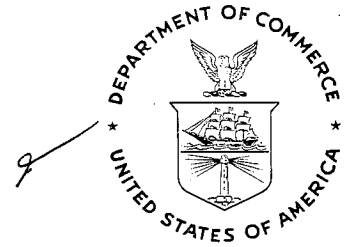


# The National Cooperative Observer



*Received 3/15/94*

FALL 1993

VOLUME 11

NUMBER 1

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EASTERN REGION      SOUTHERN REGION  
CENTRAL REGION



-- 100th ANNIVERSARY --

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WESTERN REGION  
ALASKA REGION      PACIFIC REGION

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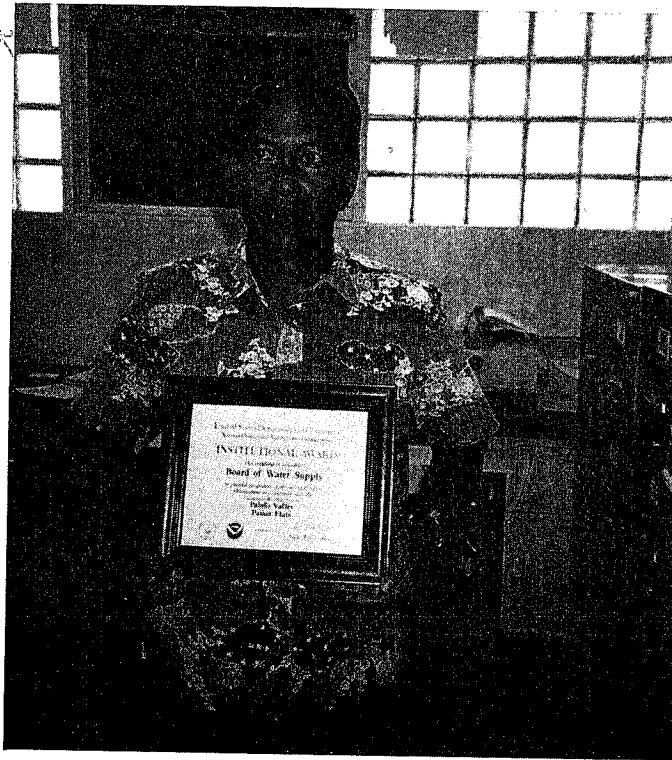
**noaa**

NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION

NATIONAL WEATHER SERVICE

ABOUT THE COVER: Kahua Ranch Headquarters. Presenting one of Pacific Region's cooperative stations on the big island of Hawaii with a breathtaking view to complement it. The Cotton Region Shelter in the foreground is owned by the observer.

## PACIFIC REGION



BOARD OF WATER SUPPLY of Honolulu received a 50-YEAR LENGTH-OF-SERVICE AWARD for stations PALOLO VALLEY and PAUOA FLATS. Glenn Matsui accepted the award.

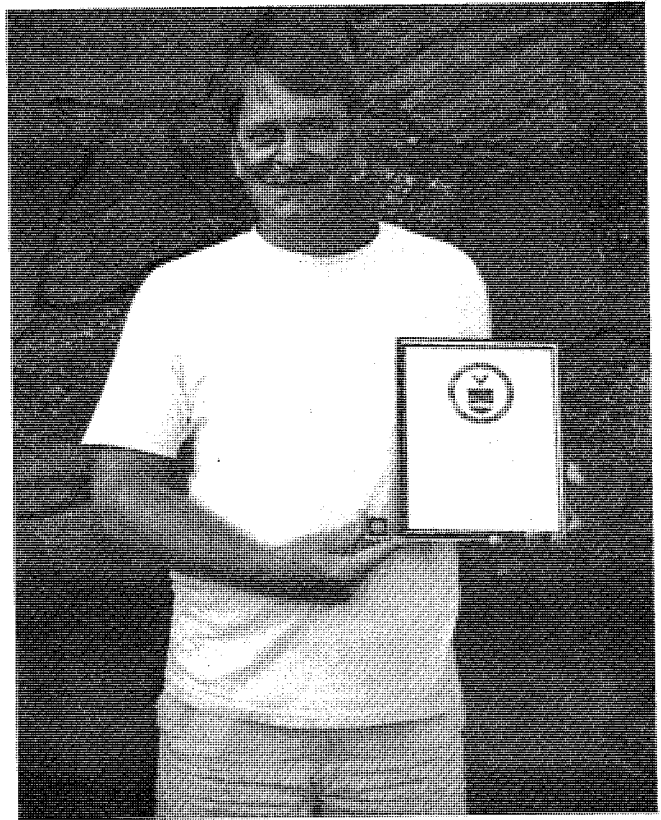


BYRON ALCOS and LYNN YAMAMOTO of OAHU SUGAR COMPANY were presented a 50-YEAR LENGTH-OF-SERVICE AWARD for service at WAIAWA on the island of Oahu.

## PACIFIC REGION



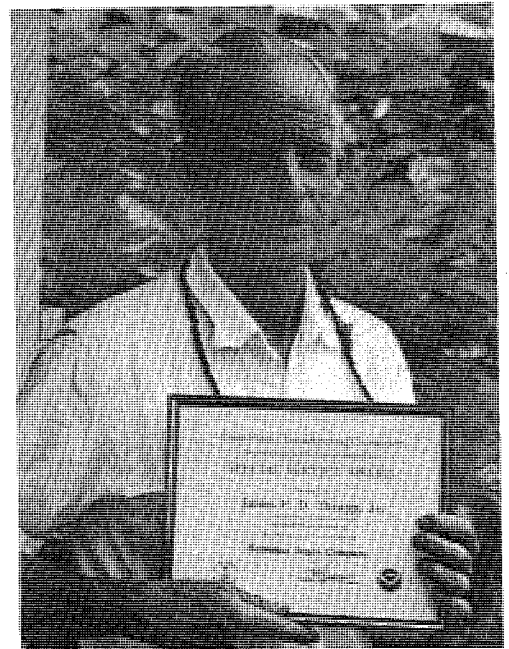
PEARL COUNTRY CLUB, OAHU, was awarded a 50-YEAR LENGTH-OF-SERVICE AWARD which was presented to Howard Hamada (right) by Ray Terada, CPM/HNL.



STEVE WILSON, OBSERVER, KAOHE MAKAI, was presented a 10-YEAR INDIVIDUAL SERVICE AWARD. The station is located on the big island.

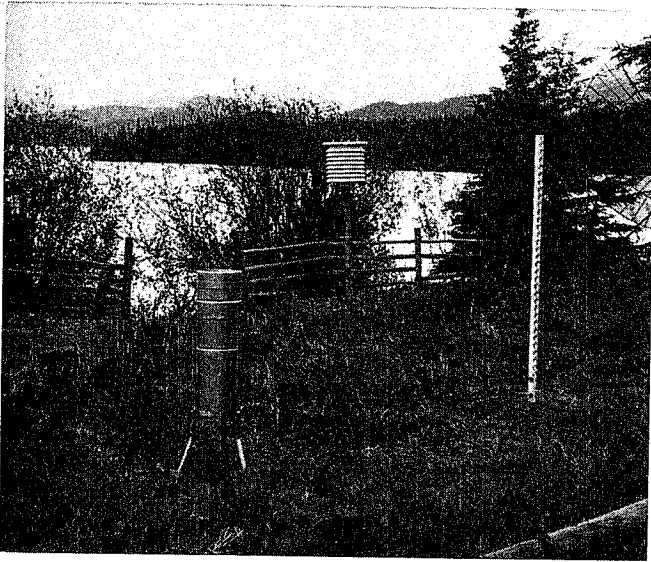


MARILYN FOWLER received a 10-YEAR LENGTH-OF-SERVICE AWARD. She and her husband, Gordon, are observers at AIEA HEIGHTS, OAHU.

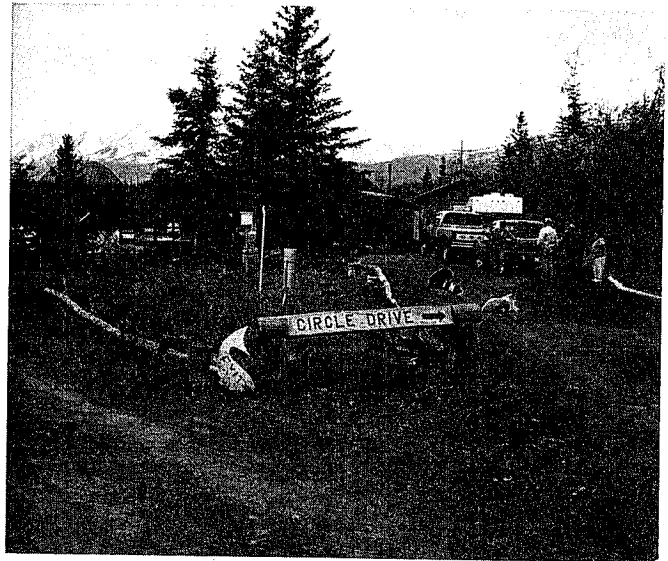


A SPECIAL SERVICE AWARD for dedicated services was presented to JAMES P. D. THROPP, JR., of HAMAKUA SUGAR COMPANY on the big island OF HAWAII, by CPM Roland Almarza. During the period when no observers were available to take readings due to company bankruptcy, Mr. Thropp voluntarily took readings for the NWS on his own time and expense.

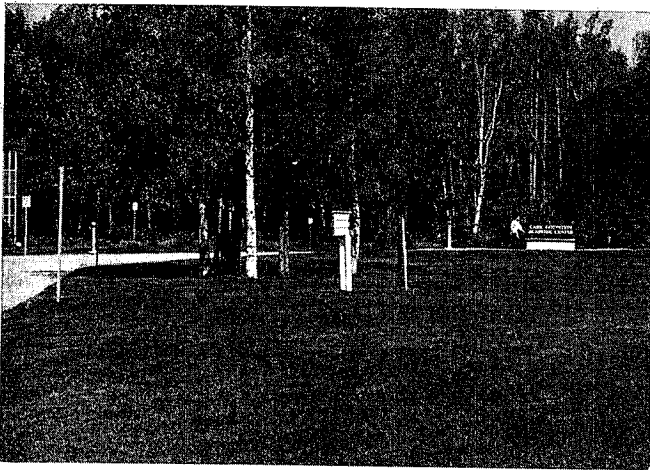
# ALASKA REGION



New coop station at SILVER LAKE, MILE 10 MCCARTHY ROAD, in the WRANGELL ST. ELIAS NATIONAL PARK



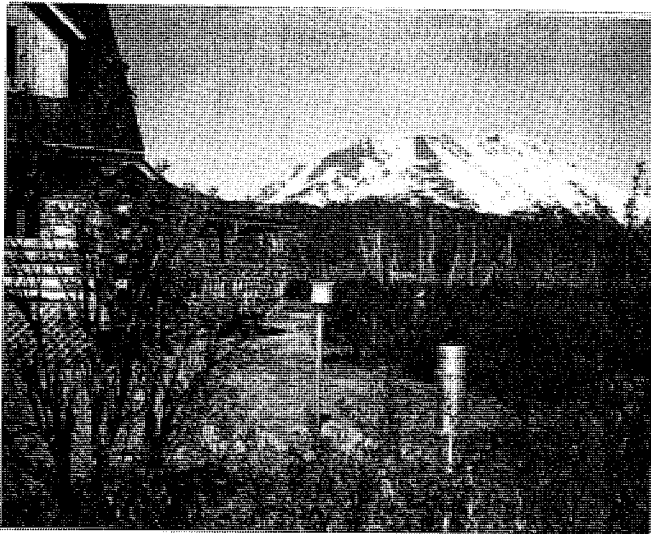
SILVER LAKE CAMPGROUND and home of GENE and EDITH COPPEDGE, the OBSERVERS.



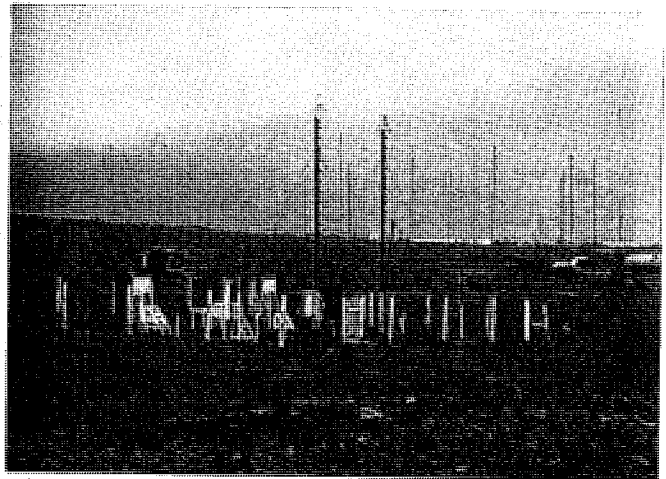
New coop station on CAMPUS of ALASKA PACIFIC UNIVERSITY in EAST ANCHORAGE.



ALASKA PACIFIC UNIVERSITY COOP STATION is a project of the UNIVERSITY PHYSICS DEPARTMENT.



PORTAGE 1 SOUTH was relocated to BIG GAME ALASKA in late May. The station is about 50 MILES SOUTH of ANCHORAGE.



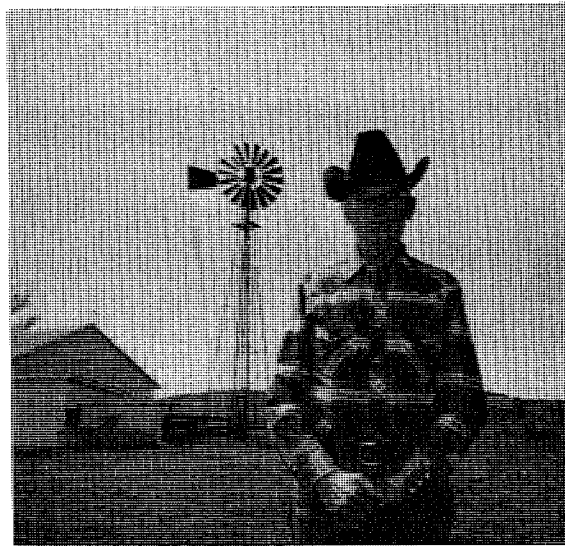
The SYNOPTIC STATION at PROVIDENIYA-URELIK, RUSSIAN FAR EAST. The station is 50 MILES NORTHWEST of GAMBELL, AK, on ST. LAWRENCE ISLAND. George Cebula, RCMP, visited the station in July and will cover more of the trip in a later issue.

# WESTERN REGION

## -- 100th ANNIVERSARY --



C. ARDEN CARTER (left), OBSERVER, WALNUT GROVE, AZ, received a HOLM AWARD PLUS A 100-YEAR AWARD which he ACCEPTED ON BEHALF OF THE CARTER FAMILY. The awards were presented for the NWS by Anton Haffer (right), Area Manager, AZ.



FRANK BIRTIC, OBSERVER, KNOBS, MT, received a 40-YEAR LENGTH-OF-SERVICE AWARD. Mr. Birtic has maintained a daily record of precipitation at his ranch. The award was presented on behalf of the NWS by George Cline, CPM, MT.



Bill Parker (left), the National Weather Service manager for Wyoming, presents an award to Maria Smith, accreditation director of Evanston Hospital, representing the Evanston Station East. Victor Hasfurther, state climatologist, joins in congratulations.

precipitation. Award ceremonies were held at each location. Bill Parker, meteorologist in charge and area manager for the National Weather Service, Victor Hasfurther, state climatologist, associate director of WWRC and professor of civil engineering the University of Wyoming; and Ray Kowrach, National Weather Service Cooperative Program manager for Wyoming, presided at each of the recognition ceremonies. Each program included a presentation on the Wyoming Cooperative Weather Program and the climate of Wyoming. Other long-term stations and their outstanding volunteers also received recognition at these ceremonies.

A wide range of citizens, many of them farmers, ranchers, teachers, homemakers, students, and retired citizens, have formed the vast corps of volunteers, operating 174 weather stations in Wyoming. Over 10,000 volunteers across the nation monitor stations, which are generally 25 miles apart. The report daily, weekly, and monthly to the National Weather Service on data, such as daily temperature, precipitation, snowfall, evaporation, river levels, and soil temperature. This data is made available to the public and archived as part of the nation's historic climatologic record. The record also serves as a basis for the study of global climate change and prediction of long-term patterns.

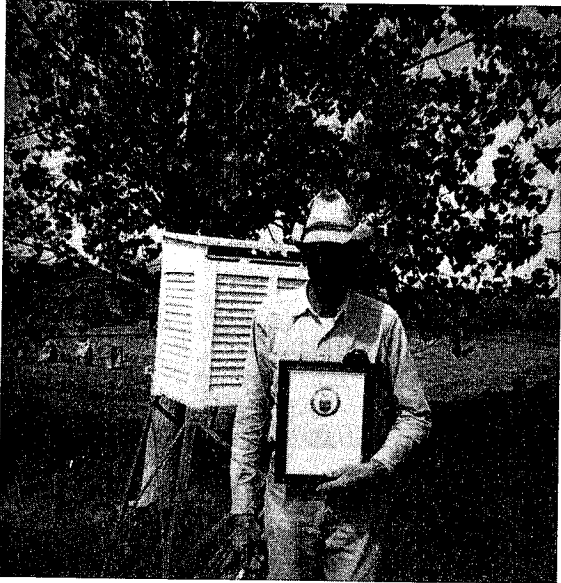
### Cooperative weather stations receive honors

Four Wyoming Cooperative Weather Stations received recognition last fall for their 100 or more years of service. Heading the list of Wyoming's centennial stations receiving the honor is Yellowstone National Park headquarters where record keeping started in 1886, followed by Evanston 1 E in 1889 and Sheridan Field Station which followed in 1891. The University of Wyoming rounds out the centennial list for long-term

The U.S. Department of Commerce National Weather Service developed the recognition program as part of a national effort to commend its volunteers in the Cooperative Observing Program. The Department of Agriculture, the American Meteorological Association, and the Association of State Climatologists also contributed to this effort.

March 1992 Wyoming Weather Resources Center Newsletter.

## WESTERN REGION



JIM BOWERS, OBSERVER, MOORHEAD 9 NE, MT, received a 30-YEAR LENGTH-OF-SERVICE AWARD. Mr. Bowers has maintained a daily record of temperature and precipitation at his ranch which is 25 MILES SOUTHWEST of BROADUS in Powder River County.



MRS. J. THOMAS MADER, OBSERVER, BIDDLE 8 SW, MT, received a 30-YEAR LENGTH-OF-SERVICE AWARD. She records daily temperatures and precipitation. In addition, Mrs. Mader serves as a severe weather spotter, reporting dangerous weather conditions to the Weather Service's Warning Office in Billings, MT.



MRS. WALTER FLECHSIG (left), OBSERVER, SIMPSON, MT, received a 30-YEAR LENGTH-OF-SERVICE AWARD. Mrs. Flechsig, aided by her husband, Walt, has helped maintain a valuable climatological record for the area and has also participated in the Weather Service's severe weather spotter's program.

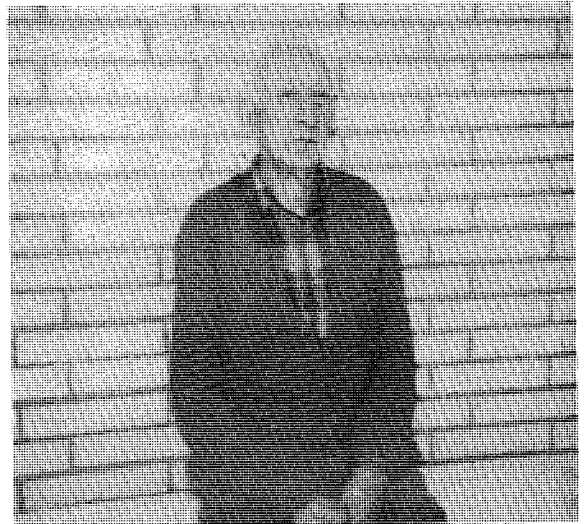


BURDETT BEVAN (right), OBSERVER, TOOELE, UT, received a 45-YEAR LENGTH-OF-SERVICE AWARD from Bill Alder, Area Manager, UT. Mr. Burdett received the Jefferson award in 1969. Observations in Tooele began by the Bevan family in 1908.

# WESTERN REGION



ROLAND HANSON (left), OBSERVER, RECEIVED A 40-YEAR LENGTH-OF-SERVICE AWARD from Bill Alder. Roland has maintained an observational program in FAIRFIELD, UT, since 1952.



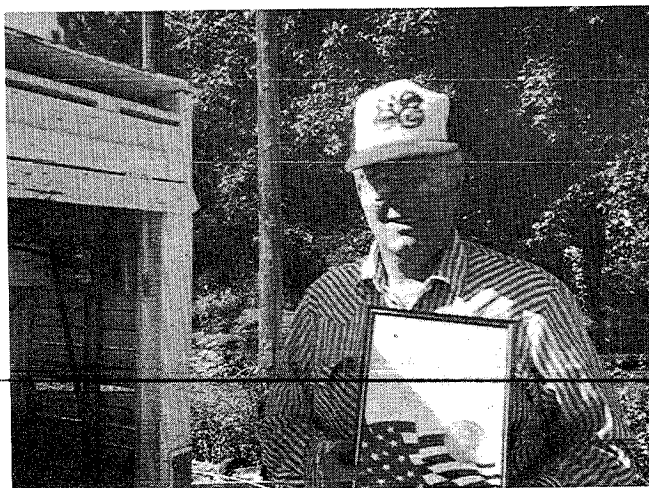
JOHN W. NELSON, OBSERVER, GOLDENDALE, WA, received a 20-YEAR LENGTH-OF-SERVICE AWARD, presented with the thanks of the NWS by Rick Orres, CPM, WA.



VERLENE HATCH, OBSERVER, SCIPPIO, UT, received a 20-YEAR LENGTH-OF-SERVICE AWARD. Verlene continues a long line of family observers in Scipio, beginning with her father-in-law, Frank S. Hatch, in 1924.



BILL AND BETTY WEAVER, observers, CONCONULLY, WA, received a 20-YEAR LENGTH-OF-SERVICE AWARD. Bill and Betty took the weather observations at their Conconully resort. Recently they sold the resort and retired.



O. REED JEFFERY, OBSERVER, DELTA, UT, received a 20-YEAR LENGTH-OF-SERVICE AWARD at his home.

## WESTERN REGION 15-YEAR LENGTH-OF-SERVICE AWARDS

| <u>Name</u>                | <u>Station</u>   |
|----------------------------|------------------|
| Anna Mae Peace             | Gisela, AZ       |
| Mr. & Mrs. Clayton Overson | St. Johns, AZ    |
| Karl Kleinert              | Sunburst 8 E, MT |
| Florence Van Luven         | Blaine, WA       |

## EASTERN REGION



A SPECIAL SERVICE AWARD was presented to the SWARTZENTRUBER FAMILY who are our OBSERVERS at GREENWOOD, DE.

Presentation was made by Bill Smith, Hydrometeorological Technician, Sterling, VA.



A 25-YEAR INSTITUTIONAL AWARD was presented to the ENVIRONMENTAL TECHNOLOGIES GROUP, INC., TOWSON, MD. Accepting the award (left to right) are Vince DaGrava, Captain Frank Draper, and Lt. Gill Carneal. Presentation was made by Bill Smith.

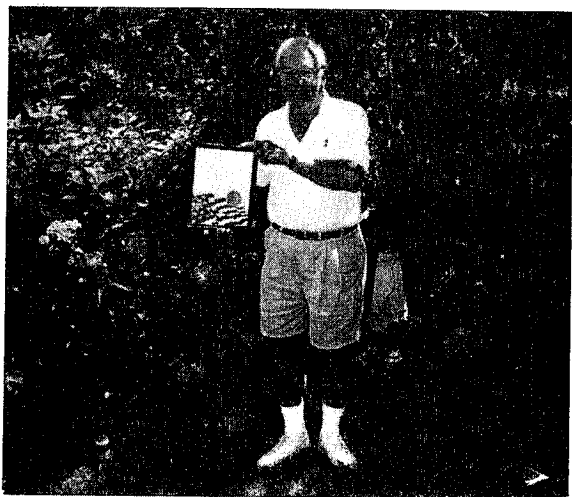


JOSEPH LLOYD (left), and KARL DELONG of AROOSTOOK FARM, which is a Maine state experimental farm, ACCEPTED A 75-YEAR INSTITUTIONAL AWARD. Mr. Lloyd is retiring after 22 years as Superintendent at Aroostook Farm. The weather station at the farm, known as PRESQUE ISLE, ME, is a Reference Climatological Station.

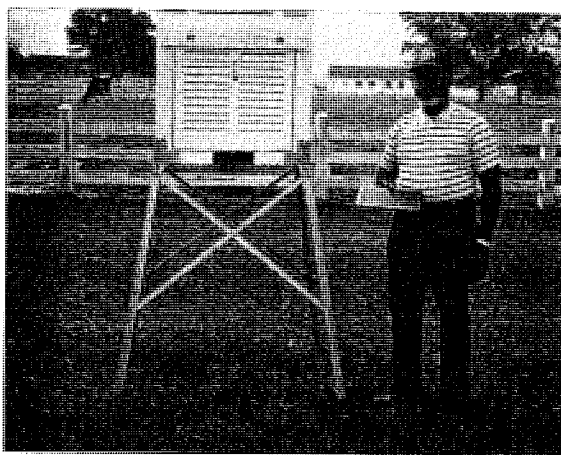
Presentation of award and photo were made by James Donahue, CPM, Portland, ME.



The NATIONAL PARK SERVICE, ASSATEAQUE ISLAND, MD, was presented a 25-YEAR INSTITUTIONAL AWARD by Bill Smith. Accepting the award are Carl Zimmerman and Elaine Furbish.



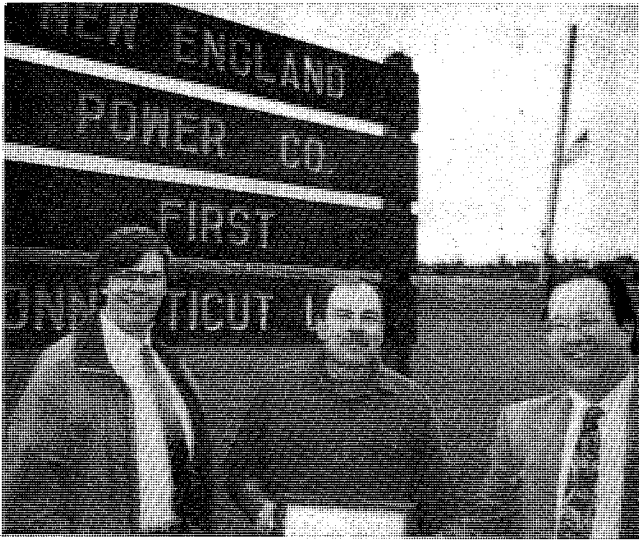
RUSSELL LEVERING, OBSERVER, LAPLATA, MD, was presented a 40-YEAR LENGTH-OF-SERVICE AWARD by Bill Smith.



A 25-YEAR INSTITUTIONAL AWARD was presented to the UNIVERSITY OF MARYLAND EASTERN SHORE AGRICULTURAL FARM at PRINCESS ANNE, MD. Presentation was made by Bill Smith. Accepting the award is David Horsey.



## EASTERN REGION



The NEW ENGLAND POWER COMPANY, FIRST CONNECTICUT LAKE, NH, received a 75-YEAR INSTITUTIONAL AWARD. Accepting the award were: Bob Ward, NEPCO Area Representation, center, and Ernie Griggs, right, from the NEPCO office in Lebanon, NH. At left is Tom Hawley, Service Hydrologist, Portland, ME.

Photo and text by James Donahue, CPM, Portland, ME.



The NEW YORK STATE CANAL CORPORATION PERSONNEL at the BALDWINVILLE LOCK, NY, were presented a 75-YEAR INSTITUTIONAL AWARD. Accepting the award (left to right) are Bob Brown, Area Supervisor, and Dan Crane, Chief Lock Operator. At right is Tom Schmidt, CPM, Buffalo, NY, who made the presentation.

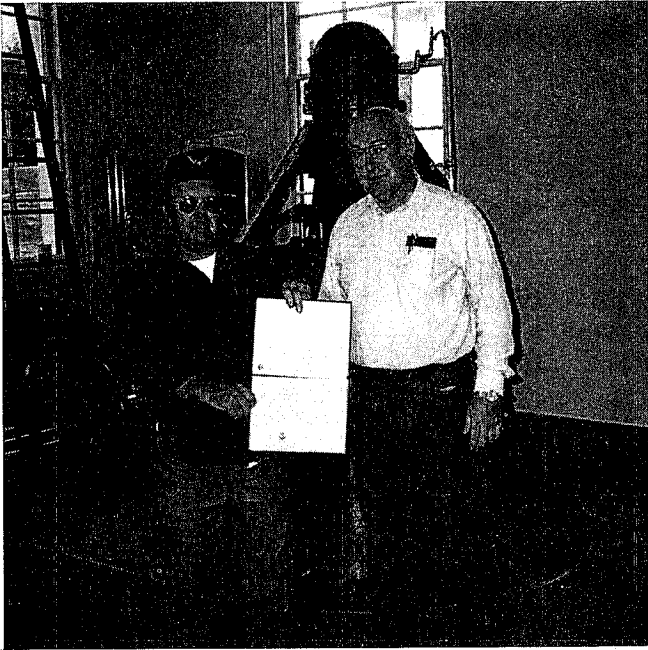


WAYNE ROOP, OBSERVER, CAPE MAY, NJ, received a SPECIAL SERVICE AWARD from Bill Smith.

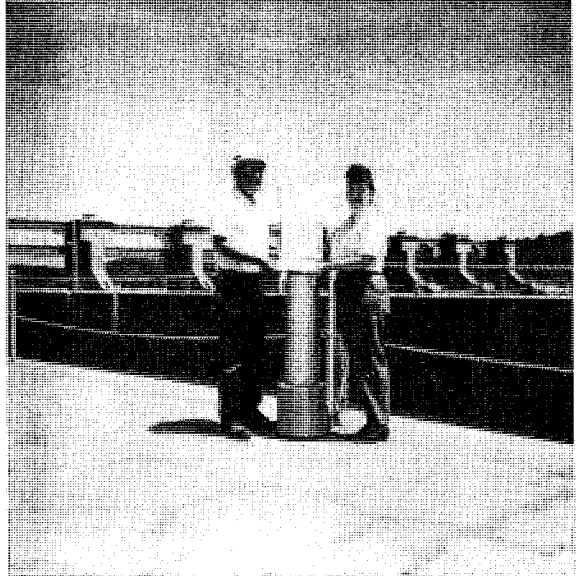


The NEW YORK STATE CANAL CORPORATION PERSONNEL at the MAYS POINT LOCK, NY, were presented a 75-YEAR INSTITUTIONAL AWARD by Tom Schmidt. Accepting the award (left to right) are John O'Connor and Joe Delaney.

## EASTERN REGION



The NEW YORK STATE CANAL CORPORATION PERSONNEL AT NEWARK LOCK, NY, were presented a 75-YEAR INSTITUTIONAL AWARD. Accepting the award (left to right) are Floyd Chadwick, Chief Lock Operator, and Henry E. Zoll, Area Supervisor. Presentation was made by Tom Schmidt.



The BELLEVILLE LOCK AND DAM, BELLEVILLE, OH, was presented a 25-YEAR LENGTH-OF-SERVICE AWARD. Accepting the award are George Connolly and Sue Douglas. Presentation was made by Keith Williams, CPM, Columbus, OH.



A 10-YEAR LENGTH-OF-SERVICE AWARD was presented to JEFFREY MCCULLA (right), OBSERVER, ST. PARIS, OH, by Keith Williams (left).



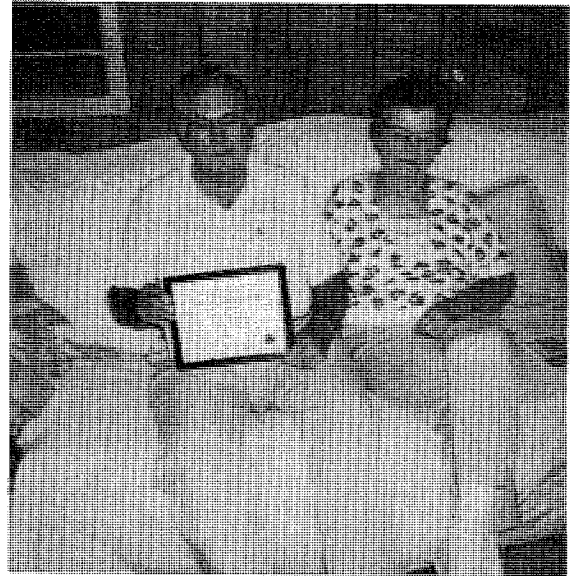
The U.S. CORPS OF ENGINEERS was presented a 25-YEAR INSTITUTIONAL AWARD at the DEER CREEK LAKE, OH, STATION. Accepting the award is Terry Stadt. Presentation was made by Keith Williams.

## EASTERN REGION



The WARREN WASTE WATER TREATMENT PLANT, WARREN, OH, was presented a 25-YEAR INSTITUTIONAL AWARD by Keith Williams. Accepting the award are Hank Angelo and Paul Truax.

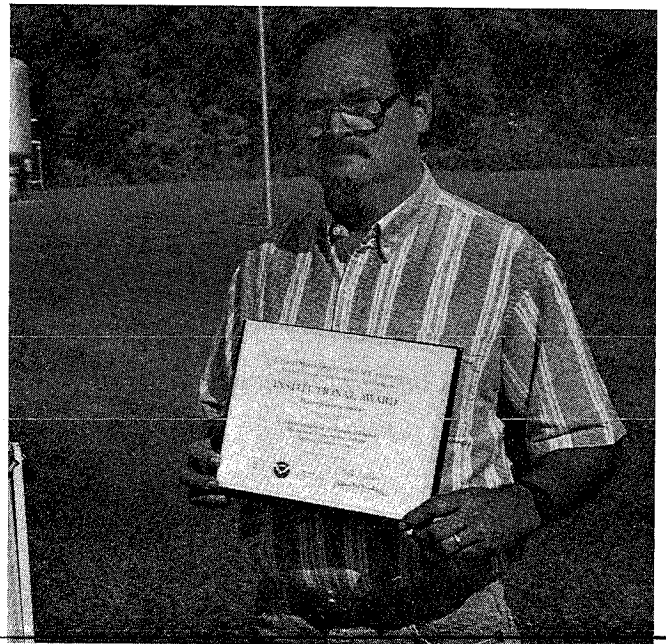
Photo (left to right): Keith Williams, Hank Angelo, and Paul Truax.



A SPECIAL SERVICE AWARD was presented to MR. AND MRS. THOMAS A. PRUITT, OBSERVERS, TANGIER ISLAND, VA. Bill Smith made the presentation.

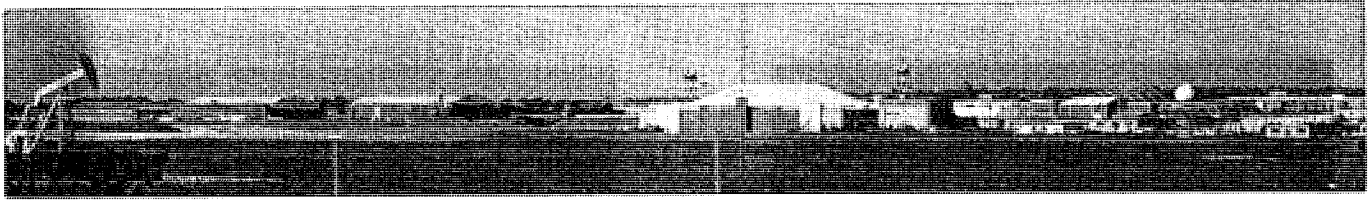


A 75-YEAR INSTITUTIONAL AWARD was presented to the EASTERN SHORE AGRICULTURAL EXPERIMENT STATION FOR SERVICE at PAINTER, VA. Accepting the award is Tom Curtis. Bill Smith made the presentation.

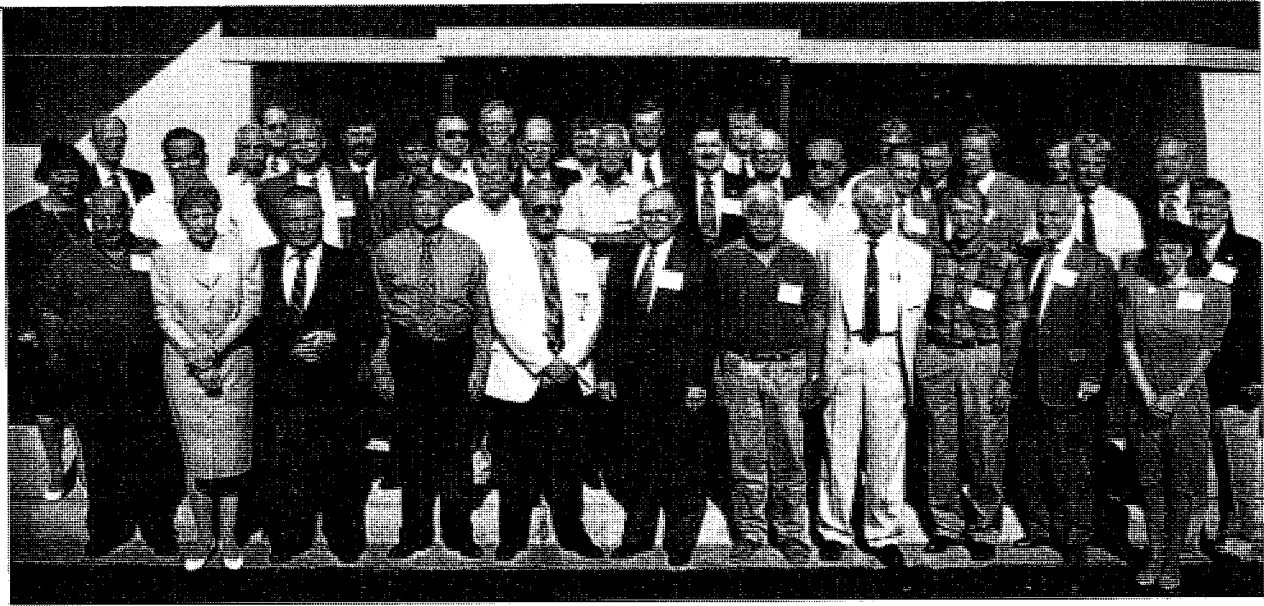


The CONSOLIDATED GAS SUPPLY CORPORATION, LOCKNEY, WV, was presented a 50-YEAR INSTITUTIONAL AWARD. Mr. Cottrill accepted the award. Presentation was made by David Keller, CPM, Charleston, WV.

# SOUTHERN REGION



Panoramic view of the Norman, OK airport and the nearby NEXRAD equipped National Weather Service Forecast Office and National Severe Storm Laboratory.



The National Weather Service (NWS) Southern Region Cooperative Program Managers (CPM) held a conference in Norman, OK, June 22-24, 1993. One of the main concerns was how to keep the cooperative observing network operating most efficiently as the NWS Modernization and Associated Restructuring (MAR) program is implemented during the next several years. Their titles will be changed from CPM to hydro-meteorological technician (HMT). We expect a large majority of the existing CPMs

to continue working as HMTs under MAR. However, their visitation work must be balanced with other important tasks, such as making broadcasts on NOAA Weather Radio, working with the new radars, issuing forecasts and warnings, etc. Thus, the future HMTs must be even more versatile in their skills than the CPMs are now. Regardless of the changes in their official titles, they will still be CPMs at heart. (Photo by Jerry Wolfe, CPM/FTW)

Front Row - Left to right

Carl Wilkins - HMT/OUN  
 Betty Borger - ERH  
 Malcolm Moreau - CPM/BTR  
 Maxie Brown - HMT/OUN  
 Tom Clarke - CPM/LAL  
 Charlie Ridge - Retired RCPM  
 Ray Terada - Hawaii  
 Tom Blackburn - NWSH  
 Johnny Roberts - OKC  
 Alex Radichevich - NWSH  
 Beverly Reese - HMT/OUN  
 Doug Davis - SRH

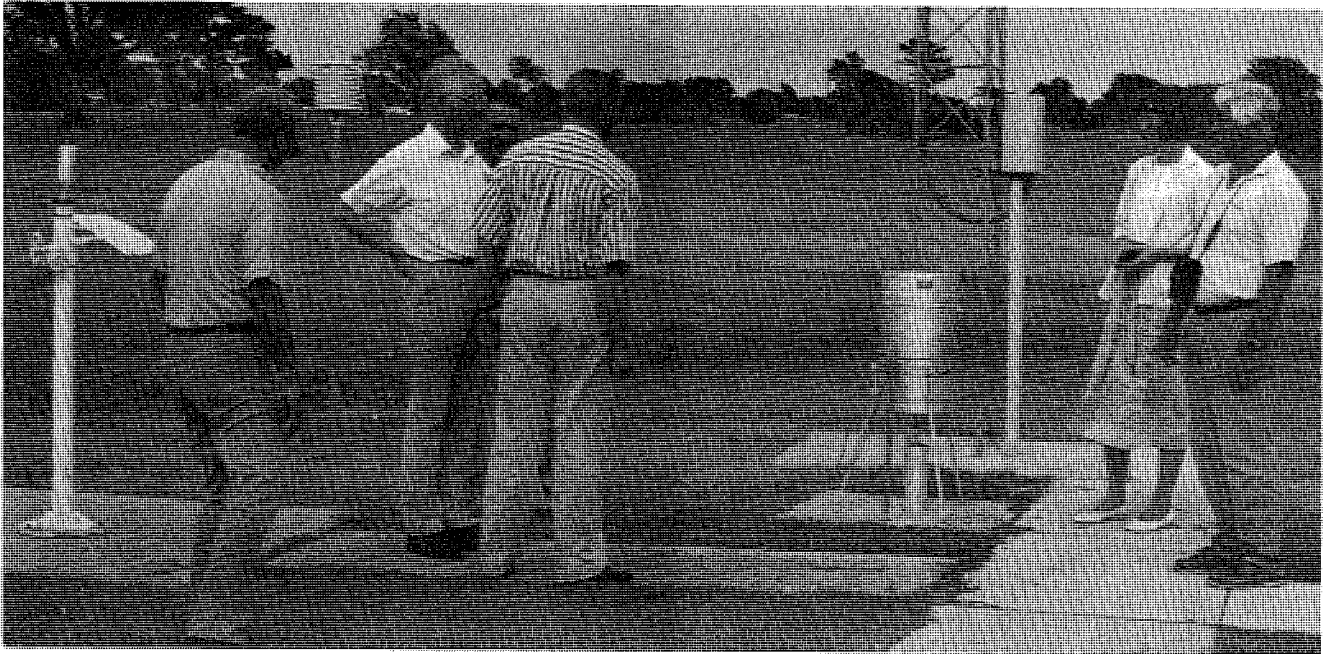
Second Row - Left to Right

Chris Grant - WSFO/OUN  
 Pancho Balleste-Baeza - CPM/SJU  
 Alan Starnes - CPM/ACT  
 Roger Kenyon - CPM/IND  
 Karl Sieczynski - HMT/CPM-STL  
 Bob Drummond - CPM/ATL  
 Woody Currence - CPM/LZK  
 John Lambert - CPM/OKC  
 Tom Sinclair - CRH  
 Chuck Megee - CPM/LBB  
 Dave Olkiewicz - CPM/FSD  
 George Cebulla III - ARH  
 Tom Adler - WRH  
 Al Abernathy - HMT/OUN

Back Row - Left to Right

Bob Manning - SRH  
 Jerry Wolfe - CPM/FTW  
 Mike Asmus - CPM/MSP  
 Mike Elias - CPM/GLD  
 John McBroom, Jr. - CPM/BNA  
 Larry Arnold - CPM/JAN  
 Harry Hassel - SR DIR  
 Tom Grayson - SRH  
 Daryl Williams (hidden) - CPM/ABQ  
 Grant Goodge - NCDC  
 Gary Grice - NWSH  
 Bill Kent - CPM/BHM

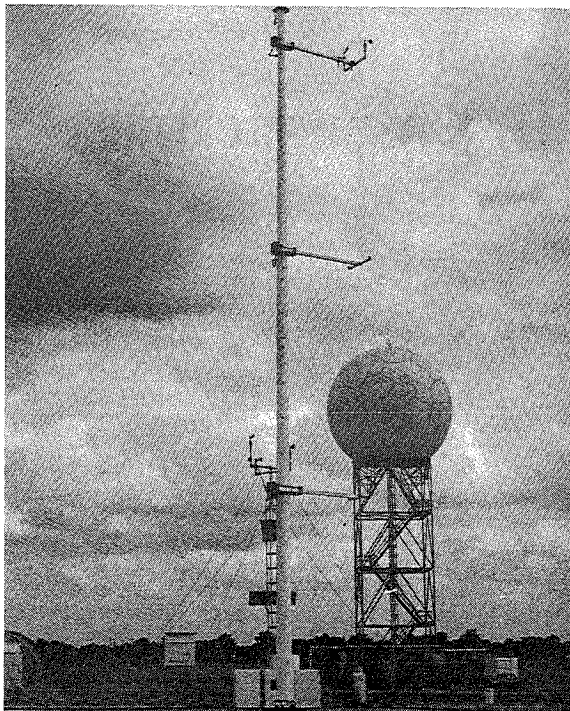
## SOUTHERN REGION



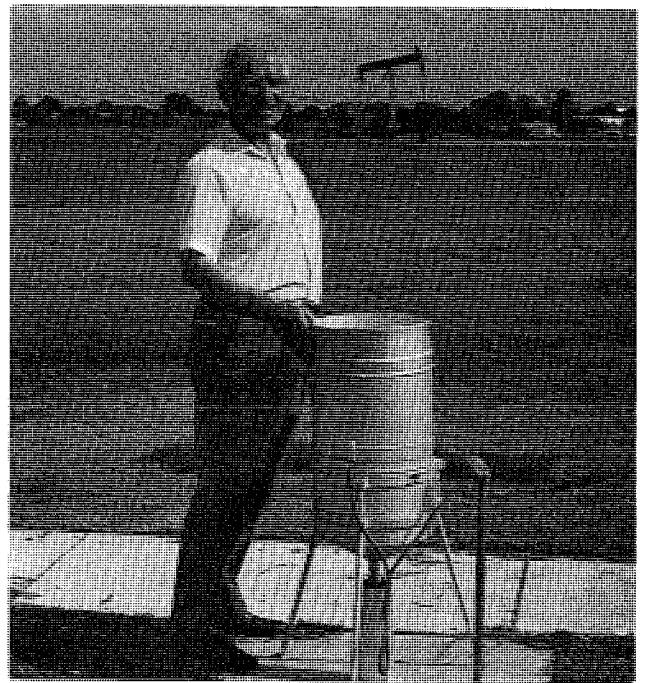
The Southern Region CPM Conference transcontinental guests were very impressed with their visit to the National Severe Storm Laboratory (NSSL) and the nearby Norman Weather Service Forecast Office.

After viewing its state-of-the-art technology, under the courteous guidance of Maxy Brown, hydrometeorological

technician, Norman, the CPM's were relieved to again be viewing basic NWS observational equipment. (Left to right): Tom Clarke, CPM/FL; Tom Blackburn, CPM, NWS-Hqtrs, Silver Spring, MD; George Cebula III, Regional Chief, AK; Maxy Brown (back); Ann Lazar, from the National Climatic Data Center, Asheville, NC; and Ray Terada, CPM/Honolulu. Photo by A. Radichevich.

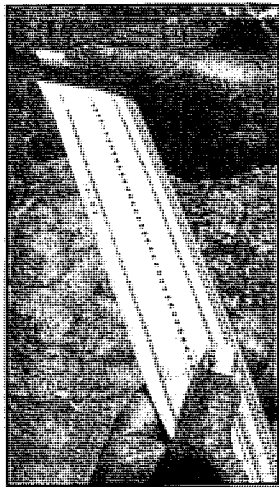
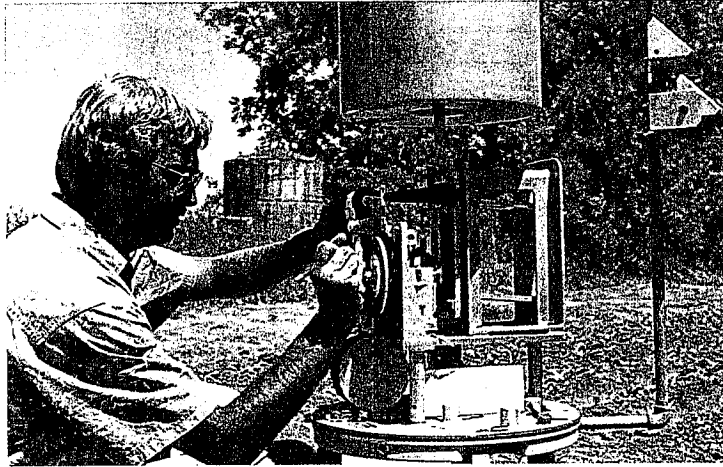


The new Doppler radars (like the one pictured above) are helping forecasters predict severe storms earlier, and with greater accuracy than ever before. On clear days, it can even detect smoke from grass fires and the wind shift line along cold fronts and outflow gust fronts ahead of thunderstorms. (Photo by A. Radichevich.)



Alexander Radichevich (NWSH) stands beside a tipping bucket rain gage that is used to tell weather observers and forecasters the intensity of rain as it is falling. Note the measuring tube that is below the gage. It is used to obtain the official rainfall total since the tipping bucket inside the gage becomes inaccurate during heavy rain events.

## SOUTHERN REGION



Daryl Williams, cooperative program manager for the National Weather Service's Forecast Office, checks readings on the automatic rain gage in Corrales. This Fischer-Porter gage records rainfall amounts every 15 minutes and the data, recorded on a perforated tape, is sent to the National Climatic Data Center, Asheville, NC.

| ALBUQUERQUE<br>RAINFALL |      |      |      |
|-------------------------|------|------|------|
| MEASURED IN INCHES      |      |      |      |
|                         | MAY  | JUNE | JULY |
| 1989                    | .02  | .02  | 1.51 |
| 1990                    | .45  | .27  | 2.36 |
| 1991                    | 1.14 | .65  | 2.63 |
| 1992                    | 1.81 | .67  | 2.01 |
| 1993                    | .20  | .44  | 0.22 |

SOURCE: Weather Data Inc.  
RUSS BALL / JOURNAL

# Storms Not Raining On Dry Albuquerque

By Nancy Tipton

JOURNAL STAFF WRITER

Bad luck. That's the reason Albuquerqueans have spent most of the month of July moving hoses from their flower beds to their vegetable gardens.

"The pattern has been pretty good," said forecaster Steve Maneikis. "The storms have been around for the past couple of weeks. The moisture is there, the air flow is there. It's just a matter of where the precipitation is falling."

It has not been falling in Albuquerque. Normal rainfall for the city in July is 1.27 inches. As of Thursday, the official rainfall for the month was 0.22 inch, said Maneikis, who works for Weather Data, Inc., the Kansas-based weather service that provides forecasts to the Journal. Last July, Albuquerque had 2.01 inches of rain.

Maneikis said the monsoon season arrived "pretty much on schedule" and the rain was falling somewhere in the state.

"Since the high pressure drifted east, we've seen more moisture coming up from Mexico. They've been spotty and scattered, but they've been there," he said.

And while temperatures have seemed on the hot side, they have been within a few degrees of normal for the past two weeks.

In late June and early July the lack of rain here could be blamed on the same weather patterns that caused heavy rains and flooding in the Midwest. But Maneikis said that has changed.

Maneikis said it looks like there is a chance for showers and thunderstorms at least for the next four or five days.

The outlook for the first two weeks of August also looks good, if rain is what you want.

Precipitation forecasts are for wetter than normal conditions for the north and west portions of the state, while the temperatures will remain near normal - in the upper 80s to lower 90s. Albuquerque normally receives about 1.50 inches of rain in August. Reprinted from: Albuquerque Journal, Albuquerque, NM.

## SOUTHERN REGION



LEROY GATES, OBSERVER, THOMASVILLE, AL, received a 40-YEAR LENGTH-OF-SERVICE AWARD. Ron Ferguson, former CPM, and Jeff Garman, from the National Weather Service in Mobile, presented the award. At 81, Mr. Gates is active in Meals on Wheels. He also continues to work at the Thomasville Times Newspaper where he has been employed since high school. Mr. Ferguson is pictured at right. Bill Kent is the CPM at Birmingham, AL.



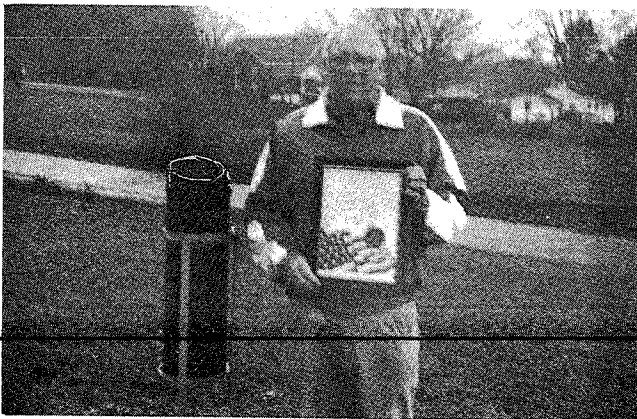
A 30-YEAR LENGTH-OF-SERVICE AWARD was presented to W. W. MCCAIN, OBSERVER, HURTSBORO, AL. Mrs. McCain is pictured with her husband. Presentation was made by Bill Kent.



A 35-YEAR LENGTH-OF-SERVICE AWARD was presented to THOMAS E. FISCHER, OBSERVER, PLANTERSVILLE, AL, by Roger McNeil, Hydrologist, WSFO/BHM. Photo by Bill Kent.



A 15-YEAR LENGTH-OF-SERVICE AWARD was presented to DR. JOHN T. ATTEBERY, OBSERVER, MAGNOLIA 3 N, AR. Presentation was made by Woody Currence, CPM/LZK.



WILLIAM B. CROW, OBSERVER, VALLEY HEAD, AL, was presented a 30-YEAR LENGTH-OF-SERVICE AWARD by Bill Kent.

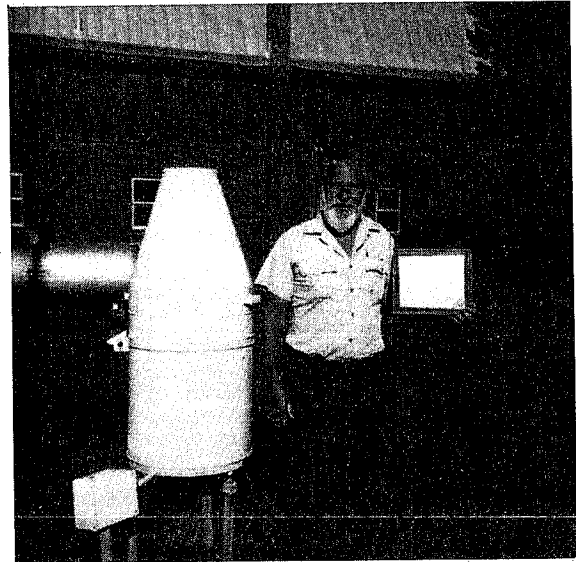


ANGELA HINTON, OBSERVER, BRINKLELY, AR, was presented a 15-YEAR LENGTH-OF-SERVICE AWARD by John McBroom, CPM/BNA.

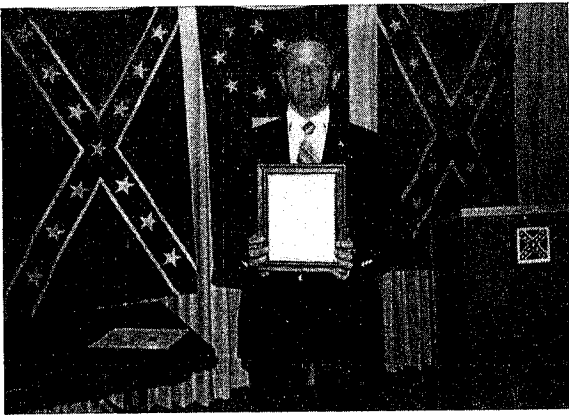
## SOUTHERN REGION



A 25-YEAR INSTITUTIONAL AWARD was presented to the GEORGIA FORESTRY COMMISSION, THOMASVILLE, 3 NE, by Tom Clarke, CPM, Florida and south Georgia. Accepting the certificate are (left to right) John Hutchinson, Ed Baggett, Danny Kelley, and Forrest Summer.



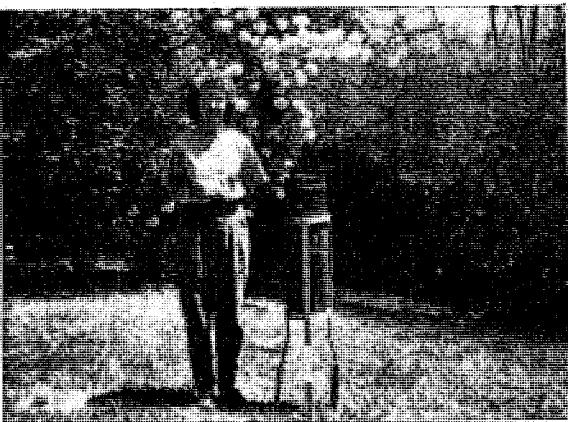
JERRY THOMAS, OBSERVER, UNICOI STATE PARK, GA, received a 15-YEAR LENGTH-OF-SERVICE AWARD from Bob Drummond.



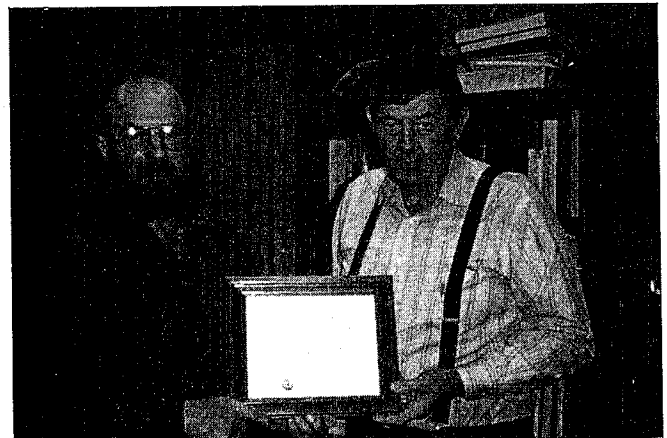
A 20-YEAR LENGTH-OF-SERVICE AWARD was presented to L. DOUGLAS GRIFFITH, OBSERVER, DALLAS 7 NE, GA. The award was presented before The Sons of Confederate Veterans on April 26, which was Confederate Memorial Day in Georgia. Bob Drummond, CPM/ATL, made the presentation.



A 50-YEAR INSTITUTIONAL AWARD was presented to the CORPS OF ENGINEERS AT THE ADDICKS DAM, LA, PROJECT OFFICE by Malcolm Moreau. Pictured left to right: Kenneth R. McDonald, Park Ranger and observer; Richard K. Long, Park Manager; and Malcolm Moreau, CPM/BTR.



DOROTHY MERCER, OBSERVER, JULIETTE, GA, received a 20-YEAR LENGTH-OF-SERVICE AWARD. Incidentally, Juliette is home of the Whistle Stop Cafe and Fried Green Tomatoes, the site of the movie by the same name "Fried Green Tomatoes." Presentation of the award was made by Bob Drummond.



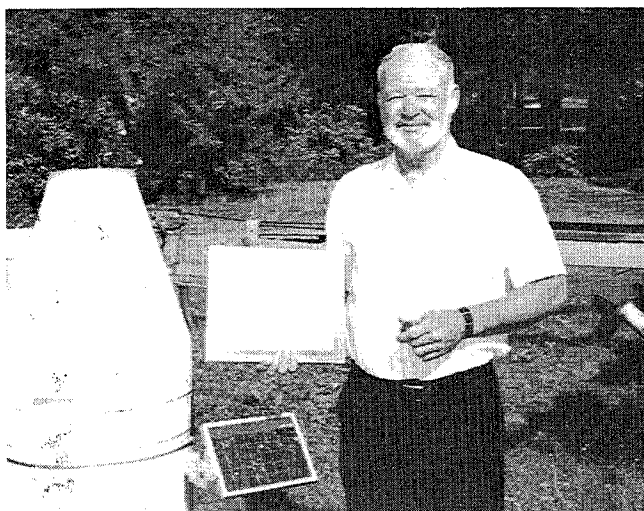
A 50-YEAR INSTITUTIONAL AWARD was presented to the LOUISIANA OFFICE OF FORESTRY, PINE GROVE FIRE TOWER, LA. Accepting the award was Olin L. Stubbs, District Forester. John T. Moseley (right), MIC, WSO/BTR, made the presentation. Photo by Malcolm Moreau.



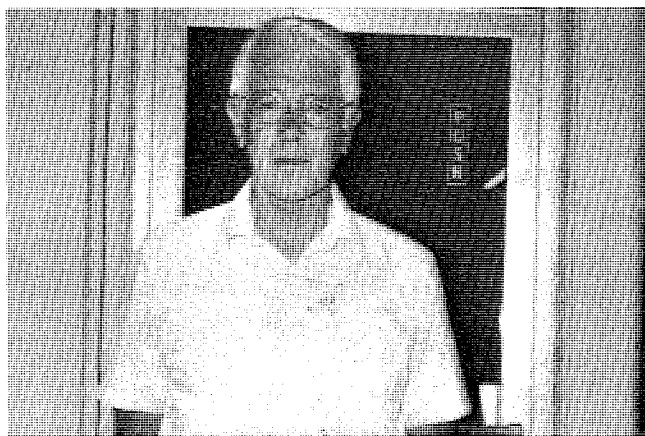
## SOUTHERN REGION



OPAL LEE ROBINSON, CRANDALL 12 N, MS, previous observer, will be remembered for her dedication and service of 35 YEARS. The LENGTH-OF-SERVICE AWARD was presented to HER SON, TED ROBINSON, JR., WHO HAS ASSUMED THE WEATHER OBSERVING DUTIES. Presentation was made by Larry Arnold, CPM/JAN.



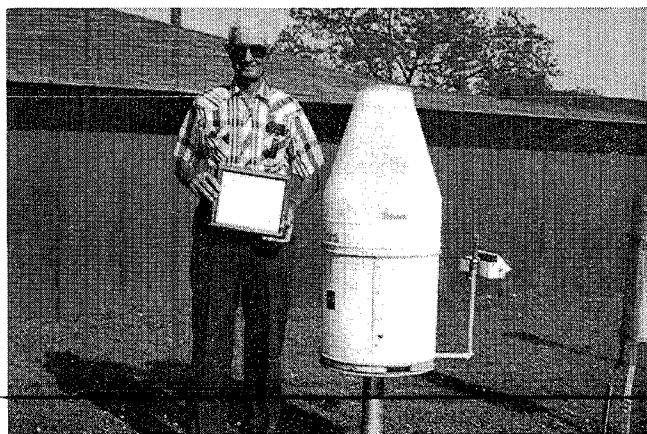
A 15-YEAR LENGTH-OF-SERVICE AWARD was presented to WILLIAM DALLISON, OBSERVER, BOONEVILLE, MS. He is a professor at Northeast Mississippi Junior College in the Science Department. The award was presented by Larry Arnold.



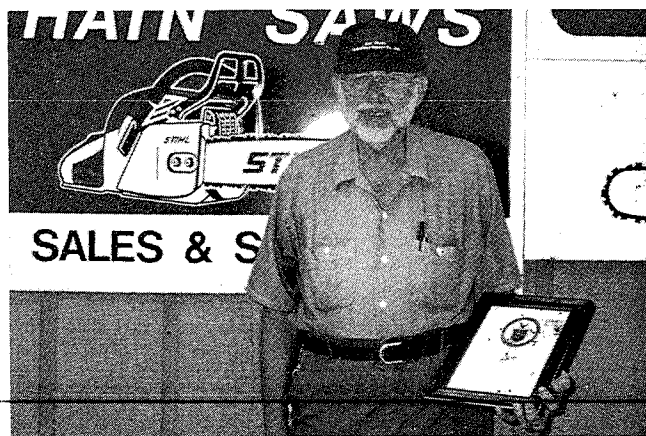
A 30-YEAR LENGTH-OF-SERVICE AWARD was presented to ALVA IRBY, QUITMAN 1 N, MS. Mr. Irby is retired but in his spare time runs a video store and a wholesale oil company. Larry Arnold made the presentation.



GLADYS DAVIS, OBSERVER, ELLIOT 1 SW, MS, received a 15-YEAR LENGTH-OF-SERVICE AWARD. Mrs. Davis is very active in her community. Presentation by Larry Arnold.



EDWARD FERGUSON, OBSERVER, INDEPENDENCE 1 W, MS, received a 25-YEAR LENGTH-OF-SERVICE AWARD. Mr. Ferguson is retired from Trunkline Gas Company. Presentation was made by Larry Arnold.

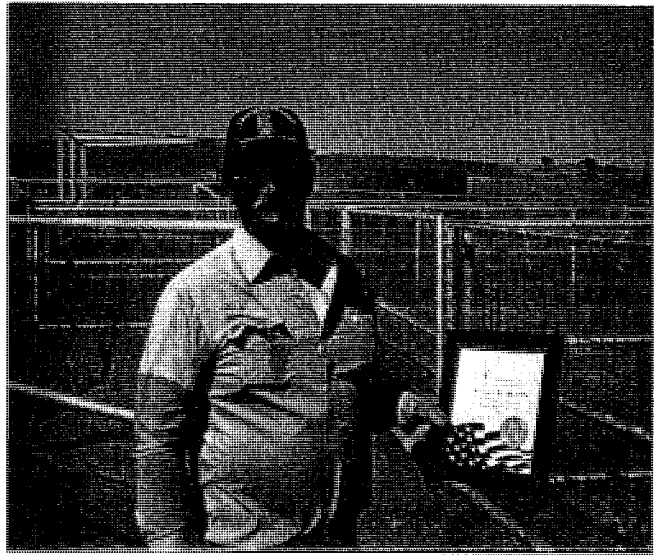


CLAUDE RISEN, OBSERVER, BUCKATUNNA 1 NE, MS, received a 10-YEAR LENGTH-OF-SERVICE AWARD. Mr. Risen is retired but still works at a local hardware store. Larry Arnold presented the award.

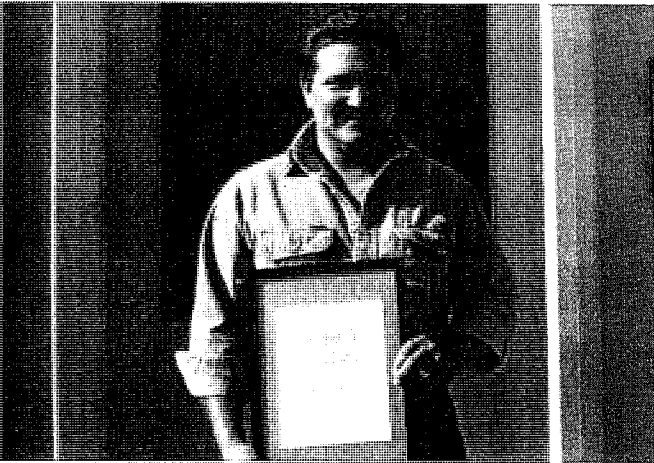
## SOUTHERN REGION



A 35-YEAR LENGTH-OF-SERVICE AWARD was presented to TOM E. KELLY, OBSERVER, KELLY RANCH, NM. Daryl Williams made the presentation.



RONALD MERRITT, OBSERVER, RAMON 8 SW, NM, received a 10-YEAR LENGTH-OF-SERVICE AWARD from Daryl Williams.



A 20-YEAR LENGTH-OF-SERVICE AWARD was presented to LUIS C. LUJAN, OBSERVER, ESPANOLA, NM. Daryl Williams made the presentation.



A 30-YEAR LENGTH-OF-SERVICE AWARD was presented to PAT HANCOCK, OBSERVER, SEDAN, OK. Carl Wilkins, HMT/OUN, made the presentation.

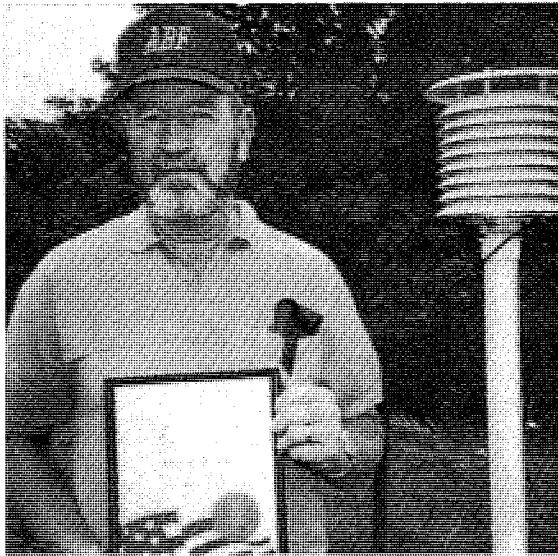


LLOYD MORROW, OBSERVER, HOUSE, NM, received a 20-YEAR LENGTH-OF-SERVICE AWARD from Daryl Williams.



A 25-YEAR INSTITUTIONAL AWARD was presented to INOLA LOCK AND DAM, OK. Pictured receiving the award (left to right): Bill Kilpatrick, Virgil Reed, and Bill Doshier. Presentation was made by John Lambert.

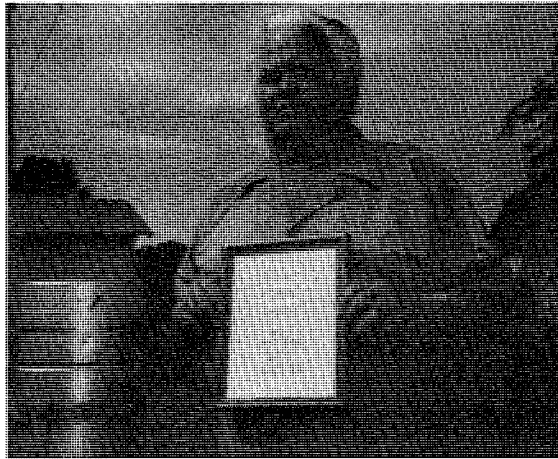
## SOUTHERN REGION



A 20-YEAR LENGTH-OF-SERVICE AWARD was presented to DARREL FARROW, MANNFORD 6 NW, OK. The award was presented by John Lambert, CPM/OKC.



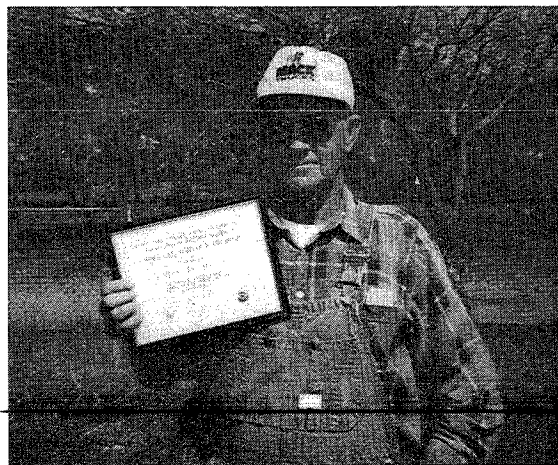
BILLIE R. SULLINS, OBSERVER, REDROCK, OK, received a 15-YEAR LENGTH-OF-SERVICE AWARD from Maxie Brown.



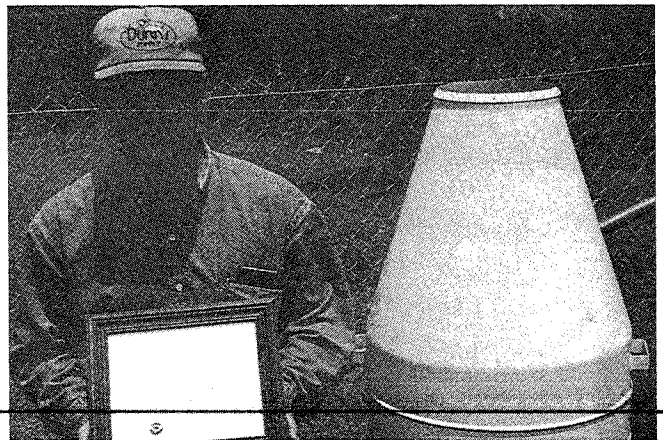
ZANE PAYNE, OBSERVER, COLONY, OK, received a 20-YEAR LENGTH-OF-SERVICE AWARD. Presentation was made by Carl Wilkins.



A 10-YEAR LENGTH-OF-SERVICE AWARD was presented to PAMELA CRUTCHFIELD, OBSERVER, SALLISAW, OK. The award was presented by Woody Currence.



A 15-YEAR LENGTH-OF-SERVICE AWARD was presented to GLENN W. HADLEY, OBSERVER, INGALLS, OK. Maxie Brown, HMT/OUN, made the presentation.



The BROWNSVILLE SEWAGE PLANT, TN, was recently presented a 25-YEAR INSTITUTIONAL AWARD. Todd Carver accepted the award for the facility. John McBroom made the presentation.

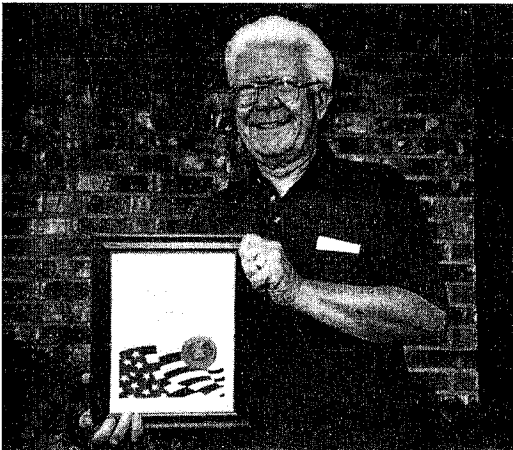
## SOUTHERN REGION



GROVER SPRINGER, OBSERVER, LENORAH, TX, received a 45-YEAR LENGTH-OF-SERVICE AWARD. Along with his duties as weather observer over the years, Mr. Springer was a Scoutmaster for 55 years and is still an active Assistant Scoutmaster. The presentation was made by Dave McLaughlin (right), DMIC/LBB, and Chuck Megee, CPM/LBB.



A 30-YEAR LENGTH-OF-SERVICE AWARD was presented to ELMER BOOTH, OBSERVER, CHARLOTTE 5 NNW, TX. Robert W. Manning, Chief, RCPS, Fort Worth, TX, made the presentation.



A 40-YEAR LENGTH-OF-SERVICE AWARD was presented to JAMES H. GIBBS, OBSERVER, CROCKETT, TX. Alan Starnes, CPM/Waco, TX, made the presentation.



LORINE R. JENKE, OBSERVER, FEDOR, TX, received a 30-YEAR LENGTH-OF-SERVICE AWARD from Alan Starnes.



A 30-YEAR LENGTH-OF-SERVICE AWARD was presented to WILMA BENNETT, OBSERVER, DERBY 1 S, TX. Bob Drummond presented the award.

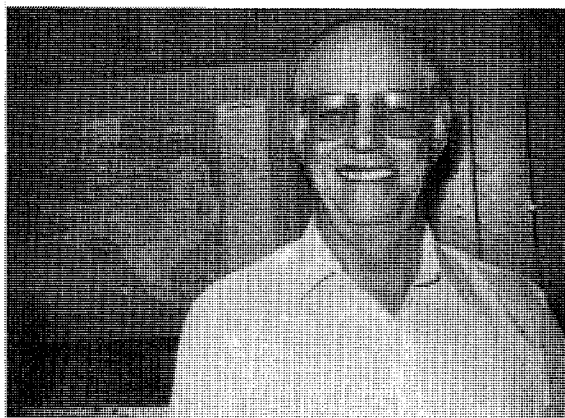


A 30-YEAR LENGTH-OF-SERVICE AWARD was presented to TRAVIS SMITH, OBSERVER, JAYTON, TX, by Chuck Megee.

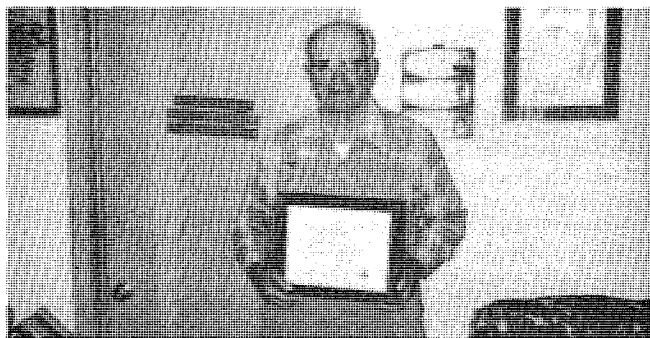
## SOUTHERN REGION



AUDREY VARGA, OBSERVER, CARTA VALLEY, TX, received a 30-YEAR LENGTH-OF-SERVICE AWARD. Presentation was made by Robert W. Manning.



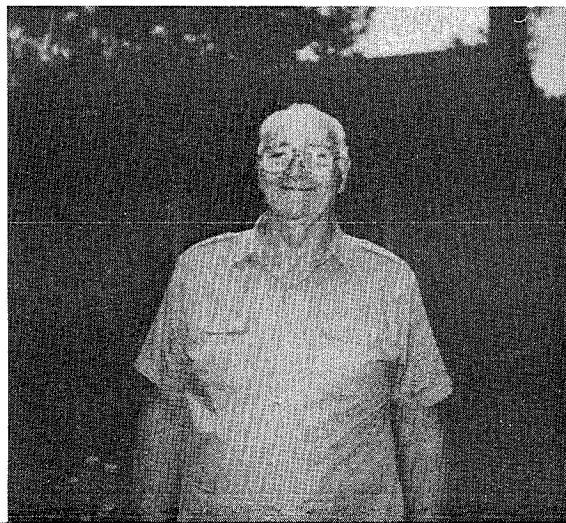
RONALD BAILY, OBSERVER, EASTLAND, TX, received a 10-YEAR LENGTH-OF-SERVICE AWARD. Mr. Baily works for the U.S. Soil Conservation Services and is on a committee to organize a nationwide computer program combining climatology and soil science references. Presentation was made by Jerry Wolfe, CPM/FTW.



TRAVIS FLOWERS, OBSERVER, PERRYTON 21 S, TX, received a 15-YEAR LENGTH-OF-SERVICE AWARD. Mr. Flowers has been a farmer south of Perryton most of his life. Although the area appears to be almost flat, just to the south looks like a miniature Grand Canyon. Chuck Megee made the presentation.



LAYNE WELLS, OBSERVER, TRENT, TX, received a 10-YEAR LENGTH-OF-SERVICE AWARD. Mr. Wells works as a postal service employee in Trent and is in the farming business also. Jerry Wolfe made the presentation.



H.P. (PAUL) ELROD, NAPLES 5 NE, TX, received recognition for OVER 10 YEARS as a voluntary river and rainfall weather observer on the Sulphur River near Naples, TX. Paul is a retired mail carrier and has observed the river most of his life. An award of appreciation was presented by Jerry Wolfe.



### "Special Recognition"

NORMA JONES, SECRETARY, WSFO, SAN ANTONIO, TX, has been performing outstandingly during the absence of Richard Vehrs, CPM/SAT. Richard has been recovering from a brain tumor operation during the past year. Mrs. Jones has been collecting the monthly forms and tapes, mailing out supplies, and relaying observers problems to the RCP in Fort Worth. We wish to commend you, Norma, for your assistance to the S/TX coop observer's network. You are truly a dedicated topnotch employee and the Southern Region owes you a debt of gratitude.

## CENTRAL REGION -- 100th ANNIVERSARY --



The NATIONAL CENTENNIAL AWARD was presented to the CITY OF ALMA, MI, to CELEBRATE 100 YEARS OF WEATHER OBSERVATIONS taken by dedicated volunteers in Alma, MI. Accepting the award were: Douglas Thomas (left), Alma City Manager; Luther Brodbeck (left center), present observer; and Nancy Gallagher (right), mayor. The award was presented by Stephen Hicks, CPM/DTX, during the Alma City Council Meeting. Photo by Michael Brodbeck.

A JOHN CAMPANIUS HOLM AWARD was presented to LUTHER L. BRODBECK, ALMA, MI, by Stephen Hicks. Pictured from left to right: Douglas Thomas; Luther Brodbeck; Stephen Hicks; and Nancy Gallagher. The award was presented to Mr. Brodbeck during the Alma City Council Meeting. Photo by Michael Brodbeck.



The National Weather Service honored ALFRED WITCOFSKI on July 31, 1993, at the annual Boystown Alumni banquet with the JOHN CAMPANIUS HOLM AWARD. Mr. Witcofski is a life-long resident of Boystown, having arrived as the 135th resident at Boystown's original location at 13th Street, Omaha, NE. He moved with Father Flanagan to the present location west of Omaha in 1921. Pictured left to right is Terry Landsvork, CPM/OVN; presenting the award is Dave Theophilus, MIC/AM/OVN; Mr. Witcofski; and Tom Sinclair, Central Region CPM.

## CENTRAL REGION



A 40-YEAR LENGTH-OF-SERVICE AWARD was presented to HENRY PRILLWITZ, BERRIEN SPRINGS 5 W, MI, by Stephen Hicks. Mr. Prillwitz is the dean of Michigan weather observers. He was also a 1991 John Campanius Holm Award recipient.



A 20-YEAR LENGTH-OF-SERVICE AWARD was presented to WILLIAM MEYER, JR. (RIGHT), DIMONDALE 1 WSW, MI, by Stephen Hicks.



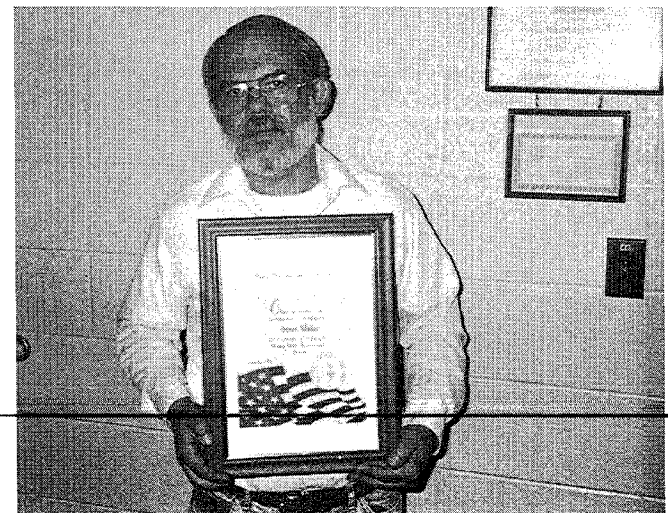
A 25-YEAR LENGTH-OF-SERVICE AWARD was presented to the CITY OF GRAYLING, MI. Bob Cinciala (left) accepted the award presented by Stephen Hicks.



A 20-YEAR LENGTH-OF-SERVICE AWARD was presented to LLEWELYN VEESER (right), SPALDING 1 SSE, MI, by Dave Guenther, MIC/MQT.



A 25-YEAR INSTITUTIONAL AWARD was presented to the DOWAGIAL WASTE WATER TREATMENT PLANT. The award was accepted by: Steven Wild (left); Don Grady (center); and Kevin Cox (right). Not pictured Tony Farrow.



A 20-YEAR LENGTH-OF-SERVICE AWARD was presented to JAMES WALKER, VASSAR, MI, by Stephen Hicks.

## CENTRAL REGION



A 15-YEAR LENGTH-OF-SERVICE AWARD was presented to JAMES BENOVIC, MONTAGUE 4 NW, MI, by Stephen Hicks.



A 10-YEAR LENGTH-OF-SERVICE AWARD was presented to CHARLES AND KARLA BUGG, GRAND MARAIS 2 E, MI, by Stephen Hicks (left).



A 15-YEAR LENGTH-OF-SERVICE AWARD was presented to CARL BROWN, BURLINGTON 3 E, MI, by Stephen Hicks.



A 10-YEAR LENGTH-OF-SERVICE AWARD was presented to RICK MOHR, CASS CITY 1 SSW, MI, by Stephen Hicks.



A 10-YEAR LENGTH-OF-SERVICE AWARD was presented to BRUCE ANDERSON, VESTABURG, MI, by Stephen Hicks.



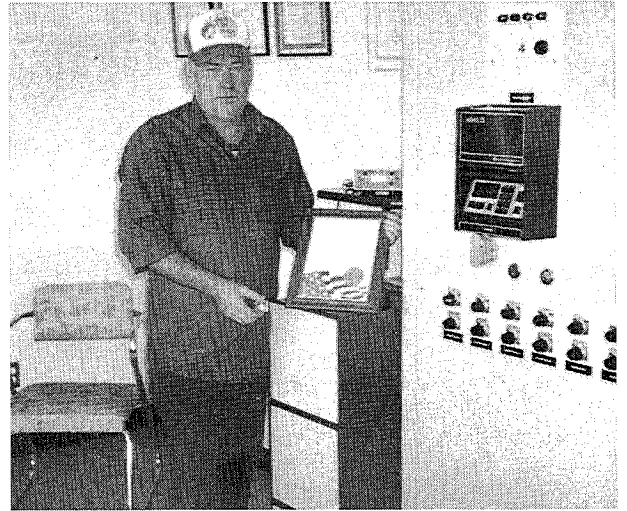
A SPECIAL SERVICE AWARD was presented to ART WIEST on his retirement from the Michigan State University Kellogg Biological Station at Gull Lake, MI. Mr. Wiest had taken the weather observations at the station for 25 YEARS. Pictured (left to right) are his daughter, Kathy Wiest, Mrs. Wiest, and Art.



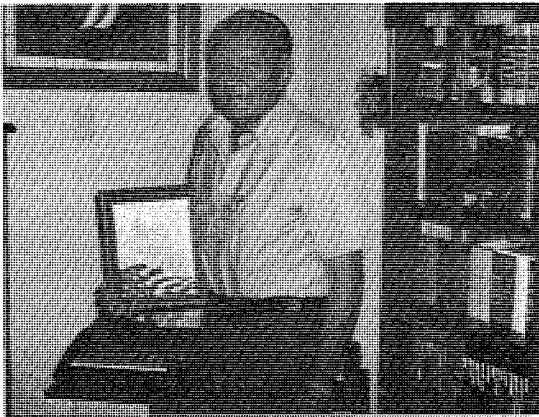
## CENTRAL REGION



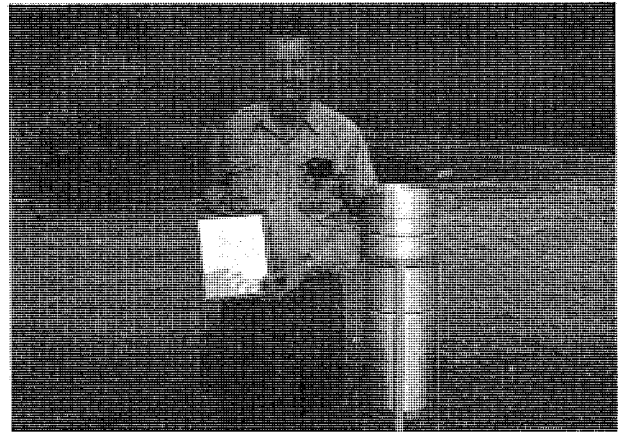
U.S. SOIL CONSERVATION SERVICE, ELSBERRY, MO, was presented a SPECIAL SERVICE AWARD for its 47 YEARS OF DEDICATED OBSERVATION AND RECORDING CLIMATOLOGICAL DATA. Left to right: Steve Bruckerhoff, Pam Stewart, and Jim Henry.



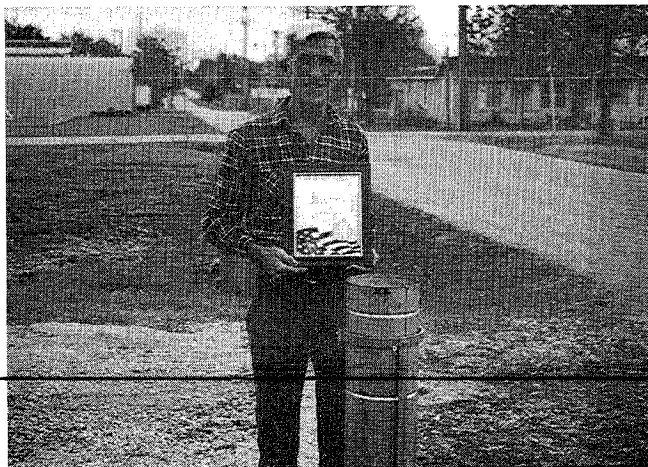
WILLIAM J. WHITENER, OBSERVER, FREDERICKTOWN, MO, was presented a 20-YEAR LENGTH-OF-SERVICE AWARD. He takes temperature and precipitation readings. His observation forms are neat, accurate, timely, and a ROSA error rate of zero.



ROBERT NIEMAN, OBSERVER, LOCKWOOD, MO, was presented a 20-YEAR LENGTH-OF-SERVICE AWARD. It is interesting to note that the observing program in Lockwood has been in the Nieman family and at the same location since 1931. Robert's father, Hubert, took observations from 1931-1972.



AUBREY HARGIS, OBSERVER, HIGBEE, 4 S, MO, was presented a 10-YEAR LENGTH-OF-SERVICE AWARD. Like many of us in the National Weather Service, Mr. Hargis is familiar with shift work. He has worked midnights for the past 12 years.

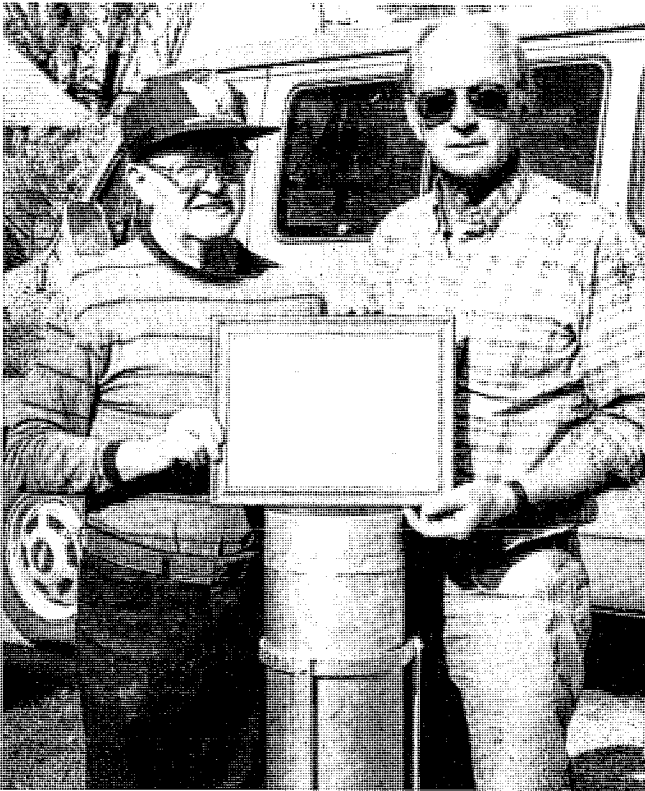


On this centennial site of LAMAR, MO, a 20-YEAR LENGTH-OF-SERVICE AWARD was presented to RUSSELL L. PEARSON.



JAMES WOELICH, OBSERVER, ST. GENEVIEVE, MO, was presented a 10-YEAR LENGTH-OF-SERVICE AWARD. He takes precipitation and river readings daily for the NWS.

## CENTRAL REGION



HERMAN KORTHALS (left) was presented a PLAQUE FROM THE NATIONAL WEATHER SERVICE LAST WEEK IN RECOGNITION OF SERVING AS A VOLUNTEER WEATHER OBSERVER FOR THE PAST 35 YEARS IN PLATTE, SD. Making the presentation was David Olkiewicz of Sioux Falls. (Enterprise photo by Sharon Huizenga)



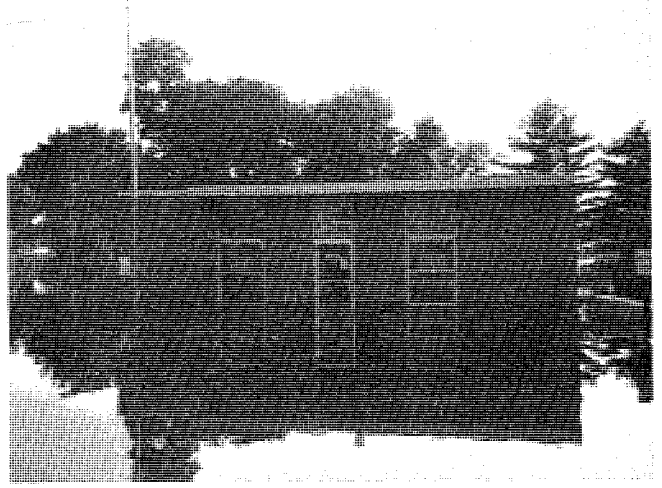
SOPHIE SARSLAND is pictured with her SPECIAL SERVICE AWARD from the National Weather Service. Sophie and her late husband, Walt, maintained a weather station for 25 YEARS IN LUDLOW, SD, recording temperature and precipitation.

The information from this station, as well as being sent to Asheville, NC, is also forwarded to the Climatological Office at SD State University to develop an agricultural forecast and to be used weekly in the Crop Summary Bulletin.

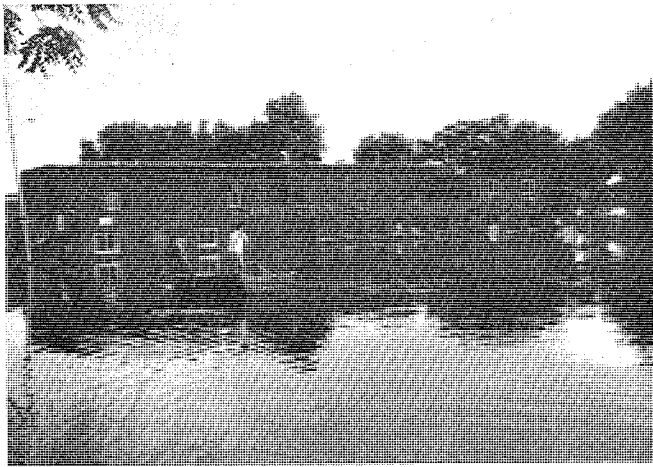


CLARA BRAUN was presented a SPECIAL SERVICE AWARD by David Olkiewicz of the National Weather Service. It is given in RECOGNITION AND APPRECIATION OF SIGNIFICANT SERVICES RENDERED TO THE NATIONAL WEATHER SERVICE FOR 15 YEARS as an observer, by maintaining and recording precipitation gage data in Buffalo, SD.

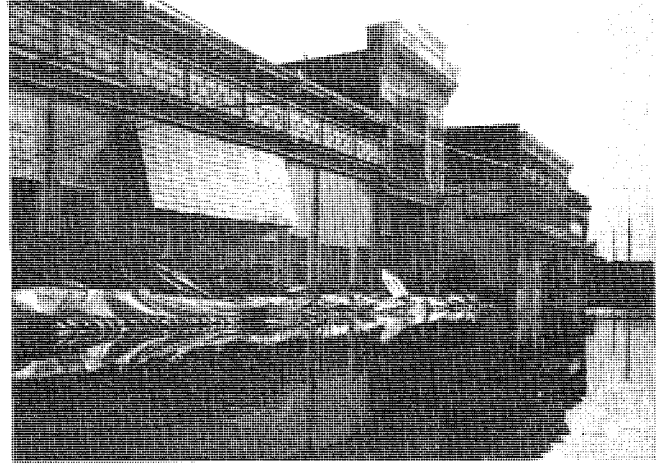
# CENTRAL REGION



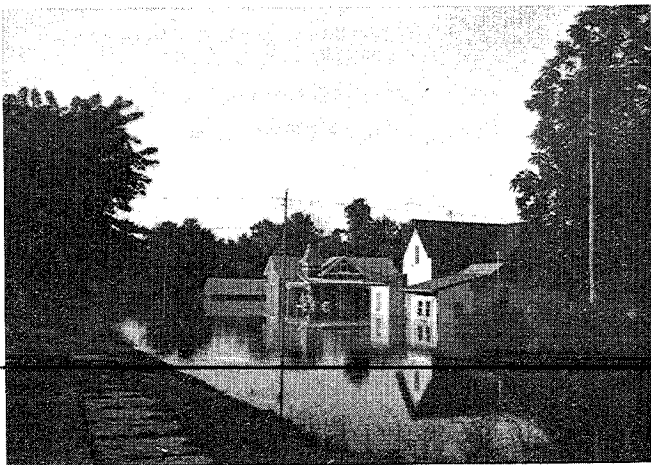
These are some pictures I took at Keithsburg, IL, when I went there to add another section to the staff gage at the Mississippi. Charles Brown is the observer with his parents. Duke and Judy Brown help him. Duke took me out in a boat to put the extra section on. (Text and photo by William Nelson, CPM/IL)



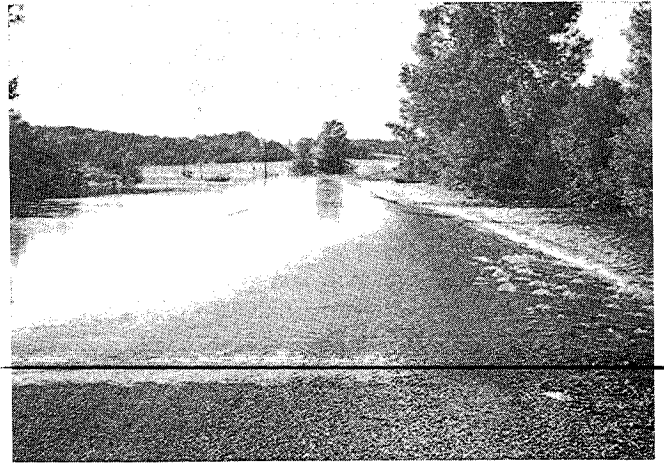
Keithsburg, IL: June 1993 - Mississippi flooding just south of Post Office on same street.



Lane, KS: The highway leading north of Lane had water under its bridge, only 27 inches official. (Photo by Greg Painter, CPM/Topeka).



Keithsburg, IL: June 1993 - Flooding in downtown from Mississippi.



Keithsburg, IL: June 1993 - Mississippi flooding north part of town.

# What's Causing All The Floods?



After A Summer Of Record Floods, It's Time To Explore The Conditions That Created Them

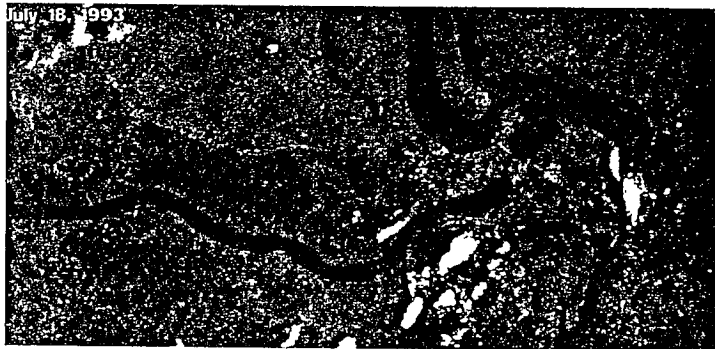
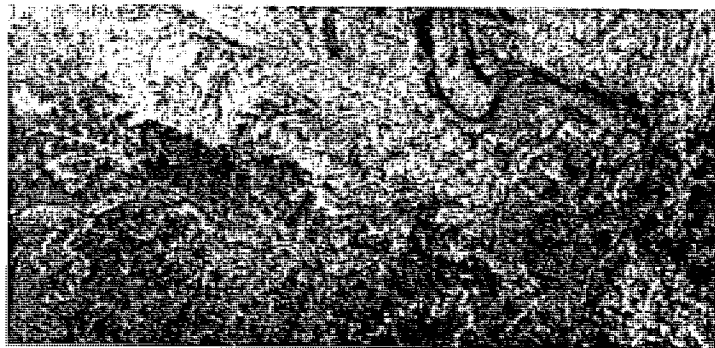
*With a continued series of extreme weather incidents, people are starting to question why, in a short period of time, we are having "The Snowstorm of the Century" and "The Worst Flooding Ever in the Midwest." Popular media, during the flooding, showed farmers and politicians all pondering if the environment, global warming, or some type of man-made cause was behind the natural disasters. Now it's time to put popular "meteorology" aside, and begin to look at the science of the recent floods.*

**By Bob Scott**  
**Illinois State Water Survey**

**S**ummer thunderstorms that roam across the Midwest during the late spring and summer months bring locally heavy rainfall to America's heartland. Frequent thunderstorms in the spring and summer are common in the Midwest, and to many people (especially farmers) they are often desirable events.

However, too much of a good thing can be devastating. Farmers in parts of the western Midwest had seen enough of a "good thing" in early May, and urban dwellers were not far behind.

The problems resulting from excessive rainfall over the last few months in Iowa, Missouri, Illinois, Minnesota, Wisconsin, North and South Dakota, Nebraska, and Kansas can be blamed largely on abnormal patterns in the large scale weather features overlaying the re-



Landsat images from the Earth Observation Satellite Company show the Missouri, Mississippi and Illinois rivers on July 4, 1988 during the 1988 drought (top picture) and on July 18, 1993 during flooding. The river running the width of the image is the Missouri River. The river running from top to bottom, with the widest width, is the Mississippi River. The river running from the top into the Mississippi is the Illinois River. The land area underneath the point where the three join is the St. Louis region. Healthy vegetation is bright green, and bare soils are tan.

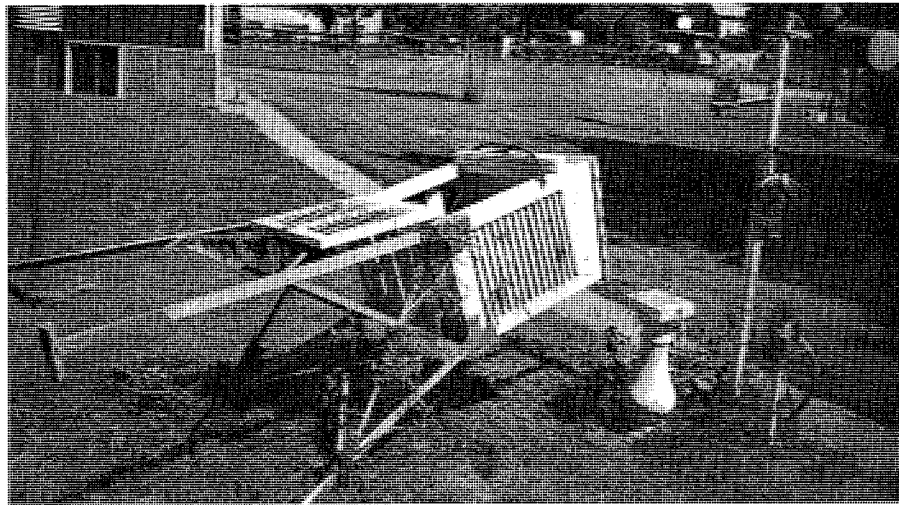
gion. These synoptic patterns, as meteorologists call them, were arranged in such a way that the skies could do nothing else but rain....and rain they did.

### **Polar Jet Stream Moves South**

In average years, a dominant weather

feature across central parts of North America is the polar jet stream—a river of fast flowing air located high in the atmosphere. This stream of air forms a boundary, or dividing line, between warmer air to the south and cooler air to the north. Low pressure systems, or waves, tend to move

# CENTRAL REGION



along this path, producing precipitation as they cross the Midwest due to the typically high amounts of surface moisture available from the Gulf of Mexico, or occasionally the eastern Pacific.

This boundary is the same feature that in winter months guides intense storms with heavy snow across the country, and behind which Arctic cold air flows deep into the United States. By contrast, the jet stream during the summer is usually weak, and typically found much farther north in Canada. Hence, temperature differentials from north to south in the U.S. during the summer are small—any given summer day in Florida or North Dakota might well have the same temperature (not so during January).

## Bermuda High Comes Onshore

A second important feature in a typical summer is a large region of high pressure found in the Atlantic, well off the southeastern coast of the U.S., the so-called Bermuda High. The clockwise circulation of the Bermuda High (anticyclone) provides a constant flow of warm, moist tropical westward-moving air over the Caribbean, across the Gulf of Mexico and northward into the eastern half of the country.

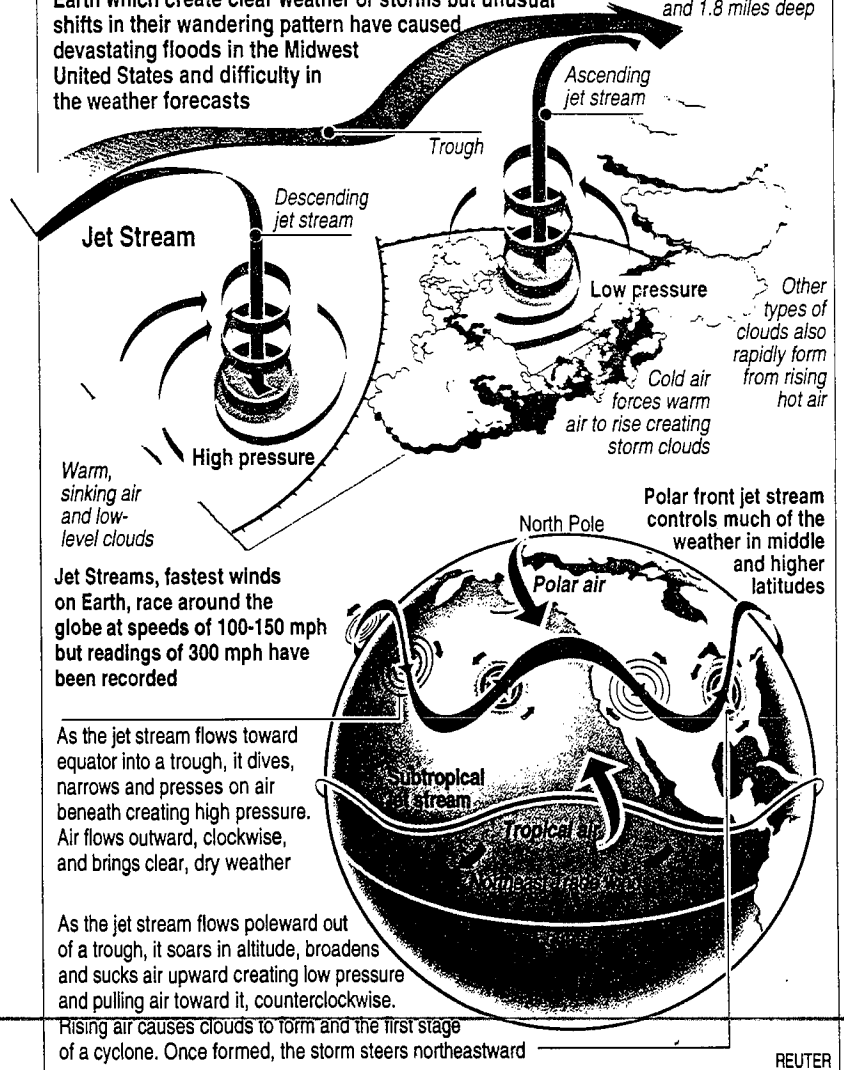
Generally, the Bermuda High and the Polar Jet are quite far apart, and interact only occasionally. However, they are not fixed features over their "average" locations. They can, and

September 1993 1-800 547-0890

## HOW THE JET STREAM WORKS

Jet streams are meandering ribbons of air around the Earth which create clear weather or storms but unusual shifts in their wandering pattern have caused devastating floods in the Midwest United States and difficulty in the weather forecasts

300 miles wide and 1.8 miles deep



REUTER

Source: EARTH by Derek Elsom and Atlas of Earth Mysteries by Philip Whitfield

# CENTRAL REGION

do, oscillate significantly, moving several hundred miles in a day or two, thus spreading their influences across a much larger area.

## Spring Patterns Continue Through Summer

If the jet over Canada were to strengthen and move south at the same time as the high in the Atlantic moved west, the flow of air between the two systems would become more pronounced. This situation would result in additional moisture and rainfall in regions near the jet because warmer, moist air from the south would interact with cooler, dry air from Canada. Furthermore, if for some reason these massive systems became semi-fixed in close proximity, heavy rainfall would continue to occur on almost a daily basis. This is precisely what happened during the late spring and summer of 1993.

As the cover of this month's issue shows, a strong polar jet stream became fixed over the central Plains, allowing for low pressure systems to move deep into the United States. This pattern is much more typical of spring. Abnormally cool air for this time of year was allowed to flow into the north central part of the country.

At the same time, a strong high pressure system, shown as a ridge in the jet stream along the east coast, moved westward out of the Atlantic and became entrenched over South Carolina and Georgia creating clear skies and little possibility of rain for the Southeast. Rather than providing moisture for South Carolina, the system created a deep flow of moisture moving out of the western Gulf of Mexico into the central Plains and western Midwest.

As the warm and cool air masses met, a natural trough of low pres-

sure formed near the boundary between the air masses. The door was open for warm, moist air from the south (enhanced by daily heating) to begin an upward spiral while the cooler air from the north moved southward and under the buoyant Gulf air. Low pressure systems moving along the jet perturbed the atmosphere even more. The upwardly spiraling moist air chilled high above the surface, condensed, formed convective clouds, and released enormous amounts of rainfall.

## Patterns Persist

The weather pattern just described is not particularly rare. In a given summer, this pattern may occur several times. However, it is extremely unusual for it to persist for so many weeks, bringing heavy rainfall to the same areas on almost a daily basis. Add to this the fact that much of the same region was drenched with the wettest July on record last year and a normal-to-wet winter. With soil moisture near capacity there was virtually no place for much of the rainfall to go but into streams and rivers.

## Annual Precipitation Has Already Fallen in a Portion of the Midwest

As Figure 1 shows, the entire Midwest, except for Kentucky and the Ohio Valley, is above normal for the first 7 months of the year, and some areas have already received their average long-term annual precipitation.

The reasons for the weather patterns to become fixed as they did in June and July are unclear and will remain unclear until better atmospheric models are available. It now appears that the persistence that caused the flood of 1993 has ended. However, the hydrologic effects of what may go down as the greatest U.S. flood on record will last well into the fall and even next year. #

*Bob Scott is a Research Meteorologist and Associate Professional Scientist at the Illinois State Water Survey. Storm, The World Weather Magazine*

## Percent Average Precipitation

January 1 Through July 31, 1993

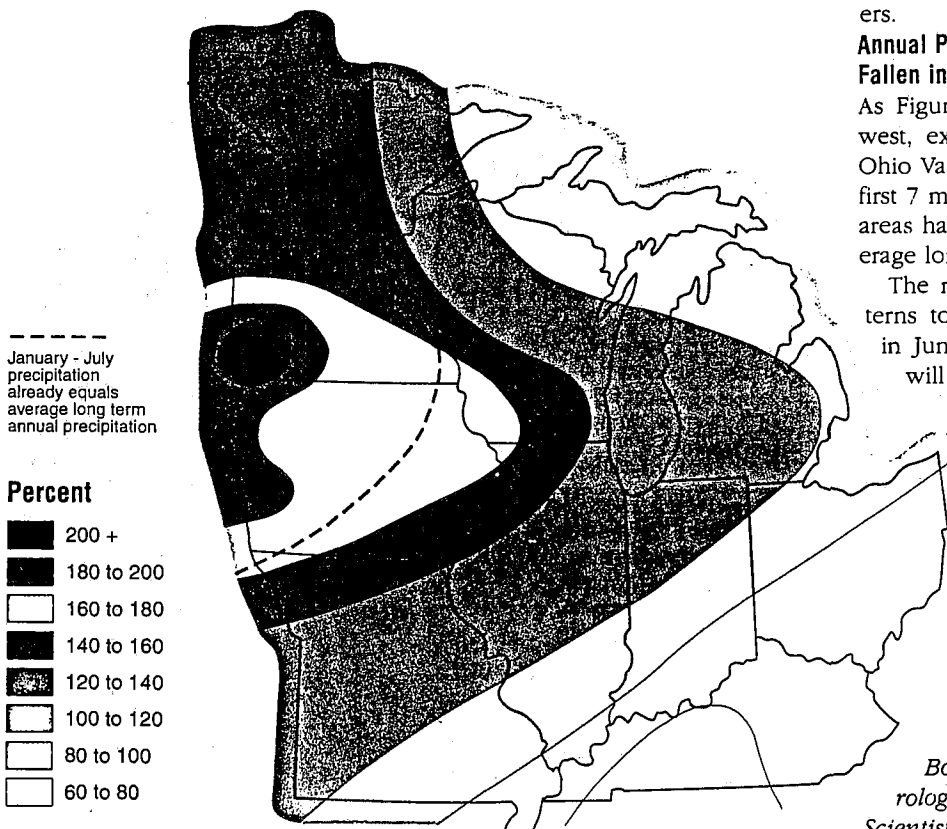
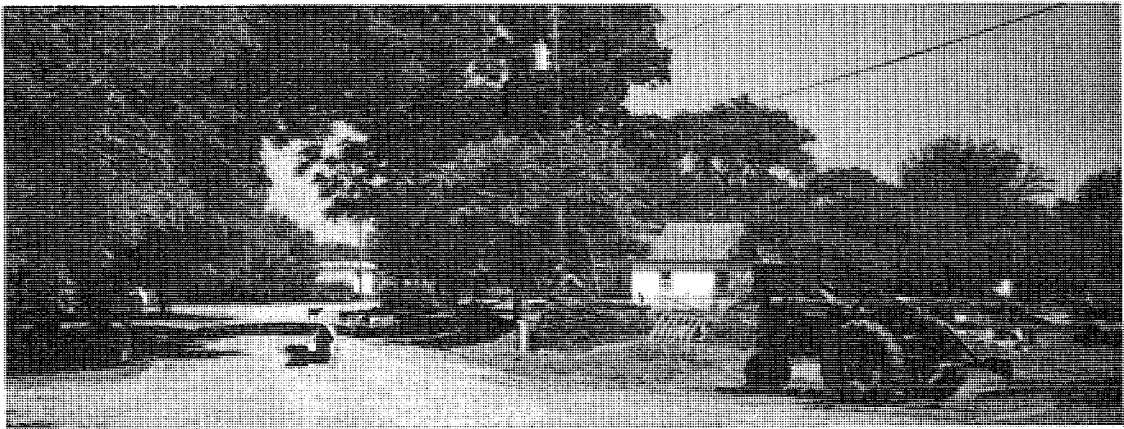


Figure 1.

## CENTRAL REGION



Ellsworth, KS: These two added pictures, above the article from "Storm" magazine, illustrate some degree of the rivers devastation against even the NWS Meteorological equipment. We appreciate the permission from "Storm" magazine editors to reprint its cover story/part 1: "What's causing all the floods?" (Both photos by Greg Painter, CPM/Topeka, KS.)



When the Mississippi and its tributaries, at the northeastern part of Kansas, flooded many farms, lots of livestock perished, but goats...Although our Cotton Region Shelter (CRS) at Ellsworth was pulled out of ground, as well as many barns and pens - goats survived by abandoning their "raft" and swam back home cheerfully. (Photos by Greg Painter, CPM/Topeka, KS.)

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