NOAA's National Weather Service

The National Cooperative Observer

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Inside

NWS Honors New York Farmer with Special Award Recognizing 84 Years of Service

When **Richard G. Hendrickson** logged his first weather observation for the U.S. Weather Bureau, the precursor to the National Weather Service (NWS), Herbert Hoover occupied the White House. Since then the Bridgehampton, NY, farmer has filed twice daily reports, tallying more than 150,000 individual weather observations and playing a critical role in building our nation's climate history.

The most recent NWS Cooperative Observer Award.

As part of the NWS Cooperative Observer Program, Hendrickson collects data from the weather observing station on his farm and calls in temperature, precipitation, wind and any other significant weather factors to the NWS New York City office in Upton, NY.

On July 27, Hendrickson, age 101, received an award for his long standing service–84 years–to the nation. Since Hendrickson is the first in the history of the program to serve for more than eight decades, the new 80-year service award was named in his honor.

"Volunteer observers are the bedrock of weather data collection," said **I. Ross Dickman**, NWS NYC Meteorologist-in-Charge (MIC). "Richard has contributed thousands of weather measurements to build the climate record for Long Island and after 84 years, holds the title of the nation's longest-serving volunteer weather observer. With this award, we honor Richard for his selfless dedication to his community and the country."

Hendrickson started volunteering as a weather Observer when he was 18 years old. His lifelong commitment stems from personal interest in weather and a sense of patriotism. "I enjoy observing the weather. It's what I do for my country," he says.

Hendrickson's enthusiasm for weather extends beyond collecting data. In 1996 he authored, "Winds of the Fish's Tail," which highlights his years of observing the weather on Long Island's East End. Hendrickson also writes a column on weather that is published in two eastern Long Island newspapers. The award presentation took place during an open

"I enjoy observing the weather, it's what I do for my country," said Hendrickson

Richard G. Hendrickson looks out over the Atlantic Ocean on a stormy day in Bridgehampton, New York (1930s). Photo by **D.L. Hendrickson**.

house at the NWS Upton, NY, forecast office.

Throughout the day, visitors were invited to tour the forecast operations floor, meet meteorologists and learn how forecasters track storms and issue warnings.

The first extensive network of cooperative stations was set up in the 1890s as a result of a Congressional Act that established the U.S. Weather Bureau. Many historic figures maintained weather records, including Benjamin Franklin, George Washington and Thomas Jefferson. Jefferson maintained an almost unbroken record of weather observations between 1776 and 1816, and Washington took weather observations just a few days before he died.

You can see Richard in action and learn more about Coop history through a short, NOAA News video.

Richard G. Hendrickson, 101 years old, gathers weather data for the NWS in Bridgehampton, N.Y. Photo by **Sara Hendrickson**.

Personal View of Prof. Cleveland Abbe, 1870-1885

Professor Cleveland Abbe's story continues from the spring edition of the **National Cooperative Observer**. *Abbe was a highly respected civilian meteorologist who worked for the Signal Service and later the Weather Bureau. Many considered him the expert on forecasting in his time. This article was written by Prof. Abbe with minor editorial changes.*

True science is never speculative; it employs hypotheses as suggesting points for inquiry, but it never adopts the hypotheses as though they were demonstrated propositions. There should be no mystery in our use of the word science: it means knowledge, not theory, nor speculation, nor hypothesis, but hard facts, and the framework of laws to which they belong.

The observed phenomena of meteorology and the well-established laws of physics are the two extremes of the science of meteorology between which we trace the connection of cause and effect. Insofar as we can do this successfully, meteorology becomes an exact deductive science.

That relation between the Signal Service and the science of meteorology, which is of fundamental importance, consists in the character of the observations made at the stations. In reference to this branch of our subject, I need only say the whole time of the regular observers was given to the work of the Signal Service, and there was a multitude of duties to engross their attention.

The fact that the Signal Service employed hundreds of men whose lives were concentrated upon the maintenance of a complete record of the weather demonstrates the thoroughness of its equipment for this work. It was indeed impracticable to maintain hourly observations,

but for many years, four simultaneous or telegraphic and three local time or climatic observations were made besides the records of the maximum and minimum thermometers and the continuous record of the wind.

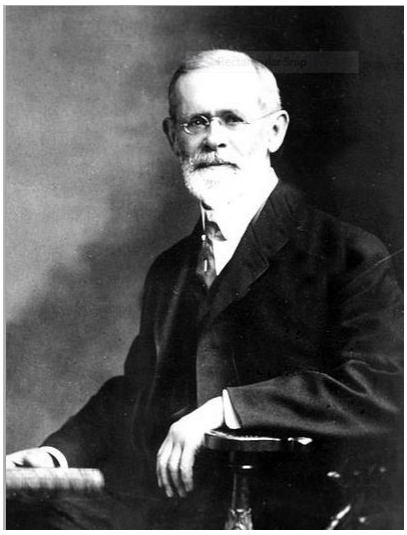
With regard to the uniform character and general accuracy of these observations, there can be no doubt that the system of instructions and inspection, and especially the inter comparison of the telegraphic reports that attended the study of the tri-daily weather map, served to prevent and detect any appreciable variation from the desired standard of accuracy. Very few instances are on record in which an Observer's observations proved to be so unreliable that they had to be rejected. In 1891, about two-thirds of the observers had been in the Service over 5 years and about one-third over 10 years.

With regard to the locations of the stations, it must be acknowledged that they were not selected for climatic purposes but almost wholly with a view to dynamic meteorology and the publication of storm warnings and weather predictions.

The Service needed to know the pressure, temperature, and the rainfall approximately, but it needed to know the strongest winds quite accurately. The first great problem of dynamic meteorology is to know the local and general motions of the air, and in fact, climatology may also be said to depend upon the same knowledge.

To bring about intimate and direct relations with the national business interests, General Myer requested the respective cities to organize committees which should feel themselves responsible to him as the representatives of popular interests and needs.

From the chairman of each committee there was usually received an annual or semiannual report, together with many intermediate letters. The committees were kept duly apprised by our observers of the progress of the Service in Washington, and, on the other hand, it gave General Myer timely notice of the character of the work done by the local weather observer. The duties of these committees included both praise and criticism, and occasionally, some excellent suggestions. The committees very existence always demonstrated the desire of the Government



Prof. Cleveland Abbe

to labor in the interests of the people. I must stop a minute to call attention to that feature of the work of the Service which has enabled it to get up its daily weather maps with a celerity and regularity that have always been the wonder and admiration of those accustomed to ordinary commercial telegraphy.

Despite the numerous telegraph wires that connect our principal cities, it ordinarily happens that individual dispatches must take their turn, and thereby suffer a delay that may amount to many hours.

General Myer saw plainly that this would never do for the work he had in mind. His experience during the [Civil] war had accustomed him to attain the utmost possible dispatch, and he demanded this also in his new application of military signaling to the commercial needs of the country.

It required much argument to induce the telegraph companies to accept the scheme that he proposed. They entered into it, at first, only on agreement that after a few months' trial it might be modified, and, in fact, such was the friction between the conflicting interests that on the 4th of March 1871, all telegraphic dispatches were suddenly refused by the Western Union Telegraph Company. For several days I made weather predictions based on such few reports as we could obtain from our stations through rival telegraph companies.

The same trouble occurred in the following year, but eventually General Myer's circuit system triumphed. By this simple arrangement

The observed phenomena of meteorology and the well-established laws of physics are the two extremes of the science of meteorology between which we trace the connection of cause and effect.

One of the matters I most urged General Myer to address was the necessity of stationing experienced officers at centers such as Chicago, St. Louis, New Orleans, and San Francisco to make forecasts for those more remote sections of the country.

the Observers deliver their short cipher dispatches to the respective telegraph Observers at prearranged minutes. All the men on a specific line of wire, or "circuit," are at hand simultaneously, and any dispatch put on that circuit wire is received simultaneously by all the Observers.

As soon as any one dispatch of a few cipher words is telegraphed, another succeeds it, and thus, in a minute, a number of stations have interchanged their reports so far as that circuit is concerned. The next minute another circuit, joining on to the preceding one, is opened, and its own, together with all the accumulated reports, are interchanged. In this manner it is found to require only from 20-30 minutes to interchange reports between all the important telegraph U.S. centers as they converge toward Washington In an hour after the observations are made, the Observers at all the larger cities begin the construction of weather charts similar to the standard chart that is published at Washington.

Cautionary Signals: Wind, Weather

The synopses and probabilities (forecasts) that were furnished to the daily press of the country reached the public eye after the lapse of considerable time, nor was it at all certain that they would reach mariners for whom the service was designed. It was, therefore, necessary to supplement these forecasts by a system of visible signals that could be hoisted immediately by telegraphic orders from Washington. The Service instituted this system of cautionary storm-wind signals in the summer of 1871, as soon as it was demonstrated that our knowledge of the movements of the storms justified taking that step.

The display of the square red flag with the black center, the cautionary danger signal, marked a passage from the general weather probabilities to the definite special prediction of a specific velocity of wind within a specific time and a small region. The region was defined as within a radius of 100 miles, and the time limit was 8 hours. Later, the Service modified the signal to show the general direction of the expected winds and whether the winds would be above or below a certain velocity.

A decided advance in our methods of communicating with the public was made early in General Hazen's administration by the adoption of a special signal for the so-called "cold wave." In many localities, people began to use special signal devices—flags and balls, steam whistles and bells, and in Ohio the so-called railroad weather signal. By means of a few flags (white, blue, and black), the probable local weather for the next day is indicated in every town and almost every telegraph and telephone station in the country so that any one may know what to expect and prepare for.

River Floods and Their Predictions

The Signal Service began receiving telegraphic reports of the condition of the rivers by January 1, 1872. This work was so desirable an expansion of the work originally authorized there could be no doubt of its propriety. At first it seemed sufficient to publish the reports of stages of water as received at the office, but soon the same general indications of probable rising and falling water began to be added to the weather probabilities. The gauge readings, above which a stage of water was considered to be dangerous, as well as the times required for flood waves to descend along the channels of the rivers, as first adopted by me, were revised in a report by General Greely in 1874.

Local Forecasts

One of the matters I most urged General Myer to address was the necessity of stationing experienced officers at centers such as Chicago, St. Louis, New Orleans, and San Francisco to make forecasts for those more remote sections of the country.

A beginning of this kind was eventually made by establishing Lieutenant Woodruff at St. Paul and Lieutenants Maxfield and Finley at San Francisco. But the original argument was to the effect that at every city where the map was published daily, a local forecaster ought to be able to do better or, at least, as well as the Central Office in Washington, and that on many accounts it was best for the Service to develop a large board of forecasters rather than to confine the work to a few military officers in Washington. The force of this argument was finally felt, and the preparations for the work of the local forecasters was already being made by the Signal Service when transferred (to the Department of Agriculture) in 1891.

Look for more Signal Service History in the fall **National Cooperative Observer**.

100 Year Honored Institution Awards

From left, Observers **Dan Foster, Vicki Brown, Rodney Zimmerman** and **Marvin Farmer** show their award presented by NWS MIC **Scott Mentzer**.

NWS presented a 100 Year Honored Institution Award to the **Northwest Research-Extension Center** in Colby, KS. Established in 1914, the Colby Agricultural Experiment Station, as it was originally known, became the repository of all official weather records for Colby. The Signal Corps, a branch of the Department of the Army, established a weather station in Colby on June 1, 1888, with **C. E. Bennett** as the Observer. This station operated until 1889 and then was restarted in 1892 by Observer **Charles Buschow**. Daily weather records have been submitted continuously in Colby since then.

The Colby Agricultural Experiment Station was established with the primary purpose of finding solutions to agricultural problems created by the weather in northwestern Kansas. At the time it was founded, the official weather station was at 4th and Garfield; **G. H. Kinkel** was the Observer.

In 1935, **J. B. Kuska** became the official Observer. J.B. was the head of the U.S. Department of Agriculture (USDA) Dry Land project at the Colby Station so the official weather station in Colby became closely linked with USDA research activities. When J.B. retired in 1957, various staff members continued recording the weather records.

Scott Mentzer, MIC at NWS Goodland, KS, presented the award to the staff currently responsible for observations in Colby.

The staff at the **Syracuse Water Supply in Skaneateles, NY,** was presented with a 100 Year Honored Institution Award. The award was presented by Hydrometeorological Technician (HMT) **Mitch Gilt**, NWS Binghamton, NY. Photo by **James Brewster**, NWS Service Hydrologist.

100 Year Honored Institution Awards

Pictured from left: **Alan Summers, Zak Copeland, Kristi Copeland, Dave Sorenson, Ramon Calzada, Rose Elguezabal, Les Howell, Kevin Park**, and **Randy Gamble**. Not pictured are **Juan Torres** and **Javier Uribe**.

Observing Program Lead (OPL) Gary Wicklund, NWS Pocatello, ID, presented a 100 Year Honored Institution Award to the University of **Idaho's Agriculture Experiment Station**. **Randy Gamble** accepted the award. Randy is the current Observer of record, but has shared observing duties with eight other staff members to ensure an uninterrupted record totaling nearly 37,000 observations. The site dates back to January 1912. The station joined the Cooperative Weather Observing Program in April 1914.

65 Albert J. Myer Year Award

Oscar Semadeni, right, observer at Cedar Point, UT, with his wife, Lila, were presented with the General Albert J. Myer Award for 65 years of service to the Coop Program. Presenting the award was Data Acquisition Program Manager (DAPM) **John Kyle**, NWS Grand Junction, CO.

Oscar, age 86, is a farmer in southeast Utah. His outlook on life is always optimistic. He has elevated the word neighborly to new levels. From helping fellow farmers year round, to his church work with young people of the area, to raising his own family, he is a huge inspiration.

Edward R. Stoll 50 Year Length of Service Awards

HMT **Philip Beda**, NWS Hastings, NE, proudly presented **George Umbarger** with the **Edward R. Stoll** Award for 50 years of Service as a Cooperative Observer. George continues the climate history of Genoa, NE, started in 1876. George has measured more than 1,397 inches (116 feet) of liquid precipitation. On average, the Genoa area sees 26.23 inches of precipitation per year. The most George measured in a year was 41.08 inches in 1982. Over the past 50 winters George has measured 1,550 inches (129 feet) of snow. The warmest temperature George has recorded is 108°F, in June 1988; the coldest, -30°F in January 1974.

Johnnie Wilson, right, of Crosbyton, TX, accepts an Edward H. Stoll Award for serving 50 years as a Coop Observer. The award was presented by MIC **Justin Weaver**, NWS Lubbock, TX. Johnnie is a native of the South Plains of Texas. In attendance was Johnnie's wife, **Sue**, and Forecaster **Jeff Vitale.** Photo by OPL **Shawn Ellis**.

50 Year Honored Institution Award

MIC **Mark Jackson** and Cooperative Observation Manager (CPM) **Bonnie Bartling**, NWS Oxnard, CA, presented the **Santa Barbara El Estero Wastewater Treatment Plant** with a 50 Year Honored Institution Award. The staff present represented the Administration, Operations, Maintenance and Laboratory sections of the plant.

Front from left: MIC **Mark Jackson**, **Todd Heldoorn, Louis Chiourn, Mary Thompson, Anne Van Belkom, Gaylen Fair, Maribel Barrios, Donovan Maccarone, Amador Escalante, Lori Weiss, Manuel Romero;** Back: **Rebecca Bjork, Roger Tousignant, Kevin Masterson, John Nielsen, Adam Munce, Darrell Shon, Steve Corral, Thomas Welche, Seth Gelber, Marc Ciarlo, Ed MacGregor, Andrew Ruiz, Gabriel Ibarra, Edith Wells**

OPL **Mark Turner**, NWS Spokane, WA, presented a 50 Year Honored Institution Award to **Roger Bly**, Observer for the city of **St. John, WA, Waste Water Treatment Plant**. The award was presented at the St. John's City Hall.

45 Year Dick Hagemeyer Service Awards

NWS Burlington, VT, awarded **Ray Allen** of South Hero, VT, with the Dick Hagemeyer Award for his excellence in providing accurate daily weather observations since June 1969. Ray is currently the longest serving Observer of the 58 volunteers across Vermont and northern New York. Ray is the owner of the famed Allenholm Farms in South Hero, VT, known for its apples and pies. His community support includes service to the South Hero Rescue Department, University of Vermont, Chittenden County Fair and American Red Cross. Ray received the Holm Award in 2008 for his years of outstanding service as an Observer as well as a lifetime of unsurpassed support to his community.

MIC **Scott Mentzer,** NWS Goodland, KS, had the privilege of presenting a 45 Year Length of Service Award to **Marvin Orth**. Marvin has been observing precipitation at his farm 8 miles northwest of St. Francis, KS, for the past 45 years. The award was presented after a lunch with Marvin and his wife, **Veda**, at the Park Hill Restaurant in St. Francis, KS. Also in attendance were Warning Coordination Meteorologist (WCM) **David Floyd**, and Administrative Support Assistant **Joy Hayden**. Pictured from left are **Scott Mentzer**, **Marvin** and **Veda Orth**, and **Joy Hayden**.

Ben VanderWeele, right, of Palmer, AK, was presented the 45 Year Dick Hagemeyer Award by NWS Anchorage, AK, WCM **Sam Albanese**. Ben and his wife **Suus** moved to Alaska in 1967 from the Netherlands and immediately took over the observation site from the retiring Observer. By May 1969, Ben also was taking observations at his home. When asked about his dedication to weather observations, he replied, “It just makes sense that weather and farming go hand in hand. To produce such high quality vegetables here in Alaska you need to watch the weather closely.” Photo by HMT **Dave Stricklan**.

25 Year Length of Service Awards

Lewis Black, right, of Blanding, UT, shows his 25 Year Length of Service Award presented by DAPM **John Kyle**, NWS Grand Junction, CO. Lewis is not only the Observer in Blanding, but was an aviation Observer for southeast Utah. Being a long time resident of the area, Lewis has a good idea of the effect that the surrounding terrain has on the local weather and calls the office to inform staff of quickly changing weather conditions. He is an invaluable source of ground truth information.

Mel Bowns of Eagle River, AK, was presented with a 25 Year Length of Service Award. His enthusiasm for the Coop program has spread into the HAM radio community, which Mel is active in. Photo by HMT **Dave Stricklan** WFO Anchorage, AK.

Rollie and **Ward Deering**, Observers in Yuma, CO, were presented with 25 Year Length of Service Awards by NWS Boulder, CO, Meteorologist **James Kalina**.

Shirley New of Speaks, TX, was presented a 25 Year Length of Service Award by HMT **Cory Van Pelt**, NWS Austin/San Antonio, TX.

25 Year Honored Institution Award, 20 Year Length of Service Awards

Haney Wells, right, of Tahoka, TX, accepts a 25 Year Length of Service award from MIC **Justin Weave**r, NWS Lubbock, TX. In attendance was Haney's wife, **Tanya**, and Forecaster **Jeff Vitale**. Photo by OPL **Shawn Ellis**.

From left, **Jeff Mast** and **Jason Reece** of the **Marion Municipal Utilities** accept 25 and 20 Year Length of Service Awards, respectively. Photo and presentation by NWS Northern Indiana OPL **Brentley Lothamer**.

Robert Footlik, Newhall, CA, was presented with a 25 year Length of Service Award by CPM **Bonnie Bartling**, NWS Oxnard, CA. No photo unavailable.

Three wonderful people, **Deanna Berry**, backup Observer, and Observers **Ellen and Paul Bonnifield** in Yampa, CO, were presented with 20 Year Length of Service Awards by NWS Grand Junction, CO, CPM **Becky Klenk**. Deanna and the Bonnefields can tell you anything you want to know about this beautiful and historic area of the Upper Yampa River Basin, nestled up to the Flat Tops Range.

Joe S. Faris, Jr. left, at Catawba, SC, was presented a 20 Year Length of Service Award by OPL **Chris Horne**, NWS Greenville-Spartanburg, SC. Members of the Faris family have been providing daily weather reports for Catawba since 1907!

20, 15 Year Length of Service Awards

John Karstens of the **Jasper Pulaski State Tree Nursery** near Medaryville, IN, accepts a 20 Year Length of Service Award. Photo and award presentation by OPL **Brentley Lothamer**, NWS Northern Indiana.

Marcia Zellman of Buncom, OR, accepts a 20 Year Length of Service Award with help from husband, **Bob**, left. The award was presented by DAPM **Charles Glaser**, NWS Medford, OR. Photo by Service Hydrologist **Spencer Higginson**.

David Wagers, Observer, at Woodrow, CO, was presented with a 20 Year Length of Service Award. The photo and presentation were by NWS Boulder, CO, Meteorologist **James Kalina**.

From left, HMT **James Brown**, NWS Gray, ME, and Observer **Ned Beecher** of Tamworth, NH, show Ned's 15 Year Length of Service Award. Photo by OPL **Nikki Becker**.

Dianne Hanson of Britt, IA, receives her 20 Year Length of Service Award from HMT **Brad Fillbach**, NWS Des Moines, IA

10 Year Length of Service Awards

OPL **Gary Wicklund**, right, NWS Pocatello, ID, presents a 15 Year Length of Service Award to **Dr. Darin Kerr**. Photo by Service Hydrologist **Corey Loveland**.

Tim and Claudia Slagel of Rupert, ID, have contributed to the NWS Coop Observer program for 15 years. OPL **Gary Wicklund**, NWS Pocatello, ID, made the presentation at their home. They requested no photo.

Barbara Weinig of Anchorage, AK, was presented with a 10 Year Length of Service Award. Barbara has been fascinated by weather since 1972 when a friend, who is also a meteorologist, talked about the Gulf of Alaska's unique weather. Barbara also loves gardening. She says the two interests go well together since keeping track of the weather plays a big part in her gardening. Photo by HMT **Dave Stricklan**. NWS Anchorage, AK

HMT **Brad Adams**, NWS Sioux Fall, SD, presented **Jeff Juffer** with a 10 Year Length of Service Award. Jeff continues observations at a site dating back to 1953. Jeff has been employed by the city of Rock Valley for over 20 years. In addition to observing weather, Brad is an avid hunter and fisherman and enjoys spending time with his grandchildren.

David Baldinger, Jr., Observer at Steamboat Springs, CO, was presented a 10 Year Length of Service Award by NWS Grand Junction, CO, DAPM **John Kyle**. David tells the story of the time he was requested to take rainfall measurements at a concert for insurance purposes. He attended the event with visiting friends, and as the event was about to start, the skies opened up. While David manned his post, taking measurements as he agreed to do, his friends returned to his place to enjoy a warm, dry and palatably satisfying (figuratively and literally) evening!

The National Cooperative Observer

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September, October, November Temperature and Precipitation Outlooks From the Climate Prediction Center