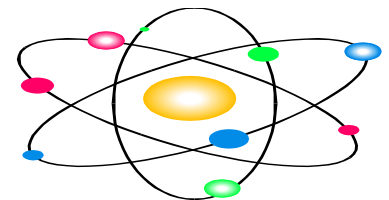


# **AN ARMY VIEW OF NUCLEAR WEAPONS HISTORY OR**

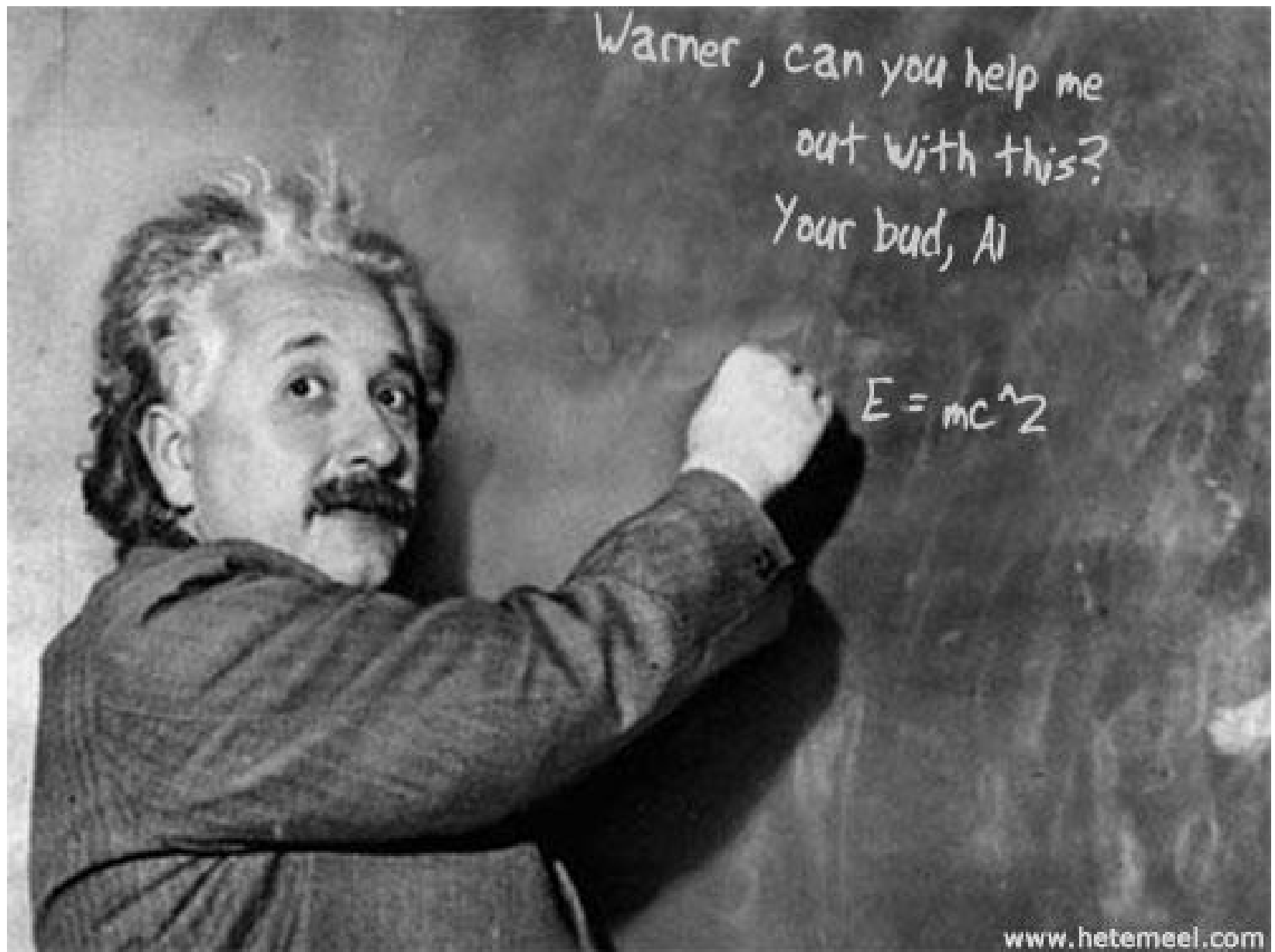
## **WHAT YOU DON'T KNOW MAY SURPRISE YOU**

**25 January 2011**

**BY  
Warner Talso**



***Who is this Guy  
and  
Why Should I Waste My Time  
Listening To Him  
?***



# **ADMINISTRATION**

- Introductions
- Viewgraphs are unclassified
- Discussion will be classified
- Break after an hour

# OBJECTIVE

- **Look at the Entire History of Army Nuclear Weapons.**
- **Focus on Nuclear Weapons as **Systems**.**
  - **Less Focus on Warheads.**
- **Have a little fun.**

# GROUND RULES

- These are my observations based on 50+ years in the NW business.
- Events as I saw them. Some may be politically incorrect.
- **War Stories.**
- Feel free to disagree.
- Ask questions and make comments anytime.
- Informal.

**What is the Difference Between  
An Old Fashioned Fairy Tale  
and  
A Modern Fairy Tale  
and  
A War Story?**

**An Old Fashioned Fairy Tale Starts Out:  
“Once Upon a Time .....**

**A Modern Fairy Tale Starts Out:  
“If Elected, I Promise .....**

**A War Story Starts Out:  
“Now, This Ain’t No S----- .....**



# AGENDA

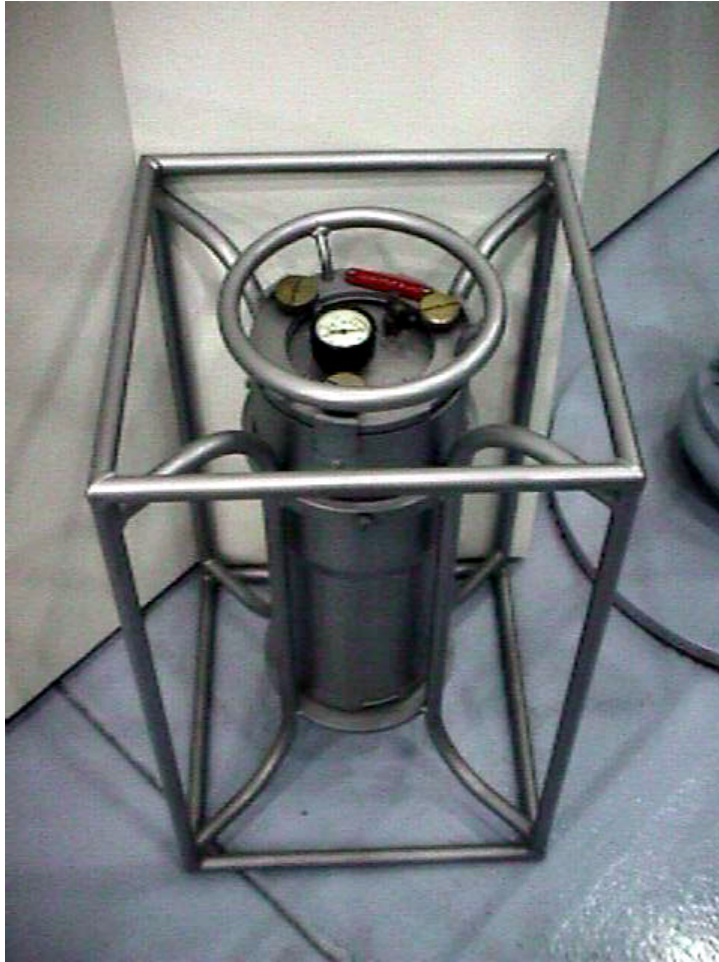
- Early Days
- Surface to Surface Rockets and Missiles
- Artillery Fired Atomic Projectiles (AFAPs)
- Atomic Demolition Munitions (ADMs)
- Air Defense Weapons
- Custodial Units
- Use Control
- Emergency Destruction
- People



# **MK 7**

- **First sub-60 inch system**
- **Ring**
  - ✓ **How many Dets?**
- **AIFI**
- **FAT every 6 months**
- **SI every 12 months**
  - ✓ **Bench Test Dets**
  - ✓ **MC 291 Power Supply**
  - ✓ **Capsule**

# BIRD CAGE



- ✓ How are they constructed?
- ✓ What do they contain?
- ✓ How are they designated?
- ✓ Mention parachutes

## Corporal Missile being Erected

Deployed in 1955





**Honest John Rocket on Launcher**



# HONEST JOHN







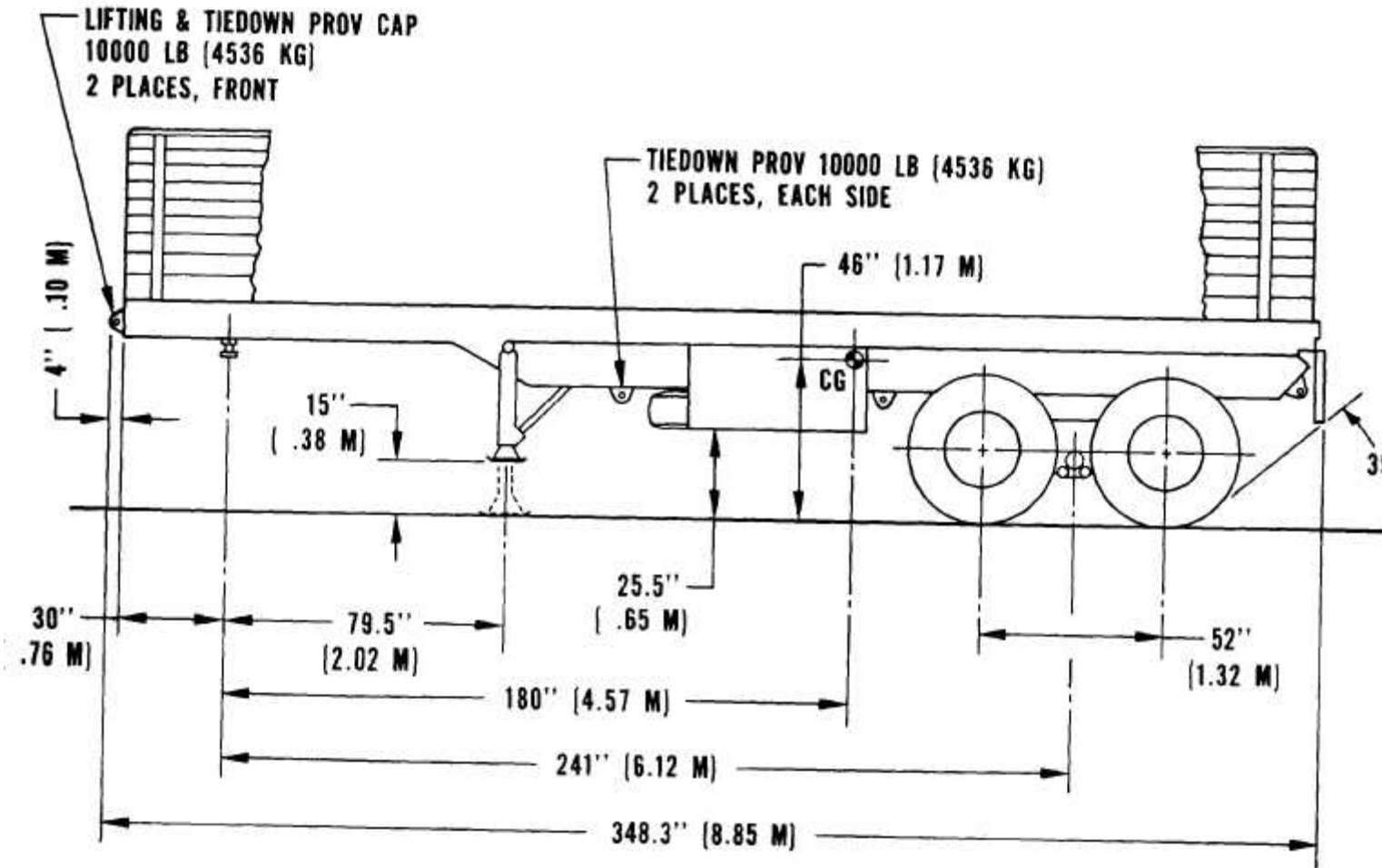
**Warhead Section and Container  
(What system is this?)**



## M543 WRECKER



## M127 STAKE AND PLATFORM TRAILER





# MK 7

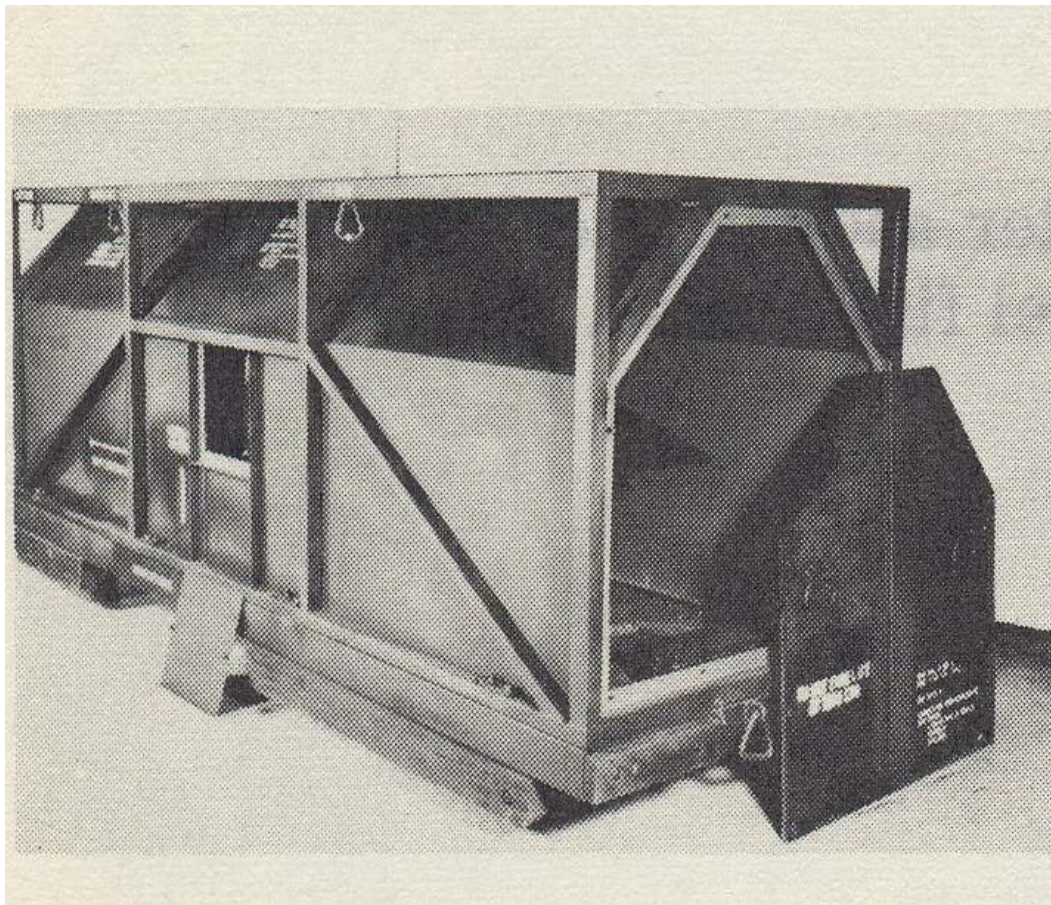


- **Corporal/HJ**
  - ✓ **Outdoor storage**
    - M127 Trailers
    - M543 Wrecker
    - Chains and Binders
  - ✓ **30 day Inspection Criteria**
  - ✓ **Wooden WHS Container**
    - Wooden mallets
    - Ice
  - ✓ **Think **Systems****
    - Corporal
    - Aniline
    - RFNA

# **MK 31**

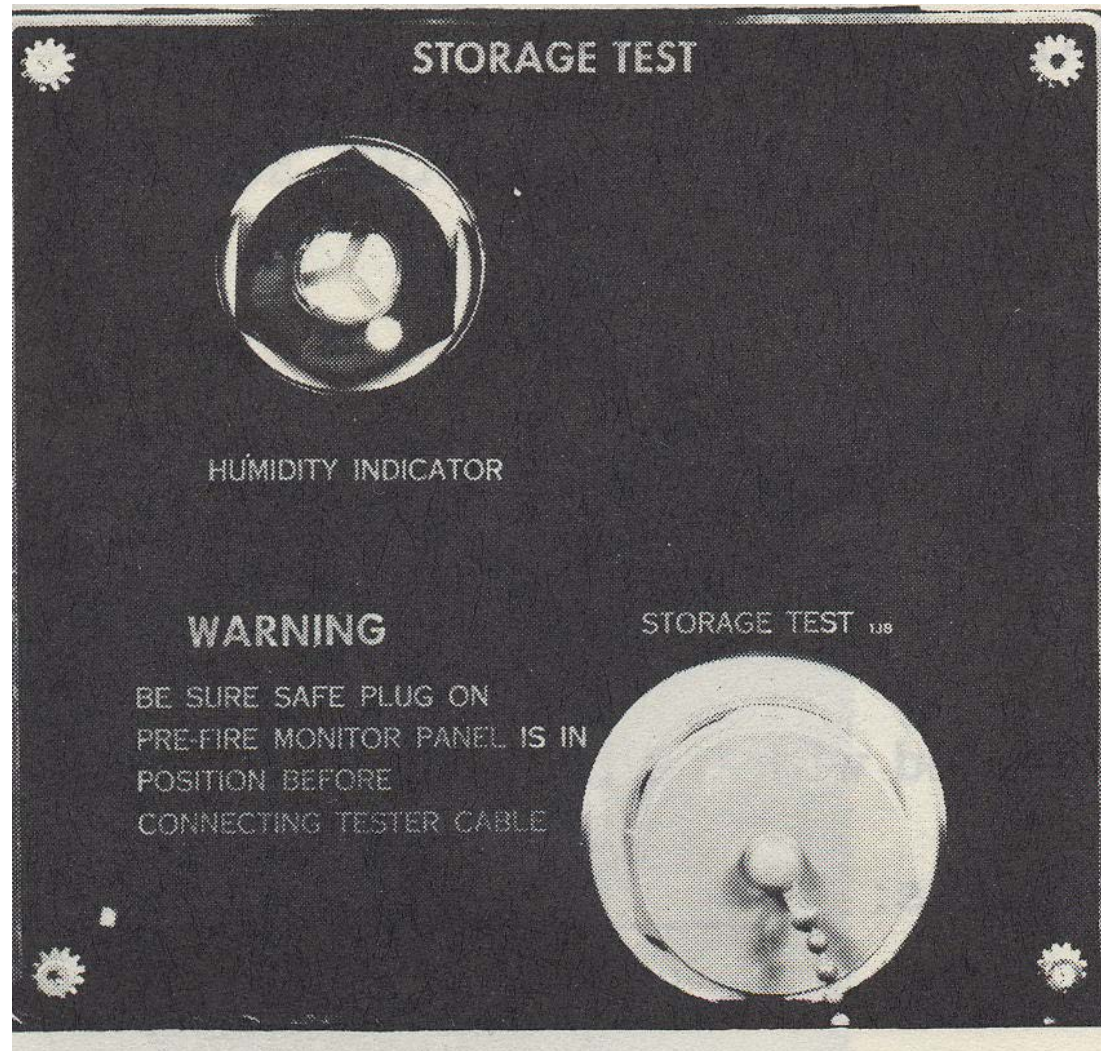
- **“Wooden Bomb”**
- **Sealed Pit**
- **Answer to all our Prayers**
- **“Solve all our Problems”**

# HJ Storage and Shipping Container (M480)

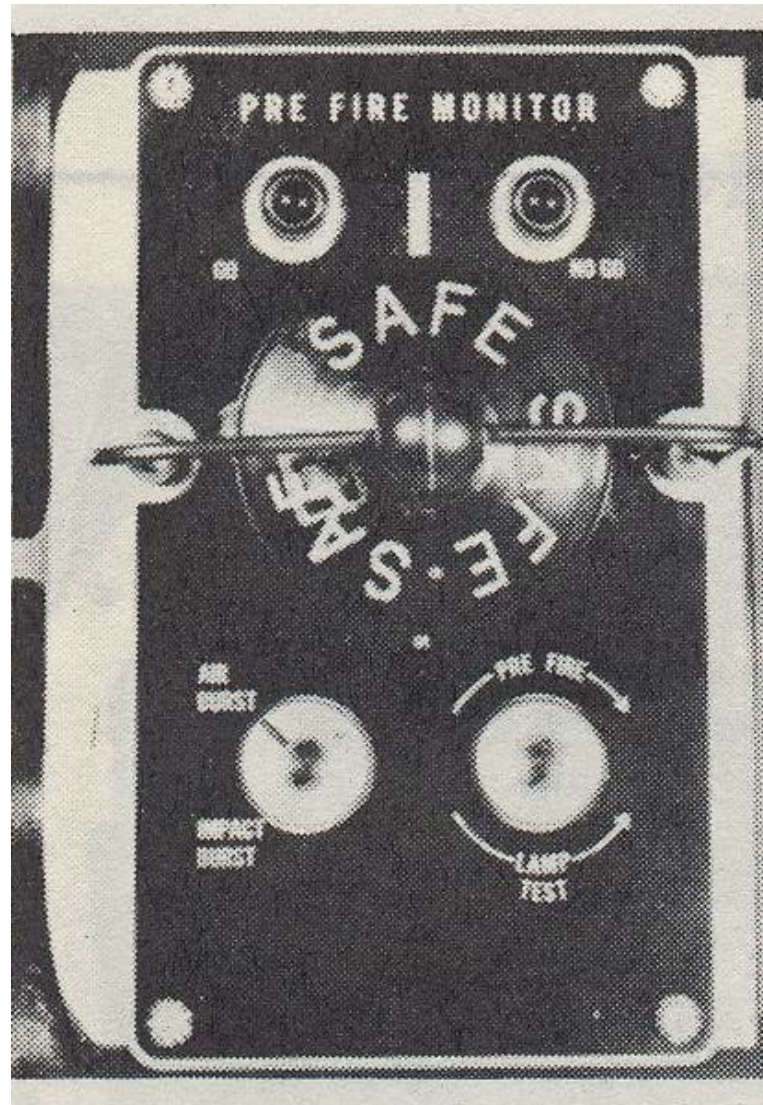




# HJ WHS Storage Test Panel



# HJ WHS Pre-Fire Monitor Panel



# W 31

- **Didn't Quite Work Out That Way**
  - ✓ **Unnecessary User Requirements**
- **HJ 30 Day Checks**
  - ✓ **RH**
  - ✓ **AK Continuity**
  - ✓ **Lifts = Safety Risk**

# Lacrosse



Short Range Guided Missile  
Radio-Command guidance  
Range: 12 Miles  
Operational: 1959-1963  
Too High Tech



# Redstone



Two Missile Groups:  
40<sup>th</sup> and 46<sup>th</sup>  
Deployed: 1958  
Deactivated: 1964





# Davy Crockett



The Davy Crockett missile is a nuclear-armed, man-portable, anti-tank missile.

The Davy Crockett missile is a nuclear-armed, man-portable, anti-tank missile.

# Little John Rocket on Launcher

Mate WHS with 40 Reed and Prince screws



# Sergeant



- Replaced Corporal
  - Liquid Propellant
- Solid Propellant System
- Deployed: 1963-1977
- Replaced by Lance
  - Liquid Propellant



# Lance



**Replaced Sergeant  
18 Month Delay Due to Carcinogenic  
Liquid Propellant**

# Pershing Organization

# Pershing

- Replaced Redstone
- PI
  - ✓ Deployed 1963
  - ✓ Replaced Redstone
  - ✓ Counter the Russian SS-20
- PIa
  - ✓ Deployed 1969
  - ✓ “Minor Modifications”
- PIb
  - ✓ Short Range Version
  - ✓ Never Deployed
- PII
  - ✓ Deployed 1984



# Pershing I On Tracks



# Pershing Ia On Wheels





# Pershing Missile System

- The increased **range** and pinpoint **accuracy** of the PERSHING II were major factors influencing the Soviet Union's decision to seek the Treaty on Intermediate Range Nuclear Forces in which the United States and the USSR agreed to eliminate an entire class of nuclear missiles.
- In accordance with INF Treaty provisions, all of the U.S. Air Force's Ground Launched Cruise Missiles (GLCMs) and the U.S. Army's PERSHING II had to be eliminated by May 31, 1991.
- A total of 234 PERSHING II missiles and 169 PERSHING Ia missiles were covered by the treaty.
- Each side also had permission to **disable 15 missiles and launchers**, then permanently exhibiting them in museums and similar facilities

# **W50 Versus W52 - MCs**

- ✓ **Size**
- ✓ **Cost**

# AFAPs

(Artillery-Fired Atomic Projectiles)

Mk 9 (280 mm)(~11 Inch)

Mk19 (280 mm)

Mk 23 (16 Inch) (406 mm) Navy

Mk 33 (8 Inch) (203mm)

W 48 (155mm)(6~Inch)

W 74 (155 mm) \*

W 75 (8 Inch) \*

W 79 (8 Inch)

W 82 (155 mm) \*

\* Never entered the Stockpile

# 280 mm Cannon “Atomic Annie”

20 Built

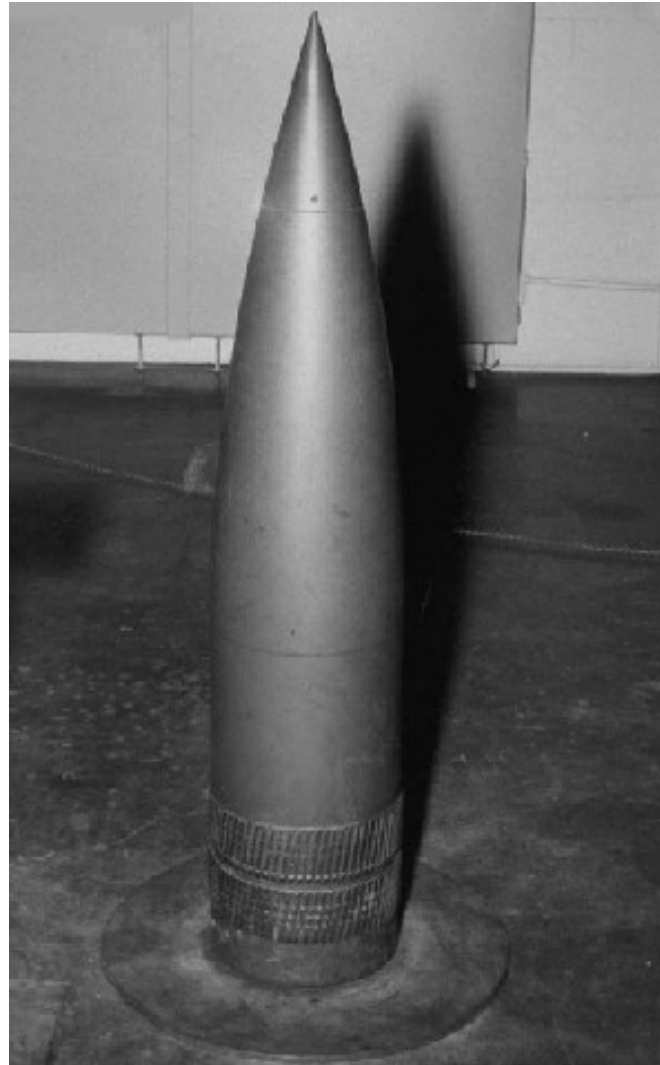
8 Survive

2 with Prime Movers



# Mk 19 Artillery Fired Atomic Projectile (AFAP)

- Length = 54 inches
- Diameter = 11.02 inches  
(280 mm)
- Weight = 600 Pounds
- No PAL





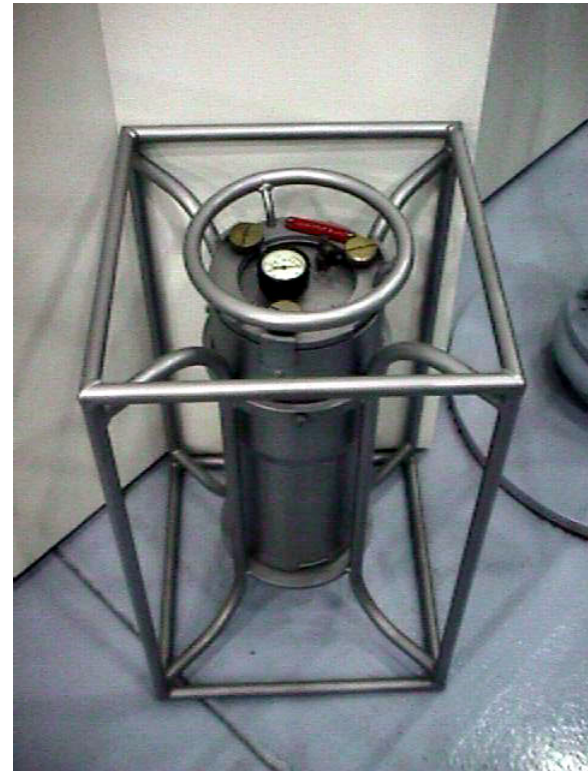
# **Mk 33/M422**

**(1956-1992)**

- **My Vote for the Worst Managed System**
- **Four BIG Problems**
  - (None of which were addressed in Congressional Hearings)
  - ✓ **Assembly Time**
  - ✓ **Preinitiation**
  - ✓ **Separate Spotting Round**
  - ✓ **Extremely High Maintenance**
  - (Four Packages)

- **Entered Stockpile:** 1956
- **Retired:** Sept 1992  
(Longest life of any NW)
- Length = 37 inches
- Diameter – 8 inches
- Weight = 243 Pounds
- Mechanical PAL

## MK 33 8 Inch





# Mk33

203 mm (8 in.)

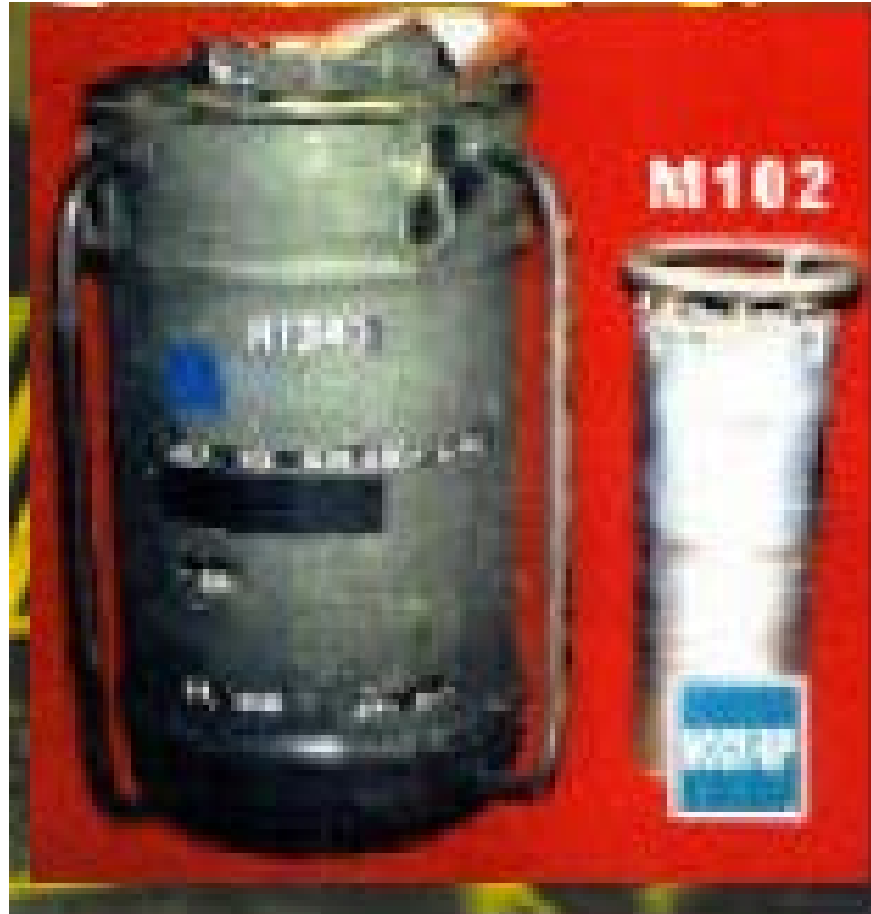
M110

Self-propelled  
Howitzer





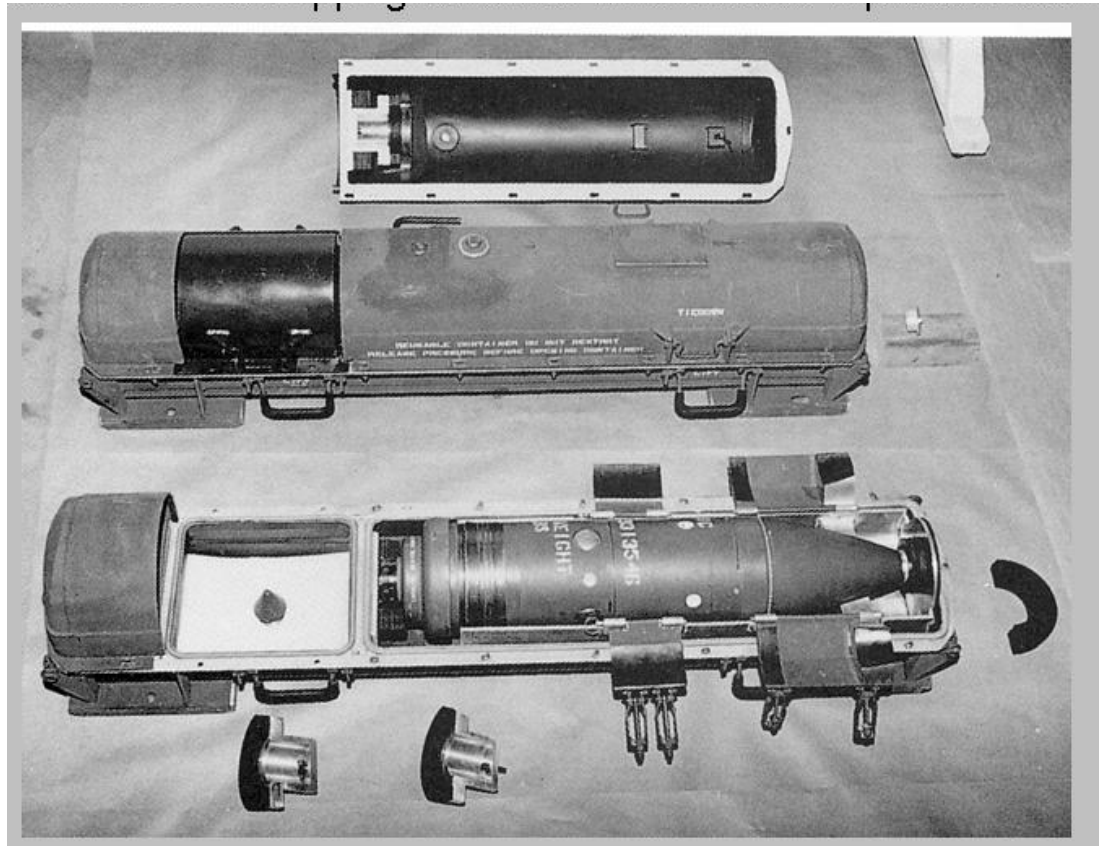
H-1343





# M422

## Projectile in M613 Shipping Container







# W 79(M573) 8 Inch Round

Entered Stockpile: 1981

Retired: Sept 1992

Weight: 243 lbs

Length: 37 inches

Dia.: 8 inches

Cat D PAL

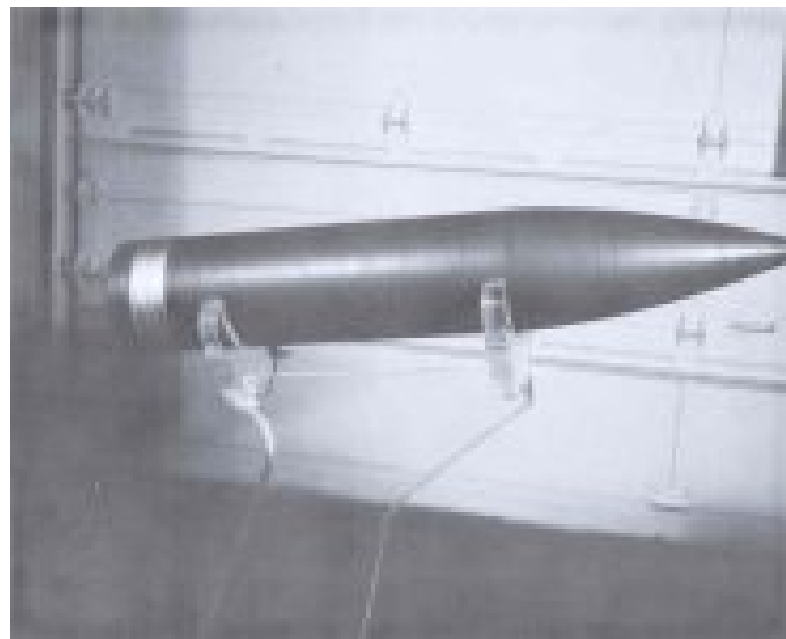
RAP

# **8 inch Follow-on Efforts**

- **W75**
  - ✓ **Not Adequately Defended**
- **W79**
  - ✓ **Not Politically Socialized**

# B 48/M 454

- **Size**
  - **Yield Range**
  - **Firing Tables**
    - ✓ **Safety Conflict**
  - **Storage**
  - **M454 Operator's Manual**
    - ☰ **McNamara's 100,000**
    - ☰ **Comic Book Format**
- Entered the Stockpile in 1963
  - Length = 34 inches
  - Diameter – 6 inches (155 mm)
  - Weight = ~120 Pounds
  - Mechanical PAL





# B 48 Safety Rules

- AR 50-102 Army safety rules for the 155 required two-person access AT ALL TIMES.
- The tech manual REQUIRED minimum exposure to the round itself.
  - ✓ That meant you did your task and stepped back 3 feet.
  - ✓ As long as the task could be seen by the 2nd individual, example setting the timer (e.g. assuring correct procedures were being performed, another safety rule), then the 2nd person could stand at the 3 foot mark.
  - ✓ Obviously this was easy with the 155, not so when ones hands had to go inside a weapon, then a closer look was required by both individuals.
  - ✓ An example where two individuals were always used was when the projectile was raised to a vertical position in the M467 container, the thing was rather heavy even if only 119.5 lbs.
- Maximum of three rounds in an unbarracaded structure.
  - ✓ Some exceptions for four rounds





# **Atomic Demolition Munitions (What is an ADM?)**

- **Project A**
- **T4**
- **ADM (Project B)**
- **TADM**
- **MADM**
- **HADM**
- **SADM**

# Mk 7(Project B)

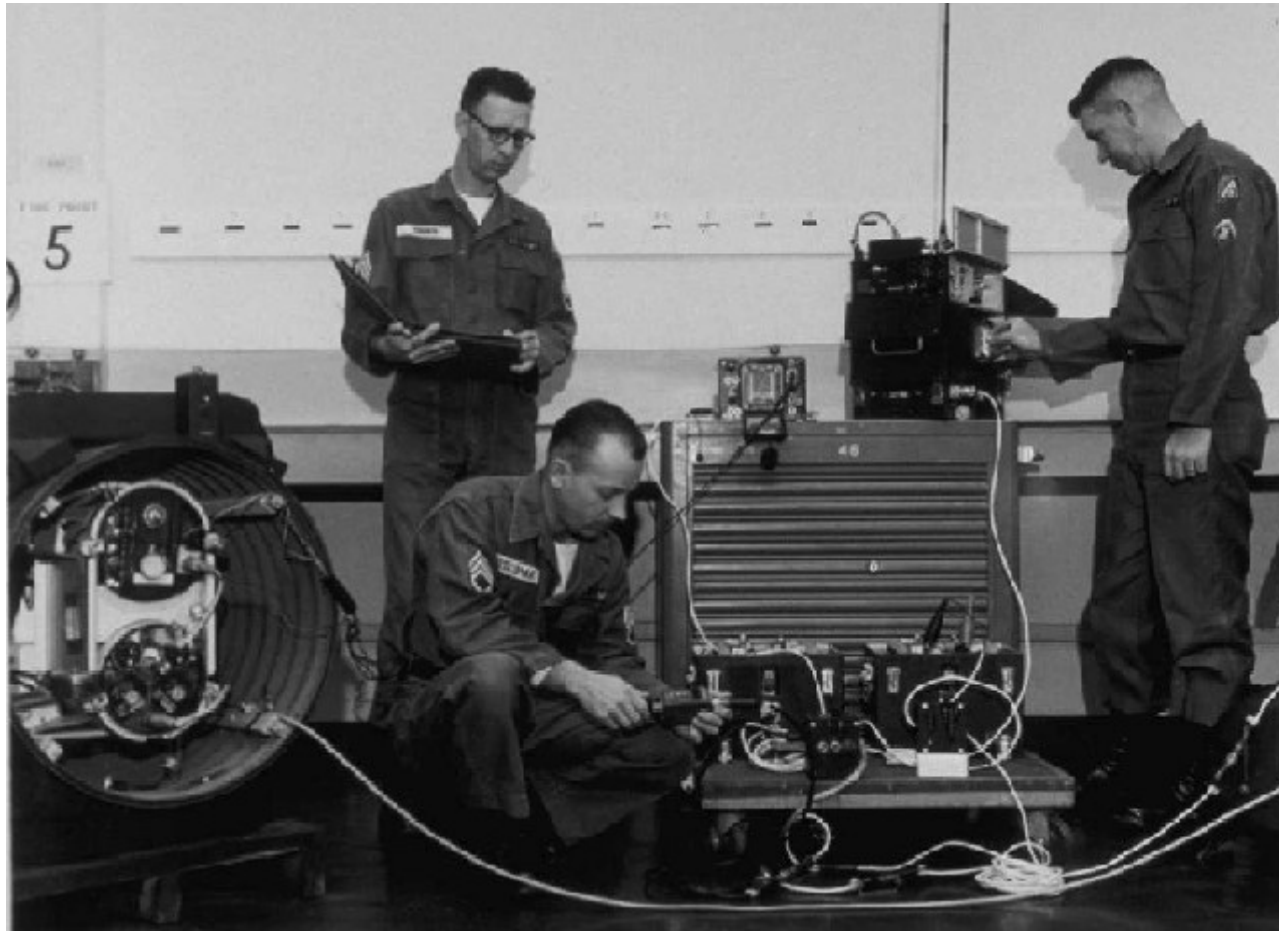
- Roughly a Coffin sized Container
- Skid Mounted Pallet
- 1600 pounds
- Timer and Wire Detonation Options.
- Entered the Stockpile in 1954.
- Retired in ?
- **Cover Lifting Handles**
- **Lesson Learned**
  - ✓ **Get the Facts**
  - ✓ **Be Inquisitive**
  - ✓ **Ask Questions**

# Tactical Atomic Demolition Munition (TADM)



- Mk 30 Warhead
- Military Characteristics (MCs) specified the corrugated metal container.
- Entered the Stockpile in 1961
- Retired in 1966.

- Design Requirement: Corrugated Pipe
- Could be detonated by timer, wire, or radio signal
- User Requirements
  - ✓ Trainer Maintenance
  - ✓ ~50% of Operator's Manual was Repackaging Empty Boxes (Unintended Consequence)



**TADM Assembly Procedures**

# Medium Atomic Demolition Munition (MADM)



- W45 Warhead
- Water proof access cover for under water employment.
- Mechanical lock over J1 connector.
- Entered the Stockpile in 1962
- Retired in 1984

# Heavy Atomic Demolition Munition (HADM)

- W31 Warhead
- There was no special container for the HADM.
- It was to be deployed on this hand cart with a canvas cover.
- Entered the Stockpile in 1960
- Retired in 1965.

# B54

## Special Atomic Demolition Munition (SADM)



- Man portable. (The “back pack” ADM.)
- As shown, configured for carry in an airborne employment.
- Weight 60 pounds.
- Design Requirement becomes Unintended Consequence.
- Entered the stockpile in 1964.
- Retired in 1992.



# **Air Defense**

- Nike Hercules (W 7)
- Nike Hercules (W 31)
- Nike Zeus (W 50)
- Sprint (W 66)
- Spartan (W 70)



**Nike Hercules Firing Battery**

# Nike Zeus



Operational 1963-1966

Project 505

Code Named Mud Flap

Complemented the AF Thor



# Sprint (W66)





# Spartan (W 71)



# Custodial Units

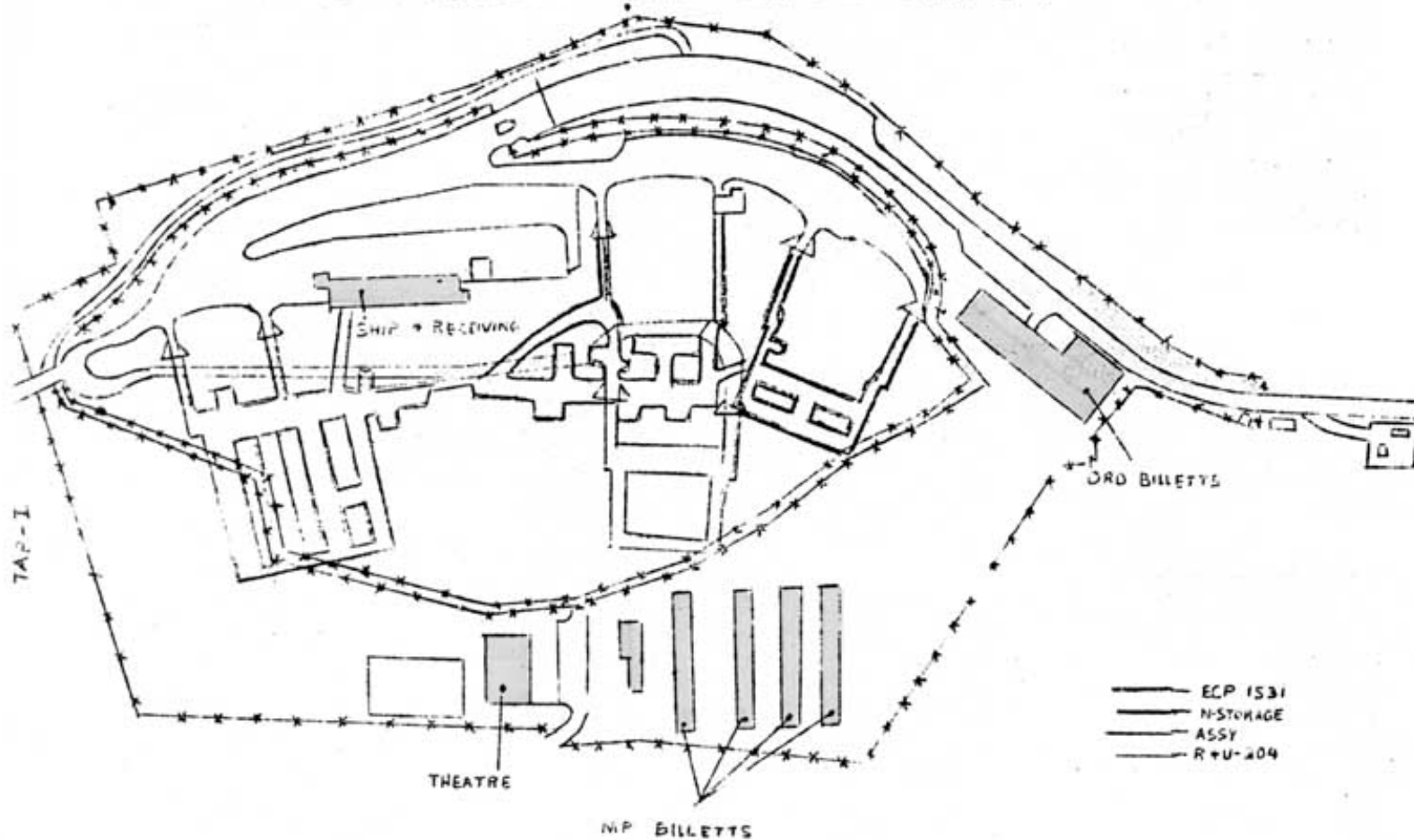
- Definition
  - ✓ Army
  - ✓ Air Force
  - ✓ Navy
- 10<sup>th</sup> FA Detachment
- First Three USAFADs in 1962
- 59<sup>th</sup> Ordnance Brigade/SETAF



# Use Control

- **What is Use Control?**
- **Prior to 1962 We Had No Use Controls**
  - ✓ **Corporal Storage Conditions**
- **Joint Congressional Committee Field Trip**
  - ✓ **Politics of the Time**
  - ✓ **Senior Commanders**
  - ✓ **Jupiters**
  - ✓ **AF Sergeant**
  - ✓ **Davy Crockett**
  - ✓ **T**

# MASSWEILER ORDNANCE DEPOT



# Use Control (Continued)

- **Two Man/Person Rule (Unintended Consequences)**
  - ✓ **Very Subjective**
  - ✓ **Paint Shoes on Floor**
  - ✓ **Mount Truck in Unison**
- **PAL**
  - ✓ **Mechanical Locks**
  - ✓ **Embedded Electro-Mechanical Locks**
  - ✓ **Maintenance Code**
  - ✓ **Recode**
  - ✓ **Sandia Course**
- **Emergency Action Messages (EAM)**

# Emergency Destruction

- Does everyone know what the ED requirement is/was?
- Predecessor to Command Disable/Destruct Capabilities
- Dr. Walske Requirement
  - ✓ ATSD(AE)
  - ✓ ~1970
  - ✓ Service Resistance
  - ✓ Thank You
  - ✓ **Unintended Consequence**
  - ✓ Time - Quantifiable criteria
    - Use of finite resources
- ✓ *People prepare to show Inspectors what they want to see*

# Transportation

- **What is a Forklift?**
  - ✓ Not the same in the Army and the Air Force
  - ✓ “Nuclear Certified” means different things
- **Army Would/Could Not Use AF or Navy Helicopters**
  - ✓ Evac Plan
  - ✓ Chinooks grounded

***Interservice Cooperation is not to be Assumed!***

# Inspection Programs

- Annual Nuclear Capable Unit Inspections by
  - ☺ Major Command
  - ☺ Service HQ
  - ☺ DASA/DNA/DTRA
- Titles
  - ☹ Technical Proficiency Inspection (TPI)
  - ☹ Technical Standardization Inspection (TSI)
  - ☹ Defense Standardization Inspection (DSI)
  - ☹ Other ?
- Very rigid standards

***Drives what work gets done***





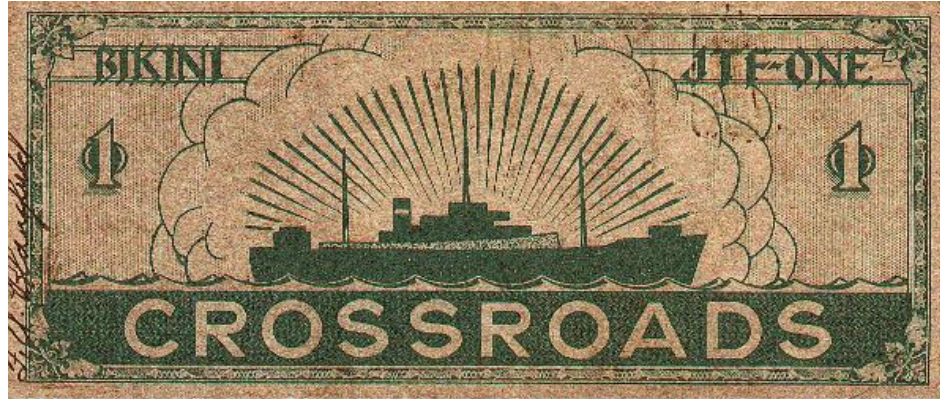
# **Military People**

- **You are doing a very Important Service**
- **In My Experience, Most People are VERY Narrow in Their Scope of Knowledge and Expertise.**
  - ✓ **“Guards have guns - and bullets!”**
  - ✓ **Rocky Flats FBI raid.**
- **Knowledge is fragile and has a half-life.**
- **Current AF Problems.**
- **AF and Navy Tend to Leave Maintenance (and Technical Knowledge) to NCOs.**

# Summary

- **Think NW as Systems**
- **Be Inquisitive, Get Facts**
- **Comments?**

# SHORT SNORTER - FRONT AND BACK



# BIKINI SHORT SNORTER





# Two Handsome Caballeros

