



FINDINGS OF CONCERN

Sector Honolulu

February 13, 2023
Honolulu, HI

Findings of Concern 004-23

ANTI-TWO-BLOCKING DEVICES FOR DECK CARGO CRANES

Purpose. The U.S. Coast Guard issues findings of concern to disseminate information related to unsafe conditions that were identified as causal factors in a casualty and could contribute to future incidents. Findings of concern are intended to educate the public, state, or local agencies about the conditions discovered so they may address the findings with an appropriate voluntary action or highlight existing applicable company policies or state/local regulations.

The Incident. Recently, a U.S. inspected cargo vessel was underway with crewmembers and charter members conducting marine debris clean-up. They were utilizing a deck cargo crane to move the debris from open top containers to large bags on the aft deck for further disposition. While the last of the debris was removed from the first container and placed into a bag, the crane arm was moved up to be repositioned to the second container. During the crane arm's movement, the crane's lower and upper blocks became "two-blocked", causing extra force to be applied to the wire rope. The wire rope snapped, resulting in the lower block to fall to the deck below, subsequently striking a charter member in the leg and fracturing the member's femur in two places.

Contributing Factors and Analysis. Although not required by current laws or regulation, the lack of an installed anti-two-blocking device (ATB) was identified as a defense that could have prevented this casualty. The crane's lower block weighed approximately 100 lbs. and was under no additional strain due to the marine debris having been removed. Post-casualty, approximately 10 feet of wire rope was cut from the working end of the crane and subjected to a break test. The wire rope failed at 23,000 lbs., meaning the accidental two-blocking applied at least 22,900 lbs. of force to the wire. If the crane was equipped with an ATB, it would have been physically incapable of two-blocking. In addition, the Coast Guard identified inattention errors by the crane operator as a contributing factor.

Findings of Concern. Coast Guard investigators have identified the following measures for owners/operators of similar vessels to mitigate the risks associated with the contributing factors identified above.

- Recommend vessels with deck cargo cranes install an ATB.
- Recommend that vessels equipped with deck cargo cranes establish policies/procedures for crane operations to include training/qualifications of crane operators and deck personnel, equipment use, safety protocols, and identification of hazardous areas.

Closing. These findings of concern are provided for informational purpose only and do not relieve any domestic or international safety, operational, or material requirements. For any questions or comments please contact the Sector Honolulu Investigations Division by phone at (808) 522-8251 or by email at D14-SMB-SecHono-Investigations@uscg.mil.