

WORLD METEOROLOGICAL ORGANIZATION

**WMO AMDAR PANEL
(Fifteenth Session)**

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AMDAR PROGRAMME STATUS

Status Reports on National and Regional Programmes

AMDAR Programme Status Report for the United States of America

(Submitted by Carl E. Weiss, U.S. AMDAR Panel Representative)

SUMMARY AND PURPOSE OF DOCUMENT

Provides a progress and activity report for the United States of America AMDAR Programme.

ACTION PROPOSED

The Panel is invited to note the information contained in the document.

PROGRESS AND ACTIVITY REPORT

Current Status

Airline	Country of Airline	Aircraft Type (e.g. B737-400)	Number of Aircraft	AMDAR Software	Format On GTS (BUFR / FM42)
Delta	US	757, 767, 737, 777, MD88, MD90	398	N/A	BUFR
UPS	US	727, DC8, 747, 757, 767, A300, MD11	177	N/A	BUFR
American	US	767, 757, A300, MD82, MD83, 737, 777	386	N/A	BUFR
Southwest	US	737	79	N/A	BUFR
United	US	A320, A319, 747, 767, 737, 757, 777	284	N/A	BUFR
FedEx	US	A300, A310, DC10, MD10, MD11, 757, 777	60	N/A	BUFR
Northwest	US	A320, A319, DC9, 747, 757, A330	152	N/A	BUFR
Alaska	US	737	119	N/A	BUFR
Continental	US	737, 777, 757, 767	326	N/A	BUFR

GSD Activities:

- NOAA's Earth System Research Laboratory/Global Systems Division continued to operate the AMDAR web page (<http://amdar.noaa.gov/>) that provides displays of AMDAR data, and AMDAR soundings to weather agencies around the world.
- The NOAA/National Weather Service MADIS program plans to take over operation of the NOAA AMDAR display over the next few years.
- ESRL/GSD also continues to make AMDAR-model differences available on the web. These have been used in many contexts, including assessing the quality of the vapor data provided by WVSS-II.
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- An ESRL/GSD study of observation impact showed that AMDAR is one of the most important data sources (Benjamin, S. G., Brian D. Jamison, William R. Moninger, Susan R. Sahn, Barry E. Schwartz, and Thomas W. Schlatter, 2010:Relative short-range forecast impact from aircraft, profiler, radiosonde, VAD, GPS-PW, METAR and mesonet observations via the RUC

hourly assimilation cycle. Monthly Weather Review 138, 1319-1343). An updated presentation of this work is available at <http://amdar.noaa.gov/docs/>.

Outreach Activities

(Further details on these and other outreach activities can be found in the report of the Training and Outreach Sub-Group)

- At the 2012 Experimental Aircraft Association's (EAA) AirVenture (July 23-29), the National Weather Service (NWS) again promoted AMDAR activities at its exhibit. An AMDAR poster was displayed at the NWS booth along with a WVSS-II unit. Response from the visitors was very supportive of the program and many pilots have knowledge of AMDAR data.
- Bryce Ford (SpectraSensors, Inc.) promoted AMDAR/WVSS-II at a number of meetings and events. These included,
 - American Meteorological Society's 92nd Annual meeting in New Orleans, LA
 - National Business Aviation Association Convention/Friends and Partners of Aviation Weather meeting in Orlando, FL

Training Activities

(Further details on these and other training activities can be found in the report of the Training and Outreach Sub-Group)

- Plans continue to work with the Cooperative Program for Operational Meteorology Education and Training (COMET) to produce an AMDAR training module. The Panel must decide if and how to proceed with this training development.

MDCRS Activities:

- The current FAA MDCRS contract with ARINC is now in the first of four option years. Approximately 2025 aircraft operated by seven US airlines (American, Alaska, Delta/Northwest, FedEx, United, United Parcel Service, and Southwest) are equipped to participate in the U.S. AMDAR program.
- On average, approximately 1500 of these aircraft provide approximately 200,000 observations daily.
- The FAA is in formal discussions with ARINC to start development of an optimization capability for MDCRS data. The intent of these talks is to examine the feasibility of entering into a contract for data optimization services.

AMDAR Data Monitoring / QC:

- In September, a large number of South African AMDAR reports were found to have that had many track-check errors and differences with the model background. Analysis showed more than 1100 reports to be duplicates from a month earlier. Extensive testing at NCEP revealed a moderate number of duplicate U.S. MDCRS reports from an older airframe from two airlines. This will situation will be investigated.
- Codes are being developed at NCEP to give very timely alerts for aircraft with quality problems to yield timely diagnoses of reporting problems.

WVSS-II Contract Activities:

- A new water vapor sensing contract with ARINC was signed in September 2012. This and a STC granted for the B737-700 series will allow for WVSS-II installations (6 per month) on an additional 55 Southwest Airlines (SWA) aircraft by June/July 2013.
 - These new 55 aircraft will be added to the current 57 WVSS-II fleet bringing the total of equipped aircraft to 112 producing about 1200 moisture profiles daily.
 - These 55 new units are expected to add nearly 790,000 moisture observations monthly. This will be a 26% increase to the approximately 3,000,000 reports currently being made.
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