

project brief

TYPE OF FACILITY:

World War II Liberty Ship



S.S. John W. Brown Liberty Ship

■ Baltimore, Maryland, United States



To address the sudden need for supplies overseas during World War II, the United States government launched an emergency shipbuilding program in 1941 that resulted in the construction of 2,700 cargo ships. Dubbed Liberty ships, these vessels were designed as economically and quickly built cargo steamers that formed the backbone of a massive seafight of troops, arms, materiel and ordnance to every theater of the war. Liberty ships like the Brown were not expected to last much longer than five years, but the 441-foot-6-inch-long Brown looks and sails almost exactly as she did at the end of the war and the Victaulic products installed are still holding water after more than 70 years. In fact, the vessel still sails today on living history tour cruises in Baltimore, Maryland.

Found on the grooved carbon steel piping of the ballast system are flexible malleable iron Victaulic couplings, which at the time were referred to as standard couplings for grooved steel pipe. Victaulic Style 77 flexible grooved couplings are the equivalent of these couplings today.

Lines from the engine room to the forepeak tank, the bilge wells in the forward three cargo holds, and the #1 and #2 cargo deep tanks are joined with the couplings. The four lines to the deep tanks are 4"/100mm diameter lines and have more than 30 couplings. These cargo deep tanks and the associated piping are not in use today, but were designed to handle cargo oil carried in the tanks. The single line to the forepeak tank is a 3½"/89mm diameter line and has approximately ten couplings. This line is still in use and carries fresh water stored in the forepeak tank.

Although exposed to a salt water environment, plus the vibration and stresses of an operating Liberty Ship the couplings performed flawlessly without the need for maintenance or replacement. According to Mike Schneider, a retired captain and volunteer on the Brown for more than 25 years, while not all of the ballast lines are still used, "the lines still have fluid in them so they have to be integral or pipelines with integrity; we can't have any leaks in them." Schneider also claims that there is no known record of any maintenance being performed on the ballast lines. The grooved couplings visible on the piping today are the original couplings installed in 1942, which are still holding strong.

SPECIFICATIONS:

SERVICES:	PIPE MATERIALS:	PIPE SIZE RANGE:
Ballast Water	Carbon Steel	2 – 4"/50 – 100 mm
Bilge Water	Carbon Steel	2 – 4"/50 – 100 mm

MARKET:

Maritime

OWNER:

Quantum Resources

CONTRACTOR:

Bethlehem Fairfield Shipyard

COMPLETED DATE:

1942