

Title: Improved Moveable Weapon Mount System for the CH47 Helicopter

Abstract Text: The development of a lightweight and improved weapon mount system has been developed. The first generation of this system was presented at last year's 46th Annual Gun and Missile Systems Conference & Exhibition. The system was the M24E1 and it was developed as a weapon mount for the M240H 7.62mm machine gun on the CH47, Chinook helicopter. The M24E1 system has been undergoing In-Theater User Evaluation since December of 2010. Since then the feedback has been positive and an additional system requirement has been added to the door-side design. This additional requirement was to allow for both normal inboard articulation and if need be emergency outboard articulation; which was the start of the M24E2 improved mount system design. The M24E2 was designed and prototyped by November of 2011. Since completion it has immediately begun flight testing in order to receive its Air Worthiness Release (AWR) for additional testing and training. The M24E1 and M24E2 systems both include added capabilities such as: a flexible cradle which helps dampen the weapon's recoil forces, doubling the legacy's ammunition capacity to 400 7.62MM rounds, a rigid discharge system that is easily emptied, as well as maintenance-free design. The mounts are primarily constructed out of lightweight materials such as titanium and aluminum thus decreasing the system weight while preserving the strength of the system. Both the M24E1 and the M24E2 have undergone extensive design reviews which included detailed modeling and simulation of crash loads, recoil, and fatigue analyses, as well as a full range of flight, live fire, and vibration testing in order to ensure the safety and system longevity. The M24E1 mount has received its AWR for testing and training and the M24E2 will soon follow suit. These mount systems can easily be adapted to other weapon systems such as .50 caliber or the 40mm depending on mission needs.