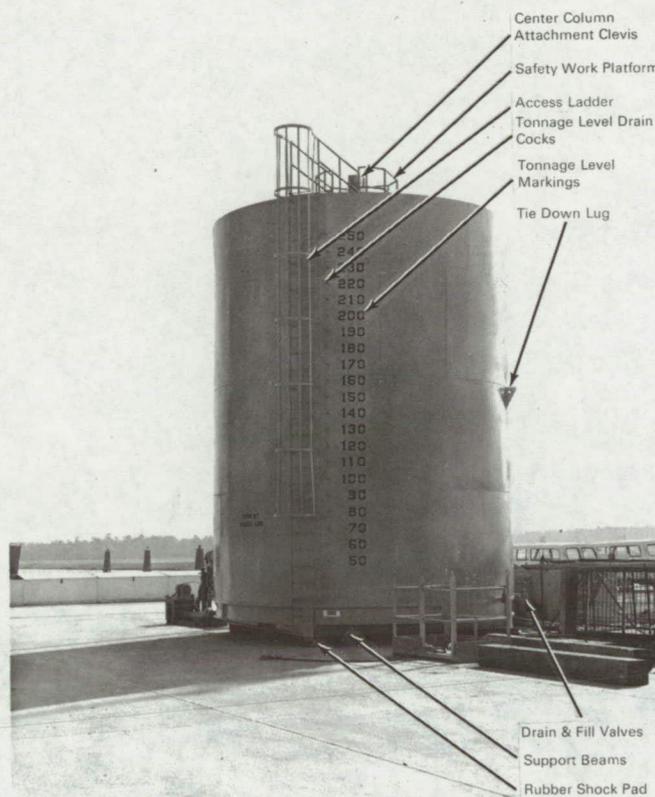


NASA TECH BRIEF



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Calibrated Water Tank Facilitates Proof-Loading of Cranes and Derricks



A calibrated steel water tank has been designed and constructed to provide the weight loads required for proof-testing of cranes and derricks. The use of the water tank provides a safer, faster, and less costly method of proof-loading cranes and derricks than the customary method involving the use of concrete blocks as proof loads.

The tank is made with internal stiffeners and slosh baffles which unitize the structure and keep it rigid.

It is supported, free standing, by a square network of I beams, with a number of 3-inch-thick rubber shock absorbers. Hoisting of the tank may be accomplished by means of a four-legged sling, which attaches to clevises on top of the tank. These clevises, welded to the upper cross members of the framework, form a 10-foot-square attach pattern. (For some applications it may be desirable to have two clevises attached directly to the center column of the tank frame and use

a pin through the shank of the derrick or crane hook to secure it.) An access ladder to the top of the tank and a work platform on top of the tank have guard rails to ensure safety to personnel when attaching the hook to the tank. Midway up the outside of the tank are two lugs (180° apart) for the attachment of guide lines, or anchor bracing during transportation. These lugs are located to coincide with the ends of the cross braces on the inside of the tank. Filling and emptying of the tank are accomplished through either or both of two valves located near the bottom of the tank. The tank graduations (weight of steel plus water) are painted on the side of the tank immediately adjacent to petcocks which establish the fill line for the required proof loads.

Notes:

1. The tank proof load should be of interest to (1) manufacturers of cranes and derricks who must proof-test and certify every unit they manufacture, and (2) users of cranes and derricks for periodic proof testing to ensure safety of the equipment.
2. No additional documentation is available. Drawings showing construction details are available from:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B69-10109

Patent status:

No patent action is contemplated by NASA.

Source R. K. Koppi
of The Boeing Company
under contract to
Marshall Space Flight Center
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