Explosive ordnance disposal: (JP 1-02, NATO) The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of unexploded explosive ordnance. It may also include explosive ordnance which has become hazardous by damage or deterioration. Also called EOD.
Definitions

- **explosive ordnance** (JP1-02, NATO): All munitions containing explosives, nuclear fission or fusion materials, and biological and chemical agents. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rocket, and small arms ammunition; all mines, torpedoes, and depth charges; demolition charges; pyrotechnics; clusters and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices; and all similar or related items or components explosive in nature.

- **unexploded explosive ordnance** (JP1-02, NATO) Explosive ordnance which has been primed, fused, armed or otherwise prepared for action, and which has been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material and remains unexploded either by malfunction or design or for any other cause. Also called UXO. See also explosive ordnance. (JP 3-15)
Definitions

- **explosive ordnance disposal procedures** (JP 1-02, NATO) Those particular courses or modes of action taken by explosive ordnance disposal personnel for access to, diagnosis, rendering safe, recovery, and final disposal of explosive ordnance or any hazardous material associated with an explosive ordnance disposal incident.
  
  - a. access procedures — Those actions taken to locate exactly and gain access to unexploded explosive ordnance.
  
  - b. diagnostic procedures — Those actions taken to identify and evaluate unexploded explosive ordnance.
  
  - c. render safe procedures — The portion of the explosive ordnance disposal procedures involving the application of special explosive ordnance disposal methods and tools to provide for the interruption of functions or separation of essential components of unexploded explosive ordnance to prevent an unacceptable detonation.
  
  - d. recovery procedures — Those actions taken to recover unexploded explosive ordnance.
  
  - e. final disposal procedures — The final disposal of explosive ordnance which may include demolition or burning in place, removal to a disposal area, or other appropriate means.
EOD Capability Development

Conventional Munitions Disposal (CMD)

Bio/Chem/(Nuclear) Munitions Disposal (BCMD)

Improvised Explosive Device Disposal (IEDD)

Improvised WMD Disposal

**Increasing Technical Difficulty**

- Identification; assessment; determine hazard area;
- render safe; dismantle; leak seal and package for transport;
- TECHINT exploit; final disposal

**Increasing Training Requirement**

- Bulk Ammo disposal; Cache Disposal; CEA;
- Sub-munitions clearance; UXO Render Safe
- TECHINT exploitation;
- Ammunition Accidents/investigations, …

- Identify, render Safe; TECHINT Exploit; Evaluate TTPs; Post Blast analysis; transport, disposal

**POLICY**
EOD Partnering

- EOD
- C-IED
- HMA
The ERW Problem

Unsecured Explosive Ordnance is a Leading Cause of Global and Regional Instability
Landmines and other explosive remnants of war (ERW) impede post-conflict reconstruction and development efforts in many mine-affected countries because they:

- threaten community safety
- hinder the safe return of internally displaced persons (IDPs) and refugees to their communities
- damage infrastructure essential for economic development and increase rebuilding costs
- limit access to health care, education and other basic social services
- prevent the use of assets vital to sustainable livelihoods. For example, water sources, irrigation channels and land used for agriculture, grazing, housing/resettlement and commerce
- deter public and private investment and economic development through increased uncertainty, cost and delays resulting from suspect presence of landmines
Stability Ops: Disarm, De-mobilize, Reintegrate

Armed Military/Insurgent Forces

- Abandoned Explosive Ordnance (AXO)
- UXO
- Landmines

Dealer:
- Collect, inventory, Inspect, store, re-issue, dispose

Ammunition Depot:
- Collect, inventory, Inspect, re-issue, demil, dispose, store

Personnel:
- Identify, integrate into Armed Forces, re-train, de-mobilize, re-integrate

Weapons/Equipment

Munitions

Personnel

Disposal

Some Trained in EOD and demining
Propellant Stabilizer Degradation

Average Annual Temperature in Celsius

- 20
- 30
- 35

% Remaining Stabilizer vs. Years
Dangerous Depots

- **2008**
  - 10 July - Kagan, Uzbekistan: 3 KIA, 21 WIA
  - 3 July - Sophia, Bulgaria: 6KM evacuation
  - 15 March – Albania: 24 KIA, 300+ WIA destroyed 400 homes

- **2007**
  - 29 December - Medellin, Columbia: 2 KIA, 7 WIA
  - 26 July Aleppo – Syria: 15 KIA, 50 WIA
  - 17 June - Mbandaka, Democratic Republic of Congo: 3 KIA, 52 WIA
  - 7 April - Khartoum, Sudan: no reported casualties. Airport closed temporarily
  - 22 March - Maputo, Mozambique: 100+ KIA, 500+ WIA
U.S. Tactical Explosive Mishaps
DOD Humanitarian Mine Action

- **The DoD Humanitarian Mine Action Training Program**
  - Authorized by 10 USC 407
  - Planned and executed by GCC as part of TSC plan
  - DSCA approves and funds through Overseas Humanitarian, Disaster, and Civic Aid (OHDACÄ) appropriations
  - OSD SO/LIC&IC provides policy oversight and coordinates with DOS weapons removal and abatement program

- **Humanitarian Demining Research and Development (HD R&D) Program**
  - Executed by Army’s Night Vision and Electronic Sensor Lab
  - Develops, demonstrates and validates demining technology
  - Provides equipment prototypes to NGOs and partner nations
  - Technology is evaluated against actual threats in real world environment
DoD HMA Process

Preconditions for U.S. Assistance

- Host Nation must submit a formal request for assistance through the U.S. Embassy
  - Hostilities have ceased
  - Workable peace agreement is in place
- USG Policy Coordination Committee (PCC) Sub-group on Humanitarian Mine Action
  - Chair – DoS, Office of Weapons Removal and Abatement
  - Co-Chair – DoD, Office of Stability Operations Capabilities
- Policy Assessment Visit (PAV)
  - Representatives from DoS / OSD / COCOM conduct PAV. Based on results of this visit, USG decides whether to initiate/restart a HMA program with that country.
    - If approved, COCOM conducts a….
- Requirements Determination Site Survey (RDSS)
  - …which identifies specific goals, objectives and resource requirements
DoD HMA Process
DoD Development of Country Programs

- Country Team and COCOM coordinate possible initiatives
- COCOM Prioritizes proposals and submits to OSD
- OSD staffs proposals with DoD/State/interagency and approves appropriate projects
- COCOM tasks units to execute projects
- Country team and COCOM evaluate effectiveness
Humanitarian Demining Prohibitions

No member of the US armed forces will:

“engage in the physical detection, lifting, or destroying of landmines or other explosive remnants of war (unless the member does so for the concurrent purpose of supporting a US military operation); or

provides such assistance as part of a military operation that does not involve the armed forces.

Title 10, United States Code, Section 407
HUMANITARIAN DEMINING TRAINING CENTER
U.S. DEPARTMENT OF DEFENSE

www.wood.army.mil/hd tc/
Angel Belen – Acting Director
Angel.belen@us.army.mil
573-563-6199
HDTC Role in HMA

- **Train U.S. Military Forces** to provide Train-the-Trainer Humanitarian Mine Action instruction in Mine Affected countries.

- **Collect and disseminate information** on Mine Action for U.S. Government agencies to facilitate execution of the U.S. Humanitarian Mine Action Program.

- **Provide SME in support** of U.S. Government Policy and Agendas

- **Train to the International Mine Action Standards**
Demining Training Course

- Mine Identification
- Mine detection by visual means
- Mine detection operations and equipment
- Mine detection by probing
- Unexploded Ordnance Identification and Disposal
- Procedures for marking lanes and minefields

- Demolitions
- Booby Traps
- Demining Tools
- Demining Site Set-up
- Clearing Process
- Demining/Disposal
- Minefield Handoff
Tactical Countermining VS. Humanitarian Demining

- **Tactical countermining**
  - Focuses on enhancing force *mobility*
  - Minefields must be rapidly detected in all possible conditions
  - *Breaching* provides for rapid clearance without the need to find every mine

- **Humanitarian demining**
  - Detection of *each* landmine more important than the speed of movement
  - Goal of demining is to locate and destroy *all landmines/ERW* within a large designated area
  - *Economic considerations* are important in deciding if and when a specific minefield will be cleared
  - *Safety* is the most important consideration
  - *Casualties are unacceptable*
Kagan ASP Response

- 21 Jul 08- ARCENT notified by Defense Attaché.
- Uzbeks requested three types of equipment: land mine detectors, water metal detectors, and bomb suits.
- DATT’s guidance was “let’s get there first with the most stuff.”
- 03 Aug 08- Pre-Deployment Site Survey Team (2 pax) on site.
- 21 Aug 08- the Training Team (5 pax) with equipment arrived in Uzbekistan.
- 28 Aug 08 all Uzbek / USEMB objectives were met
DoD Humanitarian Demining Research & Development Program

www.humanitariandemining.org

Sean Burke – Program Manager
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**Program Funding, Guidance**
- Provides Program Guidance and Oversight
- Approve requests for in-country assessments
- Approve requests for operational field evaluations
- Liaison with other Government agencies (DoS)

**Program Execution**
- Determine Requirements
- Structure Program
- Develop/Demonstrate Prototype Equipment
  - Contracts with Industry
  - In-House Developments Using NVESD Personnel and Shop Facilities
- Perform In-Country Assessments
- Conduct In-Country Operational Field Evaluations
- Assist with Transition Prototype Equipment into Operational Use
- Inform demining community

A cooperative effort
HD R&D Program Objectives

Develop, Demonstrate, and Validate Technologies to be Used in International Humanitarian Demining by:

- **Assessing Existing Technologies**
  - Assess commercial off-the-shelf equipment
  - Integration of mature technologies (e.g. sifting implements)
  - Thorough evaluation of new technologies

- **Developing New Technologies**
  - Integrate, adapt, and modify commercial off-the-shelf equipment to particular demining missions
  - New development of equipment if no suitable commercial version exists

- **Transitioning Technologies Into the Field**
FYO9 Operational Field Evaluations (OFEs)

- **Iraq**: Sifting Technology
- **Afghanistan**: HSTAMIDS, MANTIS, Orbit Sifter, Sifting Buckets
- **Thailand**: Air Spade, Beaver, Peco Cutter, SDTT, Tempest, Uni-Disk
- **PR - Vieques**: Nemesis M3
- **Yemen**: Improved Backhoe
- **Ecuador**: Long Tools, Tempest
- **Chile**: Air Spade, Multi-Tool Excavator
- **Angola**: Air-Spade, Detonation Trailer, HSTAMIDS, JCB Loadall, Mine Stalker, RMC
- **Cambodia**: Badger, Explosive Harvesting, HSTAMIDS (3 orgs), Long Tools, MAXX+, Sifting Buckets, Storm, Tempest
- **Vietnam**: Large Loop, MDA, Peco Cutter, Shinn/Birdseye Cutters, Walking Tractor

**39 Systems in 10 Countries**
The HD program is upgrading the AN/PSS-14 dual sensor hand-held mine detector employed by U.S. Forces in OEF/OIF in order to provide better detection capability and enhanced training and tactics, techniques, and procedures (TTPs).
Explosive Harvesting Program

- De-mils excess ordnance into demo charges
- Meets almost all of the NGOs requirement for donor charges
- Produces scrap metal available for sale
Explosive Harvesting Program
Questions?

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