

## Common Remotely Operated Weapon Station (CROWS)

### Executive Summary

- The Army conducted an Initial Operational Test (IOT) in 2009.
- Early in FY12, the Army Acquisition Executive notified the USD(AT&L) that the CROWS program was expected to become a Major Defense Acquisition Program with the Army as the lead Service. This designation caused the program to come under DOT&E oversight.
- In June 2012, Program Executive Office (PEO) Soldier requested that DOT&E prepare an OT&E report to Congress to support a September 2012 production decision for the procurement of the final 1,212 CROWS systems.
- In September 2012, DOT&E provided Congress with an assessment of the operational effectiveness and operational suitability of the CROWS mounted on Up-Armored High Mobility Multi-purpose Wheeled Vehicles (UAHs) based upon the results of the IOT, developmental testing, and CROWS New Equipment Training (NET) at Fort Campbell, Kentucky.
- The CROWS system is operationally effective. The CROWS target acquisition and engagement capabilities enable units to detect and engage targets at long range while both on-the-move and stationary relative to non-CROWS equipped units. CROWS operators are provided protection over Objective Gunner Protection Kit (OGPK) gunners because of the CROWS ability to fire remotely. Nonetheless, CROWS has some limitations in comparison with the OGPK due in part to the limited fields of view of the CROWS daytime and nighttime sensors.
- The CROWS system is operationally suitable. During IOT, the CROWS exceeded its reliability requirement. The CROWS-equipped UAH demonstrated the capability to perform its mission essential functions of move, shoot, and communicate.

### System

- CROWS is a gunner-operated system that provides the capability to remotely aim and fire the MK19 Grenade

### Activity

- The Army conducted an IOT in 2009. At the time the IOT was conducted, CROWS was an Acquisition Category (ACAT) II program and was not on DOT&E oversight. The Army Test and Evaluation Command (ATEC) was responsible for approving the test plan, conducting the IOT, and reporting its evaluation to the Army.
- ATEC conducted the IOT at Fort Carson, Colorado, from October – November 2009. For the IOT, the performance of a CROWS-equipped Military Police (MP) unit was compared



Machine Gun (GMG), M2 Machine Gun, M240 Machine Gun, or the M249 Machine Gun from a stationary platform or while on-the-move.

- The M153 CROWS consists of weapons cradles, traverse and elevation drives, weapon interface, weapon remote charger, ammunition container and feed system, laser range finder, day/night viewing and sighting unit, joystick, and remote fire control and display unit.

### Mission

Gunners within a vehicle crew or in a stationary battle position use CROWS to improve their weapon's performance through enhanced target acquisition, identification, and engagement capabilities while firing remotely. Units equipped with CROWS include Infantry, Artillery, Armor, Cavalry, Engineer, Chemical, and Military Police.

### Major Contractor

Kongsberg Defense Corporation – Johnstown, Pennsylvania

# ARMY PROGRAMS

program as an ACAT IC Major Defense Acquisition Program with the Army as the lead Service.

- In June 2012, PEO Soldier requested that DOT&E prepare an OT&E report to Congress to support a September 2012 production decision for the procurement of the final 1,212 CROWS systems.
- In August 2012, DOT&E observed the revised CROWS NET at Fort Campbell, Kentucky. Thirty-two Soldiers from different units at Fort Campbell participated.
- In September 2012, DOT&E provided Congress with an assessment of the operational effectiveness and operational suitability of the CROWS mounted on UAHs based upon the results of the IOT, developmental testing, and the revised CROWS NET.

## Assessment

- Representatives from DOT&E monitored the Army's IOT at Fort Carson, Colorado, in 2009 and assessed that it was adequately executed.
- The CROWS system is operationally effective. The CROWS target acquisition and engagement capabilities enable units to detect and engage targets at long range while both on-the-move and stationary relative to non-CROWS equipped units.
  - The CROWS provides enhanced lethality and is more accurate while firing on-the-move at long ranges than a crew-served weapon fired by a gunner using the OGPK.
  - CROWS operators are provided protection over OGPK gunners because of the ability to remotely fire CROWS. A unit with CROWS-equipped vehicles can synchronize target acquisition, maneuver, and provide responsive fires during missions such as Convoy Security, Route Reconnaissance, and Overwatch.
- The shortcomings of CROWS identified during IOT were that the operator and crew struggled to detect enemy personnel close to the vehicle and to maintain situational awareness of their surroundings. Additionally, they were slower than the OGPK-equipped UAHs in determining the location of enemy fire as the CROWS operator and crew lacked the visual and auditory cues necessary to stay in the firefight.

- The CROWS daylight sight provides a 47-degree field of view and its minimum focus distance is 2 meters. The CROWS thermal sighting only provides a narrow 10-degree field of view. These capabilities limit the gunner/operator from rapidly acquiring dispersed targets, whereas a gunner operating the OGPK can rapidly scan for and detect close-in and widely dispersed targets.
- The CROWS system is operationally suitable. During IOT, the CROWS exceeded its reliability requirement. The CROWS-equipped UAH demonstrated the capability to perform its mission essential functions of move, shoot, and communicate.
- The revised 2012 NET is improved over that conducted in 2009. The new program of instruction (POI) incorporates expanded hands-on, situational awareness, safety, and gunnery live-fire exercises. The POI now includes lessons on the correct method to establish no-fire and no-traverse zone.

## Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY12 Recommendations. The CROWS program manager should:
  1. Conduct follow-on operational testing to evaluate the effectiveness and suitability of CROWS as it is integrated for use on combat vehicles in addition to the High Mobility Multi-purpose Wheeled Vehicle and Mine Resistant Ambush Protected vehicle.
  2. Investigate increasing the field of view of the CROWS daytime and thermal sights to improve CROW operator determination of enemy location. The CROWS imaging sights have limited field of view, which affects the crew's ability to acquire and engage the enemy.
  3. Test to confirm the updated fire tables corrective action improve the MK19 accuracy with CROWS in a desert environment.
  4. Validate that link guide corrective action deflects expended cartridge cases and links.