

The USMC M1A1 Tank Fleet

Supporting Marine Infantry in Every Clime and Place



Agenda



- Mission
- Current Configuration
- Current Enhancement Efforts
- Next Generation Improvements



Historical Perspective on Heavy Armored Vehicle Development



24 April 1918



USMC M1A1 Mission

To provide combat power in the amphibious assault and subsequent operations ashore, utilizing maneuver, armor protected firepower, and shock action to disrupt, disorganize, and destroy the enemy.



From open terrain...



...to the close fight



PM Tank Systems Mission

To equip operating forces with effective sustainable tank, heavy recovery, assault bridging, and support systems to accomplish their warfighting missions; and to incorporate next-generation technologies to ensure their continued combat dominance.



Current Configuration

- **M1A1 Tanks built in 1991 were built with *TOP END* 1970's technology**
- **Almost entirely analog technology**
 - **Many sub components no longer made**
- **Virtually all upgrades require independent solutions**
 - **Require additional cables and displays for each new capability**

120mm Multi Purpose High Explosive

Background

- M830 HEAT no longer in production
 - Not designed for close fight
- MPAT provides marginal performance
 - Over penetration on soft targets
 - Small warhead
- Canister has limited range
- Addresses long range ATGM threat
 - Increases Lethality & Survivability



• Primary Requirement

• To address a broad target array with three modes of fuse operation:

- **Point Detonating - for lightly armored targets and wall breaching**
- **Delay - to engage threats behind walls or in bunkers**
- **Airburst - for dismounted troop targets**

120mm MP-HE Performance

Before



Before



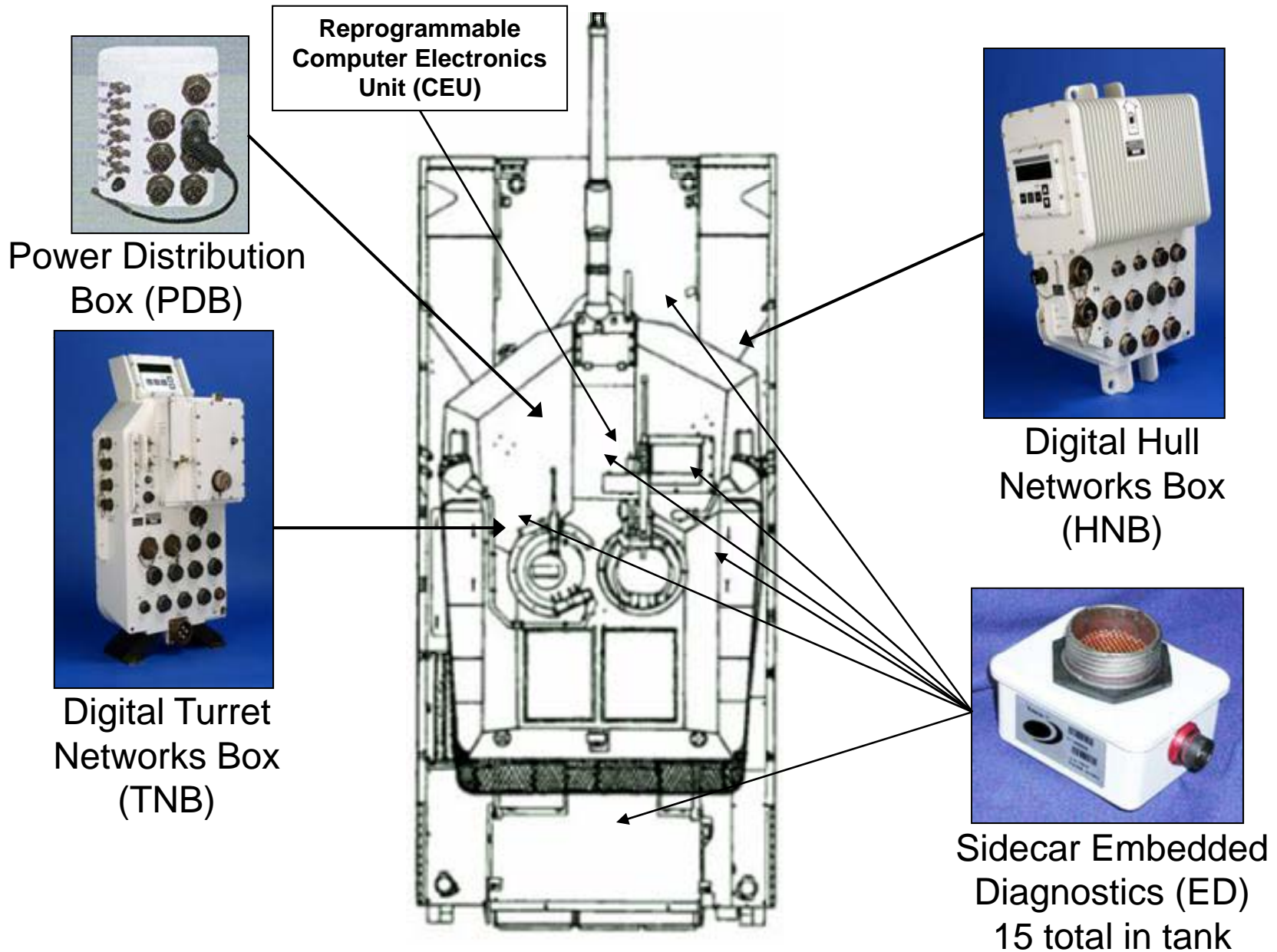
After 3 shots



After 1 shot



Obsolescence Mitigation



Improved Loader's Weapon Station (ILWS)

Description

- The Improved Loaders Weapon Station (ILWS) will allow the loader to engage enemy combatants under the armor protection of the M1A1 MBT. The system will have a day and night firing capability with two and three power zoom. It will have an increased round capacity, decreasing the amount of reloading and further protecting the crew.



Next Generation Improvements

- **Weight reduction always desired**
 - **Lighter armor with same capability**
 - **Cable reduction (current cables ~2 tons)**
- **Obsolescence mitigation critical**
- **Insertion of open architecture to support**
 - **3rd GEN thermal technologies**
 - **Sharing of info/workload across crew**
 - **Active Protection Systems**
- **Integrated cooling/heating solution**

An Expanding Marine Corps

- **Increase of 44 tanks as part of USMC expansion to 202,000 active duty Marines**
 - **Two additional active tank companies**
- **Increased AAO for M88A2 as well**
 - **Needed to support more heavy assets being fielded across the Marine Corps**

**TREAT'EM
ROUGH!**



**JOIN THE
TANKS**

United States Tank Corps.

