

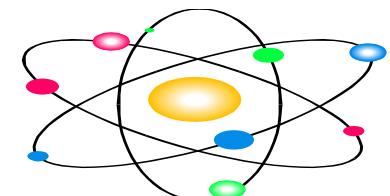
AN ARMY VIEW OF NUCLEAR WEAPONS HISTORY

OR

WHAT YOU DON'T KNOW MAY SURPRISE YOU

25 January 2011

BY
Warner Talso



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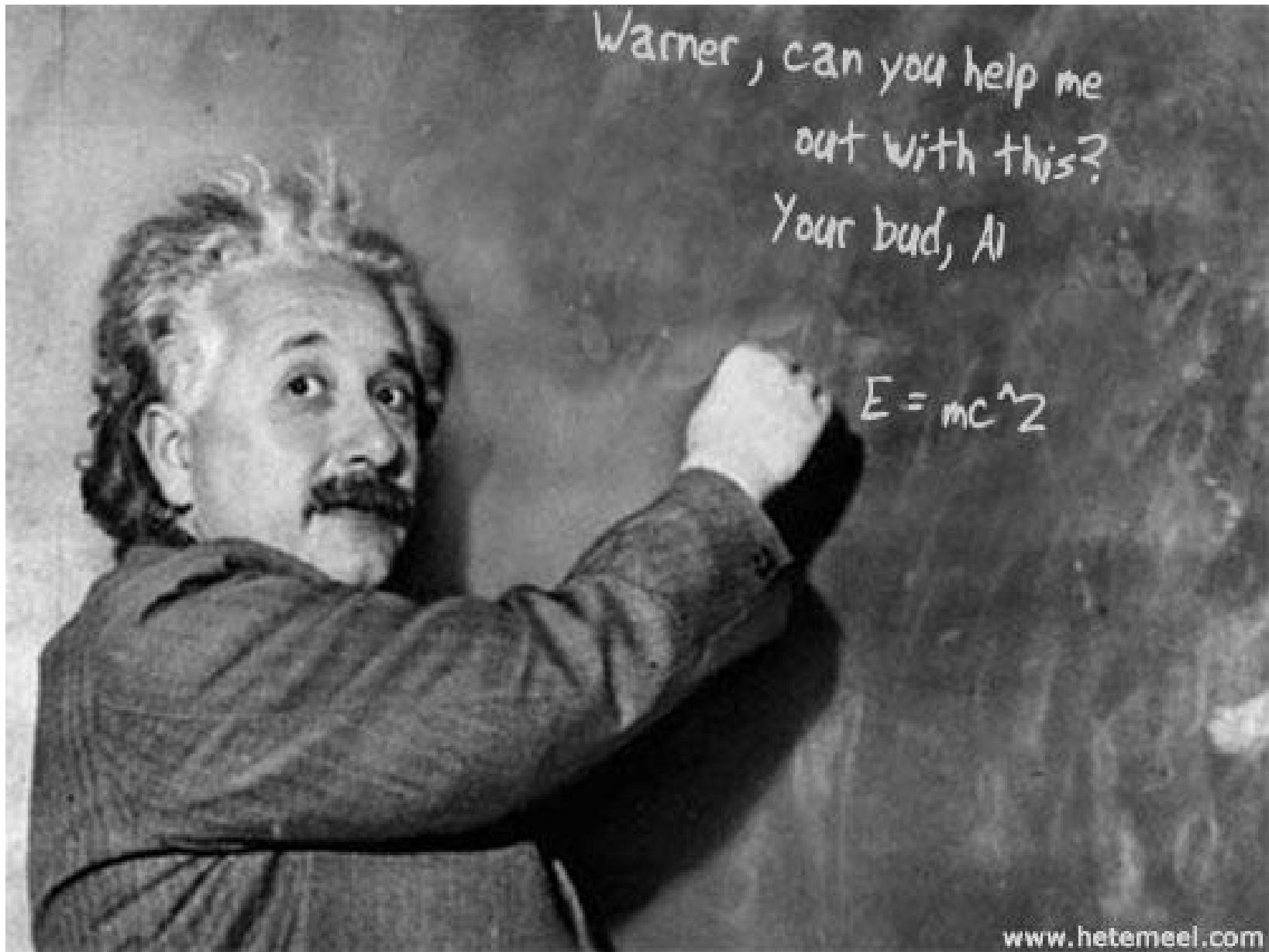
Who is this Guy

and

Why Should I Waste My Time

Listening To Him

?



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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----**



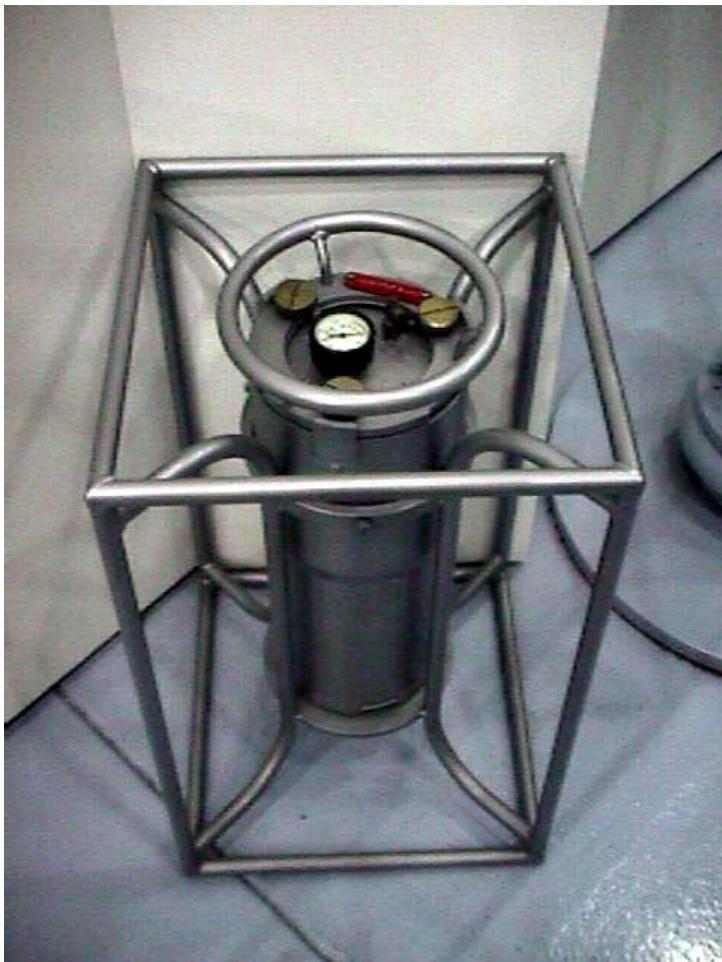
AGENDA

- 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





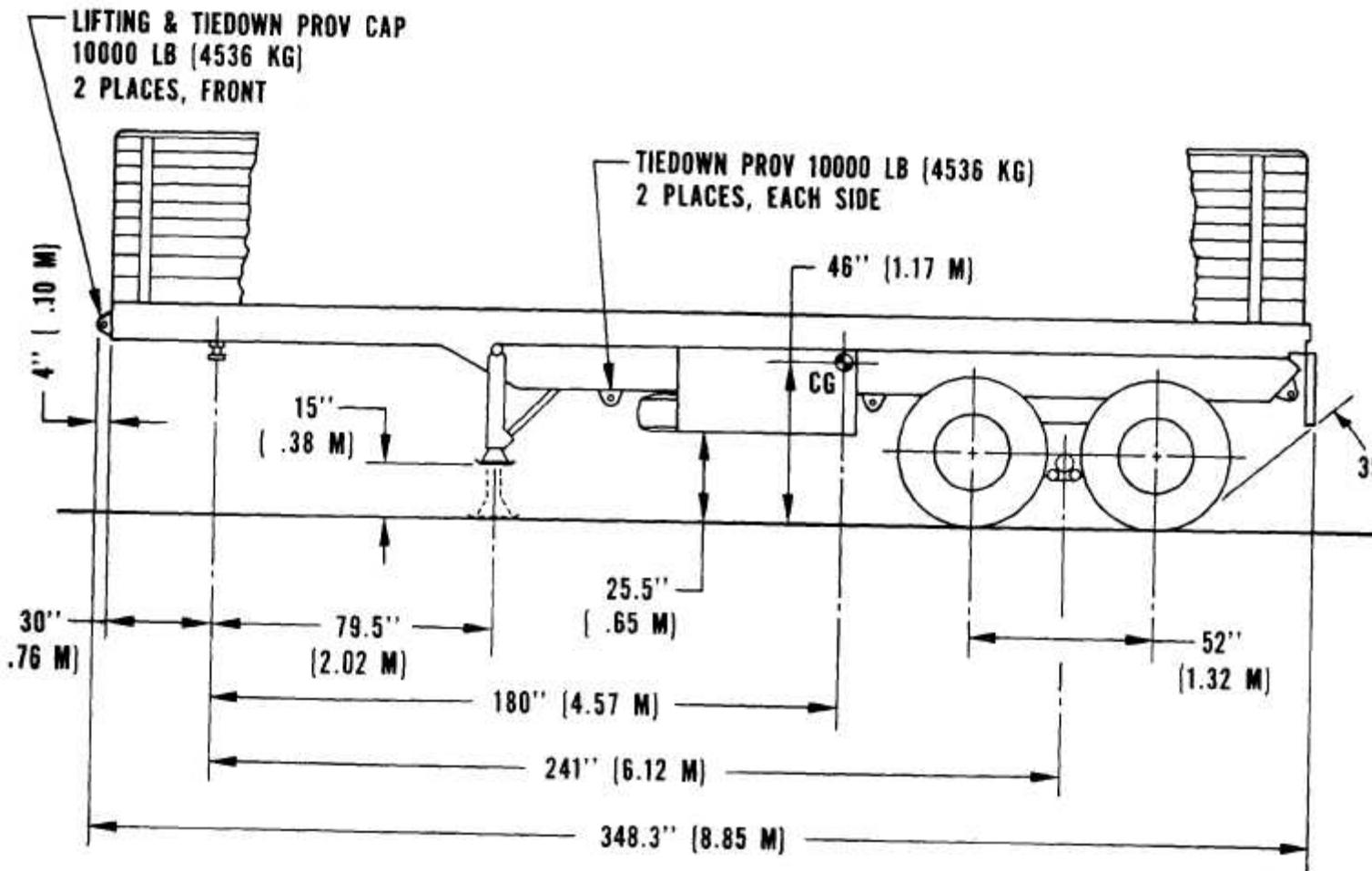
**Warhead Section and Container
(What system is this?)**



M543 WRECKER



M127 STAKE AND PLATFORM TRAILER



00000000

MK 7

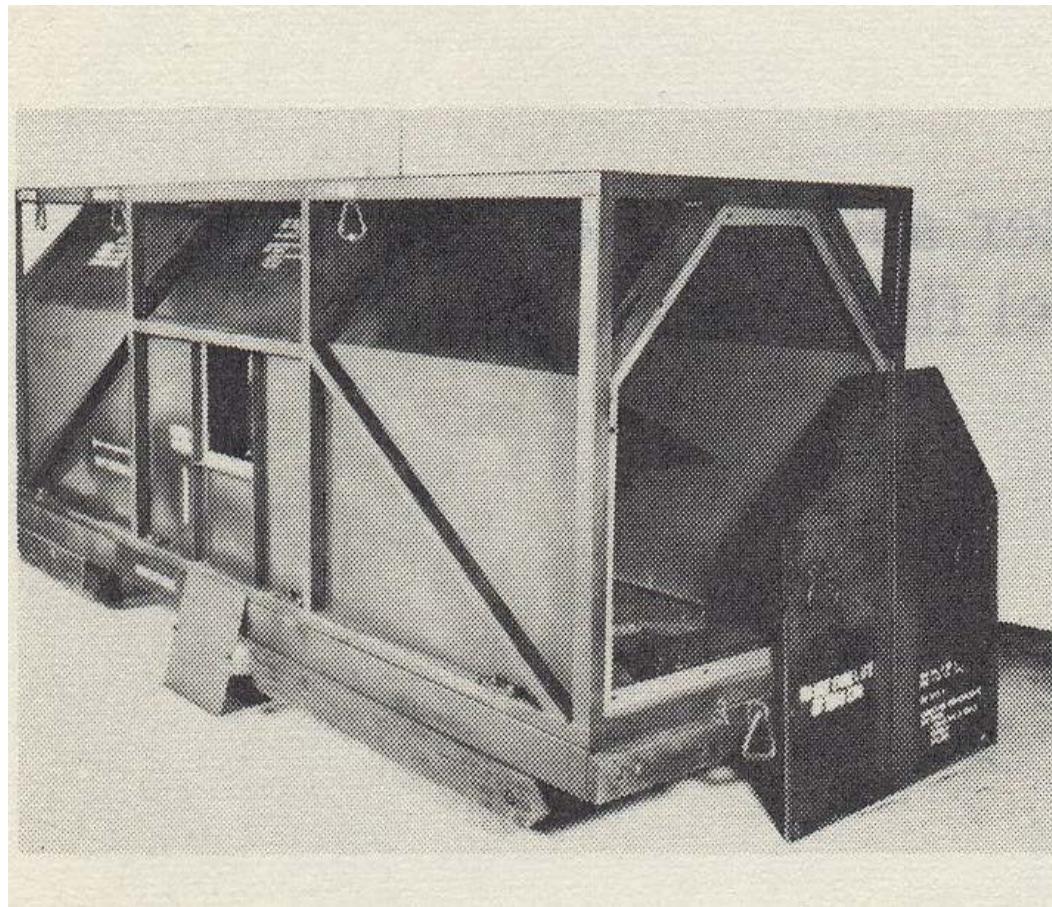


- **Corporal/HJ**
 - ✓ **Outdoor storage**
 - ▶ M127 Trailers
 - ▶ M543 Wrecker
 - ▶ Chains and Binders
 - ✓ **30 day Inspection Criteria**
 - ✓ **Wooden WHS Container**
 - ▶ Wooden mallets
 - ▶ Ice
 - ✓ **Think Systems**
 - ▶ Corporal
 - ▶ Aniline
 - ▶ RFNA

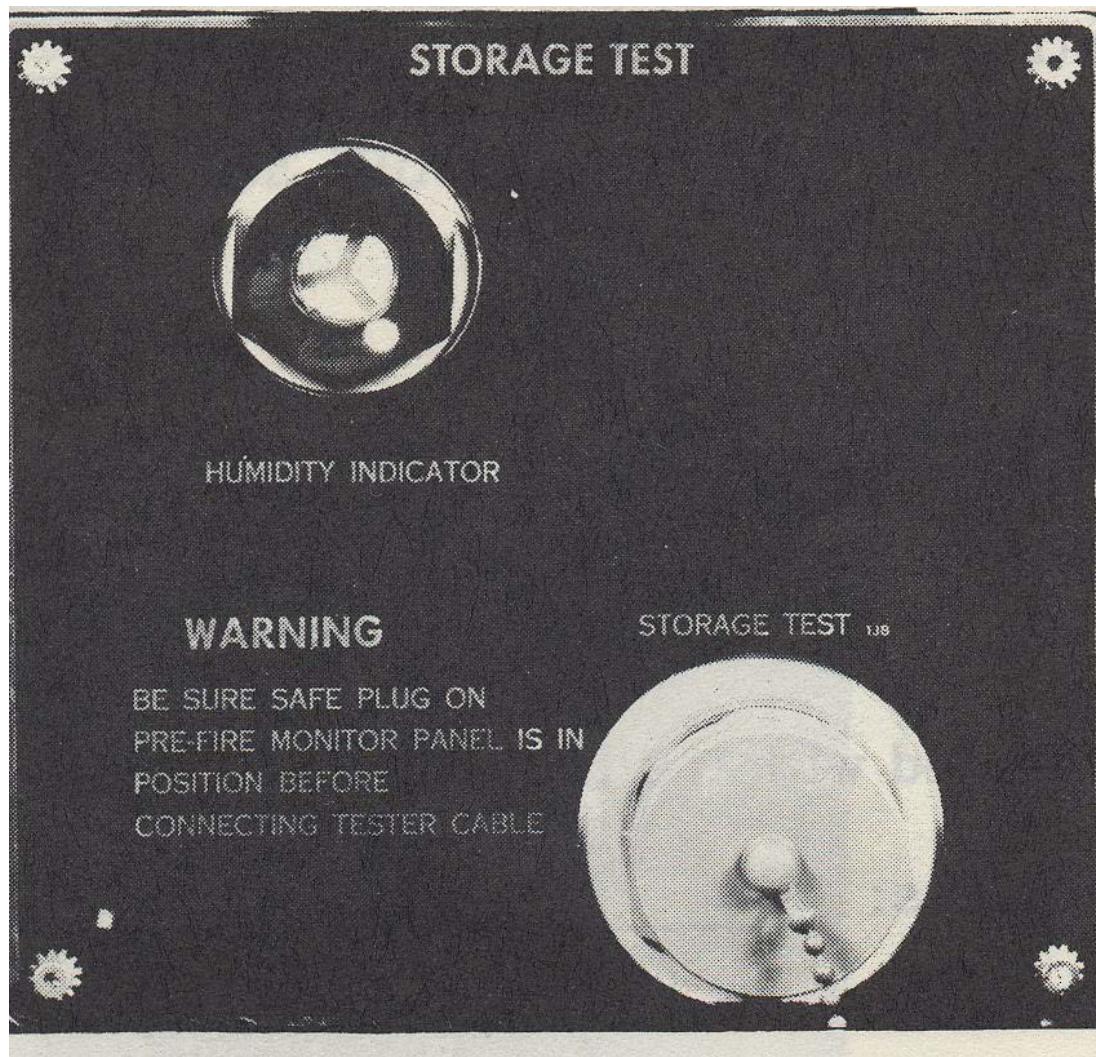
MK 31

- **“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:
40th and 46th
Deployed: 1958
Deactivated: 1964

Davy Crockett



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
- Pla
 - ✓ Deployed 1969
 - ✓ “Minor Modifications”
- Plb
 - ✓ 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

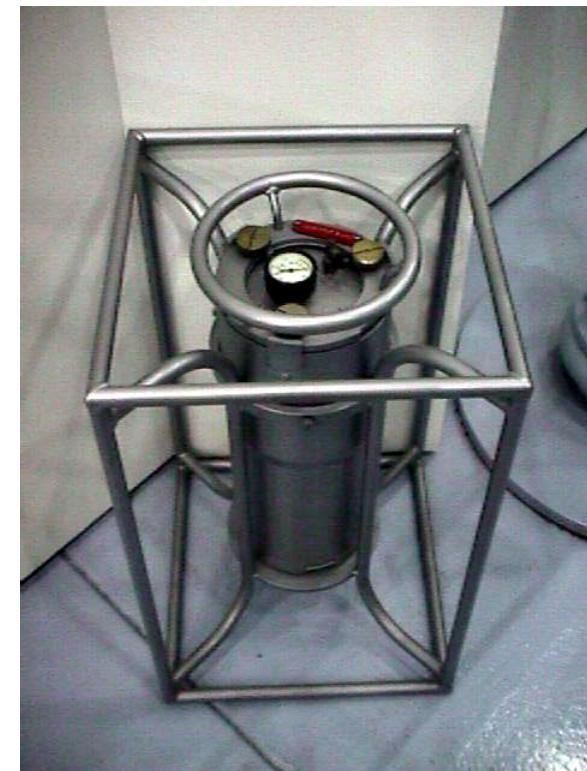
(1956-1992)

- **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.)

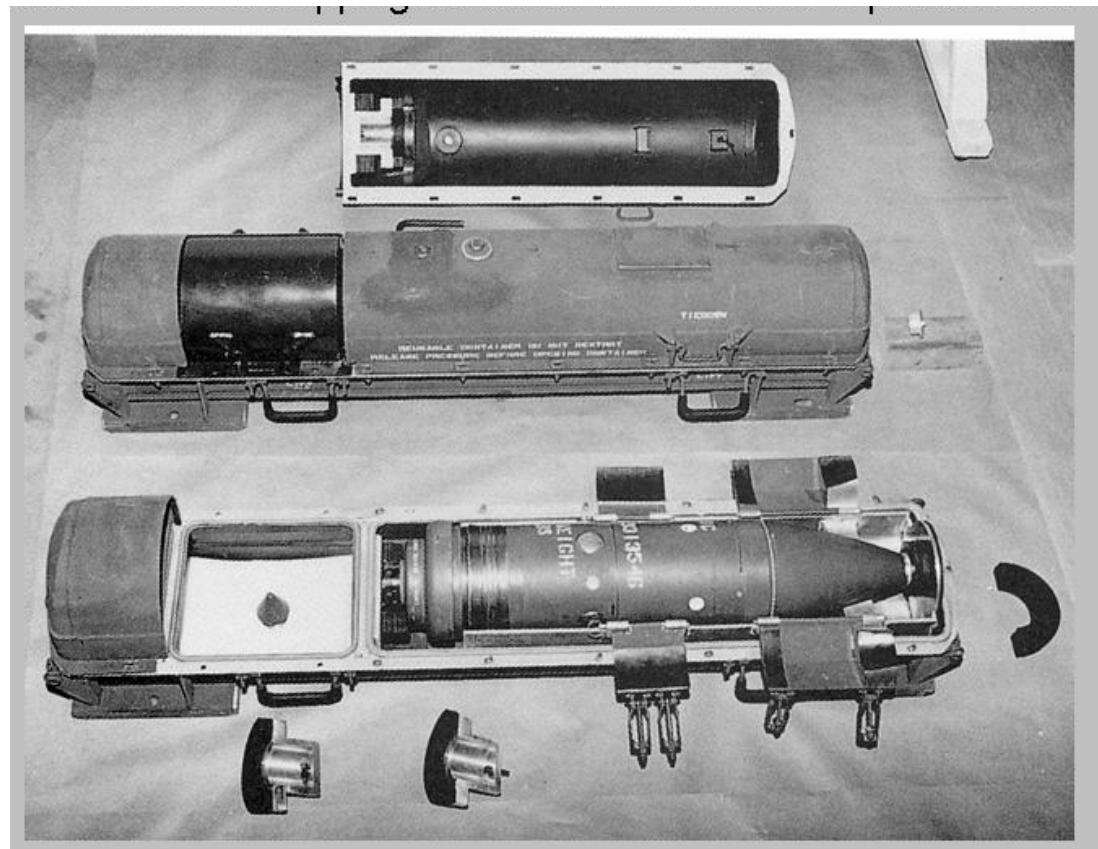
M110
Self-propelled
Howitzer



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

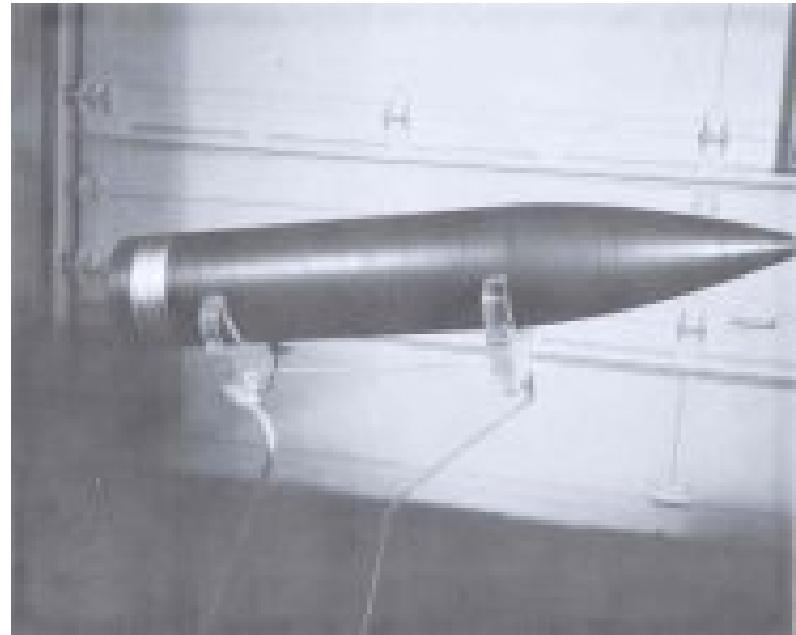
8 inch Follow-on Efforts

- 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)

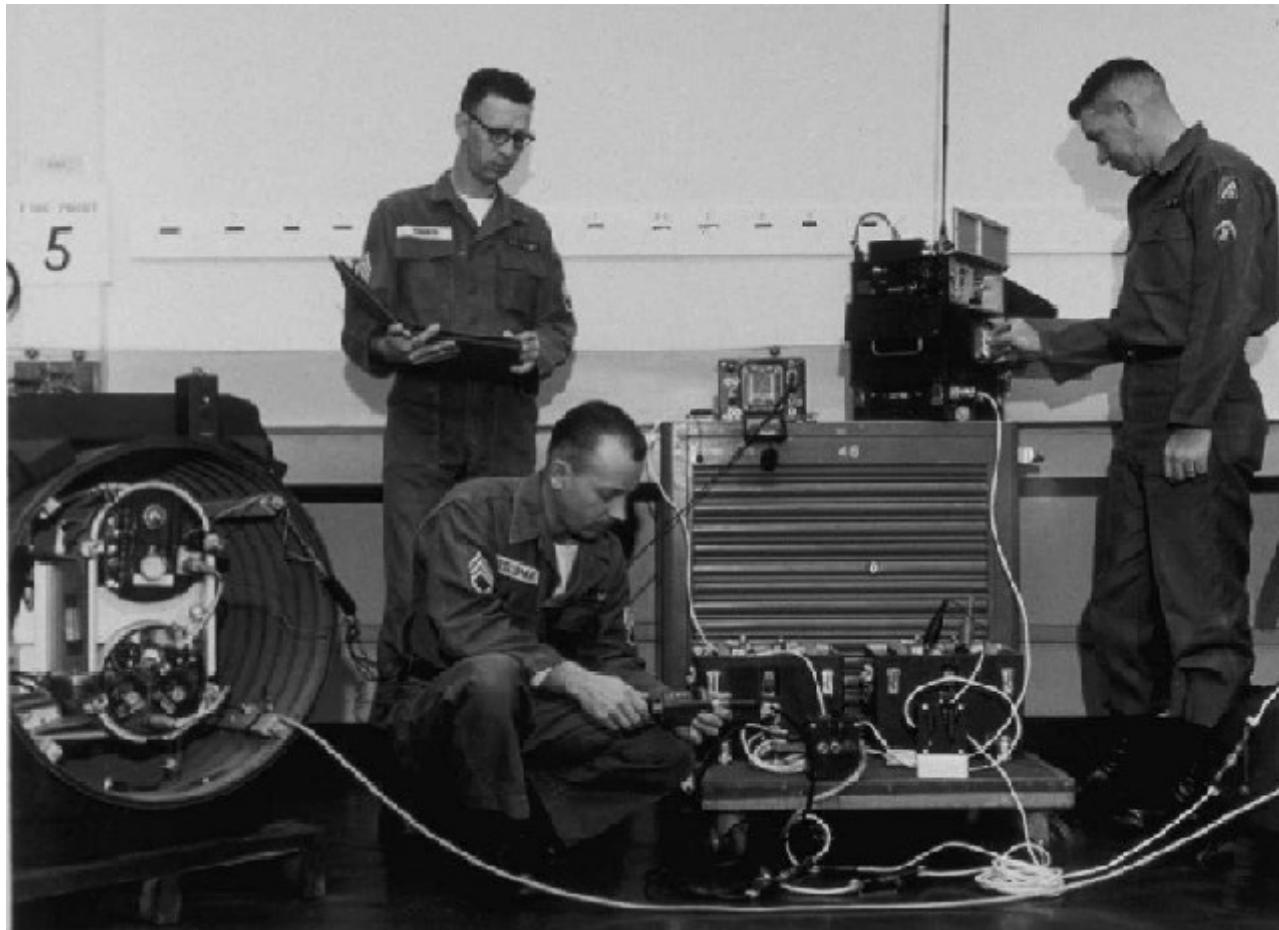
- Roughly a Coffin sized Container
- Skid Mounted Pallet
- 1600 pounds
- Timer and Wire Detonation Options.
- Entered the Stockpile in 1954.
- Retired in ?
- **Cover Lifting Handles**
- **Lesson Learned**
 - ✓ **Get the Facts**
 - ✓ **Be Inquisitive**
 - ✓ **Ask Questions**

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)



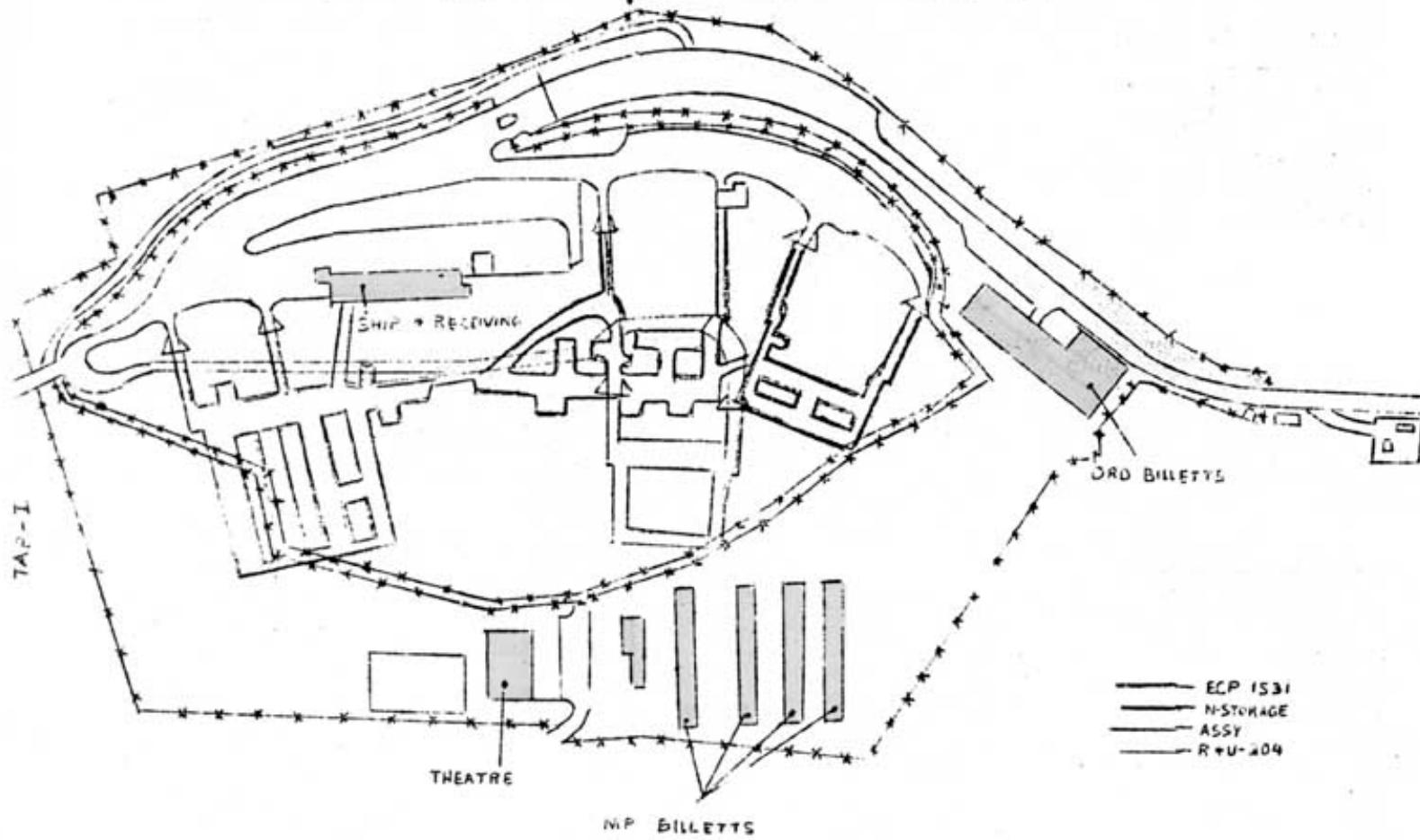
Custodial Units

- Definition
 - ✓ Army
 - ✓ Air Force
 - ✓ Navy
- 10th FA Detachment
- First Three USAFADs in 1962
- 59th 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

