



Lumbering up a beach, barge has tucked its propeller into well in center pontoon, which is

16 feet wide and 44 feet long. Outer pontoons are 6 feet wide, 60 feet long, and 9 feet high.

Leapfrog Barge Swims, Walks, Climbs

NEITHER surf nor sand dunes can stop the Navy's newest amphibious vehicle, a "walking" barge with a leapfrog gait and pontoon legs. Carrying a 60-ton load, it lifts itself by its own bootstraps over mud flats, banks, and beaches. It can even climb a six-foot wall.

A single stern propeller, driven by a power take-off from twin Diesel tank engines, propels the barge in the water. When it reaches shore, the propeller folds up out

of harm's way, and the huge craft starts to walk on the three compartmented pontoons that form its hull. For each ponderous step, the center pontoon is lifted 17 inches and moved forward 10 feet; then the outer pontoons, which are decked over to carry the load, move upward and forward in turn, as illustrated below.

Hydraulic steering pads at the rear of the outer pontoons provide sufficient pivotal drag to turn the 60-foot barge in little more

How the barge walks: A step begins with all three pontoons on the ground, the center one in its rearmost position. The first movement raises the center pontoon—its bow lifts first, then

the stern—and the next one rolls it forward 10 feet between the outer pontoons. The driving mechanism is secret, and the barge's speed, on land or in the water, has not been disclosed.





Heading for a landing, barge shows off its broad, flat deck—ideal for speedy handling of heavy cargo. Inventor has suggested building houses on the deck for use in the Arctic.



Barge uses propeller (which can be set at various angles) as far up the shore as possible before starting to walk. Outbound, it reverses process and walks as far as it can.



Balancing act on a sand dune illustrates the barge's stability. Walking mechanism, operated by one man below decks, gives the 60-foot craft two speeds forward and one reverse.



Overhang at bow and stern enables barge to hoist itself, step by step, over obstacles like this six-foot wall, although pontoons rise only 17 inches in making a single step.

than its own length. In the present model, vertical fins in the forward sections of all three pontoons insure traction in mud.

The barge was designed by John T. Tucker, superintendent of the Navy's proving ground at Port Huenceme, Calif., where it is being tested. He believes that his steel leap-frogs, built in many sizes, may change the whole concept of amphibious landings and ease the problems of setting up military outposts at remote points.

When the center pontoon reaches its forward position, it is lowered again to begin the second half of the step. Now the outer pontoons rise while the center one supports the barge's entire

The uses suggested for the craft support his belief. Carrying stacks of sectional road mats, for example, the walking barges could string completed landing ramps or airstrips behind them. They would be useful in building bridges or piers. Armored, they could become mobile fortresses to cover troops making shore assaults. In the Arctic, where impassible ice gives way to impassible bogs when the tundra melts, the barges could provide year-round, heavy-duty transport.

weight. Moved forward, the outer pontoons are ready to descend and put the barge back on "all threes" once more, center pontoon aft, ready for the next crunching step.

