

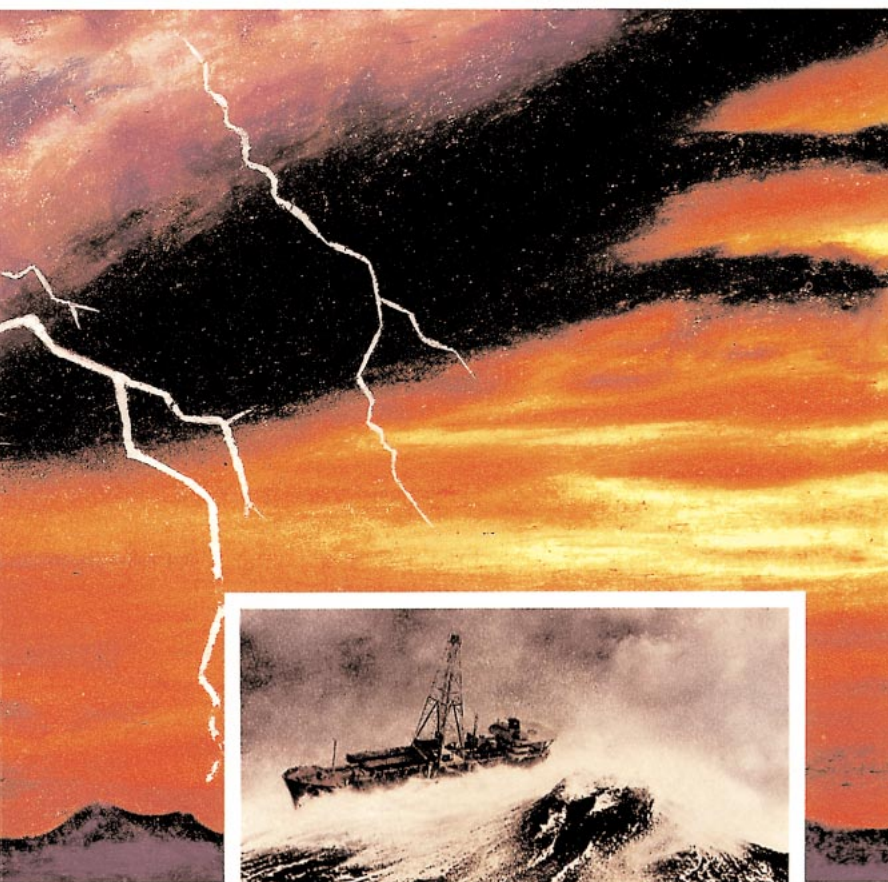
Port
Meteorological
Officers

and the

VOS

PMOs

Voluntary
Observing Ship
Program

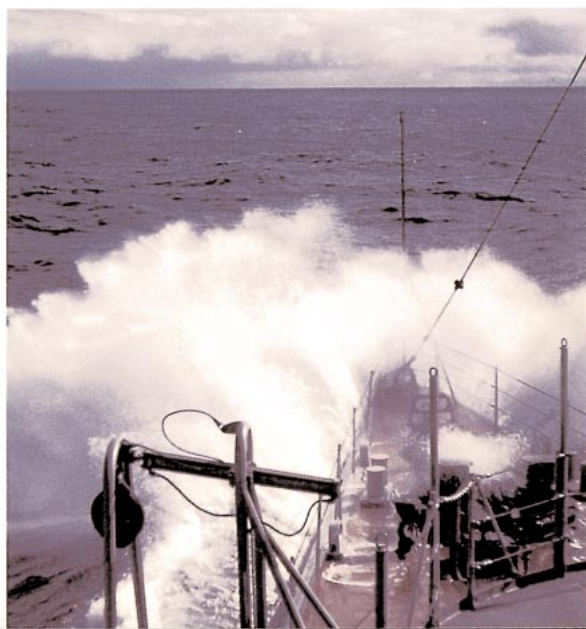


Voluntary Observing Ship Program

The Voluntary Observing Ship (VOS) program is organized for the purpose of obtaining weather and oceanographic observation from moving ships. An international program under World Meteorological Organization auspices, the VOS has forty nine countries as participants. The United States program is the largest in the world, with over 1600 vessels. Observations are taken by deck officers, coded in a special format known as the ships synoptic code, and transmitted without delay (realtime) to the National Weather Service (NWS). They are then distributed on national and international circuits for use by meteorologists in weather forecasting, by oceanographers, ship routing services, fishermen, and many others. The observations are then forwarded for use by the National Climatic Data Center in Asheville, North Carolina.

Observations from ships form the basis of marine weather forecasts in both coastal and high seas areas providing on the spot data and details about local surface conditions.

The program operates at no cost to the vessel, with communications charges, observing equipment and reporting supplies furnished by the National Weather Service. To participate, contact a Port Meteorological Officer or the national program office in Silver Spring, Md. See the Worldwide web at <http://www.vos.noaa.gov>.



Port Meteorological Officers

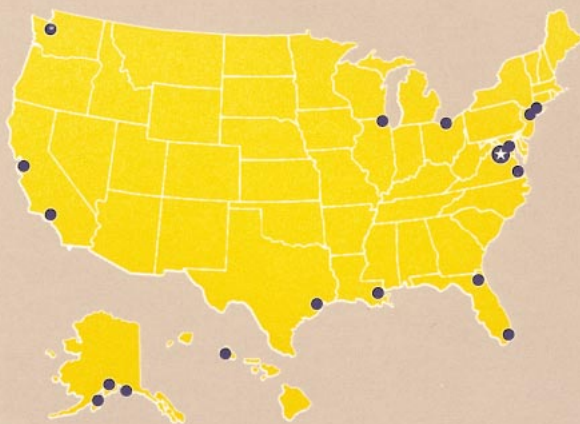
Port Meteorological Officers (PMOs) support observing programs aboard Voluntary Observing Ships. They are responsible for the recruitment of new vessels as observers, and also for ensuring the quality of observations from vessels actively participating in the program. PMOs spend a major part of their time visiting ships, primarily assisting deck officers with marine weather observation practices, codes and report transmission procedures. They also distribute observing forms, handbooks, and operating instructions, and calibrate some equipment. The PMO will review completed observation forms on board, point out omissions or errors, and suggest methods for improvement. They also maintain contact with ship owners and agents, port operators, shore radio stations, and maritime academies to secure the cooperation of the maritime community. Observing instructions, forms, and aids available free of charge to all vessels include:

- NWS Observing Handbook No. 1, Marine Surface Weather Observations
- Ship's Code Card
- Ship's Weather Observations, NOAA Form B-81
- Weather Report For Immediate Radio Transmissions, WS Form B-80
- True Wind Plotting Board
- Cloud Identification Chart
- Sea State—Wind Speed Chart
- Mariners Weather Log



PMOs are located in the following United States ports and should be contacted when any of the above services are required (for national program office):*

- ★ Silver Spring, MD, 301-713-1677 x129, vincent.zegowitz@noaa.gov
- ★ Silver Spring, MD, 301-713-1677 x134, martin.baron@noaa.gov
- ★ Silver Spring, MD, 301-713-1677 x128, timothy.rulon@noaa.gov
- New York, NY, 732-316-5409, timothy.kenefick@noaa.gov
- Newark, NJ, 732-316-5409
- Baltimore, MD, 410-633-4709, james.saunders@noaa.gov
- Norfolk, VA, 757-441-3415, peter.gibino@noaa.gov
- Jacksonville, FL, 904-741-5186, larry.cain@noaa.gov
- Miami, FL, 954-463-4271, robert.drummond@noaa.gov
- New Orleans, LA, 504-589-4839, jcwarrman@mindspring.com
- Houston, TX, 281-534-2640, jim.nelson@noaa.gov
- Los Angeles, CA, 562-980-4090, bob.webster@noaa.gov
- San Francisco, CA, 510-637-2960, w-wr-oak@noaa.gov
- Seattle, WA, 206-526-6100, pat.brandow@noaa.gov
- Anchorage, AK, 907-271-3507, greg.matzen@noaa.gov
- Valdez, AK, 907-835-4505, w-ar-vdz@noaa.gov
- Kodiak, AK, 907-487-2102, w-ar-adq@noaa.gov
- Honolulu, HI, 808-532-6439, derek.leeloy@noaa.gov
- Chicago, IL, 815-834-0600 x269, amy.seeley@noaa.gov
- Cleveland, OH, 216-265-2374, george.e.smith@noaa.gov



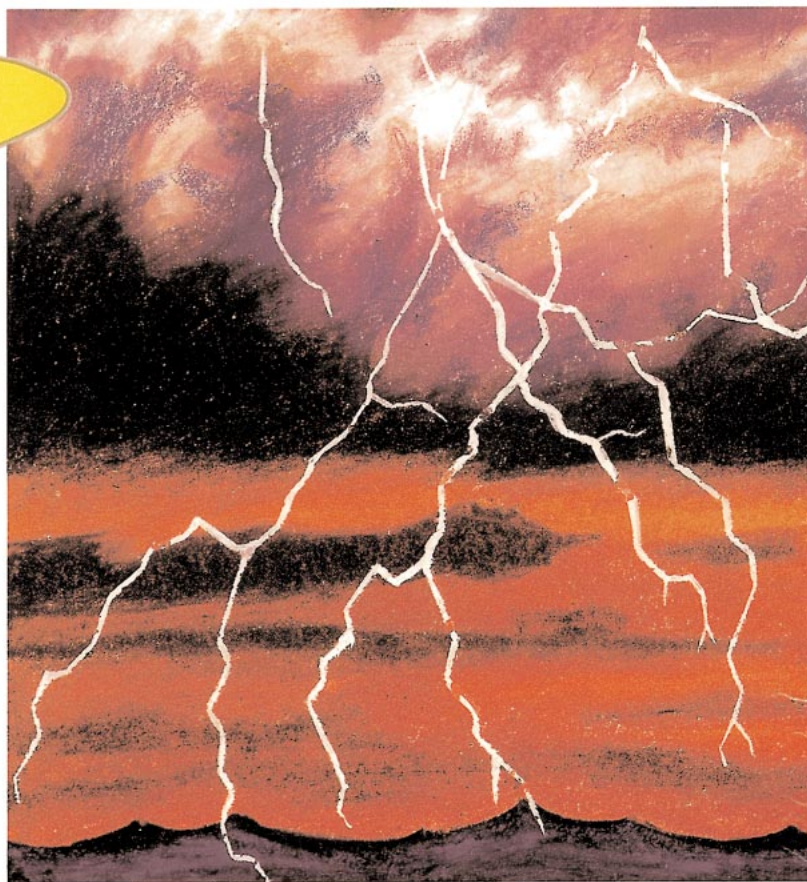
Marine Weather Observations and What They Consist of

A reliable observation is the key to forecasting a complex marine meteorological situation, so accuracy is of the utmost importance. Instruments must be calibrated and readings taken carefully. Observations taken by VOS program vessels consist of the following elements:

- Wind direction and speed
- Atmospheric pressure
- Air temperature
- Humidity
- Sea-surface temperature
- Waves (sea and swell)
- Present and past weather
- Clouds
- Visibility
- Ships course and speed
- Sea ice when appropriate

An effort should be made to observe most of the elements as close to the reporting hour as possible. Wave observations require a slightly longer period than most and many observers maintain a continuous watch on the waves. Visual estimates of wind speed and direction are based on the appearance of the sea surface, using the Beaufort scale. Air temperature and humidity readings are usually taken with a sling psychrometer. Sea surface temperature is taken either with a bucket thermometer or by reading the temperature at the engine water intake. Wave period and height are computed from the average values of the better formed waves. Swells are waves that have outrun the wind and are characterized by more uniformity and consistency. Cloud observations require careful study of the cloud descriptions and photographs which are provided. Visibility is determined by the appearance of the horizon, of other ships, of targets on the radar screen and of objects at known distances on your own vessel. The presence of ice on the sea surface or on the surface of the ship is also reported. The NWS Observing Handbook No. 1 has complete instructions on all procedures to follow. For more information contact any PMO or the National Program Office at (301) 713-1677 x129. PMOs are experienced observers and will explain all procedures to personnel on participating vessels.





U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service