

Deep-Sea Rescue of Valuable Research Instruments

Narrator: One hundred meters below the surface, off the Washington coast, a remotely-operated vehicle (ROV) is deployed by APL-UW ocean engineers and physicists on a mission to recover critical moorings.

John Mickett: We haven't attempted this before.

Narrator: Primary and backup acoustic releases had failed. So the ROV was sent in to free the mooring.

Mickett: We weren't sure this was going to work.

Narrator: The target was small – a single link of the mooring chain.

Mickett: We wanted to get our equipment back.

Narrator: The moorings are part of the NANOOS Northwest Enhanced Moored Observatory.

Mickett: We were out there at the end of October. The releases wouldn't let go then either. That was the longest they'd been deployed.

Narrator: The ROV rescue mission was a challenge for pilot Tim McGinnis.

Mickett: The ROV was moving back and forth. It was being buffeted by currents and there was cable drag. We finally got it.

Narrator: The prime suspect in the failure of the mooring release — corrosive sea water.

Mickett: When you trigger the release to let go, this hook drops out and then this larger hook, which holds the mooring, will drop down like this and let things go. What happened on both of these moorings – there's a pin that comes out of here – a stainless steel pin if you look closely, it had – things had fused in there. Stainless had almost fused to stainless. So when this rotated, this didn't move – didn't want to let go. It just sat there.

Narrator: John Mickett forecasts a redesign to deal with the corrosion issue and upgrade the release mechanism.

Mickett: There's a lot of unknowns and we hadn't done it before. But it actually worked out really well. Surprisingly well. I think we were all quite surprised how effective it was.

This is APL **The Applied Physics Laboratory at the University of Washington in Seattle.**