



NATIONAL WEATHER SERVICE Operation
SILVER SPRING, MARYLAND 20910 Letter 2-98

Date of Issue: March 18, 1998 **Effective Date:** December 31, 1997

In Reply Refer To: W/OSO14 **File With:** B- 10, B- 11, B-12 and B-66

Subject: NWS Barometry

This OML supersedes previous NWS policy on Barometry.

Policy Statement on NWS Barometry

This policy applies to all NWS offices, and regional headquarters. It is intended to provide authorization and guidance to managers on the redirection or disposal of the mercury barometer.

The NWS instituted a program to modernize the pressure instruments utilized for operations, station inspection programs, and for regular intra-instrument comparisons. The NWS will use only aneroid barometer instruments and pressure transducers at field offices and regional headquarters, unless otherwise specified. The pressure transducers used as traveling standards will continue to receive regular calibration and maintenance from Weather Service Headquarters (WSH) and all aneroid barometers and pressure transducers shall be traceable to the NWS Primary working Standard Barometer (PSB) at WSH. Both pressure transducers and aneroid instruments are being utilized by the NWS to meet operational and scientific needs. Accurate pressure transducers have been incorporated into the Automated Surface Observing Systems (ASOS). The ASOS is equipped with either 2 or 3 pressure transducers depending on airport activity level. The ASOS pressure transducers are highly reliable and are compared on a quarterly basis during the preventative maintenance cycle.

The NWS has acquired the Paroscientific Inc. Digiquartz pressure transducers for use by the ASOS electronics technician as the traveling standard with which to compare the ASOS. The NWS has also procured the Paroscientific Digiquartz for Weather Forecast Office (WFO) use in the conduct of station inspections and to perform regular barometer performance comparisons as required. The Paroscientific Inc. Digiquartz has proven to be a highly accurate (.01% of reading accuracy) and reliable pressure instrument (little or no drift after 6 years).

The Fortin Mercurial Barometer has been the standard pressure instrument utilized at field offices and as the Regional Reference Barometer (RRB). The Paroscientific Digiquartz pressure transducers that have been acquired by the NWS have proven themselves to be as accurate and reliable as the mercurial instruments, more easily readable, and eliminate a potential hazardous material problem. The requirement for the field offices and the regions to maintain mercurial barometers has expired. The Paroscientific Digiquartz pressure transducers are now the official standard pressure instruments utilized at all NWS offices. Field offices shall remove the Fortin Mercurial Barometers at their earliest possible convenience. Regional headquarters may remove the RRBs. WSH shall continue to provide support for the Fortin Mercurial Barometers until the end of the 1999 calendar year.

Weekly comparisons must be continued as prescribed in the current Federal Meteorological Handbook Number One and National Weather Service Observing Handbook Number Seven, Part I. This will continue to be the policy at all field offices taking manual surface observations and for all offices taking upper air observations. Observing policy will reflect comparisons using the Paroscientific Inc. Digiquartz instruments or the ASOS.

Upon commissioning of the ASOS, the ASOS pressure sensors become the station primary pressure instrument for surface observations to which both the Federal Aviation Administration (FAA) and the NWS aneroid instruments are compared for use in the surface observing program. To ensure that ASOS pressure transducers remain within specifications¹, the ASOS is compared on a regular schedule with a transfer standard by the ASOS technician. The transfer standard used by the technician is traced to the PSB at WSH in Silver Spring, Maryland. The ASOS pressure sensor(s) will serve as the station benchmark for comparing the site's backup aneroid instrument for use in the surface observing program. There is no further requirement to maintain mercury barometers. At upper air stations, the Paroscientific Digiquartz pressure transducer shall be the pressure standard for the upper air program.

¹The ASOS pressure transducers must maintain an accuracy of +/- 0.02 inches of mercury and have a resolution of 0.0003 inches of mercury.

NWS will utilize existing mercury barometer assets through redirecting, rather than procuring additional mercury barometers in those limited cases where a mercury barometer remains operational. H.J. Green barometers returned to the National Reconditioning Center (NRC) are being scrapped since the H.J. Green Company is out of business.

Stations should dispose of mercury barometers that are broken or no longer required by shipping them to NRC. The RRBs should be returned to WSH. In all cases, packaging and shipping of the instruments should be done in accordance with instructions developed by the Maintenance Assurance Section. If a mercury barometer breaks or leaks, all stations must follow the "NWS Field Site Mercury Cleanup Procedure" issued by W/OSO3, which explains how to properly dispose of the mercury. This procedure must be available to all staff members. Notification procedures for any type of mercury spill must be brought to the attention of regional and headquarters staff, as well as state or local officials, when required.

John J. Kelly, Jr.
Assistant Administrator
for Weather Services