



# NATHAN 19375

A NEW CONCEPT IN MOBILE WEAPON SYSTEMS

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# A NEW CONCEPT IN MOBILE WEAPON SYSTEMS



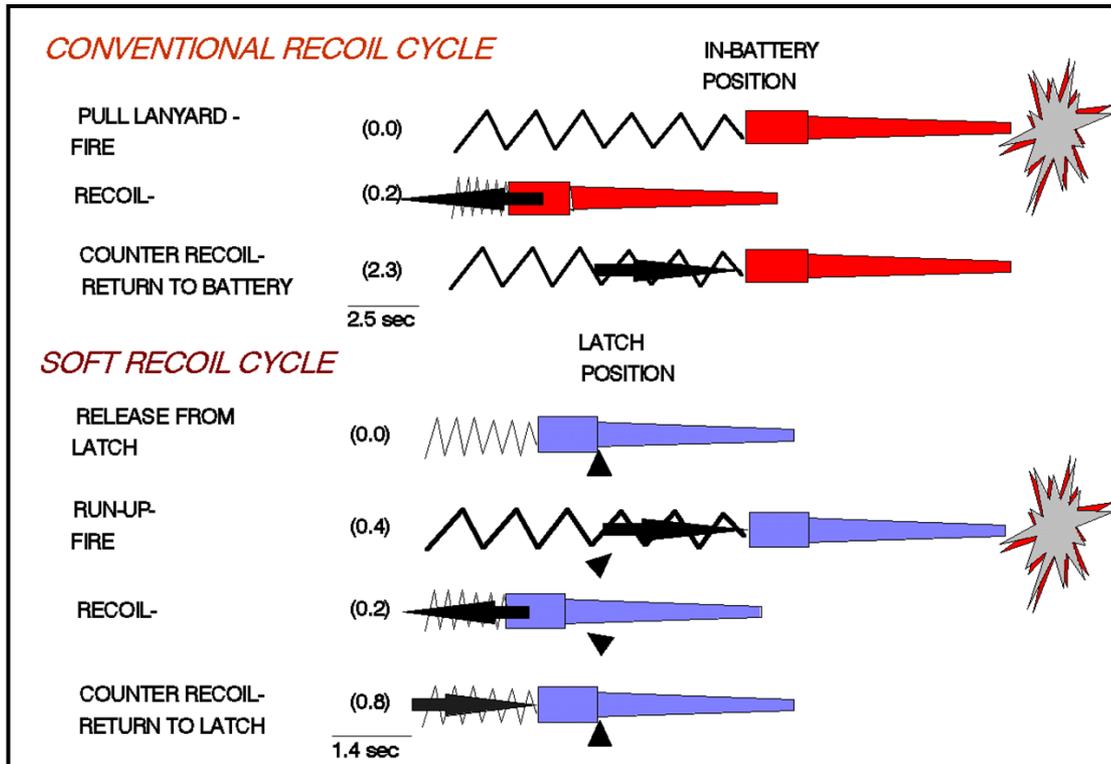
- **World-wide need for light and inexpensive large caliber fire support weapon**
- **Modularized system that is adaptable in multi-mission environments**
- **Simplified design and operation to reduce crew size**
- **Simplified design to reduce maintenance time/life cycle costs**
- **Reduced logistics support requirements**
- **Can be integrated to numerous vehicles**
- **Adaptable to international 105mm cannons of different caliber length**

*The Hawkeye Weapon Systems was designed as a universal, world-wide howitzer which would provide highly mobile and lightweight firepower to any army large or small.*

- **Modular Multi-Platform Weapon System**
- **Reduced Recoil Forces**
- **Reduced Crew Size**
- **Manufacturing Costs Low**
- **Smaller Logistic “Footprint”**
- **Electrically Operated w/Manual Backup**
- **Emplace/Displace Time**



***The importance of low recoil forces on carriages can't be over-stated***



**CONVENTIONAL**  
 $F_T = MA$

**SOFT RECOIL**  
 $F_T = (M_1A_1 - M_2A_2)$

Force of “Run-up” minus the Force of “Recoil” = Total Force ( $F_T$ )

**⇒ 40-60% reduction in Recoil Force transferred to Carriage! ⇐**

**MOUNTED ON A TRAILER**



**MOUNTED ON A FORD  
F-250**



**Low recoil forces  
allow development  
and  
testing on a variety  
of platforms**

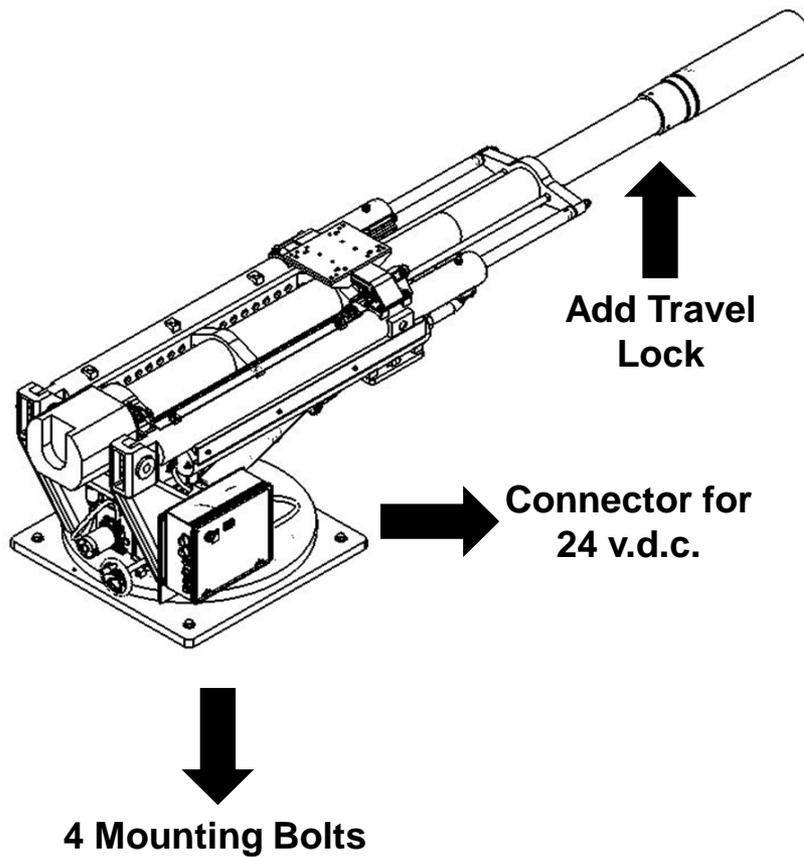
**MOUNTED ON A MACK DEFENSE  
“SHERPA”**



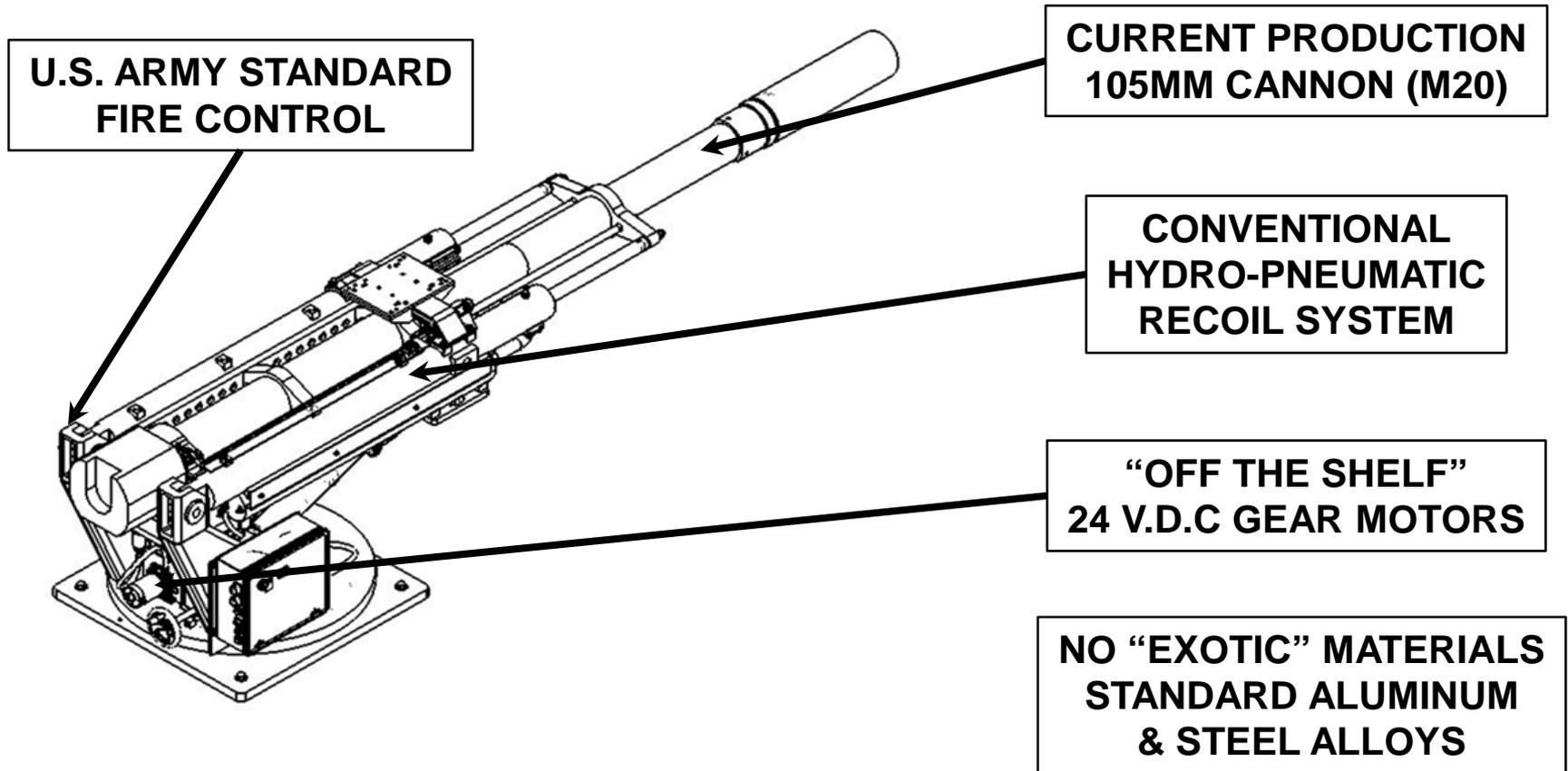
**MOUNTED ON AN AM GENERAL  
HMMWV**



# THE MODULAR CONCEPT COST ADVANTAGE



- **Adapt to existing vehicle**
- **Use existing fire control**
- **Standard 105mm ammo**
- **Reduced crew size**
- **Simple design, low maintenance costs**
- **250 component drawings**
- **Extensive use of LRUs**





# STRATEGIC DEPLOYABILITY

- ✓ **AIRCRAFT: C-130, C-17, C5A, Helicopters**
- ✓ **CARGO SHIPS: Hawkeye – small “cube” and lightweight**
- ✓ **RAIL TRANSPORT: Fits narrow tunnels/bridges easily mounted to railcars**
- ✓ **GROUND TRANSPORT: Small commercial trailers, military “flatbed” trucks**



# TACTICAL MOBILITY

- ✓ **HMMWV/Hawkeye provides superior mobility due to light weight and fewer soldiers**
- ✓ **Self-contained weapon system (one vehicle) for helicopter raids**
- ✓ **Reduced logistics “footprint”: established vehicle (HMMWV) and simple weapon design**
- ✓ **Quick emplacement during “hasty maneuvers” (Shoot and Scoot)**



- **Line Replacement Units – easy to remove/install**
- **Recoil Mechanism – can be disassembled and rebuilt in a clean motor pool**
- **Common Mechanics Tools – no special tools required**
- **Lightweight Components – no need for heavy duty lifting devices**

# OUR DEFENSE PARTNERS





# INITIAL HMMWV TEST





THANK YOU

***Any questions?***



BACKUP SLIDES

**BACKUP SLIDES**

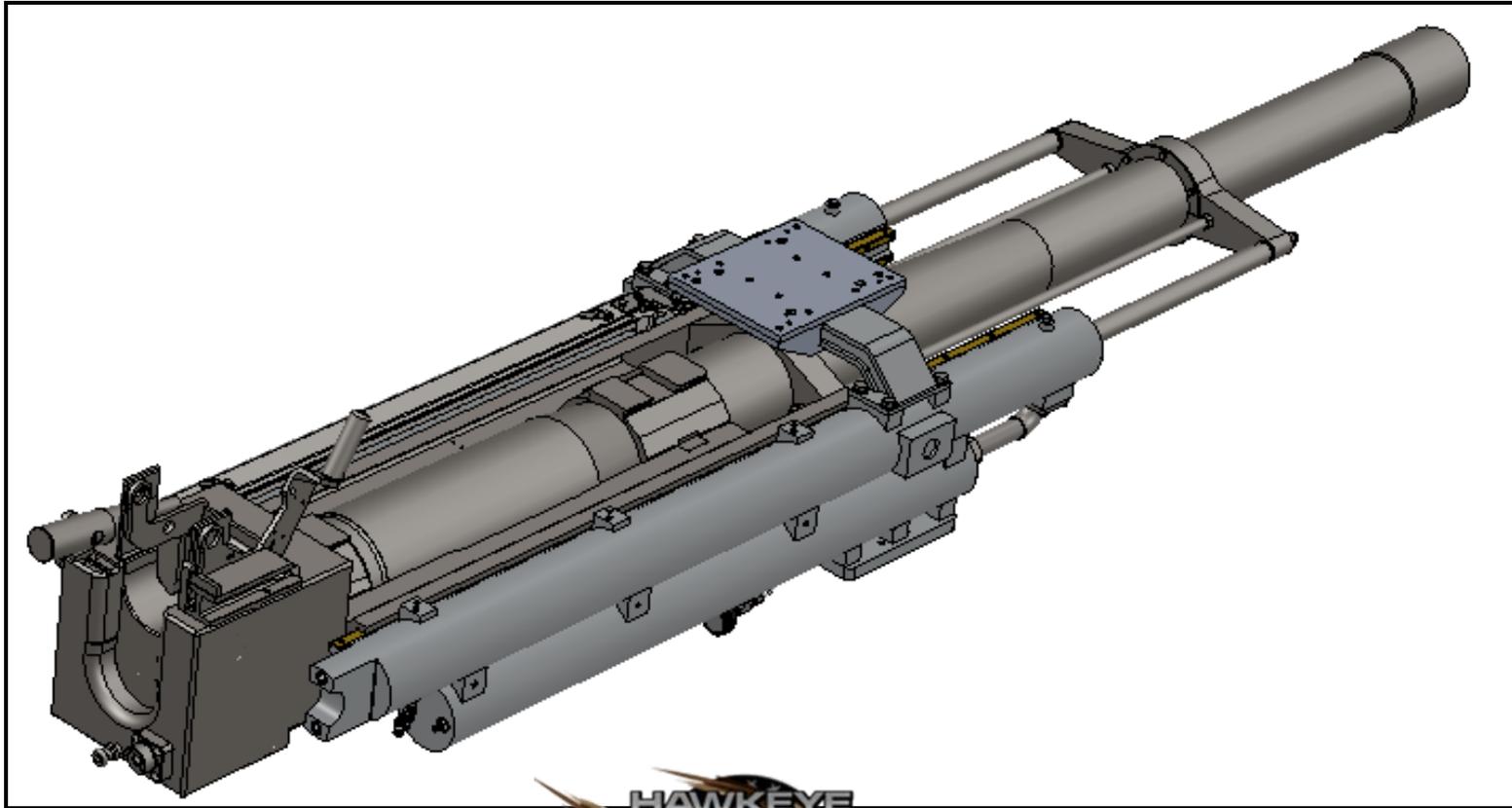


# TRAILER MOUNT





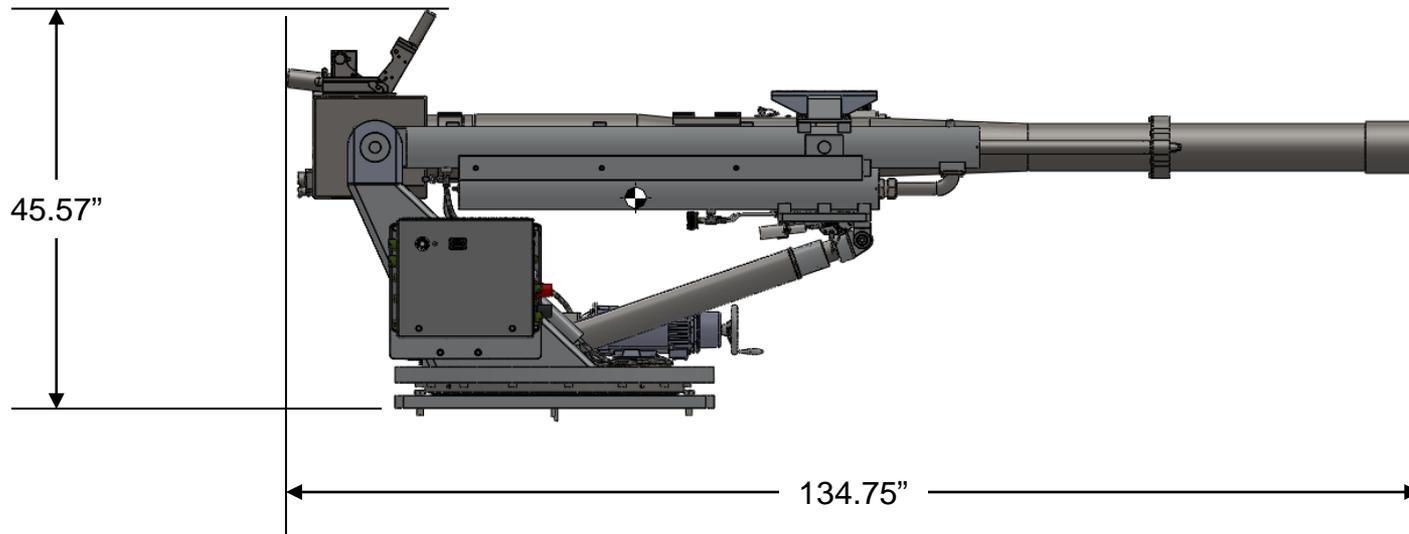
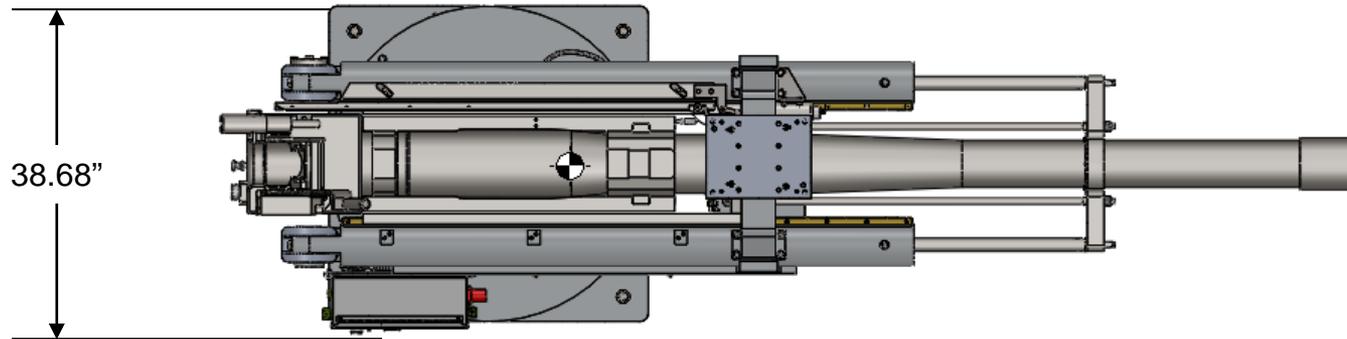






# EXTERNAL DIMENSIONS

**TOTAL WEIGHT = 2552 LBS.  
W/FIRE CONTROL**



# MAJOR COMPONENTS

