

# Reducing Winch Entanglements With Stationary Guarding

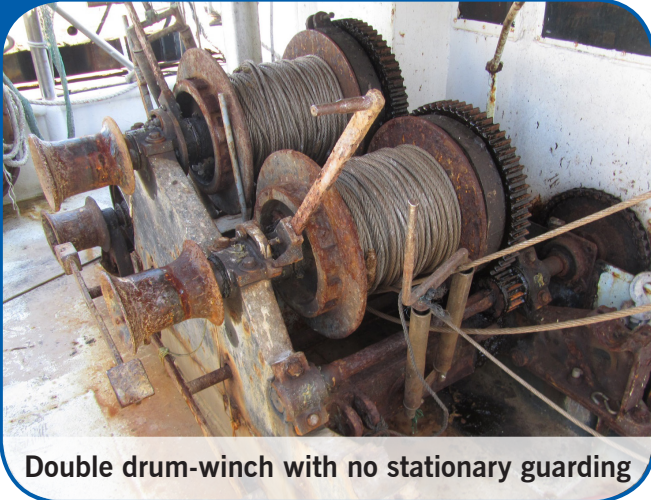
Commercial Fishing Safety Research and Design Program

## BACKGROUND

The US Coast Guard approached NIOSH about an increase in the number of winch entanglement injuries being reported among commercial shrimp fishermen in the Gulf of Mexico. In August of 2012, a 15 year-old boy, fishing on a shrimp boat, died when his clothing became caught in an operating deck winch. This fatality received widespread coverage within the industry and further highlighted the need for action.

Using the NIOSH Commercial Fishing Incident Database (CFID), researchers at the Alaska Pacific Office began studying the incidence of shrimp winch entanglements and found a total of 35 severe work-related injuries, including eight fatal injuries, caused by deck winches reported in the Southern shrimp fleet from 2000-2011.<sup>1</sup>

## NIOSH IS RESEARCHING STATIONARY GUARDING TO HELP PREVENT WINCH ENTANGLEMENTS



Double drum-winch with no stationary guarding

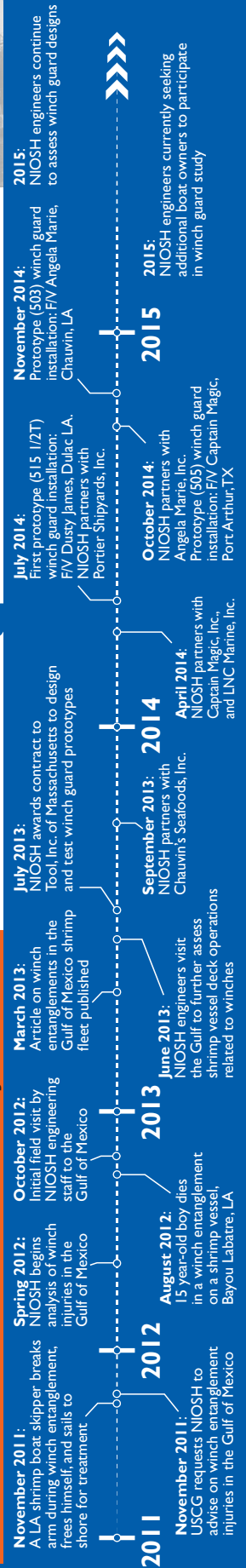


## RESEARCH

In the fall of 2013, a NIOSH contractor conducted dock side surveys to identify three of the most common drum winches used on Gulf of Mexico side-trawl shrimp vessels. The survey identified particular main-winch for guarding: the McElroy/Catchot 505, and 503 and the Stroudsburg 515 ½ T winches. NIOSH engineers designed standardized stationary guarding for each identified main-winch and built initial prototype guards for each model to be sea-tested.

NIOSH formed partnerships with boat owners to test the guard designs on each type of winch. The Gulf of Mexico shrimp fleet is diverse, both geographically and culturally. NIOSH sought to find boat owners from the various cultural groups to collaborate with the winch-guard testing. Three working side-trawl shrimp boats were chosen as test vessels operating out of Dulac, LA, Port Arthur, TX and Chauvin, LA.

## Timeline: Gulf of Mexico Winch Safety Research



**STATIONARY GUARD DESIGNS (FIRST VERSION) INSTALLED ON THREE COMMONLY USED WINCH MODELS**



**515 1/2 T Stroudsburg triple-drum winch without stationary guard**



**505 McElroy double-drum winch with minimal stationary guard**



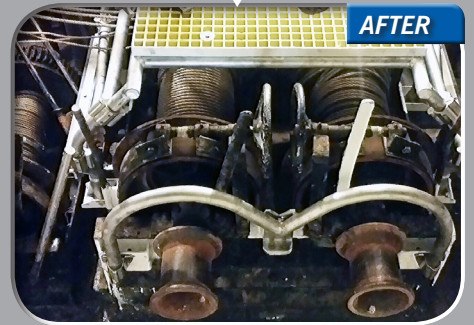
**503 McElroy double-drum winch with minimal stationary guard**



**515 1/2 T Stroudsburg triple-drum winch with prototype guard installed**



**505 McElroy double-drum winch with prototype guard installed**



**503 McElroy double-drum winch with prototype guard installed**

**ONGOING OUTPUTS**

NIOSH has completed initial designs for stationary-winch guards for three of the most commonly used models of winches currently used by the Gulf of Mexico shrimp fleet. Through collaborations and partnerships with shrimper associations and safety groups, the successfully tested winch guard design plans will also be made available to shrimpers via various internet websites. NIOSH intends to release the information in English, Spanish, and Vietnamese to better reach the target audience. The refined designs, including material specifications and estimated building costs, are scheduled to be available without charge to fishermen.

**Shrimp fishing vessels currently equipped with stationary winch guards or auxiliary-stop devices operating in the Gulf of Mexico, September 2015\***



**NIOSH IS SEEKING VESSEL OWNERS AS PARTNERS**

Mention of any company or product does not constitute endorsement by the National Institute for Occupational Safety and Health (NIOSH).

<sup>1</sup>Centers for Disease Control and Prevention. Fatal and Nonfatal Injuries Involving Fishing Vessel Winches — Southern Shrimp Fleet, United States, 2000–2011. MMWR 2013;62:157-160.

\*You can find more information about other NIOSH engineering interventions by visiting [www.cdc.gov/niosh/topics/fishing/engineering](http://www.cdc.gov/niosh/topics/fishing/engineering) or follow us on Twitter @NIOSHfishing

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If you are interested in learning more about NIOSH's work in the Gulf of Mexico, or if you want to become a partner in the research or dissemination efforts, please contact:

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