

APPENDIX X

SeaNET UPDATE
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SeaNET update

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Andy Maffei and Dale Chayes

The SeaNet Communications Node (SCN)/INMARSAT-B system which has been on the R/V Thompson was moved to The Joides Resolution (SEDCO-471) during a regularly scheduled port stop in San Diego at the end of October. This move would not have been possible without the able assistance of Mike Realander who handled the removal and packing on the Thompson end and the SEDCO crew, who managed to find time to assist with the installation in the middle of replacing both of their radars.

The installation on the Resolution was done to allow wire line logging data to be transferred ashore for analysis with the results to be sent back out to the onboard science party during the drilling leg 170. The Borehole Research Group which leads the wireline logging effort on the resolution has been using a VSAT system courtesy of Schlumberger to do this for some time. The SCN/INMARSAT-B system was installed for the current leg because the drilling site was expected to be beyond the reach of the existing VSAT capability.

As with all INMARSAT A installations, there are still problems with antenna masts (and the drill rig!) blocking the view of the satellite on certain headings. This problem is somewhat lessened by SEDCO-471 remaining stationary for much of the time during a cruise. High Speed connections to shore need to be coordinated for a time when the ship is pointed towards the equator (more or less). We are working on a software module that calculates good headings based on a ship's above deck profile and the predicted azimuth and elevation to an INMARSAT satellite. Careful planning of the antenna location can reduce the impact of obstructions. One of the things we have learned about INMARSAT B is that voice connections are more robust in the face of obstructions than for INMARSAT A. However, HSD connections require a clear line of site to the satellite. For shipboard applications where continuous HSD service is critical and a single location can't be found, consideration of two antennas might be an alternative.

We are now getting ready to help with some periodic transfers of wireline logging data from the SEDCO-471 after the first hole is finished and logged which we expect within the next week. There are some ISDN problems to be worked out and some software to be tweaked in support of their efforts to transmit some fairly large seismic files over the INMARSAT-B SeaNet system installed on the Resolution.

It is likely that we will see on the order of half a dozen large (multi-megabyte) file transfers during this leg and we expect to be able to monitor the transfer characteristics and hope to be able to improve the throughput over time while providing a useful service to the science community at the same time.

When it became clear that the our INMARSAT B system with High Speed Data (HSD) was going to be installed to support the wireline logging effort, TAMU expressed interest in using the link to transfer their cc:Mail messages between ship and shore. We are working with them to develop and implement a

test plan. One of the problems is that the ship is currently using an network number that is already in use on the TAMU campus. A "simple" TCP/IP routing scenario is not an option. A lesson to be learned from this is that even for ships (or remote sites) that do not anticipate a direct Internet connection, now is the time to allocate legitimate network addresses.

Our hope is that when (if) UNOLS vessels move to using INMARSAT-B more then we will have an attractive communications hub for them to use for various Internet type tasks. We should have some hard numbers to report by the end of the year concerning optimal file transfer rates and costs. We are also hoping to port the software to a Linux platform soon and make it available as a development platform for other shipboard applications.

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