



MEMORANDUM FOR: Distribution

FROM: W/OPS2 – John Vankuren (signed September 9, 2005)

SUBJECT: Operational Acceptance Test (OAT) Report for the Automated Surface Observing System (ASOS) Ice-Free Wind (IFW) Sensor and Version (V) 2.79/2.79A Acquisition Control Unit (ACU) Software

At the June 2, 2005, ASOS Test Review Group (TRG) conference call, the group evaluated the test results for the subject OAT. The ASOS TRG judged the integration of the IFW sensor and V2.79A ACU software into operational ASOSs at representative field sites as satisfactory. On June 15, 2005, the Chief of the Test and Evaluation Branch (OPS24) forwarded a recommendation to the Planned Product Improvement (PPI) Manager for deployment of the IFW sensor and adoption of V2.79A the operational ASOS software baseline for the ACU. IFW sensor and V2.79A ACU software deployment will be managed by the Observing Systems Branch (OPS22).

Installation of the ASOS processor upgrade (the Synergy single-board processor) and modifications to the ACU software are required to support the IFW sensor. Therefore, the OAT was designed to confirm overall ASOS performance with the revised ACU software in conjunction with integration of the IFW sensor into ASOS. During the OAT, limited production IFW sensors were evaluated at 22 sites using V2.79 ACU software; six additional sites evaluated only the V2.79 software. Production IFW sensors were evaluated at seven sites with V2.79A ACU software; two additional sites evaluated only the V2.79A software.

All OAT objectives were achieved; installation of the IFW sensor and the ACU software was straightforward, the IFW sensor interface functioned correctly, satisfactory observations were consistently produced/transmitted, interfaces with other systems functioned as required, and ASOS system stability was improved by a significant margin. The OAT report is available at:

http://www.nws.noaa.gov/ops2/ops24/documents/asos_docs.htm

Although one spontaneous ACU coldstart occurred at an OAT site with the V2.79A ACU software and an Automated Lightning Detection and Reporting System (ALDARS) interface, it could not be confirmed as a software problem. Since the conclusion of the OAT, however, spontaneous ACU coldstarts have also been noted at several sites with V2.7B-6 software and an ALDARS interface. The ASOS software contractor has identified the problem in V2.7B-6 and confirmed that V2.79/2.79A sites with an ALDARS interface may experience spontaneous coldstarts as well.

Until ACU software with a fix for the coldstart problem is available, a phased approach to deployment of V2.79A has been adopted to allow installation of IFW sensors at Northern sites prior to winter. The initial deployment of V2.79A (without IFW sensors) was approved for 35 FAA Service Level D (un-staffed) sites where observer training is not required. To date, 18 of



the 35 sites have installed V2.79A and, after 350 site-days of operation, no new coldstarts have occurred. These results confirm that the coldstart problem is infrequent and V2.79A is suitable to support deployment of the IFW sensor. Deployment of IFW sensors to the 35 sites has now been approved, along with deployment of IFW sensors and V2.79A to additional high benefit, low risk Level D sites. Deployment of IFW sensors and V2.79A to all Level A and B sites can also begin although union notification and observer training will be required for those sites with FAA or contract observers.

The ASOS software contractor has included a fix for the coldstart problem in V2.79B which will be delivered for System Test (ST) at the end of September 2005. If performance of the software is satisfactory during the ST, the OAT for V2.79B will begin in October 2005.

If you have any questions or comments regarding the OAT, please contact the test coordinator, Bryan Moore, W/OPS24, at 301-713-0326 x176. Questions regarding deployment of the IFW sensor and V2.79A ACU software should be directed to Dave Mannarano, W/OPS22, at 301-713-2093 x103.

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