

NUCLEAR NEVADA

JOSEPH KENT

**DIRECTOR OF CURATION,
PROGRAMMING AND EXHIBITS**

NATIONAL ATOMIC TESTING MUSEUM

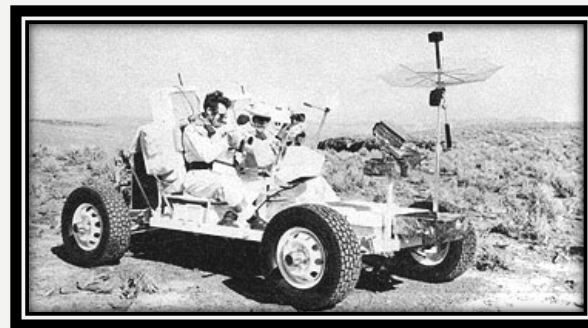
FROM MANHATTAN TO THE MARSHALLS: EARLY TESTING

- Manhattan Project
 - Trinity Test
 - July 16, 1945
 - First successful nuclear weapons test
 - Alamogordo Bombing Range
- Post-World War II
 - Operation Crossroads
 - Atomic Energy Commission
 - Pacific Proving Ground
 - Over 100 atmospheric and underwater tests conducted from 1946 to 1958 and 1962 to 1963.



BIRTH OF A CONTINENTAL PROVING GROUND

- Project Nutmeg
- Nevada Test Site
 - Established on Dec. 18, 1950
 - 65 miles northwest of Las Vegas, NV
 - Primary nuclear weapons testing site
 - 1,021 weapons detonated from 1951 to 1992
- Site chosen for nuclear and radiation-related experiments and training
 - Project Rover & NERVA
 - BREN Tower
 - EPA Farm
 - NASA Apollo Training



BOMBS IN THE DESERT: ATMOSPHERIC TESTING

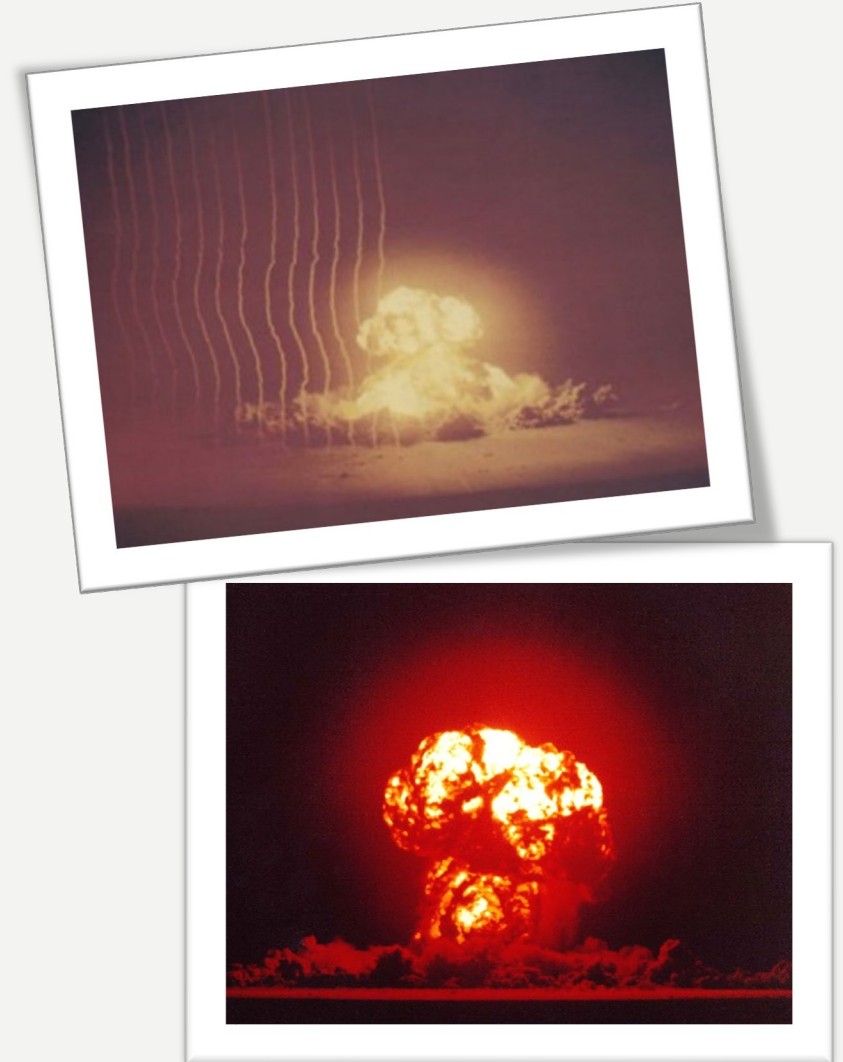
- 100 atmospheric tests between 1951 and 1963
- Methods of Delivery
 - Airdrop
 - Tower
 - Balloon
- Impact on Las Vegas and Atomic Tourism
- Notable Tests
 - Teapot APPLE-2
 - Plumbbob HOOD



TEAPOT APPLE-2



- Federal Civil Defense Act of 1950
 - Established Federal Civil Defense Administration
- Civil Effects Tests
 - Operation Doorstep
 - March 17, 1953 – ANNIE
 - First nationally televised nuclear shot
 - Operation Cue
 - May 5, 1955 – APPLE-2
 - More elaborate and involved 40 separate projects
 - Houses remain and are a highpoint of the NNSS public tours
 - <https://www.youtube.com/watch?v=ztjXZjlp8OA&list=PPSV>



J. C. PENNEY COMPANY

OF LAS VEGAS, NEVADA

....Presents these "before and after" photographs of the mannikins exposed to the atomic blast during the civil defense program at Yucca Flats on March 17th. These mannikins could have been live people, in fact, they could have been you. Volunteer now for Civil Defense. Call the Clark County Civil Defense Office today. Phone 5600.

J. C. Penney Company was happy to donate the clothing to the Federal Civil Defense Administration for this test. L. A. Darling Company is to be complimented for donating the 50 mannikins which are now on display at our store for your inspection.

HILLMAN LEE, Manager

BEFORE AFTER



Brown wool suit, brown leather overcoat, white broadcloth shirt. Right hand torn off, left hand broken off at wrist. Hole in right hand sleeve of coat, shirt had cut near knot of tie. No damage done to shoes or trousers.

BEFORE AFTER



Brown wool sports coat, tan wool trousers, white knit wool tee-shirt, brown leather overcoat. The coat, wool tee shirt, wool trousers or shoes shows no signs of damage. The top button on the coat had been pulled off which could have been pulled off from great blast. The mannikin shows no signs of damage.



Blue wool suit, white broadcloth shirt, brown leather overcoat.



Waist twisted off at the hips — right leg twisted off at hip — right thigh cracked fore part of shin bone—broken. Shirt cut full of holes — tie shows no damage except very dusty — shoes have no damage.



Green work suit, leather overcoat, composition shoes.



Left arm torn away from shoulder — no damage done to the clothing.



Cotton broadcloth pajama top, cotton broadcloth pajama bottoms, brown leather slippers.



Clothing and mannikin show no signs of damage.



Cotton broadcloth pajama top, leather slippers.



No signs of damage to the clothing. Right hand has little finger missing.



Jacket had a large burn to the back about the size of a Cadillac hub cap. This jacket was lined with all nylon fleece but the fleece showed no signs of burn.



Rayon top, green rayon slippers.



All wool suit, white tie, all wool top coat, brown leather shoes.



Head twisted off at shoulders — shirt blown off and tie was still around the collar of the shirt — shirt had had tear in back — trousers shows no signs of damage — knees broken on right leg — white broken.



Rayon sport coat, cotton knit sports shirt, black leather overcoat.



Head twisted off — face smashed and head split open from ear to ear—left leg twisted off at knee—coat cut full of holes — tie shirt also cut full of small holes on left shoulder — few small cuts in trousers.



Faced denim jacket and blue canvas rubber-soled shoes, yellow knit sports shirt.



No signs of damage to the clothing. Right arm torn off at shoulder — Left arm badly damaged at shoulder but not torn off.



Blue chambray work shirt, rayon slippers, composition shoes.



No signs of damage to the clothing. Back of mannikin was saved from the wind, die down to the tail bone.



Gray denim top, black rubber gloves.



TURN PAGE

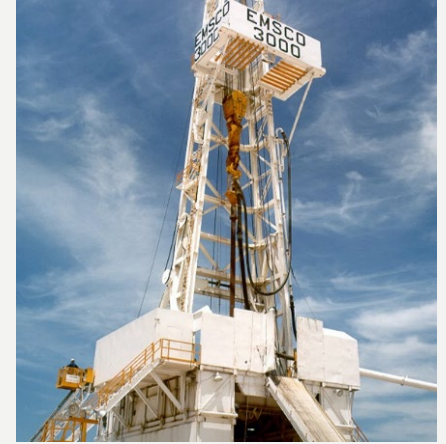
PLUMBBOB HOOD

- Shot Profile
 - July 5, 1957
 - Area 9, NTS (Yucca Flat)
 - 1500 feet
 - Balloon type
 - 74 kiloton yield
- Significance
 - Largest atmospheric test at NTS and on continental US
 - Involved Desert Rock VII and VIII exercises



BOMBS IN THE DESERT: UNDERGROUND TESTING

- Public Concern over Fallout
- Aug. 5, 1963 – Limited Test Ban Treaty Signed
- Big Hole Drilling
- Types of Underground Tests
 - Weapons Effects Tests
 - Weapons Development Tests
- Notable Tests
 - Storax SEDAN
 - Touchstone KEARSARGE



STORAX SEDAN

- Plowshare Program (1961-1973)
- Shot Profile
 - July 6, 1962
 - Area 10, NTS
 - 104 kiloton yield
- Significance
 - Largest man-made crater in US (1280 feet wide and 320 feet deep)



TOUCHSTONE KEARSARGE

- Joint Verification Experiment (1988)
- Shot Profile
 - August 17, 1988
 - 100 to 150 kiloton yield
- Significance
 - Only Joint Verification Experiment test performed at NTS



EXPERIMENTS: FARM TO LABORATORY

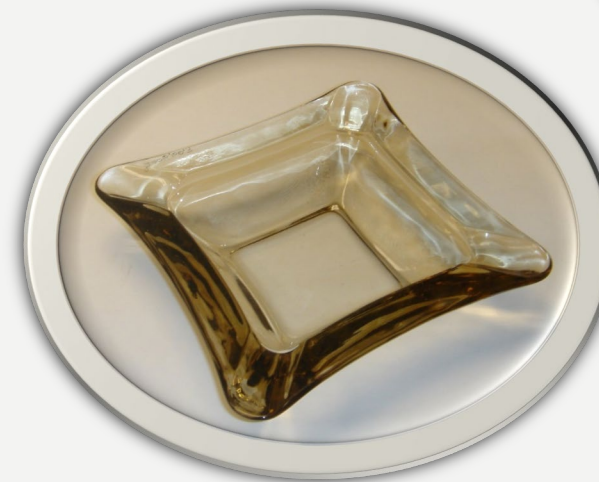
- Environmental Protection Agency Experimental Farm
 - 30-acre research zone
 - Located at Area 15
 - Established in 1964 and closed in 1981
- Features
 - One-million-gallon reservoir, dairy facilities, grain silo, etc.
- Research
 - Focus was radioiodine's process through the food chain
- Results
 - Used to develop exposure/dose assessment models and the development of countermeasures
 - Scientists gained more insight into behavior of radioactive materials





EXPERIMENTS: PROJECT ROVER & NERVA

- Project Rover (1955-1972)
 - Effort to develop nuclear-thermal space rockets for NASA
 - Testing took place at Area 25
 - Nuclear Rocket Development Station and R-MAD
- NERVA Rocket Engine Program (1961-1972)
 - Second nuclear-rocket program
 - Built upon successes of Rover
- “Nuked” Glassware
 - Common practice during NERVA



NEW MISSION FOR A CHANGING WORLD: THE SITE TODAY



- November 9, 1989 – Fall of the Berlin Wall
- December 26, 1991 – Dissolution of USSR
- September 23, 1992 – End of U.S. Testing

- Nevada National Security Site
 - Stockpile Stewardship
 - Defense Nuclear Nonproliferation
 - National Nuclear Incident Response

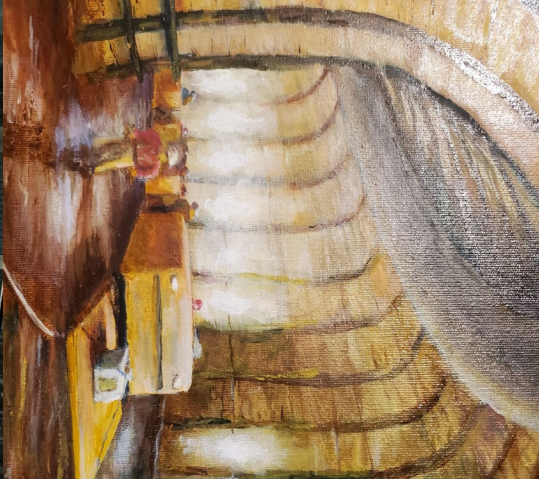


NATIONAL ATOMIC TESTING MUSEUM

- What is the NATM?
- Exhibits
 - Main Gallery
 - Trinity – The Day the World Changed
 - Beyond the Manhattan Project
 - Equipping Our Everyday Heroes
- Hours of Operation
- In-Person and Virtual Guided Tours
- Education Events







 **NATIONAL
ATOMIC TESTING MUSEUM**
A Program of the Nevada Test Site Historical Foundation
A Smithsonian Affiliate

