



Summary of Break-Out Group Discussions
AIRMAP Planning Meeting 29-30 October 2001
New England Conference Center

Participants at the meeting gathered in three separate groups for about an hour. These groups were organized in three general areas: chemical measurements, meteorological measurements, and modeling. Bob Talbot (chemical), Jack Dibb (modeling), and Sam Miller (meteorological) wrote the summary reports below.

Chemical:

There was general consensus to focus our attention and resources on optimizing the use of our current suite of measurements rather recruiting new ones into the 2002 scoping study. There were a few exceptions to this that may be implemented without too much demand on the AIRMAP program:

- (1) place an O₃ instrument on the ferry running four times daily between Portsmouth Harbor and Star Island, Isles of Shoals (Eric Williams has an instrument that could probably be used for this purpose),
- (2) through collaboration with the Health of the Atmosphere program an outside group may fly a tethered balloon package for O₃ and CN at Appledore Island, Isles of Shoals, and
- (3) there is a possibility that the DOE G1 aircraft would make some coordinated flights with the Ron Brown.

Action items identified included:

- Develop a plan for information exchange on a daily basis for the various field platforms.
- Implement an ftp and/or web site (location TBD) for the data collected on the ship.
- Agree to a data protocol and time line for reporting final data (June 2003?).
- Define ancillary data requirements such as emission inventories for Boston.
- Discuss the possibility for exchange of trace gas standards for major species such as CO and NO.

Meteorological:

The following recommendations were made during the group meeting. Individuals responsible for follow-up are indicated by square brackets ("[]").

- Isle of Shoals (IOSN3): Install and operate a RWP/RASS and mini-sodar. The ladder provides profile data for the region below the lowest gate of the former (about 150 meters AGL). [Allen White, ETL.]

- Pease International Airport (KPSM): Continue operation of RWP/RASS that was installed in July, 2001. [Wayne Angevine, AL.]
- Gray, Maine (KGYX): Collect and archive VAD wind data reported by the doppler weather radar. [Jim Koermer, PSC.]

Rye, New Hampshire:

- Twice daily rawinsonde launches (one in late morning, one in mid-afternoon). [Sam Miller, UNH -- arranged through either CRREL or Frank Colby, UMass Lowell.]
- Ozone LIDAR. [Christoph Senff, ETL.]
- Fort Constitution, Newcastle, New Hampshire: An alternative location for the twice daily rawinsonde launches. [Sam Miller, UNH – arranged through either CRREL or Frank Colby, UMass Lowell.]
- Portsmouth and Durham, New Hampshire: Position Davis weather stations (with full range of standard met measurements) for continuous recording at the top of the WHEB and WUNH radio towers. Data to be periodically downloaded to UNH server and made available to group via FTP [Sam Miller and LeeAnn Stevens, UNH.]
- Barrington, New Hampshire or vicinity: Install and operate RWP/RASS. Site surveys and preliminary arrangements to be completed by UNH [Sam Miller and Huiting Mao]; equipment to be provided and installed by ETL [Allen White] with assistance from UNH [Sam Miller, others].
- Falmouth, Massachusetts (KFMH): Alternative location for positioning of RWP/RASS noted in 7 (above). [Allen White, ETL; Wayne Angevine, AL.] (Should this site be chosen for the profiler, pibal launches will be considered for the Barrington location [Joe Zabransky, PSC].)
- Ship-board (R/V Ron Brown): Rawinsonde launches four times per day.
- Woods Hole Oceanographic Institute (WHOI) and Stowe, Massachusetts: There may be profilers already on-site. If so, we will collect these data for use in the study. [Wayne Angevine will follow up on these leads.]

Modeling:

At the breakout session Monday afternoon, the modeling group strongly stressed the need for additional vertical profile information. At a minimum, standard met profiles are needed to assess model performance. Profilers on the Isles of Shoals and the Ron Brown will be a big help, but there was sentiment that additional radiosondes should be launched in "oceanic" regions upwind of the AIRMAP near-coastal study region. (Subsequent group discussion indicated that there is a

standard sonde site on Cape Cod. This must be verified and arrangements to obtain the data should be in place before the study.) This group urges that sondes be released from the Ron Brown at least twice daily (and more often if budget allows).

Any vertical profiles of chemistry, ozone at the minimum, would also be a huge plus in diagnosing model performance. (MCNC might attempt to assimilate profiles, but validation efforts the main goal.) Can ozone sondes be added to sites already releasing radiosondes? (Someone in the group thought price/sonde just several \$100s, Jim Meagher joined the discussion late and said he felt cost was closer to \$1000/sonde.) (The tentative Brookhaven plans to fly an instrumented aircraft, presented Tuesday, would appear the most likely source of any chemical profiles in 2002.)

Most improvement in model simulations felt likely to come from better emissions. Two different efforts will be undertaken. EPA indicated that many large point sources (power plants) already forecast variations in output as function of expected demand. This obviously translates into varying emissions over short time scales. Incorporating this information into the model simulations is planned. It was also agreed that the representation of land use in current models is very crude. This impacts emissions predicted by the models, and also has big impact on PBL dynamics. All of the New England states have more detailed information on current land use than what the models presently use. Contacts have been/will be made to get access to this more recent data for incorporation into next year's simulations.