

4 Post Mechanical Freight Lift for Submarine Decommissioning



The Challenge

The US Navy was seeking a specialized solution to efficiently and safely transport scrap metal and other material between the bottoms of a dry dock area to a disposal area approximately 41 feet above. The Navy was challenged to make the decommissioning process go as quickly as possible and, as such, needed a solution that met the following criteria: 1. High Capacity – lifting platform must be designed to safely manage large, heavy parts 2. High Travel – must be capable vertical travels to over 40 feet, traveling as fast as practicable 3. Severe Duty – lift components and finish must withstand outdoor use in sea-salt environment with high winds 4. Removable – entire lift structure and personnel guarding must be designed for removal, storage, and re-installation by overhead crane.

The Autoquip Solution

Autoquip met with its equipment integrator and representatives of the Navy to review government specifications and drawings of the dry dock and equipment storage areas. A 4-post vertical reciprocating conveyor (VRC) was ultimately recommended because of its ability to convey large, heavy loads over extremely high vertical travels, as well as its self-supporting lift structure that provided the freestanding and easily-removal features the application required. The 4-post VRC is a fully mechanical lift solution hoisted at the four corners of the platform, providing maximum clear space on all four sides for loading and unloading.

All electrical components were rated for wash-down service, the drive was provided with a cover to minimize the effects of the weather, and the entire lift finished with marine-duty epoxy primer and paint system. Safety



features included a carriage free-fall arrest system, redundant motor brakes, and personnel guarding in compliance ANSI B20.1.

Lift Specifications for this severe duty application:

Lift Model: FL4M-12

Lifting Capacity: 8,000 lbs. live load

Vertical Travel: 495"

Platform Size: 102" x 120"

Lifting Speed: 45 FPM

Actuation: Mechanical

The Solution Benefits

Benefits include: decreased turnaround time required to decommission a submarine; safe, fully enclosed conveyor system to transfer parts overhead; minimal footprint required to use & store lift; and the ability to re-use lift over and over.