district, but WBAS, Buffalo, under its county responsibility, creditably furnished flood warnings to the affected communities. With the increased demand for this service, official establishment of the Buffalo River District resulted.

Superior Accomplishment Awards

Edward M. Behrenbrinker

EDWARD M. BEHRENBRINKER, Aviation Forecaster at WBAS International Falls, was given a Superior Accomplishment Award of \$200 for highly competent performance during the past five years. Mr. Behrenbrinker is considered a key man at his station because of the speed and accuracy with which he does his work, his willingness to help others, and his thorough knowledge of observational work. He is also relied on by the staff and the electronics technician for routine and emergency maintenance; and because of his patience and tact, he has considerably influenced the success of the station's training program for new personnel. Mr. Behrenbrinker's integrity, cheerfulness, technical knowledge, and ability to make objective decisions in personnel matters, have won for him the respect of his associates and have contributed greatly to the smooth functioning of his station.

Walter R. Boehner

WALTER R. BOEHNER, Technical Assistant at WBAS La Guardia received a Superior Accomplishment Award of \$200 for his highly competent work during the past several years. Mr. Boehner's efforts are constantly directed to the best interest of the Bureau. He applies himself assiduously to the improvement of station service programs and the maintenance of a high level of cooperation and friendly relations with other agencies and organizations. His drive, zest and zeal to perform all work possible in the most efficient manner and his extreme loyalty to the Bureau are persuasive influences in the maintenance of cooperation, efficiency and morale within the organization. Mr.

Boehner has constantly extended himself beyond the requirements of his position and has participated actively in the development, implementation and adjustments of service programs. In negotiating local arrangements for supplies and services he has saved the Bureau a substantial amount of money over the years.

Earl W. Breazeale

EARL W. BREAZEALE, Administrative Assistant (Observer in Charge) at Swan Island (now at WBAS Athens, Ga.) was given a Superior Accomplishment Award of \$200 for his competence, loyalty, and devotion to duty during and immediately following the passage of hurricane "Janet" over Swan Island on September 27, 1955. The CAA commended him for his assistance to the CAA personnel in restoring communications so that the critically needed observational program could be resumed as quickly as possible. By remaining on the island and assisting with salvage operations until they were completed and replacements had arrived for other personnel who had been evacuated immediately after the storm, Mr. Breazeale kept the observational program going and prevented the possible loss of \$10,000 worth of Weather Bureau equipment.

Grace W. Carter

GRACE W. CARTER, Traffic Officer in the Fiscal Section of the Central Office, was given a Superior Accomplishment Award of \$200 for outstanding performance during 1954-55. Because of her extensive experience and willingness to go beyond the normal requirements of her job in dealing with the individual travel problems presented to her, she has

earned the respect and gratitude of the many Bureau employees who have benefited from her efforts in their behalf. The increasing number of projects, meetings, etc., involving travel outside the United States, the enactment of new public laws related to travel, and the many changes in travel regulations, have posed travel problems which have been handled with outstanding efficiency and dispatch. Miss Carter has been complimented many times personally for her performance, and has been commended by Regional Offices for her efficiency and courtesy in handling travel problems for employees in their areas.

Edward J. Fencil

EDWARD J. FENCIL, Shipboard Observational Supervisor, Atlantic Weather Project was given a Superior Accomplishment Award of \$150 for modifying the design and construction of the helium system aboard weather ships. Mr. Fencil's improvement is expected to save the Bureau at least \$2000 annually, since the Atlantic Project ships will use about 3 tanks of helium less per patrol than was possible with the old system. The same system has also been approved for Pacific Project vessels and, when installed, will result in additional annual dollar savings from reduced helium consumption.

Esther R. Foster

ESTHER R. FOSTER, secretary in the Field Services section, WBRAO, Anchorage, Alaska was given a Superior Accomplishment Award of \$100 for outstanding performance. Her work over the years has been exceptional and she has consistently demonstrated that she can handle extra assignments with little instruction or guidance.

Employee Suggestion Box

Although she began work in the Field Services Section with almost no previous knowledge of the forms and procedures used in this type of work, she was soon preparing and distributing all routine reports without assistance or supervision. She materially assisted in the development of an improved filing system for station records and in the establishment of a "reminder" checklist for notifying field stations of impending actions. Before the end of her first year with the section, she was composing letters to the various Alaskan stations and to the Central Office after being given only a general idea of the tone and purpose of the letter. She displays an excellent knowledge of information on files in her office and can readily produce information on short notice. Mrs. Foster consistently shows unusual interest in her work, is dependable, cheerful and cooperative at all times, and plans her work to make full use of all available time.

Alfred H. Geddes

ALFRED H. GEDDES, MIC at Nantucket was given a Superior Accomplishment Award of \$30 for analyzing a helium transportation problem and working out an improved plan which resulted in an annual saving of at least \$500. As a result of Mr. Geddes' action, helium cylinders are now handled all the way by one company between Boston and Nantucket at a substantial reduction in transportation cost.

Leroy Hafer

LEROY HAFER, Observational Specialist in the Observations and Station Facilities Division at the Central Office, was given a Superior Accomplishment Award of \$200 for his outstanding contribution to the solving of many new problems arising out of the transition from optical to electronic
(Cont'd. on page 135)

Robert J. Ahrens
Milwaukee, Wisconsin

\$15 A suggestion which led to adoption of the practice of issuing a bulletin giving full details of the WB scholarship program and containing information such as policy on leave, salary while attending school, travel of dependents, etc, whenever a scholarship is announced. This will insure up-to-date information being available for the guidance of employees who are considering applying or have been selected for scholarships.

Miss June E. Brice
RO, Salt Lake City

\$15 A suggestion which led to revision of WB Form 255-3, a form letter used in connection with auditing of invoices and vouchers. Unnecessary items have been eliminated, new items added and the form rearranged so that it now fits on one page.

Ivan W. Brunk
Chicago, Illinois

\$15 Advise all stations of the availability of reperforators. Experience has proven the great value of the local teletypewriter circuit in disseminating weather data, and knowing that reperforators are available should encourage establishment of additional circuits.

Mrs. Ernestine J. Campbell
NWAC, Washington

\$15 Use plexiglass instead of film overlays for encoding charts at the NWAC, resulting in a savings in time and improved finished product.

Vincent J. Creasi
Office of Climatology,
Washington
(Formerly NWAC)

\$15 Photostat operators clean acetates rather than having the meteorologists working with these acetates perform this task.

John L. DuPree
RO, New York

\$20 A suggestion which led to the printing of WB Form 038-6, "Publication Transmittal Slip." The new form will result in a savings in time in answering requests for climatological data at field stations and in the Central Office.

Roger S. Frantz
Hartford, Conn.
(Formerly Buffalo) \$20 Transmit winds aloft maps on facsimile circuits so that levels can be displayed in ascending order in a vertical arrangement. This will facilitate use of the material by pilots and briefers.

John C. Hagan
Hydrologic Services Div.
Washington
(Formerly Brownsville) \$15 Recruiting personnel make certain prospective employees are aware of "pay lag" in receipt of first pay check before leaving for assignment to avoid embarrassment to the new employee or his station.

John C. Hagan
Hydrologic Services Div.
Washington
(Formerly Brownsville) \$15 All supervisory offices adopt the practice followed by the CO and most of the RO's for the past several years whereby file numbers are placed on all multiple address issuances to facilitate filing and reference work.

Thomas E. Hostrander
Baltimore, Maryland \$20 Gum WB Form 452.1-1 on the edge to facilitate its use as a mailing label. This will result in an improved and more convenient method for affixing labels to the cans of calcium chloride for mailing.

Jack L. Hudnall
West Palm Beach, Florida \$25 Transmit all hurricane advisories, warnings and bulletins on Circuit 7021 twice. This second run will speed up final dissemination at the receiving station by providing an extra copy so that two employees can distribute the warning. The rerun will also serve as a confirmation copy and eliminate numerous requests for repeats when garbling occurs.

Miss Rose Kobler
RO, New York \$25 Procure for use in the Central Office and the RO's, SF-1166 series, "Voucher for Schedule of Payments," in snap-out assembly with carbon interleaved. This is a marked improvement over the use of the single sheets which required inserting carbons and lining up the forms before scheduling.

James E. Lunney
Shreveport, Louisiana \$25 Publish a trouble shooting radar check list for use of station personnel in performing preventive and corrective maintenance.

(Awards Cont'd.)
methods of wind finding. For example, Mr. Hafer developed devices for computing the direction and speed of winds aloft under conditions of exceptional height that recently became common owing to improved equipment. These conditions also required that a method be worked out to correct winds-aloft data for the effect of curvature of the earth. Mr. Hafer contributed significantly to the solution of the problem involved. As chairman of special committees for upper-air procedures, such as one for the definition of the tropopause, he has greatly contributed to the adoption of a number of procedures which have either increased the accuracy of the methods of obtaining upper-air data or simplified the operational procedures. Mr. Hafer also played an important part in preparing the instructions and technical aids required for the computation of Civil Defense fallout winds. He has since served as a consultant and active participant in the program.

John Ward

JOHN WARD of WBAS Fort Worth was given a Superior Accomplishment Award of \$100 for outstanding performance while an observer at WBAS Waco, Texas. His work is characterized by an exceptional interest in the success and accuracy of all phases of Weather Bureau work. Over the years he has voluntarily worked many hours of overtime coming to work early, staying on after his shift ended, or voluntarily returning to the station during periods of severe weather when he felt his services would be helpful. His work has at all times been of the highest quality and his competence and excellent attitude have won the respect and admiration of fellow employees and supervisors alike.

NEW METEOROLOGISTS IN CHARGE

Milford, Utah

FRANK C. GIFT of WBAS, Las Vegas has been selected to succeed Charles F. Penfield as Meteorologist in Charge at Milford, Utah. Mr. Gift is 29 years of age and has been in the Bureau since August 1947, with assignments at the Analysis Center, Washington, D. C., AWP, Boston, Mass., Buffalo, New York, Baltimore, Maryland and Las Vegas, Nevada. He has served at Las Vegas as Meteorologist since December 1955. Mr. Gift served in the Army during World War II and later completed a course of advanced

weather forecasting at Sparton School of Aeronautics.

Roseburg, Oregon

CHARLES F. PENFIELD has been selected to succeed Aels M. Lander as Meteorologist in Charge at Roseburg, Oregon. Mr. Penfield is 46 years of age and has been in the Bureau since July 1930, with assignments at Medford, Portland and Burns, Oregon; Tacoma, Bellingham, Chehalis and Ellensburg, Washington; Helena, Montana and Milford, Utah. He has served as Meteorologist in Charge at WBAS, Milford since September 1953.

Springfield, Mo.

DANIEL J. MAGUIRE, Fore-

caster at the St. Louis, Missouri WBAS, has been selected to succeed Mr. Charles C. Williford as MIC at Springfield, Missouri. Mr. Maguire began his career in the Weather Bureau as a Junior Observer at St. Louis on July 17, 1929. In 1937 he transferred to Omaha and in 1939 to Bismarck. On June 1, 1941, he returned to the St. Louis Airport. In 1942 he went to St. Joseph and later that year was assigned in charge of the station opened at Brady, Texas. In 1943 he transferred to Minneapolis and in 1947 was again assigned to St. Louis. He was born in Pacific, Missouri, on December 16, 1908.

Deaths

Richard N. Galloway

RICHARD N. GALLOWAY, Maintenance Technician at the Fort Worth Regional Administrative Office, died suddenly on June 24, 1956 while on duty at Burrwood, Louisiana. Mr. Galloway entered the Weather Bureau as an Airway Observer at Santa Fe, New Mexico on August 16, 1937 and served continuously from that date until his death. He was transferred from Santa Fe to Roswell in August 1940 and remained there as Observer and Forecaster until June 3, 1956 when he entered on duty at the Fort Worth Regional Administrative Office as Maintenance Technician.

Percy E. Garrison

PERCY E. GARRISON, Meteorological Aid at WBAS, Winne-

mucca, Nevada died suddenly June 30, 1956 at the age of 56. Mr. Garrison was born at Milford, Illinois, October 16, 1899 and attended high school in Urbana, Illinois and Salt Lake City, Utah. He served in the 145th Field Artillery during World War I. Upon return from military duty he attended the University of Utah and Western State Teacher's College. Following this he taught in Colorado schools from 1923 to 1925. He moved from Colorado to California and worked at various jobs until his appointment as Junior Observer at Los Angeles in September 1927.

He subsequently served at Red Bluff and San Pedro, California; Salt Lake City, Utah; Reno and Winnemucca, Nevada. During his many years of service in the

Bureau, Mr. Garrison earned the respect and admiration of his fellow workers and was a credit to the Federal Service.

Alvin Green

ALVIN GREEN, former employee of the Publications Unit of the Central Office, passed away on July 22, 1956 at the age of 60. Mr. Green retired from the Bureau on March 16, 1956 (see Topics April 1956). He is survived by his 95 year old mother and a sister.

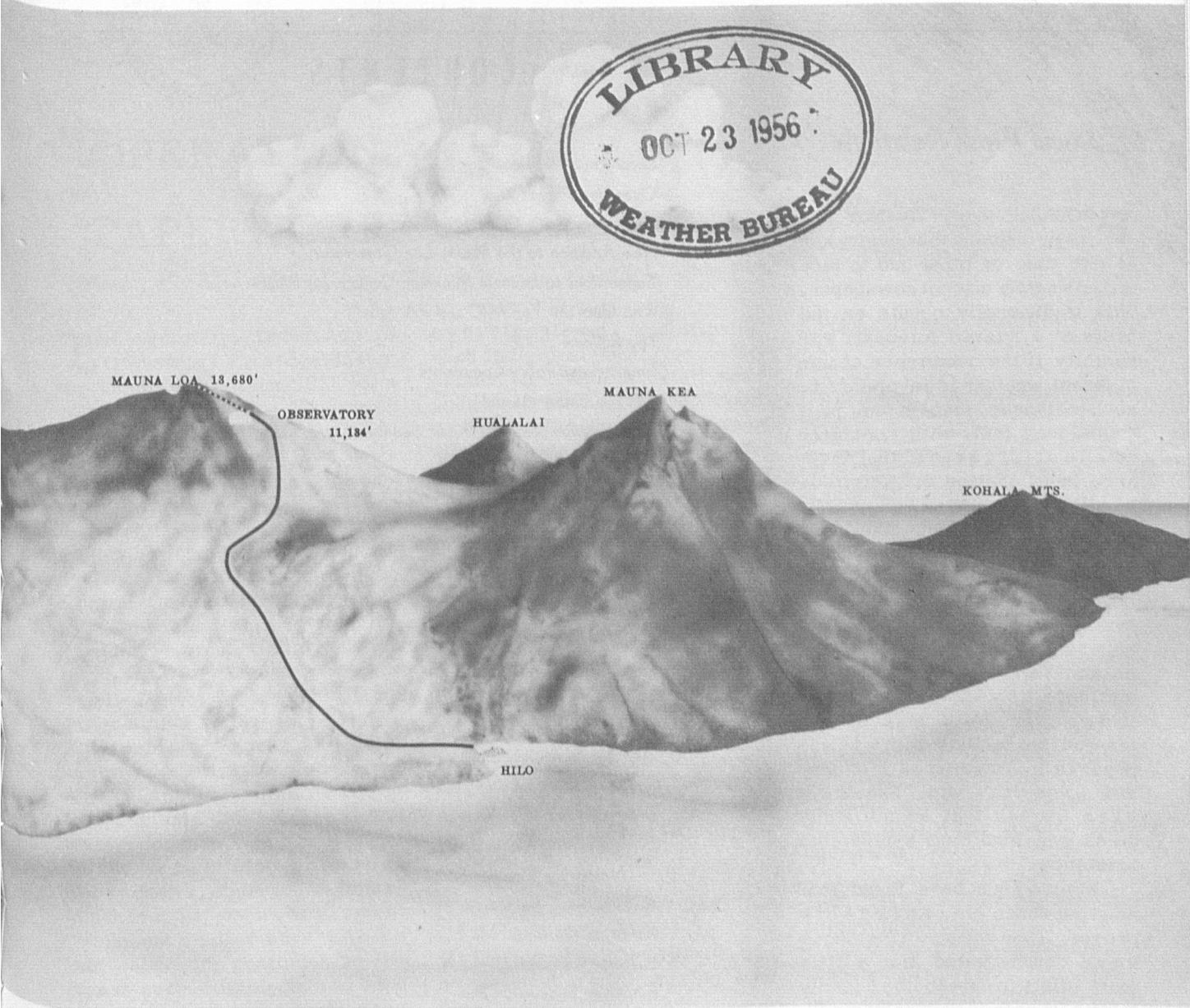
Andrew M. Hamrick

ANDREW M. HAMRICK, who retired as MIC at Dallas May 31, 1952 after more than forty-eight years service (see Topics for June 1952) died suddenly June 28. He is survived by his wife and two stepdaughters.

WEATHER BUREAU

TOPICS

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1956



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Number 9

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.

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Local Press Relations

PROBABLY every Weather Bureau office in the country has at one time or other had to face criticism from a local newspaper. This traditionally occurs on the heels of a missed forecast, especially if the occurrence of unpleasant weather is involved. In such instances, local Bureau personnel may feel, with considerable justification, that facts have been omitted or distorted.

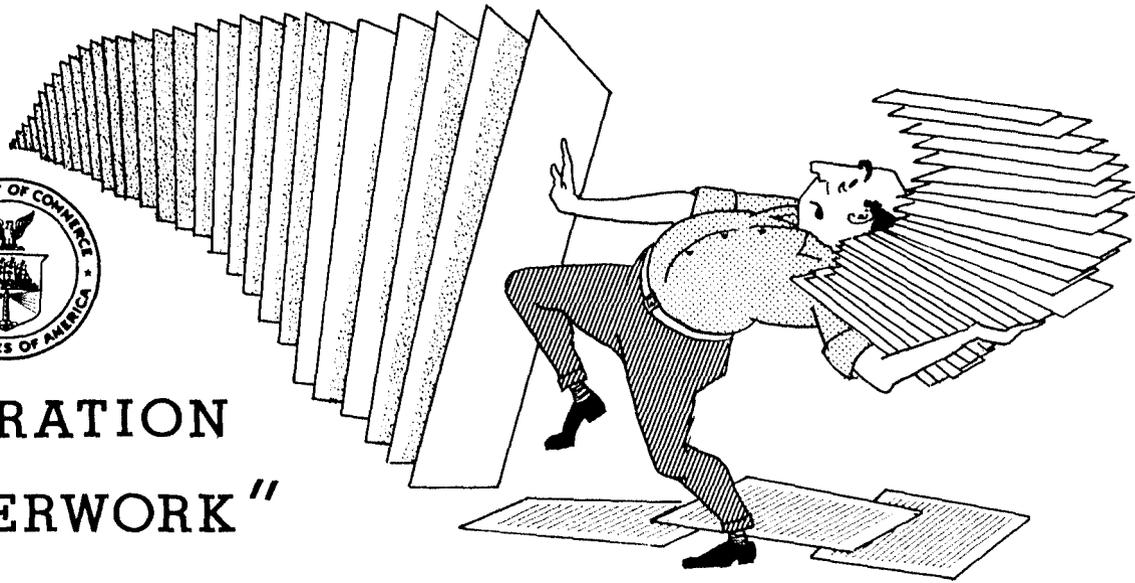
Newspapermen of any experience have been through many controversies and have long ago developed a combat efficiency far beyond the capabilities of the average layman. They will not necessarily look for a battle, but an accusation of inaccurate reporting is a shot they are unlikely to ignore. Most MIC's have learned that arguing with a newspaper is like arguing with an umpire - you can't win. They have also learned that an unfriendly press can lead them a miserable existence.

Most of us have found that newspapermen are reasonable people. Time and again instances have demonstrated that a little extra effort in developing friendly relations with reporters and editors, and no little self-control when things go awry, pay big dividends in continued pleasant relations with the press.

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"OPERATION PAPERWORK"



THE Secretary, Department of Commerce, has designated the month of October 1956 for a concentrated drive on "Operation Paperwork", a program designed to reduce the volume and complexity of paperwork. All employees are urged to give this undertaking serious thought and enthusiastic support. Top management in Government and the Central Office as well, are in desperate need of bold inspired thinking to prevent strangulation by paperwork. Much can be done by eliminating paperwork which has marginal value, and by simplifying of procedures. The major paperwork elements include forms, reports, record keeping, directives, classified material and correspondence. In the Weather Bureau we must also consider maps, charts, observation forms, and in fact, paperwork of all types.

Recent studies have shown that paperwork continues to increase geometrically in volume and complexity despite many proposals for reduction.

The Secretary, in recognizing this problem, and in proposing "Operation Paperwork", has called for the help of each and

every employee. Specifically, each individual employee understands in complete detail some phase or portion of the paperwork process. The combined effort of all employees in concentrated attack on our paperwork problems can achieve substantial results. The Secretary in designating October 1956 as "Operation Paperwork" is calling for the contribution of each and every employee in attacking a vast and complicated problem.

Although this article is only to announce the program, the following is a brief outline of principal elements in paperwork process that should be considered and a brief outline of individual and group awards for achievement during "Operation Paperwork."

FORMS - Internal and Public Use

- (1) Necessity for form.
- (2) Design - Facility of use, e.g., arrangement of information and ease in completion.
- (3) Procedural requirements, e.g., number of copies, distribution and processing.
- (4) Simplification - Elimination of unnecessary data.

- (5) Consolidation of similar forms.

REPORTS

- (1) Purpose and necessity of report.
- (2) Utility.
- (3) Availability of information elsewhere.
- (4) Frequency of preparation.
- (5) Simplicity.

RECORD KEEPING

- (1) Elimination of non-essential files and records.
- (2) Elimination of duplicate records.
- (3) Retirement of obsolete and dormant records.
- (4) Efficient utilization of filing equipment.
- (5) Elimination of filing cabinets, safes, and other special filing equipment.

DIRECTIVES - Internal Administrative Instructions

- (1) Standardization and control of issuances.
- (2) Elimination of unnecessary or marginal reporting or record keeping requirements.
- (3) Simplification of procedural instructions.
- (4) Reduction of directives mailing

lists to minimum working requirements.

CLASSIFIED MATERIAL

- (1) Downgrading and declassifying classified material.
- (2) Disposing of classified material.

CORRESPONDENCE

- (1) Receipt, distribution and control of incoming correspondence.
- (2) Elimination of unnecessary acknowledgment and transmittal letters.
- (3) Concurrences and routing of outgoing correspondence.
- (4) Elimination of non-essential copies.
- (5) Substitution of form letters where appropriate.

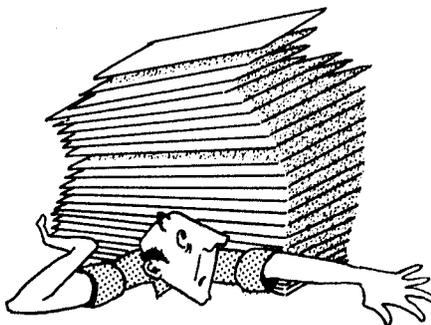
AWARDS:

(a) General Excellence Trophy - To be awarded to the bureau or office which makes the outstanding accomplishment record in all phases of the program.

A second and third place award will also be made.

(b) Special Achievement Award - To be awarded to any or all bureaus and offices for outstanding accomplishment in any aspect of the paperwork operation.

(c) Management Award - To be awarded for outstanding leadership and direction of a successful program for the accomplishment of the objectives of the "Operation". Awarded to the Management organization of the bureau or office.



(d) Individual Awards - To be awarded to employees within the framework of the "Employee Suggestion Program" for acceptable suggestions leading to savings in costs or increased operating efficiency. These may be cash awards or other appropriate awards.

Additional information concerning this program will follow, together with details on the suggestion program, the evaluation of results, and ideas on possible approaches that can be taken at all levels within the Bureau.

The full support and participation in this program by each activity, station, and employee is strongly urged, and action should now be taken to start a systematic review of the paperwork process at all levels. Your ideas and suggestions are needed, and are essential to a successful "Operation Paperwork" program in the Bureau.

The Series #40, Climatography of the United States

THE first issue of this series, with the title "Climatic Guide for Baltimore, Maryland", Number 40-18, was completed in May 1956. This issue is considered a prototype and future issues of the Guide for other cities will not necessarily be the same in detail. Copies of the Baltimore Guide have been sent to all first order stations, to State and Area Climatologists and to many others who would be interested in a new climatic release. Weather Bureau offices located in cities having a population of over a quarter of a million have been asked to comment in detail on this first model. Questionnaires were sent to these offices because the basic plan for the series foresees publication of guides for each of the 18 locations

with populations over half a million in the 1950 census. After this they are to be issued for each of the slightly larger number of places which has a population between a quarter and a half million.

These recent comments, as well as suggestions made by various Divisions of the Central Office where the program was originally planned, have been valuable indeed. The changes and additions which will be made in the second issue of the guide are likely to be an improvement over the first issue. While uniformity in most of the basic climatic presentations of the Guide series is desirable, sufficient flexibility is to be maintained so that the details of the climate which is

peculiar to each locale can be included.

The Climatic Guides are now being prepared, with the cooperation of the Meteorologist in Charge of each station, using personnel and facilities of the Central Office and the National Weather Records Center as time permits. Ways and means of implementing the project faster will be explored so that the Climatic Guides can be completed sooner.

Further suggestions are still welcome and the Office of Climatography will be glad to send a copy of the "Climatic Guide for Baltimore, Maryland" to any Weather Bureau office which does not now have a copy for comment.

New Addition to the Mauna Loa Observatory

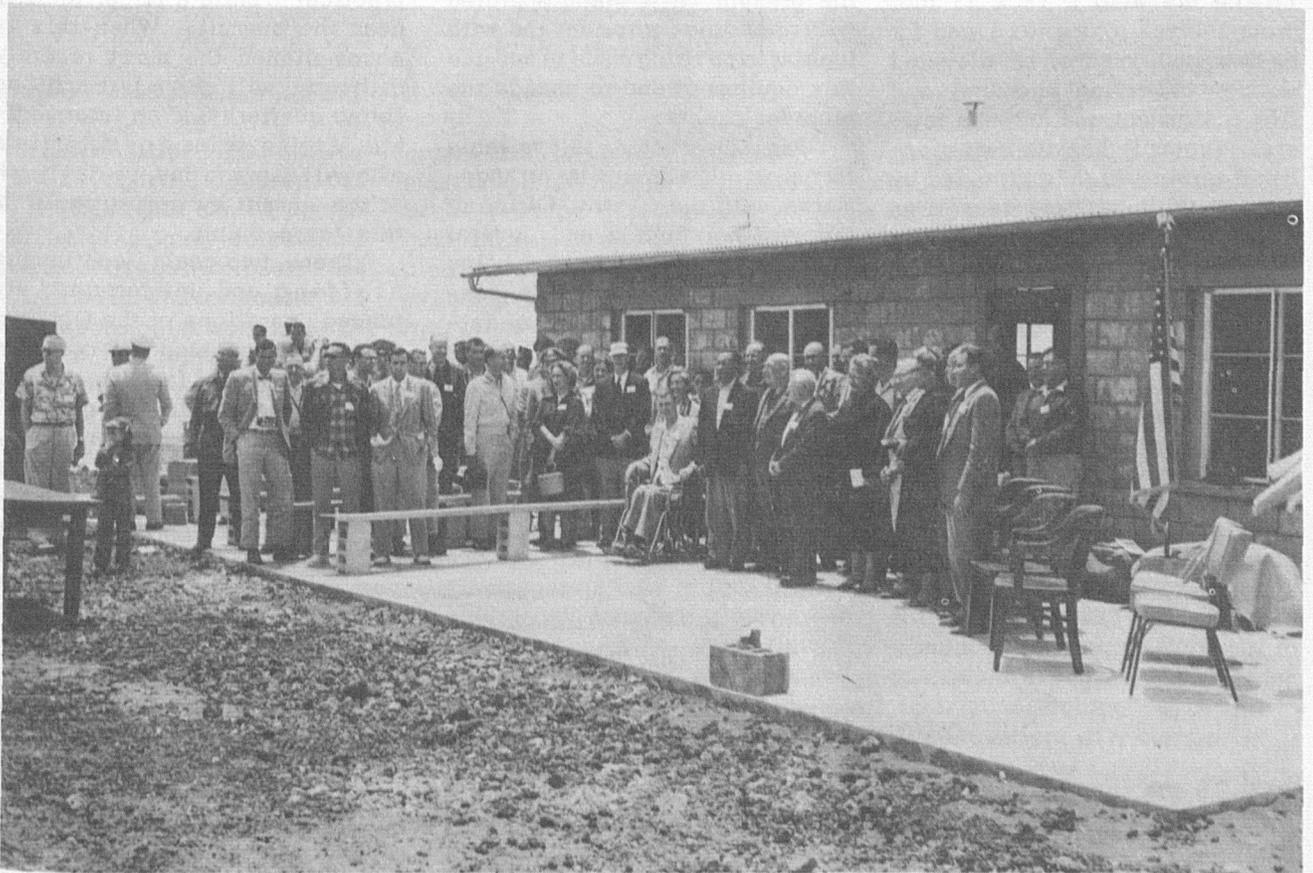
ON June 28, 1956, the second or "slope" unit of the Mauna Loa Observatory was dedicated. (See also TOPICS January 1952) The ceremony was held under sunny skies at the Observatory site on the north slope of Mauna Loa, 11,134 feet above sea level. Dedication ceremonies (attended by many scientists and government officials) were arranged by Roy L. Fox, MIC, Pacific Supervisory Office with J. C. Cox, president of the Geophysical Society of Hawaii, as master of ceremonies. After introductory re-

marks by Governor S. W. King of Hawaii, Mr. J. W. Steiner, MIC, Hilo gave some highlights on the new facility. Mr. Ralph Stair and Dr. C. C. Kiess of the National Bureau of Standards then spoke on research potentials of the observatory and its use in studying the Planet Mars. Professor W. B. Steiger of the University of Hawaii commented on the importance of the observatory to geophysics, and Mr. Fox discussed the past, present, and future of the Observatory.

On the day of the ceremony,

the participants traveled to the site from Hilo, the primary city on the Island of Hawaii, along the northeast slope of Mauna Loa over a lava ash roadway built in 1951 to make possible the summit unit of the Observatory.

The ceremony marked the culmination of the cooperative planning, programing and implementing work of people in two agencies of the Department of Commerce, the National Bureau of Standards and the Weather Bureau, and the combined efforts of many others. It also helped to



Courtesy of Howard Pierce, Honolulu, T.H.

Dedication Ceremony of Mauna Loa Observatory

crystalize and intensify the interest of many groups in the Observatory and to stress the important part this "high level" site is expected to play in future work in meteorology and related fields of geophysics in Hawaii.

The building was constructed under a contract with the NBS. Mr. Ralph Stair of the Radiation Division, who served as the Standards Project Leader, not only did a fine job of directing the construction, but became a booster for Hawaii at the same time. The "slope" unit consists primarily of a compact one-story 20 x 40 foot concrete block building partitioned into three bedrooms, a combined kitchenette and dinette, and a 16 x 20 foot combination workshop and laboratory room. There are also a 15 x 45 foot ground-level concrete pad for basing instruments, an elevated wooden observing platform, and two instrument and antenna towers. The unit has its own electrical power which is provided by two diesel generators as well as a Butane operated gas range, hot water heater, space heater and refrigerator. It also has its own water catchment, storage and distribution system.

Very few other "high elevation" observatories in the world offer such fine accommodations for living and for siting instrumental equipment nor are many more accessible from a nearby "low elevation" staging point. The atmosphere at the Observatory has a low absolute humidity and is free of industrially produced contaminants and from dust which is so

often present in the air over large land masses.

Mauna Loa is a great barrier to the trade wind flow covering an area almost twice the size of Rhode Island and rises from sea level to an elevation of 13,680 feet. It does not, despite its great height, have abrupt orographic features. Its gradual slopes tend to minimize its effect as an orographic barrier and enhance its value as an enormous raised base for an observatory site.

The "slope" unit, like the small facility at the summit which was erected in 1951, is managed by the Weather Bureau. It is hoped that, in the very near future, it can be staffed on a continuing basis with full time Weather Bureau personnel. However, for the present, it is being operated with recording equipment and with regular trips being made to service this equipment and to change the recorder sheets.

The Observatory is available for use of other groups by arrangements with the Central Office of the Weather Bureau and several "extra-Bureau" projects are being planned. One of these is concerned with the structure of natural snow crystals falling from an atmosphere containing very few aerosols. Another will study the energies transmitted in various bands of the solar spectrum under conditions likely to be more favorable than ever before.

The first group to use the "slope" unit on an "arrangement" basis was a National Geographic Society party of four scientists headed by Dr. C. C. Kiess. This

party used the site for a spectrographic study of the atmosphere of Mars in July when Mars was unusually close to the Earth. They praised the Observatory as affording excellent living and observing conditions.

When it becomes feasible to man the Observatory continuously, it is expected that pilot balloon and surface observations will be taken. It is also anticipated that continuous staffing will result in more complete and more reliable autographic records from the site and also in the initiation of a program of continuous solar radiation and ozone measurements.

It is envisioned that, ultimately, the present trail from the "slope" unit to the summit will be improved sufficiently to make it practical to build a larger facility near the summit. When this is accomplished the unit recently dedicated will serve primarily as living quarters and an intermediate staging point for scientists who will carry on day-to-day work at the summit by commuting from this "slope" unit.

These two goals, continuous staffing and uninterrupted attended operations of the Observatory and expansion and continuous operation of facilities at the summit, are yet in the planning stage. However, considering past accomplishments, it is anticipated that they will be attained.

Mr. Fox, staff of the Pacific Supervising Office, and WBAS personnel at Hilo have passed another milestone in the long record of meteorological developments in the Pacific.

Suggestions to Increase Minimum Ceilings for Pibals

SINCE the inauguration of the Incentive Awards Program, fifteen persons suggested that the minimum ceiling, below which pibals would not be required, be increased from the present 1000 feet to as much as 3000 feet.

Comments were solicited from forecasters and research meteorologists to determine whether these suggestions should be adopted. The consensus was that winds-aloft data between the surface and 3000 feet above it are

valuable for forecasting and operational purposes sufficiently often and at a large enough number of stations to justify continuance of the present practice.

Who Gets the Top MIC and PA Jobs?

A check was made recently on the background and former assignments of employees selected to fill GS-12 and higher Meteorologist in Charge and Principal Assistant jobs during the past 18 months. The "score" should be of interest to many field personnel and is given below:

Twelve positions in this category were filled during the 18-

month interval.

Six were by transfer and promotion of aviation or district forecasters.

Three were filled by transfer and/or promotion of former forecasters who had previously been reassigned to MIC or PA positions.

One was filled by reallocation of the position and promotion of the incumbent.

One position required considerable hydrologic experience and was filled by a man who had specialized in this field.

The remaining position required a man with considerable background in both climatology and hydrology and was filled by transfer and promotion of an employee whose background included major experience in these fields.

The Builders

by Dr. Vannevar Bush

(Reprint from *Weather Service Bulletin*)

THE article titled "The Builders" by Dr. Bush is reproduced here, as its depth can be appreciated by practicing scientists. This article fits quite closely, the more indistinct and tortuous trials of the meteorologist working as he does with concepts rather than substances.

"The process by which the boundaries of knowledge are advanced, and the structure of organized science is built, is a complex process indeed. It corresponds fairly well with the exploitation of a difficult quarry for its building materials and the fitting of these into an edifice; but there are very significant differences. First, the material itself is exceedingly varied, hidden and overlaid with relatively worthless rubble, and the process of uncovering new facts and relationships has some of the attributes of prospecting and exploration rather than of mining or quarrying. Second, the whole effort is highly unorganized. There are no direct

orders from architect or quarry-master. Individuals and small bands proceed about their business unimpeded and uncontrolled, digging where they will, working over their material, and tucking it into place in the edifice.

"Finally, the edifice itself has a remarkable property, for its form is predestined by the laws of logic and the nature of human reasoning. It is almost as though it had once existed, and its building blocks had then been scattered, hidden, and buried, each with its unique form retained so that it would fit only in its own peculiar position, and with the concomitant limitation that the blocks cannot be found or recognized until the building of the structure has progressed to the point where their position and form reveal themselves to the discerning eye of the talented worker in the quarry. Parts of the edifice are being used while construction proceeds, by reason of the applications of science, but other parts are merely

admired for their beauty and symmetry, and their possible utility is not in question.

"In these circumstances it is not at all strange that the workers sometimes proceed in erratic ways. There are those who are quite content, given a few tools, to dig away unearthing odd blocks, piling them up in the view of fellow workers, and apparently not caring whether they fit anywhere or not. Unfortunately there are also those who watch carefully until some industrious group digs out a particularly ornamental block; whereupon they fit it in place with much gusto, and bow to the crowd. Some groups do not dig at all, but spend all their time arguing as to the exact arrangement of a cornice or an abutment. Some spend all their days trying to pull down a block or two that a rival has put in place. Some, indeed, neither dig nor argue, but go along with the crowd, scratch here and there, and enjoy the scenery. Some sit by and give advice, and some just sit.

"On the other hand there are those men of rare vision, who can grasp well in advance just the block that is needed for rapid advance on a section of the edifice to be possible, who can tell by some subtle sense where it will be found, and who have an uncanny skill in cleaning away dross and bringing it surely into the light. These are the master workmen. For each of them there can well be many of lesser stature who chip and delve, industriously, but with little grasp of what it is all about, and who nevertheless make the great steps possible.

"There are those who can give the structure meaning, who can trace its evolution from early times, and describe the glories that are to be, in ways that inspire those who work and those who enjoy. They bring the inspiration that not all is mere building of monotonous walls, and that there is architecture even though the architect is not seen to guide and order.

"There are those who labor to make the utility of the structure real, to cause it to give shelter to the multitude, that they may be better protected, and that they may derive health and well-being because of its presence.

"And the edifice is not built by the quarrymen and the masons alone. There are those who bring them food during their labors, and cooling drink when the days are warm, who sing to them, and place flowers on the little walls that have grown with the years.

"There are also the old men, whose days of vigorous building are done, whose eyes are too dim to see the details of the arch or the needed form of its keystone; but who have built a wall here and there, and lived long in the edifice; who have learned to love it and who have even grasped a suggestion of its ultimate meaning; and who sit in the shade and encourage the young men."

Employment Policy Complaints

IN the September 1955 issue of Topics the President's Executive Order on Government Employment Policy was discussed, and the Weather Bureau's program implementing this policy was announced. In reviewing the past year it is gratifying to note that no formal complaints have been filed. We think this is a good indication of compliance with the President's Policy. However, 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 following are designated Weather Bureau Employment Policy Officials:

REGIONAL EMPLOYMENT POLICY OFFICERS

| | | |
|-------------------------------|------------------|---|
| Region I | James W. Osmun | Weather Bureau Regional
Administrative Office
Federal Building
New York International Airport
Jamaica 30, N. Y. |
| Region II | Erle L. Hardy | Weather Bureau Regional
Administrative Office
Fort Worth 2, Texas |
| Region III | A. W. Walstrom | Weather Bureau Regional
Administrative Office, Room 902
1828 Walnut Street
Kansas City 8, Mo. |
| Region IV | Hugh D. Spangler | Weather Bureau Regional
Administrative Office
222 S. West Temple Street
Salt Lake City, Utah |
| Region V | Glen Jefferson | Weather Bureau Regional
Administrative Office, Pouch 13
Anchorage, Alaska |
| NWRC
Asheville, N. C. | Leslie Smith | Supervisor
National Weather Records Center
U. S. Weather Bureau
Arcade Building
Asheville, N. C. |
| Hawaiian &
Pacific Islands | Roy L. Fox | Meteorologist in Charge
Pacific Supervisory Office
U. S. Weather Bureau
Box 3650
Honolulu 11, T. H. |
| San Juan | Ralph L. Higgs | Meteorologist in Charge
U. S. Weather Bureau Airport Station
Box 5187
Puerto de Tierra Station
San Juan 27, Puerto Rico |

DEPUTY EMPLOYMENT POLICY OFFICER

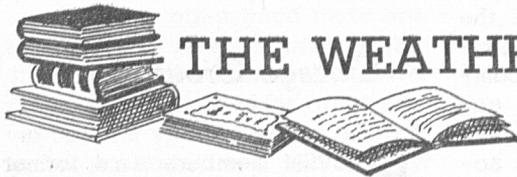
| | | |
|----------------|--------------|---|
| Central Office | R. R. Hamann | U. S. Weather Bureau
Washington 25, D. C.
Attention: Mr. R. R. Hamann |
|----------------|--------------|---|

Chicago Group Award

ELEVEN members and former members who were on the staff at WBAS Chicago during the period from December 1952 to December 1954, and who contributed to Chicago's excellent reputation for courteous and effective pilot weather briefing, were each awarded \$100 in recognition of the excellent results of their teamwork. Under the leadership of Escal Bennett, Chief Airport Meteorologist, (now MIC, WBAS, Cincinnati), this observer-briefer team received expressions of appreciation from many private pilots and members of the National Business Aircraft Association, commending them for their valuable service to aviation. In addition to Mr. Bennett, the other award recipients were: Arthur A. Arbanas, John R. Clark, Edmund A. DiLoreto, George W. Francis, Tillman F. Gladney, Edward Lazar, Daniel P. O'Connell, George W. Polensky, John A. Schwab and John J. Sullivan.

Radio Station Receives Public Service Award

RADIO Station KSOK, Arkansas City, Kansas, has received the Bureau's Public Service Award for outstanding service to the public. A tornado reported to the radio station was relayed to WBAS Wichita, where a tornado warning was issued. At least six people credit the saving of their lives to hearing the warning from a Wichita television station and going to a storm cellar minutes before their home and other buildings were blown away.



THE WEATHER BUREAU LIBRARY



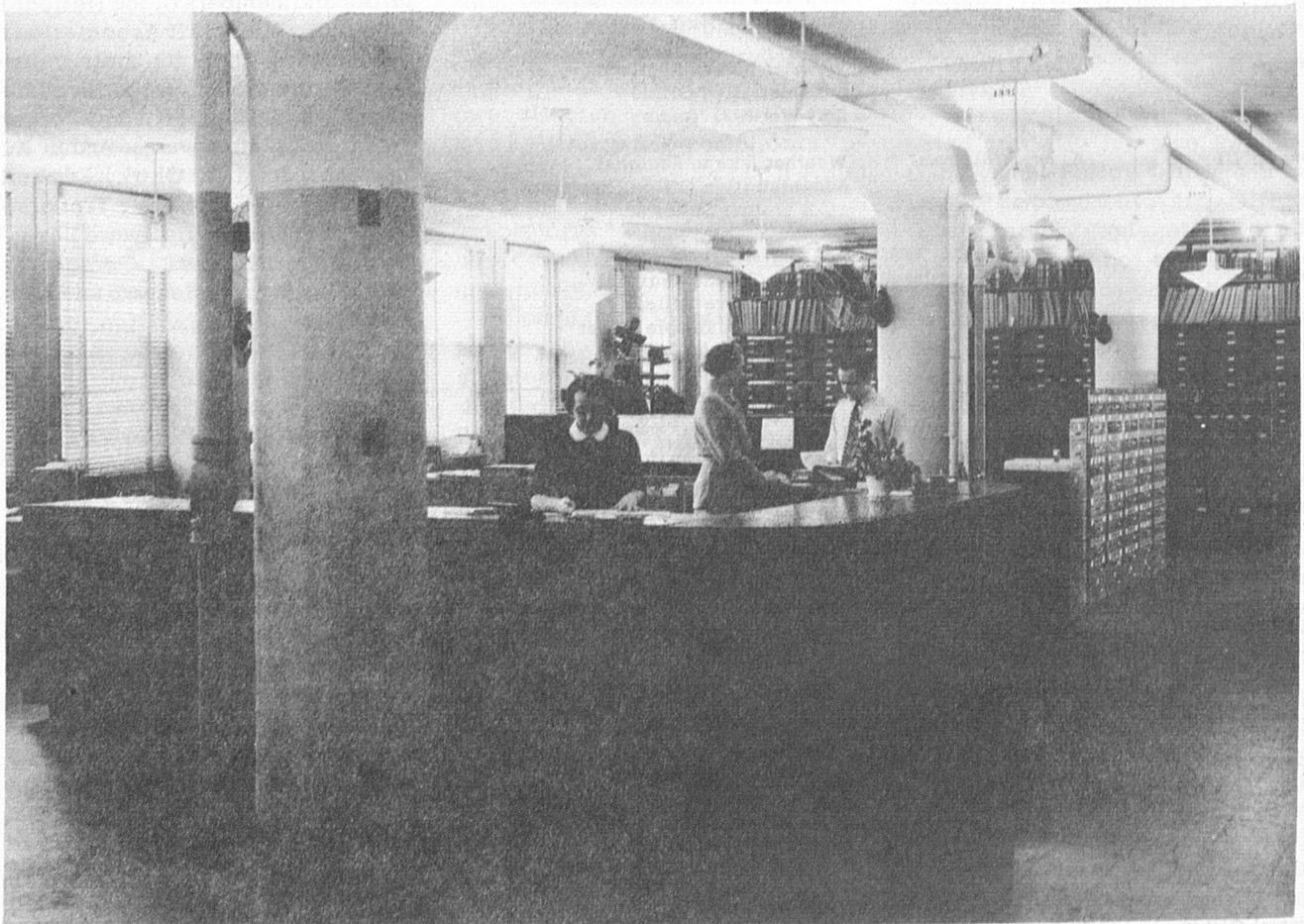
RECENT issues of TOPICS have outlined the work of Central Office units which were transferred to Federal Office Building No. 4 in Suitland, Maryland, beginning in the spring of 1954. This article is intended to give a brief, though fairly comprehensive, idea of what the Weather Bureau Library now is and how it functions.

The Library moved to Suitland in June 1954, after being located for about seven years in the Pack-

ard Building, one-half block north of the Central Office Administration Building. The advantages, in the present location, in space for the collection and in better facilities for users and staff compensate in part for the nine miles that separate the Library from personnel stationed downtown. The Library's hours are 8:00-4:30, Monday through Friday. The space occupied is about 230 feet long and 60 feet wide, and

about two-thirds of this space is used for book stacks. (The collection now comprises approximately 115,000 volumes.) The remaining space consists of the Circulation and Reference, Acquisitions and Catalog Departments, the card catalogs, a reading room and work rooms.

The Library serves first of all the Bureau, both at the Central Office and in the field. The entire holdings of the Library (except for



CIRCULATION DESK



STACK AREA

reference material) are available to Bureau offices on loan. The Library also serves the public; materials may be used in the Library by anyone who comes to the Library. They are also lent to other government bureaus, to organizations and to individuals through interlibrary loan.

The Library acquires new books in great variety, on meteorology and climatology as well as in other fields allied to Bureau work, but the number of book titles acquired is far outweighed by serial issues. These serials consist not only of scientific and other relevant journals, but also a vast array of research reports

and publications of the U. S. Government and of foreign meteorological services. Close track must be kept, by what is called the Visible File, of the receipt of the serials, so that missing numbers may be claimed and completed volumes assembled for binding. About 1100 items are recorded weekly in the Visible File. Furthermore, the past five years of manuscript maps are kept (on microfilm these maps are retained permanently), including all the principal charts drawn at the National Weather Analysis Center and some of those prepared by the Extended Forecasting Section. Microfilm is also used so that the

Library's collection may be more complete with respect to certain foreign journals, not easily available in their original form. The growth of the collection of college and university theses in meteorology and climatology has been greatly expedited through acquisition of microfilm.

Motion picture films in the collection are lent to Bureau stations and personnel for official use—also for public showing when Bureau personnel accompany and show the film. For several years the Library has kept on deposit a copy of each Bureau film in all the state film depositories (located, in most cases, at the state uni-

versity) for circulation to the public. The latest two films to be so deposited are "Tornado" and "Operation Hurricane."

How does the Library acquire its new material? Nearly all the commercially published books (texts, etc.) must be purchased, but the Library receives free a quantity of material, including research reports from universities and other organizations, works issued in foreign countries (many are received in the international exchange of publications that is under the sponsorship of the World Meteorological Organization), and some material received in exchange for the furnishing of photographs for illustrations.

Once acquired, new material goes to the Cataloging Department, which catalogs it. It is now ready for circulation, for deposit, or for shipment to station libraries. A considerable part of the Central Office material is sent to the Reading Room at 24th and M Streets for two weeks. During this time, as during the subsequent week in the Reading Room

in Suitland, the publications are available for study in the room by anyone, and those persons wishing opportunity for more extended study sign reserve cards so that the publications can be routed to them in turn. Reference work, an important part of the work of the Circulation and Reference Department, endeavors to meet a wide variety of needs. A few general and specific examples are: location of popular, though reliable, material on given meteorological subjects, information on one associate of Cleveland Abbe, the compiling of author bibliographies, and the identification of obscure or incomplete references.

So far no mention has been made of the photograph collection which is also under the responsibility of the Circulation and Reference Department. By supplying photographs field stations, generally speaking, have been of greatest assistance to the Library, and in previous issues of TOPICS Bureau personnel have been requested to send in clear, glossy prints, with negatives when pos-

sible, of unusual cloud and weather phenomena, severe storm damage and floods. To be of use to the Library, the pictures must be unrestricted as to reproduction and distribution by the Bureau. Credit lines are used as supplied.

In line with what has been kindly sent in the past, it is requested further that articles and manuscripts on meteorological and climatological subjects, especially subjects of local interest, written by Bureau personnel and others (except items which have been published or are expected to be published in widely disseminated journals), be sent for inclusion in the Library collection.

It is hoped that when field personnel are in Washington they will try to find opportunity to visit the Library, for only by first-hand knowledge of its collection and facilities can a realistic idea of its value be gained. It is desired also to take this opportunity to express appreciation for the active interest in and encouragement for the Library, shown by personnel in the field and at the Central Office.

Reducing Telephone Calls

THE MIC at Topeka, Kansas reports a problem that came up a couple of years ago similar to that at Louisville (TOPICS July 1956) of individual science class students calling the Weather Bureau for identical information. It was solved in a little different manner in which you might be interested.

"The superintendent of schools was contacted and told of the added burden that such an influx of routine calls placed upon the staff. He was furnished a schedule of direct Weather Bureau broadcasts carried over local radio stations and it was suggested he distribute the schedule to all school principals and science

teachers with the suggestion that students be instructed to obtain the desired information from these scheduled broadcasts. This not only relieved the office of answering individual calls but also served to advertise the regular information programs of the Bureau to a great many people.

"It has been found that a new schedule of broadcasts should be provided at the beginning of each school year to incorporate any changes in broadcast times that might have occurred and to acquaint new science teachers of this method of obtaining weather information. It is also always necessary to include the local data the students usually need for

the project in about the same form in each broadcast.

"We recently learned of a rather novel use being made of local weather statistics carried in the broadcasts when a new man assigned to the station neglected to include local information in the usual manner. An old peoples' home with about 300 inmates copies the Topeka forecast, current temperature, humidity, maximum temperature in the past 24 hours and the precipitation carried in the early morning broadcast and publishes this in the morning news sheet distributed to the inmates with their breakfast."

Movie - "Hurricane Watch"

DURING the period of August 17-24 copies of the new hurricane educational movie entitled "Hurricane Watch" were mailed to first order Weather Bureau stations along and near the Atlantic and Gulf Coasts. This movie was produced as part of the Bureau's effort to acquaint the public with the nature of hurricanes, the operation of the hurricane warning

service and precautions that should be taken when warnings are issued.

Prints of the movie were given wide distribution so that each Weather Bureau office in areas where hurricanes occur would work with local television stations, schools, civic associations, etc., in getting wide distribution of the film. Copies of

the film are also being furnished to each State Film Depository Library for loan to interests within the State.

The Motion Picture Services of the Department of Agriculture produced the film for the Weather Bureau. In order to hold down costs an effort was made to utilize Weather Bureau people as actors in a number of the scenes and



L. S. Rothschild (center/Under Secretary for Transportation, Department of Commerce, presenting first copy of new film "Hurricane Watch" to Mr. R. C. Grubb, Assistant Chief for Administration, Weather Bureau. Looking on are Mr. C. A. Carrello (left) Chief of Production, Motion Picture Service, Department of Agriculture and Mr. G. R. Courtney (right) Script Writer and Director for the Movie.

TOPIC's readers may be interested in knowing the identity of these people.

Mr. and Mrs. Judd Scott were portrayed by Mr. and Mrs. Gilbert Clark, WBO, Miami. Jim Gibson, South Carolina executive is played by Mr. James Gibson, Chief of the Motion Picture Service at Agriculture. The parts of Mr. and Mrs. Bill Bishop and Mr. and Mrs. Sid Schwartz were taken by Mr. and Mrs. Wilmer L. Thompson, MIC at WBAS, Miami, and Mr. and Mrs. William McGehee of WBO, Miami. Jane Graham is actually Mrs. James Fellgren of the Synoptic Section in the Central Office while Mr. Graham is Thomas Brennan of the Classification Sec-

tion in the Central Office. Cooperation of Valti Powell in permitting his son Samuel to take the part of the younger Graham helped to round out this family. The hurricane forecaster in the movie is Kenneth Norquest of Washington National Airport and the map plotter is William O. Glidewell.

Excellent cooperation was received from the Master of the Swedish ship S. S. AXEL GORTHON. The scenes showing the ship's officer and radioman were aboard this vessel while it was in port at Charleston, S. C. Mr. Jack Cummings, MIC at Charleston also arranged for the authentic shots showing Sgt. Cantrell and Trooper Ackerman of the South

Carolina Highway Patrol. The radar observer is Sam K. Parrish of WBAS Charleston and the family leaving the beach cottage is that of Gene De Veaux also of WBAS Charleston. Scenes showing the release of the radiosonde were taken at Hatteras, N. C., while the shot showing the tying up of small boats was made in Charleston Harbor.

The narrator is Clarke Thornton of the U. S. Information Service; the TV announcer is John Douglas who has his own weather program on Station WTOP-TV, Washington, D. C., and the radio announcer is Bob Dalton also of WTOP staff.

Non-Routine Station Activities

ONE way or another, communications always enters as a basic factor in our operations. One phase of this concerns the need for convenient and more informal methods for sharing information between the field service and the Central Office. From time to time, a few stations have

sent informal reports of non-routine activities in more or less diary form which often do as much to keep us posted as does more formal correspondence. Whenever possible, items reporting unusual services performed, the development of ingenious operating procedures, and the like, are picked

up and reported in TOPICS.

Although we are reluctant to impose an additional reporting chore on busy people, we hope that MIC's feel perfectly free to communicate in informal diary fashion whenever they have information that is worthwhile.

Reemployment Rights

THE Civil Service Commission has revised the reemployment rights program effective August 1, 1956. Heretofore the regulations provided that reemployment rights would automatically apply when a career employee moved from a non-defense to a defense agency. Under the revised program the gaining agency confers the reemployment rights on the basis of a Letter of Authority secured from the Civil Service Commission. When an agency believes that the emergency situation is so critical as to justify offers of reemployment rights, it may request the Commission to issue a Letter of Authority.

The request by an agency for

a Letter of Authority must conform to standards determined by the Commission which shall include the following:

1. The positions to be filled must be related to emergency situations for which the usual recruiting methods are inadequate;
2. The positions must be a part of a specific program immediately essential to the national interest;
3. The positions must be essential to the functioning of the program;
4. There must be substantial basis for the belief that reemployment rights will be a significant and reasonable aid in meeting the emergency situation.

An appointing officer who intends to employ with reemployment rights an employee of another executive agency must give the losing agency a written notice at least 10 work days before the effective date of the proposed action. The losing agency may within 5 work days after the receipt of this notice appeal the proposed grant of reemployment rights to the Commission if it believes the grant would be detrimental to the public interest. The Commission will determine whether the employee will be given reemployment rights and notify both agencies accordingly. If the losing agency does not appeal within 5 work days, the

employee shall be granted re-employment rights.

Employees who may be granted reemployment rights under this program are:

1. Employees serving in competitive positions under career or career-conditional appointments;

2. Non-temporary excepted employees.

Reemployment rights granted under a Letter of Authority shall expire at the end of 2 years following the date of the personnel action unless exercised or otherwise terminated before that time.

Reemployment rights of an employee serving outside the continental United States shall extend for an additional period of 3 months.

Additional information relative to the exercise of reemployment rights may be secured from the appropriate personnel office.

Among other things the Bureau has the responsibility of (a) preparing and disseminating forecasts of severe weather such as hurricanes, tornadoes, floods, and (b) maintenance of the basic observational network and forecast services in this country for the conduct of military operations in time of war and in time of national disaster. Consequently the transfer of employees from the Bureau with reemployment rights without individual review and evaluation of each case is not considered to be in the national interest. Therefore, each case will be reviewed on the basis of its merits and the granting of such rights by the gaining agency will be appealed to the Civil Service Commission unless facts in the case justify gaining of reemployment rights. This is especially true concerning employees in "shortage" category occupation, such as meteorologists, physicists, mathematicians, engineers, scientists, and electronic technicians.

Vacancies in Army Meteorological Program

THE Technical Director of the Meteorology Department, Army Electronics Proving Ground, Ft. Huachuca, Arizona, has again asked the Central Office for co-operation in filling some positions in that program. While the Weather Bureau does not wish to en-

courage its employees to transfer to other agencies, anyone who may be interested in one of the positions listed below may feel free to make application to the Technical Director at the address given above.

| | | |
|------------------------|-------|--|
| Ft. Monmouth, N. J. | GS-12 | Specialized forecasting, general technical supervision, liaison with research and development activities. |
| Ft. Monmouth, N. J. | GS-7 | Supervisory observer. |
| Washington, D. C. area | GS-11 | General forecaster and experienced field man. |
| Washington, D. C. area | GS-7 | Supervisory observer. |
| Yuma, Arizona | GS-9 | Assistant specialized forecaster, and technical supervision. |
| Ft. Huachuca, Arizona | GS-11 | Meteorologist with field experience, equipment background. |
| Ft. Huachuca, Arizona | GS-9 | Supervisory Electronic Technician |
| Ft. Huachuca, Arizona | GS-11 | Experienced in Met data, handling and machine processing of data. |
| Ft. Huachuca, Arizona | GS-7 | Supervisory observer with special emphasis on testing, evaluating, calibrating, and maintaining equipment. |
| Ft. Huachuca, Arizona | GS-11 | Meteorologist experienced in the field of meteorological effects on microwave propagation. |

Conrad Mook

CONRAD MOOK, Research Forecaster at Washington National Airport, has been appointed to serve during the coming year as a member of the Editorial and Publi-

cation Committee of the American Geophysical Union. His duties will include those of editor for meteorology of the AGU Transactions.

The Midwest Automatic Pressure Jump Indicator Networks

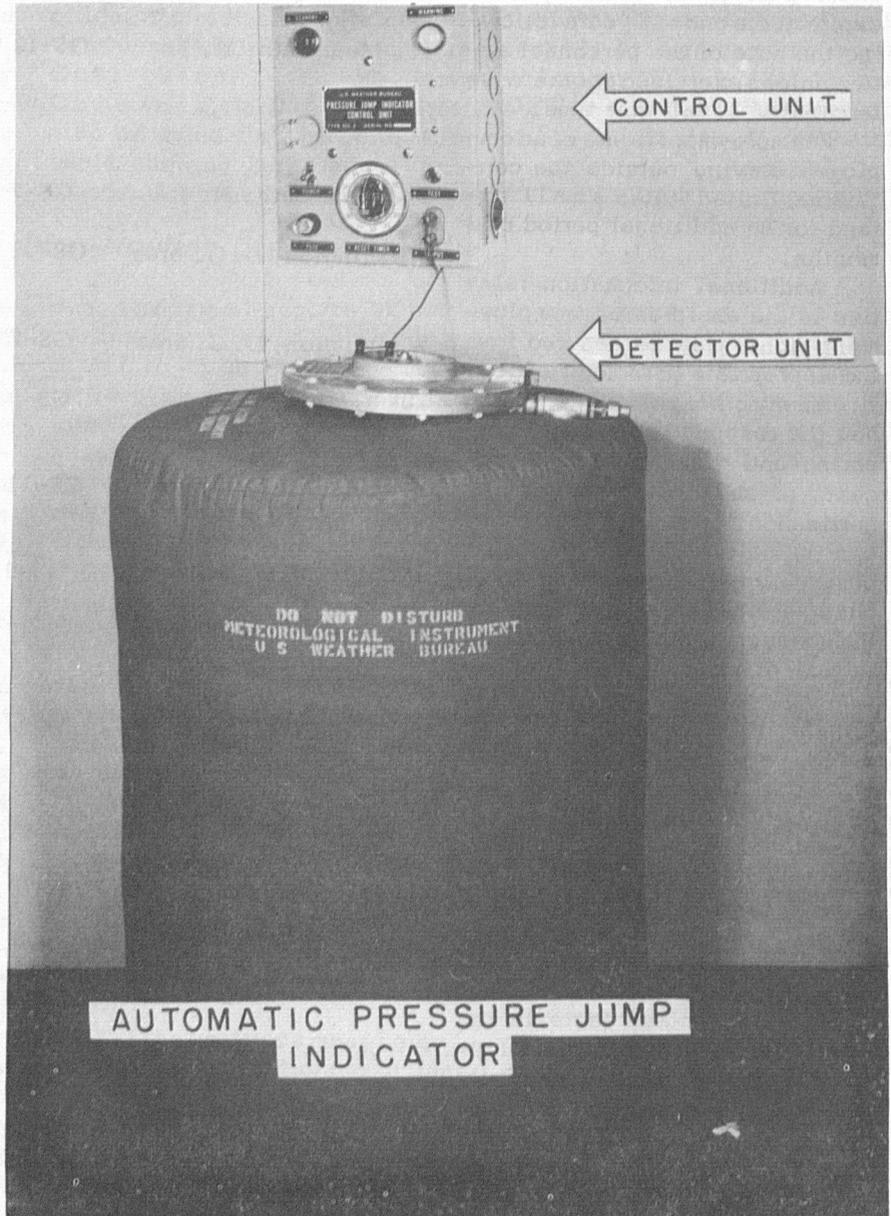
AN additional tool for use in connection with the forecasting and tracking of severe local storms may emerge in the near future as a result of the establishment this summer of a series of networks of automatic pressure jump indicators. This instrument and networks are the logical outcome of the research on atmospheric gravity waves and pressure jump lines, which has been carried out for the past several years, under the direction of Dr. Morris Tepper, in the Severe Local Storms Research Unit of the Office of Meteorological Research.

The general nature of pressure jumps, their organization as a comparatively small-scale (100 - 150 miles), short-lived (3 - 5 hours) line phenomenon, and the high correlation in space and time between the passage of such a line and the occurrence of severe local storms, including tornadoes, has been established for some time. During the Spring of 1955 the Instrumental Engineering Division developed a device capable of automatically detecting the occurrence of a pressure jump, and during the summer of that year a pilot network of 10 such instruments was established in the Washington, D. C. area for the purpose of testing the operational feasibility of such a network and its ability to detect and clock the passage of pressure jump lines through the area. On the basis of the successful operation of this network the present program of similar networks in the Midwest severe local storm belt was organized.

The pressure jump indicator operates on the same principle as an airplane rate-of-climb indicator, in that it is sensitive to

the rate of change of pressure; but operates, in addition, only when the total pressure rise has exceeded a specified amount. The basic components are an insulated 55-gallon drum air reservoir on

which is mounted a disk-shaped diaphragm or detector unit for sensing the pressure jump, and an electrically connected control unit which sounds a buzzer alarm and turns on a red warning light

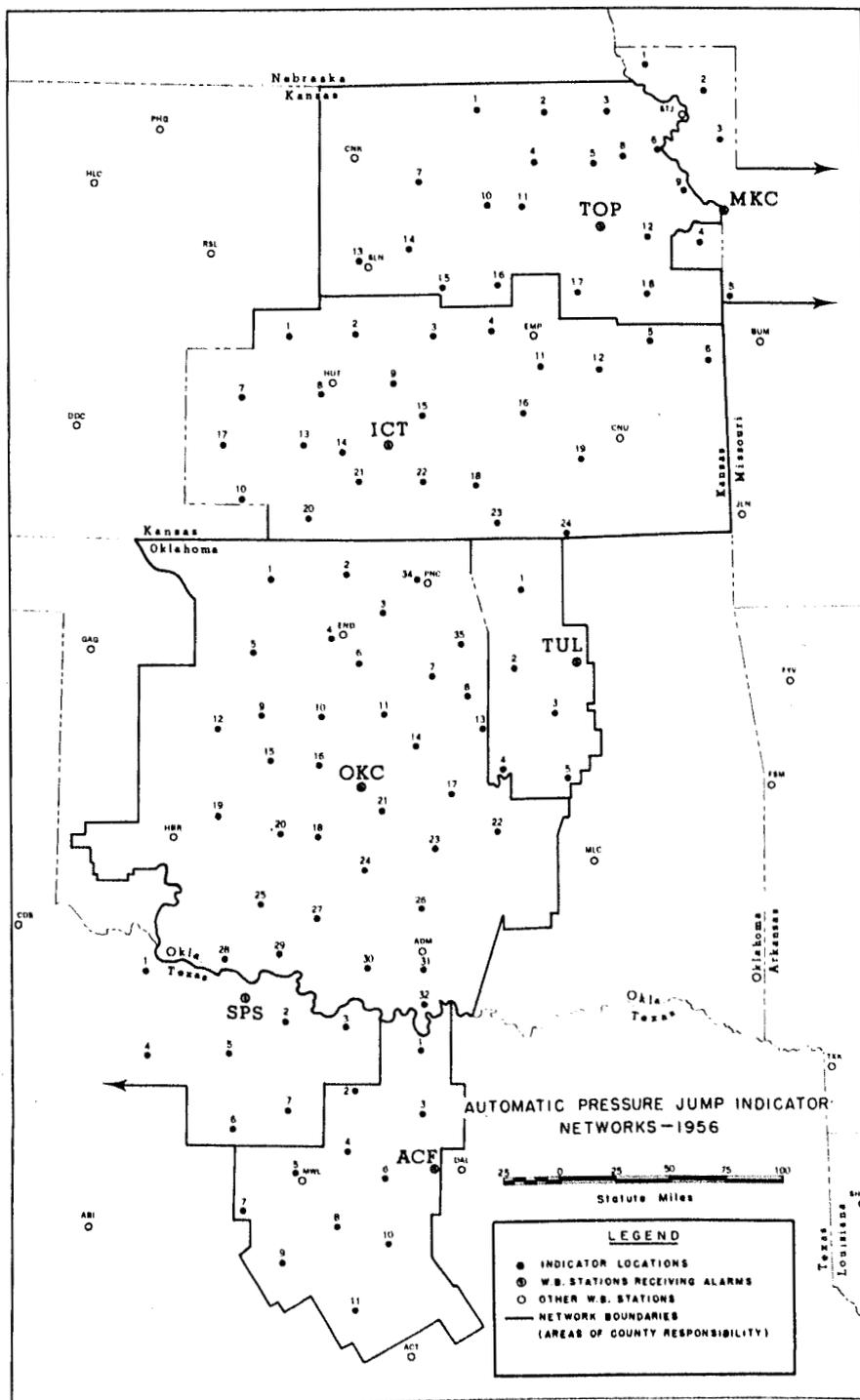


when a jump is detected.

Seven individual but adjacent networks, consisting of a total of 105 of these indicators have been established and are now in operation in the area between Fort Worth and Kansas City. The average separation of stations is about 30 miles. Instruments were installed at places where 24-hour duty is maintained, such as police and fire stations, telephone exchanges, water and power plants, etc., so that there is a continuous watch of the indicators. The stations are all on a cooperative basis and the services are free of charge to the Bureau.

Each of the networks centers about, or is generally "upwind" from, a key Weather Bureau station which acts as the recipient of alarms from the cooperative stations in its network. When an alarm is sounded at a station, indicating the passage of a pressure jump, the person on duty immediately notifies his key station by collect, long-distance telephone, giving his location, the time of the alarm and a brief description of the accompanying weather. This information is logged, plotted and analyzed by personnel at the key station, and is also relayed to SELS in Kansas City as well as to other Weather Bureau stations by means of RAWARC teletypewriter circuit No. 7062,

The networks thus make it possible to detect and to determine the orientation and movement of pressure jump lines through the area. The forecaster at each of the key stations can then predict the time of its arrival at any point (particularly at his own, usually larger metropolitan area), and can be quite sure that if a severe storm is to occur, it will occur with or very near the time of passage of the pressure jump line. In this respect, the pressure jump line can be considered as a triggering mechanism, with severe storms



occurring along its length only at such places where other necessary conditions exist. Consequently, analyses of pressure jump alarms are best used in conjunction with all of the other infor-

mation and analyses available to the forecaster. Notable here is the radar, observations of which may be greatly augmented by a pressure jump line analysis, which can indicate to the fore-

caster not only the linear relationship of existing, apparently scattered echoes, but will tell him where echoes may be expected to form in the immediate future.

Of secondary, but none-the-less considerable, importance to the forecaster, is the dense coverage of current weather conditions available with the reported pressure jump alarms. These reports, although brief and given in the layman's terminology, serve to fill in the large gaps between

regular reporting stations, and have already proven an aid to the forecaster on a local area basis, especially during periods of wide-spread severe storm conditions.

Logs of alarms from both cooperative and key stations are being checked against the microbarograph records of the equally dense Severe Local Storms Research Network and those from regular Weather Bureau stations in the area. These analyses and the findings of a recent field sur-

vey of the networks indicate that the program can be expected to be operationally successful.

Since the pressure jump indicator itself can be inexpensively (about \$200) mass-produced, and the only operational cost is that of communication, it is probable that after a satisfactory test period the network area will be expanded to cover more of that portion of the country which is so commonly frequented by severe local storms and tornadoes.

Los Angeles Starts Continuous Aviation Weather Broadcast

PILOTS in Southern California can now tune to the Los Angeles L/MF radio range frequency (332 kcs.) and receive aviation weather information continuously during daylight hours. Operated jointly by the Weather Bureau and CAA, the broadcast furnishes flying weather forecasts for the Los Angeles area and for routes to San Diego, San Francisco, Las Vegas, and Phoenix, plus the latest weather reports from selected stations, pilot weather reports,

and winds aloft forecasts. Notices to airmen, warnings to small aircraft, and other special advisories for the safety of airmen are included when appropriate.

The Los Angeles continuous broadcast started on July 3, 1956 and is the first to use the improved type of transcribing equipment developed by the CAA. The WBAS furnishes the weather forecast and warning information and the CAA INSACS adds selected weather reports and NOTAMS and operates

the broadcast. The broadcast is patterned after the Arcola broadcast (Washington, D. C.), developed and operated by the Weather Bureau.

Pilots have commented very favorably on this new service and are looking forward to additional broadcasts throughout the country, which within the next few years is destined to become a nationwide service.

Successful Ocean-Station Patrols

TWO Atlantic Weather Patrols recently reported an average raob height for the entire patrol in

excess of 25,000 meters. Data on these patrols are as follows:

| | | |
|--|---|---|
| Name of Cutter Station | Cook Inlet DELTA | McCulloch COCA |
| Period on station | July 7-23, 1956 | July 17-Aug. 6, 1956 |
| Average raob height | 25,201 meters | 25,085 meters |
| Maximum raob height | 29,275 meters | 29,133 meters |
| Number of observations followed to bursting point of balloon | 32 out of 33 | 39 out of 41 |
| Observers | George P. Schaefer, OIC
Christopher E. Horseman
Thomas E. Kondos
Charles W. Cullen | James H. Dew, Jr., OIC
Hugh J. Greenan
Richard T. Richmond
Dewitt C. Shults, Jr. |

62 Years for Triple Register

THE MIC at Marquette, Michigan reports that triple register No. 50 was placed in service on May 10, 1893, at 7:22 p.m., 75th Meridian time. Evidently it has been in service here almost continuously since that time.

Approximately 5,320,000 miles of wind have passed the station during the time triple register No. 50 has been in service.

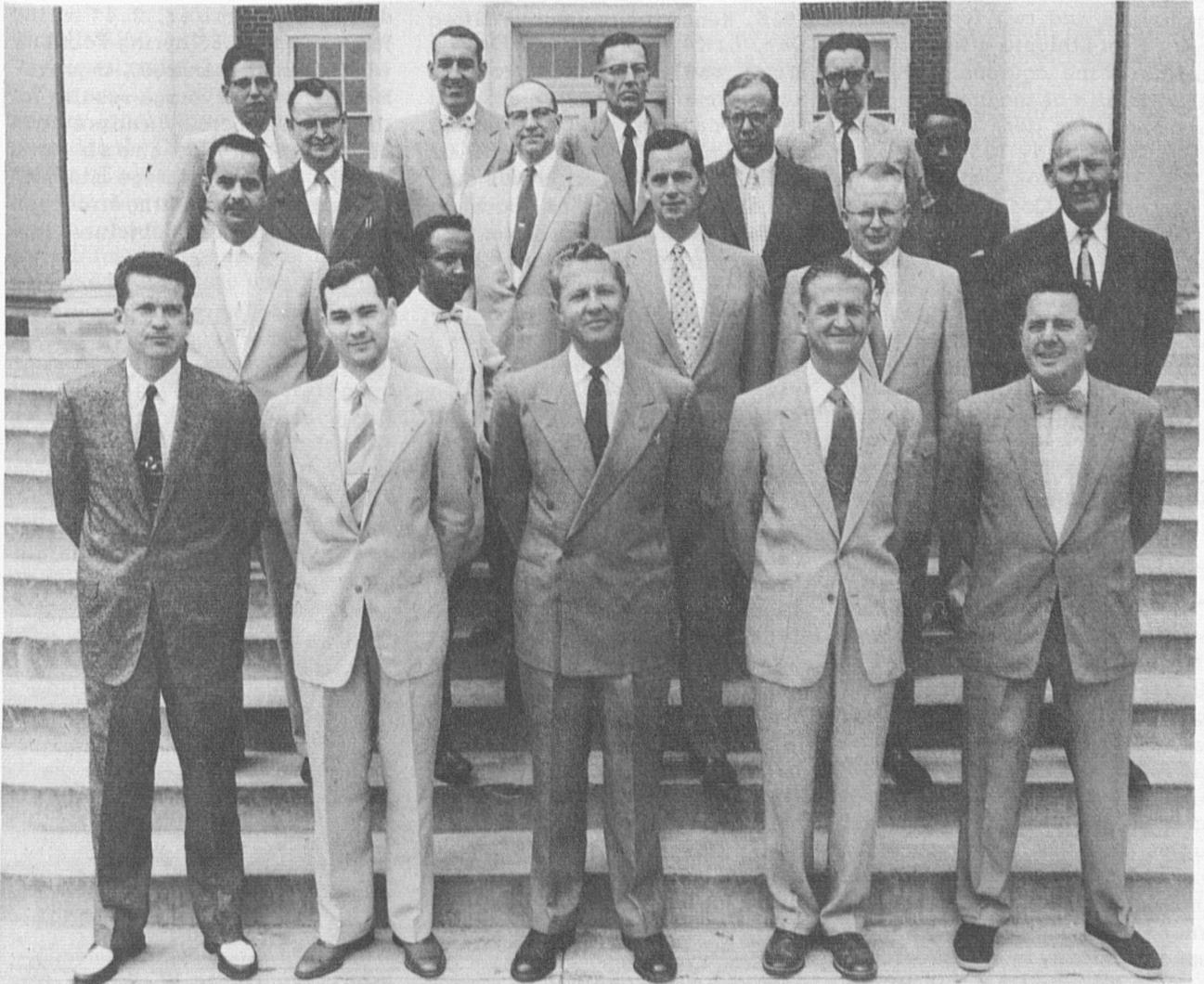
There have been some replacements of parts during these 62 years of service. At the present time the instrument is operating normally, as it has for several years.

Agricultural Meteorology Institute

THE Agricultural Meteorology Institute which began on July 9, 1956 was brought to a close at a luncheon for members of the class, given by the University of Maryland. Among the short "com-

mencement" talks was one by Dr. Reichelderfer who gave a brief outline of the Bureau's past work in the field of agricultural meteorology and tentative plans and hopes for the future development

of this phase of our service. The Chief of Bureau also expressed his appreciation to those whose vision, planning and hard work had made the course possible and brought it to a successful con-



Front row-left to right-Lee L. Stinson, Col.; Robert R. Dickson, N. C.; Dale R. Harris, Cal.; Robert F. Hasling, La.; and Vincent J. Valli, Ct.; Second row-left to right-Henry J. Paul, Md.; Tesfaye Asfaw, Ethiopia; M. G. Baldwin, Pa.; Donald V. Dunlap, Pa.; and Oliver H. Newton, Texas. Third row-left to right-Gordon Hundebay, Cal., Gerald T. Beall, Minn.; John L. Baldwin, D. C.; and Mogus Takie, Ethiopia. Back row-left to right- James A. Harman, Nebr.; Ray L. Kistler, Ariz.; Percy N. Eland, Kans.; and Harry L. Swift, D. C.

clusion. Among those to whom he expressed appreciation were the University officials, Mr. J. M. Beall, Mr. Milton Blanc, and Dr. Helmut Landsberg.

Classes were begun at the Weather Bureau installation at Suitland, Maryland and at the end of three weeks the group transferred to the University of Maryland at College Park for the remaining four weeks of the session. Sixteen Weather Bureau employees and two foreign students from Ethiopia attended. An outline of the courses given and other details of the Institute were included in an item appearing in "TOPICS" for July 1956.

A. B. Hamilton, who acted as University Coordinator for the program and who "shepherded" the group during its stay there, was toastmaster for the luncheon. Dr. Gordon M. Cairns, Dean of the College of Agriculture, presented certificates of satisfactory completion of the course at the close of the luncheon.

Radar Installation

Completed at San Juan

ON July 26, 1956, the installation of an SP radar at San Juan was completed. This is a radar similar to that which was used so successfully at Hatteras last summer for hurricane detection. The radar operates on a wavelength of 10 cm., has an 8-foot antenna, and maximum peak power output of 1,000,000 watts. An automatically-operated 35 mm. time-lapse camera, which photographs the echoes on a separate repeater scope, is also provided.

It is expected that this equipment will be very useful in tracking any hurricanes that approach within 200 nautical miles of that station. It will also be useful for general work in operational programs in aviation, general weather, hydro-

District Forecasting Team at WNA

Receives Cash Award

THE district forecasting staff at Washington National Airport was given a Group Award of \$250 for Superior Accomplishment during the past winter season. During the winter months of December, 1955 through February 1956, Kenneth Norquest, Wilfred Day, Ernest Rampey, George Brown, and James Hunter provided exceptionally accurate minimum temperature forecasts for the Washington, D. C. area. Their record during this period was outstanding and results (as shown by the table) were so much better than for any previous winter season

since verification records were started in 1945, that it was considered worthy of special recognition.

From the above tabulation it can be seen that the average error during the past winter was 2.6° during December, 2.4° during January and 2.6° during February which is more than a 30% improvement over the average results for the past ten years. In no previous season in any of these three months has the average minimum temperature forecasting error been as small as that obtained this year.

| | <u>December</u> | <u>January</u> | <u>February</u> | <u>Average for winter</u> |
|--|-----------------|----------------|-----------------|---------------------------|
| 1945 | 3.1 | --- | --- | |
| 1946 | 4.1 | 4.8 | 3.9 | 3.7 |
| 1947 | 3.2 | 4.0 | 4.1 | 4.1 |
| 1948 | 3.4 | 4.0 | 4.8 | 4.0 |
| 1949 | 4.4 | 3.0 | 3.1 | 3.2 |
| 1950 | 3.5 | 4.4 | 3.8 | 4.2 |
| 1951 | 2.9 | 3.7 | 3.0 | 3.4 |
| 1952 | 3.5 | 4.2 | 2.9 | 3.3 |
| 1953 | 3.4 | 4.1 | 3.3 | 3.6 |
| 1954 | 3.6 | 3.7 | 4.2 | 3.8 |
| 1955 | --- | 3.1 | 4.0 | 3.6 |
| Average Error
(10 years) | 3.5 | 3.9 | 3.7 | 3.7 |
| Average Error
During
Winter
Dec. 1955
thru Feb.
1956. | 2.6 | 2.4 | 2.6 | 2.5 |

logy, and research.

The installation was made by Mr. D. R. Soltow and Mr. R. R. Miller, radar engineers of the Instrumental Engineering Division, and Mr. C. L. Dannheiser, facilities engineer of the O & SF

Division. Mr. R. C. Fultz is the resident electronics technician at San Juan. Mr. M. W. Brooks, supervisory electronics technician for the Caribbean area, will also assist in maintaining the equipment.



Evansville Pilot Makes Special Flights to Reconnoiter Threatening Weather Situations

UNUSUAL action taken by a local pilot to assist the Evansville office in reporting severe local storms has been reported to the Central Office by the MIC at Evansville.

Mr. Marshall Hayes, executive pilot for the Traylor Brothers Construction Company of Evansville made voluntary weather survey flights on two occasions when tornado-like clouds were reported in or near the Evansville area of responsibility. The aircraft used for these flights was a Beechcraft Bonanza fully equipped for instrument flight.

During the evening of April 14 a funnel cloud was observed in the distant northeast. Mr. Hayes was in the Evansville office checking

weather at the time and volunteered to make a reconnaissance flight to report on the conditions. By the time he arrived in the area no funnel was seen. Again on the evening of May 26 the CAA station at Paducah reported an unconfirmed tornado at La Center about 12 miles west of Paducah. This was later confirmed as a tornado by Kentucky State Police. Two hours later the observer at Lock 49, Uniontown Ky. called to report heavy rain showers with tornado-like clouds moving northeast. Mr. Hayes was in the office and again made an aerial survey to the area to determine if any unusual conditions were moving into Evansville. When he arrived in the area of question the

tornado-like clouds had dispersed and only the remnants of a thunder-shower was seen.

Aerial reconnaissance of this type is not often obtainable. Still it is one of the most effective ways known to get the type of information forecasters need in determining whether or not this or that community or area should be warned unnecessarily.

The Chief of the Bureau has sent Mr. Hayes a letter of appreciation for the valuable, unselfish contributions he has made toward increasing the effectiveness of our weather warning services and the safety of the people in his area.



Walking the Extra Mile

A memo from Phoenix points out that the Weather Bureau family sometimes forgets how important a brief explanation can be to the public during adverse weather.

A heavy telephone load developed at Phoenix during a thunderstorm and, at the suggestion

of a radio station editor, the Meteorologist in Charge broadcast an informal explanation to help reduce public apprehension. The following letter was received later from the Mayor of Phoenix:

"The other afternoon when a violent wind storm hit Phoenix and some rain accompanied it, I chanced to hear your ad-lib explanation of the same, and I considered it most excellently done.

"I was interested in noting the sudden quiet that came over every one in the vicinity of the radio so that all could hear your words.

"We forget sometimes how dramatic storm information is and how raptly people listen. This type of informal explanation, I think, is beyond a doubt one of the valuable services of your office that we sometimes overlook."

A Pat on the Back

FROM time to time we print expressions from users complimenting the Weather Bureau for its services. The following letter is

reproduced since it compliments a radio station for accurate weather reporting. "Sugar catches more flies than vinegar" and we

believe the time it takes to send a compliment to a broadcaster when an exceptionally fine broadcast is noted is well spent.

Manager
Radio Station WGN
441 North Michigan Ave.
Chicago 11, Illinois

July 10, 1956

Dear Sir:

I want to congratulate a WBN staff member on an especially fine job of reporting a severe weather forecast about two weeks ago. Being able to listen for only a short time, I didn't get the man's name; the broadcast was over WGN between 1:05 and 1:10 p.m. (CDT) on Tuesday, June 26th.

The severe weather forecast covered two areas, one of them just touching Chicago. In wording such forecasts it is always a problem for us to indicate the area explicitly and to properly express the limitations. Your broadcast, given verbatim plus a few very brief clarifying statements, made what we feared to be a rather complicated forecast very clearly understood.

That forecast, like all which mention possible tornadoes, merely passed on to the public our own apprehension of possible danger. In these forecasts we are faced with the difficult problem of alerting a great number of people, whereas never more than an extremely small percentage experience or even see a tornado. This can't be avoided if we forecast tornadoes at all, but from experience we feel a great many lives have been saved by tornado forecasts; we also feel that an important part of the credit belongs to the people who relay the forecasts so promptly and accurately.

As you know, a tornado forecast, as opposed to a tornado warning, means we expect one or several tornadoes somewhere in an area of perhaps half a state or larger. Once a tornado is sighted we issue a tornado warning for a much smaller area. We think the warning is more effective--people will look for it and know more quickly what to do--if alerted by the severe weather forecast. An example with evidence of many lives saved was in the Grand Rapids, Michigan area on April 3rd of this year; also other places that same day.

Incidentally, on June 26th the nearest tornado was between South Bend, Indiana and St. Joseph, Michigan. Your broadcast that afternoon accurately communicated our estimate of the situation without any impression of greater or less urgency than the forecast intended. This example of fine reporting is no doubt common on WGN, perhaps many other stations, but the meteorologist is usually too busy to listen to his own forecast, so it is gratifying to him to note an example of such excellent cooperation.

Sincerely,

J. R. Fulks,
Meteorologist-in-Charge
Chicago Office

Superior Accomplishment Awards

Lucy Kirchner

LUCY KIRCHNER of the New York Regional Office was given a Superior Accomplishment Award of \$100 for highly competent performance of her duties as Placement Officer. During some twelve years of Bureau service, Mrs. Kirchner has consistently carried a very heavy workload. Her constant attention to duty, and her capacity for work has prevented the accumulation of a backlog during periods when the staff of her unit has been temporarily reduced. Despite a varied and heavy workload, her work is of the highest quality. She takes more than a routine interest in assisting field employees and, on occasion, her analysis of an employee's qualifications has led to the discovery that he had better qualifications than he had indicated. Mrs. Kirchner's warm, courteous, discreet and helpful treatment of those she is charged with meeting has elicited many expressions of appreciation from the recipients.

Olive Long

OLIVE LONG, Assistant Chief of the Fiscal Section in the Central Office, was given a Superior Accomplishment Award of \$200 for outstanding performance. Over the years, Miss Long's understanding of fiscal matters gained through her deep interest in her work and many years of experience has been of great benefit to the Bureau. As a recent example, Miss Long conceived and developed a plan with the U. S. Engineers and the Bureau of Reclamation to consolidate a number of separate funds and allotments under a master account. This new procedure has reduced considerably the cost and work involved in processing these accounts. She has also made an outstanding contribution to the

simplification and application of a new property accounting system recommended for use in the Weather Bureau by the General Services Administration, by working out all reporting details in close cooperation with our Procurement and Supply Section.

Gaspere Licausi

GASPARE LICAUSI, pressroom foreman in the printing section at the Central Office, was given a Superior Accomplishment Award of \$200 for outstanding performance. He is credited with greatly contributing to the high quality of the pressroom's printing output, to the increase in offset production with a concurrent decrease in operating cost, improving morale in the pressroom and keeping it at a high level, and cutting production time lost because of machine breakdown to less than twenty hours last year through effective equipment maintenance. An additional example of Mr. Licausi's ability was his assembling and installing of a dismantled "22 x 34" Harris press at Asheville in five days to meet a deadline schedule. Factory representatives had estimated 5-7 days for the job at \$100 per day plus travel expenses if one of their mechanics had done the job.

Alvida H. Nordling

ALVIDA H. NORDLING, Meteorological Aid in the Climatological Section, WBO Anchorage, was given a Superior Accomplishment Award of \$200 in recognition of her highly competent work during 1954-55. She has been rated outstanding for the past two rating periods because of her ability to perform her own duties in an excellent manner and carry on the functions of the office when her

supervisor was away on field trips. For several months during 1955, after her supervisor had been transferred, Miss Nordling carried on a large proportion of the work and responsibilities normally handled by the supervisor, in addition to her regular duties.

Joseph W. Pope

JOSEPH W. POPE, First Assistant at Pensacola, was given a Superior Accomplishment Award of \$200 for outstanding performance during 1953-55. Shortly after Mr. Pope reported to Pensacola in June of 1953, one assistant was transferred and the MIC retired July 1, 1953. The remaining man was out sick for six weeks so that Mr. Pope had to run the station during this time with the help of a man temporarily detailed from Fort Worth. Pope was acting MIC from July 1 until October 16, 1953. For a considerable period after the new MIC arrived, he and Mr. Pope carried the full work load at Pensacola.

Maude K. Smalls

MAUDE K. SMALLS, photocopy machine operator at NWAC, was given a Superior Accomplishment Award of \$100 for the outstanding quality and quantity of her work since her appointment in March of 1955. Despite her limited amount of experience, she quickly became so proficient that she was asked to instruct new and inexperienced personnel in the operation of the machines - and has done an excellent job. Mrs. Smalls' supervisors have commended her especially for her initiative and good judgment in a machine breakdown emergency at 3 a.m. on November 15. The photocopy machine jammed, and because of the hour a repairman was not available so

Employee Suggestion Box

Mrs. Smalls was told to shut down the machine. Realizing that this would seriously hamper NWAC's work flow, Mrs. Smalls assumed the responsibility for attempting to make the necessary repairs. After considerable difficulty and without appropriate tools or previous knowledge, instructions, or experience, she succeeded in repairing the machine, and voluntarily stayed overtime to help clear up the backlog of work.

Dorothy Tudor

DOROTHY TUDOR, clerk stenographer in the River Forecast Center at Kansas City, was given a Superior Accomplishment Award of \$150 for consistently outstanding performance. Her work within the limits of her job description has been excellent, but of even more value to her unit has been her ability to assume certain hydrologic duties when necessary, thus permitting more flexibility in staff assignments during flood emergencies. Mrs. Tudor is thoroughly familiar with the entire operation of the office and has become proficient in supporting the forecasting activities of the River Forecast Center. In addition to her exceptional stenographic and hydrological work, Mrs. Tudor's ability in the field of mathematics and hydrology has contributed to the increased productivity in research and development projects carried on by her office. She has received an "outstanding" rating for the past three years.

Alice Voll

ALICE VOLL, Assistant in the office of the Administrative Services Division was given a Superior Accomplishment Award of \$100 for outstanding performance. In addition to discharging her regular duties in a highly competent manner, Mrs. Voll has taken a keen interest in the many and varied
(Cont'd. on next page)

Francis Drybala
Miami, Florida

\$25 A suggestion which resulted in a change in the ship collectives so that a sub-heading precedes the ship reports if the time of observation is different from that of the original heading. This change is helpful to the plotters and eliminates the possibility of reports being entered on the wrong map because the time of reporting is overlooked.

Richard Garrett
Topeka, Kansas

\$35 Change the SD call-up procedure on RAWARC so that call letters appear one following the other in a horizontal arrangement instead of vertically. Appropriate changes will be made in the RAWARC manual, and adoption of this suggestion will result in a considerable savings in teletype paper.

Albert Karpovich
Office of Climatology
Washington

\$15 Show upper air wind values in the National Summary and the Monthly Weather Review in knots instead of in terms of the Beaufort scale. This will make possible more accurate determination of mean upper air wind values, and modernize presentations to make them comparable to those in other publications.

Sidney Marcus
Extended Forecast Section
Washington

\$75 Eliminates plotting and analyzing ten maps monthly by substituting photocopies of a different scale reduced to proper size. An estimated annual savings in manpower of \$700 will result, and in addition the new maps are considered a marked improvement.

Donald C. Merrill
San Francisco, Calif.

\$25 A specified rearrangement of the order of collection on Service "A" Circuits 8011 and 8012. The order proposed, which was adopted with only two exceptions, will more efficiently serve the needs of the Weather Bureau and other Service "A" subscribers.

Ernest R. Orr
Printing Section
Washington

\$15 Print a black triangular reference mark in the upper left-hand corner of page one of publications having several pages. This mark facilitates locating the first page when separating the trimmed sheets for stapling, which will result in a considerable savings of time in the finishing operation.

\$25 All CO Divisions and Sections use non-photographic blue formats when typing manuscripts for offset printing. Use of these formats results in a saving of time in layout and camera work and promotes more efficient use of paper space.

Eugene L. Peck
Salt Lake City, Utah

\$25 Revise the format of Tables 1 and 2 of the Annual Summary of Climatological Data. A heavy line separating the months makes the data for each month more readily distinguishable.

Robert F. Webster
Philadelphia, Pa.

\$15 A suggestion which resulted in a previously-issued publication containing instructions concerning setting and reading aneroid barometers. These may be used by stations in answering local inquiries for such information.

Leland D. Wilkins
Pomona, California
(Formerly Phoenix, Arizona)

\$125 Revise instructions to enable radiosonde observers to calculate rate of ascent for each significant level above 80 mbs rather than waiting for the end of the flight to calculate an average rate of ascent. This will make it possible to include more information in the first transmission and fill an important need in supplying higher level wind data as soon after the observation as possible.

George C. Williams
Chicago, Illinois

\$25 Acquaint employees traveling by air on government transportation requests with "family plan" so that advantage can be taken of savings available. Par. C-3107 of WB Administrative Manual is being amended to urge employees to take advantage of the plan whenever convenient.

(Awards Cont'd.)
management improvement projects of the Division and has undertaken to provide organization and management analysis assistance whenever possible. Her suggestions for simplifying the preparation of the Bureau telephone directory, and for handling of emergency address cards have both been adopted, and the legislative reference system she developed for facilitating the presentation of Bureau comments and views on proposed legislation, Department Orders and Circulars has proved to be a valuable contribution to office operation. As Security Assistant, Mrs. Voll has performed in an exceptional manner in processing security information, maintaining records and taking care of related security matters.

Marjorie Wiss

MARJORIE WISS, Appointment Clerk at RAO Kansas City, was given a Superior Accomplishment Award of \$100 for outstanding performance during 1954-55, and for highly competent work during the several years immediately preceding. Although she was required to assume the duties of Classification Clerk along with her own because of a reduction in staff in June 1953, Miss Wiss, by working overtime and streamlining procedures was able to keep up to date on both jobs. Later, when further reductions were necessary, she increased her productivity still more to assume a portion of this increase in workload.

Throughout all this increase in workload, Miss Wiss has maintained a very high standard of accuracy. In 1954, Civil Service Inspectors commented on the "remarkable accuracy" of the personnel actions and records processed by Miss Wiss. This accurate work was the more remarkable because it was accomplished with a minimum of checking because of the heavy workload.



THE publications that are listed in this column have been issued during the month of June. Those items showing prices are on public sale and are available from the Superintendent of Documents.

Aviation Series No. 18 - Altimeters--How Their Readings Are Affected by Temperatures and Other Factors, concludes the series of map back articles on flying weather information for pilots. All eighteen articles have been converted to 8-page pamphlets and are on public sale singly and in packet form. Single copies are 5 cents each. The packet, which includes the series of 18 pamphlets, is 75 cents.

Aviation Series No. 18 - Altimeters, How Their Readings Are Affected by Temperatures and Other Factors. 1956. 8 pages. 5 cents.

Change A 10 - Addendum to Circular P. (WBAN Manual of Radiosonde Observations.) 6th ed. 20 pages.

Change No. 1 - Manual of Radar Meteorological Observations. 2nd ed. 1956. 2 pages.

Climatic Summary of the United States - Nebraska - Sup-

plement for 1931 through 1952. 1956. 68 pages. 35 cents.

Geophysical Research Paper No. 47. A Meteorological Analysis of Clear Air Turbulence. 1956. 74 pages.

Hurricanes. A Quick Reference Guide to Synoptic Charts of Hurricanes That Threatened or Entered the United States, 1954-1955. 1956.

Hurricane Warnings. 1956 4 pages. 5 cents each; \$3.75 a 100 copies.

National Hurricane Research Project: Report No. 1 - Objectives and Basic Design of the National Hurricane Research Project. 1956. 8 pages; Report No. 2 - Numerical Weather Prediction of Hurricane Motion. 1956. 32 pages.

Ocean Station Vessel Meteorological Records Survey - Atlantic and Pacific. 1956. 72 pages. 40 cents.

Publications Lists. Part 4. Aviation Series; Part 5. Terminal Forecasting Reference Manual.

Research Paper No. 39. Mesoanalysis, An Important Scale in the Analysis of Weather Data. 1946. 92 pages. 50 cents.

Selected Bibliography on Weather Crop Relations in the

Great Lakes. 1956. 16 pages.

Substation Histories: Alabama, 1956. 64 pages. 35 cents; Colorado. 1956. 104 pages. 50 cents; Georgia. 1956. 68 pages. 35 cents; Iowa. 1956. 72 pages. 35 cents; Kentucky. 1956. 54 pages. 30 cents; Maryland and Delaware. 1956. 48 pages. 25 cents; Michigan. 1956. 60 pages. 35 cents; Mississippi. 1956. 68 pages. 35 cents; Missouri. 1956. 82 pages. 45 cents; New England. 1956. 132 pages. 65 cents; New Jersey. 1956. 24 pages. 15 cents; New York. 1956. 148 pages. 65 cents; North Carolina. 1956. 68 pages. 35 cents; Ohio. 1956. 88 pages. 45 cents; Texas. 1956. 224 pages. \$1.00; Virginia 1956. 60 pages. 35 cents; Washington 1956. 104 pages. 50 cents. West Virginia. 1956. 60 pages. 35 cents; Wisconsin. 1956. 60 pages. 35 cents.

Supplementary Scales and Diagrams to be bound with Radiosonde Observation Computation Tables and Diagrams. (Reprinted from Circular P, 6th Ed.) 1956. 4 pages.

Technical Paper No. 15: Part XVI - Mississippi. 1956. 72 pages. 40 cents; Part XVII Pennsylvania 1956. 148 pages. 65 cents.

Forecaster Unhurt in Blaze

VERNON T. HOUGHTON, JR., river forecaster at Pittsburgh, while attending a flood control conference at Warren, Pa., last April, had the misfortune of losing his clothes and business papers when his hotel burned during the night but was lucky enough to escape uninjured. Mr. Houghton gave this account shortly after

the fire:

"I was caught right in the middle of it. I'm still a bit dazed. I had just gone to bed shortly after 1 a.m. when I heard a crackling outside my door and got up to see what was going on. When I opened the door I saw the corridor was full of flames. All I had on were my pajamas and my glasses but I

ran through the corridor pounding on doors to awaken other guests. I had to run through flames to get to the stairway and I went down to the lobby and told the desk clerk the hotel was on fire. Then I stood outside in my bare feet for about 15 minutes before a friend found me and took me to his home. I almost froze."

1000-Hour Sick Leave Club

Albuquerque, N. M., WBAS

H. E. Hutchison
R. B. Selleck

Boston, Mass., WBAS

W. A. Drebert

Central Office

J. J. Brennan
O. Y. Causey
J. A. Fellgren
M. J. Field
F. E. Houghton
W. E. Jones
C. R. Jordan

Charleston, W. Va., WBAS

J. A. Mayer
W. D. Wolfe

Cincinnati, Ohio, WBO

E. S. Bennett
J. J. Sopko

Dayton, Ohio, WBAS

T. V. Brierly Jr.

Escanaba, Mich., WBO

T. D. Coen

Fresno, Cal., WBAS

R. A. Baum

Fort Wayne, Ind., WBAS

C. H. Downes

P. A. Lucas

Galveston, Tex., WBAS

W. H. Heath

Green Bay, Wis., WBO

F. E. Kolander
J. V. Lepage
M. N. Schmitz
J. M. White

Houston, Tex., WBAS

H. G. Baker

Kalispell, Mont., WBAS

A. F. Burnham
R. E. Hall

Kansas City, Mo., WBAS, WRPC

E. C. Corkill
W. Cowdrick
F. B. Johnston Jr.
E. Thomas

Koror

V. F. Callaway

Lexington, Ky., WBAS

C. E. Hardy
D. E. Newton
U. B. Webb
W. E. Zavitz

Lincoln, Neb., WBO

W. R. Stevens

Medford, Ore., WBAS

W. E. Acord
R. L. Cutshall
A. W. Fritz

Orlando, Fla., WBAS

E. S. Morgan Sr.

Pensacola, Fla., WBO

C. E. Mahaffey

Philadelphia, Pa., WBAS

J. W. Anderson

Port Arthur, Tex., WBAS

E. F. Thompson

Raleigh, N. C., WBAS

S. F. D. Duke

Rapid City, S. D., WBAS

H. A. Boyles
R. G. Strietzel

Tucson, Ariz., WBAS

A. J. Bentley
P. C. Dressler

Waco, Tex., WBAS

J. M. Keller

Yakima, Wash., WBAS

R. F. Allen
C. A. Finch
H. F. Rush



Major Alfred H. Thiessen

MAJOR ALFRED H. THIESSEN USA(ret.) 84, one of the first Army weathermen, died on Thursday, June 7, 1956.

A former employee of the Weather Bureau from 1900 to 1917, he transferred from Salt Lake City to Portland, Oregon in May 1917, as an Official in Charge. Major Thiessen was commissioned in the Army in 1917, and on January 1, 1918 he was given an indefinite furlough to enter military duty in World War I.

After serving in Europe in the First World War, he returned to the United States and headed the

Meteorological Section of the Army Signal Corps.

Around 1925, when the Navy was making a series of around the world flights, Major Thiessen served as their weatherman in Labrador.

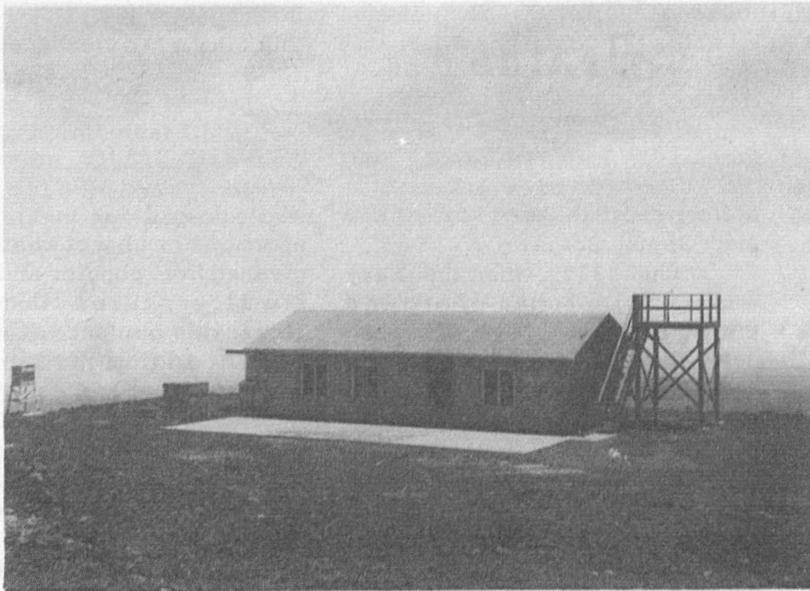
Major Thiessen compiled the Bureau publication "Weather Glossary" that was issued in 1946. His work on it began some ten years previously, however, as a retirement hobby. The preface to the volume states that the basic collection of terms was made by Charles F. Talman, Bureau Librarian from 1908 to 1936,

who accumulated in his time an enormous number of weather terms gleaned from popular and scientific literature. Under Major Thiessen's guidance, terms were selected from the Talman list, new terms that had come into use were added, and, finally, terms were chosen from suggestions contributed by many meteorologists. In the compilation Major Thiessen's objective was that the definitions be written as simply and as understandably as possible.

He lived at 1618 S. Arlington Ridge Rd., Arlington, Va.

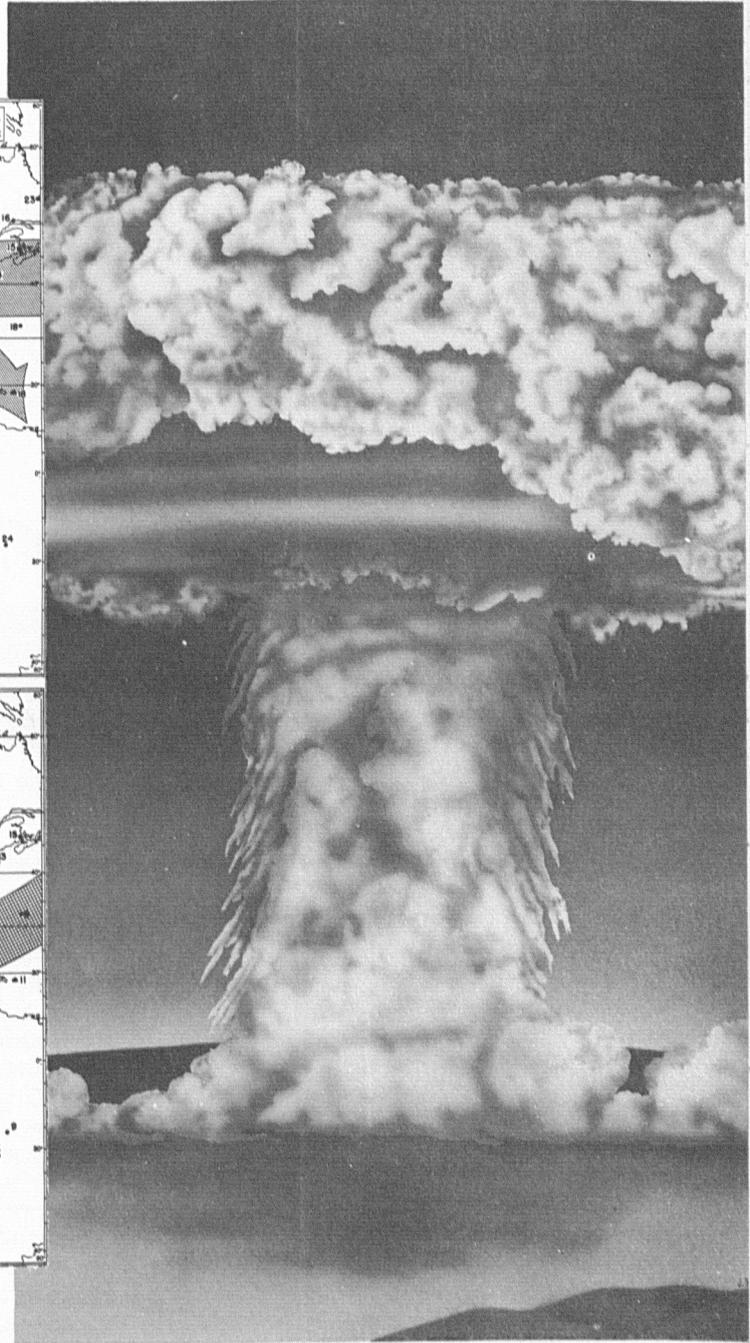
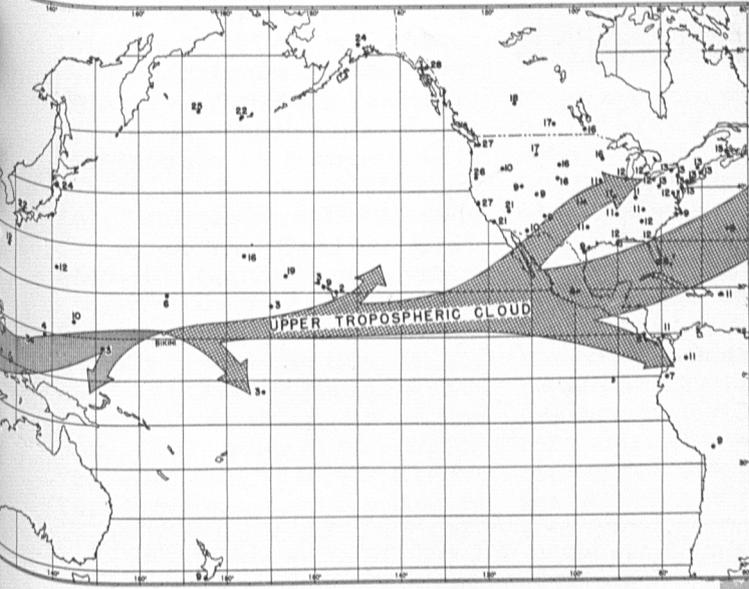
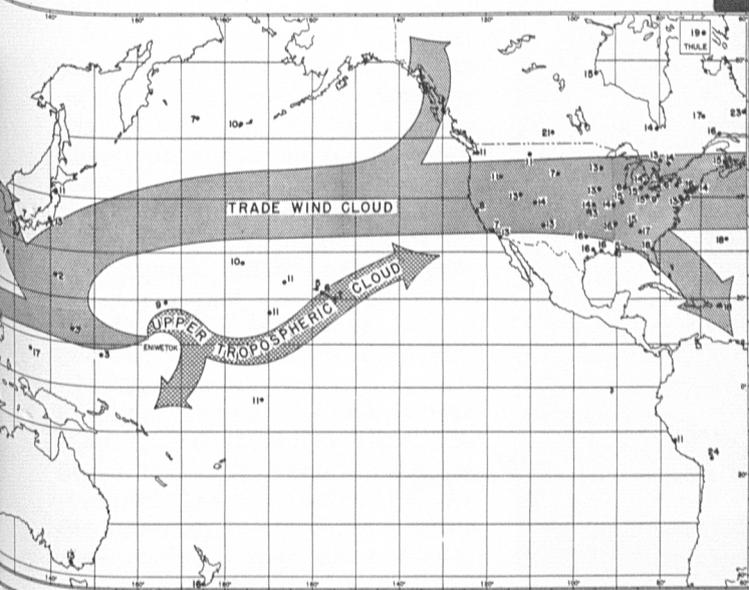


THE SUMMIT UNIT - 1952



THE SLOPE UNIT - 1956 (see pages 141-142)

TOPICS



MEET THE ASSISTANT CHIEF FOR PROGRAM PLANNING

Lloyd E. Brotzman

THIS month we are presenting Mr. L. E. Brotzman, Assistant Chief for Program Planning, who really needs very little introduction to many of you. He is a frequent passenger in the Weather Bureau airplane when it heads cross-country; the counselor and guide for field employees visiting the Central Office; and the very warm personal friend of the great number of us with whom he has worked during his 36 years with the Weather Bureau.

Mr. Brotzman was born in Easton, Pennsylvania, April 18, 1903 of Pennsylvania Dutch ancestry. The nomadic life of a weatherman began for him at the age of four when his father, William S. Brotzman, who had joined the Weather Bureau at Montgomery, Alabama in 1906, took him to Louisville, Kentucky; Ithaca, New York; and Nashville, Tennessee before settling down in Pittsburgh, Pennsylvania in 1915.

"Brotz" as he is affectionately known attended Crafton High School in Crafton, Pennsylvania; Brooklyn Academy, Euclid Business College, and Columbia University in New York City, N. Y.; and American and George Washington Universities in Washington, D. C. Study in meteorology began as early as 1929 at Columbia University, and studies in Administration at American University culminated in an Associate in Public Administration degree in 1952.

His Weather Bureau employment began on July 1, 1920 with a temporary appointment as "Printer's Helper" in the Pittsburgh Office. For a few months in the spring of 1923 he left the Bureau



for an extended period of leave, but returned to accept an observer position in the New York City Office on July 5. Progressive advancements soon resulted in a title of Senior Observer and assignment to the Marine Program of ship visitation. Expansion of the Marine Program in 1931 called him to New Orleans to develop better participation by shipping interests in the Gulf and Caribbean area. He was transferred back to New York City in November 1934 to head the enlarged Marine Program there.

With the censorship of weather information early in World War II, the Marine Program was restricted and Mr. Brotzman was transferred to the Central Office with assignment to the newly formed Station Operations Division. Outstanding performance in this work brought promotion to

Chief of the Regional Operations Section in 1944 and to Assistant Chief of the Division in January 1946. Organizational changes in 1948 established the Office of Plans and Program Management and Mr. Brotzman was selected as its Chief. He held that position until given his present assignment early this year.

Participation in the preparations for briefings of Col. Lindbergh, Adm. Byrd and Clarence D. Chamberlain, who made historic non-stop flights across the Atlantic in 1927 was an early highlight in the "Brotz" career. The growth and development of the observational program performed by commercial shipping into such an important segment of the international weather reporting services is a tribute to his diligent and effective work with the shipmasters.

He developed an early interest in administrative work and has always maintained a "forward look" toward the job at hand. Even though he found the wartime work load heavy and exacting on arrival at the Central Office in 1942, he immediately enrolled in the School of Administration of American University to further those interests. He has played an important part in the development of the Bureau's organization and has taken the leadership in planning management practices to keep pace with the times.

As a boss, as a co-worker, as a man, he is always friendly and helpful, considerate and respectful of your problems and viewpoint, frank in his discussions and evaluations of the point in question, and dedicated to getting the job done. He is never too busy to discuss with anyone a business or personal problem, or to exchange personal amenities. His genial manner and the warmth of his personality place one immediately at ease in his presence and his quiet mild firmness inspires one's best effort.

In his private life "Brotz" is the typical suburban home owner, gardener, green keeper, decorator, etc. He is a member of the American Meteorological Society, the American Geophysical Union, the Society for Advancement of Management and Toastmasters International. At present he is Secretary of the Washington Chapter of SAM and has previously held important offices in Toastmasters.

Edith Brotzman, a gracious hostess, is almost as widely known among Weather Bureau people as is her husband. Their home has been an "open house" to many Bureau people both local and those temporarily in the city. Their family includes daughter Jessie (Mrs. Joseph O'Brien) and granddaughter Cynthia of Miami and Lloyd, Jr. now a senior at the University of Richmond.

Civil Service Inspection

IN conducting its recent inspection of Personnel Management activities in Region IV, the Commission used a questionnaire to ascertain employee reaction to the program. We believe that this is a good approach and one that if continued will be helpful in improving the personnel management program. The questionnaire was sent to a representative number of supervisory and non-supervisory employees selected at random. No record was kept of the employees to whom the questionnaires were sent and employees did not sign the completed questionnaires. The returns were entirely anonymous. This encouraged the frank response that is necessary if the results of the questionnaire were to be of value.

In Region IV practically all of the questionnaires distributed were completed and returned.

The results were fairly conclusive in showing—

(1) That in certain areas of the personnel management program additional information should be made available to employees, and

(2) That many employees were not familiar with the details in the Personnel chapters of the Weather Bureau Administrative Manual or all of the articles dealing with pertinent personnel subjects published in TOPICS or other issuances.

The Personnel Division will continue to make information available in the various personnel program areas, by preparing Manual chapters and articles in TOPICS.

Manual chapters and TOPICS articles are usually prepared on those subjects of general interest to all employees and new issuances should be brought to the

attention of all employees; otherwise they will not accomplish their purpose. The new Employee Handbook which has just been distributed should provide much additional information of interest to employees.

As was natural in the use of questionnaires, it was apparent that some questions were not interpreted alike by all employees. For example, 100% of the supervisory employees answered that they had discussed work performance with their employees during the last 12 months yet only 73% of the non-supervisory employees replied that their work performance had been discussed with them. This difference may have been due to a belief by some employees that the question referred to a formal discussion or conference on the subject at rating time. However, many supervisors prefer to carry on these discussions more informally throughout the year as a regular part of their supervisory responsibility. These informal discussions of work situations and procedures are of equal if not greater value than the formal type of discussion held once a year at rating time. On the basis of such informal discussions, the employee would be correct in giving an affirmative answer to this question in the questionnaire.

Another question asked was "Do you feel that employees are promoted on a fair, impartial and equitable basis?" This question was answered in the negative by 32% of the non-supervisory employees and 21% of the supervisory employees. Since the Bureau Placement and Promotions Board's primary concern is that promotions be made on a fair, impartial

and equitable basis, its members would be interested in receiving suggestions from employees for improving the promotion program.

The Bureau's policy statement on promotions, reassignments and transfers as discussed in Chapter I-D-35 of the Weather Bureau Administrative Manual includes an invitation to all employees to submit comments concerning the present policy and suggestions for its improvement. Comments and suggestions should be forwarded, attention of the

Personnel Division.

In most respects, however, the questionnaires established the fact that supervisory and non-supervisory employees alike were quite well informed on personnel program activities and the rights and privileges of employees.

The Acting Regional Director of the Denver, Colorado, Civil Service Regional Office wrote our Regional Administrative Officer as follows:

"It is gratifying to note that this inspection indicated that

there has continued to be generally effective administration of personnel management functions, with adequate provision for incorporating in the program the essential elements prescribed in the Commission's guides. As you know, these findings were confirmed by the results of ninety employee and supervisor personnel program questionnaires which were completed during the inspection."

Forecasting Guides Program

THIS month a new series of Weather Bureau Forecasting Guides is being inaugurated by the publication of Guide No. 1, "Forecasting Tornadoes and Severe Thunderstorms". The Guide will be distributed to all Bureau meteorologists. These Guides, which are to appear at irregular intervals, are part of a new Weather Bureau program, initiated in 1955, which is designed to provide Bureau forecasters with better guidance material on forecasting techniques and the application of new research ideas to forecasting. A portion of this program, in which several worthwhile forecasting articles already in print were given widespread distribution, was inaugurated last year (See C. O. Memorandum, dated November 30, 1955 on "Wider Distribution of Publications for Weather Bureau Forecasters"). Such articles will continue to be distributed. However, the primary goal of this program is the preparation of our own Forecasting Guides by experienced Bureau forecasters and research meteorologists.

The aim of the Guides will be to furnish up-to-date information on various forecasting problems

in concise and readily understandable form. They will not attempt to teach people how to forecast, but will rather point the way toward the techniques and considerations which appear to offer the most promise for improving the forecasting product. Since these Guides can only treat the more general aspects of most forecast topics they are in no way intended to replace local forecast studies and manuals, but it is hoped that they will serve to complement these local manuals and to stimulate further work on local forecast problems.

At the present time, three additional guides are in various stages of preparation. These are concerned with hurricane forecasting, the forecast problem of rain vs. snow and the prediction of maximum and minimum temperatures. It is hoped that these will be published within the next year. Additional topics on which work will be started within the next several months are quantitative precipitation forecasting, probability forecasting, and high level wind prediction. Several other forecasting problems on which work is contemplated within the next year or two are visibility, fire-weather, dust storms,

drought, radioactive fallout, forecasting for shipping, and agricultural forecasting. In arriving at these particular subjects care was taken to avoid topics which would merely duplicate good articles recently published or soon to be prepared by the Bureau and other agencies. Thus, such topics as forecasting upper wave patterns by vorticity techniques, objective forecasting, use of radar in weather prediction, extended-period forecasting, and numerical weather prediction have been deferred for the present.

Comments from field personnel on published Forecasting Guides and suggestions about the program in general would be greatly appreciated. These should be addressed to Mr. Jay S. Winston of the Extended Forecast Section, who is currently supervising the program under the guidance of a committee on forecasting guides, which is presently composed of Messrs. P. H. Kutschenreuter, J. Nambias, J. C. Thompson, and E. M. Vernon. Incidentally, two former members of this committee, were Mr. G. E. Dunn, who originally suggested the program, and Mr. R. H. Simpson.

Development of Practice Forecast Program

WHEN the Practice Forecast Program was started in 1955 participants were limited (with few exceptions) to GS-7 and GS-9 meteorologists with twenty credits in meteorology. In 1956 the program was opened to meteorologists of all grades who had the required meteorology credits but due to limited facilities this fact was not stressed. In 1957 the program is being opened to all professional meteorologists in the Bureau regardless of grade, position, or number of meteorology credits. A review of applications received for 1957 shows that employees in all grades from GS-5 to GS-12, inclusive, have applied. The program may now be truly regarded as a program for the entire Bureau.

A new program is started each calendar year. Detailed quarterly results for comparative purposes are sent each participant each quarter and, in addition, his national decile rating for the quarter is furnished. At the end of the year he is sent his national decile rating for the entire year. In dealing with the results of the program decile ranks rather than actual scores are used and, as a general rule, only the participant and his Meteorologist in Charge are informed of the participant's decile rank. However, in recognition of their accomplishment, the names of participants who finished in the first decile in the 1955 Practice Forecast Program are listed below in order of their actual rank.

1. LaMarr E. Eaton-Atlanta, Ga.
2. James H. Eggleston-Lake Charles, La.

WRVA - RADIO

RICHMOND 12, VIRGINIA

July 27, 1956

Mr. Ed Jacobs
United States Weather Bureau
Byrd Field
Richmond, Virginia

Dear Ed:

Please permit me to compliment you on your very excellent weather broadcast in which you described the tornado situation which developed Friday, July 20. Your own personal experience and the manner in which you described the tornado which was in the area of your home was extremely interesting to me and I am sure to many of our listeners.

It is not often that a competent meteorologist is right on the scene to expertly describe what happens. All of us at WRVA are most appreciative of the fine work being done by you and your colleagues.

Best personal regards.

Sincerely,



John B. Tansey
GENERAL MANAGER

JBT/dc

3. Richard F. Browne-Chicago, Ill.
4. Henry C. Schaefer-Milwaukee, Wis.
5. Thomas D. Carter-Sioux Falls, S. D.
6. Max Traunfeld-New York, N. Y.
7. John T. Schilling-Knoxville, Tenn.
8. Tillman F. Gladney, New Orleans, La.
9. Earnest A. Rodney-Washington, D. C. (C.O.)
10. Wayne S. Johnson-Denver, Colo.
11. John W. Measells-Jackson, Miss.
12. Melvin T. Beecroft-Sacramento, Cal.
13. Harold B. Cole-Washington, D. C. (WNA)
14. Edward A. Miechowicz, Buffalo, N. Y.
15. John C. Hurley-Louisville, Ky.
16. Howard Martin-Kansas City, Mo.
17. Lester B. Larson-Walla Walla, Wash.

Bureau Forecasters Provide Weather Services for U. S. Soaring Contests

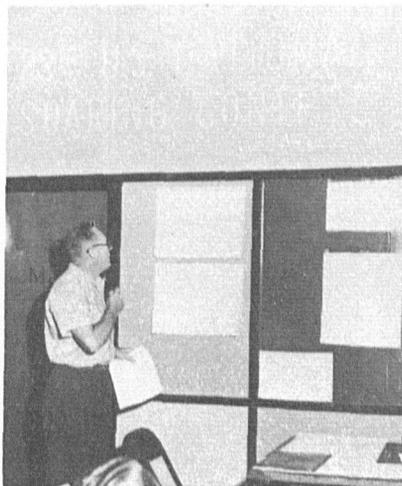
W EATHER briefing services for the Northwest International Soaring Contest at Wenatchee, Washington June 30-July 8 and the 23rd National Soaring Competitions at Grand Prairie, Texas July 31-August 10 were provided by Weather Bureau forecasters. Mr. Joe Mihalic, fruit-frost forecaster at Wenatchee assisted with the Wenatchee Contest and Mr. E. T. Lange, FAWS forecaster at Fort Worth assisted with the Grand Prairie Competitions. The area and winds aloft forecasts prepared at Seattle and Fort Worth FAWS centers provided the necessary guidance material. Reports received indicate that these meetings were the most successful held thus far in their respective areas. Sponsoring organizations were very pleased with the services provided by the Bureau.

At the Wenatchee contest 2000 miles of cross-country flight were logged. The Seattle Glider Council, sponsor of this meet, attributes much of its success to the accuracy of the weather forecasts received.

The largest number of high-

performance sailplanes on record was entered in the Grand Prairie Competition. This coupled with improved soaring techniques and almost perfect soaring weather, combined to break many competitive records.

The contest was also different from other national contests in that it was a "task contest" of



E. T. Lange, WBAS Ft. Worth, Briefing 23rd National Soaring Contest, Grand Prairie, Texas.

the same type conducted at the International Competitions in France this summer. Thus the efficiency of the sailplane and flying techniques decided the contest, not physical stamina as was often the case in past years.

55 pilots were entered in the contest including 5 foreign countries: England, Switzerland, Denmark, Argentina and Canada. Pilots were given a complete weather briefing each morning with special emphasis on convective activity. Following this session, individual help was given up to the minute of take-off.

Mr. Lange had the opportunity of making several flights during the contest.

Some of the statistics on the contest follow:

A total distance of 42,000 miles flown.

Longest single flight, 394 miles.

3 U. S. records broken.

6 Foreign records broken by pilots from the other countries.

15 flights exceeded 300 miles.

45 flights exceeded 200 miles.

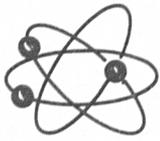
The World Soaring Competition, St. Yan, France

W HILE a full account of the 1956 World Soaring Competition at St. Yan, France, where the U. S. team carried away top honors was printed in the August issue of FORECASTERS FORUM, a few additional points should be brought to the attention of field personnel.

At the request of the Soaring Society of America, Mr. B. L. Wiggin, MIC, Buffalo, New York,

was granted leave by the Bureau to serve as Team Captain for U.S. entrants in this international event and also to handle their meteorological service requirements. Mr. Wiggin highlights the fact that all contenders made extensive use of all meteorological services and that specialized weather forecasts figured as prominently in the results as did pilot skill and equipment capabilities.

Since Mr. Wiggin has worked with the Soaring Society of America for many years one could assume that after making a major contribution to the winning of the 1956 International Contest he might want to rest on his laurels. Instead, he is already planning for participation in the 1958 contest which, in all likelihood, will be held in the United States.



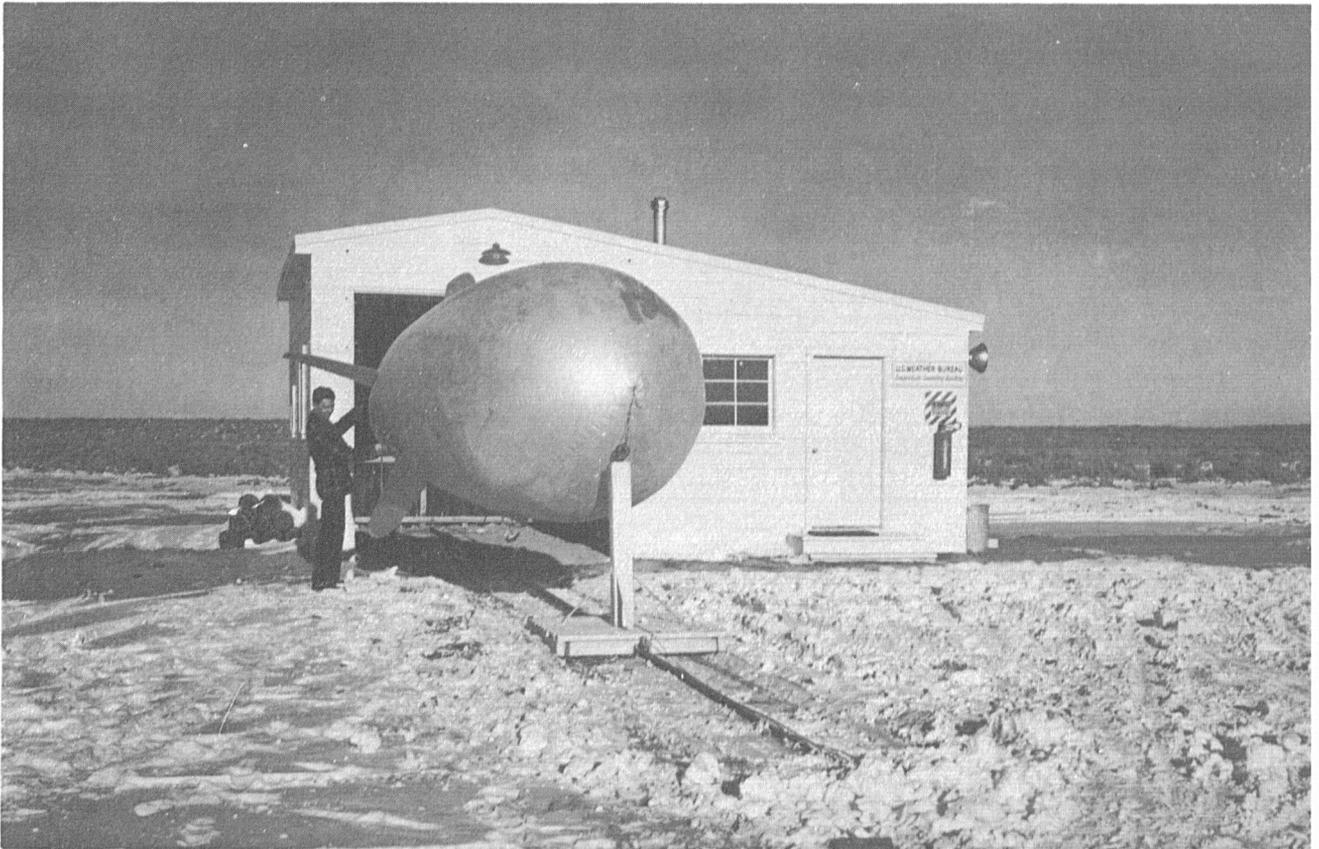
NUCLEAR ENERGY AND THE WEATHER BUREAU

EVEN a cursory glance at the newspapers of the past few years almost invariably reveals one or more articles dealing with the discovery, development, or utilization of nuclear energy. The Weather Bureau has been closely associated with this expanding field of science. Through a program of cooperation with the Atomic Energy Commission, the Department of Defense and other groups, Weather Bureau meteorologists have been working on the application of meteorology to nuclear energy problems. The connection between meteorology and nuclear energy stems from the

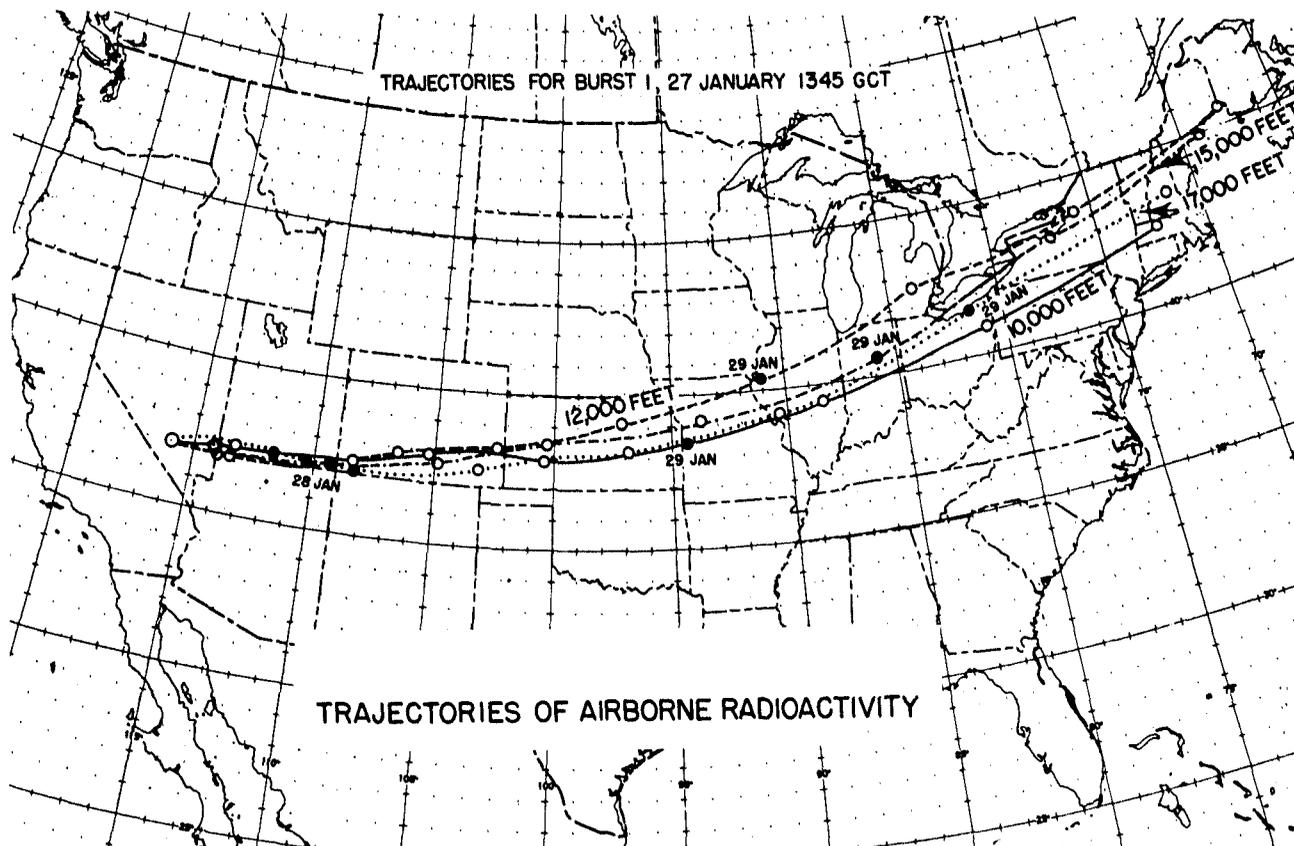
fact that the creation of energy through the disintegration of an atomic nucleus also creates radioactive particles or gases which, when released into the air, can travel great distances in relatively short periods of time. Early in the development phase of nuclear energy, it was realized that it would be desirable to survey the environment near plant installations to learn more regarding the geology, hydrology, and meteorology. The Weather Bureau has been called upon to provide meteorological advice and services for this purpose.

In the Central Office, the

Special Projects Section of the Office of Meteorological Research does work for the Atomic Energy Commission investigating the relationship between the detonation of nuclear weapons and weather. As pointed out in *Science* (January 1955) and in the 1956 report of the National Academy of Science on the "Biological Effects of Radiation," no evidence has been obtained to show that there are any large-scale effects by nuclear weapons on weather (a copy of these reports have been sent to all First Order Stations). In addition, this group is working on the trajectories of bomb debris as it



Low level temperature sounding station at the NRTS showing mooring mast and track.



travels around the globe and development of meteorological parameters affecting fallout from nuclear tests. Both of these latter projects involve a large number of Weather Bureau stations in the collection of the gummed film samples of deposited radioactivity. There is also a group working with the Engineering Development Branch of the Reactor Development Division of the Atomic Energy Commission on the application of meteorology to a number of problems connected with development and operation of various atomic energy sites.

The establishment of Weather Bureau field stations in connection with atomic energy installations dates back to the late 1940's and currently there are nine such stations at the following locations: Brookhaven National Laboratory, Upton, Long Island; Oak Ridge Operations Office, Oak Ridge,

Tennessee; National Reactor Testing Station, Idaho Falls, Idaho; Connecticut Aircraft Nuclear Engineering Laboratory, Middletown, Connecticut; Pressurized Water Reactor, Shippingport, Pennsylvania; Georgia Nuclear Laboratory, Dawsonville, Georgia; Convair Aircraft Nuclear Propulsion Project, Fort Worth, Texas; and the AEC Nevada Test Site, Las Vegas, Nevada. The program at these stations is quite varied but almost all of them are engaged in defining the diffusion micro-climate of the installation which they serve. In general, this consists of determining the frequency of wind directions, speed, lapse rate, and diffusion coefficients and their interrelationships with each other. Instrumentation is not the standard equipment normally seen at a Weather Bureau Airport Station but may consist of towers 50 to 100

meters high, instrumented at several levels with wind and temperature measuring equipment. There may be bivanes for obtaining the vertical velocities and low windspeed anemometry (since the detection of even slight air movements is quite important around these sites). Stations may use Geiger counters for the detection and quantitative evaluation of the diffusion of material emitting gamma radiation. Programs for extensive smoke and fluorescent tracer experiments to quantitatively determine the action of meteorological parameters and of terrain in diffusing material are common.

This equipment and the intensive investigations over relatively small areas have shown a bewildering variety of conditions existing over rather short distances. (A comprehensive report of such an investigation was prepared by

the Weather Bureau Office, Oak Ridge in the AEC publication "ORO-99 - A Micrometeorological Survey of the Oak Ridge Area.") The picture obtained from a standard synoptic map is insufficient to provide the precise detail required for quantitatively predicting the movement and dispersion of material. To obtain the necessary information for this purpose, it is usual practice to install remotely operated sub-stations which collect data that can be correlated with a master station. Again at Oak Ridge the Weather Bureau developed a remote station network that telemeters wind, temperature, temperature gradient and precipitation data to a central location and records it on a standard teletypewriter. This system

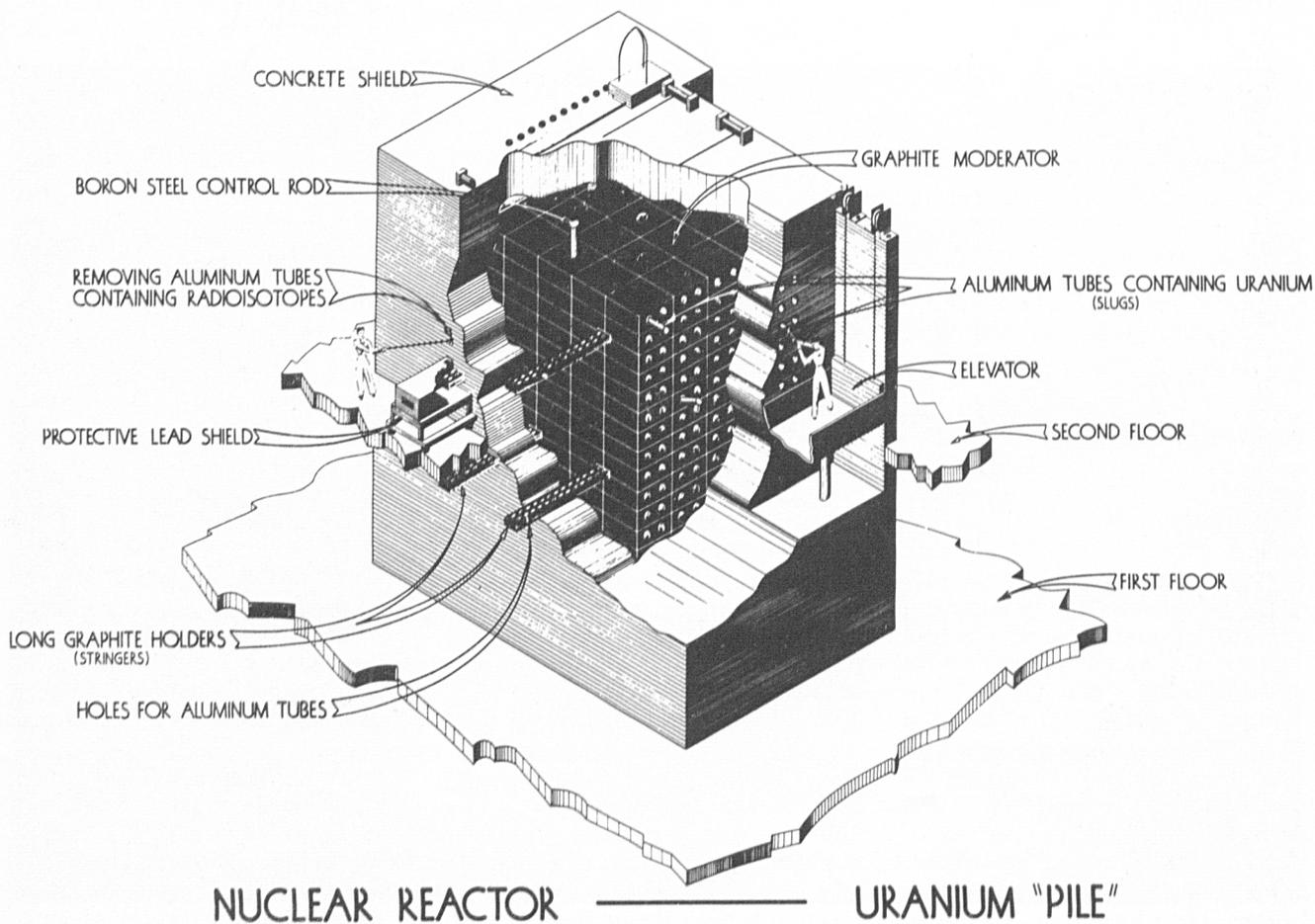
was described in the March 1956 Bulletin of the American Meteorological Society by R. F. Myers.

These stations not only deal with microclimatology and associated research programs but also have day-to-day operational problems. Many of those are similar to that encountered in the usual Weather Bureau station. However, there are more unusual requests. The caller may ask, "What would be the concentration of 1000 curies of Iodine ¹³¹ five miles SSW of a 300-foot stack if the material were released at 3:00 p.m.?" Or the problem might be to determine what would be the probability, as the result of Operation X, that concentrations of Y curies per cubic meter would occur if a plant were erected at a point Z on the nuclear

installation. Answering these and similar questions requires combining microclimate statistics with diffusion computations and estimation of probabilities.

As the day of propulsion of aircraft by nuclear power approaches, it is expected that meteorology will play a prominent role in determining the location of bases for nuclear aircraft and possibly conditions under which these aircraft (at least in the experimental stage) can operate.

In addition to the microclimatological and operational work, considerable research into the theory of turbulent diffusion has been carried on by personnel assigned to this program. Much of this work has been described in articles by F. G. Gifford, R. A.



NUCLEAR REACTOR ——— URANIUM "PILE"

Sketch of the Oak Ridge Graphite Reactor.

McCormick, and I. Van der Hoven in the Journal of the American Meteorological Society and Quarterly Journal of the Royal Meteorological Society.

The Weather Bureau has had meteorologists associated in one phase or another with most of the atomic tests, both in Nevada and the Pacific. During the recent Pacific tests, two meteorologists were assigned to the fallout forecasting unit and additional upper-air observations were also made in connection with these tests. In Nevada we have recently installed two additional upper-air stations in support of the Nevada testing program. An analogue computer to speed fallout computations was designed and constructed by the National Bureau

of Standards under a Weather Bureau and AEC sponsorship.

In addition to the field stations and the work in the Central Office previously described, Dr. Harry Wexler, Director of Meteorological Research, is a member of the AEC Advisory Committee on Reactor Safeguards. This committee reviews the proposals for construction and operation of all civilian nuclear reactors throughout the United States and advises on the health and safety aspects of these devices. The items surveyed by this committee range from physics of nuclear reactors to the flow of ground water underneath the proposed site, but prominently considered is the micrometeorological climate of the proposed location and the

probable distribution of air-borne radioactivity.

This is a fascinating and interesting field with its shop talk of "reactors going critical," "spectrum of turbulence at 90 meters," "megaton weapons," etc. Much of the Weather Bureau's experience in this field was summarized in the publication Meteorology and Atomic Energy prepared for the Atomic Energy Commission by the Office of Meteorological Research. Copies of this publication were sent to numerous stations.

It can be expected that as nuclear energy applications grow and play a larger role in our lives, it will also play a larger part in Weather Bureau programs.



IN the February 1955 issue of TOPICS, we left our hero FOSDIC on the drawing boards of the Bureau of Standards. We are proud to report now that FOSDIC has sprung to life and is learning to walk; deliverance for the beleaguered National Weather Records Center will soon be at hand.

You may remember that FOSDIC (Film Optical Sensing Device for Input to Computers) is a high speed electronic machine designed to read the microfilm of punched cards; and thereby allow the NWRC to reduce the present 35,000 sq. ft. mountain of card files. FOSDIC employs the "flying spot" of an electron gun in a cathode ray tube like that in your TV set, to scan the microfilmed image of a punched card and trigger a photoelectric cell when the clear spot of a punched card hole is found. The prototype FOSDIC has now been completed by the Bureau of Standards and is undergoing testing and refinement; its performance is already slightly spec-

tacular. FOSDIC zips through the microfilm at the rate of 4300 card images per minute, searching for cards which contain predetermined, operator-controlled classes of data as recorded in any ten columns of the card image. For example, FOSDIC can be asked to locate all observations of ceilings under 500 ft. with NW winds of more than 15 knots. When such an observation is found, FOSDIC reads out the data from the entire card image into an IBM card punching machine.

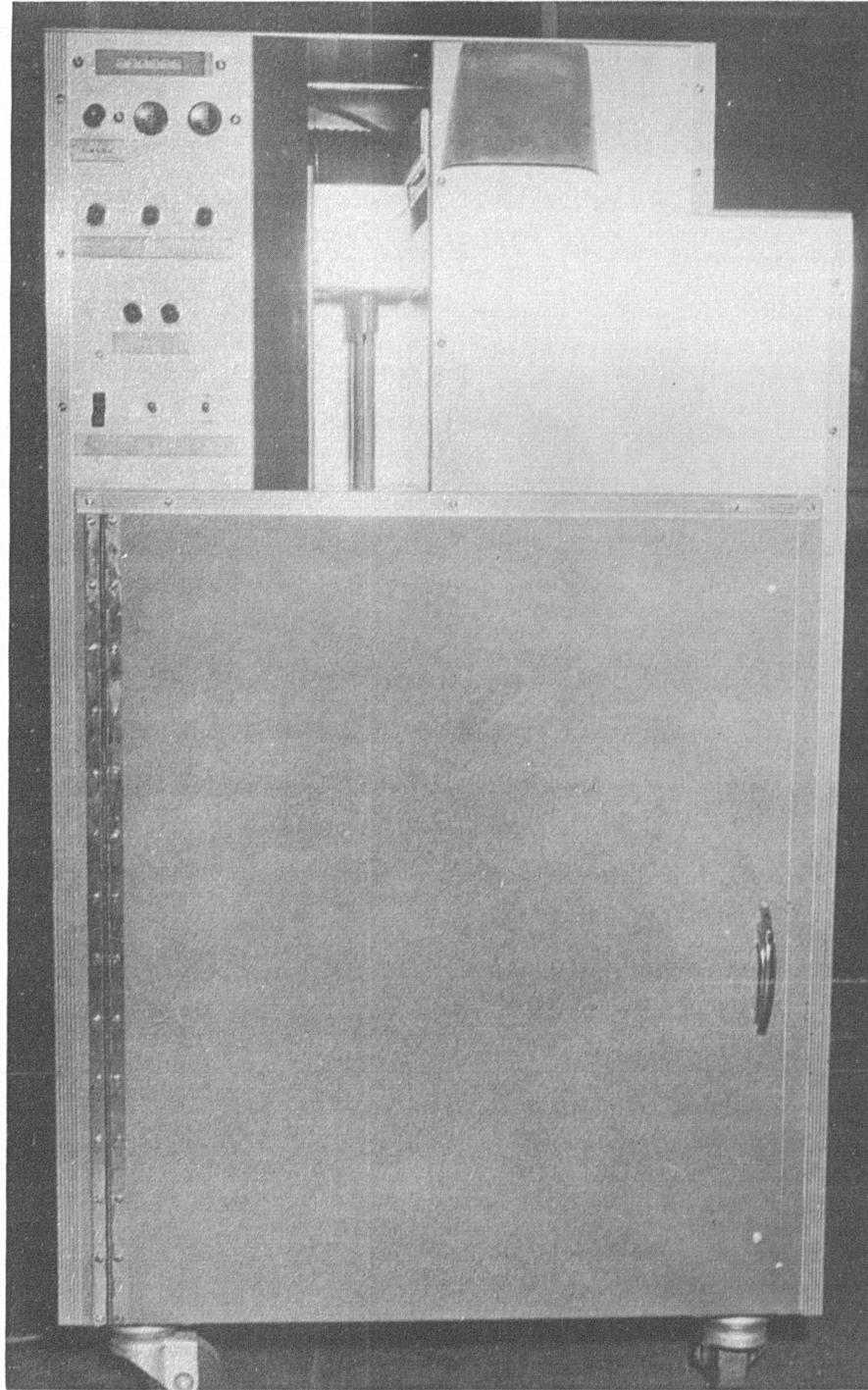
For the next six to eight months, FOSDIC will serve as guinea pig at the Bureau of Standards for two immediate further developments: (a) complete specifications for commercial procurement of a battery of FOSDIC machines, and (b) design and construction of a FOSDIC film-editor. FOSDIC will eventually be shipped to NWRC for a long life of productive use; in the meantime, it will be available for use as the need arises.

Now that FOSDIC is a reality, NWRC will begin microfilming punched cards in the very near future concentrating at first on a number of older, little used decks. The filming will be done on a camera designed especially for this purpose by the Census Bureau, to Weather Bureau specifications. This camera, which has already undergone exhaustive tests, is a fine precision instrument that microfilms 420 cards per minute, placing about 13,000 card images on a 100 ft. roll of 16 mm. film.

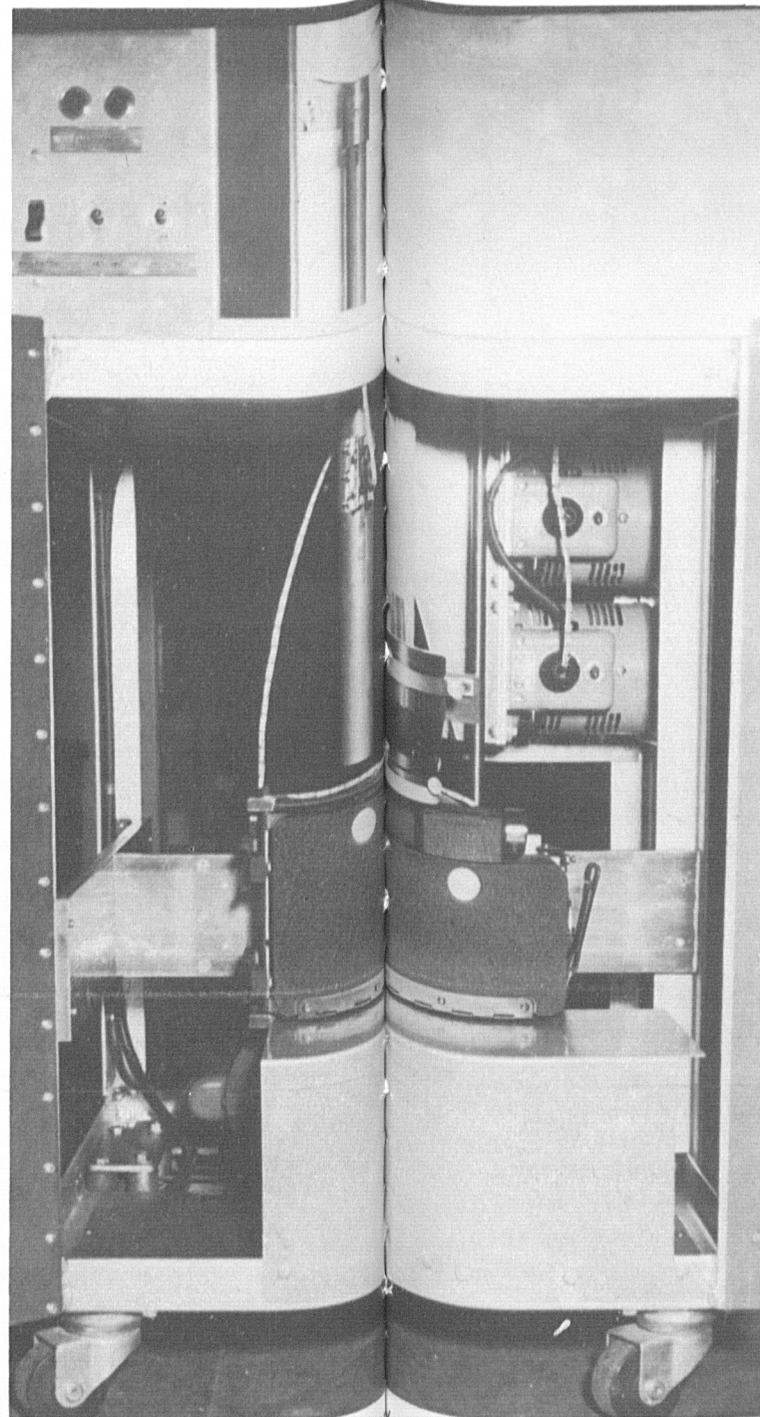
High on the list of future developments is an ultra-high speed FOSDIC designed to read the microfilmed data directly into electronic computers, at speeds approaching 15,000 digits per second, and matching the best speeds of magnetic tape readers.

Thus this first FOSDIC is destined, we believe, to be only the first of a versatile line of machines built around the principle of flying spot scanning of microfilm. (Pictures on next page.)

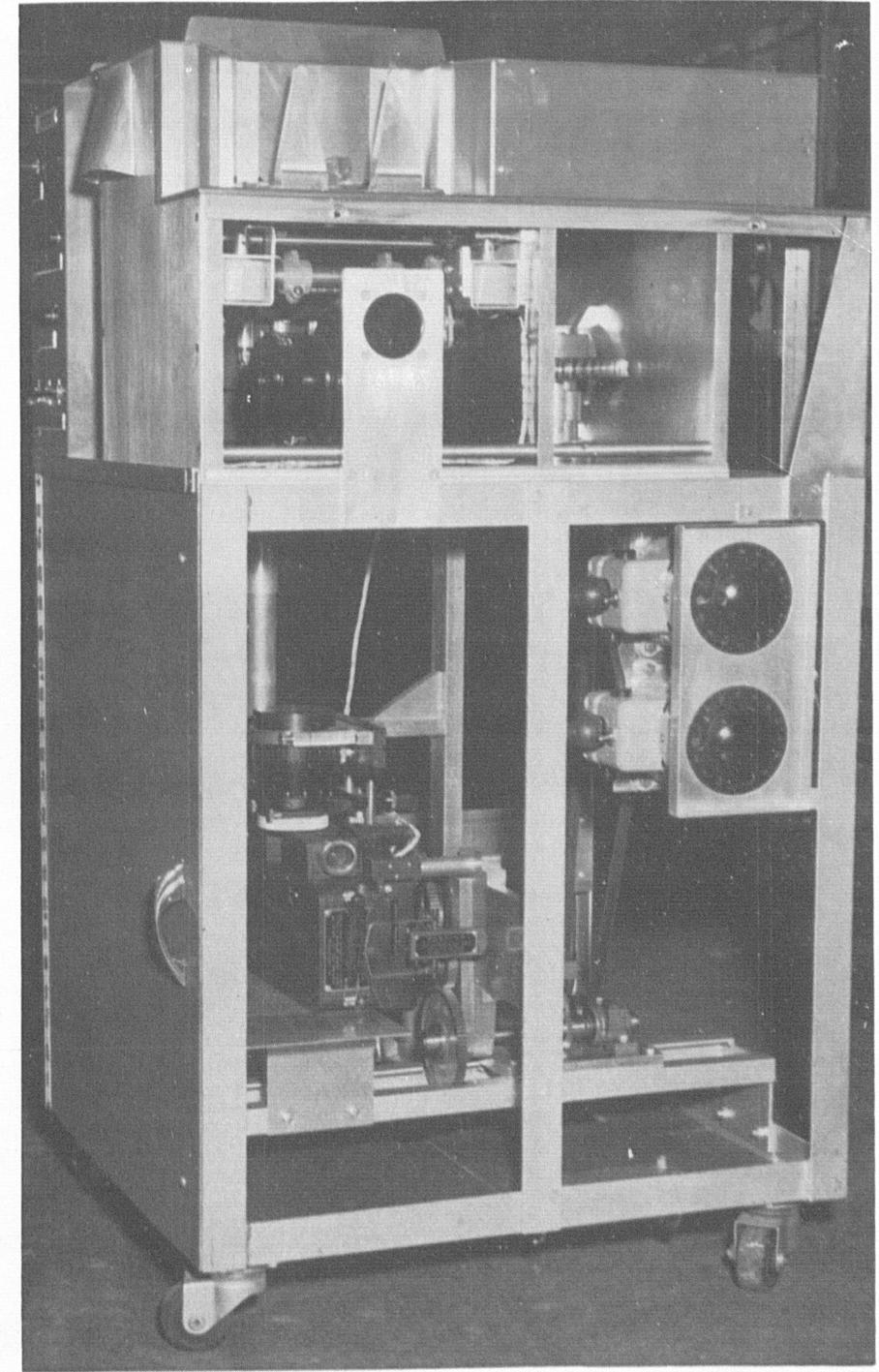
FILM OPTICAL SENSING DEVICE FOR INPUT TO COMPUTERS
"FOIC"



Front of FOSDIC Filmer.



Front of FOSDIC Filmer (with cover removed).



Side view of FOSDIC Filmer, showing anamorphic lens.

Student Trainee Program—1956

CONSIDERABLE progress was made this year in the Bureau's student trainee program, with the result that sixteen meteorology trainees were appointed throughout the country, fourteen of whom were given career-conditional appointment from the Civil Service registers. In addition, five engineering students

were also appointed, for a combined total of twenty-one trainees. Those students eligible are returning to school this fall in a leave without pay status; students who are not eligible for leave without pay will be separated and will have the opportunity to apply for the new student trainee examination which will be announced

by the Civil Service Commission within the next few months. Six of the meteorology trainees will complete their senior year during 1956-57 and will be eligible to return to GS-5 Meteorologist positions, while the remainder will have from one to three more years to complete before receiving their degrees.

Reporter's Visual Rain Gage as an Aid in Flash Flood Warnings

THE Reporter's Visual Rain Gage is designed specifically for the purpose of improving the reporting service for river and flood forecasting. It permits an observer to read and report rainfall amounts up to 10 inches without stepping outdoors. This feature is conducive to prompt and frequent reporting, day or night, whenever rainfall reporting criteria are met. Networks of these rain gages have been installed to supplement the radar flash flood warning pilot projects recently established at Des Moines, Iowa, Oklahoma City, Okla., and Hartford, Conn. Flash floods on small rivers give little time for warnings. By using a network of these rain gages in conjunction with radar, it is possible to keep areas of rainfall under continuous observation and to call observers in these areas and get instantaneous readings of rainfall amounts.

Tests on similar rain gages in the past have shown rather satisfactory agreement between the catch of the visual gage and that of a properly exposed standard gage. The visual gage, however, is not intended to be used for official record purposes.

The gage consists of a 3-inch brass collector with an iron bracket for mounting to the roof

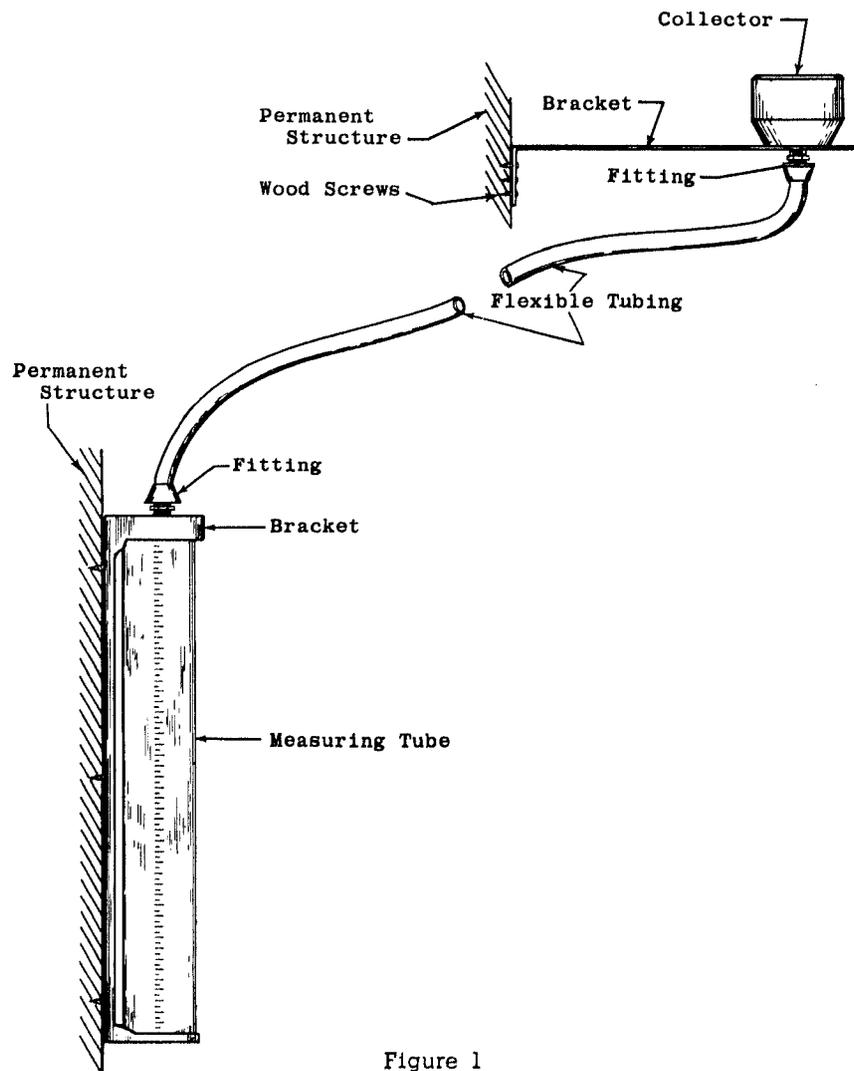


Figure 1

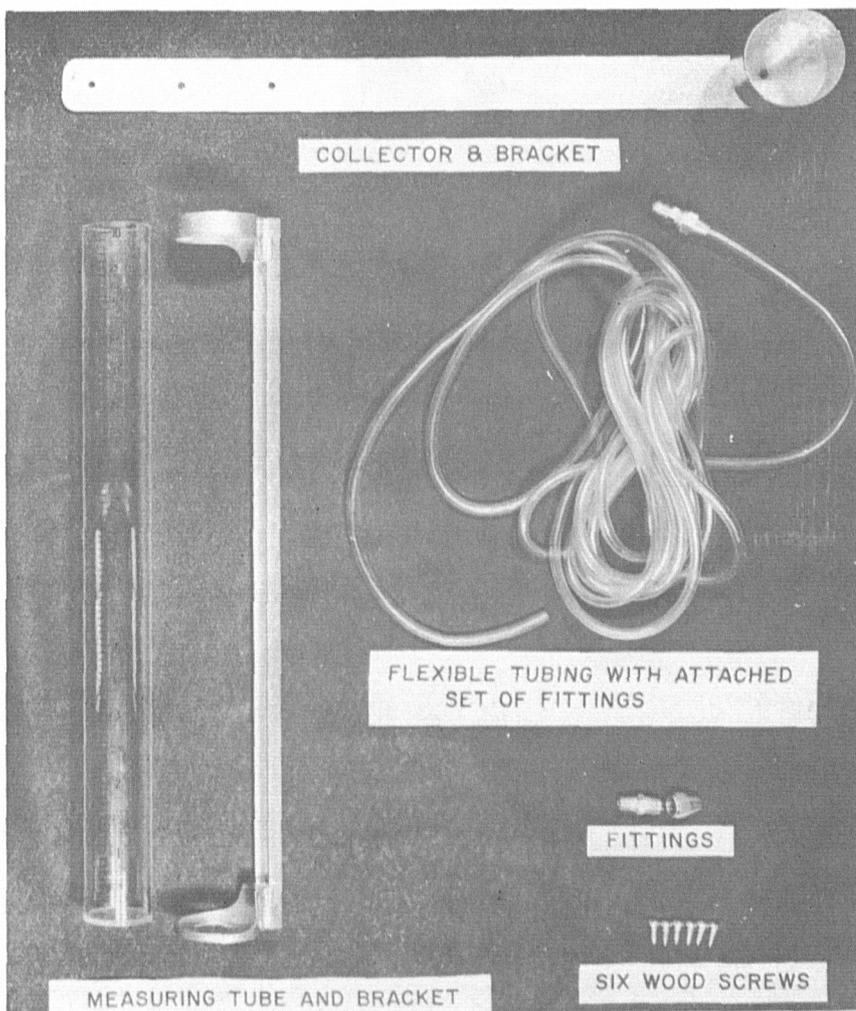


Figure 2

or eaves of a house or other structure. A length of flexible plastic tubing serves to conduct the precipitation entering the collector to a clear plastic graduated measuring tube. A supporting bracket permits this tube to be installed inside, or immediately outside of a window, so that the catch may be observed

from indoors. It may be desirable in some cases to mount the measuring tube on the pillar of a porch or under some other protective covering. The measuring tube can be lifted conveniently from the bracket for emptying. A simple installation is shown in Figure 1 and the component parts of the gage in Figure 2.

Financing of Increased Salary Costs

THE July issue of TOPICS contained a summary of the Weather Bureau's budgetary plans for fiscal year 1957. Since this

plan was developed the entrance rates in the GS-7, GS-9, and GS-11 Meteorologist, Engineer, and other similar grades have

been increased. The estimated total cost of these increases amounts to \$540,000.

The Bureau requested a deficiency apportionment of its appropriation for the last quarter of this fiscal year to meet this cost. This procedure is normally followed when Congress approves a pay raise for all government employees but does not appropriate therefor until late in the fiscal year when a realistic sight of the funds needed is obtained.

Recently, notification has been received from the Bureau of the Budget that our requested deficiency apportionment does not meet the legal requirements of the Budget and Accounting Act which provides for deficiency apportionments only in those cases resulting from Congressional actions or from emergencies that could not be foreseen and are beyond the administrative control of the agency. While raising the entrance rates for the above grades has the backing of Law, it is, in effect, an administrative action on the part of the Bureau, the Department, and the Civil Service Commission, and, therefore, does not clearly meet the criteria for a deficiency apportionment and subsequent deficiency appropriation.

The Bureau will submit a supplemental appropriation request as soon as possible to meet this cost; however, final decision on our request cannot be obtained for several weeks and possibly not until January or February 1957. In the meantime, the Bureau must continue to exercise every possible economy and, in addition, must plan now to defer basically essential programs originally planned so that if supplemental appropriations are not provided later, retrenchments that will be required in the last half of the fiscal year can be minimized.

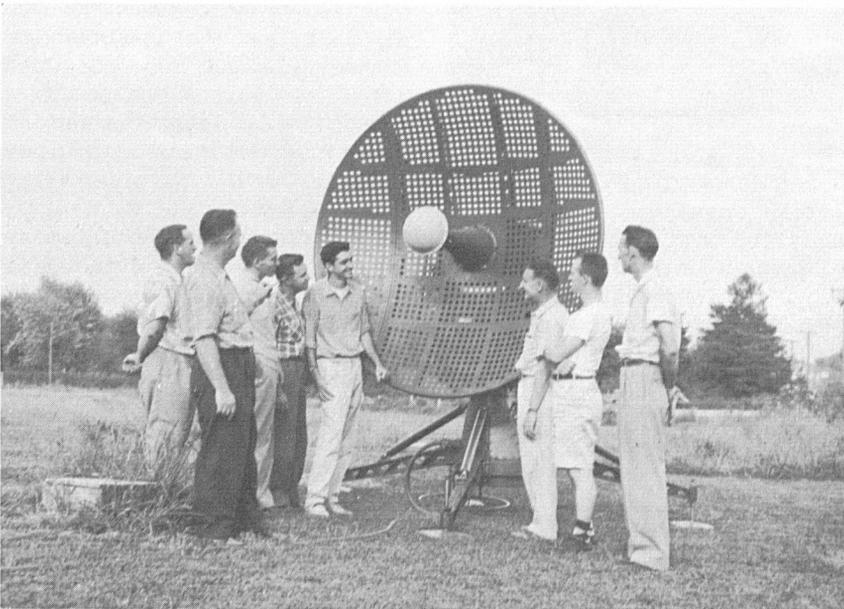
Observer Training Center

SINCE the opening, June 4, 1956, of the Observer Training Center at Columbia, Missouri, 20 people have been trained there in the techniques and procedures of weather observing. This training included all phases of aviation, synoptic, and upper-air observations presented over a period of 8 weeks. Upon returning to their home stations these observers were prepared to assume full time observer duties within a few days.

Several advantages in training methods were offered observer recruits at the Training Center. Most important was the assignment of two expert instructors, Paul Hammett and Monroe Lanham, who gave full time to the school. Instrumentation was provided in the school for surface and upper-air observations. Each observer



Two radiosonde recorders used in training observers, Richard Walchli and Ernest Green.



GMD-1A Mount used for training purposes. Instructors are Mr. Lanham left foreground and Mr. Hammett right foreground. Students left to right: Green, Schwibinger, Adams, Kalotkin, Gale, Walchli.

was given individual instruction and experience at each observing position in upper-air observing procedures. This proved particularly advantageous in teaching the evaluation of the recorder record during the radiosonde flight. The method of learning by doing was stressed. In general a balance of approximately 5 hours a day laboratory or actual job assignment and 3 hours a day group discussion, lecture and supervised study was maintained.

The quarters for the school are in a former aviation education building located a few steps from a large modern hotel and just across the street from the Weather Bureau Airport Station. Under the general supervision of Mr. James McQuigg, MIC at Columbia, all trainees were given some familiarization with public service, pilot briefing and related service

functions of the Columbia station.

Whenever possible observer recruits were detailed to the Training Center for a period of 8 weeks of intensive training in weather observing in preference to the slower and sometimes less

effective on-station training at very busy airport stations. This has been particularly desirable for personnel being recruited for assignment outside of continental United States. In such cases this training provided a period in which

personality traits, aptitudes, and temperament could be observed in determining the suitability of recruits for assignment at isolated stations.

Suggestions for Improved Upper-Air Sounding Methods

THE upper-air sounding system now in use in the United States—and which is commonly used in most other countries—has been developed progressively over the past twenty-five years. It has brought a new dimension into the routine analysis of day-to-day weather that greatly expands our knowledge of weather processes. But today's needs for weather are vastly different from those of twenty-five years ago. The jet aircraft, guided missiles, rockets, radio-active fallout, microwave transmissions, numerical weather prediction and a number of other fundamental developments have changed radically the demands for information about the upper air. Fortunately, with these demands have come an enormous expansion of instruments and techniques for data collection: radar, television, atomic tracers, radio propagation, astronomical tools, chemical devices of all kinds.

The need is to match these new tools to the expanded problem. The letter quoted below was addressed to one of the basic research organizations of the country. It sets out the Bureau's problem in clear terms and raises a challenge to all meteorologists to find a more effective means of meeting these new demands.

"Dear Sir:

"For many years the Weather Bureau has been interested in the various possibilities for continuously sounding the atmosphere by

indirect means in order to supplement the upper-air data which is obtained from radiosondes, aircraft, rockets and similar devices. Of these methods, radar is the one which has had the most obvious applications in meteorology and, as you are aware, has seen wide application in our observing and forecasting. The anomalous propagation of sound has also been used in obtaining temperature distributions from high altitudes.

"In addition to these systems, a number of other suggestions have been made for continuously sounding the upper atmosphere. These have included the detection of inversions and other phenomena by the reflection of radio and sound waves, correlation of point-to-point radio communication with certain weather phenomena, and most recently the relationship between weather phenomena and scatter propagation. We have always felt that if one or more of these techniques proved to be really effective, we could do a great deal more in locating and forecasting the smaller-scale variations in the atmosphere which often lead to important, and sometimes severe, weather conditions. For example, it is believed that certain features of the structure of the lower atmosphere are highly important in the formation of squall lines and tornadoes.

"With the advent of jet transport operations, the detection and forecasting of severe clear-air

high-level turbulence is becoming urgent. The small-scale structure of the jet stream will be important in future air operations. It is too often evident that many of these important features are totally missed by our radiosonde network, and it is in such situations that continuous indirect soundings would prove of inestimable value.

"Although certain research projects have been carried out to explore some of these methods, there has been no overall, concerted effort to look into all of the possibilities. Research proposals have been made from time to time, but it has been very difficult to evaluate their merits due to the lack of general background information. Most of the proposals have related to the construction of specific pieces of equipment, and often appear lacking in theoretical preparation. We recently reviewed the various possibilities for indirect soundings here in the Bureau, and came to the conclusion that the most urgent need was for a thorough overall survey of the potentialities and probable utility of all of the possible physical phenomena which might be used for indirect sounding of the atmosphere. This work would also furnish a background against which the results obtained from experimental equipment would be evaluated. We felt that such a study program should be given the highest priority, and there was general agreement that your organization is exceptionally

well-qualified to undertake such a study. We have discussed this possibility with Dr. William Kellog during his recent visits to the East, and he has indicated a personal interest in the problem. He has also suggested that we get in touch with you to see if your organization would be in a position to carry on this research.

"Among the various possibilities that have been suggested are the following:

1. Radio reflections from tropospheric phenomena such as inversions and turbulent eddies. This was originally proposed by Mr. A. W. Friend, who published several articles on this subject during the past 15 years. An elaborate program was undertaken by Cruft Laboratory at Harvard University to further explore these possibilities, but was terminated prematurely due to lack of financial support. The work was then taken up by the Copano Research Foundation at Victoria, Texas, and it is our understanding that a large installation has been made at or near Victoria preparatory to actual testing. We have heard, however, that the actual test work has not yet been carried out.

2. Sound ranging of the troposphere has been recently proposed by the Cook Research Laboratories, the feeling being that the atmosphere might exhibit much

greater reflectivity for sound waves than for radio transmissions. Anomalous sound propagation has, of course, been used in determining high-level temperatures in the atmosphere, but so far as is known, it has not been applied to soundings in the lower layers. The Army has done a great deal of work with sound ranging in connection with location of enemy artillery, and may have useful research data available.

3. Scatter propagation has been observed to be dependent upon atmospheric structure, presumably in the troposphere. Mr. K. A. Norton of the Bureau of Standards Laboratories at Boulder, Colorado, has expressed great interest in the relationship between propagation and weather. Various authors have published articles on this subject, most recently in the October 1955 issue of the Proceedings of the Institute of Radio and Engineers.

4. Other suggestions include the correlation of the scintillation of stars with upper-level wind velocities, the attenuation of cosmic rays as a function of pressure or density, and the use of intense searchlight beams in determining the density structure of the atmosphere.

"It is, of course, possible that there are a number of other sounding methods which have not

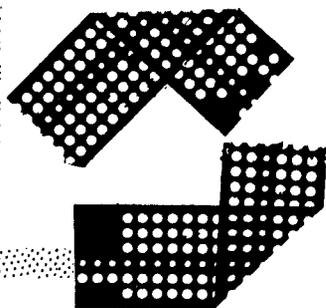
been proposed thus far. It would be hoped that eventually soundings from surface stations might be applied to the problem of obtaining upper-air data over the oceans. This is one of the most perplexing problems confronting meteorologists at the present time.

"We hope that this problem interests you and that your organization will be able to undertake a program to explore the different possibilities and suggest the particular lines of approach which would appear to be of greatest benefit to meteorology. We would welcome receiving a proposal."

Every member of the Bureau family is invited to contribute ideas to the solution. All suggestions will be carefully reviewed by experts of the Bureau and of industry, and the most valuable ones will be considered for awards under the Incentive Awards Program. All letters should be addressed to the Chief of Bureau, Attention O & SF Division, and should reach the Central Office by April 1, 1957.

Should any of the ideas prove to be workable and are eventually put into general use, they will be eligible for consideration in the Department of Commerce Awards Program where awards as high as \$25,000 are possible.

Splicing Perforated Tape



A field employee has suggested, as a time saver, a method of attaching a small tape containing a correction to the original tape in order to have continuous transmission and not be interrupted by another station during his attempt to enter a correction manually. He suggests applying a small amount of quick-drying rubber cement to the beginning of the new tape, placing it under the end of

the old tape and lining up the feed holes. (Caution: The tape will hang up (stop) if the holes aren't lined up or if the new edge isn't glued down securely.) AT&T staff have tried to discourage the use of this method around the Central Office, therefore, it is suggested that you check with your local maintenance man before splicing tape.

Gulf Coast Volunteer Radio Network

ON July 10 final arrangements were completed for the Weather Bureau Office at Houston, Texas to make direct radio broadcasts during hurricane emergencies over more than 50 A.M. and F.M. radio stations in the Gulf Coast Volunteer Network. Radio stations which will carry the broadcasts stretch from Brownsville to Lake Charles. (For information on similar emergency broadcast programs see TOPICS for March 1956.)

The program will consist of broadcasts by Weather Bureau personnel at Houston whenever a Gulf storm is located within 300 miles of the Texas coast and poses a threat to the U. S. While broadcasts may be at 6 or 3 hourly intervals when the storm is distant they will probably be made at

hourly intervals as the hurricane approaches the coast.

Radio Station KPRC - FM at Houston will operate as the key station. Upon advice from WBO, Houston, KPRC will advise all stations in the network, both A.M. and F.M. by Associated Press and United Press wire service that regular broadcasts will begin at a specified time. Broadcasts will be made by KPRC personnel and the broadcasts will be heard simultaneously over all stations in the network.

Hurricane warnings and advisories will be transmitted by WBO, Houston verbatim as released by the forecast center in New Orleans; in addition, factual data such as wind direction and speeds for coastal sections in the affected area and any other factual information deemed of value will be included. Stations in the network will also furnish through KPRC any information regarding local conditions which affect safety operations involving the Red Cross, Civil Defense, and Department of Public Safety.

The Third Advanced Study Group

THE Third Advanced Study Group, which began September 4, 1956 is meeting at the NWAC, Suitland, Maryland. Classes will move to the Central Office in November. The meteorologists participating are: John C. Ballard, MIC, WBAS Atlanta, Georgia; William H. Bierbower, Administrative Officer, WBRAO Salt Lake City, Utah; Albert W. Cook, MIC, WBAS Denver, Colorado; Ernest C. Johnson, MIC, WBO Albany, New York; George W. Kalstrom, MIC, WBAS Los Angeles, California; Fred White, Office of Meteorological Research, Washington, D. C. Mr. Vincent J. Oliver, Leading Analyst,

NWAC, is instructing the group.

The first phase of the curriculum for this group consists of concentrated study in modern developments in analysis and prognosis, and field trips to several important meteorological research organizations. The second phase covers technical executive and supervisory problems under Mr. Albert V. Carlin, Chief of the Training Section, assisted by other members of the Central Office staff.

This session will be completed in December and plans call for the fourth group to meet in February 1957.

Summary of Hourly Observations

A Summary of Hourly Observations has been prepared for 113 Weather Bureau stations having a 24-hourly observational program. They generally cover the 5-year period prior to 1955. The tables summarized contain the same elements as those comprising Tables A, B, C, D, and E of the Local Climatological Data Supplement as published prior to July 1956. Percentage frequencies are given, however, in Tables B, D and E, rather than the number of occurrences as published in the monthly Supplement.

These summaries have been prepared in partial fulfillment of the requirement for aeronautical climatological summaries as specified in the Technical Regulations of the World Meteorological Organization. The publication is a part of the Climatology of the U. S. Series.

The greater portion of the summaries has been printed and distributed and it is expected that all will be completed by October 15, 1956.

Capsule Course in Human Relations

Five most important words
I am proud of you!
Four most important words
What is your opinion?
Three most important words
If you please
Least important word

I
(From Watertown News and Views via the Kansas City Newsletter, American Society of Training Directors, via The NBS Standard.)

Superior Accomplishment Awards

Vinton R. Bouslough

VINTON R. BOUSLOUGH, substation inspector for Minnesota, Wisconsin and northern Iowa, was given a Superior Accomplishment Award of \$300 for unusual initiative and competence. From 1949 to 1954 the average monthly percentage of missing or incomplete stations in Minnesota was reduced from 18% to 4%, mainly because of Mr. Bouslough's efforts. He has consistently taken the initiative in planning the full coverage of substations in his area; he has assisted materially in maintaining cordial relations between observers and supervising stations, and he has never hesitated to alter his program to take care of emergency operations in the field. During 1953 and 1954 his enthusiasm and devotion to the Bureau's operations became especially noticeable when he was assigned the task of opening many river, rain-fall, and snowfall stations in connection with rehabilitation of the Upper Mississippi service. During January of this year, Mr. Bouslough on his own initiative made 20 snow depthwater equivalent surveys which were of great assistance to the La Crosse River District Office and the St. Louis River Forecast Center and met an important need.

Herbert Huennekens

HERBERT HUENNEKENS, Meteorologist at Billings, Montana WBAS was given a Superior Accomplishment Award of \$200 for his analysis of conditions which threatened severe thunderstorms and possible tornadoes, and for the exceptional service which he

rendered in connection with the situation. On the morning of July 6, 1955 on the basis of his study of the weather situation he issued a forecast calling for severe afternoon thunderstorms with possible hail and strong winds in the Billings area. This was done without benefit of a guidance forecast at the time from the district or SELS centers. At 1225 he issued another forecast for direct broadcast through eight radio stations, calling for severe thunderstorms, hail, and strong winds. At 1400 when very threatening clouds tended to confirm his earlier analyses he made an emergency broadcast warning of destructive hail and winds, with the possibility of tornadoes. That afternoon Billings suffered the most severe local storm in its history. There were hailstones up to 3 1/4 inches in diameter, and two tornadoes struck close by causing property damage estimated as being in excess of \$6,000,000 but no loss of life.

Two other employees, Mr. Tyron Espeseth who voluntarily stayed on for three hours after his shift ended and Mr. Martin Vick who, on his own initiative reported for work early when he realized extra help would be needed, are commended for their part in helping to handle the service load.

Harry A. Miller

HARRY A. MILLER, Liaison Communications Analyst, WBAS Honolulu (recently transferred to Central Office) was given a Superior Accomplishment Award of \$100 for substantial contributions to the maintaining of a smooth flow of meteorological data in the

Pacific area during schedule changes and retrenchment of facilities, and for excellent performance of his administrative duties. Because of his thorough knowledge of the details of the Pacific communications network, Mr. Miller has been able to make suggestions for changes in scheduling, changes in priority, and changes in order of transmission which have contributed greatly to the regular and prompt receipt of essential data - locally, at outlying stations in the Pacific, and on the U.S. Mainland. Mr. Miller also has acted in the capacity of administrative assistant at the station and has demonstrated excellent judgment and ability to analyze administrative problems quickly and arrive at satisfactory solutions. For example, his work in connection with the formulation of plans for the Bureau's quarters in the new airport administration building aided greatly in the evolving of a plan which was in the best interests of the Bureau.

Wesley Morris

WESLEY MORRIS, now at Sault Ste. Marie, was given a Superior Accomplishment Award of \$200 for very competent performance of his duties while Executive Officer at Mould Bay, N. W. T., Canada in 1954-55, and for his noteworthy accomplishments outside the normal requirements of this position. Under his supervision, the physical appearance of the Mould Bay station remained excellent and the morale of the men very high throughout the rigors of an Arctic winter. In addition to performing his regular duties in an outstanding manner, Mr. Morris car-

ried out a number of extra activities which included submitting detailed supplemental material describing the difficulties encountered in the operation of an arctic upper air program, a station narrative which provided valuable information concerning ice conditions, natural phenomena, constructive suggestions about station operation and an informal glimpse into the personal trials encountered during the dark period of the Arctic.

Mr. Morris also conducted considerable geological research and exploration on his own initiative, collecting numerous fossils, marine animals and plants. He uncovered several items, previously uncatalogued, and others of scientific significance such as driftwood obtained at strand lines above five hundred feet elevation. This material will provide valuable information on the natural history of the Mould Bay area.

Benjamin Ratner

BENJAMIN RATNER, Meteorologist (Climatologist) in the Office of Climatology at Suitland, was given a Superior Accomplishment Award of \$100 for his work in connection with the preparation of a paper entitled "Winds and Fallout: A Climatological Appraisal." This paper is carefully designed to be as useful to non-meteorologists as possible without sacrifice of essential technical content; and it has served its purpose remarkably well. It has proved so useful to the Federal Civil Defense Agency, that, as of the early part of January this year, 10,000 copies has been requested by that agency.

Harlan Saylor

HARLAN SAYLOR, former IAFS Forecaster and shift supervisor at La Guardia, was given a Superior Accomplishment Award of \$200 for outstanding performance during 1954-55. By keeping abreast of

(Cont'd on next page)

Employee Suggestion Box

- | | | |
|--|------|--|
| Alexander Middleton
Jacksonville, Florida | \$15 | Telegraph daily observation from Cedar Keys, Florida, during the hurricane season direct to Miami instead of to Jacksonville for relay to Miami, resulting in a small monetary savings and elimination of the relay. |
| Mrs. Alice Mothershead
Synoptic Section
F&SR
Washington | \$50 | Use government communications facilities for messages to the Caribbean area instead of commercial cable. Adoption of this practice for future message traffic will result in considerable monetary savings. |
| Joseph C. Ofenloch
RO, Kansas City | \$15 | An improved form letter, adopted by the Department of Commerce, for use in connection with handling debt complaints. |
| William Ray
Hartford, Connecticut | \$15 | Amend the River Data Code to allow transmission of below zero stage and tendency in the same message. Suggestion resulted in the code being changed so that plain language can be used to report tendency, for example, "02899 Rising." |
| Pierce Rosenberg
Philadelphia, Pa. | \$15 | A suggestion which pointed out the need for securing compliance with instructions for reporting snowfall (2" or more) during the hour preceding an observation. Since snowfall is seasonal, it should be considered among weather elements requiring reminders to observing personnel, and as a result of this suggestion training material will be issued to improve this phase of the reporting program. |
| Thomas Weitz
Burbank, California | \$15 | Clarify instructions for reporting in airway observations the directions of phenomena extending through more than one direction at a distance from the station. At present there are no specific instructions for this procedure, and users cannot be certain, for example, whether "S thru N" refers |

George Williams
Chicago, Illinois

\$25

to the western or eastern half of the horizon. As a result of this suggestion, instructions will be included in Circular N to provide for intermediate directions being used when necessary for clarity. For example, "N-E-S" will be used to indicate the eastern half of the horizon.

All forecast centers include normal temperatures in their five-day forecasts to lend more meaning to the departure from normal and to assist those using the forecasts to answer public inquiries. Although this procedure has been followed by many districts for several years, a memorandum urging general adoption of the practice will be issued.

(Awards cont'd.)

the latest developments in analysis and forecasting, and by experimenting with new or modified methods, he has encouraged other forecasters to work toward the same end. This has led to a better understanding and appreciation of related problems, an increase in competitive spirit and the maintenance of a high level of cooperation and morale. Mr. Saylor has an excellent technical knowledge of meteorology, is unusually adept at putting his theoretical knowledge into practice, and has a complete understanding of the problems involved in operational utilization of forecasts. Added to this, his dependability and cooperation with the staff and users of the station services make him one of the Bureau's outstanding forecasters. Mr. Saylor is now stationed at NWAC, Suitland.

Helen E. Senter

HELEN E. SENTER, Clerk-Stenographer at WBO Albany, New York, was given a Superior Accomplishment Award of \$100 for outstanding performance of her duties. Her ability to perform tasks quickly and accurately in

almost all phases of the station's program with a minimum of supervision enables higher grade employees to give more time to professional work, thus increasing the quality and the quantity of the station's professional output. Miss Senter's outstanding interest in and devotion to her work has been shown on many occasions such as, for example, reporting for duty on a Saturday when weather conditions were threatening, because she knew that the one-man shift would be hard put to

keep up with a heavy public demand. This was done on her own initiative and without compensation because of her interest in the weather program at her station. Miss Senter was previously awarded the Department of Commerce Silver Medal for Meritorious Service in 1952.

William Templeman

WILLIAM TEMPLEMAN, Clerk at NWAC Suitland, was given a Superior Accomplishment Award of \$200 for highly competent performance of duties in an office to which he has been assigned less than a year. Because of his quick understanding of the needs of this office, and his ability to become familiar quickly with the responsibilities involved, he has made a significant contribution to the efficiency of the Analysis Center. The job involves ordering, stocking, and distributing working supplies to four crews of 45 people each, who cover the complete 168 hours of the week. By keeping a constant check of all supplies on hand, scheduling advance reordering dates for replenishment of stocks, and scheduling his own work program, Mr. Templeman has consistently handled his assignments with outstanding good results.



Publications Corner

THE publications that are listed have been issued during the months of July and August. Those items showing prices are on public sale and are available from the Superintendent of Documents.

Circular M. Manual of Marine Meteorological Observations, 9th Edition. Reprinted to include Changes 1 and 2. 1956—114 pages—\$1.25.

Circular N. Manual of Surface Observations. Abridged. (For SAWRS and A-Type Second-Order

Stations.) Seventh Edition. Revised to include Changes 1 and 2. 1956—56 pages.

Circular N. Manual of Surface Observations (WBAN). Seventh Edition. Changes 1 and 2. 1956—186 pages.

Climate and Air Conditioning. 1956—1 page. (Reprint from Weekly Weather and Crop Bulletin National Summary of July 23, 1956.)

Climatic Summary of the United States—Supplement for

1931 through 1952. Washington. 1956—80 pages—40 cents.

How Water Acts in the Soil. (Reprint from Weekly Weather and Crop Bulletin, April 25, 1955.

Instruction Manual for Rotating Beam Ceilometer. 1956—206 pages—\$1.25.

L. S. 5618—Average Number of Days Each Month Tornadoes are Reported in the U. S.; 5619—Average Number of Tornadoes Reported Each Month in the U. S.; 5620—The Hurricane Circuit.

National Hurricane Research Project Reports: No. 2—Numerical Weather Prediction of Hurricanes. 1956—32 pages; No. 3—Rainfall Associated with Hurricanes. 1956—314 pages.

Record Highest and Lowest Temperatures (all States—Based on entire period of record through December 1955.) 1956—4 pages.

Summary of Hourly Observations. (5-year summaries of surface weather data.) Published for 117 stations. 10 cents each copy:

Akron, Ohio; Albany, N. Y.; Albuquerque, N. M.; Allentown, Pa.; Amarillo, Tex.; Asheville, N. C.; Atlanta, Augusta, Ga.; Austin, Tex.; Baltimore, Md.; Baton Rouge, La.; Billings, Mont.; Birmingham, Ala.; Bismarck, N. Dak.; Boise, Idaho; Boston, Mass.; Brownsville, Tex.; Buffalo, N. Y.; Burbank, Calif.; Burlington, Iowa; Charlestown, S. C.; Charlotte, N. C.; Chattanooga, Tenn.; Cheyenne, Wyo.; Chicago, Ill.; Cincinnati, Cleveland, Ohio; Columbia, S. C.; Columbus, Ohio; Corpus Christi, Dallas, Tex.; Dayton, Ohio; Denver, Colo.; Des Moines, Iowa; Detroit, Mich.; Duluth, Minn.; El Paso, Tex.; Evansville, Ind.; Fargo, N. Dak.; Fort Wayne, Ind.; Fresno, Calif.; Galveston, Tex.; Grand Rapids, Mich.; Great Falls, Mont.; Greensboro, N. C.; Harrisburg, Pa.; Hartford, Conn.; Helena, Mont.; Honolulu, Hawaii; Houston, Tex.; Idlewild, N. Y.; Indian-

apolis, Ind.; Jackson, Miss.; Jacksonville, Fla.; Kansas City, Mo.; Knoxville, Tenn.; La Crosse, Wis.; La Guardia, N. Y.; Lake Charles, La.; Lansing, Mich.; Lincoln, Nebr.; Little Rock, Ark.; Los Angeles, Calif.; Louisville, Ky.; Madison, Wis.; Medford, Oreg.; Memphis, Tenn.; Miami, Fla.; Milwaukee, Wis.; Minneapolis, Minn.; Missoula, Mont.; Mobile, Ala.; Moline, Ill.; Montgomery, Ala.; Nashville, Tenn.; Newark, N. J.; New Orleans, La.; Norfolk, Va.; Oakland, Calif.; Oklahoma City, Okla.; Omaha, Nebr.; Philadelphia, Pa.; Phoenix, Ariz.; Pocatello, Idaho; Port Arthur, Tex.; Portland, Me.; Portland, Oreg.; Providence, R. I.; Pueblo, Colo.; Raleigh, N. C.; Richmond, Va.; Rochester, N. Y.; Sacramento, Calif.; St. Louis, Mo.; Salt Lake City, Utah; San Antonio, Tex.; San Diego, San

Francisco, Calif.; San Juan, P. R.; Santa Fe, N. Mex.; Savannah, Ga.; Shreveport, La.; Sioux City, Iowa; Sioux Falls, S. Dak.; Spokane, Wash.; Springfield, Ill.; Springfield, Mo.; Syracuse, N. Y.; Tampa, Fla.; Toledo, Ohio; Topeka, Kans.; Tulsa, Okla.; Washington, D. C.; Wichita, Kans.; Wilmington, Del.; Yakima, Wash.; Youngstown, Ohio.

Technical Paper No. 15, Pt. XVIII: West Virginia. Maximum Station Precipitation for 1, 2, 3, 6, 12, and 24 Hours. 1956—52 pages—35 cents.

Terminal Forecasting Reference Manual. Medford Municipal Airport, Medford, Oregon. 1956—22 pages—10 cents.

Weather Bureau and Cooperative Upper Air Stations. 1956—16 pages.

Weather Forecasting (reprint). 1956—44 pages—20 cents.

RETIREMENTS

MAY P. ADAMS, Addressing Machine and Graphotype Operator in the Printing Section of the Central Office, retired September 30 after more than thirteen years of Weather Bureau service. Mrs. Adams entered the Bureau on December 28, 1942, in the SR & F Division, transferring in 1948 to the Printing Section where she remained until her retirement.

Prior to working for the Bu-

reau, Mrs. Adams was for many years a housewife and a department store saleswoman. She has traveled extensively and although she plans to maintain her Washington residence at 5427 Potomac Avenue, N. W., she is looking forward to wintering in Florida. After November 1, her address for six months will be 103 Rogers Street, Clearwater, Florida.

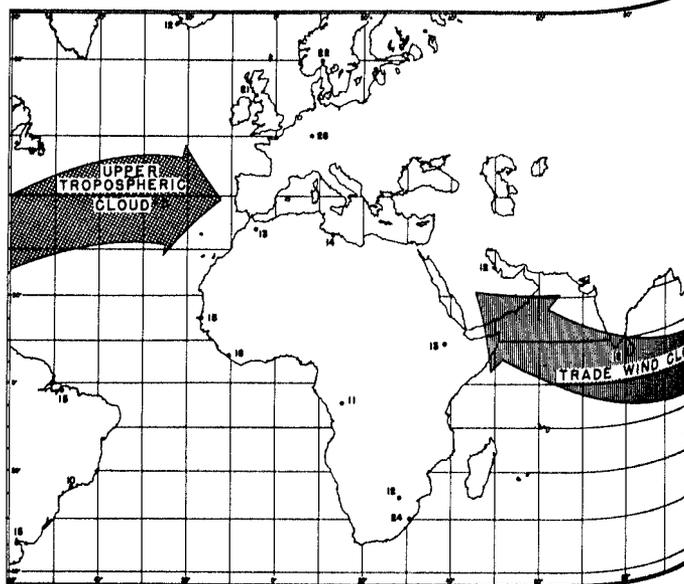
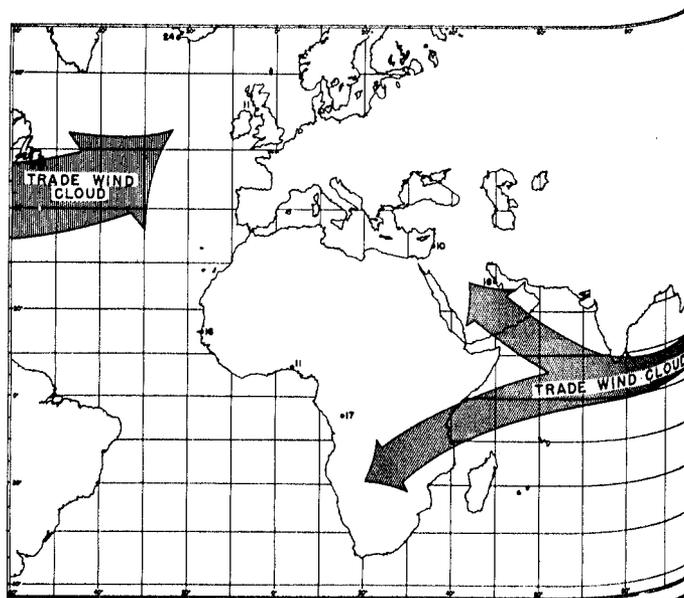
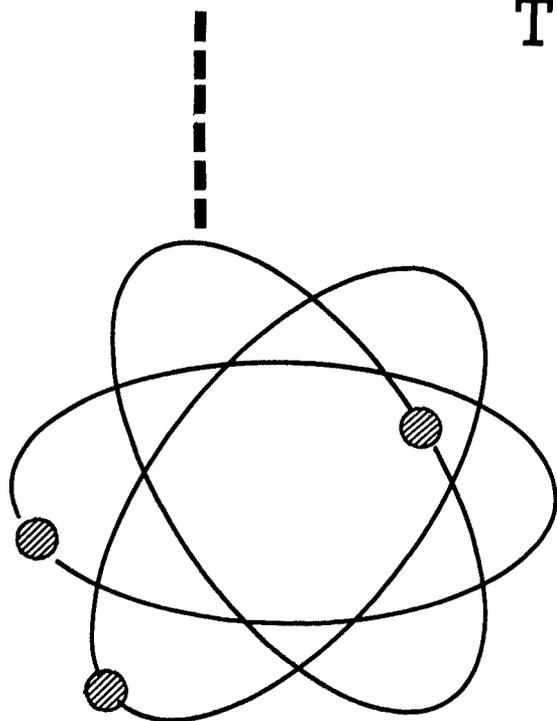


Deaths

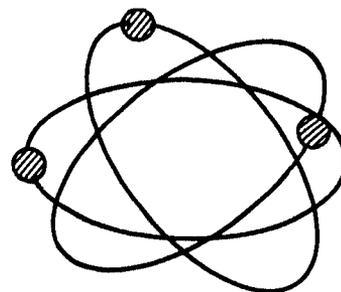
LEON F. PALADEE who retired from the Bureau July 31, 1946 died September 5 in Pico, California at the age of 66. Mr. Paladee entered the Bureau as a printer in 1926 at

Little Rock, Arkansas. He transferred to Ft. Worth, Texas in 1944 where he remained until his retirement.

NUCLEAR ENERGY & THE WEATHER BUREAU



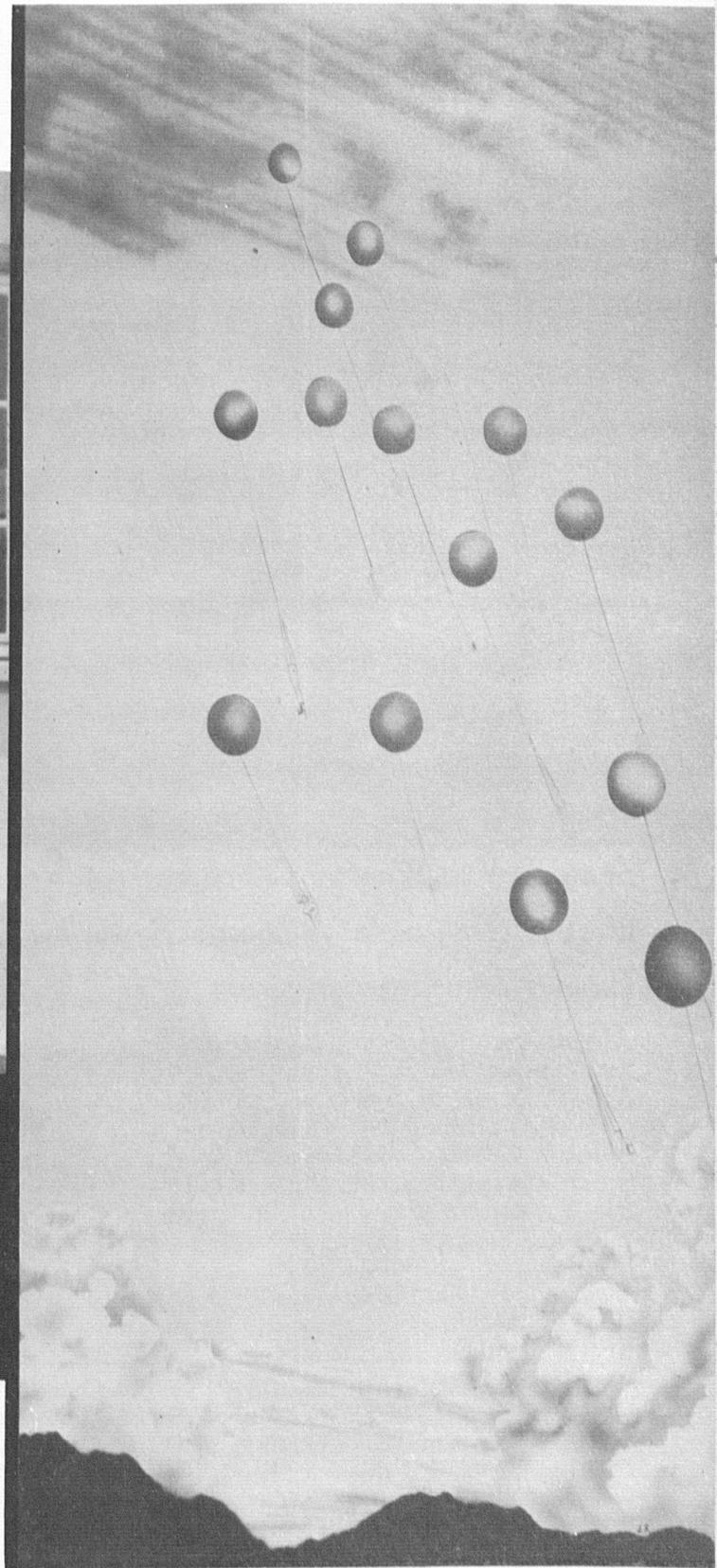
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TOPICS



↑ Finland
 ↑ France
 ↑ Poland
 ↑ Netherlands



MEET THE ASSISTANT CHIEF FOR ADMINISTRATION

Russell C. Grubb

IN March of this year Mr. Russell C. Grubb became Assistant Chief for Administration. This was just 29 years after entering the Bureau. We must hasten to explain that Russ is still a young man despite this long service which began when he was eighteen.

Russ was born in Tonti, Illinois on October 14, 1908 but moved with his parents to Independence, Kansas in 1914. He graduated from Independence High School in 1926 and on May 1, 1927 reported for duty with the Weather Bureau at Roswell, New Mexico as a temporary Minor Observer. Ten years later, May 1937, he transferred to Albuquerque, and in 1941 to Fort Worth, Texas to assist in establishing the Regional Office there. This venture was barely underway when the U. S. entered World War II. Many plans for the gradual orderly development of newly created Regional Offices had to be abandoned. With only sketchy guidance the Regional Offices almost immediately were faced with full-scale operating problems. Improvisation, imagination, resourcefulness and energy were at a premium. Major problems never before encountered by the Weather Bureau, such as local recruiting, large scale training, joint operations with the CAA and military, draft deferments, cryptography, security, expansion and relocation of station networks, etc., demanded immediate solution. This was fertile ground and a grand opportunity for a young Assistant Regional Director. During these war years Russ achieved a reputation that brought him increasingly to the attention of the Central Office. Soon after the War, March 1946, he was made



Chief, Regional Operations Section of the Station Operations Division in the Central Office. This was to be Mr. Grubb's shortest assignment because in July 1946 he became Budget Officer for the Weather Bureau. At the time Russ took occasion to place on the record his desire to be reassigned to the field. Like most Central Office officials he considers himself a product of the field stations and even though dreams of returning must now be faint he strives to maintain the viewpoint of a station man through visits and numerous personal contacts.

Since 1937 Russ has been taking college courses almost continuously. He has attended the University of New Mexico, Texas Christian, American University, U. S. Department of Agriculture Graduate School and

George Washington University. Majors are meteorology and physics with minors in mathematics and public administration. At Texas Christian Mr. Grubb was also on the faculty as a meteorology instructor.

Russell Grubb and Katherine Wyatt were married in 1931 and son Charles joined them in 1941. The Grubbs are active in community affairs such as PTA, scouting and church activities. Russ is a member of the American Meteorological Society, the American Geophysical Union, the Masonic Order and Toastmasters International. Hobbies include hunting, fishing, golfing, bowling and bridge. A few years ago Russ could be found on Sunday afternoons pacing the sidelines as Charlie and his buddies played Midget League football. Charlie's interests are now turning to hunting and

fishing and we expect that father and son will be making frequent week-end forays into open country.

Russ is a 200 pounder standing well over 6 feet. He is an adopted Texan with the lean leathery look of a southwestern rancher and the habits of mind and personal tastes to go with it. His ready smile and natural friendliness have endeared him to his associates everywhere. He is quiet and almost reticent in manner; but one must not be deluded for soon you will find he is thinking way ahead of you. Cheerful and considerate, Russ is always a gentleman and is very adept at relieving tense situations and promoting harmony. To old friends probably his strongest personality traits are patience, loyalty, and perseverance. He relies on persuasion rather than command and seldom, if ever, makes an arbitrary decision in the face of honest opposition. He will undoubtedly play a harmonious role on the top management team of the Bureau. In his particular area of Budget and Management, Personnel, Administrative Operations, and Public Information we can expect practical changes appropriate to the development and growth of the Bureau's scientific programs—of management fads and abstract philosophy we expect to see little.

Distribution of Weather Bureau Topics

A memorandum dated February 14, 1955 informed Bureau employees that the distribution of TOPICS would be increased to provide a personal copy for each employee desiring one.

As a result the number of copies printed of each issue was increased from 1500 to 3600. Copies are distributed to 260 retired employees, Department of Commerce and other agencies, and 100 copies are retained in file. This leaves 3240 copies to be distributed among 4850 employees, or a ratio of two copies for each three employees.

The memorandum of reference pointed out that the MIC should make periodic reviews of the number of copies received at his station and to adjust the distribution so that only those who want a copy for personal use receive one.

Under the impetus of "Operation Paperwork" eight suggestions were received questioning the need for the distribution of TOPICS for personal use.

Two years ago the Department of Commerce initiated a broad

program among its bureaus to develop "house organs". The overall objective was to assist in maintaining employee morale and to keep employees informed of activities taking place within their bureaus. The Weather Bureau was one of a number in the Commerce Department that had been issuing a publication for employees for a number of years. Therefore, all required of the Bureau was to determine the number of employees wanting individual copies. This was done.

We are in accord with the suggestions submitted on reducing the number of copies of TOPICS distributed to the extent that we do not wish to be wasteful. We suggest that each MIC or section chief at the Central Office determine once again the number of copies desired. Regional Administrative offices and Central Office divisions should then inform the Publications Unit if there is a change in the number of copies required for distribution.

No further action will be taken on the employee suggestions.

The International Geophysical Year

FOR the third time in 75 years, geophysicists of the world will join during the next two years for intensive observation and measurement of the physical characteristics of man's environment. The activity will take place over an eighteen month period beginning July 1, 1957, known as the International Geophysical

Year. In the United States the special observational program is being arranged and coordinated through the U. S. National Committee for the IGY which was appointed by the National Academy of Sciences - National Research Council. Coordination is achieved internationally through a special committee appointed by the

International Council of Scientific Unions.

Meteorology is one of ten fields of activity chosen for the IGY. In planning the program of special meteorological observations, emphasis was placed on the study of the world atmospheric circulation. Since it is not possible to fill all the gaps in the

world upper air network, additional upper air soundings will be concentrated along the 10°E, 140°E and 70°/80°W meridians from pole to pole. Observations will be made at numerous places in Antarctica to understand better its role in the world atmospheric circulation. Special measurements will be made of the amount of atmospheric carbon dioxide, ozone, solar radiation and the chemical components of precipitation. In addition, larger balloons will be used with rawinsondes and special firings of rockets will be employed to explore higher elevations of the atmosphere.

IGY meteorology funds in the amount of two million dollars have been made available to the Weather Bureau to expand the regular program of meteorological observations made by the United States. The meteorology program has been planned by a Technical Panel for Meteorology appointed by the U.S. National Committee for the IGY. The Panel is composed of nine meteorologists from universities, the Weather Bureau, Air Force, and Navy, and has been assisted by a much larger group of meteorologists with special interests in various phases of the program. The total program is composed of seven separate projects which are described below.

Antarctic Observational and Weather Central Program

Six observing stations and the Little America Weather Central will be established in Antarctica. The Weather Bureau observers will take the meteorological observations at Little America, Byrd Station and Pole Station and will cooperate with Navy Aerologists at the Knox and Weddell Stations. The joint New Zealand - U. S. station at Cape Adare will be manned by New Zealand, U. S. Navy and U. S. Weather Bureau personnel. Three and six hourly synoptic, 12 hourly rawinsonde, heat flux, radiation and snow

albedo observations will be taken at all stations and in addition, at Little America, observations will be made of sky brightness, ozone (total and surface), carbon dioxide and vertical gradients of various elements in the lower layer of the atmosphere. (See TOPICS February-March 1955, October 1955.)

The Weather Bureau has been given the responsibility of running the IGY Antarctic Weather Central at which representatives of other nations will be stationed. A full program of surface and upper air analyses of the Southern Hemisphere and Antarctica will be maintained and Antarctica prognostics prepared for use of all countries.

Shipment of equipment and supplies and recruiting of personnel for the Antarctic program is practically complete for this year, but additional personnel must soon be recruited for the second year.

Other interesting aspects of the Antarctic program will be announced in an early issue of TOPICS. Because of transportation schedules it has been necessary up to now to concentrate much of the effort on this phase of the IGY. The emphasis is now shifting to other geographical regions and to new observational programs.

South American Upper Air Program

Five upper air stations will be established in South America in cooperation with the respective countries. These stations will be at Guayaquil, Ecuador; Lima, Peru; and Antofagasta, Quintero and Puerto Montt, Chile. Using United States rawinsonde equipment, local observers and U. S. technical assistance, they will complete the chain of upper air stations extending from Pole to Pole along the 70°/80°W Meridian.

High Altitude Rawinsonde Observations

In fulfillment of a major goal of the IGY, the U. S. aerological

stations will use larger rawinsonde balloons capable of reaching average heights in excess of eighty thousand feet.

Arctic Ice Floe Meteorology

Programs for scientific meteorological observations are planned at two stations on floating ice in the Polar Basin. One of these stations will be Ice Island T-3, often referred to as Fletcher's Ice Island, while the other is proposed for the ice pack at a location half way between Barrow, Alaska, and the North Pole. Both stations will be established and supported logistically by the U. S. Air Force. Other organizations will join with the Weather Bureau and the U. S. Air Force in making scientific measurements at these stations. Personnel requirements for this program will soon be announced.

Atmospheric Chemistry

In cooperation with the IGY Oceanographic Program, considerable attention is to be given to the amount of the carbon dioxide in the atmosphere. Some scientists believe that the climate of the earth is gradually warming because of an increasing amount of carbon dioxide. The effect would be similar to that produced by the glass in a greenhouse. A large portion of the studies will be accomplished by Scripps Institution of Oceanography, University of Washington, and Woods Hole Oceanographic Institute. A device for measuring the amount of carbon dioxide by its infrared absorption will be operated at Little America. Selected Weather Bureau stations will be asked to collect air samples in glass flasks at regular intervals. These air samples will be analyzed for certain atmospheric constituents and for the ratios of the carbon and oxygen isotopes.

There will be other chemical programs also. Surface and total ozone will be measured and chemicals in precipitation will be

studied at selected stations, including Antarctica.

Data Processing and Dissemination

Particular attention is being paid to the speedy processing and dissemination of all IGY data. The national data will be sent on special forms to the WMO head-

quarters in Geneva, Switzerland, there to be photographed on micro-cards and made available at cost to all countries.

Cooperative Projects

Weather reconnaissance flights by the Air Weather Service along other than standard tracks are being planned and it is hoped

to increase the number of commercial aircraft weather reports. Particular attention will be paid to the collection of observations during the six World Meteorological Intervals (WMI's) of 10 days duration, timed to be held at the solstices and equinoxes of the IGY.

o o o o o o o o o o *Bon Voyage to Antarctic Personnel* o o o o o o o o o o

ON October 12, 1956, Dr. Reichelderfer and Dr. Wexler met with the people in the IGY Antarctic Meteorological Program.

In his remarks Dr. Reichelderfer pointed out that the 21 Weather Bureau meteorologists who are wintering-over in Antarctica are continuing a tradition started as early as 1928 when the late "Cyclone" Bill Haines, and Henry H. Harrison (now Director of Meteorology United Air Lines) of the Weather Bureau were members of the First Byrd Expedition and again in 1934-36 when Bill Haines and George Grimminger (now associated with Air Force Research and Development) were members of the Second Byrd Expedition. Again in the 1939-41 U. S. Antarctic Service Expedition, Arnold Court (now Meteorological Advisor, Department of Agriculture, Berkely, Calif.) and Herbert Dorsey (now doing Climatological Research for the State of California) represented the Weather Bureau in carrying out a meteorological program. Dr. Reichelderfer pointed out that the present expedition differs quite markedly from earlier expeditions not only in its size and scope but in international implications involving the cooperation of 11 countries which will increase markedly our knowledge of Antarctic geophysics, particularly meteorology.

Dr. Wexler then spoke as follows: "In a few months you men will be posted in the interior and along the coasts of one of the most barren and inhospitable continents in the world—Antarctica. You will be exploring the structure and properties of a near virgin atmosphere, — alternately in darkness for several months and alternately exposed to sunlight for several months. There have never been more than two or three complete meteorological observing stations operating in Antarctica at the same time; but now with the cooperation of 11 nations there will be 20 such stations — not counting an almost equal number of more limited surface stations in the Palmer Peninsula.

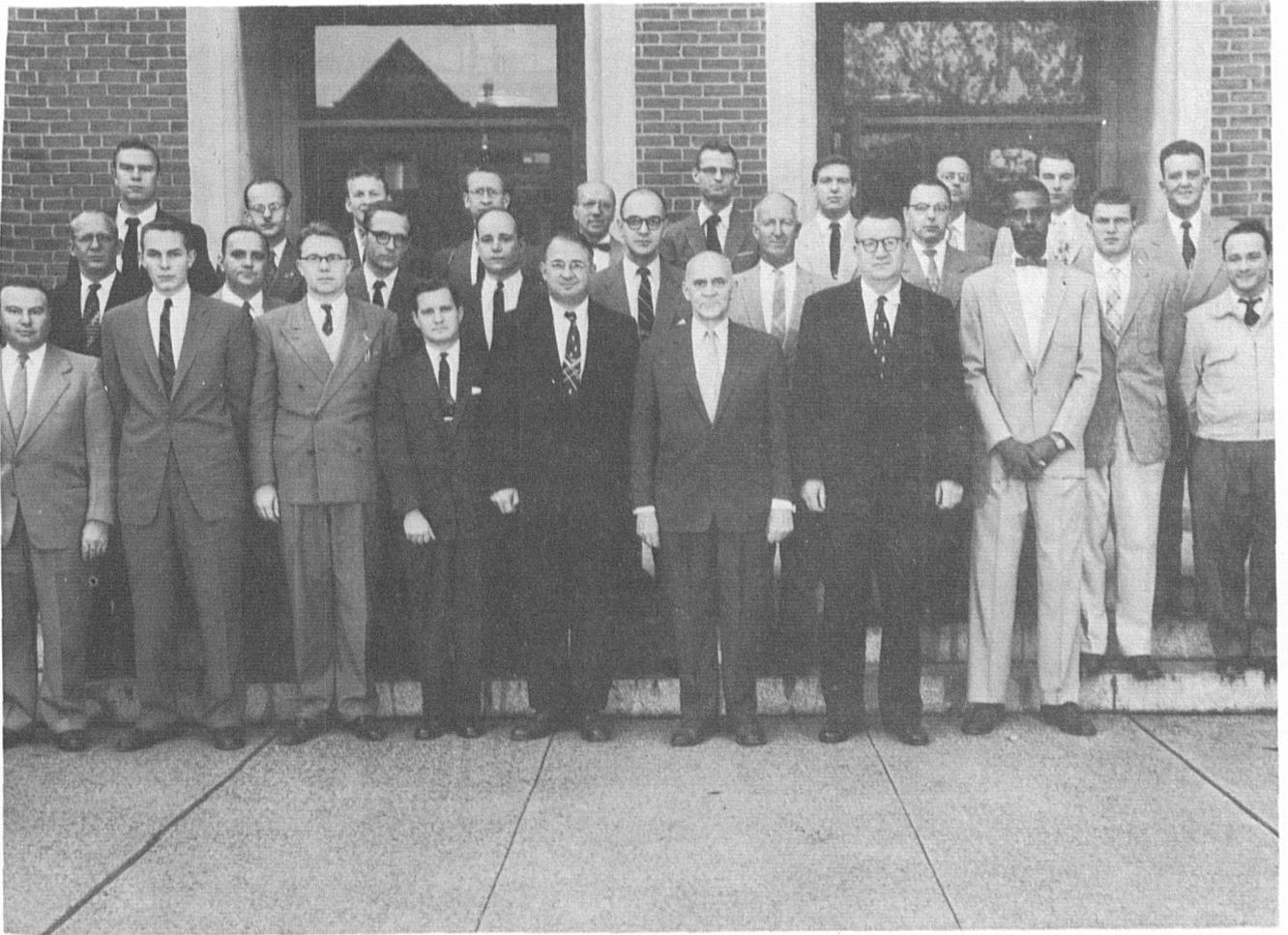
"The Antarctic affords an opportunity to investigate a wide range of meteorological problems under conditions not found elsewhere on Earth. These problems include the examination of the thermal, mass, and mobile structure of an atmosphere cut off both from direct solar energy for many months and, in contrast to its Arctic Ocean counterpart, from conduction of appreciable heat from below. The sharp distinction between the troposphere and the stratosphere, so marked elsewhere, is believed to vanish during the polar night over most of Antarctica.

"Another problem is whether

the Antarctic troposphere's flow pattern is dominated by the mid-latitude planetary wave system moving like spokes of a wheel around the Pole as appears to be the case in the Arctic, or by waves moving radially outward from the interior of the Continent, as suggested by earlier meteorological observations. A smaller-scale, but important problem, especially for field and aircraft parties, is the drainage, blocking, and deflective influence of mountains and hills on producing local circulations and blizzard winds up to hurricane force.

"The existence of a near uniform thermal and flat snow surface, such as is found for hundreds of miles over the Ross Ice Shelf, will provide an unexcelled natural laboratory to study atmospheric turbulence and energy exchange between atmosphere and snow surface. The incoming and outgoing radiation fluxes, the albedo of the snow surface, the polar white-out, and the variations of ozone, carbon dioxide, radioactivity and chemical content of precipitation will be measured in Antarctica during the forthcoming International Geophysical Year.

"The U. S. is spending many thousands of dollars to place each member of its scientific team together with his equipment and living needs in Antarctica. You are each at the end of a long pipe-



This group attended the meeting with Dr. Reichelderfer and Dr. Wexler.
 First row—left to right—J. P. Krank, B. L. Lieske, R. C. Taylor, G. R. Fierle, Dr. H. Wexler, Dr. F. W. Reichelderfer, J. G. Dyer, R. H. Johns
 Second row—left to right—R. A. Honkala, W. C. Sutton, H. L. Hansen, P. A. Humphrey, M. J. Rubin, E. E. Goodale, E. C. Flowers, N. F. Helfert, W. R. Morris
 Third row—left to right—J. C. Knoerl, Jr., E. A. Alf, G. L. Harter, Dr. J. A. Shear, G. D. Cartwright, E. A. Volbrecht, J. F. Guerrero, W. F. Johnson, J. R. Cooley, J. F. Wildes

line involving planning and procurement of supplies and scientific equipment which began several years ago. You people represent the payoff for all these labors and you have a great responsibility in carrying on your duties. Those of you who are going down as observers have had the benefit of specialized training plus refresher courses specially designed for polar work. As you go forward to take up your positions in Antarctica we are confi-

dent that you will assume your duties in the finest tradition of past generations of polar meteorologists, that you will perform your observations in the most exacting and careful manner and that you will attempt to sound the atmosphere to the greatest heights possible. Those of you who will be members of the IGY Weather Central should be conscious of your international responsibilities which have been assigned to the U. S. in carrying out the plotting,

analysis, and prediction of Antarctic weather for the benefit of all participating nations.

"The U. S. National Committee for the IGY of the National Academy of Sciences has given to the Weather Bureau the responsibility for carrying out its meteorological program. Although you will be many thousands of miles away from the U. S., you are still members of the Weather Bureau family which will now be spread from 82° North latitude to 90°

South. I hope personally to see most of you in Antarctica, travel facilities to your stations permitting."

The following is the Weather Bureau personnel roster, by station, for the first tour of duty in Antarctica. This group will depart the U. S. in November and December of this year and return in April 1958.

Adare Station

Dr. James A. Shear (Dr. Shear will act in the dual capacity at

Adare Station of meteorologist and Station Chief Scientist.

Byrd Station

Wesley R. Morris
Edward A. Alf
Norbert F. Helfert
Robert H. Johns

Knox Station

Rudolf A. Honkala

Little America

Ben W. Harlin
John C. Knoerl, Jr.
Gene L. Harter
William C. Lavris

Benjamin F. Remington, Jr.

Walter C. Sutton

Pole Station

Edwin C. Flowers
John F. Guerrero
Herbert L. Hansen
William F. Johnson

Weddell Station

Gerard R. Fierle

Weather Central

William B. Moreland
Joseph P. Krank
Bruce L. Lieske
Ronald C. Taylor

The Weather Bureau and Civil Defense

CIVIL Defense Offices, whether at the local, state, or national level, are concerned with all kinds of disasters—especially those caused by severe weather, floods, and enemy attack. The further the Weather Bureau goes into the field of Civil Defense, the more obvious it becomes that weather and climate are among the primary factors in most Civil Defense planning.

During the current fiscal year, the Weather Bureau's support program to the Federal Civil Defense Administration will require the full time services of thirty-five employees and an expenditure of \$230,000. This is in contrast to a program of sixteen employees and \$100,000 during FY-'56. Briefly, this year's plans include a six-man briefing unit at FCDA's National Headquarters in Battle Creek, Michigan, the continued assignment on one meteorologist to each FCDA Regional Office, four research projects in the Central Office, and a Central Office Coordinator.

The research projects are being carried on in four separate Central Office Divisions and are described briefly in the following paragraphs.

The Office of Meteorological Research is continuing its studies of improved methods of forecasting

radioactive fallout. They are exploring various computer techniques, conventional forecast methods, and combinations of the two.

The Office of Climatology has already completed an analysis of fallout areas, based on five years of rawin data from 51 locations and has extrapolated these data where necessary to 80,000 feet. The analysis yields geographical probabilities of fallout, annually and by seasons. Specialized applications of this study are now being conducted to yield geographical probabilities in terms of the "hot line". The "hot line" is indicated in a fallout message by the last coded group, and represents the line along which the fallout of radioactive material would usually be most intense. Special studies of the probabilities when fallout areas overlap are also planned.

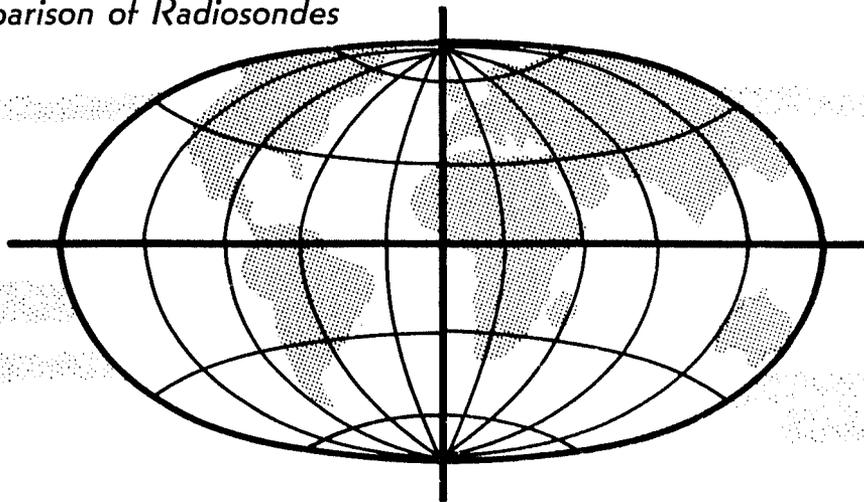
Hydrologic Services Division is carrying on a project for the collection and compilation of flood data in a form designed to show flood disaster potential for various stages at points along major U. S. river drainage basins. The American Red Cross and other agencies are cooperating in the project.

Observations and Station Fa-

cilities Division has begun a study designed to increase the accuracy and maximum altitude of upper wind observations. Their goals are to provide immediate improvement within the limitations of our present observing system, to develop new techniques which could be used immediately, and to determine the feasibility of radically new systems. A satellite GMD-1 station, and at least one hundred rawinsonde flights are included in the program.

The forecasts, flood warnings, and fallout messages prepared in Weather Bureau offices are basic to the entire Civil Defense effort. Without these vital products, our support program would be meaningless. The Central Office recognizes that the success of contributions to the Civil Defense effort depends upon the quality of these station programs, and upon the liaison activities carried on between the stations and the various Civil Defense offices. We have been complimented by the Department of Commerce and FCDA for the job the Bureau is doing. We are happy to forward the compliment to field employees whose interest and devotion to duty are responsible for the good job.

Second World Comparison of Radiosondes



IN 1953, the CIMO appointed a Working Group to make preparations for a second comparison, but progress was slow until the impetus of the IGY program was felt. The Working Group met in Payerne, Switzerland in the fall of 1955 to formulate plans regarding location of the various receivers, provisions against interference, methods of launching the radiosondes, and presentation of the data. (Allocations were made for local expenditures from a WMO appropriation.) This provided for hydrogen, clerical help for typing and reproduction of data and necessary labor incidental to the experiments. In addition, temporary buildings were erected for housing ground equipment for the various radiosondes since the permanent aerological building of the Swiss Service could accommodate only two additional sets.

The second International Comparison of radiosonde instruments took place in Payerne, Switzerland in May 1956, after a series of recommendations and resolutions by several WMO Committees.

Fourteen kinds of radiosondes were launched in the same train in a series of soundings in order

to determine the relative indications of the instruments. With such information, it should be possible to derive correction factors and render all data compatible. Meteorologists have been hampered by discrepancies between data from differing types of radiosondes, particularly in Europe where the variety is wider and aerological stations are close together. A similar comparison took place in 1950, but only six radiosondes were represented, including that of the United States. The results showed that for the lower levels at least, the instruments were in reasonable agreement. However, at upper levels and particularly during daylight when solar radiation was an additional factor, large differences between radiosondes were found. As a consequence, considerable effort has been directed by meteorological services to the improvement of the performance of their respective radiosondes.

The following countries participated: Belgium, France, West Germany, East Germany, Finland, Japan, India (with two types), Netherlands, Poland, Switzerland, United Kingdom, U.S.S.R., and U.S.A. Observers also were

present from Austria, Egypt, and Yugoslavia. Sweden also participated in the experiments by bringing and operating a high captive balloon with a wired radiosonde. The purpose of that phase of the experiment was to establish a reference point above the surface, -500 to 1500 meters. Comparisons at that level would show which radiosondes were subject to shock or shifted their calibration after leaving the ground. In addition, a group from England operated a Decca Radar. Here the object was to track the sounding and obtain readings of heights to serve as an independent reference for comparison.

The United States group consisted of Christos Harmantas and Joseph Szokolozsky from the Central Office; Jeff Ardoin from Silver Hill; Don Howard from the Denver AWS; and D. E. Cline of the Signal Corps Electronic Laboratories. In Payerne, the U. S. group was joined by several Army Officers and technicians from the European theater, each of whom stayed for several days. Visits were also made by the Air Force attache in Berne and by members of the Consul General's Office in Geneva.

(Cont'd. on next page)



Left to right—G. Golychev, U.S.S.R.; J. Lugeon, Switzerland; C. Harmantas, U.S.A. Dr. Lugeon is telling an anecdote about his radiosonde. Note flags over the door. These are the flags of countries who sent representatives but did not participate with radiosondes. Flags of the participants were placed at their respective locations.

D. K. Langlo and Oliver Ashford of the Technical Division of WMO were in Payerne for almost the duration of the experiment. WMO Secretary General Davies came to observe the tests at first hand and his favorable impression resulted in a visit by the entire WMO staff. Open house was held one day and a large gathering of members of the press took notes of the proceedings. There were also visits by diplomatic representatives of other countries and by manufacturers of balloons, batteries, and other accessories.

An illustration of local interest was noted in the small replicas of the GMD-1A, the Decca radar, and a multi-radiosonde launching, beautifully executed in chocolate, which decorated the large dinner table at the hotel.

At its November meeting, the Working Group accepted the advice of Dr. Delver, a statistician of the Netherlands Meteorological Service. He had devised a method for obtaining statistical information about the radiosondes by launching them in groups of four in an established sequence of

groupings. Operations in Payerne began by launching four radiosondes in a train with two parachutes, one radar reflector, and three 2000-gram balloons. Due to occasional radiosonde failures or premature bursting of balloons, it became evident that the number of soundings should be increased or else larger groups should be launched. Six radiosondes were tried and as it proved successful, eight were tried and this culminated to the maximum grouping of fifteen balloons, two parachutes, one radar target, and fourteen

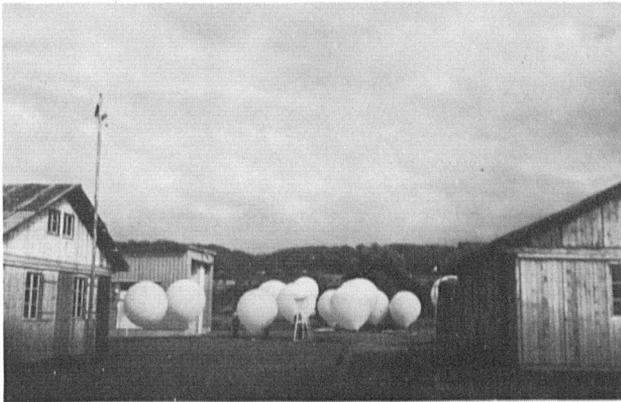
radiosondes. There was no interference at any of the receiving stations and the work went on smoothly, but it was somewhat tedious because of the extensive amount of data. Readings of temperature, pressure, humidity, and rawin data were taken each minute. After the sounding was computed, it was also transmitted in the usual manner; that is, P T and H for significant and standard pressure levels. A third form provided mean values of P T and H for a five-minute interval at each standard pressure level. In addition, the times at which pressures at the standard levels were reached were recorded for comparisons with data from the Decca radar. All data were then duplicated by

the clerical staff and distributed. It amounts to six large volumes. The data are now being analyzed to obtain statistical differences in the radiosonde parameters. Comparison will also be made of the data as reported in the usual manner. This study is not yet completed. During the experiment, it became evident that the U. S. and West Germany radiosondes were in such excellent agreement that they were adopted as reference radiosondes and both were attached to all subsequent soundings.

The participants were much interested in observing the different techniques used with the various radiosondes and in comparing notes on each other's pro-

cedures in the evaluation of the soundings.

On the social side, there was a reception given by the Comune of Payerne and a view of the Community Wine Cellar (with samples). The Canton of Vaud and the Federal Government gave a banquet at Grandeveau, a beautiful spot overlooking Lake Geneva. A thunderstorm and heavy showers prevented our enjoying the view, but not the delicious dinner. The group also went on a Sunday excursion to Zermatt and Gonergratt for a view of the Matterhorn. Despite the disappointment produced by clouds hiding the peak, the trip was enjoyed by all and the scenery en route was magnificent.



Inflated balloons waiting to be tied to the train.



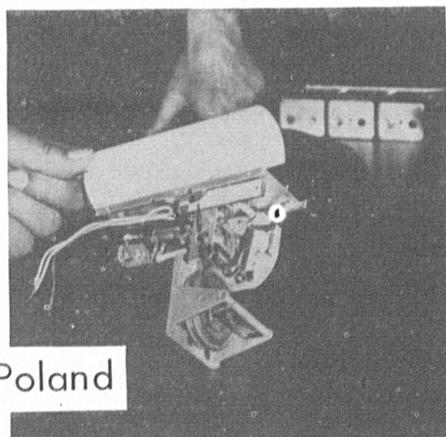
WMO Photo

Just before the launching - balloons are up, but train is still on the ground.

TYPES OF RADIONDES USED BY PARTICIPATING NATIONS



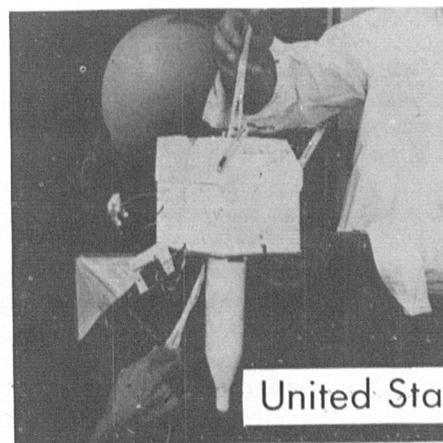
West Germany



Poland



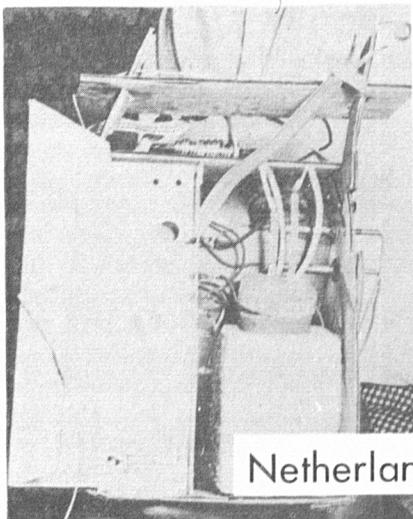
U.S.S.R.



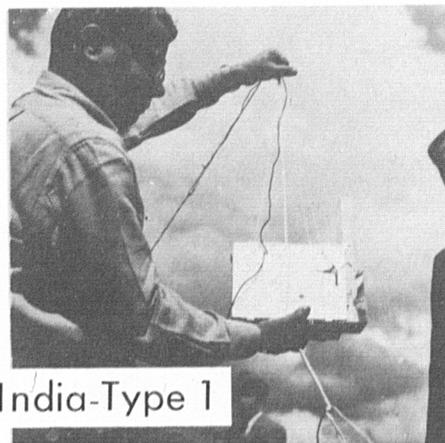
United States



Finland



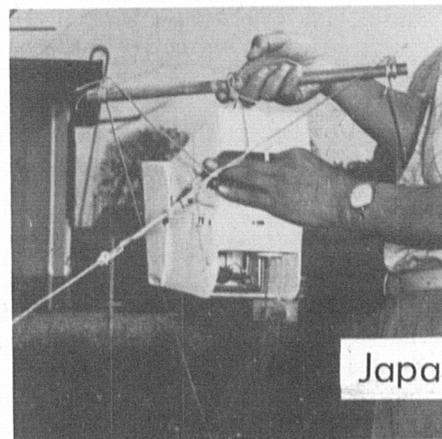
Netherlands



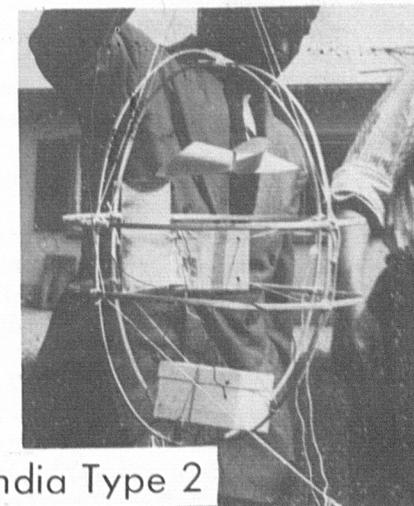
India-Type 1



United Kingdom



Japan



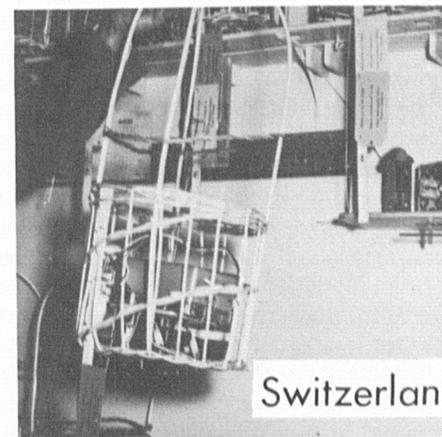
India Type 2



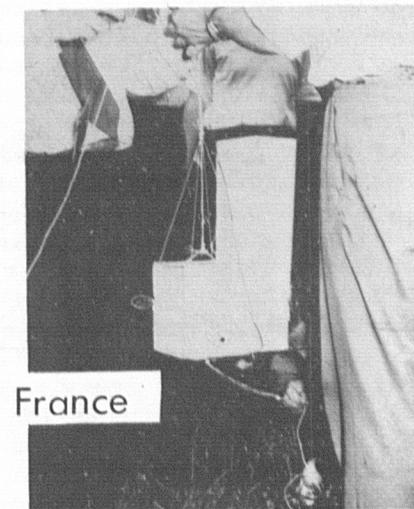
Belgium



East Germany



Switzerland



France

Scientific Method, Statistical Inference, and the Law

DOES "rainmaking" work? Do droughts come in cycles? Can accurate long range weather forecasts be made? Do sunspots affect the weather? These and similar questions which are being asked daily of workers in the field of meteorology are not easily answered by an unqualified "yes" or "no" since there is a lack of conclusive evidence on many points, and much of this evidence may be statistical in nature. However, the layman, impressed with the precision and exactness of science, often expects a definite statement from the scientist indicating the truth or falsity of a claim. Anything less than this may be interpreted as confusion, fear or weakness on the part of the scientific investigator or administrator. How can we, as scientists and civil servants, answer these questions and help the public to obtain a greater understanding and appreciation of the scientific method? Excerpts from a letter in *Science* (September 1956) entitled "Scientific Method, Statistical Inference, and the Law" are printed (By permission Editors of "Science".) here in the hope that they may be helpful in clearing up some of the misunderstandings that often arise in the interpretation of experiments in weather control and other scientific investigations. The letter, written by Gayle W. McElroth and Jacob E. Bearman of the University of Minnesota, Minneapolis was directed primarily to members of the legal profession but appears to apply to other groups as well.

"Every day life is becoming more surrounded with affairs closely related to the scientific

laboratory. Intimately associated with advances in technologic processes are the objective criteria by which the scientist reaches his conclusions....

"...The thinking of the experimentalist, be he pure or applied, must of necessity be based on statistics: he must analyze data obtained by observation; and the only available objective methods of accomplishing this analysis are provided by the discipline of statistics. To digress for a moment, it should be mentioned that theoretical statistics, which develop the abstract logic on which the applications rest, might be considered as a branch of applied mathematics and has its foundations in the theory of probability. However, the applied statistician dealing with the real facts of a physical world, must be more than a mathematician if he is to work on the same team with researchers in any field of investigation who have concrete problems facing them for which solutions in the real world must be discovered.

"A qualitative analogy can be made between the thinking of the experimentalist and that of the lawyer in his situation. Although the lawyer may not have been aware of it, he is trained to think and reason in a manner similar to the scientist. Perhaps he has not been conscious that his processes of deducing conclusions are—in principle—the same as those of the scientist; the lawyer may have been unaware of this fact, because he has given the scientist too much credit for 'precision'. Take the legally familiar phrase, 'beyond a reasonable doubt'. The phrase very scrupulously does not say, 'with certainty' or 'beyond

a doubt'; the legal phrase carefully includes the word reasonable.

"The scientist, too, never proves everything 'with certainty' or 'beyond a doubt'; the best he can ever hope to say is that he has established a fact 'beyond a reasonable doubt'. The difference between the experimental and the legal situations is that the scientist has learned how to calculate the probability of the doubt. This has been the contribution of statistics.

"We need not go into detail with the scientific measurement of experimental uncertainty. One hypothetical example will serve to illustrate. Suppose that a medical researcher comes up with a new treatment. The results of the experiments he conducts to evaluate his treatment are almost never black or white, but usually one of the shades of gray: more patients may improve with the new treatment than usually show improvement with the traditional treatment. (The key word here is usually: associated with any phenomenon there is almost always variation. For example, on the average, 70 percent of patients may recover from a disease inside of a week, in the long run. But given the next five groups of 100 patients each, we should not be surprised to see as few as 60 or 65 patients or as many as 75 to 80 patients recovering inside of a week in some of the groups. Almost certainly not all five groups of 100 patients will have the same number recovering inside of a week.) Here statistics comes to the rescue and aids in evaluating the experiment by analyzing the pattern of variation as follows:

If there is no more merit to the new treatment than to the old treatment and if we repeated our experiment under identical conditions many times over, then by chance alone we would observe differences at least as large as those in our experiment in less than, say, one out of 10 such experiments (or one out of 20, or 100, or 1000, and so forth). The one out of 20, or one out of 100, and so forth, is the doubt that remains. What we choose to call 'reasonable doubt', or what we class as 'beyond reasonable doubt' depends on the consequences of a wrong decision. Indeed, this type of reasoning is not new to the law; some philosophers of the law have implicitly set an upper limit for 'reasonable doubt' for criminal actions: 'Better that 100 criminals shall go free than to unjustly convict one innocent person'.

"More and more legal actions depend for their bases in fact on the results of experiment. Since experimental results vary, any experiment establishes a 'fact' only within a certain area of doubt; and the lawyer should be aware of the existence and extent of these areas...."

Correspondence Courses

PENNSYLVANIA State University is offering a new 3 semester-hour correspondence course, Meteor. 320, Tropical Meteorology, using as a text Tropical Meteorology by H. Riehl. Revised editions of Meteor. 373-C, Dynamic Climatology and Meteor. 315-C, Synoptic Meteorology Exercises I will be ready in a few weeks.

The fee for college credit correspondence courses effective July 1, 1956 is changed from \$10.00 to \$12.00 per semester hour.

International Meteorological Organization

The Executive Committee of the World Meteorological Organization has decided that an annual prize shall be awarded by the Organization, to be known as the International Meteorological Organization Prize. The prize will be awarded for outstanding work in the field of meteorology. In making the award consideration will be given both to scientific eminence and the record of work done in the field of international meteorological organizations.

The Committee has decided that the IMO Prize shall consist of

- (a) A gold medal
- (b) A sum of money (\$1200)
- (c) A certificate, giving the citation of the award and bearing the signature of the President of the Organization and the official seal of WMO.

The first recipient of the IMO Prize is Dr. Th. Hesselberg of Norway in recognition of his unique record of service with the International Meteorological Organization and to the World Meteorological Organization and in recognition of his valuable contributions to the science of

Prize Established

meteorology.

To assist in selections for future awards, the Executive Committee has established a Selection Committee consisting of the following: Dr. S. Basu, India; Dr. A. Hyberg, Sweden; Sir Graham Sutton, United Kingdom; Dr. Andrew Thomson, Canada. This Committee has been asked to submit to the next Session of the Executive Committee, which is due to begin in September 1957, a list of not more than five names of persons who, in the view of the Committee, seem most suitably qualified for the second award. To help the Selection Committee in its work, the Secretary General of WMO has informed all members of the Organization about the procedure to be followed and has invited them to submit the names of the persons who, in their opinion, are worthy of consideration for an award. Suggestions for candidates to receive future awards should be forwarded to the Chief of Bureau by April 1, 1957. In each case a statement of one hundred words or less on the qualifications and merits of the candidate is requested.

New Type Aviation Forecast Folders

TO replace the old type Aviation Forecasts folder having cardboard pockets, a new type folder having plastic pockets with metal hinges was developed and field tested. The field test indicated that the new type folders would be much more durable. A quantity of the new folders sufficient to supply about one-half of our stations was sent to the Regional Administrative Offices in March

1956 for redistribution to those stations in their region having the greatest need for new and more durable folders. It was planned to purchase enough new folders early this fiscal year to supply the remaining stations, but the budget allotment proved insufficient for that purpose. Additional folders will be purchased when finances allow.

Mc Donald Makes Field Trip

REALIZING the importance of maintaining close contact with the field, the Chief of Bureau asked Mr. W. F. McDonald, former Assistant Chief of Bureau, to assist in maintaining the field visitation program. Mr. McDonald was happy to cooperate and spent ten weeks, from the latter part of June through early August, on this assignment. He visited 38 stations ranging from Alaskan outposts, such as Point Barrow and St. Paul Island, to district forecast centers at Great Falls, Seattle and Anchorage.

Prior to station visits, the Chief of Bureau wrote each MIC explaining the primary purpose of Mr. McDonald's visit "...to give an opportunity for field officials and field employees to talk at whatever length they desire with a senior official who has had broad experience in the Weather Bureau. In Mr. McDonald's capacity as a representative of this office, I hope you will take the opportunity to discuss with him anything that you would like to discuss with the Chief of Bureau and that you will feel free to present any plans or problems that you think should have further attention by the Central Office."

Mr. McDonald's reports and his briefings upon his return have indicated that this purpose was served very well. He was particularly impressed with the conscientiousness and ability demonstrated by field personnel. His comments have caused re-examination of several programs and to highlight, through examples, some of our major problems. Some stations have written in to express appreciation for the boost in morale provided by his down-to-earth

approach. Very likely future trips to other stations will be arranged as Mr. McDonald finds the time.

At the moment he is representing the Bureau on a WMO mission to Europe.

Computing your Retirement Annuity

FOR the employee who is interested in estimating how much his annuity would be at the end of so many years of service, the following described table will be of use. This table is based on the formula combination of best advantage to the employee, taking

into consideration his average salary and length of service. It does not represent the tables used by the Civil Service Commission, but does provide a simplified method of estimating the life annuity rate.

1. First, figure your average salary over your highest-paid five consecutive years.
2. Second, multiply this average by the appropriate percentage in the following table according to your years of service and your salary range. (Add the dollar amount or amounts where indicated, after multiplying.)

| YEARS
SVC. | 5-YEAR AVERAGE SALARY | | | \$5000
and over | Add the following to the percentages and dollars in the columns at the left, according to your months of service | | | | | |
|---------------|-----------------------|---------------|--------|--------------------|--|------|-------|-------|------|-------|
| | \$2500-\$3333 | \$3334-\$4999 | | | Mos | % | \$ | Mos | % | \$ |
| 5 | 5% / \$125 | | | | 1 | .083 | 2.08 | 6 | .500 | 12.50 |
| 6 | 6% / 150 | | | | 2 | .167 | 4.17 | 7 | .583 | 14.58 |
| 7 | 7% / 175 | | | | 3 | .250 | 6.25 | 8 | .667 | 16.67 |
| 8 | 8% / 200 | | | | 4 | .333 | 8.33 | 9 | .750 | 18.75 |
| 9 | 9% / 225 | | | | 5 | .417 | 10.42 | 10 | .833 | 20.83 |
| | | | | | | | | 11 | .917 | 22.92 |
| 5 | | 5.00% / \$125 | 7.50% | 1 | .146 | | 6 | .875 | | |
| 6 | | 6.75% / 125 | 9.25% | 2 | .292 | | 7 | 1.021 | | |
| 7 | | 8.50% / 125 | 11.00% | 3 | .438 | | 8 | 1.167 | | |
| 8 | | 10.25% / 125 | 12.75% | 4 | .583 | | 9 | 1.313 | | |
| 9 | | 12.00% / 125 | 14.50% | 5 | .729 | | 10 | 1.458 | | |
| | | | | | | | 11 | 1.604 | | |
| 10 | 10% / 250 | 13.75% / 125 | 16.25% | | | | | | | |
| 11 | 12% / 250 | 15.75% / 125 | 18.25% | | | | | | | |
| 12 | 14% / 250 | 17.75% / 125 | 20.25% | | | | | | | |
| 13 | 16% / 250 | 19.75% / 125 | 22.25% | 1 | .167 | | | | | |
| 14 | 18% / 250 | 21.75% / 125 | 24.25% | 2 | .333 | | | | | |
| 15 | 20% / 250 | 23.75% / 125 | 26.25% | 3 | .500 | | | | | |
| 16 | 22% / 250 | 25.75% / 125 | 28.25% | 4 | .667 | | | | | |
| 17 | 24% / 250 | 27.75% / 125 | 30.25% | 5 | .833 | | | | | |
| 18 | 26% / 250 | 29.75% / 125 | 32.25% | 6 | 1.000 | | | | | |
| 19 | 28% / 250 | 31.75% / 125 | 34.25% | 7 | 1.167 | | | | | |
| 20 | 30% / 250 | 33.75% / 125 | 36.25% | 8 | 1.333 | | | | | |
| 21 | 32% / 250 | 35.75% / 125 | 38.25% | 9 | 1.500 | | | | | |
| 22 | 34% / 250 | 37.75% / 125 | 40.25% | 10 | 1.667 | | | | | |
| 23 | 36% / 250 | 39.75% / 125 | 42.25% | 11 | 1.833 | | | | | |
| 24 | 38% / 250 | 41.75% / 125 | 44.25% | | | | | | | |
| 25 | 40% / 250 | 43.75% / 125 | 46.25% | | | | | | | |
| 26 | 42% / 250 | 45.75% / 125 | 48.25% | | | | | | | |
| 27 | 44% / 250 | 47.75% / 125 | 50.25% | | | | | | | |
| 28 | 46% / 250 | 49.75% / 125 | 52.25% | | | | | | | |
| 29 | 48% / 250 | 51.75% / 125 | 54.25% | | | | | | | |
| 30 | 50% / 250 | 53.75% / 125 | 56.25% | | | | | | | |
| 31 | 52% / 250 | 55.75% / 125 | 58.25% | | | | | | | |
| 32 | 54% / 250 | 57.75% / 125 | 60.25% | | | | | | | |
| 33 | 56% / 250 | 59.75% / 125 | 62.25% | | | | | | | |
| 34 | 58% / 250 | 61.75% / 125 | 64.25% | | | | | | | |
| 35 | 60% / 250 | 63.75% / 125 | 66.25% | | | | | | | |
| 36 | 62% / 250 | 65.75% / 125 | 68.25% | | | | | | | |
| 37 | 64% / 250 | 67.75% / 125 | 70.25% | | | | | | | |
| 38 | 66% / 250 | 69.75% / 125 | 72.25% | | | | | | | |
| 39 | 68% / 250 | 71.75% / 125 | 74.25% | | | | | | | |
| 40 | 70% / 250* | 73.75% / 125 | 76.25% | | | | | | | |
| 41 | 72% / 250* | 75.75% / 125 | 78.25% | | | | | | | |
| 42 | 74% / 250* | 77.75% / 125* | 80.00% | | | | | | | |
| 43 | 76% / 250* | 79.75% / 125* | | | | | | | | |
| 44 | 78% / 250* | 80.00% / 125* | | | | | | | | |
| 45 | 80% | | | | | | | | | |

* An annuity may not exceed 80% of highest 5 consecutive year average salary

Identification of WB Employees Answering Telephones and Making Radio Broadcasts

A survey was made recently of selected Weather Bureau offices to determine whether employees should identify themselves when answering telephones and making radio broadcasts. This survey was inaugurated because of a suggestion received that Weather Bureau employees answering the telephone add his name following the standard phrase, "Weather Bureau". The suggestion also proposed that employees giving direct or recorded broadcasts be identified by name. Advantages claimed for the suggestion included improved public relations and development of a higher sense of responsibility for employees who would have to identify themselves.

On the first suggestion 23 of the 26 offices queried in the survey indicated the addition of the person's name to the telephone answering phrase "Weather Bureau" would be of little consequence in improving public relations or efficiency. Some typical comments were: "Increases time of handling calls"; "Tends to personal service"; "Callers will get into habit of asking for specific forecaster".

On the second suggestion the almost unanimous opinion was that the name of the forecaster should be included in radio broadcasts. The replies stated that only one reference should be made to the broadcaster's name; this could be either at the start of the program or at the conclusion. It appears to be standard operating procedure among the nation's radio stations to include the name of our employee in the introduction by the local station announcer.

Following are a few of the more interesting paragraphs

selected from replies to the survey:

"A point not mentioned but one which is closely related to the subject of your memorandum is that of the use of forecasters' names in newspaper stories. Several times in the past someone has raised the question as to whether newspaper stories should refer only to the Weather Bureau and the forecaster should not be quoted by name or his name mentioned.

"Many reporters are on the weather assignment for long periods and pretty soon they recognize the voices of the different forecasters and quote or mention them by name whether it is desirable or not. It is a practice which we heartily favor and we believe there are advantages in having both the Weather Bureau and the forecaster referred to as a source of material. In all worthy news reports some responsible official is always mentioned—this adds authenticity to the report and makes it more credible to the reader. It also keeps the forecaster on his toes and he has a greater feeling of pride in his work when he knows he will make the front pages from time to time.

"This office has always identified the forecaster making the broadcast. We have not required employees to identify themselves when answering the telephone.

"We are in agreement with the suggestor that such a practice would fix responsibility and is therefore desirable. It should increase the employee's feeling of personal responsibility for information given out. It may or may not improve our public rela-

tions. In any event, we intend to institute this practice at this station immediately."

"Whether personal identification will enhance the feeling of responsibility to any appreciable degree depends largely upon the individual. We have discussed this point with all of our employees and while most of them admit personal identification would increase the feeling of responsibility in some cases, the increase would be negligible and could not be measured in terms of greater courtesy or accuracy in an evaluation of the employee's overall effectiveness. Some insisted that personal identification would not have any effect whatsoever on their feeling of responsibility. Our overall evaluation of the consensus of opinion regarding this point is that personal identification would enhance the feeling of responsibility to a very slight degree.

"This leads us to the question 'Will it improve public relations?' In answering this question, we must consider the effect not only on the individual but also on the total station program. Since our employees believe that their feeling of responsibility would be enhanced only slightly or not all, the degree of courtesy and attention shown to the caller could not be expected to show appreciable upturn. Hence, the improvement of public relations through such greater courtesy and attention would be slight."

"We can not agree with the suggestion to use name identification with answering telephone calls for several reasons some of which are listed below:

"Over the past several years considerable influence has been effected by the press and radio to individualize our service by quoting individuals by name rather than service of the Weather Bureau. We believe that a homogenous Bureau Service is more desirable rather than a break down into individual parts. Our station operates on the assumption that all data and forecasts are Bureau service and not that of any individual person. After the forecast is made we accept it as the Bureau forecast, 'our' forecast and not 'my' forecast. In our opinion identification over the telephone will lead to individualized service."

"This seems to be one of the suggestions where the benefits are more apparent than real. If the employee wishes to include his name when answering the phone there is certainly nothing harmful about the practice. On the other hand, it is difficult to see how any tangible benefits will be realized.

"It seems to us that the primary reason why employees answer the telephone 'Weather Bu-

reau' instead of 'Weather Bureau, Jones speaking' is not to hide behind the cloak of anonymity but for the very practical reason that the former is shorter. When one must answer the telephone scores or even occasionally hundreds of times during a working day brevity becomes necessary and important."

"We have found on many occasions when the employee's name has been given, that subsequent calls from the same party are directed to that same employee by name, causing considerable delay in the prompt and efficient handling of the telephone work. Since this delay and confusion which sometimes results wastes a great deal of time, at any rate at a station such as ours where the telephone load is extremely heavy, and since anyone either making a radio broadcast or answering the telephone does so as an employee of the Weather Bureau and not as an individual, we believe that the suggested procedure should not be adopted as standard practice.

"In answer to the other questions posed in the memorandum,

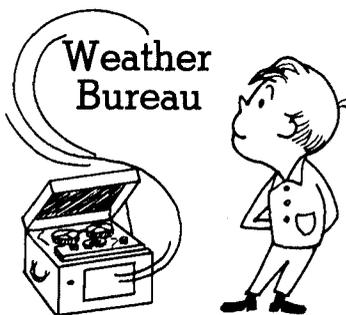
while the practice might improve public relations in that those calling for information might feel a more personal service is being given by the employee's giving his name, nevertheless the impairment of efficient service likely to result more than offsets any such improvement. We believe that our employees already have a strong feeling of personal responsibility for any information which they give out, and that the inclusion of personal identification, as suggested, would therefore have negligible effect as regards the factor of personal responsibility.

"Again it should be noted that our rule of not giving names is not inflexible. For example, if a problem arises during a telephone conversation which necessitates a call back later in the day, and such a call back can be most efficiently handled by the employee who took the first call, then that employee would tell the caller to call back, say, this afternoon, and ask for Mr. Smith. However, as a general rule, it is felt that personal identification is to be used only as the occasion demands it."

Students Visit Weather Office by Tape Recorder

EVELYN MARTIN, sixth grade teacher from Tempe, Arizona, in cooperation with Mr. Louis R. Jurwitz, MIC, WBAS Phoenix, Arizona, and two sixth grade students, produced a tape recorded "field trip" of the weather station. Mrs. Martin's interesting article "Community Resources and the Tape Recorder", describing the production and presentation of the recording to her class which could not visit the station, appears in the spring 1956 edition of TEACHING TOOLS.

This method of bringing the



Weather Bureau office into the classroom may appeal to many of our busy stations where there is

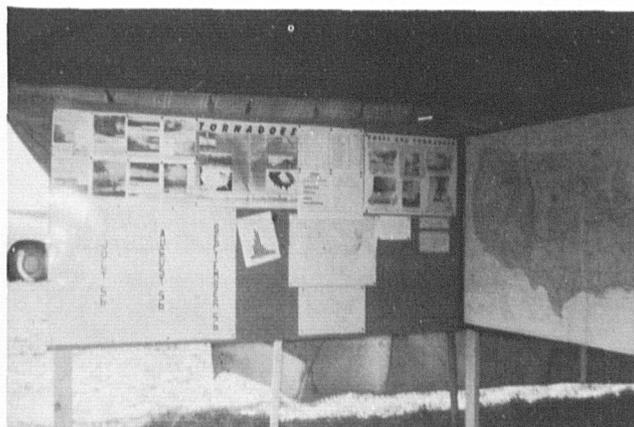
little time available for field trips at the station for the local school children. The importance of stimulating these children to scientific interests and, possibly, a few into the meteorological field, is of vital importance to our future recruitment program and also to the national pool of scientifically trained personnel. The results of this type of effort are only apparent over a long period; however, if the word gets around that our work is interesting and attractive, many of our overworked stations may receive relief.

Weather Services for Minnesota Plowville

THE 1956 Minnesota "Plowville" was held at Mazeppa, Minnesota on September 14 and 15. The program consisted generally of demonstrations of soil conservation practices and state plowing matches. Weather services for this operation and briefing service for pilots who flew to the event were provided by the staff at WBAS Rochester, Minnesota. A field weather station was set up at Plowville Headquarters. Com-

munications between Rochester Weather Bureau Airport Station, Plowville Headquarters and the landing strip operation's site was provided by the Rochester Amateur Radio Club. Pertinent weather information including current reports and forecasts were made available to Headquarters and the landing strip site by means of the equipment provided by the Amateur Radio Club. A plastic covered map 46x66 inches was used to

show main weather features. The current weather information and certain climatological data were posted on bulletin boards for ready reference by Weather Bureau personnel and the participating farmers. Considerable time was spent by Bureau personnel at the Headquarters site in discussing weather information and weather services in general with individuals or groups of farmers.



Tornado Film Benefits

A survey shows that the film "Tornado" has so far resulted in 239 communities establishing tornado warning networks, with others being in the planning stage. During the six-month period from March through August of this year, the film was shown to various public groups a total of 2016 times. It was also presented over television 301 times. For these combined showings, the estimated audience was 41,065,000 people of which 73% viewed the film during the first two

months.

A number of Weather Bureau officials took an active part in meeting with local groups to furnish guidance and to encourage the development of the networks. The MIC's report that the meetings provided an excellent opportunity to strengthen public relations. Gratification was also expressed for the point brought out in the film that communities also have some responsibility for helping to warn themselves of approaching tornadoes. The film stimulated

many MIC's to strengthen their own networks, in addition to coordinating them with the community nets.

Two cases have been reported of families in Kansas who credit the saving of their lives to the safety precautions learned from seeing the film on television. The MIC at Flint, Michigan also reported that the film showings probably resulted in most people being in their basements and escaping injury during the tornadoes on May 12.

Certified Professional

Secretary

TRUBEE T. CAMPBELL of the WBAS Los Angeles, California, has passed the examination sponsored by The National Secretaries Association and is now a Certified Professional Secretary. Only 211 of the 1,071 candidates taking the examination in 1956 were certified.

Chapters of the National Secretaries Association (International) throughout the country are active in enlisting management's support in business, industry, and government and in obtaining local adult and college educational facilities tailored to provide classes and workshops in such phases of office work as secretarial skills, practices, and accounting; business law; economics and office management; and personal adjustment and human relations as well as some purely cultural courses. These are open to anyone interested regardless of membership in the NSA. Others besides secretaries attend. Information about the Chapter activities in any area can be obtained from the Association Headquarters, 222 West 11th Street, Kansas City 5, Mo.

Meteorological

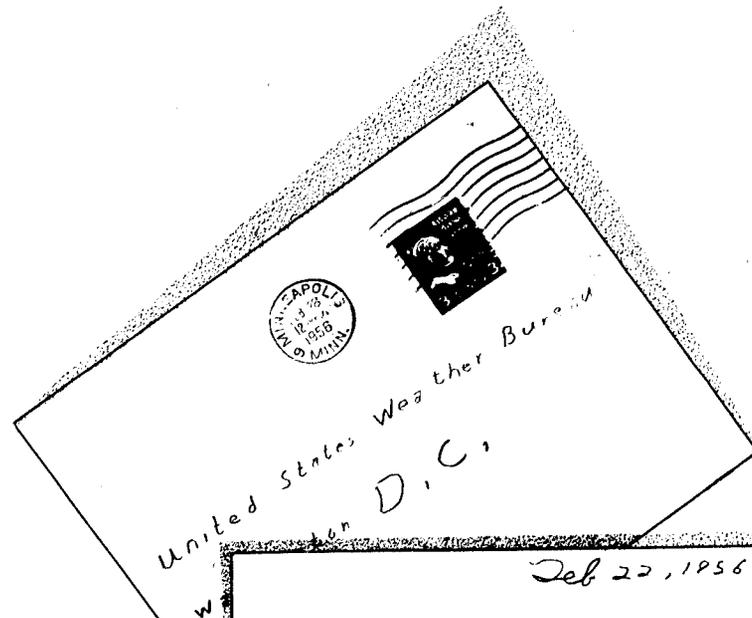
Book Exchange

As a result of an employee suggestion we are establishing a want-ad column in *Topics* for the exchange of meteorological publications between Bureau personnel. Each notice will be published once; however, notices may be resubmitted. It is hoped that this advertising medium will facilitate the economical exchange of meteorological texts and related publications through-

out the Bureau.

Employees desiring to buy or sell publications should send the title, author, date of publication, price desired or offered together with their name and address to the Chief, U. S. Weather Bureau, Washington 25, D. C., Attn: Editor

of *Topics*. Persons wishing to buy or sell publications advertised in *Topics* should correspond directly with the employee listed. *Topics* will serve only as an advertising medium in this program, and cannot undertake handling of transactions.



Feb 22, 1956

Dear Sirs

I would like you to name a hurricane after my teddy bear's airport

Make it a small hurricane

Yours Truly

Reed
Diamond

HINTS FOR SERVICE IMPROVEMENT

Modification of Keyboard on Local Public Service Teletypewriter Circuits

A field station has suggested a modification of the teletypewriters on the Local Public Service circuits to prevent them from dropping into lower case when the space bar is struck. The local maintenance man will usually make this modification without expense to the Bureau but all printers on the local circuit should make the change at approximately the same time. All of the teletypewriters used in meteorological

communications do not drop down following the space bar impulse and both experienced and inexperienced communicators would prefer the modified version which seems to be the logical arrangement. Another inexpensive improvement on the keyboard as suggested in the Central Office Memorandum dated March 2, 1955, File 630, is to have the upper case blank key print the dash or minus sign.

New Weather 1212 Installation

EFFECTIVE September 16, 1956, the 11th Weather 1212 installation in the country was inaugurated in San Francisco. The installation, which is the first in the Pacific Coast States, can handle 480 simultaneous calls since there are 240 trunk lines into the exchange in San Francisco and a like number in the East Bay exchange. Forecasts are restricted to 35 1/2 seconds.

After five days of operation, the MIC at WBAS, San Francisco reports that there appears to have been a material reduction in his station's telephone load.

Plans for similar installations for at least two additional west coast cities have been reported to the Central Office and it is hoped that still other cities will eventually receive this service.



Abiding Faith

THE fact that safety in air transportation by personal-type airplane compares very favorably

with travel by automobile is amply borne out by available statistics. However, one might expect that a person riding an aircraft involved in an accident would, at least momentarily, doubt the wisdom of his decision to travel by air. Obviously, this was not the case with Mr. Edward A. Alf of WBAS Glasgow, Montana, when he took a familiarization trip. Pertinent portions of his brief and to the point trip report read as follows:

"While on trip, aircraft crashed on landing at Lewiston, doing considerable damage to the aircraft. I returned to Glasgow by private aircraft."

We conclude that Mr. Alf has an abiding faith in aviation!



Old-Fashioned Bovine

Can't Dig Science

Carthage, Tex., Oct. 1 (AP)—Byron Ross' cows don't get along very well with the Weather Bureau. One of the Bureau's weather instrument parachutes settled down on the head and horns of one of his young cows. In trying to untangle itself from the 'chute and 75 feet of lines, the cow stampeded the remainder of the herd, which tore down two fences. Handing the weather instruments to Postmaster David Claubaugh as printing on the box instructed, Ross pleaded: "Tell them to send the next one in a different direction."

Correspondence Courses

PENNSYLVANIA State University reports that 454 Weather Bureau employees were enrolled for correspondence courses from January 1 to June 13, 1956. During this six months period 159 completed one or more courses; 225 completed one to twenty-three lessons; 49 failed to submit a lesson and 21 dropped from the courses. Approximately two-thirds of all Weather Bureau stations have some participation in this correspondence program. Those participating are to be congratulated not only for their own initiative but for their contribution toward a stronger professional Weather Bureau force.

HAVE YOU READ



FROM time to time articles on weather or Weather Bureau operations appear in many of the

periodicals. Many times the article is of great interest to all Weather Bureau offices and may even be retained as good file-reference material.

Often, certain stations are not aware of the publication of

some of the articles. Reprinting or mass purchases of the major articles by the Central Office is economically unfeasible.

Through the medium of TOPICS, an attempt will be made to call attention to current, published articles. No attempt will be made to evaluate the contents, although a small synopsis may appear.

As an example, some of the major articles appearing in past months have been:

| MAGAZINE | DATE | TITLE |
|-----------------|-----------------|----------------------------------|
| FORTUNE | AUGUST 1956 | HURRICANES |
| LIFE | AUGUST 27, 1956 | WHAT'S HAPPENING TO THE WEATHER? |
| NATURAL HISTORY | SEPTEMBER 1956 | CAN YOU TRUST THE WEATHERMAN? |

The November issue of READERS DIGEST carries a reprint of the above mentioned article,

"What's Happening to the Weather?" that appeared in LIFE, August 27, 1956. Authored by Herbert

Brean, the article concerns itself with climatic changes.

New State Climatologists

Denver, Colorado

JOSEPH W. BERRY, Chief of the Foreign Area Section of the Office of Climatology, has transferred from the Central Office to Denver. In addition to his duties as Colorado State Climatologist, he will be the Weather Bureau consultant to the Great Plains Agricultural Council, an organization of landgrant colleges in the High Plains states cooperating with the Department of Agriculture.

Salt Lake City, Utah

MERLE J. BROWN, formerly Aviation Forecaster at Denver, Colorado, was transferred in June to Salt Lake City, as State Climatologist for Utah and Nevada. From January to June he was

granted leave from Denver to attend Iowa State College where he took courses in agronomy, climatology and statistics.

Nashville, Tenn.

ROBERT R. DICKSON, for-

merly Climatologist and Assistant Chief for Climatic Information and Reference Section of NWRC at Asheville, N. C., has been transferred to Nashville as State Climatologist for Tennessee. He assumed his duties in this position early in October.

RETIREMENTS

Milton W. Davis

ON June 16, 1916, Mr. Milton W. Davis entered the Weather Bureau as an Assistant Observer at San Francisco. On October 31 retirement from his position as Principal Assistant at the Weather Bureau Airport Station, Cleveland, Ohio, terminated his career of

over forty years of service.

In addition to his initial assignment at San Francisco and military furlough for service in World War I, Mr. Davis served at Denver, Des Moines, and Chicago before transferring to Cleveland in January 1928 following the retirement of his father, William Davis.

Between Milton and his father, they have a total of 58 years in the Cleveland office and 91 years in the Bureau.

Mr. Davis' tact, patience, well-balanced personality, rounded experience in all lines of Weather Bureau work, and high devotion to duty have earned for him an enviable reputation. In recognition of extremely competent performance of duty, he was awarded the Department of Commerce Silver Medal.

Mr. and Mrs. Davis have purchased a home in Fort Lauderdale, Florida, and their new address is 2000 N. E. 21st Avenue. It is expected that they will be busily engaged in landscaping and interior decorating for the first several weeks after their arrival in

Florida. Mr. Davis is also looking forward to devoting considerable time to his sketching and painting, as well as trying his hand at salt water fishing.

Clarence F. Hand

CLARENCE F. HAND, Meteorologist at Williamsport, Pa., retired October 31 after more than thirty-nine years of service. Mr. Hand entered the Weather Bureau in 1917 at Binghamton, N. Y., transferring in 1930 to Sandy Hook, N. J., as Official in Charge. When the Sandy Hook observational program was assumed by the Coast Guard in 1940, he transferred to the Weather Bureau Office at New York City. In 1941, Mr. Hand was assigned as Official in Charge

at Nantucket, Mass., transferring in 1946 to Williamsport where he remained until his retirement.

Mr. Hand was born in Bradford County, Pa., and educated in schools at Owego and Johnson City, N. Y.

Two of Mr. Hand's sons are meteorologists in the Central Office — Leonard, in the Weather Bulletin Unit of the Forecast and Synoptic Reports Division, and James, in the Severe Local Storms Research Unit of the Office of Meteorological Research. A daughter is employed by the Signal Corps at Fort Monmouth, N. J.

After his retirement, Mr. and Mrs. Hand expect to divide their time between their home at 823 Broad St., Montoursville, Pa., and a cottage at Lake Page, Pa.



Dahl Baxter

DAHL BAXTER, former head of the Carpenter Shop at the Central Office, died October 19, 1956. Dahl retired June 30, 1951 after more than 48 years of service. He entered the Weather Bureau in 1903 at Mt. Weather, Virginia, serving at Drexel, Nebraska; Royal Center, Indiana; and Ellendale, North Dakota, before transferring to the Central Office in 1932, where he remained until his retirement.

Mr. Baxter is survived by his wife of 1906 North Lincoln Street, Arlington, Virginia, two sons, and six grandchildren.

Frederick J. Thomas

FREDERICK J. THOMAS retired from the Bureau May 31, 1949, died September 17 in Portland,

Oregon. Mr. Thomas entered the Bureau in 1912 at Chicago remaining there until 1942 with the exception of five years spent in private industry. He served at Billings, Montana, from 1942 to 1949, transferring to Baker, Oregon, as OIC just a few months before retiring.

Mr. Thomas is survived by his wife of 1601 N. E. Dekum Street, Portland, Oregon, three brothers, and three sisters.

LeRoy B. Stapleford

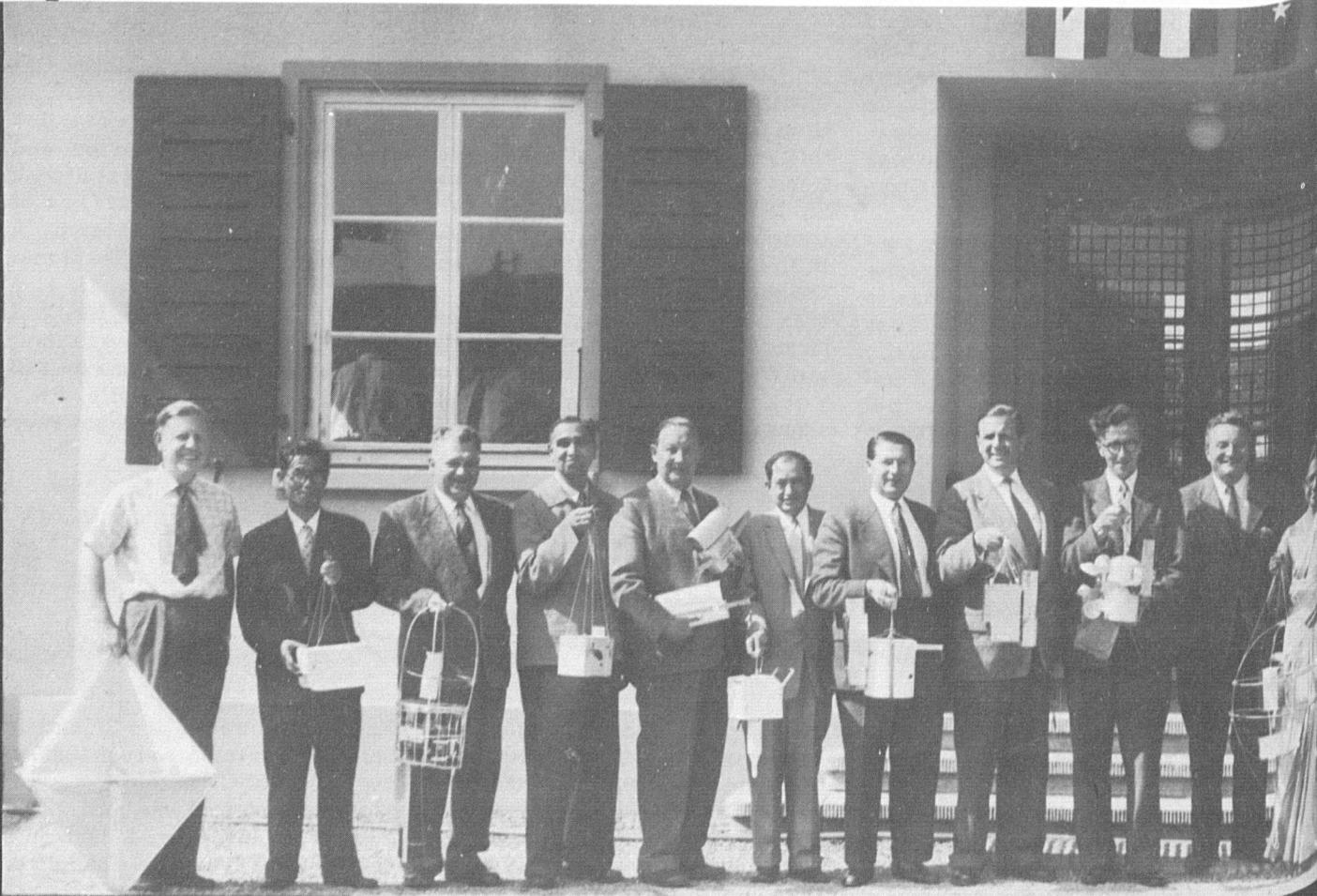
LEROY B. STAPLEFORD, Meteorologist in the Foreign Area Section of the Office of Climatology, died suddenly on October 12. He first came to the Weather Bureau in 1947 as a map plotter in the WBAN Analysis Center. In 1949 he transferred to the Special

Projects Section of the Scientific Services Division and in 1955 to the Office of Climatology.

Mr. Stapleford was born March 6, 1911, in Littleton, Massachusetts. He attended Pawtucket Senior High School, Pawtucket, Rhode Island; Rhode Island School of Design, Providence, Rhode Island; Institut Pantheon, Paris, France; and received a BA degree from George Washington University in 1955. He was an Air Force weather forecaster during World War II, and after his discharge served as a meteorological aid in the Air Force Weather Transmission Central at Paris. He entered the Weather Bureau a few months after his return to the States from his assignment in Paris.

Mr. Stapleford is survived by his wife, Anna, of 8519 Glenview Avenue, Takoma Park, Md.

SECOND WORLD COMPARISON OF RADIOSONDES



Decca, Target →

Japan →

Switzerland →

India "C" →

E. Germany →

United States →

Belgium →

W. Germany →

United Kingdom →

Mr. Perlat
Pres. CIMO →

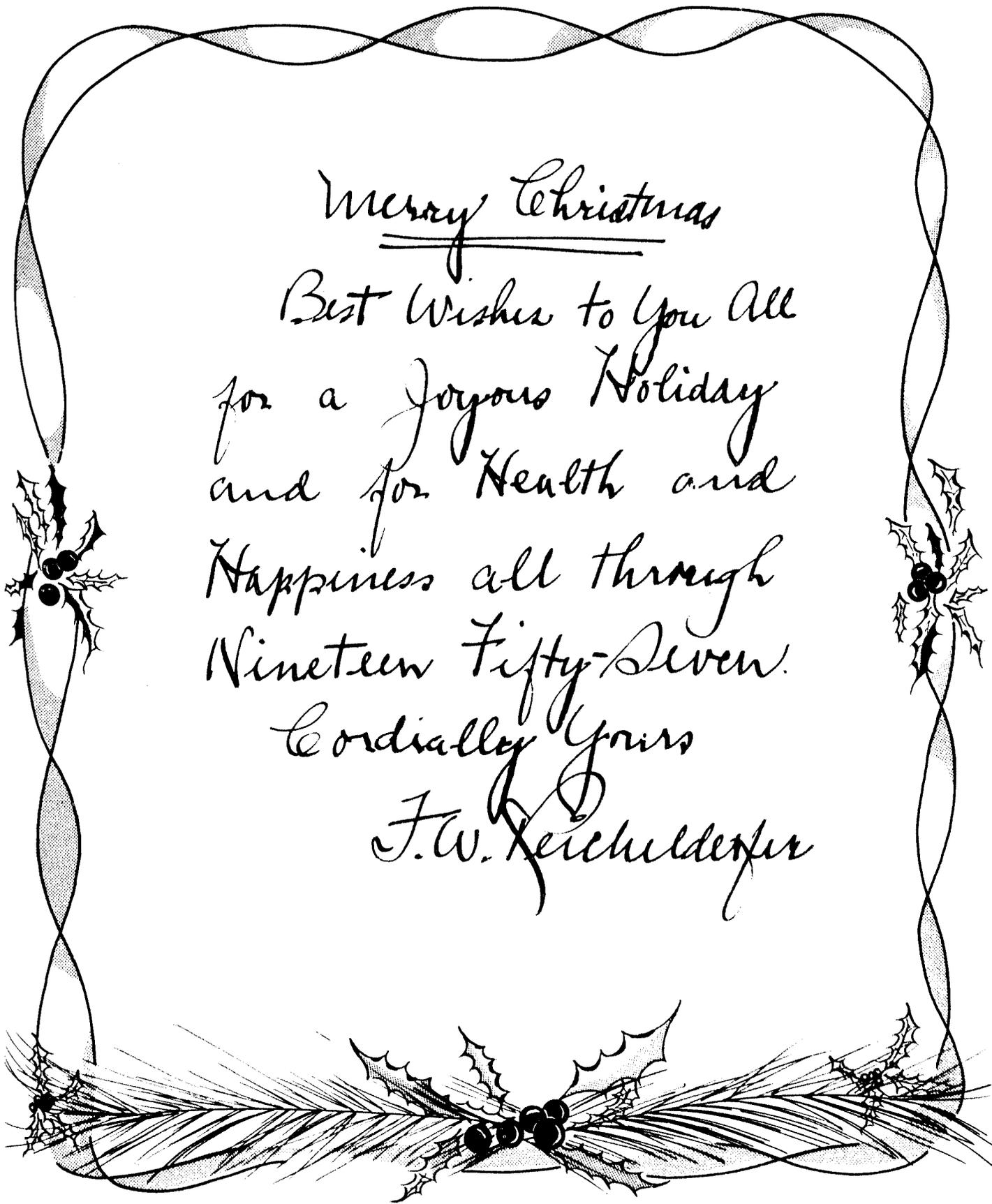
India "F" →

Switzerland →

See article on page 197

TOPICS



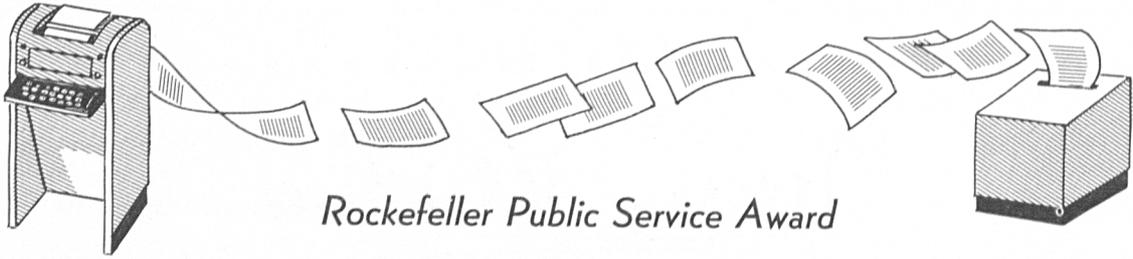


Merry Christmas

Best Wishes to You All
for a Joyous Holiday
and for Health and
Happiness all through
Nineteen Fifty-Seven.

Cordially Yours

J. W. Reichelderfer



Rockefeller Public Service Award

JEROME NAMIAS, who returned in late September from an 11-month period of study and travel in Europe as a recipient of a Rockefeller Public Service Award (TOPICS, May 1955) reports on his assignment abroad.

"For each of the past four years, about ten government employees have been selected as winners of Rockefeller Public Service Awards. These awards enable the recipient to spend from six to twelve months carrying on studies completely free of governmental responsibilities and provide full salary plus travel expenses for him and his family. John D. Rockefeller III, who established and donates the funds for the Awards program, hopes that it will ultimately be taken over by the Government, since he feels that the benefits derived will more than offset the cost of the program. Speaking as one fortunate enough to have been selected as an Award Winner and who has just returned from almost a year in Europe, I too would like to see this program adopted officially. This is not because I had an enjoyable time, which I did, but because I feel that I have returned to the Weather Bureau with a perspective appreciably clearer and more far reaching than when I left. After many years close to a job a person tends to become myopic; no matter how hard he tries, it is difficult for him to see his work and that of his group in full perspective.

"While I discovered no magic



Jerome Namias

formula for solving the complex problems of extended forecasting, I now feel that the general avenues most likely to lead to success have been illuminated. Decisions involving modification, termination of old and institution of new practices and research come with less trepidation; the essence and fundamental nature of problems arise more quickly.

"While in Europe I visited meteorologists in Sweden, Finland, Norway, Denmark, West Germany, Belgium, Holland, England, France, Switzerland,

Austria, and Italy. The period of longest stay was in Stockholm where seven months were spent at the International Institute of Meteorology which Professor C. G. Rossby directs. My time here was largely spent carrying on research, and participating in seminars dealing with surprisingly varied meteorological topics. My particular research involved exploring the possibility of utilizing high speed electronic computers for extended and long-range forecasting, and also studies of the dynamic climatology relating to

long period fluctuations at high latitudes*.

"From mid-May to mid-September comprised a period of extensive travel to other European countries. Inasmuch as I had visited a number of the same centers in connection with an official trip in 1949, I was able to note broad trends in European research and operations in synoptic meteorology and make comparisons with our efforts in the United States—at least as far as extended forecasting is concerned.

"Perhaps the most striking change lies in the much greater emphasis now being placed on the expanded view of weather afforded by maps covering a large portion of the entire hemisphere and leading to techniques designed to bring to the forecaster's attention events evolving over periods longer than 24 hours. Concepts involving planetary waves, vorticity flux, interdependence of the centers of action, and long period weather trends are now put into practice in some degree, though in different ways, in practically all European countries. As a result, weather outlooks beyond 24 or 36 hours in advance are either a vital part of most operating weather services, or are carried on in a less formal manner to assist the forecaster in obtaining the "big" picture, so helpful in making short range predictions. This development has apparently been generated largely by the intense study Europeans have given to work by what I like to call the "American school" of meteorologists.

* Some papers on this research:

1. The Success of 72-hour Barotropic Forecasts in Relation to Mean Flow Patterns; Tellus VIII (1956) 2.
2. The General Circulation of the Lower Troposphere over Arctic Regions and its Relations to the Circulation Elsewhere; to be published in the Proceedings of the AGARD (NATO) Symposium on Polar Atmosphere, Oslo July 2 - 8, 1956.
3. Characteristics of Cold Winters and Warm Summers over Scandinavia Related to the General Circulation; to be presented at the Annual Meetings of the American Meteorological Society to be held in New York in late January 1957, and to be published in the Journal of Meteorology. —Other work dealing with an experiment in 30-day prediction by numerical methods is proceeding.

"The logical extension of these methods with the help of high-speed computation is receiving considerable attention, although naturally on a much smaller scale than in the United States. However, a number of nations are now carrying on research involving numerical prediction, and some will have or have access to an electronic machine soon. There is naturally some concern about the expense of this development to small countries, and the possibility of establishing of a large computing center which could furnish desired analysis and prognostic information to small nations is frequently raised in conversation. As in America one finds anxiety among practicing forecasters about the role of the computer (and automation) in weather forecasting—indeed, the spectrum of opinion is broad. The more outstanding forecasters feel that they will receive help from the computer in formulating the prognosis of the broad-scale circulation and weather patterns. On the other hand, they feel that actual weather forecasts for a city, for example, will probably evade computer methods for years or generations to come, so that the job of weather forecaster will be modified, not eliminated. Only a few forecasters ridicule the efforts of numerical prediction groups.

"There is an increased interest in long-range predictions (beyond 5-days). Although efforts in this area are mainly directed to research, in some countries (e.g. France and Germany) long-range predictions are issued officially.

In Northern countries many newspapers are publishing the 30-day north European outlook as indicated in the United States Weather Bureau 30-day folder. This has captured a great deal of public interest and has stimulated research in this direction by meteorological staffs. At a number of centers I was asked to lecture on this topic. My dreams of being free of news reporters vanished whenever the European newsmen learned that 'the American long-range forecasting expert' was in town. Of course, they all wanted weather forecasts for at least a season ahead!

"Whereas in earlier years long-range forecasting was left mainly to those considered to be on the fringe of science, the imminent possibility of long-range forecasts of value to the economy appears to be recognized by all serious professional meteorologists in Europe. This healthy surge of interest on the part of capable and erudite meteorologists is indeed a hopeful sign for the future of long-range forecasting.

"While it is always dangerous to attempt comparisons between Europeans and Americans and between their technical practices, particularly based on limited stays in a number of countries, I return with certain opinions which may interest or possibly challenge us in the official U. S. Weather Service. While the scale of operation of foreign weather services is seemingly about an order of magnitude less than ours, the amount of work they accomplish, both in operations and research,

is surprisingly great. The reasons that they are able to do so much with so little probably lie in (1) the element of necessity brought about by austere budgets, (2) the fairly high calibre of the limited number of men in meteorological work, and (3) the fact that they are intense scholars and can draw profit from researches carried on elsewhere. Many of the forecasters are well read and indeed surprisingly familiar with American literature. While many of them would like to carry on research on the scale practiced in America, they are too limited in money and manpower. Hence, they do the next best thing, i.e., study carefully the researches of foreign groups and put into practice the most promising results.

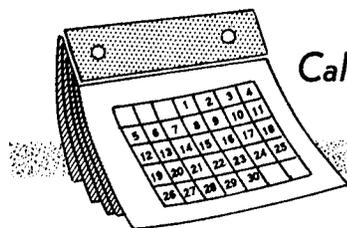
"This procedure is relatively easy on both budget and manpower and therefore frees some of them to concentrate on so-called 'pure' or 'basic' research—the best of which often returns as a sort of feedback from expensive applied work—especially that performed in America. While this 'austerity' procedure of operating has its good points, it naturally introduces some lag in the services of the nations practicing it. Besides, it appears to defeat the natural and logical desire for expansion of their services. They not only have to wait on the results of other foreign groups, but often do not have the time and personnel to take an aggressive position and initiate new and needed meteorological services to industry and agriculture.

"Partly because of this situation the young European with a natural enthusiasm for a meteorological career has a harder road to travel than his American counterpart. There are few openings, promotions are more difficult to obtain, and salaries are hardly what one would call tempting.

"Perhaps more 'science for

living' and less 'living for science' might help alleviate this situation, although in saying this

I lay myself open to the common European charge of being too materialistic in my philosophy."



Calendar of Scientific Meetings

| | | |
|--|------------------|--------------------|
| AMS (AAAS) | Dec. 28-31 | New York, N. Y. |
| AMS | Jan. 28-31 | New York, N. Y. |
| AMS | March 19-21 | Chicago, Ill. |
| Sixth Weather Radar Conference | March 26-28 | Cambridge, Mass. |
| AMS Conference on Severe Local Storms | April 16-18 | Kansas City, Mo. |
| AMS Session on Bioclimatology with Fed. of Amer. Soc. for Experimental Biology | April 19 | Chicago, Ill. |
| AGU - AMS | April 29 - May 3 | Washington, D. C. |
| Air Pollution Control Association - AMS | June 3-7 | St. Louis, Mo. |
| AMS | June 11-13 | Monterey, Calif. |
| AMS Conference on the Upper Air | Oct. 8-10 | Omaha, Nebr. |
| AMS | Nov. 13-15 | College Sta., Tex. |
| AMS (AAAS) | Dec. 26-31 | Indianapolis, Ind. |

FURTHER information on the meetings can be found in the publications of the organizations sponsoring the meetings. Employees planning to request authority to travel to the meetings at government expense to present papers should advise the Central Office 90 days in advance of the meetings in accordance with C.L.

3-55. They should also keep in mind that travel funds for the remainder of the current fiscal year for this purpose are very limited. Accordingly employees should, if possible, postpone presentation of papers until meetings are scheduled which will require little or no travel.

Hurricane Warning Service Activities—1956

AS the hurricane season draws to a close a review of new developments during 1956 is in order.

Some idea of the amount of tropical storm activity can be gained by examining the number of advisories issued by the hurricane forecast centers. During 1955 there were 237 formal advisories issued on 11 tropical storms while thus far in 1956 (through November 21) only 76 advisories on seven storms have been released. This statistic would indicate that 1956 has been a much less active year than 1955 for tropical storms.

When preparations for 1956 were started there was no conclusive evidence that fewer storms would occur. Plans were made for an "active" year and included the following:

Expansion of the public hurricane educational program. A number of new letter supplements dealing with hurricanes were issued and those in use from 1955 were revised. As in 1955, "Hurricane Kits" were mailed to all radio and television stations located on or near the coast from Brownsville, Texas to Eastport, Maine. Supplies of items making up the "Kits" were furnished Regional Administrative Offices for distribution to field offices where they are available for local distribution to schools, civic organizations, and the public generally.

A new movie "Hurricane Watch" and two separate one-minute spot announcements for television station use were produced to aid in acquainting the public with the warning service and safety precautions that can be taken to safeguard life and property.

A hurricane tracking chart was

published on the reverse of the printed Washington Daily Weather Map during Hurricane Betsy and Flossy and arrangements have been made for the Government Printing Office to stock and sell this item. (10 cents each - \$3.50 per hundred)

Strengthening of the Storm Surge Forecasting Program. Developmental studies continued at the offices where a storm surge forecasting program had been established in 1955. Remote recording tide gage equipment was installed in 11 coastal Weather Bureau offices to aid in obtaining current tide readings and procedures for transmitting these data on internal Weather Bureau communication circuits were introduced. Recorders are in operation in the following Weather Bureau locations: WBAS Boston, WBAS Providence, WBAS LaGuardia, WBO New York City, WBO Atlantic City, WBAS Philadelphia, WBAS Baltimore, WBAS Norfolk, WBO Charleston, WBO Miami, WBO Pensacola and WBO Galveston.

Special Communications Facilities. The emergency long distance telephones at the hurricane forecast centers were continued and these facilities proved very helpful during the periods when hurricanes were in progress. Similar special telephones were installed in the River Forecast Centers at Hartford, Harrisburg and Augusta to permit exchange of information between the River Forecast Centers and the Hurricane Forecast Centers regarding possible floods resulting from hurricane rains. Emergency phones were also placed in the Extended Forecast Section and the Joint Numerical Weather Pre-

diction Unit to enable conference calls between the forecast centers and these units.

Dissemination of Warning Information. Effective July 1, 1956 the Hurricane Warning Center at Miami was named the National Hurricane Information Center for the Weather Bureau thereby making it possible for all news media to obtain hurricane information from one office.

Special radio broadcast programs were set up on the Texas coast (see TOPICS for October 1956) and in New Jersey. Arrangements in New Jersey were used quite effectively during Flossy. As the storm moved up the East Coast direct broadcasts were made by Weather Bureau personnel from WBO Atlantic City which were carried over most commercial radio stations in the State. Reports received indicate that these broadcasts did much to quell the fears of people in coastal areas while at the same time providing a rapid means for dissemination of high water and wind warnings.

Guide to Previous Hurricanes. In July copies of "Hurricanes - A Quick Reference Guide to Synoptic Charts of Hurricanes That Threatened or Entered the U. S." were distributed to most first order stations in Regions One and Two. This "Guide" provides surface and 500 mb. synoptic charts at six hourly intervals showing location and track of hurricanes during 1954-1955 that threatened or entered the U. S. Work is progressing on expanding the "Guide" and early in 1957 it is expected that the years 1952, 1953 and 1956 will be added. Years previous to 1952 will be added as time permits.

WABB  **WABB-FM**
5,000 WATTS DAY AND NIGHT 50,000 WATTS RADIATED POWER

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RADIO CENTER
MOBILE 9, ALABAMA

September 28, 1956

Mr. Bill Tilson
U. S. Weather Bureau
Bates Field
Mobile, Alabama

Dear Mr. Tilson:

Now that all the excitement has died down, I would like to express on behalf of myself, and all of us here at WABB, thanks for the wonderful spirit of cooperation extended to us by you and your entire staff before and during Hurricane "Flossy".

Since the storm, WABB has had many compliments on its coverage, a major portion of which came directly from your office; and in some cases, on the air by the weather bureau personnel through our special facilities installed permanently in your office. We feel that a good bit of the credit should be passed on to you and your staff.

Mr. Tilson, you know that WABB feels that weather information is vitally important in this Gulf Coast area; so much so that we maintain the special telephone line and equipment in your office for the daily weathercasts so efficiently and faithfully made by your staff, day in and day out. We feel that this dependable source of vital weather information "direct from the horse's mouth", so to speak, has been instrumental in making people aware that in times of emergency, such as during "Flossy", the latest information is available to them at all times on WABB, through the wonderful cooperation of your office.

In this way, we continue to try to fulfill two important jobs: That of a prime medium helping to disseminate, in the public interest, this important information; and that of a friend of the Weather Bureau, helping you to do the best possible job.

So thank you very much for your very fine day-in, day-out cooperation, as well as for the extra effort and help during "Flossy".

Sincerely,



PHIL FORREST
Program Director

PF:pm

Can you use Help in Dissemination of Weather Warnings?

MANY Weather Bureau offices have devised local arrangements to help them in the dissemination of weather warnings. Since the importance of rapid dissemination of warnings cannot be overemphasized, we are describing some outstanding arrangements that have come to our attention. You may wish to adopt one of the systems or combinations of them. Or, you may be able to develop a better arrangement tailored to meet local requirements.

Muskegon

At Muskegon, Michigan, the Weather Bureau makes a minimum of eight outgoing telephone calls to radio stations and key distributors. Each key distributor then makes no more than five telephone calls. The entire distribution of a severe weather forecast or warning is accomplished in about ten minutes.

The local Civil Defense Agency dispatches two trained telephone operators to the Weather Bureau to assist in answering telephones during critical weather conditions. A police radio transmitter-receiver is located permanently in the Weather Bureau office for use during emergencies. In cases of telephone failure, additional amateur and Civil Defense radio facilities are available.

New York City

The Weather Bureau office at New York City utilizes the Local Public Weather Teletypewriter Circuit to transmit severe weather warnings to the Civil Defense Director of Suffolk County on Long Island. The Director has arrangements for relaying the warnings to community Civil Defense offices who notify the public. The ar-

rangement serves many purposes. Not only are the warnings transmitted quickly, but they reach a great number of small communities which otherwise might not have received the warnings.

(Another help in warning distribution utilized by the New York office was described in article entitled, "Time-Saving Methods for Warning Dissemination", that appeared in the May 1956 issue of Weather Bureau TOPICS.)

Houston

Along the Coast of the Gulf of Mexico, a Volunteer Radio Network was organized this summer for the purpose of relaying direct radio broadcasts during hurricane emergencies. The Weather Bureau office at Houston, Texas, can make a simultaneous broadcast over more than 50 A. M. and F. M. radio stations stretching from Brownsville to Lake Charles. The plans call for broadcasts to start whenever a Gulf storm is located within 300 miles of the Texas coast and poses a threat to the U. S. While the storm is distant, broadcasts may be at 6 or 3 hourly intervals. With the approach of the hurricane near the coast, the frequency of broadcasts can be increased to hourly. (A description of operation appeared in the October 1956 issue of Weather Bureau TOPICS under the heading of "Gulf Coast Volunteer Radio Network".)

Miami

Although not a direct aid in warning distribution, the cooperative arrangement of the Weather Bureau office in Miami, Florida, with the American Red Cross is presented because of its possible adoption elsewhere. At their own expense, the American Red Cross installed an amplifier and microphone in their own office with a

loop to the Weather Bureau office which can be connected to the Weather Bureau amplifier. The operation of the arrangement is quite simple. In closing a hurricane broadcast, the Weather Bureau gives a cue to introduce the Red Cross announcer. To transfer the control, a switch on the Weather Bureau panel is turned. A red pilot light indicates that the switch has been made. The Red Cross follows with information on shelter locations, hospital facilities and other vital hurricane relief information. At the conclusion of their broadcast, which can be monitored on a headset, the switch is restored to the original position to activate the Weather Bureau microphone for future use.

Youngstown, Ohio

The MIC at Youngstown, Ohio reports that:

"Due to the large number of telephone companies serving our area, making long distance calls and receiving such calls is time consuming. The operators of the Warren Telephone Company, which serves our office, will put us through to a list of numbers (usually to disseminate severe weather bulletins) one immediately following another, without having to replace the receiver and place the next call. At times when several long distance incoming calls are piled up, the same service is given us until all calls have been taken care of.

Sacramento

At Sacramento the Weather Bureau office and the State Department of Water Resources developed a hypothetical flood sequence which was used as a basis for an exercise called "Operation Flood" on November 15, 1956.

The aim was to test and improve existing plans for the effective use of Weather Bureau flood warnings. The exercise covered all counties in the Central Valley of California and adjacent counties in the Sierra Nevada and Mt. Shasta-Siskiyou area. Participating agencies included particularly the California Disaster Offices and also all interested Federal, State and County agencies, the American Red Cross, and personnel of all Reclamation, Levee and Irrigation Districts.

NAED "PLAN"

In the final analysis, much of the responsibility for keeping informed on storm or flood developments rests with the individual, community official or industry. The "Plan" or Flood-Disaster Program discussed in a Newsletter by the National Association of Electrical Distributors, C. L. No. 40-56, places the responsibility on the office manager to keep apprised of the latest weather and/or condition reports. The Weather Bureau

should make every effort to disseminate warnings to as many people as possible. Aid should be rendered to business and industry groups, communities, etc., in developing plans for obtaining and using the warnings effectively. The NAED Newsletter stresses the effective use of warnings.

In connection with industry planning for natural disasters we have just learned of the program supported by many dairies to supply safe drinking water in half gallon containers during disaster periods. Since advance notification of possible weather or flood disasters would aid dairies in carrying out this program local offices may receive requests from dairies for warning information. In so far as possible such requests should be handled by arranging to furnish an industry group (representing all dairies in a given metropolitan area) with the necessary warning information rather than to distribute warnings direct from the Weather Bureau to individual dairies.

Communication Errors and JNWP

PRIOR to October 1, prognostic weather charts were developed by a digital computer in the JNWP, using analyzed data provided by NWAC. Since then, raw data have been fed directly into the computers and analyzed automatically. The complete process, through prognosis, can be accomplished before the same amount of data can be plotted and analyzed manually.

This accomplishment is very important, even though much remains to be done to perfect the computational process. Part of the problem, however, goes back to the well known fact that analyses and forecasts are only as good as the data on which they are based. As a part of the identification and checking procedure,

the machine rejects garbled or incorrect data, or messages which deviate unduly from prescribed formats. Extraneous words or number groups, groups in the wrong order, and false starts are common deviations of format causing rejection. All radiosonde data are recomputed for hydrostatic consistency and rejected if deviation is beyond reasonable standards. About ten percent of all upper air data are regularly rejected for inconsistency, and unavailable for further analysis.

At present, transmissions are being checked from the originating point to final reception to determine the number and distribution of errors. Stations included in the study are selected at random, and are asked to provide original data

for comparison against teletypewriter copy at the transmitting and receiving points. To help eliminate errors, a release time was advanced a half hour to provide more time for accurate computations and to reduce transcribing and typing errors. Although there are basic limitations in equipment now in use, substantial improvement can be made by unceasing efforts of observers and communicators to improve performance quality.

A Christmas Gift Reminder

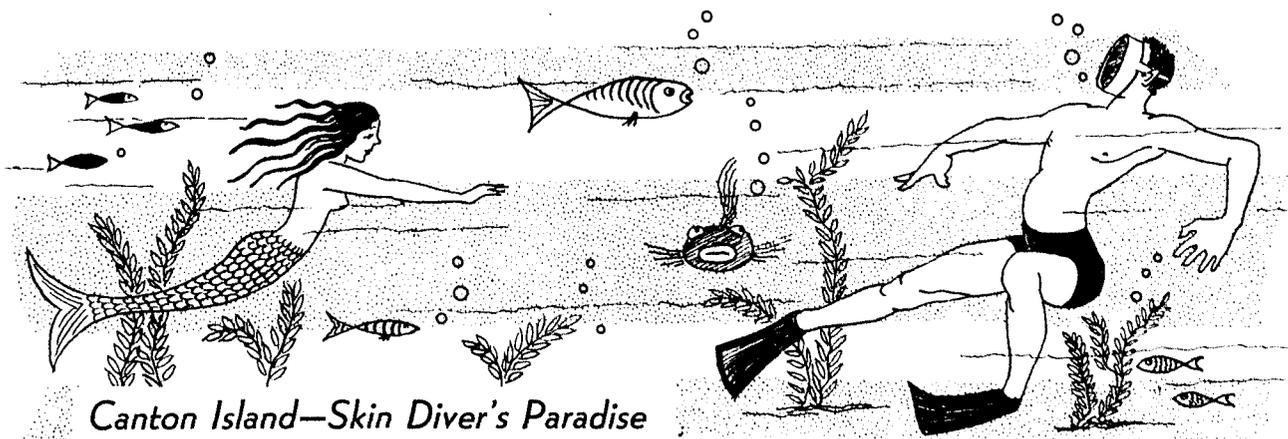
WHEN an individual or firm chooses to show its appreciation for the weather services received by sending a gift to an employee or to a station it is sometimes difficult, in returning the gift, to write an explanation that will make a good impression. It is, of course, necessary to phrase letters to suit each particular situation, but it may be interesting to see how one station official has handled the problem. The following letter written by Mr. Chambers of Dodge City seems to be especially tactful and appropriate.

Mr. John Jones
Manager, Radio Station XYZ
Dear John:

Each Christmas season we are reminded by our Agency Inspection Staff that it is our responsibility to graciously return any gift received from persons or firms with whom we have official relations.

In returning your gift we are complying with regulations. However I want you and your staff to know that we can keep and cherish the thoughtfulness and spirit that prompted your kindness. This we do.

We want to express our appreciation for the fine cooperation, from you and your staff, during 1955, and extend our best wishes for 1956.



Canton Island—Skin Diver's Paradise

THE following article by Neil Bouray, Meteorological Aid at Canton, is one which we think would be of interest to Weather Bureau employees.

"Like to skin dive or fish? Canton Island out in the South Pacific leaves much to be desired in the way of a tropical paradise pictured by the movies or writers of fiction, but does have some of the best skin diving and fishing you could want. Canton Island is noted for its beautiful coral gardens, over on the south side, the term used for the south end of the atoll where Pan American had their seaplane moorings and hotel in the days of the flying boats. It is here in these coral gardens and over the reef that you will find some of the most beautiful marine fish in the world. It is also in these same gardens that you will, according to some people, find some of the most repulsive fish. Giant moray eels, groupers, sharks, octopi and manta ray come under this last category.

"As for myself I like being around fish regardless of shape, size or color. During my high school and college days, my brother and I became interested in tropical fish and soon had aquariums all over the house.

During World War II I was sent out here in the Pacific as a pilot on B-24's and it was then that I became interested in skin diving. We had only crude goggles then and the fear of sharks kept us out of the best diving areas; the fancy diving gear was to come after the War. Not much was known about skin diving or sharks in those days. Our idea of a shark was the savage villain ready to snap up any swimmer that came its way. This knowledge gained from Hollywood movies and fiction writers, later proved not to be true by the more daring skin divers.

"After the War, I went to college at the University of Wichita at Wichita, Kansas, my home town. I moved out to Oregon after several years and eventually went to work for the Weather Bureau at Troutdale, Oregon. The stay at this station was short because I was recalled to active duty during the Korean War. After two and a half years with Air Force Troop Carrier I was back to civilian life and again joined the Weather Bureau, this time at Elko, Nevada.

"However, Nevada didn't appeal to me and all the articles on skin diving appearing in magazines made me anxious to get back out here in the Pacific with a lung

so I could do some diving again. I put in my application for transfer and in due time was notified of a vacancy in Canton which I accepted.

"Before leaving the States I purchased an Aqua-Lung, air compressor and the other necessary equipment needed for diving. After arriving at Canton I had to do all my diving without the lung at first as the equipment did not arrive until several months later. This arrangement worked out well as it is recommended that a person lose his fear of what is in the water before using a lung.

"On my first dive I entered the lagoon water from the beach not far from our living quarters and was disappointed at the dirty water. There was no crystal clear water like I had seen at other islands. Visibility was about ten feet and it was just plain spooky and being out by myself didn't help any. According to what local residents had to say I expected a large shark or moray eel to make a meal out of me any minute. I kept looking behind me so much I saw little of what was in the water.

"After several dives in this dirty water I discovered that the only clear water in the lagoon was over at the south side near the channels. There are only two

channels between the ocean and the lagoon and these are separated by a small island known as Spam Island whose only use is a breeding ground for thousands of birds. At high slack tide the water is clear in this area and it is here where most of the fish and coral are found in the lagoon. Over the reef diving is best at low tide when the fish are forced off the reef into the deeper water. It is here where you will find schools of fish so thick you can't see through them. It is also over the reef that most people think they will find the biggest sharks and refuse to dive outside the lagoon. However, I soon discovered that the sharks inside are just as big as the ones outside and the biggest shark I have seen was one over twelve feet long, it was inside the lagoon.

"After buying a boat and motor, Stan Massey, another Weather Bureau man, and I were able to fully explore this area. In due time we gradually lost our fear of sharks and moray eels of which there are thousands around here. The most common shark is what we call the reef shark or black tip shark, named because of the black tips on its fins. This was no vicious killer of the deep. Instead I found a shy shark who was only interested in minding his own business and getting a square meal by scavenging or feasting on wounded or helpless fish. After getting my underwater cameras I found this shark just about impossible to photograph as it would run every time I tried to approach it. Not up to Hollywood standards at all.

"Another common shark seen is a large black shark with white tips on its fins. This shark has no fear of divers and I found it a bit unnerving at first to have one of these eight footers come up to me and look me over. However, it appeared that they were just curious and made an excellent

camera subject. It soon became apparent to Stan and me that other people did not share our views about sharks being pets and I was forced to do most of the diving alone after he left, not only because of sharks but because I was the only one with a lung.

"Another shark, species unknown, I sometimes find sleeping in caves during the days. Apparently this one feeds only at night as it is seldom seen during the day. Last but not least is the shark that stays in the deeper water outside the lagoon. This is the one that the fisherman around here curse as it is very frustrating to pull up nothing but a fish head after battling a large tuna for some time.

"When my lung first came I was kept busy for several months diving for the so-called black pearl shell which has a length of ten to fifteen inches. This is a bi-valve shell found in water over twenty feet deep and grows standing up on the bottom with about one-third of it under the sand. Since it has 'roots' it is rather difficult to dislodge at times. The procedure I use is to shake it vigorously to loosen the sand around it. I then get a good grip on its edge, put my feet against something to brace myself and pull like mad. This shaking business greatly delights the fish who come around by the hundreds to pick around the loose sand, eating the worms and other organisms.

"My interest gradually turned to underwater photography and I purchased a Bolex 16 mm camera and a 35 mm stereo camera and the underwater cases for them. At the beginning I tried using Anscochrome because of its faster speed but the results underwater with this film are exceedingly poor. The results with Kodachrome are satisfactory although the film speed is much slower.

"I soon discovered that underwater photography isn't easy.

Very few of the fish will pose and it is a matter of following your subject around until you have him in the desired pose and against the desired background with the desired light. Some of the fish refuse to cooperate at all. The ones that feed at night hide in the caves during the day and it is only by chance I catch one out in the open. Moray eels are obliging souls. They are very curious and will come about one-third of the way out of their holes to see what is going on. The stories you hear about eels attacking is not true. Even when speared their only desire is to get away. I had one wrap himself around the end of my spear and snap it in two like a match stick. The spear was through his head. Although they are capable of giving a nasty bite I consider eels all bluff and no bite.

"The most exciting fish I have filmed are the manta rays. These large graceful so-called 'devil fish' are really something to see under water. One day I was out with just my stereo camera and found eight to ten mantas. They would line up tail to mouth like elephants in a parade and swim circles around me when I jumped in the water. Although I was sorry I did not bring my movie camera I did get a few good stereo shots of them. My ambition now is to grab a tail of a manta and take movies of him pulling me. I came close to this twice but both times they took off so fast when I touched their tails I was left holding nothing but water and discovered the first time I was filming nothing but the bottom of the ocean as I tried to get a hold of its tail.

"I find that what the underwater movies people like the best are the ones of sharks, eels and manta rays. It seems as though the more ferocious the underwater creatures look the more people want to see of them—in movies that is."

A Better Informed Public Through Local Public Service Circuits

THERE are now 55 local public service weather teletypewriter circuits distributed throughout the United States, as shown on the accompanying map, and the 56th is in the process of being established at Tampa, Florida. These circuits, when properly utilized, make possible a wide and rapid distribution of forecasts, warnings and meteorological data to subscribers than could otherwise be accomplished (by telephone under the present staffing and workloads) from most Weather Bureau offices.

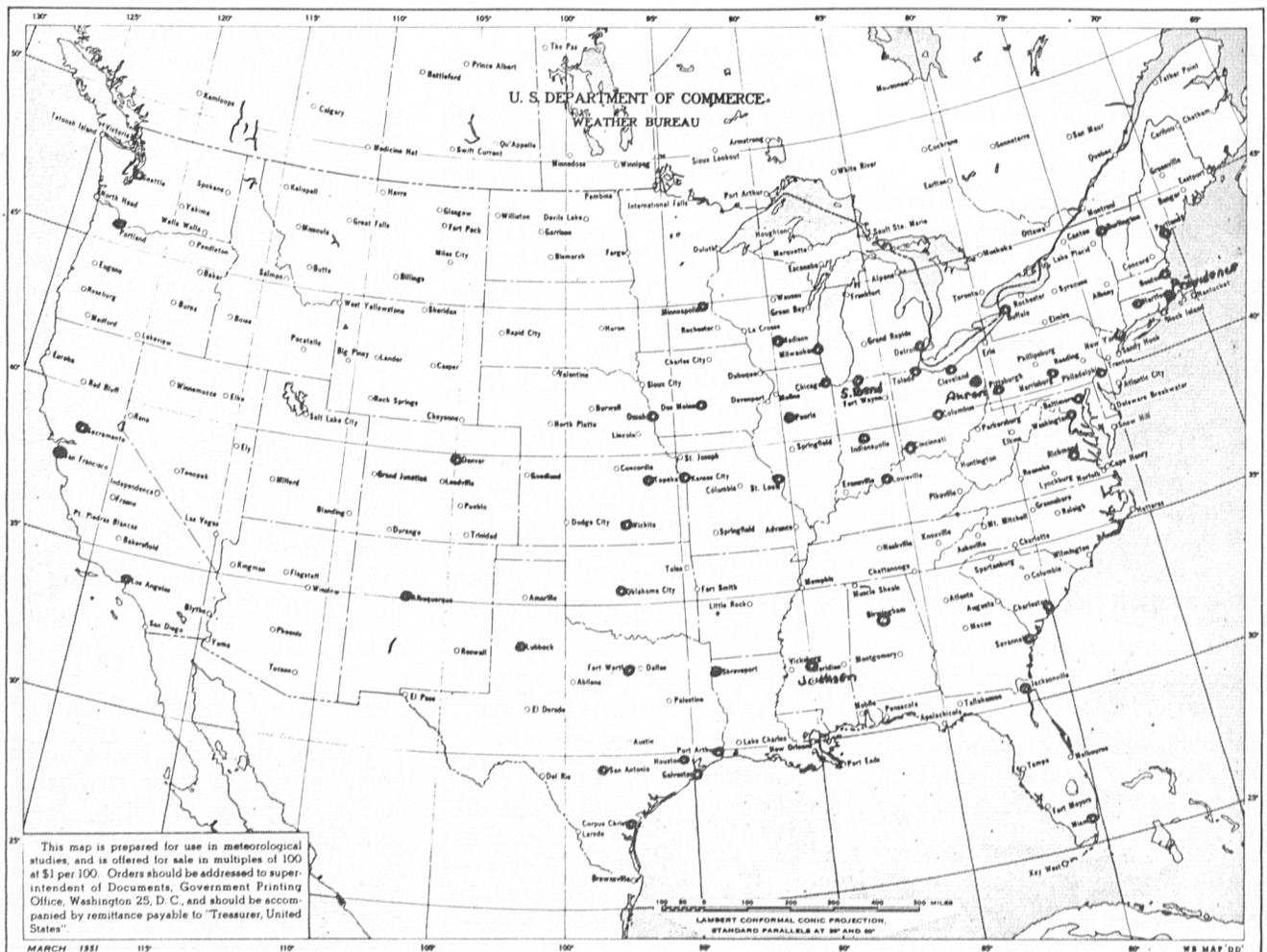
According to Central Office records, the overall average number of subscribers per circuit is a little more than nine. There are three circuits with only four subscribers each while the cities of Chicago and New York have 35 and 33 direct subscribers respectively.

The potential value of a public service teletypewriter circuit may be better understood by considering the wide distribution of an individual circuit such as the one at Chicago.

The 35 drops on the Chicago

public service loop serve 45 subscribers. Included in this number are 11 radio stations, five TV stations, four news wire services, and five local newspapers as well as several other publications. Were the same service to be given to these recipients via telephone, 45 calls would be required at each scheduled time and for each emergency warning which would result in long delays for some of the subscribers in receiving the information.

It should be the goal of all the Weather Bureau offices with local





Excessive usage of photostat paper in the taking of pictures much smaller than the size of the paper was corrected by adjusting the photostat machine so that as many exposures as possible are made on one sheet of photostat paper. Estimated annual saving in photostat paper at NWAC, \$112.

Eliminate extra line feeds and headings on temperature extremes forecasts so that all stations enter their forecasts in the time allowed. As a result of this suggestion the FM collection format is being changed to a sequence type collective.

A suggestion to add a correction to a teletype message by attaching with rubber cement a small tape containing the correction to the end of the original tape. This procedure would insure continuous transmission and prevent interruption by another station, as often happens when a manually typed correction is attempted.

A suggestion which led to clarification of instructions of the code for water equivalent of snow depth.

Provide newspaper mats of tornado and other storm pictures for distribution to newspapers in connection with news stories on these subjects. This will help bring about more widespread and effective distribution to the public of tornado safety rules and other educational information concerning severe storms.

A suggestion which led to the change of the caption of the last column of the new WBAN 31 to read "Altitude of Significant Lev-

Joseph H. Rauccio
Asheville, North Carolina

Andrew D. Robb
Topeka, Kansas

Mrs. Grace V. Shafer
Denver, Colorado

Richard K. Siler
Honolulu, Territory of
Hawaii

Gilbert L. Sternes
Portland, Oregon

James Villarejo
Washington, D. C.

- els or Remarks".
- \$25 Suggestion leading to the purchase of a "bursting" machine for separating IBM paper into the required lengths, a job formerly done by hand tearing. A \$500 saving will be realized this year.
 - \$25 A suggestion which led to improved instructions for the computation of monthly degree day totals from monthly mean temperature.
 - \$15 A recommendation that every fifth line on the winds-aloft computation sheet be printed heavier so that data can be transferred more quickly and accurately from the computation sheet to the graph.
 - \$25 A proposal that led to the preparation of a leaflet "Something New For Pilots" which will soon be distributed to pilots through airport stations and selected aviation organizations.
 - \$25 For devising a plastic overlay map as an aid in more quickly locating substations on maps in connection with computations of degree day data.
 - \$15 By omitting the identifying century, the "N" after latitude and the "W" after longitude, by using a symbol "T" instead of the term "True Maximum", and by eliminating the typing of the state after each station name, (since each report is devoted to one state, identified on the cover and in the introductory text as well as by maps) the typing of manuscripts of U. S. Weather Bureau Technical Papers series known as "Maximum Station Precipitation for 1, 2, 3, 6, 12 and 24 hours, has been simplified.

RETIREMENTS

James G. Barnhart

JAMES G. BARNHART, Meteorologist, WBO New York, retired October 31 because of disability.

Mr. Barnhart was born in Bellingham, Washington, and educated in the elementary and high schools of Okanogan, Washington. He graduated in 1938 from Western Washington College where he majored in science and English. Before coming into the Bureau, Mr. Barnhart taught English, science, and mathematics in the public junior high school at Bellingham.

In December 1941 Mr. Barnhart joined the Weather Bureau as assistant observer at San Francisco. He transferred to Alaska in 1943, serving at Gambell and Cordova before returning in 1946 for duty on the Atlantic Weather Patrol. He was promoted to meteorologist and assigned to the New York Regional Office as Liaison Officer in 1946. In 1948 he transferred to Bridgeport, Connecticut as Official in Charge, returning to New York the following year with assignment to the Marine Section where he remained until his retirement.

Mr. Barnhart's present address is: c/o Eastern Military Academy, Cold Spring Harbor, Long Island, New York.

Eugene M. Barto

EUGENE M. BARTO, Meteorologist in Charge at Nashville, Tennessee, retired October 31, bringing to a close a career which started as messenger boy in Ithaca, N. Y., more than forty-two years ago.

Mr. Barto entered the Bureau on April 1, 1914 and in addition to serving at Ithaca, he has held assignments at Key West, Mobile,

Trenton, Washington (CO and Airport), Atlanta, New York Regional Office and finally Nashville where he has been MIC since 1943.

Among Mr. Barto's achievements was his work as assistant to Dr. Willis Gregg when the latter was Chief of the Aerological Division where he helped organize the airway weather service. From the Central Office he went on to important assignments at Atlanta, Washington Airport and the Regional Office at New York before taking up his duties at Nashville.

In addition to his Weather Bureau duties, Mr. Barto has been active in civic affairs wherever stationed and has found time to cultivate many outside interests and hobbies. At present he is a member of the Nashville Rotary Club. Some of his hobbies to which he hopes to be devoting more time are stamp collecting, fishing and swimming.

Plans after retirement are rather indefinite but for the present, friends may continue to contact the Barto's at 222 Blue Hills Drive, Nashville 14, Tennessee.

Thomas R. Brooks

THOMAS R. BROOKS, Assistant Chief of the Forecasts and Synoptic Reports Division, retired October 31 after more than forty-five years of government service, which included a tour of duty in the Navy and a short period of service with the District Government. He served in the Central Office from 1917 until his retirement except for military duty from August 1918 to June 1919.

Mr. Brooks was appointed in the Central Office on May 12, 1910 and his first assignment was as assistant observer at Mt. Weather, Virginia. He served in

a similar capacity at Madison, Wisconsin; Richmond, Virginia; and Raleigh, North Carolina; before returning to Washington. He was a chartman from 1917 to 1924 except for the time he was on military furlough. Early in this period the forecast cards and maps were being delivered by street car, bicycle or on foot, and the Chief of the Bureau traveled between his office and the Department of Agriculture by horse and buggy. Mr. Brooks was supervisor of the Forecast Map Room from 1924 to 1936, and was one of the first to broadcast weather by radio in the late 1920's. He has been Assistant Chief of Division since 1936, and among his many contributions has been his prominence in the development of the forecast and warning services and his fostering the installation of the nation-wide facsimile chart network.

In addition to his accomplishments in the Weather Bureau, Mr. Brooks was honored by election to Phi Beta Kappa at the age of 46 after receiving an AB in Economics at George Washington University in 1937.

Mr. and Mrs. Brooks will maintain their residence at 3927 Oliver Street in Chevy Chase, Maryland, but plans are in the making for a trip to Florida and a six months voyage to Europe. Mr. Brooks has been a life-long resident of Maryland except for his early Weather Bureau days. Mr. Brooks has one son, Thomas, an Assistant State's Attorney, and a resident of Hyattsville, Maryland.

Martha J. Gallenne

MARTHA J. GALLENNE, Procurement Assistant in the Procurement and Supply Section of the Central Office, retired October 31

aftermore than thirty-three years of government service.

Mrs. Gallenne first came to the Bureau in 1919 as Martha J. Colburn and was assigned to the Station and Accounts Division. She married Jean H. Gallenne, a Weather Bureau employee, in 1930. Mr. Gallenne retired several years ago with over thirty-nine years of service. Together Mr. and Mrs. Gallenne have given the Weather Bureau over seventy-two years of service.

Mrs. Gallenne's career in the Weather Bureau was interrupted in July 1933 by reduction in force as a result of the Emergency Act which provided that in a RIF action married persons would be dismissed before any other persons if the spouse was also employed by the District or Federal Government. Mrs. Gallenne was reinstated in January 1938. All of her service has been in the Central Office.

Mrs. Gallenne is a native of Washington and has no plans to leave here after retirement. She and Mr. Gallenne hope to do some traveling in the future, but in the meantime she expects to keep busy with her church work, duties as a housewife, and her many pets. Friends may continue to contact the Gallenne's at 4311 Alton Place, N.W., Washington 16, D.C.

Roy J. Rogers

A career of over forty-seven years of devoted public service came to a close on October 31 when Roy J. Rogers retired as Meteorologist in Charge of the fruit-frost station at Pomona, California.

From his original assignment on August 12, 1909, as messenger boy at Northfield, Vermont, Mr. Rogers went on to serve as assistant observer at Raleigh, Charleston, and Baltimore. His Weather Bureau career was interrupted by World War I in 1917. During his one and one-half years

of military service he attained the rank of Sergeant, First Class, in the Meteorological Service of the Signal Corps. He returned to duty in 1919 for a temporary assignment at Birmingham before reporting to Denver. In 1920 he transferred to Phoenix where he remained until 1924 when he accepted an assignment in San Francisco.

Mr. Rogers first became associated with fruit-frost work at San Francisco in 1926, and in 1930 he transferred to Pomona as First Assistant. Although his headquarters stations were San Francisco and Pomona during the period from 1927 to 1934, Mr. Rogers acted as relief Official in Charge for personnel desiring to take annual leave, and in this capacity his travels took him to stations all over the United States. He gained a very fine reputation as well as a wealth of experiences in this work. One Official in Charge commented that he would not take leave unless Roy Rogers was assigned to his station for relief duty. His regular schedule of fruit-frost forecasting found him at Pomona from June to November; Upland, California, from November to March; and Medford, Oregon, from March to June.

Mr. Rogers was a member of the American Meteorological Society and the National Federation of Federal Employees. A career which involved so much travel left little time or opportunity for hobbies or community activities. Mr. Rogers' career was a notable achievement for its length alone, but in addition it was a career of accomplishment, of dedication to duty at the cost of personal convenience and of day-to-day competence in representing the Weather Bureau. His many friends will be happy to learn that he is convalescing satisfactorily from a recent illness at his home. His present mailing address is P.O. Box 444, Pomona, California.

Albert D. Sanial

ALBERT D. SANIAL, a former rural school teacher from McKeesport, Pa., reported for duty as Assistant Observer at Portland, Oregon for his first Weather Bureau assignment on May 1, 1913. On October 31, retirement from his position as Meteorologist in Charge of the Weather Bureau Airport Station at LaCrosse, Wisconsin, terminated a career of over forty-three years of service.

Following his initial assignment, Mr. Sanial served short tours of duty at Walla Walla, San Francisco, Fresno, Milwaukee, LaCrosse, St. Louis, and Duluth returning in 1917 to LaCrosse, where he gained a fine reputation for his contributions to the river and hydrologic program. In 1945 Mr. Sanial received a meritorious promotion in recognition of his outstanding work in a special snow survey and stream flow forecasting of spring floods in the Upper Mississippi Valley.

Mr. Sanial's interest in the physical characteristics of nature extends beyond his work into his hobbies. This is borne out by his interest in astronomy, including the construction of telescopes, ham radio operation, and flower and vegetable gardening. He has cultivated other varied hobbies and interests including boating, hunting, fishing, photography, and rifle marksmanship. He is Secretary of the LaCrosse Rifle Club devoting considerable time to training boys in proper handling of firearms and is very active in lodge activities, being a Past Master of all Masonic York Rite bodies in LaCrosse.

Mr. Sanial has had ample opportunity to experience the LaCrosse area's rigorous winters and future plans include some travel during the winter months to places having a milder climate. However, he and Mrs. Sanial will retain their residence at 421 North Losey Blvd. in LaCrosse.

