

Fleet-77 Marine Field Evaluation on the R/V Maurice Ewing

Val Schmidt
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LAMONT-DOHERTY
EARTH OBSERVATORY
OF COLUMBIA UNIVERSITY

Participants

- **LDEO**
- **Thrane & Thrane (Denmark)**
- **INMARSAT**
- **Telenor**

LDEO Participants

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- Network engineer, Instrument Lab

- Richard Oliver-Goodwin

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- Sysadmin, Office of Marine Affairs (OMA)

- Paul Ljunggren

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- Marine Superintendent, Office of Marine Affairs (OMA)

Fleet 77 “Services”

Digital

“High Speed Data Service”

64 kbit/s Data – ISDN

56 kbit/s Data – ISDN

MPDS – (Variable Bandwidth up to 64kbit/s, Pay Per Packet)

Analog

Speech

3.1kHz Audio

“Mini-M” Services (2.4kbit/s)

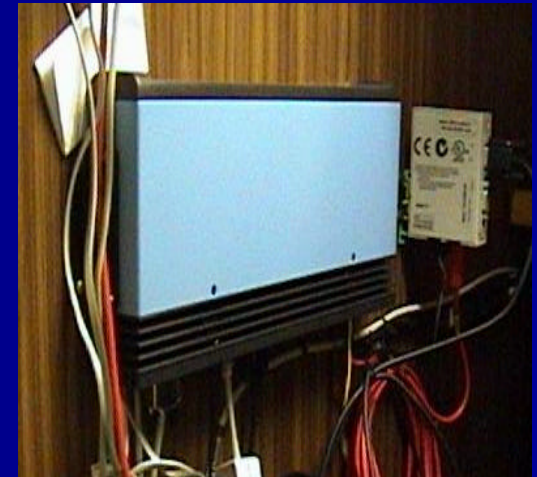
Mini-M Voice

Mini-M Fax

Thrane & Thrane BDU Interfaces

- 2 - Handset Jacks (1 Handset Provided)
- 3 - RJ11 2 Wire Analog Jacks
- 1 - ISDN Interface (allows multiple connections with devices that support multiple subscriber line (MSL) [1B + 1S])
- 1 - USB Jack
- 2 - RS-232 (DB9)

Installation



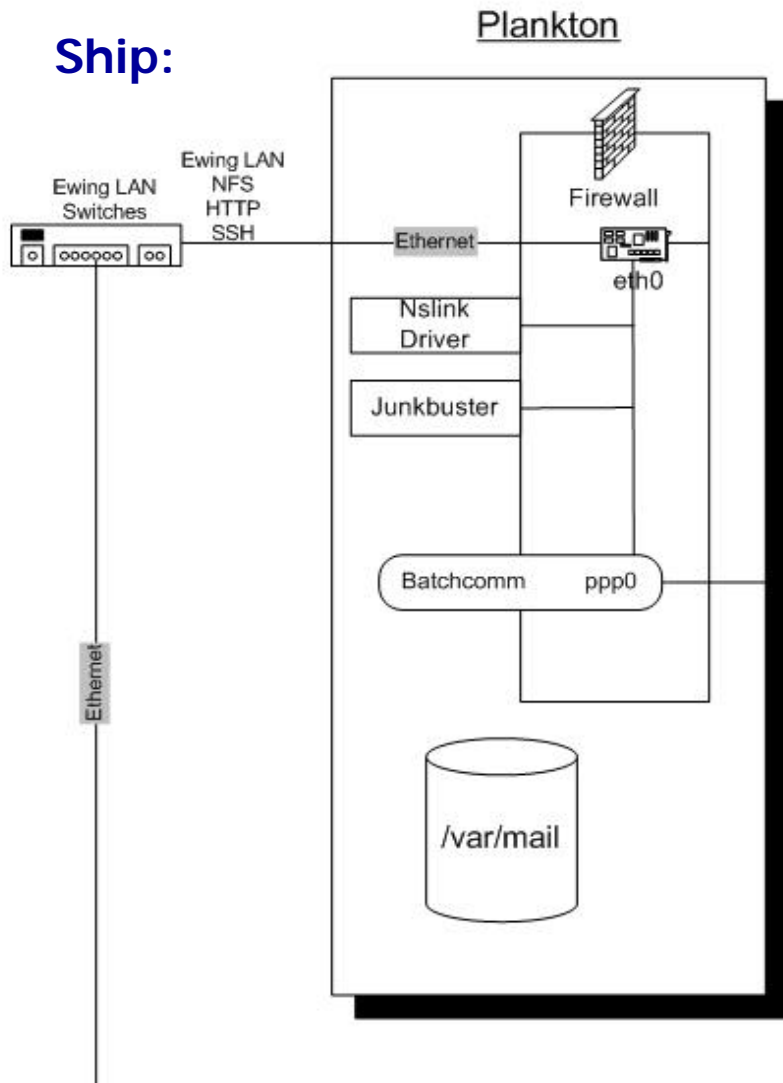
Installed a T&T 3084A
Fleet-77 Mobile Earth
Station (MES) on the R/V
Ewing in Guam (mid-Feb
2002)



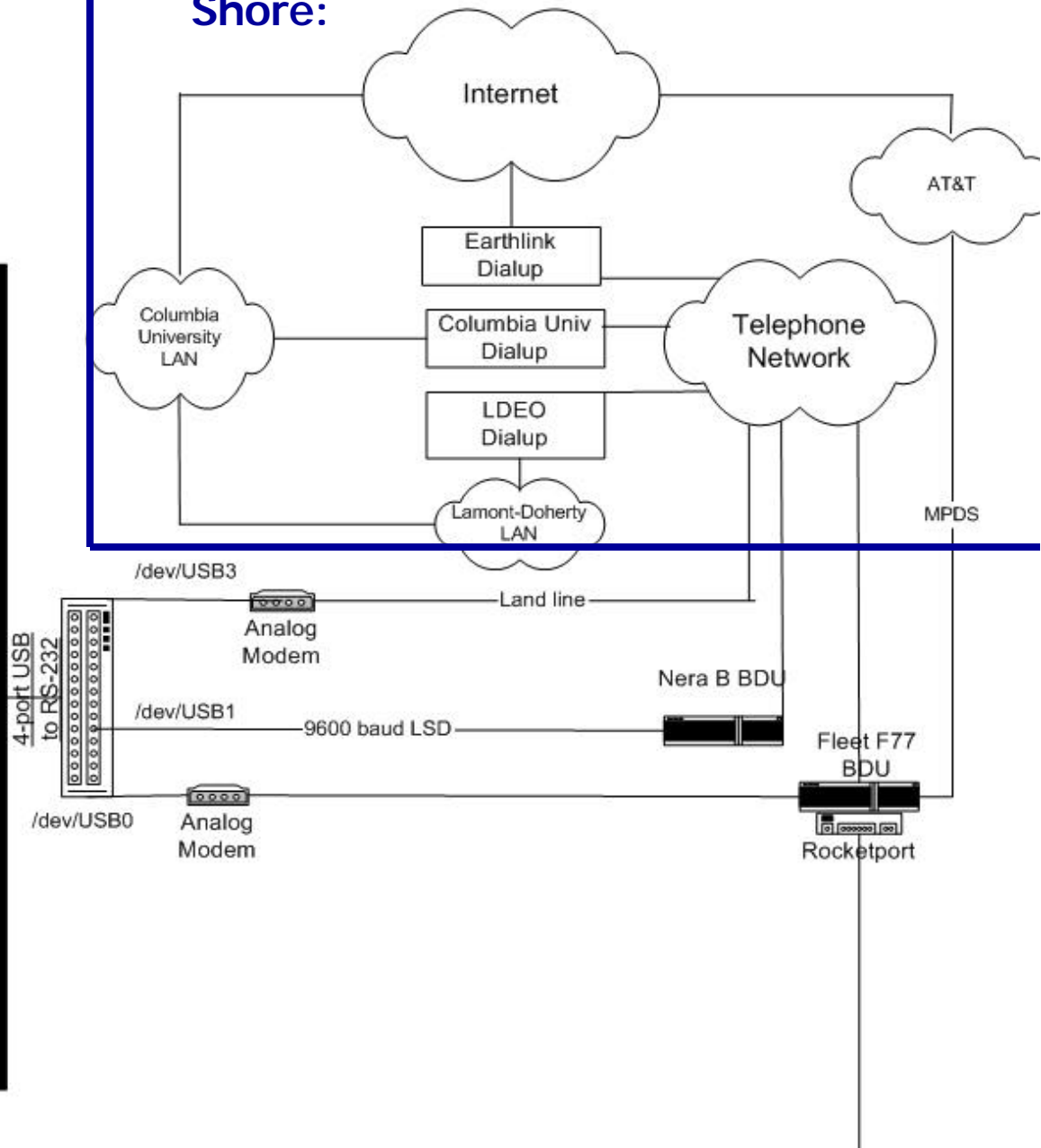
Data Streams

Ewing Mail System
 Mail Diagram
 Thursday, May 23, 2002
 Ethan Gold and Richard Oliver-Goodwin

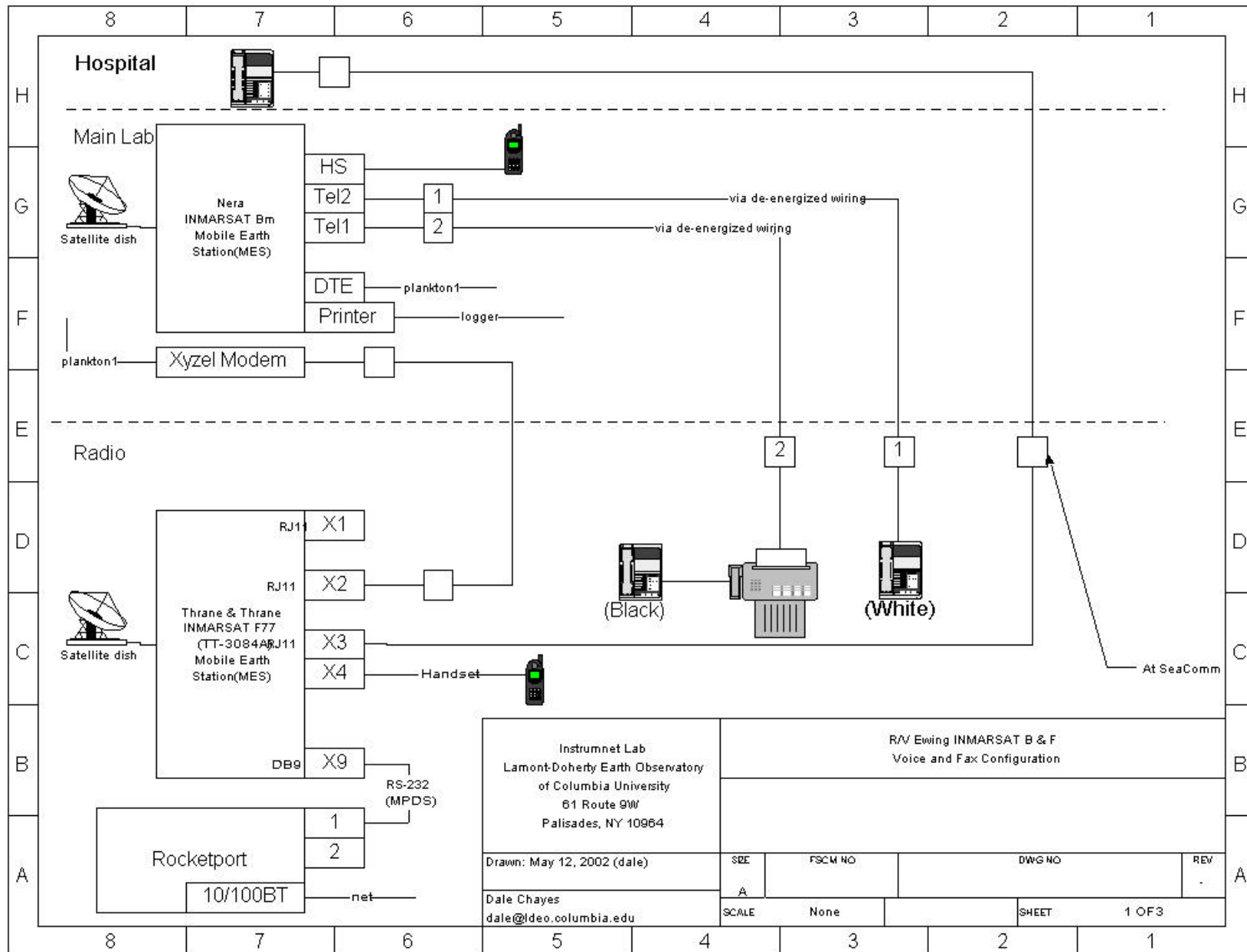
Ship:



Shore:



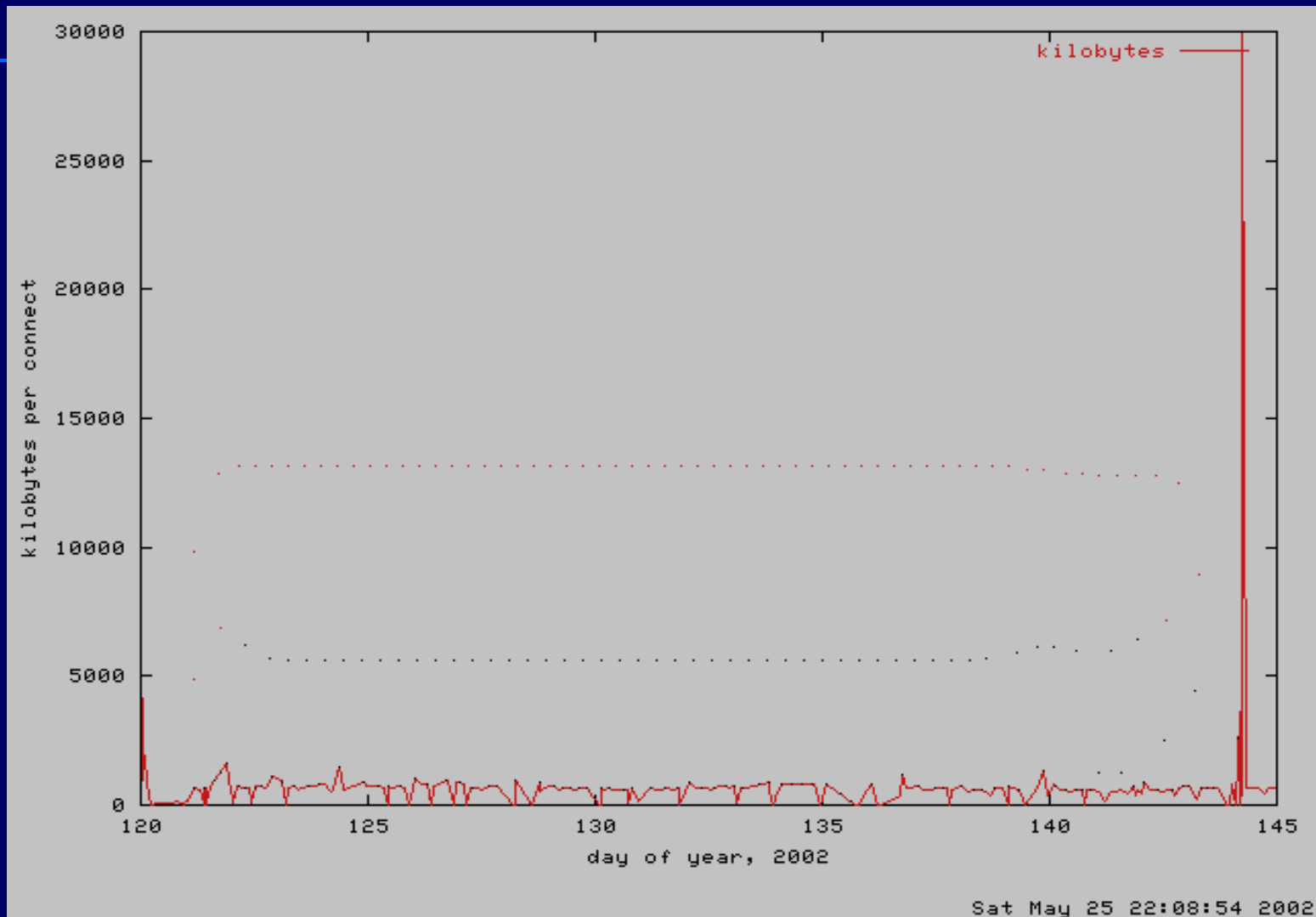
Voice Streams



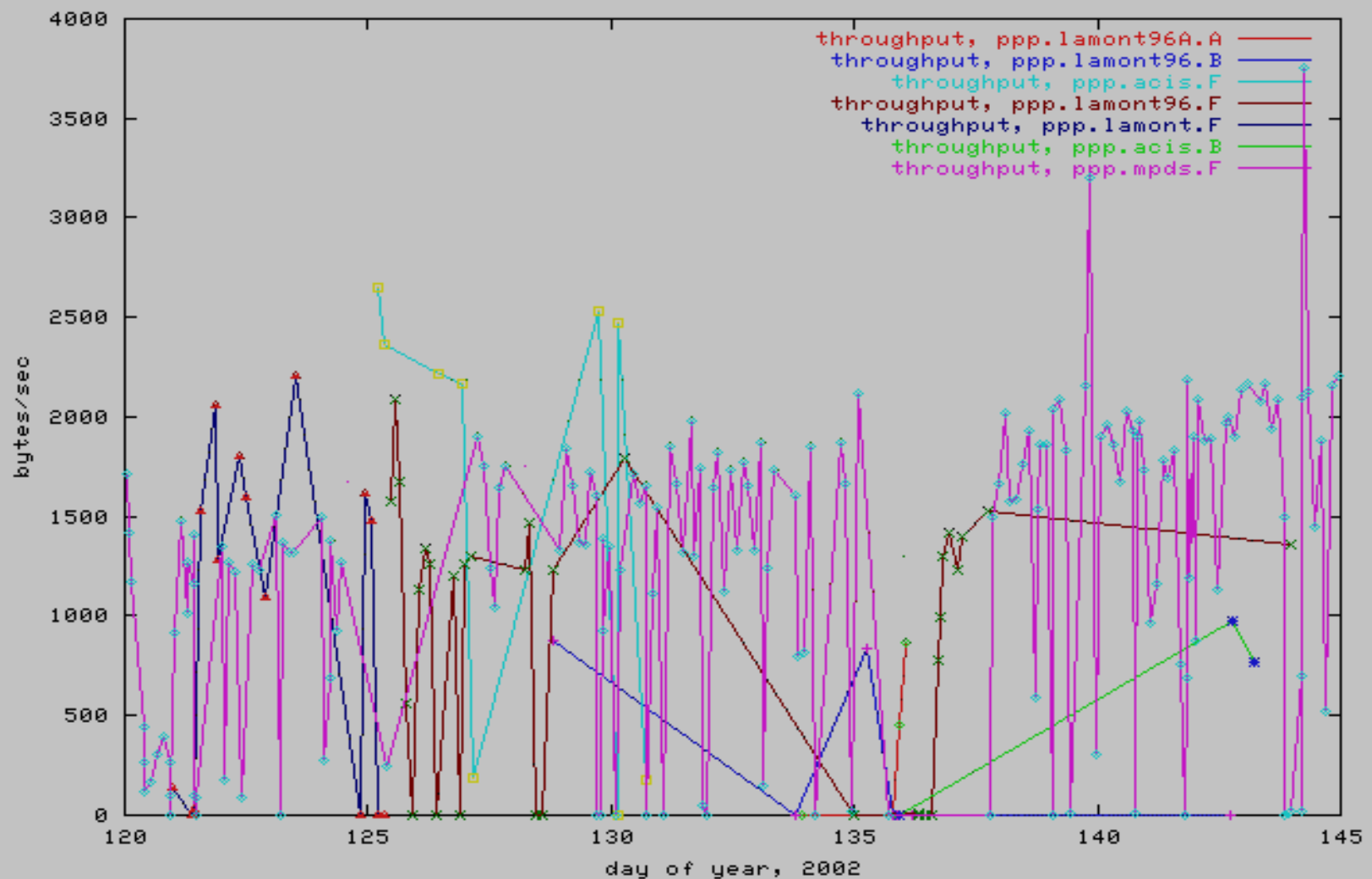
Looked at...

- Mobile Packet Data Service (MPDS)
 - Throughput, latency, bandwidth
- Some “audio” with analog modem
 - Throughput, latency, bandwidth
- Some “speech” for voice calls
- Extensive use of Mini-M voice
- Performance plots are updated (daily) at:
 - <http://www.ldeo.columbia.edu/~etgold/statdir/05/STATS.html>

Bytes transferred

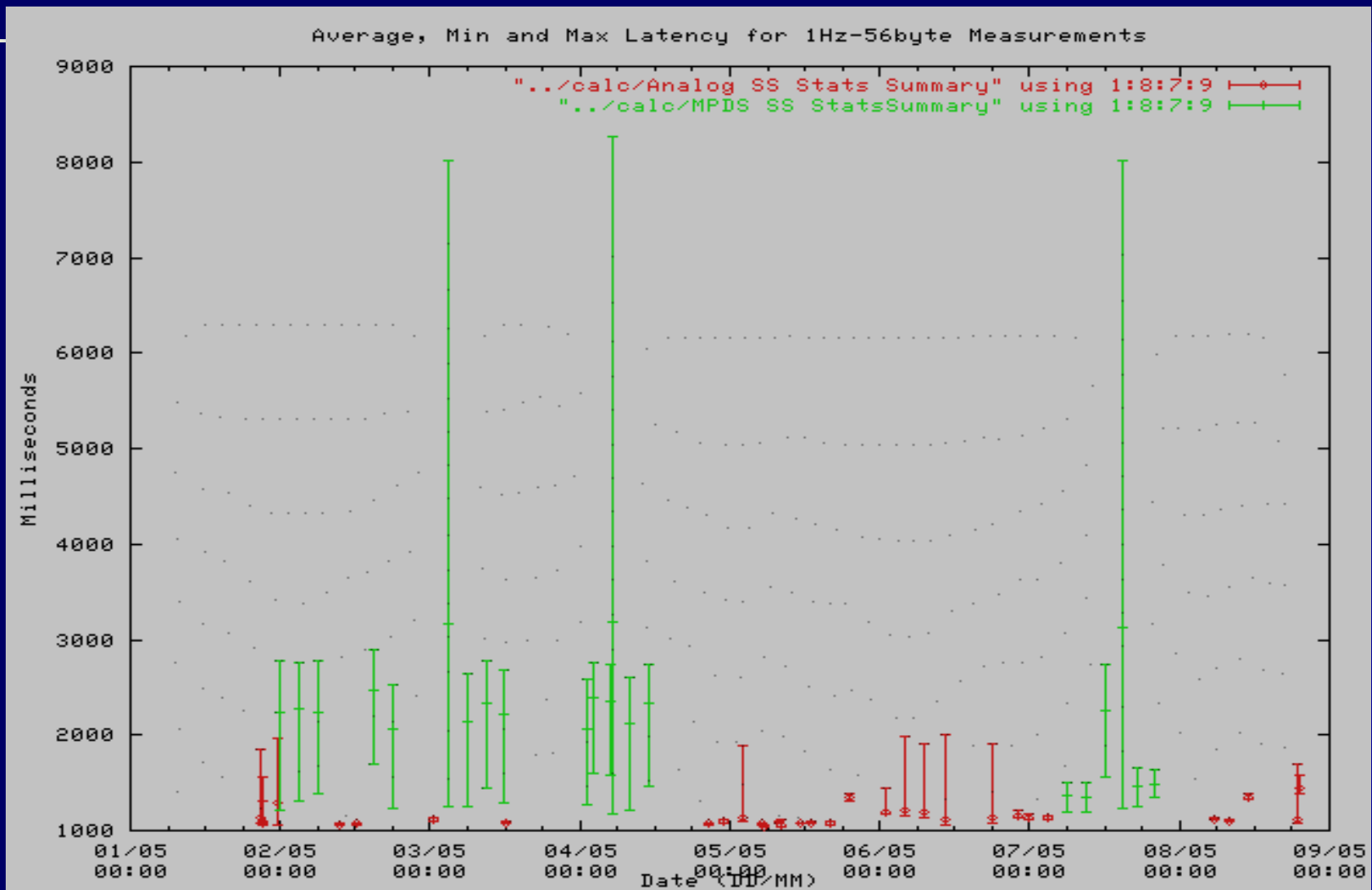


Throughput

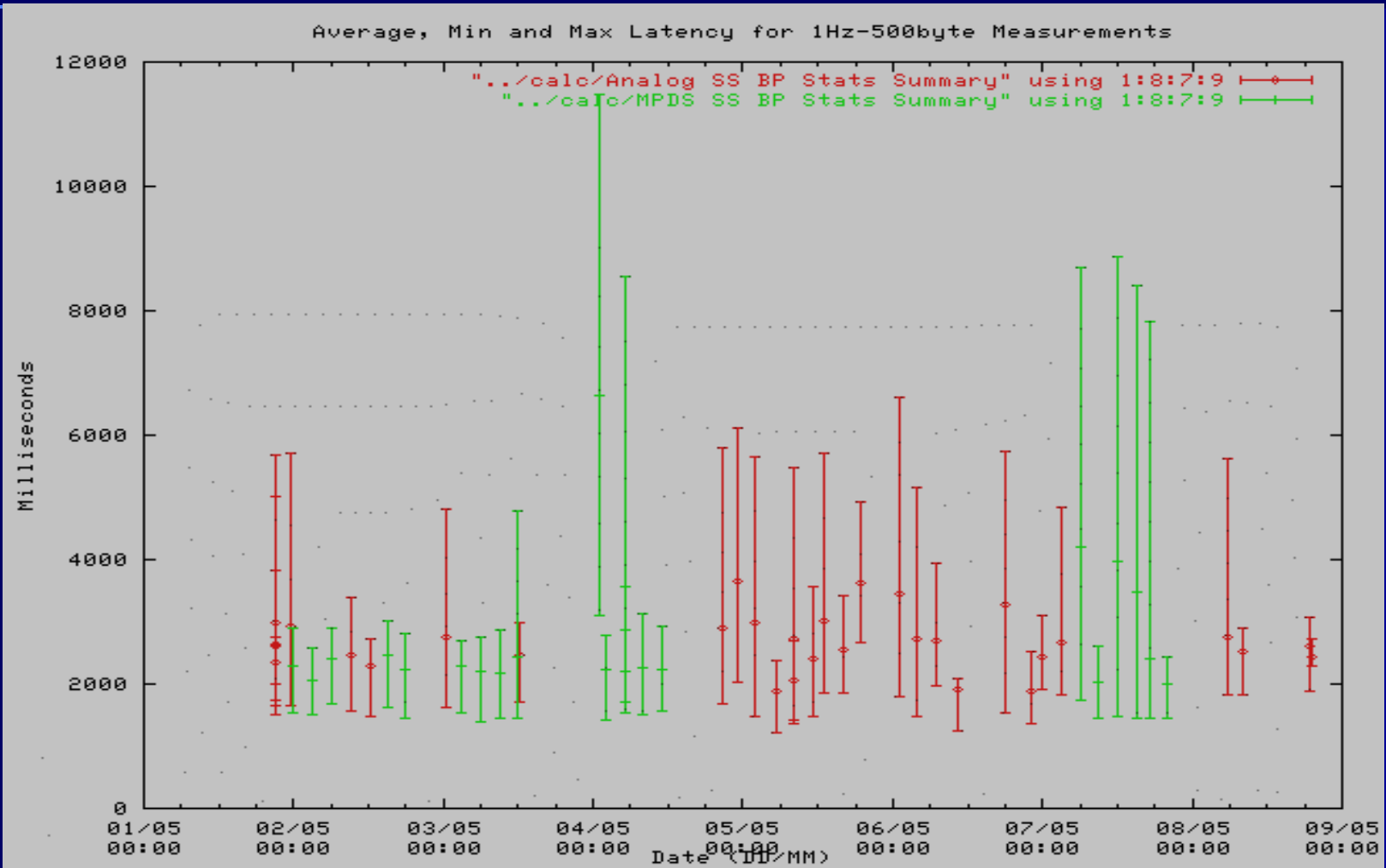


Sat May 25 22:08:55 2002

Latency (56 byte @ 1 Hz)



Latency (500 bytes @ 1Hz)



Latency (500 bytes @ 50Hz)



Observations

- Size and ease of TT-3084A installation is great!
- MPDS Has Much Potential
- DNS (over MPDS) unreliable (caching DNS?)
- Fleet-77 “speech” quality is excellent
- Analog modem over “audio” works well
- Issues remain with “Speech” and “Fax” calls to the ship – carrier selection and ISDN compatibility
- Current TT-3084A firmware has a problem with some external devices on the analog voice lines