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AEROGRAPHER'S MATE

More Than the Navy's
Weather Experts **PAGE 16**

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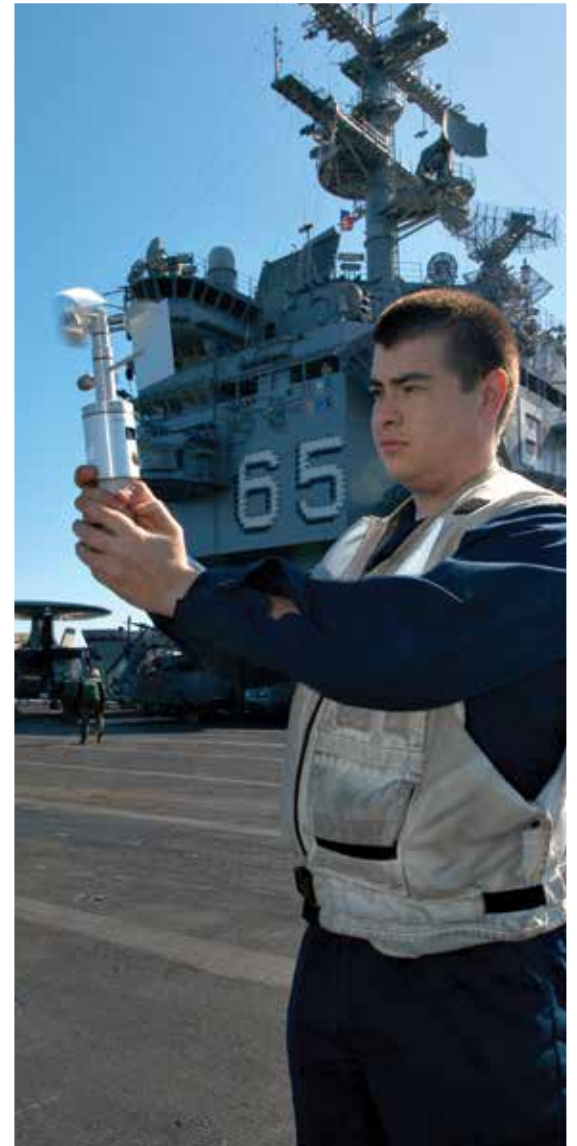
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U.S. Navy photo by Airman Maebel Tinoko.



U.S. Navy photo by Photographer's Mate Airman Justin McGarry.



U.S. Navy photo by Photographer's Mate Airman Alex J. Recalde.

Left top: Aerographer's Mate 3rd Class Faride Muwad from Orlando, Fla., reads surface winds with a handheld Anemometer used for forecasting weather aboard USS Nimitz (CVN 68).

Left middle: Aerographer's Mate Airman Steven L. Davidson of Rockhill, S.C., reviews the AN-SPA radar screen that is used to read the heights of clouds within the radar's radius aboard USS Enterprise (CVN 65).

Right top: Aerographer's Mate 3rd Class Blaine Knab from Manitowoc, Wis., uses a handheld anemometer to accurately find the air speed on the flight deck aboard USS Enterprise (CVN 65).

Right bottom: Aerographer's Mate 1st Class Daryl Meer, left, assigned to Fleet Weather Center Norfolk, and Aerographer's Mate 2nd Class Zachary Yanez, also assigned, set up an Advanced Automated Weather Observation System during Ice Exercise (ICEX) 2016.



U.S. Navy photo by MC2 Tyler N. Thompson.



AEROGRAPHER'S MATE

More Than the Navy's
Weather Experts



Remember General Eisenhower's weather concerns as plans were coming together for the invasion of Normandy? Years of detailed planning went into the D-Day invasion on June 6, 1944, but success hung on one uncontrollable element—the weather. In the days leading up to the invasion, Allied meteorologists delivered the most important weather forecast in U.S. military history. If the forecast was wrong, tens of thousands of men and World War II might have been lost forever. Forecasting weather and sea conditions was critical then, and it remains an integral component of U.S. Navy operations.

The Navy Aerographer rating was officially established in 1924, making it the same age as FRA. In 1942, the Navy's experts in meteorological and oceanographic sciences became known as Aerographer's Mates (AG). An Aerographer's Mate is the Navy's weather forecaster, collecting, measuring and analyzing the elements of the physical environment (land, sea, air, space) and land/sea interface. They bring together all the oceanographic and meteorological data, as well as firsthand observations and measurements to produce forecasts to support flight and navigation safety for naval/joint operations and missions. They also provide expertise in hydrography, geospatial information and services (GIS) and tactical decision aids (TDA), and they combine knowledge of the operating environment with a thorough understanding of warfighting capabilities to assess and predict environmental impacts on friendly and enemy platforms, sensors and weapon systems. They develop actionable recommendations for tactics, techniques and procedures in order to take full advantage of the surroundings and conditions as they work to mitigate risk and enable success across all warfighting capabilities. AGs distribute the information to aircraft, ships and shore activities using a variety of means to direct support of afloat units, fleet/joint staffs or combatant/operational commanders. No aircraft takes off without first checking the weather.

AG "A" and "C" schools are currently located in Biloxi, Miss., at Keesler Air Force Base. AG "A" school concentrates on weather observation and lasts 19 weeks. Upon graduating from "A" school, AGs work toward qualification as environmental observers through completion of personnel qualification standards and job qualification requirements. They also prepare for advanced training at "C" school by the four- to six-year stage of their military career. Those who go on to AG "C" school spend approximately nine months learning to use their observation skills to actually forecast weather patterns.

AGs are assigned to larger ships (such as aircraft carriers, amphibious ships and cruisers) to naval air stations, weather centers and other shore facilities both in the U.S. and overseas. AGs spend about 60 percent of their time assigned to fleet units and 40 percent to shore stations.

How It All Started

Alexander G. McAdie, director of Harvard University's meteorological observatory, agreed to provide Aerography instruction to a small group of U.S. Navy officer candidates. On December 3, 1917, enlisted weather observers — predecessors to today's AG rating and known as Quartermasters Aerographic [QM(A)] — were trained at the QM school located at Pelham Bay Park, on Long Island, N.Y.

Professor McAdie was sworn in to the U. S. Naval Reserve on February 1, 1918, and was assigned to the aviation desk in the Office of the Chief of Naval Operations. The Secretary of the Navy at the time, Franklin D. Roosevelt, encouraged the development of a Naval Aerological Organization, which later became the beginnings of the Naval Weather Service.

In April 1918, McAdie, eight junior officers and 15 QM(A) traveled to Ireland and France, where they set up coastal aerography stations to support offshore patrol flights. When the hostilities in Europe ended, the Naval Aerographic Organization was comprised of 53 reserve aerologists and 200 enlisted personnel. Of course, most of the enlisted personnel were from the U.S. Weather Bureau.

In 1918 the Navy began to organize a meteorological observatory. Weather observations were made and there was a data exchange via telegraph with several other locations, one of which was the Blue Hill Observatory located at Harvard University, Cambridge, Mass. This was the beginning of map plotting, analysis and forecasting at naval air stations, carried out primarily by assigned QM(A) personnel. By October 1919, the wartime numbers were reduced to five officers and three QM(A) personnel.

A four-month training course at Naval Air Station Pensacola, Fla., was started on November 1, 1919, to develop and provide some aerological support to naval aviation at all Navy and Marine Corps air stations, plus three seaplane tenders. The creation of the Bureau of Aeronautics (BuAer) in 1921 helped to clarify aerology's responsibilities to Naval aviation.

In 1923, the QM(A) rating was replaced by "Aerographer," and Navy Chief Quartermaster John R. Dungan changed his rating to Chief Aerographer, becoming the first AerM. BuNav Circular Letter 99, dated December 23, 1923, officially established the rating of Aerographer beginning in 1924.

Seniority in the AerM ratings was built up by accepting senior petty officers from other ratings for training and conversion to Aerographer. By 1925, nearly all shipboard and naval air station aerological units were led by Chief Aerographers.

These were lean times throughout the Navy and Marine Corps, but the advent of WWII loosened the purse strings.

In early 1942, the U.S. Navy was expanding rapidly in advance of World War II and the need for aerographers grew as well. Training classes got larger and shorter to meet that need. Women Accepted for Voluntary Emergency Service, WAVES, were also added to the AG rating for the first time. Class length was reduced from 12 to 10 weeks and classes overlapped so that every month 125 men and 25 women graduated.

On August 8, 1942, the AG rating was changed to Aerographer's Mate (by Circular Letter 113-42) in order to accommodate the new Warrant Officer specialty being established. Wartime personnel detailing was decentralized from BuAer, and pools of AerMs accumulated in Norfolk, San Diego, Seattle and Alameda; detailing authority was granted to the Aerological Officers at those locations. By the end of WWII there were roughly 5,000 AerMs serving, but this was followed by rapid downsizing of the military when hostilities ended. For example, on July 16, 1945, the monthly quota for Class A Aerographer school plunged from 64 to 12.

A major change happened in 1948 when AerMs became AGs, as part of the Group IX (Aviation) change for designating ratings by digraph. The restructuring was made easier with machine processing or IBM punch card systems to keep track of all personnel records. Ten years later, the Navy created Senior and Master Chief Petty Officers (pay grades E-8 and E-9) and Lee O'Rork became our first AGCM. The new Command Master Chief program soon followed. AGCM William Heagley was the first to serve as CMDMC of the Naval Weather Service.

One Man's Story

Shipmate Edward Belbin (Warwick, R.I.) joined the Navy in 1951. He'd been working in a factory as a young 20-year-old high school graduate, living in a single-parent household, and considered himself to be poor. The factory job was not to his liking so he decided to join

Aerographer's Mate (AG)

General Description

Aerographer's mates are the Navy's meteorological and oceanographic experts, trained in the science of meteorology and physical oceanography. They also learn to use instruments that monitor weather characteristics such as air pressure, temperature, humidity, wind speed and wind direction. They then distribute this data to aircraft, ships and shore activities.



What They Do

The duties performed by AGs include:

- Collecting, recording and analyzing weather and oceanographic information
- Preparing up-to-date weather maps and oceanographic data
- Issuing weather forecasts and warnings
- Conducting weather/oceanographic briefings
- Using, testing, calibrating and performing minor and preventive maintenance on meteorological instruments including satellite receivers
- Preparing balloon-carried instruments for flight, evaluating and analyzing data received
- Operating, programming and maintaining computers and related equipment

Working Environment

Men and women in the AG rating perform their duties in clean, comfortable, office-like environments. Their work is usually mental, is done closely with others and requires little supervision.

Requirements

ASVAB: PAY 97 VE + MK + GS = 162 or
PAY 80 VE + MK + GS = 165

Must have normal color perception.

Security clearance required. No exceptions.

Must be a U.S. Citizen.

Notes

Advancement opportunity and career progression are directly linked to a rating's manning level (i.e., personnel in undermanned ratings have greater opportunity than those in overmanned ratings). Rating conversions will normally only be considered for those who are in appropriately manned or overmanned ratings who seek entry into undermanned ratings. Please see a career counselor for more information.

Credit: Official Website of the United States Navy

Oceanography Warrant Officers to Make a Return

The Navy has announced that it is bringing warrant officers back to naval oceanography in 2018 after a 28-year hiatus. At the same time, the Navy is eliminating the Oceanography Limited Duty Officer (LDO) Program. The goal is to meet the increasing demand for officers with meteorology and oceanography knowledge, skills and abilities. The Secretary of the Navy approved the Oceanography Chief Warrant Officer (CWO) rate, with the first candidates to be selected by Fiscal Year 2018.

“The Navy wants to retain the technical expertise of the senior enlisted Aerographer’s Mates and give sailors opportunities to pursue their interests in the technical aspects of our work,” said Cmdr. Christi Montgomery, oceanography officer community manager.

Currently there are no commissioning programs that provide advancement opportunities to allow technical skill growth. Senior enlisted sailors gain administration and policy responsibilities, while the technical aspects of their specialties are de-emphasized. LDOs with seniority are increasingly focused on officer/leadership responsibilities and less on the technical aspects of the job.

The FY 2018 In-Service Procurement Board will select the first oceanography CWOs for a FY 2018 commission. Annual application deadlines to Navy Personnel Command likely will be Oct. 1. To be eligible for the program, sailors must have 14–20 years of service with waivers up to 22 years of service for master chief petty officers only. Applicants must be E-7 (select) or above and must have previously qualified as Aerographer’s Mate forecasters (NEC 7412). Montgomery said plans at this point call for approximately three CWO selections per cycle.

“This is a very positive change for the [Navy Meteorology and Oceanography Community] (METOC),” Montgomery said. “We want to keep the best technical leaders in our force in order to advance our support to the rapidly expanding naval mission set and platform base.”

Credit: Naval Information Forces Stennis Public Affairs

the Navy, Air Force and Coast Guard—all at the same time! What he didn’t know was the recruiting office near Providence, R.I., was the hub for all three branches.

“I really didn’t care for the idea of running around with a rifle in fox holes, plus I just didn’t like the color of the Army uniform,” quipped Belbin. The Navy Chief at the recruiter’s office kindly explained to Belbin that he just couldn’t join all three branches and he really needed to choose one. Because of Edward’s age compared to the other younger men who were joining up, and maybe because of his eagerness to serve, the Chief committed to moving Belbin to the top of a recruiting list of more than 375 people.

Before long, Belbin was off to recruit training at Bainbridge, Md. After posting higher-than-average test scores, Edward was offered the opportunity to become an AG. “If you did well on the exam you got a good job,” he said. Edward chose AG school, or what was known then as weather school, at Lakehurst, NJ. It was a tough class with lots of difficult course work. “There was an awful lot to learn and it was certainly not easy,” recalls Belbin. “I served on a carrier, USS *Sicily* (CVE-118), out of San Diego. The *Sicily* was a leftover escort carrier from WWII. We were sent to Korea after boot camp for four years.”

When Belbin completed his tour with the Navy, he returned to Boston, determined not to work in a factory. He used the G.I. Bill to attend college where he became a civil engineer, all the while staying in the Selected Air Reserves at Naval Air Station, South Weymouth, Mass. Shipmate Belbin shared, “I was in the Navy for 37 years and got to travel all around the world. Once it gets into your blood, it never leaves. It was the greatest experience of my life.”

Hunting Hurricanes with Seismology

Shipmate Alvin Berry (San Diego, Calif.) joined the Navy in June 1951 and was discharged in May 1955 after achieving the rating of AG2. Berry was trained as a micro seismographic weather man, tracking hurricanes during his tours at Naval Air Station Jacksonville (Fla.) and aboard USS *Worcester* (CL-144). “Having been transferred in February 1953 from cold NAS Brunswick, Maine, to sunny Miami, Fla., and to take part of this ‘unknown project’ was great! I enjoyed my time at NAS Jacksonville, Fla.,” shared Berry.

During hurricane season, Berry served one day on and one day off. AGs would also record any earthquake or seismic activity and send related data to the 46 reporting station across the continent. Personnel at the U.S. Coast and Geodetic Survey would then issue a preliminary determination of the epicenter. "When an earthquake would hit our station, we would lose all trace of it because we were receiving on photo paper. The trace would move so fast it would not record until the wave subsided, creating a blank spot," said Berry.

Recently Berry placed a weather-tracking display in the Tavares City (Fla.) Historical Museum for visitors to view. Local weather man Tom Sorrells, of TV 6, included the historical display in his May 2014 weather story called *Surviving the Storms*.

In 1977, the U.S. Air Force was designated the Single Service Manager for all enlisted military weather training. To contain expenses and eliminate duplicative efforts, all Navy, Coast Guard and Marine Corps weather training was consolidated to Chanute AFB in Rantoul, Ill., where USAF training had been conducted for many years. When Chanute AFB was closed during a Base Realignment and Closure (BRAC) effort, weather training was moved, in its entirety, to a larger, more modern facility at Keesler AFB in Biloxi, Miss.

Technology-Driven

The AG rating continues to evolve, driven by the rapid technological changes that are taking place in the telecommunications and related fields. In 1960, the Television Infrared Observation Satellite (TIROS) was capable of remote sensing of the earth, it allowed scientists to view earth from a new perspective — space. The TRIO, a program promoted by Harry Wexler, began sending cloud photographs back to earth and proved the value of satellite weather. Computer technology permitted the processing of photos and other satellite data. Because of the technological aspect of the program now, training requirements have expanded greatly and there is an awesome responsibility at Keesler AFB to prepare AGs for duty in the fleet.

Today's AGs: Highly Sophisticated and Technical

The new areas of support that today's AGs provide include hydrography (mapping the ocean floor), oceanography, unmanned underwater vehicle (UUV)

operation and sonar data processing. As part of the Information Warfare Forces, AGs use the latest technology to enhance battlespace awareness by providing the characterization, forecast and impacts of the environment. The Navy's approximately 1,000 AGs play a vital role in all of the Navy's traditional warfare areas, including aviation, as well as the new realm of information warfare. They also support safety of navigation to the Navy's global humanitarian aid/disaster relief efforts and safety at sea. AGs have also become the Navy's accepted experts in the operation of unmanned underwater vehicles (UUV), which they extensively use in mine-warfare operations and hydrography, for access routes and charting.

"AGs are the backbone of Operational Navy Oceanography. As a group, they are smart and technologically adept. They have always been willing to accept new and additional duties — whatever they have been asked," said Rear Adm. Tim Gallaudet, Naval Meteorology and Oceanography Command (NAVMETOCCOM) commander. "That's why the job has expanded so much into oceanography, hydrography and information warfare — because they were willing and able to learn new things and take on new responsibilities. The U.S. Navy is a safer and more effective fighting force because of the AGs — and I know this to be a fact from my firsthand experiences with AGs in the Persian Gulf and Western Pacific, and the Mediterranean, Arabian, Yellow and Red Seas."

Aerographer's Mate Master Chief Petty Officer Mark E. Mageary (AW/SW) is currently assigned to the Naval Oceanography Operations Command (NOOC) at the Stennis Space Center, Miss. The NOOC is responsible to the fleet for providing enhanced asymmetric war-fighting capabilities in the undersea domain from the shore to blue water, 24/7, and critical support of the information technology infrastructure across Naval Oceanography Units.

Today's AG plays a significant role in disseminating the NOOC products directly to the fleet to insure "home field advantage anywhere in the world. We know the water!" emphasizes AGCM Mageary.

"The most rewarding part of my job is watching both officers and enlisted personnel grow and learn about how much impact our AG community has on the warfighter. The most challenging part of the job is the ever-changing technology and how we stay on top of that," stated Master Chief Mageary.

AGCM (IW/AW/SW) Patricia Kelly at Naval Oceanography Mine Warfare Center at Stennis Space Center, Miss., described what her command currently does and how that plays a role in today's sea services. "Our command currently collects and processes data utilizing a collection of highly technical equipment to analyze the undersea environment and aid in the detection of mines. We help reduce the timelines for commanders and aid in the revolution of warfighting in the littorals. Additionally, we provide asymmetric information warfare of the ocean environment, reducing risk and tactical execution timelines through the fusion of oceanographic science, intelligence preparation of the operational environment (IPOE), tactical mine hunting and data analysis. In today's sea services, we deploy certified teams in direct support of global mine warfare forces to conduct ocean bottom surveys, assessment and data fusion."

AGCS (IW/AW/SW) Jessica Mihailin with Naval Oceanographic Office and Fleet Survey Team (FST) at Stennis Space Center added, "As a senior enlisted leader, the most rewarding part of my job is witnessing the success of my sailors. They have a tremendous impact on worldwide operations and are highly praised for their efforts. Whether they are operating a UUV, analyzing post-mission data or briefing warfare commanders on environmental impacts to operations, they are highly regarded for their subject-matter expertise and professionalism. They never cease to amaze me with their eagerness to continue to learn and enhance the warfighters' ability to succeed in the mission."

"Fleet Survey Team (FST) is a specially trained team that employs 62 military and civilian personnel. Deploying globally, FST conducts hydrographic surveys and related environmental assessments to enable safe and effective maritime navigation and access to the littorals for naval and joint forces. In general, FST provides littoral hydrographic support to enable safe navigation to a wide variety of missions. Using organic survey platforms, the team collects and processes data on scene to provide timely products to the warfighter, including the best possible graphic depiction of potential hazards to navigation," said Senior Chief Mihailin.

FST maintains a team of 96-hour, globally-deployable hydrographers to conduct swift navigation check surveys in support of humanitarian aid, disaster relief efforts or other emergent tasking. Teams operate hydrographic survey vessels to execute high-quality navigation surveys that produce on-scene field charts

and update current nautical charts. Teams actively engage with host nation counterparts to promote theater security cooperation and build upon long-standing international hydrographic agreements. Rapid Littoral Survey Vehicles (RLSVs) deploy to provide an immediate navigational tactical decision aid to on-scene commanders. They support safe ship-to-shore force movements by surveying from the 10-meter contour to the beach.

Senior Chief Mihailin shared, "I have the privilege of working with some of the finest professionals in the Navy. The sailors and civilians never cease to amaze me; their professionalism, their drive, their thirst for knowledge and their dedication to the mission are awe-inspiring. Watching them come together to execute the mission, the pride they exhibit in their work, watching them grow personally and professionally and being able to interact with them daily is the most rewarding part of my job. Being the senior enlisted leader for this command has been one of the highlights of my career."

Even More Critical

There have been a lot of technological changes in how AGs track weather and oceanographic patterns, but some aspects of their work remain the same. Weather impacts virtually every facet of military operations today, just as it did during the D-Day invasion in 1944. Rapid advancements in technology, coupled with a better understanding of how the wind and ocean currents affect our military capabilities, have made Navy aerographers an even more critical tool in our nation's warfighting arsenal.

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