

ABATED FALL HAZARD AT NAS WHIDBEY ISLAND FUEL PIER

Employees at Naval Air Station, Whidbey Island, Washington are required to walk back and forth between the pier and a fuel barge during transfer of aviation fuel from the barge. Pier workers used to risk falling into the frigid water of Puget Sound. This fall hazard was due to the steep angle of the access ramp between the top of the barge and the pier, as seen in the photo at left. Anyone who falls into the water between a barge and the pier during fuel transfer operations risks hypothermia, the dangerous lowering of body temperature due to loss of body heat while subjected to extreme cold. Other hazards include serious injury from hitting the pier or barge during the fall and the possibility of drowning.



The difference between high and low tides at the fuel transfer pier averages six feet. This means that at high tide, a barge sits higher in the water above the pier. The top of a barge is also significantly higher above the pier when the fuel barge is empty. The distance between the deck of the barge and the pier or the water line is called its freeboard. Increases in freeboard result in steeper and steeper climbing for pier workers (see photo at right), which increases the risk of falling overboard.



After several near misses, during which pier workers nearly fell between a barge and the pier, one employee actually did fall into the water and was lucky to escape serious injury. At the time the man fell, a tugboat had been pushing the barge up against the dock. An alert line crew aboard the tug quickly rescued the worker from the water, saving him from drowning and from being crushed between the pier and the barge. Fortunately, the worker suffered only minor injuries and mild hypothermia.

After that fall incident, the Chief of Naval Operations' Hazard Abatement Program funded the purchase and installation of a new floating dock. The brow, or front, of the dock is equipped with a hydraulic winch. The floating dock cancels the changes in freeboard, or variation in height between the barge and pier, due to tide changes. The new brow can be hydraulically raised and lowered in position, which also eliminates manual lifting.



Floating dock with hydraulic winch

The floating dock allows workers to move safely between the barge and the pier. The hydraulic brow has pivot points to accommodate the rising of the barge in the water as its cargo of fuel decreases. The Center of Expertise for Air

Stations, located at the Navy's Engineering Field Activity Northwest in Poulsbo, Washington, was instrumental in recommending and validating the floating dock equipped with a

hydraulically operated winch as an appropriate engineering control method to abate fall hazards during fuel transfer operations.

Point of Contact: Mr. Mark Kane, Engineering Field Activity Northwest, Poulsbo, WA

Telephone: Commercial (360) 396-0093, DSN 744-0093

Email: KaneME@efanw.navfac.navy.mil