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MISSILE LOADING INCIDENT

PLACE: RNAD Coulport (jetty)

DATE: 3.12.87

WEAPON CONCERNED: Polaris A3TK missile, Serial No. 2691 (in liner).

MACHINERY INVOLVED: Jetty crane - Arrol 40 T/5T diesel electric luffing tower crane.

Missile erection trailer (13898 RN).

BACKGROUND

1. Because of a series of test failures, on 2.12.87 HMS Repulse requested an exchange of one of her Polaris missiles at short notice, the transfer to take place on 3.12.87. The replacement was an A3TK missile, Serial No. 2691 in a liner with Westinghouse Hoist fitted to enable the missile to be lowered for embarkation into the SSBN.

2. Because no weapon outloads or offloads had been programmed, the more modern 50 ton jetty crane was out of service for maintenance and thus not available for this unplanned exchange. It was therefore necessary to use the older 40 ton standby crane.

3. Following the normal sequence of outload operations, the missile, positioned on its trailer under the crane, had been raised from the horizontal to the vertical position and the security blocks on the trailer supports slid out of the way thus freeing the liner trunnions. At this stage the crane director instructed the crane driver slowly to raise the load to clear the trailer. No upward movement of the load occurred. The crane driver indicated that he could not raise the load. After consultation with those present it was decided to lower the load to the horizontal position on the erection trailer and investigate the crane defect.

4. The crane director gave the order to replace the security blocks on each side of the trailer and replace the required locking pins in accordance with established procedures. One block had been replaced and as the other locking pin was being inserted, the load began without warning to rise.

5. Sufficient movement occurred to cause the rear wheels of the trailer's prime mover to be raised 2 to 3 inches off the ground. The load being applied to the trailer supports and security blocks caused the block that was partially closed to be released and the block that was closed and locked to be forced open. This action released the trailer and caused the load to twist and oscilliate and then collide with the trailer supports. The personnel manning the tag lines were then able to bring the load under control.

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6. Under the direction of the senior representative the prime mover was moved forward approximately 6 feet and the missile in its liner was lowered onto the bed of the trailer in a vertical attitude and the load on the crane partially removed.

7. At this stage senior management were informed of the incident and took control. The depot emergency headquarters was manned and activated. The initial [redacted] signal was prepared and transmitted. Shortly afterwards the Chief Engineer at Coulport declared the situation safe and stable. Recovery action followed; subsequently it was found that there was absolutely no damage to the missile.

BOARD OF INQUIRY

8. On the 4 December 1987, a Board of Inquiry was convened to investigate the circumstances and report findings, with recommendations.

9. The Board of Inquiry concluded that:

a. The accident was due to human error on the part of the crane driver, following the development of a defect in the 40 ton crane.

b. There were some deficiencies in procedures for controlling the maintenance and defect rectification of the 40 ton crane and for adequately certifying it fit for lifting a Polaris missile, given its "back-up" status to the preferred 50 ton crane.

c. Although the speed of the operation was not a major factor in this incident, the operational imperatives to effect any unplanned missile exchange can create pressures which need to be taken into account by management to ensure that the absolute safety of such an unexpected occurrence is not diluted.

The Board made a total of 11 recommendations relating to lessons learned.

10. DGST(N) has accepted the findings of the Board of Inquiry and its recommendations. A subsequent detailed submission on the recommendations, which have led to substantial changes in management responsibilities, training, command and control, and consultation with the RN, and which have now been implemented, has been endorsed by CFS who regards the actions as having been completed.

11. CSSE and D Nuc Pol/Sy have also been informed and are satisfied with the outcome of the Inquiry.