

NATIONAL WEATHER SERVICE PACIFIC REGION SUPPLEMENT 01-2021

APPLICABLE TO NWSI 10-1301

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Operations and Services

Surface Observing Program, NWSPD 10-13

Aviation And Synoptic Observations, NWSI 10-1301

BAROMETERS USED IN THE PACIFIC REGION

NOTICE: This publication is available at: [NWS Directives System](#).

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Certified by: W/PR1 (E. Lau)

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SUMMARY OF REVISIONS: This Supplement supersedes Pacific Region Supplement 02-2003, dated March 14, 2003.

The following changes were made in this issuance:

- This Supplement was moved to NWSI 10-1301 from NWSI 10-1302.
- The OPR, Certifier, and Approver have been updated.
- References to the Precision Digital Barometer (PDB) as the barometric Home Station Standard (HSS) for the ASOS observing programs at Hilo, Lihue, and Guam have been removed.
- Other minor changes to wording and acronyms.
- Updated the mailing address to the Pressure Standards Laboratory.

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1. Policy

The Precision Digital Barometer (PDB) will be used as the barometric home station standard (HSS) for the upper-air program and for other meteorological programs such as a manual aviation and/or synoptic observing program.

1. At Pacific Region (PR) stations with an upper-air and a manual observing program (Pago Pago, Majuro, Chuuk, Pohnpei; Yap; Palau):
 - The PDB will be the HSS for both the upper-air and manual observing programs.
 - The Digiquartz Portable Pressure Standard (DPPS) Traveling Standard, Model #760-16B, will be the backup instrument to the PDB.
 - These stations will also maintain aneroid barometers as a secondary backup.

2. Operations

The PDB’s are programmed at NWS Headquarters (NWSH) with the necessary elevations and R-values. Manual stations using the Micro-Computer Aided Paperless Surface Observations (MAPSO) application in the surface observing program will enter the **sensor pressure** (either hecto-Pascals or inches of mercury) value into the MAPSO program. MAPSO will then compute the sea-level pressure and altimeter-setting values.

No correction will be applied to the PDB pressure values when used as the HSS to surface observations. Due to the potential for inaccurate data, the PDB readings for altimeter-setting and sea-level pressure will **NOT** be used to backup those elements in the surface observation.

In the event the MAPSO application fails, the MAPSO stations will maintain pressure reduction tables for the manual backup of the observations.

3. Comparisons

PR stations will conduct regular comparisons of the PDB against the DPPSs and the aneroid barometer (where available).

1. The comparisons will be conducted weekly on the same day of the week.
2. Two comparisons will be taken at least 15-minutes apart.
3. The traveling standard will be positioned within one (1) foot vertically and three (3) feet horizontally during the comparison.
4. Record the results on WS Form 11-1, modified for PR use (see Appendix A).
 - Forms created on station are also acceptable for use.

If readings are within 0.007 inches/Hg, no further action is required. If the difference is greater than 0.007 inches/Hg, stations will notify the Environmental Sciences & Services Division (ESSD) immediately.

Send the Form to ESSD at the end of each quarter (March, June, September, December), but no later than the 5th calendar day of the new quarter (5 April, 5 July, 5 October, 5 January).

4. Annual Calibrations

Stations will follow the procedures listed below:

1. The PDBs will be calibrated on an annual basis at the National Weather Service Pressure Standards Laboratory (NWS PSL). Stations will receive a replacement PDB prior to returning the PDB that is due for calibration.
2. The DPPS Traveling Standard, Model #760-16B will be calibrated on an annual basis at the NWS PSL. Stations will receive a replacement DPPS prior to returning the DPPS that is due for calibration.
3. When replacement PDBs and DPPSs are received, each station will check for damage and accuracy before placing in use.
4. Stations will return PDBs and DPPSs using the return shipping documentation provided by the NWS PSL. Otherwise, return the barometers to the NWS PSL at the following address:

NWS Pressure Standards Laboratory
Sterling Field Support Center
43741 Weather Service Road
Sterling, VA 20166

