

Below are my notes taken during the BAMEX Operational Planning Meeting of 31 March – 1 April. These are not comprehensive, but probably hit most of the key points including the action items (see bottom).

### **BAMEX summary notes (31 March, 2003)**

NOAA P-3

McFadden: possible issues of funding and war. Neither will be known for a while (he did not think there was a great likelihood of this) Scheduled deployment is 18 May.

Doppler modules at 18000 feet rather than 10000 ft. (-15C)  
Coordinated with NRL P-3 when possible (NRL P-3 Flying at low levels)

System relative flight tracks: did dropsonde aircraft plan take account of these??

Several issues about microphysical modules:  
    Staying with leading line or stratiform  
    How to optimally conduct the pattern

What do we do with non-asymmetric systems (long lines)?

How much of the line do we sample? How long is the longest leg?  
Guidance from Ops Center is critical for narrowing down the region of peak bowing and strongest cells? How long should be the flight legs from the NRL P-3? Idea of flying a little longer on an initially disorganized system, then focusing in.

Major issue: no drops within 25 nmi of P-3 unless air-to-air communication.

Dropsondes in real time in Ops center?

Time series of surface observations in real time? Time resolution?

Mesolow position in real time. Need sfc pressure data?

MIPS

Radiometer temporal resolution is now 2 minutes  
915 prof 50-100 m resolution, winds at 2-4 km AGL

BAMEX additions

- Wide-band satellite COM system
- Wired and wireless LAN access to web
- Probe vehicle
- GLASS sounding system
- DSD (if system can be borrowed)

#### Schedule:

Depart 1000-1200  
1400-2000 (LST) setup in daylight much preferable  
2300-0200 end of IOP (sample nocturnal b.l. transition)

IOD depends on distance, previous rest, timing of MCS, aircraft schedule  
MIPS scout vehicle to

#### GBOS operating restrictions

Greater flexibility

Open area required for MIPS, MM and MGLASS  
(soundings to log real-time surface data)

MIPS needs to avoid ground clutter targets with large cross sections, powerlines.

MM requires paved roads after rainfall (Street Atlas USA)

MGLASS requires open area for balloon launches (can drive when sounding is in the air); restriction for aircraft (can't be within 25 miles)

MGLASS: launch to transmission = 90 minutes (up to 100 mb)

Cut soundings off = 45 minutes

#### COMMS:

VHF within 10 km (Freq.?)

Cell phones??

Sat phone

M-GLASS has VHF and sat phone

Sat phones not great for receiving phone calls

IF all fails, GBOS will call Ops Center using pay phone.

GBOS-aircraft? Maybe best through Ops center

#### Deployment Considerations

Pre-storm BL

Within BE convective

Within BE strat

Ahead of MCVs

#### Setup

MIPS: 10 min

M-GLASS: 20-25 min to launch

#### Pre-storm environment:

MIPS position is key

100-km + baseline between M-GLASS

#### Bow Echo Convective Region

Probe about 5 km W of MIPS: severe weather alert. Need 1 minute warning to cover sensors

BE stratiform region

How long to stay on after system passes?  
Can have one person stay on for a later system.  
MM transects are a little shorter

Advance of MCV

Triangle configuration  
Setup downshear?  
Forecast of motion of MCV (how well can we do this?)  
Lots of questions about basic design issues of deployment. With jet? Without jet?

Large MCS

OPERATIONS CENTER

Daily planning meeting is really for Day 2.

Aircraft takeoff time can be modified as late as the time the aircraft returns.

Pre-flight is 3 hours. 12 hours required from time last person leaves the plane until the first person later reports.

Where is Mission Scientist? (a.k.a. Chief Scientist)

Let Proj Office know when I am arriving at MAA.

Security

Fingerprint (local law enforcement agency)  
Employment History  
ID Application

Submit at least 3 weeks before arrival

MAA  
Office of Public Safety  
9768 Airport Blvd.  
Mascoutah, IL 62258-5500

Data:

Flight-track info available from dropsonde aircraft.  
Aircraft intercomparison issues: do on 19 May?? YES

**1 April, 2003**

**DATA MANAGEMENT:**

Some issues on data policy: basically follow IHOP model. Remove collaborator requirement after 1 year.

Surface data: Ask Ray Arritt whether he can transmit his data in real time.

Radar:

Kevin might have a suitable workstation for DMX

Ask Pete if other tape archival systems can replace those that are broken (DMX, OAX, EAX, SGF, LZK, ARX, etc.)

Soundings from ARM central site (Lamont) 4/day.

**BREAKOUT**

Proposal to be conservative near the beginning, less so later on.

How do we decide among more than one system? (case of May 7, 1995)

Add 25 mi. radius consideration to Ops Plan: Can we coordinate? Need for immediate dropsonde position information.

Takeoff time can be moved, assuming the adequate rest period, as late as the time of landing of the P-3.

Will there be someone from NCAR to "handle" PMS probes (maintenance)? Yes.

Backup dropsonde operator (for double-crewed mission or when primary operator cannot do it) is Diana or Jason. Probably need to identify informal backups and shift people around as needed.

Daytime drops could occur as low as 25,000 feet during the daytime.

**MEDIA RELATIONS**

Distribution at EGS meeting: notice to foreign film crews.

Media Day May 19.

At MAA

9 AM

A few short presentations

Morris

Kevin

Dave J.

One more??

Following project there will be a report of media coverage.

Issue of visitors on P-3s: very hard to get on if foreign

## ZEBRA

Aircraft tracks from 2 P-3s definite, likely dropsonde jet

Positions of GBOS probable, will need manual entering of position data

Stacking of displays a key: bottom of display

Can draw tracks: need to do this relative to the system; need to manually enter system motion. However, end points of tracks will be sent in an email message. Images are 7 minutes old, 2 minutes to send to the plane. Images will be in a web viewable ftp directory. Email

Issue of zoom capability so that the position of aircraft relative to weather features can be determined. Can the zoomed image be saved and sent to aircraft?

## PLENARY

### GBOS

Refined generic models for each of 6 systems

Yes, deploy even if aircraft don't fly.

Setup for MIPS is 10 min, NOT including GLASS

Factors in experimental design:

- Position near 88-D or profilers (esp if no aircraft)

- Scale length needed >1 h prior to setup

- Sounding interval 1-1.5 h

- 3-h ahead of system

- Pre-storm environment

  - (near 900-600 mb shear; and MCV motion)

- Convective region

  - Soundings:

    - Cold pool

    - Just ahead of line

    - Within St.

    - Within conv updraft

    - Core of comma

    - Wake low

- Ahead of MCV

  - More simultaneous launches

  - Triangle size 75-150 km

  - 2-h ahead of system

- Playbook needed for each system type

### AIRCRAFT

Safety: 25 mile rule unless there is direct communication

Not launching second P-3 and jet unless organization obvious (i.e., convective assuming linear structure and likelihood of stratiform region).

Science crew for double-crewed dropsonde jet

Does jet launch at the same time as P-3? General agreement on this.

M-GLASS soundings not a concern for P-3 position.

Possibility of doing 3-4 rapid soundings along rear inflow (headed rearward) assuming that the jet can get in the right position behind the convective line.

Issue of whether P-3 will see convective line from 18,000 feet (need supercooled liquid up higher)

#### ACTION ITEMS:

Security forms

Staffing Matrix Calendar

May 20 intercomparison flight planning (all systems and comms)

Send presentations to Melinda

Modifications to Ops Plan Draft

Dropsonde flight tracks

Operation of P-3s near dropsondes

Damage Surveys: strategy and logistics

GBOS operation near MCVs

GBOS "crew duty day"

88D archival hardware

Dropsonde "no-drop" zones (map US Census web site; flight charts)