

## The National WWII Museum's 2019 Robotics Challenge: D-Day 75th Anniversary—*Back the Robot Attack*

*Project on the 79th Armored Division—Hobart's Funnies*



Badge of the 79th armored division in WWII

Percy Hobart was a British Military Engineer with creative ideas. In 1938 he was in charge of the 'Desert Rats,' a mobile armored unit in North Africa. He was not popular among his superiors and was forced into retirement in 1940. He went home to Chipping Camden, and led the Home Guard there. Hobart was a favorite of Churchill's, and the Prime Minister had him re-enlisted in 1941. Even though he was 57 years old, Hobart was given the task of raising a new mobile armed unit, the 79th, in preparation for D-Day. After the failure of the Dieppe Raid, it became apparent that normal tanks wouldn't be particularly useful in an invasion, and Hobart was given the task of modifying the tanks for special purposes. The modifications were successful in helping the invasion at Normandy, even though American units hardly used them.

There were several modifications, including:



Duplex Drive: These tanks carried a canvas enclosure that was raised so that they could float. The same engine that pushed the treads could be used to power a propeller.

Bobbin: a tank carrying a reel of reinforced canvas. It was used to deploy a barrier on the ground that tanks could roll over too avoid sinking into soft ground.



Fascine: a tank that carried a bundle of wood that could be dropped into ditches so that the tank, and subsequent tanks, could make their way over the barriers.

Armored Ramp Carrier: a tank without a turret, and with two extendable ramps, one front and one back. It could be used to form a bridge that other vehicles used to traverse obstacles.





Crab: a tank with a rotating cylinder of heavy chains at its front (a mine flail). The chains would detonate mines in front of the tanks.

*Your Project:*

Design and build a Hobart Funny modification for your robot. Model it on one of the historical examples, or make up your own.

You won't be able to display your modified robot at the competition, because your robot will be competing in matches. Instead, display attachments, use photos and diagrams to explain how it works.

Include details of how you tested and improved your design using the design process. Be sure to include the problem your design is meant to solve, and a quantitative evaluation of how well it does in solving the problem.

To communicate your process and results use a standard sized trifold board, and put a short report with more details on the table with your display.