MAIB

MARINE ACCIDENT INVESTIGATION BRANCH

SAFETY FLYER TO THE SHIPPING INDUSTRY

Failure of non-cargo handling lifting appliances

The dredger *Sand Falcon* was alongside at a jetty when the trolley from its gantry-type stores crane came off and fell 7.5m landing on the deck guardrails. The trolley weighed over 400kg and narrowly missed the 7 people who were working nearby on the main deck and ashore on the jetty. The crane was being prepared to load ship's stores at the time and was not carrying any load.

The failure was due to a combination of design flaws, lack of maintenance and weaknesses in the inspection and testing methods used to assess the safety of the crane.

The floating sheerleg *Cormorant* was raising her 85t 'A' frame when two pad eye fittings holding wire supports detached from the deck causing the sheerleg to fall back onto the wheelhouse. Considerable damage resulted but there were no injuries.

The failure was due to the rigging being overloaded by the uncoordinated use of the hoisting and luffing winches**.** The raising of the sheerleg had not been identified as a key shipboard activity. There had been no risk assessment and no written operational procedures were provided. No alarms or interlocks were fitted to the hoisting system.

The pad eyes had not been identified as lifting equipment and had not been inspected or tested for 37 years. Although their condition was not considered to have contributed to the failure, weld fatigue was identified by non-destructive testing to corresponding pad eyes on board a similar vessel

The 77m general cargo vessel, *Velox,* was loading grain and the crew was tasked with painting the hull using the ship's workboat. Instead of using the workboat's hand-operated davit, a larger electrically-driven stores crane was used. An AB and cadet boarded the workboat and it was hoisted off the cradle. After some problems slewing the workboat outboard, the workboat was then lowered. When it had descended approximately 2m, the lifting wire parted and the boat, with its occupants, fell 8m into the water. Both the AB and the cadet suffered serious injuries.

The lifting wire was in an extremely poor condition and it was later found that the stores crane had not been maintained for some time. The stores crane was meant to have been decommissioned, but not everyone knew this and it had not been put out of use.

Overseas Camar was alongside loading a cargo of gas oil and a stores barge was secured on the outboard side. The stores crane had lifted the first load of hydraulic oil drums safely and a second load was being hoisted, when suddenly the load began to fall back onto the deck of the stores barge. The crewmen on the stores barge looked up and saw both the crane and its operator, who was in the control platform attached to the crane, falling. The crane struck the side of the ship, crushed a skip on the stores barge and fell into the sea. It was first thought that the operator had fallen into the sea too, but he landed on a lifeboat deck, some 5m below the crane pedestal. Although his injuries were severe, he was extremely fortunate not to have fallen further and been killed. Both crewmen on the stores barge were able to run clear.

The nuts and bolts used to hold the crane pedestal to the mounting ring were badly corroded, allowing the bolts to pull straight through the nuts. Neither the ship's planned maintenance nor inspections by the classification society had detected how bad the corrosion had become.

These accidents are examples of the 29 similar cases that have been reported to MAIB since 2001 involving the failure of non-cargo handling cranes. The majority of these cases had the potential to cause fatal injuries and although there were no fatalities, a total of 11 people were injured.

Safety Lessons

- Check that planned maintenance and inspections cover all parts of the equipment and arrange proper access to reach components in awkward positions.
- If the manufacturer's maintenance instructions are poor, or there are none, get expert assistance to make sure that the right maintenance is being done.
- Check that all non-cargo lifting appliances have been identified and recorded in accordance with national regulations. Some, like the rigging used to raise a sheerleg, might not be obvious.
- Make sure that those carrying out statutory inspections, load tests and thorough examinations are competent to do so. Employing contractors who meet a recognised industry standard should provide greater quality assurance.
- Follow the guidance on lifting equipment published by the Maritime and Coastguard Agency in Marine Guidance Notes 331 and 332, and in the Code of Safe Working Practices.
- Ensure that all key shipboard activities are identified, risk assessed and that the control measures identified, such as procedures, alarms and interlocks, are provided.

This flyer and relevant MAIB's investigation reports are posted on our website: www.maib.gov.uk

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