

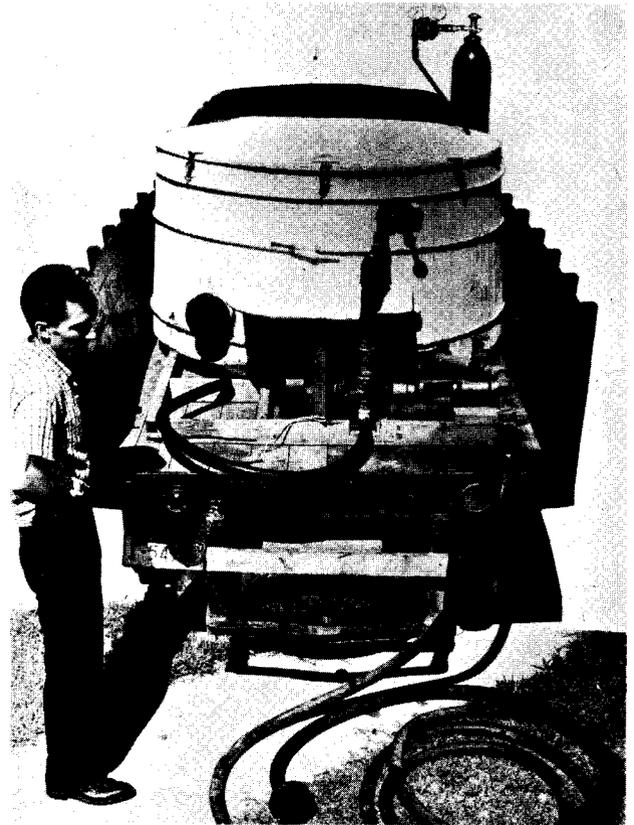
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## A TANK FOR TRANSPORTING ADULT AMERICAN SHAD

In April and May 1963, when live adult American shad (*Alosa sapidissima*) were moved by truck from the Potomac River to the Snake Island fishway near Washington, D.C., 87 of 110 (averaging 2.9 pounds and 17.4 inches in fork length) survived in five 34-mile trips of about 1 hour from the gill net fishery and three 77-mile trips of about 3 hours from the pound net fishery.

Our circular 310-gallon tank (57 inches in diameter, 28 inches deep) was made of 1-3/4-inch redwood. Its circular lid (3/4-inch plywood) was hinged on the midline. The forward half was screwed to the tank sides; the other, secured by three hasps and sealed by a foam rubber gasket. A self-priming centrifugal water pump, powered by a 3-1/4-horsepower 4-cycle gasoline engine, filled the tank (to capacity to reduce surge during transport) from the river through a 35-foot hose. Clamped rubber hoses connected inlet and outlet pipes to the pump to reduce vibration and facilitate assembly. In circulation, water was drawn from the center of the tank bottom through a 1-1/2-inch galvanized pipe, then pumped through a 1-1/4-inch pipe to two 1-inch pipes entering the tank sides. A clockwise current (about 1/2 foot a second) was effected by small sheet-metal deflectors set over inlet pipes to direct the flow along the side. Two inlet pipes were used to ensure uniform water velocity at all depths. Rate of flow was controlled by engine speed and by gate valves on inlet pipes. A screen (1/4-inch-mesh



hardware cloth, 6 inches in diameter) prevented clogging of the outlet pipe. Rubber tubing (1/4 inch) took oxygen from a cylinder to an aerating stone on the tank bottom.

As shad quickly adjust to the circular tank and swim against the current, injury caused by striking tank sides is reduced.

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