

EDUCATION, SCIENCE AND TRAINING

SENATE LEGISLATION COMMITTEE – QUESTIONS ON NOTICE 2003-2004 BUDGET ESTIMATES HEARING

Outcome: CSIRO
Output Group: CSIRO

DEST Question No. E103_04

Senator Carr asked on 4 June 2003.

Question:

- (a) Can you describe in detail any serious problems did occur at sea with the CTD winch?
- (b) Did this result in injury? Was that satisfactory?
- (c) Do you agree that this stems, in part at least, from inadequate spooling of the cable in Hobart?
- (d) How is that crew member now?
- (e) What OH&S reports have been made?
- (f) What action has been taken to try and rectify this particular problem?

Answer:

Southern Surveyor – Winches – Problems at Sea with CTD Winch

CSIRO has provided the following response.

(a) i) During SS02/2003 a problem occurred when the guide knife in the spooling gear jumped across the archimedes screw causing the wire to mis-spool for part of the lay during a CTD upcast. The wire was paid out again, the knife was re-aligned and the cast was completed. During the next dredging operation the guide was dismantled and the worn knife was replaced with a spare. The repair took several hours.

ii) During a tow-yo cast on SS02/2003 the outer support bearing on the aft drum became noisy and hot. Grease was applied which stopped the noise and reduced the heating. On inspection of the winch after the cast it appeared that the aft drum had become mis-aligned on the shaft – it was not possible to determine the cause of the misalignment at the time. During SS03/2003 the misalignment appeared to become worse and the decision was taken only to use the forward CTD drum and not to use the aft drum until the cause of the problem could be determined and repairs made.

iii) During tow-yo operations on SS02/2003 the scientists requested that we pay out more wire than had been previously spooled off (tow-yo's require more wire out than standard CTD casts in the same depth of water). After several casts to the greater depth we began to experience problems with the spooling of wire on the drum due to the cumulative effect of tension on the outer layers compressing the inner layers to a smaller diameter. This is a very small effect when considering the circumference of one turn, however, when accumulated over many turns does result in a significant surplus of wire that needs to be accommodated. With repeated over-winding, the surplus worked its way to the drum check where it became trapped and was forced out through the lay above which rendered any

ordered spooling impossible. To remedy the problem we paid out two more lays of wire to take out the slack and allow the wire to be re-spooled correctly.

(b) The boatswain was injured during an operation designed to pay out and re-spool the CTD wire to avoid a repeat of the problem described above (see (a) iii). A drogue was used to keep the wire under tension and away from the ocean floor.

This was not satisfactory – the injury was an unacceptable incident, and the procedure was immediately abandoned.

(c) The CTD wire was wound onto the winch under sufficient (but not full) tension in Hobart to meet requirements of testing the spooling gear, lebus shells and drum capacities. It was intended to re-spool the entire length of wire at sea if sufficient water depth were available. At sea, greater wire lengths were used than initially planned, resulting in spooling problems. Re-spooling at sea is a common practice during the commissioning of a new or modified winch, or of new wire.

(d) The boatswain carried out light duties for about three days after his injury. He returned to normal duty after that time.

(e) A P&O Incident Report (SS0065) was filed, which is the correct procedure for any incidents involving P&O employees. Details of this specific incident report can be found in the incident report log which forms an attachment to question E201_04.

(f) The CTD winch is to undergo repairs and maintenance during the port period in Darwin in July 2003, including re-spooling the wires under tension.