

# Appendix XIV

## Z Drives Glosten Report Recommendations

### Z Drives Glosten Report Recommendations, 1998, and Current Status

1. *The original RIV Knorr lower starboard gear was replaced at the May 1998 drydocking. This was important to do because the original gear was a high risk gear. WHOI had purchased two new lower gear sets for Knorr in advance of this drydocking, and checked the contact area of the installed port side 1997 replacement lower gear. At this time it was determined that in accordance with the "moderate risk" definition, the cost/risk assessment determined that the 1997 replacement gear (port side) should not be replaced. Both units had bearing/seal replacements.*

Status:

- Two gears purchased.
- Starboard gear replaced, but not port gear, by ONR direction.
- Bearings and seals replaced on both sides.
- Remaining new gear held as spare.
- New gears are of Klingelberg manufacture (firm with best tooth contact/hardening performance to date on earlier gears), but were on hand/rapidly available, thus meet 0.094 in. case depth, not the more stringent 0.104 in. specification.
- The new gear bought but not installed should serve as a competent, if not optimal, fleet spare provided good tooth contact is maintained.

2. *Replace the original R/V Melville lower port gear at the next drydocking. The contact area of the 1993 replacement gear should be checked at this time, and a cost/risk assessment made as to replacement of this starboard gear.*

Status:

- ONR funded purchase of two new gears; both to be replaced at next drydocking.
- ABS is reviewing gear specs./certification process via a Corrective Action Team (CAT), which may lead to changes.
- Purchase of gears being held until CAT is settled, due August 15, 1998.
- ONR has asked Lips to meet/discuss the issue after CAT analysis is received.

3. *Obtain one spare lower gear set for Melville/Knorr class, held in reserve in case of a failure. This gear will serve as a spare for all 4 thrusters.*

Status:

- WHOI gear purchased but not installed should serve for now
- But see discussion in #1 above; there may be cause for additional changes in Knorr after CAT results, ONR/Lips meeting, etc.

4. *Obtain one spare port upper gear and one spare starboard upper gear for AGOR 23-5.*

Status:

- Funded by ONR.
- Complete lower unit spares exist, so spares complement will cover all 4 possibilities (port upper, port lower, starboard upper, starboard lower) when these are purchased/on hand.
- This purchase also on hold pending CAT results.

