To: All Port Engineers and S/C/E

From: Bruce Cooper, C/E
       MV Tacoma

Date: 02-23-05

Re: North Sea Resins

Back in December of 2003 I sent out some information on North Sea Resin Rapid Repair Kit. The kit contains a photosensitive resin that cures in 30 seconds under intense, blue LED light. Last night I had a chance to use this product.

We received a call that water was dripping from a light fixture in front of the 2nd Mates door. After pulling the overhead panels we found that a slop sink drain in a Texas deck-cleaning gear locker had an incomplete weld in the pipe. Finding the leak required squeezing into the overhead over some ductwork using a flashlight and mirror. It appeared to have been leaking onto the ductwork for some time.

I decided to test out the Rapid Repair Kit because 1) it was a tough location to get into with both hands to soft patch; 2) the pipe was at atmospheric pressure and 3) "just cause" I wanted to test the product.

I first used to thin resin to fill the small void, used the blue LED to cure it for one minute. I then used the thick resin to add some body to the patch, allowing the resin to have a larger mechanical bond area. Once again I cured it for one minute. I then attempted to clean up the patch edges by trying to apply the thick resin but successfully dropped the tube between the steel bulkhead and the passenger cabin bulkhead...where it will remain. I applied the thin resin to the patch edges and noted that it started to run down the pipe but was able to quickly LED cure it to prevent the resin from running any further. The patch was applied using a flashlight and mirror thus I would not call it a beautiful patch but it did successfully seal the leak. We were able to test the patch quickly after the patch cured. I was pleased to see that the resin self-life held up well to sitting in the EOS refrigerator for over a year. I sent in a Work Order for repair at our next yard period. I am still waiting for a chance to use this product on a pressurized pipe leak.

Before and after shots.