

M88A2 Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES)

Executive Summary

- The Army is planning to execute an Engineering Change Proposal (ECP) to the M88A2 Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) to enable single vehicle recovery (SVR) of the heaviest tracked combat vehicles in the fleet. The SVR capability has been lost due to incremental weight increases of the Abrams tank.
- The Army conducted four underbody blast events and an exploitation event in FY17 against the M88A2 HERCULES to establish the baseline survivability performance of the platform and inform required design improvements in the ECP program.
- The program funding is projected to start in FY18 and follow-on M88A2 ECP testing is planned for FY20.

System

- The M88A2 HERCULES included upgrades to the hoist, boom, main recovery winch, and engine of the M88A1. The Army intends the M88A2 ECP to regain SVR of the heaviest tracked combat vehicles in the fleet (currently the Abrams tank) by improving the powertrain, suspension, and track.
- The M88A2 HERCULES is currently unable to safely perform single vehicle recovery of the Abrams tank due to incremental weight increases of the Abrams over the years. The Abrams System Enhancement Package version 2 (SEpv2) has a combat weight of approximately 74 tons while the Abrams SEpv3 will increase the combat weight even further by 5 tons.
- The Army is exploring additional upgrades to be included in the M88A2 ECP program, expected to result in increased speed (both with and without load), better braking and slope performance, more hoisting and winching capacity, increased survivability, and increased reliability.

Mission

- Commanders will employ the upgraded M88A2 HERCULES to provide single vehicle towing, winching, and hoisting



- operations to support battlefield recovery operations and evacuation of heavy tanks and other tracked combat vehicles.
- The M88A2 HERCULES-equipped unit will recover tanks mired to different depths, remove M1 Abrams turrets and power packs, and upright overturned heavy combat vehicles.

Major Contractor

BAE Systems – York, Pennsylvania

Activity

- The Army conducted four underbody blast events from December 2016 to April 2017 to demonstrate the M88A2 baseline performance and inform the potential improvements to underbody survivability of the M88A2 HERCULES ECP program.
- The Army continued the assessment of M88A2 HERCULES performance in the FY15 to FY17 timeframe. The activities included towing, recovery and survivability technical

- assessments, auxiliary power unit performance testing, and follow-on production qualification.
- The prototyping will start as soon as the Army approves and funds the M88A2 ECP strategy. The next phase of testing is projected to begin in FY20.

FY17 ARMY PROGRAMS

Assessment

- The results of underbody mine testing in FY17 demonstrated the baseline survivability performance of the M88A2 HERCULES platform, and provided data to inform potential design improvements in an M88A2 ECP program, which could include improved seating and a reinforced floor structure.
- Limited space in the crew cabin, especially when the crew of the disabled vehicle is being transported in the M88A2

HERCULES, presents challenges both for survivability and ergonomics.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY17 Recommendations. None.