



CRANE DIVISION

NAVAL SURFACE WARFARE CENTER



Distribution Statement A – Approved for public release; distribution unlimited.

CREW SERVED WEAPONS

MODERN SIGHTING SYSTEMS FOR PROVEN WEAPONS

Michael H. Jones

**Naval Surface Warfare Center Crane
(NSWC Crane)**

NDIA Small Arms Symposium

21 May 2009

BACKGROUND

- **Crew Served Weapons currently fielded:**
 - M2HB .50 Caliber Machine Gun
 - MK44 Minigun
 - MK46/MK48 Light Machine Guns
 - M240/M249 Heavy Machine Guns
 - MK19/MK47 Grenade Launchers
- **MK47 has an integral targeting system**
- **Iron sights are the “targeting system” for the remainder**

DEFICIENCY

- **Mounting surfaces**
- **Targeting Optics**
- **Active Aiming Components**
- **Illumination Systems**
- **Control At Operator/Weapon Interface**

OBSTACLES

- **Increased shock load from weapon**
- **Shock from vehicle platforms**
- **Maintain Situational Awareness (SA)**
- **Protection from Accidental Discharge (AD) of illumination and target designation equipment**

OBSTACLES

- **Ballistic compensation for Targeting, Designation, and Illumination (TDI) components**
- **Control of TDI components**
- **Power source for TDI components**
- **Integration with existing ballistic shields**
- **Size, Weight, and Location (Weapon Balance) of Devices**

SOLUTION

- Utilize the MK93 mount as the platform for M2HB, MK19, and M240
- Mount TDI components to the MK93 mount
- Component mounts incorporate ballistic compensation
- Provide targeting components that have long standoff distance (eye relief)

SOLUTION

- **All Combat Critical functions of TDI components controlled from spade grip area**
- **All TDI capable of operating from internal battery, remote battery, and vehicle power**
- **Stand alone optic**
- **Large components mounted forward of the ballistic shield**

PROJECT DEVELOPMENT

- **USSOCOM's Weapons Accessories program initiated the Miniature Day/Night Sight-Crew Served Weapons (MDNS-CSW) project**
- **Integrated Product Teams (IPT) developed initial requirements for MDNS-CSW project**
- **Early User Assessment (EUA) provided a "first look" at COTS TDI components**
- **Results from the EUA were used to refine MDNS-CSW Performance Specification**

Distribution Statement A – Approved for public release; distribution unlimited.

PATH FORWARD

- **MDNS-CSW will utilize a two-phase incremental development path**
- **Initial effort will provide TDI components which are mounted on the MK93 Mount and controlled from the spade grip area**
- **Incremental development will explore a “smart” integrated system that incorporates magnified day/night optics, Head Mounted Targeting Viewer (HMTV) and remote observation capability**

INITIAL EFFORT


- **Large “Reflex” sight: MDNS-CSW identifier: Enhanced Combat Optical Sight-Heavy (ECOS-H)**
- **Visible and IR laser: MDNS-CSW identifier: Crew Served Heavy Weapon Aiming Laser (CSHWAL)**
- **White Light Source: MDNS-CSW identifier: Visible Bright Light-Heavy (VBL-H)**
- **Ranging Device: MDNS-CSW identifier: Laser Range Finder-Heavy (LRF-H)**
- **Flash Suppression: MDNS-CSW identifier: Crew Served Flash Suppressor (CSFS)**

INCREMENTAL DEVELOPMENT

- **Will integrate control of system components**
- **Incorporate Day/Night camera technology**
- **Video display at weapon with remote capability**
- **Data bus controlled from Operator/Weapon interface**



CONTACT INFO



Michael H. Jones
MDNS-CSW Project Manager
NSWC Crane
Commercial: (812) 854-6230
michael.h.jones@navy.mil