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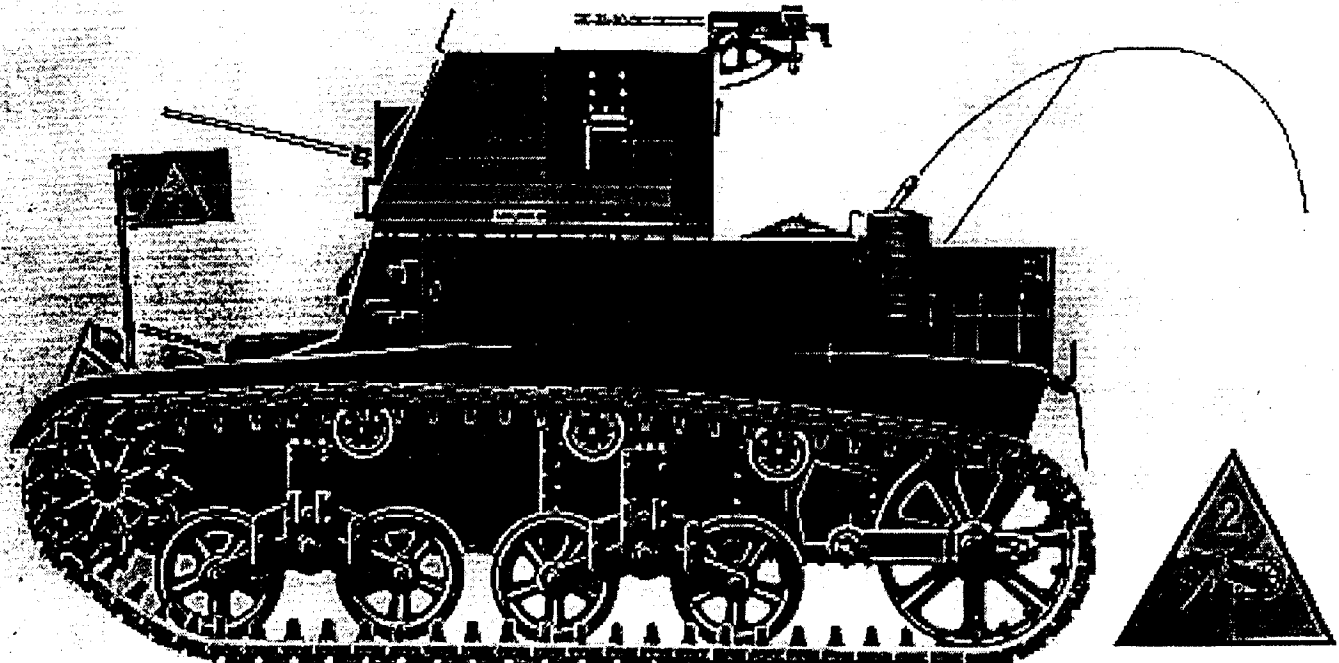
Defense Environmental Restoration Program
for
Formerly Used Defense Sites
Ordnance and Explosives

Archives Search Report FINDINGS

for
the former

Camps Iron Mountain and Granite

Rice, CA
Project Numbers J09CA028401 & J09CA704301
September 1996



DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
for
FORMERLY USED DEFENSE SITES

FINDINGS

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR FORMER

CAMP IRON MOUNTAIN
PROJECT NUMBER J09CA028401
RICE, CA
AND
CAMP GRANITE
PROJECT NUMBER J09CA704301
RICE, CA

SEPTEMBER 1996

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ORDNANCE AND EXPLOSIVES
 ARCHIVES SEARCH REPORT
 FOR
 FORMER CAMPS IRON MOUNTAIN AND GRANITE
 RICE, CA
 PROJECT NUMBERS J09CA028401 & J09CA704301

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ORDNANCE AND EXPLOSIVE WASTE
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBER J09CA028401 & J09CA704301

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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN & GRANITE
RICE, CALIFORNIA
PROJECT NUMBERS J09CA028401 & J09CA704301

1. INTRODUCTION

a. Subject and Purpose

(1) This report presents the findings of a historical records search and site inspection for ordnance and explosives (OE) presence located at the former Camps Iron Mountain and Granite, Rice, California (see plate 1 for general location map). The investigation was performed under the authority of the Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP FUDS).

(2) This investigation focused on approximately 67,907.5 acres of land that were used by U.S. War Department as part of the Desert Training Center, later called California-Arizona Maneuver Area (CAMA). The site was established as one of several divisional camps dedicated to the training and conditioning of troops and testing military equipment from 1942 to 1944.

(3) The purpose of this investigation was to characterize the site for potential OE contamination, to include conventional ammunition and chemical warfare material (CWM). This investigation was conducted by experienced ordnance experts through thorough evaluation of historical records, interviews and an on-site visual inspection results.

b. Scope

(1) This report presents the site history, site description, real estate ownership information, and confirmed ordnance presence (prior to and after site closure), based on available records, interviews, site inspections and analyses. The analyses provide a complete evaluation of all contamination where ordnance presence has not been confirmed.

(2) For the purpose of this report, OE contamination consists of live ammunition, live ammunition components, CWM or

explosives which have been lost, abandoned, discarded, buried, fired or thrown from demolition pits or burning pads. These items were manufactured, purchased, stored, used, and/or disposed of by the War Department/Department of Defense. Such ammunition/components are no longer under accountable record control of any DOD organization or activity.

(3) **Expended** small arms ammunition (.50 cal or smaller), is **not** considered OE contamination. OE further includes "explosive soil" which refers to any mixture in soil, sand, clay, etc., such that the mixture itself is explosive. Generally, 10 percent or more by weight of secondary explosives in a soil mixture is considered explosive soil.

2. PREVIOUS INVESTIGATIONS

a. **Preliminary Assessment**

(1) The preliminary assessments of Camp Iron Mountain and Camp Granite were conducted under different Defense Environmental Restoration Program Formerly Used Defense Sites (DERP FUDS) projects by the U.S. Army Corps Of Engineers, Los Angeles District (CESPL) in 1994 (see document E-1).

(2) The Findings and Determination of Eligibility (FDE) for Camp Iron Mountain (67,907.5 acres) and Camp Granite (3,200 acres), dated 12 September 1994 and 30 August 1994, respectively, concluded that the project areas had been formerly used by the War Department. That report determined that the sites were formerly used by the Department of War/DOD and recommended referral to CEHNC for an evaluation of possible ordnance contamination.

(3) Real estate documentation and maps showed Camp Granite (actually 7,000 acres) to have been created from land under the control of Camp Iron Mountain (67,907.5 acres). Due to the overlap of the sites' real estate boundaries, these OE projects have been combined. To complete a thorough evaluation of Camp Iron Mountain, inspection and evaluation of the Camp Granite area was necessary.

(4) Table 2-1 represents an overview of the PA phase for each camp. Note: FDE addresses Camp Granite acreage of 3,200 acres, for the purpose of this report, Camp Granite will be the

actual acreage of 7,000 acres which includes the original and final campsite locations for Camp Granite.

TABLE 2-1 DERP-FUDS PRELIMINARY ASSESSMENT PROJECTS				
Project Number	DERP Category	Present Phase	Comments	Location
J09CA028401	OE	SI	Ordnance or Explosives contamination	Entire site 67,907.5 acres
J09CA704301	OE	SI	Ordnance or Explosives contamination	Entire site 7,000 acres
	HTRW	-	No projects recommended	Both Projects
	BD/DR	-	No projects recommended	Both Projects

b. Other Investigations

The ASR team did not find any other previous investigations or reports pertinent to this investigation.

3. SITE DESCRIPTION

a. Existing Land Usage

(1) The former Camps Iron Mountain and Granite are located in an undeveloped region of San Bernardino and Riverside counties, California, 14 miles west of Rice, California. Camp Iron Mountain is located within T1S, R17E, SEC 1, 2, 6, 7, 11-14, 18-33; T1S, R18E, SEC 1-15, 17-35; T1S, R18E, SEC 1-12; T1N, R18E, SEC 1-36. Camp Granite is located within T1S, R17E, SEC 25; T1S, R18E, SEC 29-32.

(2) Subject land was utilized by five armored divisions and a number of other units as an encampment and maneuver area. Today, the land is being utilized as a recreational and a wildlife conservation area.

(3) Table 3-1 is included to represent the current ownership and land usage of the former Camp Iron Mountain and Granite (see plates 5 and 6).

TABLE 3-1 CURRENT LAND USAGE					
Area	Former Usage	Present Owner	Current Usage	Size Acres	Comments
A	Camp Iron Mountain Encampment Area	Dept. of Interior	Wildlife Conservation	4,926.0	See plates 5 and 6
B	Safety Area	Dept. of Interior	Wildlife Conservation	17,663.5	See plates 5 and 6
C	Training Area	Dept. of Interior	Wildlife Conservation	38,318.0	See plates 5 and 6
D	Camp Granite Encampment Area	Dept. of Interior	Wildlife Conservation	7,000.0	See plates 5 and 6
TOTAL				67,907.5	

b. Climatic Data

(1) The Camps Iron Mountain and Granite has a semiarid climate with varied temperatures. Daily and seasonal temperatures fluctuate greatly and are influenced by general air movement and topography. Highest monthly temperatures occur during June and September, with a monthly average of 91.4 degrees Fahrenheit (F). Daily temperatures rise to above 110 degrees F and drop to the 70's at night. Average monthly winter temperature fall between 53 degrees and 63 degrees Fahrenheit.

(2) The climate of the range area is primarily influenced by two main sources of air movement. From fall through spring, the area is affected by northern and middle latitude Pacific air movements which cross the Sierra Nevada Mountains. As moist air moves east from the Pacific, the mountain deplete the moisture, creating a rain shadow effect over the Great Basin and Mojave deserts. In summer and early fall, tropical air masses from southern Pacific zones and the Gulf of Mexico dominate the region.

(3) Annual precipitation is generally light. The average annual precipitation of less than 4 inches falls in only a few showers during the year. Heavy showers may occur at any time throughout the year, although the typical pattern is one of extended periods without precipitation.

(4) Relative humidity is moderate to low throughout the year. Readings around 45 percent are characteristic of the early morning hours in all seasons and afternoon readings range around the 20 percent level.

(5) Wind is moderate over the flat reaches of the desert. An average speed of 8 miles per hour has been observed at Blythe with only occasional strong winds being reported. Almost half of the observations reported show wind from either the south or west, while about 25 percent of winds are reported as coming from the north or northwest. It has been estimated that an average exposure in the southern California area experiences 75 mph winds only about one time within a fifty year period (reference B-6).

c. Topography

(1) The topographic features of the Camps Iron Mountain and Granite area are typical of the Basin and Range Physiographic Province, with long, north-south trending mountain ranges separated by broad alluvium-filled valleys and dry lake beds. Primary mountain ranges of the area are the Iron, Granite, Palen, Coxcomb, Little Maria, Turtle, and Old Woman. Primary dry lake beds of the area are Danby and Cadiz.

(2) The elevations in the vicinity of Iron and Granite Mountains range from approximately 200 feet on the desert floor to 1,000 feet in the higher elevations. The slope of the terrain increases from 5 percent or less on the valley floors to 20 percent or more on the foothills. At the highest elevations, slopes can exceed 45 percent. Most of the upland terrain is heavily dissected by gullies and washes that carry the infrequent rain water to the desert floor (reference B-6).

d. Geology and Soils

(1) The soils around the subject site are of a dissected piedmont alluvial plain that has been formed over millions of years. These alluvial plains (valleys) were formed when great land masses were uplifted due to tectonic plate shifting and volcanic action which formed the various mountain chains. The rocky layers near the surface are mainly basalt, which are porous rocks formed from volcanic activities. The bed rock is made of granite due to extreme pressures of tectonic shifting and

volcanic formations slowly began chipping away, forming immature sandy soil. This immature sandy soil makes up the majority of the site's terrain.

(2) In a representative profile the surface layer is covered by a close fitted pavement of gravel coated with dark brown to black desert varnish on top and tinted red or orange on the bottom. The surface layer is about one and a half inches of bleached, pale brown, very gravelly silt loam. Below this lies an approximate fourteen inch layer of light brown silty clay loam and very gravelly clay loam. At a depth of about sixteen inches appears a light brown, very cobbly and gravelly fine sandy loam which may extend to a depth of more than sixty inches.

(3) Vegetation in the plains is typical of that found in the Colorado Desert and is represented by creosote bush, grasses, and abundant low desert shrubs. Large iron wood and palo verde trees line the many shallow washes which support a wide variety of plant and animal life. The runoff of water from localized storms has an important effect on the areas of soils below.

e. Hydrology

There is no surface or subsurface water within the Camps Iron Mountain and Granite area. Average annual precipitation is 3 to 4 inches, most of which occurs between the months of November and March. The area also receives rainfall from localized summer thunderstorms usually of short duration but of high intensity which may at times cause severe runoff and flash floods. An aqueduct system owned by Metropolitan Water District of Southern California runs through the project area.

f. Natural Resources

Personnel from the Department of the Interior, U.S. Fish and Wildlife Service provided a listing of threatened and endangered species which may be found in the surrounding areas of Camp Iron Mountain/Granite. Subject information is included in this report as Table 3-2 (reference B-8).

g. Historical/Cultural Resources

(1) The Iron Mountain Divisional Camp was nominated to the National Register of Historical Places in 1977. The proposed

nomination had been certified by the California State Historic Preservation Officer. Today, the site is considered to be eligible and designation still pending. Any intrusive measures taken within the area will require oversight by the State Historical Preservation Office (SHPO) and/or other like organizations (references B-9).

(2) Little is known about the archaeology of the Camp Iron Mountain/Granite area. It appears that one archaeological site and one isolated historic feature are located within the project boundaries; and one prehistoric trail runs through the southern portion of the project area. Therefore, should a project be developed and intrusive digging were to occur at some later date, close coordination with the SHPO should be maintained prior to making a determination to dig in this area.

(3) Table 3-2 is included to show natural, historical and cultural resources which may not actually be located on the acreage addressed in this report, but have been documented as being present in the immediate vicinity of subject acreage, thereby creating the potential for the presence of such at any given time.

(4) The status of listed species are defined in the following ways; E: Endangered, T: Threatened, PE: Proposed Endangered, PT: Proposed Threatened, and C1: Category 1 candidates for listing of which the Fish and Wildlife Service has substantial information to support listing as either threatened or endangered.

TABLE 3-2 NATURAL, HISTORICAL & CULTURAL RESOURCES		
Resource Classification	Type	Comments
Wildlife		
Mammals	Stephen's Kangaroo Rat	E
	Peninsular Bighorn Sheep	PE
	San Bernardino Kangaroo Rat	C1
Reptiles	Desert Tortoise	T
	Flat Tailed Horned Lizard	PT
	Coachella Valley Lizard	T

TABLE 3-2 (cont.)
NATURAL, HISTORICAL & CULTURAL RESOURCES

Resource Classification	Type	Comments
Amphibians	Arroyo Southwestern Toad	E
	Desert Slender Salamander	E
	California Red-Legged Frog	PE
Birds	Peregrine Falcon	E
	American Peregrine Falcon	E
	Least Bell's Vireo	E
	Bald Eagle	E
	Brown Pelican	E
	Southwestern Willow Flycatcher	E
	Yuma Clapper Rail	E
	Aleutian Canada Goose	T
	Coastal California Gnatcatcher	T
Crustaceans	Riverside Fairy Shrimp	E
	Vernal Pool Fairy Shrimp	E
Insects	Delhi Sands Flower-Loving Fly	E
	Quino Checkerspot Butterfly	PE
	Greenest Tiger Beetle	C1
Plants	Slender Horned Spineflower	E
	Santa Ana River Woolly-Star	E
	Parish's Daisy	E
	San Diego Button Celery	E
	California Orcutt Grass	E
	Munz's Onion	PE
	Coachella Valley Milkvetch	PE
	Triple-Ribbed Milkvetch	PE
	San Jacinto Valley Crownscale	PE
	Nevin's Barberry	PE
	Parish's Meadowfoam	PE
	Thread-Leaved Brodiaea	PT
	Vail Lake Ceanothus	PT
	Prostrate Navarretia	PT
	Johnston's Rock Cress	C1
Sticky-Leaved Dudleya	C1	
Little San Bernardino Mtn. Gilea	C1	
Plants	San Bernardino Blue Grass	C1
	Hidden Lake Bluecurls	C1
Historical	Nominated for National Historic Place	Coordinate With SHPO
	Prehistoric Trail	
	Isolated Historic Feature	
Cultural	Archaeological Site	Coordinate With SHPO

4. HISTORICAL ORDNANCE PRESENCE

a. **Chronological Site Summary**

(1) The War Department in March 1942 task General George S. Patton Jr. to find a desert training site that met all the criteria of North Africa. After three days of surveying the area by plane and on foot, General Patton decided on the Southern California area as the site for the new Desert Training Center. Land acquisitions, both public and private, began immediately. When all land was acquired by General Patton and the Commanders following Patton, the total Desert Training Center encompassed approximately 11 million acres covering three states (see document L-1).

(2) Camp Iron Mountain was one of ten major camps in the Desert Training Center. This particular camp was started in the spring of 1942 and was occupied by the 2nd Armored Division under the Command of General Patton. The War Department acquired the lands by 1) P.L.O. #1 dated 20 June 1942 for 33,200 from the Department of Interior; 2) Use Permit dated 24 April 1942 for 34,706.55 acres from Department of Interior; and 3) a Lease Agreement W-04-193-eng-443 for 0.094 acres from the Metropolitan Water District of Southern California.

(3) The main mission of Camp Iron Mountain and the others was to train the troops for desert warfare. But, there was another high priority, that was the testing of equipment, ammunition, weapon systems and supplies. The commanders of the Desert Training Center also wanted realism in the training and maneuvers. Besides using practice ammunition, they would use 'live' ammunition to give the troops a sense of what combat is really like.

(4) In the spring 1943, the military population of the Desert Training Center soared until it reached almost 190,000. These elements had to be provided with division camps. On real estate acquired for the construction of Camp Iron Mountain, Camp Granite was built. The construction of Camp Granite eased Camp Iron Mountain's housing problems and provided additional firing ranges. In the coming months, seasonal rains forced Camp Granite to be moved south of its original site to higher grounds where it permanently stayed.

(5) In October 1943, DTC's name was changed to the California-Arizona Maneuver Area (CAMA). This change was made to

reflect the alterations of size and purpose, plus the desert war in North Africa was winding down. Even at the time of the name being changed the CAMA's mission was already scaling down. One of the major reason for the scale down was the CAMA was critically short of service personnel, particularly transport and communication specialists, who were rapidly being shipped overseas in 1943. Because of this shortage in service personnel, which was interfering too severely with the proper operation of the camps, the current commander General McNair recommended the closing of the CAMA.

(6) On March 30, 1944 the CAMA was declared surplus by the War Department. All of the major commands had to close the facilities down and clean up each camp. The X Corps Artillery was responsible for closing Camp Iron Mountain and the 1135th Engineer C Group for closing Camp Granite.

(a) Consideration was given to the location and disposal of unexploded shells. It was recognized that practically the entire maneuver area had been used for firing during a period of approximately one and a half years. In the majority of cases no records were available detailing areas in which firing had actually been conducted.

(b) Headquarters Battery of the X Corps Artillery policed the Iron Mountain Range. Within the capabilities of the troops of the troops available, work on the location and destruction of duds was carried out in the Iron Mountain impact area. Two hundred and eight duds were located and destroyed. The training requirements and preparations for movement of troops prevented any extensive use of troops to search for duds.

(c) Camp Iron Mountain had several large firing ranges within CAMA. One of Camp Iron Mountain's firing ranges was Fortified Area, Palen Pass. The task of restoring this area to its original condition exceeded the capabilities of the troops available. As a result, the area was to left as it was and marked by appropriate signs.

(d) The entire Camps Iron Mountain and Granite were policed in accordance with field sanitation standards. The camps were cleaned out lock, stock and barrel. Abandoned equipment and supplies, tentage, stoves, and similar movable items were shipped to the base depot. Excess lumber was used for boxing and crating of equipment going overseas.

(e) By the end of April 1945, all camps had been evacuated of personnel, supplies, and readily removable property (see documents E-2, F-18, F-21 and L-3).

(7) The War Department transferred ownership of Camp Iron Mountain lands by 1) P.L.O. #1 dated 20 June 1942 for 33,200 relinquished to the Department of Interior 16 December 1944 (Later, revoked by P.L.O. #342 dated 13 January 1947); 2) Use Permit dated 24 April 1942 for 34,706.55 acres relinquished to the Department of Interior 30 June 1949; and 3) a Lease Agreement W-04-193-eng-443 for 0.094 acres terminated with the Metropolitan Water District of Southern California 31 October 1942 (see documents G-4 and L-2).

(8) Between 1947 and 1952, the second large scale ordnance disposal and clearance operation of CAMA was conducted under the supervision of the U.S. Army Corps of Engineers (USACE). The area of Camp Iron Mountain was swept and restricted to surface use only.

(9) After World War II, the Department of Defense again conducted military exercise was in the former DTC/CAMA. From 17-30 May 1964, the U.S. Sixth Army conducted a joint military exercise code named, Desert Strike. Desert Strike was a simulated nuclear weapons exercise. The main purpose of this exercise was to train major combat and support organizations in joint operations employing tactical nuclear (simulated) as well as conventional weapons. Of the 12,500,000 acres used for Operation Desert Strike, U.S. Army Corps of Engineers, Los Angeles District, had land permits for 12,204,481 acres or 98 percent of all lands used.

(10) In December 1977, the Iron Mountain Divisional Camp was nominated to the National Register of Historical Places. The proposed nomination had been certified by the California State Historic Preservation Officer. Today, the site is considered to be eligible and designation still pending.

b. Ordnance Related Records Review

(1) Research efforts for the former Camps Iron Mountain and Granite began with a thorough review of all reports, historical documents and reference material gathered during the archives search. During this review, an effort was made to focus on areas of confirmed and/or potential OE contamination.

(2) A good collection of documents including drawings, maps, technical ordnance data, real estate documentation, correspondence, and various other records appropriate to DTC/CAMA, Camp Iron Mountain, Camp Granite and/or that era have been located. The information from these documents was very useful in terms of assessing potential contamination at the former Camp Iron Mountain. To be able to fully assess potential contamination of Camp Iron Mountain you must understand the mission of DTC and Camp Iron Mountains integral part in completion of that mission.

(3) The declared mission of the DTC had been to teach officers and men to live and fight under desert conditions. The DTC would simulate as closely as possible an overseas theater of operations. All basic, all small unit and some large unit training would be completed prior to arrival in the simulated theater. The normal assignments of service units functioning with tactical units would constitute their advance training prior to departure for overseas assignment. During training conducted at DTC, commanders and ground forces received instructions on the employment of aviation in support of ground troops. Tests were given which included aircraft recognition, air-ground communication, close air-support coordination, target designation, camouflage techniques, antiaircraft procedures, and the supply of ground forces by air (see document E-2).

(4) The training program covered thirteen weeks of special advance training. Documents F-10 and F-13 provided a description of the daily and weekly special advance training schedules. As part of the training program, troops conducted field maneuver operations. While conducting field maneuvers, troops learned to attack and defend an organized position, to search out hostile forces and make a coordinated attack. Units activities were restricted by maneuver area and unlimited firing area boundaries. It was noted that during maneuvers, that highways, railroad tracks, and the aqueduct were the only artificial restrictions. These training schedules and activities allowed the assessment team to identify the probable ordnance items used in accordance with each training situation. (see documents F-10, F-13 and L-4).

(5) In 1942, the War Department through Public Land Order #1, withdrew approximately 106,000 acres of public and non-public lands for campsites and maneuver purposes. From the 106,000 acres, 67,907 acres was used to create the temporary

divisional camp, Camp Iron Mountain (see documents G-1 thru G-4). Camp Iron Mountain was 1 of 10 divisional camps setup throughout DTC. Real estate maps and facility layouts provided the actual location of the campsite. A historical aerial photograph gives you a visual display of the campsite (see documents F-1, F-2, K-11, K-12 and L-2).

(6) Camp Iron Mountain was home to various divisions of armor units (3rd, 4th, 5th, 6th, 7th) of which used the M3 Stewart, M3 Grant and M4 Sherman tanks. The early World War II tanks used 37mm, 75mm and 76mm high velocity projectiles respectively for their main guns. For infantry purposes the tanks had .30/.50 caliber machine guns mounted within and on top of the tank. Also included with these armor units were Tank Destroyer units, Anti-Aircraft Units and Artillery Units. The Tank Destroyers Units used 105mm howitzers, Anti-Aircraft Units used 3 inch, 40mm and 90mm projectiles and the Artillery Units used 75mm, 105mm and 155mm projectiles. To protect themselves from close in hostile forces, these troops were armed with .45 caliber pistols/submachine guns, .30 caliber carbines/rifles and Mark II fragmentation grenades (see documents D-12 thru D-21, E-2, E-3, F-8 and F-9).

(7) The National Archives provided several ordnance related documents. One document gave information on ammunition requested for training at Desert Training Center. Another document showed the basic type and amount of ammunition on various combat vehicles. A list of chemical ammunition authorized by Commanding General, Army Ground Forces to be used at the Desert Training Center was discovered within the archive files. Finally various related maps to the DTC and Camps Iron Mountain and Granite were found within the repository (see documents F-3 thru F-9).

(8) The area camps had six documented maneuver firing ranges and nine fixed firing ranges. Of the 15 documented ranges associated with Iron Mountain and Granite, only portions of the fixed firing ranges were located within Camp Iron Mountain's boundary. Seven of the nine fixed ranges firing points originated within the boundaries, but the impact areas continued off the camp's boundary. Two of the nine fixed firing ranges and all six of the maneuver ranges lie completely outside of the camp's boundaries (see documents F-1, F-2 and plate 3). A journal article on the DTC, depicts an undocumented hand grenade range that borders the camp's boundary. Located halfway between the camp and the western mountains is an extensive grenade

throwing range. With an accompanying photograph, the article tells of finding the associated foxholes and grenade containers end caps (see document F-12). All the ranges located outside of Camp Iron Mountain boundary will be addressed in Section 5 of this report, additional acreage and future DERP-FUDS projects (see plate 5).

(9) Letters, newspaper stories, and journals articles provided historical information on camp life and training conditions in the DTC. Photographs and articles from the newspapers provided a description of the Camp Granite's facilities such as the movie theater, shower house, tank park. Articles recalling the division size maneuvers against fortified positions at Palen Pass and the delaying actions fought for four days afterwards. Another account of Palen Pass maneuvers, tells of moving eighty miles in a single hectic night to surprise the "enemy" at Palen Pass. This time the pursuit of the "enemy" continued north over the sun-baked desert and white crusted salt flats almost to Needles. The maneuvers meant temperatures of 130 degrees, no shade, cutting your way through barbed-wire entanglements, dodging simulated land mines fields, and never having quite enough water. These were maneuvers of supply and movement with an emphasis was on ammunition, water, gasoline, and rations (see appendix H).

(10) A selected type of Chemical Warfare Material was used during training activities conducted at the DTC. While reviewing all documents associated with DTC and Camp Iron Mountain, no documents ever stated the presence or used of casualty causing, toxic, CWM. During World War II timeframe, noncasualty causing munitions such as incendiaries, screening smokes and harassing gases were considered CWM. The Commanding General, Army Ground Forces authorized the use of HC and CN smoke pots, empty chemical land mines, and CNB tear gas solution for training purposes. Combat units were capable of drawing these chemical munitions from locally established Chemical Supply Depots located at Coachella and Needles. As part of the maneuver training, troops used colored smoke grenades and smoke pots to marking their positions when coordinating close air-support. Also, training documents discussed chemical air attacks against ground troops during maneuvers. By allowing airplanes to spray tear gas over troops on maneuver, the troops were force to practice using their chemical protective gear against gas attacks (see documents F-4, F-5 and F-6).

(11) Rumors abound with stories of equipment, ammunition and supplies being buried in the desert theater. In one document, individuals claim to have had a friend of his dig up a buried case of Thompson submachine guns on Camp Ibis. Other stories include entire tanks being buried along with who knows what. A journal article and a map from BLM talk about a camp dump located at the north end of Iron Mountain and another dump located west end of Granite. In accordance with interviews from local individuals additional undetected burial sites may exist elsewhere within the DTC. The items contained within the camp dumps or exact location at this time are unknown (see documents F-11, F-12, F-22 and H-2).

(12) After all the dedudding effort, OE contamination still existed within the Camp Iron Mountain area. In 1980, an incident report was filed when a WWII practice antitank landmine was discovered while laying out a motorcycle course near Iron Mountain. Also, BLM had a undocumented report (only location marked on an office map) about a 66mm projectile found around Granite Mountain (no report was available nor a round of that type known to exist). Interviews with BLM and local law enforcement offices state that periodically they will receive calls of ordnance items being found in the site area. During site inspection, Assessment Team members were shown various ordnance items and components found around Camp Iron Mountain by local treasure hunters and museum personnel. There is no telling the number of ordnance items that have been removed and in the hands of private citizens.

(13) After the World War II era, a military report was obtained from the Army War College discussing how the Department of Defense again conducted military exercise in the former DTC/ CAMA. From 17-30 May 1964, the U.S. Sixth Army conducted a joint military exercise code named, Desert Strike. Desert Strike was a simulated nuclear weapons exercise. The main purpose of this exercise was to train major combat and support organizations in joint operations employing tactical nuclear (simulated) as well as conventional weapons. Maps from the 1960's showing possible military ordnance contamination were retrieved from Mr. Butch Gates. The map showed areas of possible contamination. The exact time period (World War II or Desert Strike) and the type of OE contamination could not be determined (see documents F-23, F-24 and I-4).

(14) The Iron Mountain Divisional Camp was nominated to the National Register of Historical Places in 1977. The proposed

nomination had been certified by the California State Historic Preservation Officer. To preserve Camp Iron Mountain, BLM prepared a Resource Management Plan for the site. The plan gives background information on the camp management objectives and constraints, and a summary of action plans. Today, the site is considered to be eligible and designation still pending (see document E-3).

(15) Current real estate ownership was obtained from Riverside and San Bernardino Counties Assessor's Office (see document G-8).

c. Interviews With Site-Related Personnel

(1) Efforts to locate individuals who had served or had first hand knowledge of Camps Iron Mountain and Granite were minimally successful. Personal interviews were conducted with local U.S. Fish and Wildlife Service employees, Bureau of Land Management employees, site-related personnel and local law enforcement to obtain information about the Camp Iron Mountain and Camp Granite.

(2) Mr. William Wiley is employed with the Bureau of Land Management (BLM) and has been stationed at the Needles office for the past ten years. He provided a local map of the region that had areas of contamination and two possible dump locations within the project area. He also provided site related information from the BLM files and additional points of contact. He, along with many others, stated that this area has been picked over pretty cleanly by scavengers and souvenir hunters over the past fifty years. Mr. Wiley was concerned that the dumps located within the Desert Training Center houses unexploded ordnance similar to the dumpsite near Goff (see document I-1).

(3) Mr. Robert Lyons is a deputy with the San Bernardino County Sheriff's Office. A life long resident of the area, Mr. Lyons has been employed with the Sheriff's Office for 12 years and is actively involved with their search and rescue missions. He stated that ordnance has been found throughout the desert area (especially Ward Valley) over these past fifty years but could not relay any real specifics (see document I-2).

(4) Mr. William Claypool is owner and operator of a local hardware store in Needles, California. Mr. Claypool has lived in this community for over 73 years. Mr. Claypool stated

that he has heard of stories of ordnance being discovered around Iron and Granite Mountain area, however, he has no direct knowledge of any ordnance or explosives having been found in subject areas. Again most are aware of people looking for souvenirs in this area over the past fifty years (see document I-3).

(5) Mr. Butch Gates is described as the "local expert" when it comes to discussing areas of the California/Arizona Maneuver Area (CAMA). Many refer to Mr. Gates as the "map man" due to his documentation of this land over the years. Since 1972, Mr. Gates has worked with the San Bernardino County Sheriff's office, actively involved with their search and rescue missions. Only recently has he retired to the Idaho Falls, Idaho area. Throughout his years with the Search and Rescue Team, Mr. Gates has compiled maps, photos, and very valuable first hand knowledge of ordnance areas throughout the CAMA. Mr. Gates supplied the inspection team with some of the above mentioned mapping and photographs of these areas. Mr. Gates stated that throughout Ward Valley and Palen Pass area the Army conducted live fire training exercises. He has personally discovered practice items within the area (see document I-4).

(6) Mr. Dennis Casebier is a retired government employee who currently lives in the Goffs, California area. Mr. Casebier is a writer and historian and has written many books on this desert area. He has traveled these lands extensively and is well aware of the history surrounding this entire area. Mr. Casebier is familiar with the stories of buried ordnance and the such, but was unable to add any specific information which could add to verifying the existence or location of any ordnance or explosives. Mr. Casebier stated that he has no first hand knowledge of anyone discovering any live ordnance or explosives in the area of the Camp Iron Mountain and Camp Granite (see document I-5).

(7) Ranger Fred Delcamp is stationed at the Blythe office of the BLM ranger stations. Mr. Delcamp has held this position for most of the past ten years. In his time at this location he stated that he has heard stories of ordnance or explosives having been found in the Camp Iron Mountain and Camp Granite area. Ranger Delcamp told of a couple of girls who found two practice land mines approximately two years ago. The exact location of this find could not be determined, as these two girls had supposedly transported them to a campground located along the Colorado River. One of these mines was "accidentally" detonated

when driven over by a vehicle, while the other was reportedly destroyed by an EOD unit from Ft. Irwin. Ranger Delcamp knew of no other instances involving ordnance or explosives in this area. He again reiterated the fact that many souvenir hunters have combed the area over these past fifty years (see document I-6).

(8) Mr. John Lynch, a retire Air Force officer and military historian from Phoenix, Arizona, accompanied the inspection team on the site visit. Mr. Lynch showed the location of various DTC camps, which included Camp Iron Mountain and Camp Granite. He provided maps and photographs showing the location of each camp and some of their firing ranges. He explained several of the training procedures of the timeframe and speculated how they occurred at Camp Iron Mountain and Camp Granite. Mr. Lynch has no direct knowledge of any ordnance or explosives having been found in subject areas (see document I-7).

(9) Mr. Benton Loucks, military enthusiast from Phoenix, Arizona, accompanied the inspection team on the site visit. Mr. Loucks has traveled to several of the divisional camps in the DTC. He provided the inspection team valuable insight on camp life and some of the interesting discoveries that were associated with DTC divisional camps. Mr. Loucks has no direct knowledge of any ordnance or explosives having been found in subject areas (see document I-8).

(10) Mr. Jim Dellis is employed as a detective with the Riverside County, California, Sheriff's Office. Mr. Dellis was very knowledgeable about the area and has hunted deer in the area. He stated that as far as he knew, nothing in regards to ordnance or explosives has been found in the recent past. He stated that if something were to be found they would in turn contact 70th Explosive Ordnance Disposal Unit (see document I-9).

(11) Mr. Allen Preston is employed by Metropolitan Water District of Southern California. Mr. Preston stated that he had heard of stories of ordnance items being discovered in the area, however, he had no direct knowledge or information on finds of unexploded ordnance. He stated that his information, maps, and drawings on the DTC and the subject areas were similar to that at the Patton Museum and BLM Office at Palm Springs (see document I-10).

(12) Mr. Walter Scott is a long time local resident and farmer. Mr. Scott was very knowledgeable of the area having traveled numerous times across the desert valley herding his

sheep. He stated that ammunition has been found out in the desert and remnants remain all over the place. He stated that as far as he knew, nothing in regards to ordnance or explosives has been found in the recent past (see document I-11).

5. SITE ELIGIBILITY

a. Confirmed Formerly Used Defense Site

(1) Former land usage by the War Department was previously confirmed for the entire site as summarized in section 4a of this report. The 67,907.5 acre divisional camping area were located in an undeveloped region of San Bernardino and Riverside counties, California, 14 miles west of Rice, California. Historical documents and personal interviews confirmed this.

(2) Between 1944-49, War Department returned to the Department of Interior 67,907.5 acres and 0.094 acres to the Metropolitan Water District of Southern California. Today, the Department of the Interior and the Metropolitan Water District of Southern California continues to maintain ownership of the property (see documents G-5 thru G-8).

b. Potential Formerly Used Defense Site

(1) Following personal interviews and historical research, the ASR team concluded that the FUDS-eligible acreage is greater than 67,907.5 acres qualified in the FDE. The additional acreage addressed in this report is the firing ranges south of Camp Granite, grenade range adjacent to Camp Iron Mountain, and safety areas associated with Camps Iron Mountain and Granite. Due to the close proximity to these two sites, the additional acreage has been addressed in this ASR

(2) As noted in paragraph 4b, the Army had unlimited use of all lands within the Desert Training Center's maneuver area. Troops stationed at Camp Iron Mountain engaged in practice firings at fixed firing ranges and during maneuvers exercises located within the Desert Training Center's unlimited firing area boundary. Table 5-1 and plate 5 provides general information on the areas of additional areage. Table 5-2 and plate 4 provides general information on the areas of potential FUDS. The potential FUDS sites are Camp Iron Mountain maneuver areas

(124,140 acres) and Army Air Force bombing targets located in the general vicinity (3,398 acres).

TABLE 5-1 ADDITIONAL ACREAGE					
Area	Former Usage	Present Owner	Current Usage	Size Acres	Comments
E	Safety Area	Dept. of Interior	Wildlife conservation	6,877	See Plate 5
F	Firing Range	Dept. of Interior	Wildlife Conservation	15,275	See plate 5
G	Grenade Range	Dept. of Interior	Wildlife Conservation	2,379	See plate 5
Note: This is approximate acreage				TOTAL	24,531

TABLE 5-2 POTENTIAL FUDS SITES					
Area	Former Usage	Present Owner	Current Usage	Size Acres	Comments
1	Maneuver Area	Dept. of Interior	Wildlife Conservation	124,140	See plate 4
2	Sonic Bombing Target	Dept. of Interior	Wildlife Conservation	3,398	See plate 4
Note: This is approximate acreage				TOTAL	127,538

6. VISUAL SITE INSPECTION

a. **General Procedures and Safety**

(1) During the period of 10 thru 20 January 1996, members of the Assessment Team traveled to the Camp Iron Mountain. The primary task of the team was to assess OE presence and potential due to its former usage as a Desert Training Center divisional camp and training area, as stated in the INPR. Site inspection was limited to non-intrusive methods; i.e. subsurface sampling was not authorized or performed.

(2) Real estate rights-of-entry were not obtained by the team due to the willingness of the current owner to allow the team to visit his property. As such, control and jurisdiction of the site remained with the owner during this inspection.

(3) A site safety plan was developed and utilized by the assessment team to assure safety from injury during the site inspection of this facility. Prior to the inspection, a briefing was conducted which stressed that OE should only be handled by military EOD personnel (references B-1 and B-2).

(4) Prior to the site visit, a thorough review of all available reports, historical documents, texts, and technical ordnance reference materials gathered during the historical records search portion was made to ensure awareness of potential ordnance types and hazards.

b. Area A: Camp Iron Mountain Encampment Area

(1) Area A was used as a temporary campsite for Army troops while on maneuvers. This area included divisional headquarters, temporary sleeping quarters, divisional supply point and a maintenance park. The encampment area is comprised of barren, rock and scrub-covered foothills located on the southeast side of the Iron Mountains sloping easterly toward Ward Valley. Vegetation is characteristic of creosote-bush scrub habitat of the lower Mojave desert. Travel access is limited. Significant historic resources are located within the encampment area. Approximately 1,600 acres of the campsite is fenced to preserve as a historical site.

(2) Throughout the camp, many remnants from day-to-day life can be found. Stone work lining the camp roads and walkways are located within the entire site. Many rock designs of company symbols and insignias are found in the central portion of the camp. Signs of hobby collecting activity and erosion are evident everywhere (See photos J-6 thru J-12).

(3) The only permanent improvements located within the encampment area are a chapel, an altar and a graded contour simulation map depicting the Desert Training Center. The chapel located at the southwest end and the altar located at the northeast end remain in good condition. Located in the center of the camp, a deteriorated map, is currently surrounded by a ten foot high security fence and no access is permitted (See photos J-3 thru J-5).

(4) During the site visit, the Assessment Team did hear rumors of burial sites at Camp Iron Mountain, however, the people did not know the location, the origin of the burial sites or the

purpose. The inspection team did find several signs of burial sites within the encampment area. These burial sites were small in size. Items ranged from metal cans, glass bottles to burnt pieces of wood. The small pits were consistent to general disposal practice for that time era. The standard Army practice was to burn and bury disposable items at temporary camps and during field maneuvers. The team did not discover any major dumps at Camp Iron Mountain or Camp Granite, however, personnel from BLM suspect that two major dumps may exist west of the Camp Granite in T1S, R17E, SEC 34 and T2S, R17E, SEC 3 and northeast of Camp Iron Mountain in T1N, R17E, Sec 36. The Assessment Team did not observe any evidence of OE contamination.

c. Area B: Safety Area

(1) Area B was used as a buffer area between the training area and the encampment area. The safety area is comprised of barren, rock and scrub-covered foothills located between Iron Mountain and Granite Mountain. Vegetation is characteristic of creosote-bush scrub habitat of the lower Mojave desert. Travel access is limited. Significant historic resources are located within the area.

(2) Throughout the safety area, many remnants from day-to-day camp life can be found. Stone work lining the camp roads and walkways generating from the encampment are located within the site. Treasure-hunting groups and individuals have visited and collected remnants from the camps for years. Signs from hobby collecting activity are evident everywhere. A landing strip was located within the safety area. Located at an elevation of 900 feet, the landing strip was a one runway strip made out of sand/gravel 1500ft x 150ft long (See photos J-11 and J-12).

(3) During the site visit, the Assessment Team did find signs of small burial sites similar to Area A. Again like Area A, the team did not know the origin or the purpose of these pits. The Assessment Team did not observe any evidence of training activities or OE contamination.

d. Area C: Training Area

(1) Used for Army troop training, Area C, only one overall generalization can be made concerning the terrain: it was

varied. In the area, you had your rugged mountains mostly running in a north-south direction and you have wide desert valleys with deep ravines and flat, dry lake beds. The area is comprised of barren, rock and scrub-covered foothills. Vegetation is characteristic of creosote-bush scrub habitat of the lower Mojave desert. Travel access is limited.

(2) Historical documents and aerial photographs indicated that various areas around Camp Iron Mountain and Camp Granite were used for training purposes. During the site inspection, the Assessment Team observed alterations in the landscaping indicating the area had been used by troops and tracked vehicles, however, exact training locations, dimensions, and usage are speculative and could not be authenticated during site inspection. Historical firing range documentation indicate the possibility the area could be contaminated with expended small arms ammunition, hand grenades, mortars and large caliber ammunition etc. Document L-1 indicates the entire area was located within the DTC unlimited firing area.

(3) The Assessment Team did observed berms, foxholes, vehicle tracks, and burnt wood. The Assessment Team did not observe any OE contamination within Area C. This does not mean any OE contamination does not exist. Due to the massive nature of the area and the terrain, the Assessment Team lacked the necessary time and equipment to thoroughly inspect the area (See photos J-29 thru J-31).

e. Area D: Camp Granite Encampment Area

(1) Like Area A, Area D was used as a temporary campsite for Army troops while on maneuvers. This area included divisional headquarters, temporary sleeping quarters, divisional supply point and a maintenance park. The encampment area is comprised of barren, rock and scrub-covered foothills located on the southeast side of the Granite Mountains sloping northeasterly toward Ward Valley. Vegetation is characteristic of creosote-bush scrub habitat of the lower Mojave desert. Travel access is limited. Significant historic resources are located within the encampment area.

(2) Throughout the camp, many remnants from day-to-day life can be found. Stone work lining the camp roads and walkways are located within the entire site. Many rock designs of company

symbols and signias are found in the central portion of the camp. Signs of hobby collecting activity and erosion are evident everywhere. No permanent improvements were located within the encampment area (See photos J-13 thru J-17).

(3) During the site visit, the Assessment Team did hear rumors of burial sites at Camp Granite, however, the people did not know the location, the origin of the burial sites or the purpose. The inspection team did find several signs of burial sites within the encampment area. These burial sites were small in size. Items ranged from metal cans, glass bottles and tubes to burnt pieces of wood. The small pits were consistent with general disposal practice for that time era. The standard Army practice was to burn and bury disposable items at temporary camps and during field maneuvers. The team did not discover any major dumps at Camp Granite, however, personnel from BLM suspect that a major dump may exist west of the campsite in T1S, R17E, SEC 34 and T2S, R17E, SEC 3. During the search of the encampment area, the Assessment Team did not observe any evidence of OE contamination (See photos J-18 and J-19).

(4) A military study and maps retrieved from Mr. Butch Gates on DOD operation, Desert Strike, shows possible contaminated areas in the former DTC/CAMA. The maps showed several of the areas of contamination being located within the general vicinity of Camp Granite. The exact type of ordnance that could possible be found could not be determined at this time (see plate 4).

f. Area E: Safety Area Additional Acreage

Similar to Area B, Area E is additional acreage not addressed in the initial FDE that was used as a buffer area between the training area and the encampment area. Throughout the additional safety area, many remnants from day-to-day camp life can be found. Stone work lining the camp roads and walkways generating from the encampment and roadways leading to and from the encampment area are located within the site. During the site visit, the Assessment Team did find signs of small burial sites similar to Area D. Again like Area D, the team did not know the origin or the purpose of these pits. The Assessment Team did not observe any evidence of OE contamination. The team did notice that grating work had altered the makeup of the landscape by leveling the surface area out (See photo J-20).

g. Area F: Firing Ranges Additional Acreage

(1) The firing ranges acreage is not included in the FDE, but should be considered because of their association with Camp Iron Mountain and Camp Granite. Historical documentation showed several of the firing ranges have firing points that originate within the Camp Iron Mountain boundary (Area C) and had impact areas extending over the boundaries. Due to the massive nature of the area and the terrain, the Assessment Team did not have the time or the resources to traverse all of the firing ranges, however, local individuals have discovered ordnance items within the vicinity of these ranges. The ordnance items are on display at various places throughout Southern California (see photos J-21 thru J-28 and plate 5).

(2) A military study and maps retrieved from Mr. Butch Gates on the 1964 DOD operation, Desert Strike, indicate that areas within Area F could be contaminated from training exercises. The maps show that several of the firing range areas could be contaminated (see plate 4). The Assessment Team found no signs of military activities related to this timeframe.

(3) The additional acreage is located southeast of Granite Mountain. Only one over-all generalization can be made concerning the terrain: it was varied. In the area, you had your rugged mountains mostly running in a north-south direction and you have wide desert valleys with deep ravines and flat, dry lake beds. The area is comprised of barren, rock and scrub-covered foothills. Vegetation is characteristic of creosote-bush scrub habitat of the lower Mojave desert. Travel access is limited.

h. Area G: Grenade Range Additional Acreage

(1) The grenade range acreage is not included in the FDE, but should be considered because of its association with Camp Iron Mountain. In document F-12, the author describes an extensive grenade throwing range between the camp and the western mountain. During the site inspection, the Assessment Team did observe signs that the Army did use this area, however, exact training that occurred could not be determined. When the team traversed the area no grenade related items were found, however, expended .30 and .50 cal. small arms ammunition and a 37mm AP projectile were found within Area G (see document F-12 and photo J-30).

(2) Located near the base of Iron Mountain, the area is comprised of barren, rock and scrub-covered foothills. The vegetation is characteristic of creosote-bush scrub habitat of the lower Mojave desert. Along the base of the mountain, the area has numerous dry washes making travel to the area difficult.

7. EVALUATION OF ORDNANCE HAZARDS

a. General Procedures

(1) Each subsite was evaluated to determine confirmed, potential, or uncontaminated ordnance presence. Confirmed ordnance contamination is based on verifiable historical evidence or direct witness of ordnance items. Verifiable historical record evidence consists of ordnance items located on site since site closure and documented by local bomb squads, military Explosive Ordnance Demolition (EOD) Teams, newspaper articles, correspondence, and current findings. Direct witness of ordnance items consists of the site inspection team directly locating ordnance items by visual inspection. Additional field data is not needed to identify a confirmed site.

(2) Potential ordnance contamination is based on a lack of confirmed ordnance presence. Potential ordnance contamination is inferred from records or indirect witness. Inference from historical records would include common practice in production, storage, or disposal at that time which could have allowed present day ordnance contamination. Potential ordnance contamination could also be based on indirect witness or from present day site features. Additional field data is needed to confirm potential ordnance subsites.

(3) Uncontaminated ordnance subsites are based on a lack of confirmed or potential ordnance evidence. There is no reasonable evidence, either to direct or inferred, to suggest present day ordnance contamination. Additional field data is not needed to assess uncontaminated ordnance subsites.

b. Area A: Camp Iron Mountain Encampment Area

(1) Based on material collected during the ASR, the Iron Mountain encampment area is considered to be **uncontaminated** in respect to OE presence. There is no reasonable evidence, either direct or inferred, to suggest that ordnance contamination

exists. Interviews with local residents, military historians, Dept. of Interior employees, law enforcement officials, and EOD personnel confirmed the area was just used as a campsite and the area had been swept for unexploded ordnance on two different occasions.

(2) The encampment area was used by soldiers as a temporary billeting area, motor pool and supply point. Designated as a temporary camp, Camp Iron Mountain had no permanent billeting structures. Throughout the entire encampment area, tents were used for shelters. The only permanent structures located within the encampment area are a chapel, an altar and a graded contour simulation map depicting the Desert Training Center. All the permanent structures still exist today. No ordnance activities ever occurred within the encampment area.

(3) Even though Camp Iron Mountain's encampment area is within the DTC's unlimited firing area, historical documentation and aerial photos illustrate the area was a heavily populated campsite. Since site closure, the encampment area of Camp Iron Mountain has been cleared on two separate occasions. The Army's Headquarters Battery of the X Corps Artillery cleared the encampment in 1945. The U.S. Army Corps of Engineers cleared the area from 1947 to 1952. After the second clearance, the area was restricted to surface use only due to the possibility of buried landmines. It is believed that no landmines exist in this area today. The reason being, this Area's inclusion in the "surface sweep only" certificate was probably due to the proximity and to simplify the outlining of the Camp Iron Mountain's broad area. Also, the area has been heavily searched by treasure hunters and sightseers without any reportable incidents involving landmines or any type of OE contamination.

(4) A short distance to the north of Camp Iron Mountain, is the village of Iron Mountain. It is a pump station for the Metropolitan Water District's Colorado River aqueduct. The aqueduct was the main source of water for all the camps in the area. Designated off limits, training and firing range activities were restricted from occurring around the aqueduct.

(5) A short distance to the south of Camp Iron Mountain, was the original encampment area for Camp Granite. Camp Granite was built on land under the control of Camp Iron Mountain to ease overcrowding at Camp Iron Mountain. Resulting from seasonal rains, flash flooding forced the original Camp Granite to be moved further south to higher ground. The new location became

Camp Granite's permanent location and the subject of a separate DERP-FUDS ASR. No ordnance activities ever occurred at either of the camp's locations.

c. Area B: Safety Area

(1) Based on material collected during the ASR, the safety area of the encampment areas are considered to be **potential** in respect to OE presence. Having no definite boundaries and being located adjacent to the training area (Area C), the possibility exists that ordnance items could be buried under the surface.

(2) Area B was used as a buffer area between the training area and the encampment area. Within Camp Iron Mountain, the camp had areas such as the aqueduct system, the airport, the temporary housing areas, etc. that needed protection and safety from possible exposure to training mishaps within Areas C, F, and G. Also, after examining aerial photos no exact boundaries of the safety area were available and only estimations could be made. Research of historical documents stated no specifics on exact type of training, location of ranges or the safety zones. As a result, the possibility exist that parts of Area B may have actually have been used for training or had some aspects of training from Areas C, F, and G migrate into the buffer area.

(3) Personnel from BLM suspect that two major dumps may exist in the vicinity of Camp Iron Mountain. Just outside of the boundary line, west of the Camp Granite in T1S, R17E, SEC 34 and T2S, R17E, SEC 3 and northeast of Camp Iron Mountain in T1N, R17E, Sec 36 are the locations of the suspected dumps. The items contained within the camp dumps at this time are unknown, however, fears of burial pits containing ordnance items similar to the incident at Goff do exist within the local community (see document F-22). Interviews from local individuals suggest additional undetected dumps may exist elsewhere.

(4) There is a landing strip located within Area B. The only possible type of contamination in the area of the landing strip is subsurface. Restrictions on training around landing strips state that no firing would be permitted within airways except small arms firing on ground targets. No documented small arms range ground targets were located around the airport.

(5) There are documented range clearance reports on Area B. Camp closing units and U.S. Army Corps of Engineers did conduct surface sweeps of the area. Similar to Area A, Area B has been restrict to surface use only because only surface sweeps were conducted and the possibility of practice antitank land mines may exist. No ordnance related items were discovered within Area B and due to its design purpose, the possibility of practice antitank landmines being present within Area B is remote.

d. Area C: Training Area

(1) Based on material collected during the ASR, troops from Camp Iron Mountain and Camp Granite conducted training exercises within the DTC's unlimited firing area boundary within Area C. The exact type of training was not known, however, practice and live ordnance items could have been used during training exercises. Range clearance activities were conducted within Area C, however, the area is still considered to be **potential** in respect to OE contamination. The range clearance were restricted to surface sweeps only. The possibility excess the ordnance items may still exists on or below the surface.

(2) The Army had unlimited use of all lands within the DTC/CAMA. It was customary to have maps showing training areas, description of the training that took place and the associated impact areas, but as far as it is known, the Army kept no precise records of these areas in the Southern California area. As a result, exact limits of the area are not known but have been set by approximation. To simulate an actual theater of war, the training theater had very few restrictions. Troops had the freedom to conduct maneuvers and firing exercises as they deemed necessary as long as they were within the proper boundaries and meet the restriction associated with the area.

(3) Camp Iron Mountain and Granite had six documented maneuver firing ranges and nine fixed firing ranges. Of the 15 documented ranges associated with Camp Iron Mountain and Granite, Area C is comprised of several fixed firing ranges located south of Camp Granite encampment area. Seven of the nine fixed ranges' firing points originated within Area C but the impact areas continued off the camp's boundary (Area F). Two of the nine fixed firing ranges and all six of the maneuver ranges lie completely outside of Area C (see plate 3).

(4) There are documented range clearance reports on Area C. U.S. Army camp closing units and U.S. Army Corps of Engineers did conduct surface sweeps of the area. Similar to Area A, Area C has been restricted to surface use only because only surface sweeps were conducted and the possibility of practice antitank land mines may exist. No documents were discovered showing the exact location of the antitank mine fields. Historical documents only state, "During maneuvers, troops were trained in the laying of mine fields and in their removal. The probability does exist that practice antitank mines are within Area C. Area C was located adjacent to the maneuver areas and without precise boundaries could itself be part of the maneuver area. Also, there has been one documented, OE incident involving practice antitank mine in the vicinity of this area. Located in T2N, R16E, SEC 25, an WWII practice antitank landmine was discovered on 15 March 1980 (see document F-22 and plate 3).

e. Area D: Camp Granite Encampment Area

(1) Based on material collected during the ASR, Camp Granite encampment area is considered to be **uncontaminated** in respect to OE contamination. There is no reasonable evidence, either direct or inferred, to suggest that ordnance contamination exists. Interviews with local residents, military historians, Dept. of Interior employees, law enforcement officials, and EOD personnel confirmed the area was just used as a campsite and the area had been swept for unexploded ordnance on two different occasions.

(2) The encampment area was used by soldiers as a temporary billeting area, motor pool and supply point. Designated as a temporary camp, Camp Granite had no permanent billeting structures. Throughout the entire encampment area, tents were used for shelters. No ordnance activities ever occurred within the encampment area. No firing ranges or training activities occurred within the encampment area. All firing and maneuver ranges associated with Camp Granite are located outside of the encampment area.

(3) Since site closure, the encampment area of Camp Granite has been cleared on two separate occasions. The Army's 1135th Engineer C Group cleared Camp Granite in 1945. The U.S. Army Corps of Engineers cleared the area from 1947 to 1952. After the second clearance, the area was restricted to surface use only due to the possibility of buried landmines. Its

believed that no landmines exist in this area today. Reasoning being, all training activities, including landmine placement and remove, occurred outside of the encampment area. Aerial photos of Camp Granite show the encampment area heavily populated with housing structures. Thirdly, the area has been heavily searched by treasure hunters and yet, there has been no reportable incidents involving landmines since site closure.

(4) After WWII, the Department of Defense again conducted military exercises in the former DTC/CAMA around Camp Granite and Iron Mountain from 17-30 May 1964. The military exercise code named, Desert Strike, left behind areas of possible contamination. The maps showed an area of possible contamination was located adjacent to the 7,000 acre Camp Granite encampment area. The maps did not designated the encampment area as a possible contaminated area. The site inspection team found no signs of military activity related to this timeframe during site inspection.

f. Area E: Safety Area Additional Acreage

(1) Based on material collected during the ASR, the additional acreage outside the real estate and FDE boundary surrounding Camp Iron Mountain was used by the Department of the Army and is considered to be **potential** in respect to OE contamination. The possibility exists that subsurface ordnance items may still be present. An extension of Area B, Area E is additional acreage not addressed in the original INPR that contains the suspected major burial sites by BLM personnel.

(2) Personnel from BLM suspect that two major dumps may exist in the vicinity of Camp Iron Mountain. Just outside of the boundary line, west of the Camp Granite in T1S, R17E, SEC 34 and T2S, R17E, SEC 3 and northeast of Camp Iron Mountain in T1N, R17E, Sec 36 are the locations of the suspected dumps. The items contained within the camp dumps at this time are unknown, however, fears of burial pits containing ordnance items similar to the incident at Goff do exist within the local community (see document F-22). Interviews from local individuals suggest additional undetected dumps may exist elsewhere.

(3) Excluding parts of the aqueduct system, the entire area of and around Camp Iron Mountain was either leased for use or just used outright by training units associated with the DTC/CAMA. To simulated actual theater of war, the training

theater had very few restrictions. Troops had the freedom to conduct maneuvers and firing exercises as they deemed necessary as long as they were within the proper boundaries and meet the restriction associated with the area. Few of the training and firing area were actually documented. As a result, any area outside of the encampment area and the aqueduct system could have been used by Army troops for training.

(4) Similar to Area B, there are documented range clearance reports on Area E. Camp closing units and U.S. Army Corps of Engineers did conduct surface sweeps of the area. Area E has been restricted to surface use only because only surface sweeps were conducted and there is the possibility that practice antitank land mines may be present.

g. Area F: Firing Ranges Additional Acreage

(1) Area F, a continuation of Area C, should be considered to be a **confirmed** ordnance area due to its intended purpose, its demonstrated use, and the overwhelming amount of evidence amassed concerning the numerous discoveries of unexploded ordnance subsequent to site closure.

(2) Area F was created from historical maps that documented the approximate location of the firing ranges associated with Camp Iron Mountain and Granite. Historical photographs and range descriptions were used to verify the location of the firing range area. Additional documentation described the various types of live and practice ammunition used during training. The training documentation describe the types of training that occurred within Area F.

(3) Area F has nine fixed firing ranges located within its boundaries. With seven of the nine fixed firing ranges' firing points originating in Area C (range # 1 and 9 originate in Area F), Area F has all the impact areas located within its confines.

(4) Since site closure, the firing range area has had surface clearance operations on two separate occasions, however, no subsurface sweeps were ever conducted. Originally, the Army's 1135th Engineer C Group cleared Camp Granite in 1945. Then, the U.S. Army Corps of Engineers cleared the area from 1947 to 1952. After the second clearance, the area was restricted to surface use only due to the possibility of buried landmines. No evidence

was discovered during this ASR project to indicated that there has ever been any concerted effort to conduct a subsurface investigation of the firing range areas after WWII or the 1963 military operation, Desert Strike. Since no subsurface sweeps were ever conducted, the possibility exists that projectiles from the fixed firing range areas could still exist today.

(5) Since site closure, projectiles, small arms ammunition, projectiles, practice bombs and practice antitank landmines with fuze have been discovered by the public in the vicinity of Camp Iron Mountain and Granite. In the local area, ordnance items can be found in museums and private individuals homes. The exact locations of where these items were found could not be verified, however, you could positively identify the items were from Army training activities during WWII.

h. Area G: Grenade Range Additional Acreage

(1) Area G should be considered to be a **confirmed** ordnance area due to the discovery of expended .30 and .50 cal. small arms ammunition and a 37mm AP projectile by the Assessment Team. Similar to Areas E and F, Area G is additional acreage not addressed in the original FDE.

(2) Located within the unlimited firing area of the DTC, the confirmed area is in close proximity to Camp Iron Mountain. No reports or documents discussed any usage or training activity to have occurred in this area. The area was inspected following the description of an extensive grenade range located halfway between Camp Iron Mountain and the western mountains. Document F-12 stated, "grenade container end caps littered the ground behind the foxholes where the throwers ducked for cover." The Assessment Team combed the area looking for the described range, however, the team did not find any grenade related items or any area that resembled a grenade range. This does not mean the range does not exist, only the exact location could not be confirmed by the team at the time of this report.

(3) Numerous questions arose with the discovery of ordnance items by the Assessment Team. Of all the questions that arose, only question that could be answered was item description. An explanation of how or what type of training that had taken place could not be answered. The area was not heavily contaminated in respect to OE. There were range clearances sweeps performed in the area in the past. Following the last

documented range clearance by the U.S. Army Corps of Engineers (1947-52), the area was and still is restricted to surface use only.

8. SITE ORDNANCE TECHNICAL DATA

a. **End Item Technical Data**

(1) Numerous evidence exists to indicate that a variety of different types of conventional ammunition, explosives and nontoxic chemical warfare material were associated with this site. Table 8-1 on the following pages tries to encompass the extensive listing of ammunition and explosive fillers used for DTC/CAMA training purposes.

(2) Technical data and drawings relative to the end items and component parts listed in table 8-1 can be found in Appendix D.

TABLE 8-1 AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER		
Item	Type/Model	Filler Weight
Small Arms Ammo .30 Cal with gilding metal jacket Propellant	M2 Ball M2 AP M1 Tracer T10 Tracer M1 Incendiary	Lead Antimony Tungsten Chrome Steel Tracer Composition Incendiary Composition Single base or Double- base (DB) powder
Small Arms Ammo .45 Cal Primer Composition Propellant	M1911 Ball F.A. 70	230 gr lead core hardened with antimony covered by gilding metal jacket 0.37 gr 5 gr smokeless powder
Small Arms Ammo .50 Cal with gilding metal jacket Propelling Charge	M2 Ball M2 AP M1 Tracer M10 Tracer M17 Tracer M21 Tracer M1 Incendiary M23 Incendiary	Soft Steel Tungsten Chrome Steel Tracer Composition Tracer Composition Incendiary Mixture Single base or Double- base (DB) powder

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Shell, Fixed, H.E. 37mm	M54	0.10# Tetryl
Fuze, P.D. Detonator	M56	Primer mixture Lead azide Tetryl
Booster		Tetryl
Tracer, S.D.		Tracer mixture
Relay Pellet		Black powder
Propelling Charge		0.38# FNH powder, M1
Primer, percussion	M38A2	Primer mixture 55 gr black powder
Shell, Fixed, H.E. 37mm	M63	0.085# TNT
Fuze, B.D. Detonator	M58	Priming mixture Lead azide Tetryl
Booster		Tetryl
Tracer, S.D.		Tracer mixture
Relay Pellet		Black powder
Propelling Charge		0.44# FNH powder, M1
Primer, percussion	M38A2	Primer mixture 55 gr black powder
Shot, Fixed, A.P.C. 37mm	M51	Hard steel core
Tracer		Tracer composition
Propelling Charge		0.15# FNH powder, M1 or M5
Primer, percussion	M38A2	See above
Shot, Fixed, A.P.C. 37mm	M59 or M59A1	Hard steel core
Tracer		Tracer composition
Propelling Charge		0.31# FNH powder, M1 or 0.52# FNH powder, M5
Primer, percussion	M38A2	See above
Shot, Fixed, A.P. 37mm	M74	Solid steel slug
Tracer		Tracer composition
Propelling Charge		0.44# FNH powder, M1
Primer, percussion	M38A2	See above

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Cartridge, AP-T 57mm Tracer	M70	Hardened steel solid shot 73 gr red tracer composition 20 gr igniter charge
Propelling Charge Primer, percussion	M1B1A2	2.25# FNH powder, M1 Primer composition 100 gr black powder
Cartridge, APC-T 57mm Tracer	M86	Hardened steel solid shot 73 gr red tracer composition 20 gr igniter charge
Propelling Charge Primer, percussion	M1B1A2	2.25# FNH powder, M1 See above
Cartridge, APC-T 57mm Bursting Charge Fuze, B.D. Primer	M86	0.094# Explosive D Tetryl pellet
Detonator Charge	M72	Primer mixture No. 26 Black powder delay pellet Lead azide Tetryl
Tracer		73 gr red tracer composition 20 gr igniter charge
Propelling Charge Primer, percussion	M1B1A2	2.25# FNH powder, M1 See above
Shell, H.E. 60mm Fuze, P.D. Detonator	M49A2	0.34# TNT
Booster Percussion Primer	M52	Priming Mixture (Mercury Fulminate) Lead Azide Tetryl
	M32	0.37 gr No. 70 primer mixture 1.65 gr black powder pellet
Ignition Cartridge	M5A1	40 gr DB powder
Propellant Increments	M3	140 gr DB powder

TABLE 8-1 (continued)
AMMUNITION FOUND/USED AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Shell, Practice 60mm	M50A2	0.05# Black Powder
Fuze, P.D.	M52	See above
Percussion Primer	M32	See above
Ignition Cartridge	M5A1	See above
Propellant Increments	M3	See above
Shell, Illuminating 60mm	M83	Illuminant Charge 52.1% Barium Nitrate 10.4% Sodium Nitrate 26.0% Aluminum 5.2% Sodium Oxalate 4.1% Sulfur 1.1% Castor Oil 1.1% Linseed Oil Quick Match First Fire Charge 0.74oz Pellet - 25% black powder Priming Charge 0.055oz black powder
Ignition Cartridge	M5A1	See above
Percussion Primer	M32	See above
Propellant Increments	M4	112 gr DB powder
Shell, Smoke, WP 60mm	M302	White Phosphorus
Fuze, P.D.	M82	UNKNOWN
Ignition Cartridge	UNKNOWN	
Percussion Primer	UNKNOWN	
Propellant Increments	UNKNOWN	
Shell, Training 60mm	M69	INERT
Ignition Cartridge	M4	47 gr DB powder
Shell, Training 81mm	M68	INERT
Ignition Cartridge	M3	120 gr DB powder

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Shell, H.E. 81mm	M43A1	1.22# TNT
Fuze, P.D. Detonator	M52	Priming Mixture (Mercury Fulminate) Lead Azide Tetryl
Booster Percussion Primer	M33	0.37 gr No. 70 primer mixture 1.65 gr black powder pellet
Ignition Cartridge	M6	120 gr DB powder
Propellant Increments	M1	700 gr DB powder
Shell, WP Smoke 81mm	M57	4.04# White Phosphorus
Fuze, P.D.	M52	See above
Ignition Cartridge	M3 (old) M6 (new)	See above See above
Percussion Primer	M34	See above
Propellant Increments	M2	820 gr DB powder
Shell, H.E. 81mm	M56	4.31# TNT
Fuze, P.D. Primer	M53	UNKNOWN
Delay Pellet		Black Powder
Relay		Lead Azide
Detonator		Tetryl
Lead Charge		Lead Azide
Booster		Tetryl
Fuze, TSQ	M77	Tetryl
Primer		UNKNOWN
Time-train pellet		Black powder
Relay pellets		Black powder
Detonator		UNKNOWN
Booster		Tetryl
Percussion Primer	M34	0.37 gr No. 70 primer mixture 1.65 gr black powder pellet
Ignition Cartridge	M3 (old) M6 (new)	See above See above
Propellant Increments	M2	820 gr DB powder

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Shell, H.E., 75mm, semi-fixed	M48	1.49# TNT
Fuze, P.D. Detonator Superquick Delay	M48A2	Lead azide Compressed black powder pellet Lead azide pellet
Relay Booster Detonator Closing cup Booster pellet Propelling Charge Primer	M20A1 M1B1A2	Lead azide over tetryl Tetryl Tetryl 1.06# FNH powder, M1 See above
Shell, H.E., A.T. 75mm, fixed	M66	1.00# Pentolite
Fuze, B.D. Detonator Slider charge Booster Booster Propelling Charge Primer, percussion	M62 M1B1A2	Priming mixture Lead Azide Tetryl Tetryl Tetryl Tetryl 1.04# FNH powder, M2 See above
Shell, Smoke, WP 75mm, semi-fixed	M64	1.35# White Phosphorus
Fuze, P.D. Detonator Superquick Burster Detonator relay Burster charge Propelling Charge Primer, percussion	M57 M6 M8 M1B1A2	Lead azide Lead azide over tetryl 1 oz. tetryl 1.04# FNH powder, M1 See above
Shell, H.E., 76mm, fixed	M42A1	0.86# TNT
Fuze, P.D. Detonator Superquick Delay Relay Booster Detonator Closing cup Booster pellet Propelling Charge	M48A2 M20A1	Lead azide Compressed black powder pellet Lead azide pellet Lead azide over tetryl Tetryl Tetryl 3.75# FNH powder, M1

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Shell, A.P.C. 76mm, fixed Fuze, B.D.	M62A1	0.144# Explosive D
Detonator-booster assembly	M66A1	Tetryl booster pellet
Intermediate detonating charge		Lead Azide and tetryl
Primer		Primer mixture No. 26
Delay pellet		Black powder
Tracer		Red tracer composition
Propelling Charge		3.75# FNH powder, M1
Primer	M28A2	Primer composition 300 gr black powder
Shell, H.E., 90mm, fixed Fuze, P.D.	M71	2.04# TNT
Detonator	M48A2	
Superquick		Lead azide
Delay		Compressed black powder pellet
Relay		Lead azide pellet
Booster	M20A1	
Detonator		Lead azide over tetryl
Closing cup		Tetryl
Booster pellet		Tetryl
Propelling Charge		7.31# FNH powder, M1
Primer	M28A2	Primer composition 300 gr black powder
Shell, A.P.C. 90mm, fixed Fuze, B.D.	M82	0.44# Explosive D
Detonator-booster assembly	M68	Tetryl booster pellet
Intermediate detonating charge		Lead Azide and tetryl
Primer		Primer mixture No. 26
Delay pellet		Black powder
Tracer		Red tracer composition
Propelling Charge		7.31# FNH powder, M1
Primer	M28A2	Primer composition 300 gr black powder
Shell, H.E., 105mm, semi-fixed Fuze, P.D.	M1	4.8# TNT
Detonator	M48A2	
Superquick		Lead azide
Delay		Compressed black powder
Relay		Lead azide pellet
Booster	M20A1	
Detonator		Lead azide over tetryl
Booster pellet		Tetryl
Propelling Charge		3.04# FNH powder, M1
Primer	M1B1A2	See above

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Shell, H.E., 105mm, fixed	M38A1	3.63# TNT or 50-50 amatol
Fuze, M.T.	M43	
Primer, percussion		UNKNOWN
Pellet		Compressed black powder
Magazine charge		Black powder
Booster	M20A1	
Detonator		Lead azide over tetryl
Closing cup		Tetryl
Booster pellet		Tetryl
Propelling Charge		11# FNH powder, M1
Primer, percussion	M28A1	Primer composition 300 gr black powder
Shell, Practice 105mm, fixed	M38A1	8 oz. black powder
Fuze, M.T.	M43	
Primer, percussion		UNKNOWN
Pellet		Compressed black powder
Magazine charge		Black powder
Booster	M20A1	
Detonator		Lead azide over tetryl
Closing cup		Tetryl
Booster pellet		Tetryl
Propelling Charge		11# FNH powder, M1
Primer, percussion	M28A1	Primer composition 300 gr black powder
Shell, H.E., A.T. 105mm, semi-fixed	M67	2.93# 50/50 Pentolite
Fuze, B.D.	M62	
Detonator		Priming mixture Lead Azide Tetryl
Slider charge		Tetryl
Booster		Tetryl
Booster		Tetryl
Propelling Charge		1.60# FNH powder, M1
Primer, percussion	M28A2	Primer composition 300 gr black powder

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Shell, H.E. 155mm	M107	15.13# TNT
Fuze, P.D. Detonator Superquick Delay	M51A4	Lead azide Compressed black powder pellet Lead azide pellet
Relay Booster Detonator Closing cup Booster pellet	M21A4	Lead azide over tetryl Tetryl Tetryl
Propelling Charges	M3	5.94# FNH powder, M1
	M4A1	13.91# FNH powder, M1
Primer, percussion	Mk. IIA4	Priming composition 17 gr black powder
Rocket, HEAT 2.36-inch Fuze Detonator	M6, M6A1, M6A3 None	0.5# 50/50 Pentolite Priming Mixture Lead Azide Tetryl
Booster Propellant Squib		Tetryl Sticks of DB powder Black powder
Rocket, HEAT 2.36-inch Fuze Propellant	M6A3D None	0.5# 50/50 Pentolite See above T1E1 salted powder
Rocket, HEAT 2.36-inch Fuze Propellant	M6A3F None	0.5# 50/50 Pentolite See above M7 (T4) powder
Rocket, HEAT 2.36-inch Fuze, BD Propellant	M6A4 M400	0.5# 50/50 Pentolite M7 (T4) powder
Rocket, HEAT 2.36-inch Fuze, BD Propellant	M6A5 M401	0.5# 50/50 Pentolite M7 (T4) powder

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Rocket, Practice 2.36-inch Propellant Squib	M7, M7A1, M7A3, M7A4	INERT Sticks of DB powder Black powder
Rocket, Practice 2.36-inch Propellant	M7A5	INERT T1E1 salted powder
Rocket, Practice 2.36-inch Propellant	M7A6	INERT M7 (T4) powder
Rocket, WP Smoke 2.36-inch Fuze Detonator Detonator-Burster Propellant Squib	M10 None	0.9# White Phosphorus Priming Mixture Lead Azide Tetryl UNKNOWN Sticks of DB powder Black powder
Rocket, WP Smoke 2.36-inch Fuze, BD Propellant	M10A3 M401	0.9# White Phosphorus M7 powder
Rocket, HC Smoke 2.36-inch Fuze Detonator Igniter Propellant Squib	T27E1 None	1# HC Priming Mixture Lead Azide Tetryl UNKNOWN Sticks of DB powder Black powder
Rocket, Incendiary 2.36-inch Fuze Detonator Igniter Propellant Squib	T31 None	1.1# Thermate Priming Mixture Lead Azide Tetryl UNKNOWN Sticks of DB powder Black powder

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Grenade, Hand, Fragmentation Fuze, detonating	MK II	Bursting Charge 0.74oz E.C. Blank Powder
Primer	M10	
Delay - Time Fuse	MK V	0.4 gr Primer Mixture
Detonator		2" Black Powder train 7 gr loose Black Powder
Grenade, Hand, Offensive	MK IIIA2	Bursting Charge .5# Pressed TNT
Fuze, detonating	M6A2	UNKNOWN
Grenade, Hand, CN Tear	M7	CN
Fuze, igniting	M200A1	Similar to M10 above
Grenade, HC Smoke Fuze, igniting	M8 M200A1	HC See above
Grenade, Colored Smoke Fuze	M16 None	UNKNOWN See above
Grenade, Colored Smoke Fuze, igniting	M18 M200A1	.72# Smoke Mixture See above
Grenade, Red Smoke Fuze, igniting	AN-M3 M200A1	Red Smoke Mixture See above
Grenade, White Phosphorus, Smoke Fuze, detonating	M15 M6A3	0.9# White Phosphorus See above
Grenade, Rifle, WP Smoke Detonator	M19 None	8.5 oz. White Phosphorus UNKNOWN
Grenade, Rifle, Colored Smoke	M22	6.5 oz. standard colored smoke fillings
Grenade, Rifle, Antitank Fuze	M9A1 None	4 oz. 50/50 Pentolite Priming Mixture Lead Azide Tetryl
Booster		Tetryl
Grenade, Rifle, HC	None	10.75 oz. HC
Grenade, Rifle, Practice	M11A3	INERT

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Mine, Anti-Personnel, Practice Relay Charge Delay Charge Fuze Assembly Primer Safety Fuze Igniter	M8 M10A1	.024# Black Powder 15 grains Black Powder
Mine, Anti-Tank, Practice Fuze, Practice	M1 M1	60 grains Black Powder 100 grains Red Phosphorus
Mine, Anti-Tank, Light, Practice Fuze Assembly	M7 M603	Inert
Mine, Anti-Tank, Light, Practice Fuze Assembly	M10 M604	Inert
Flare, Airport First Fire Charge Primer Disc Friction Igniter	M13	Flare Composition Black powder
Flare, Trip Fuze (grenade-type) Percussion Cap Igniter	M49	Illuminant Compound Black Powder
Flare, Trip, Parachute Primer Igniter Relay Charge Propelling Charge Delay fuse Expelling Charge Ignition Charge	M48	Illuminant Compound 75 grains

TABLE 8-1 (continued)
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER

Item	Type/Model	Filler Weight
Signal, White Star, Parachute	M17 Series	Sheet Metal .16# Illuminant 16 grains Black Powder
Signal, White Star, Cluster	M18 Series	Sheet Metal .25# Illuminant 16 grains Black Powder
Signal, Green Star, Parachute	M19 series	Sheet Metal .16# Illuminant 16 grains Black Powder
Signal, Green Star, Cluster	M20 series	Sheet Metal .25# Illuminant 16 grains Black Powder
Signal, Amber Star, Parachute	M21 Series	Sheet Metal .13# Illuminant 16 grains Black Powder
Signal, Amber Star, Cluster	M22 Series	Sheet Metal .22# Illuminant 16 grains Black Powder
Signal, Red Star, Parachute	M51 Series	Sheet Metal .13# Illuminant 16 grains Black Powder
Signal, Red Star, Cluster	M52 Series	Sheet Metal .23# Illuminant 16 grains Black Powder
Smoke Pot	M5	Hexachloroethane
Bomb, Incendiary magnesium alloy 4-Pound Primer Charge First Fire Charge	AN-M50A2	1.25# 0.63# Thermate

TABLE 8-1 (continued)		
AMMUNITION USED/FOUND AND EXPLOSIVES/CHEMICAL FILLER		
Item	Type/Model	Filler Weight
Bomb, Incendiary 4-Pound Primer Charge First Fire Charge Delay Fuze Detonator Bursting Charge	AN-M50XA2	1.25# magnesium alloy 0.58# Thermate Tetryl
Bomb, Incendiary oil, 6-pound Ejection-Igniter Charge Fuze, Bomb	AN-M69 M1	2.8# gelled gasoline 0.4 oz. black powder and magnesium
Bomb, Practice 100 lbs. Primer Spotting Charge	M38A2 M1A1	80 lbs. sand 28-gage blank shotgun shell 3 lbs. Black Powder

b. Chemical Data of Ordnance Fillers

Table 8-2 on the following pages provides a summary of the chemical data for the explosive/chemical fillers used in the ordnance cited in table 8-1.

TABLE 8-2		
CHEMICAL DATA OF ORDNANCE FILLERS		
Filler	Synonym(s)	Chemical Formula
Amatol (50-50) or (80-20) Ammonium Nitrate TNT	 2,4,6-trinitrotoluene	 $\text{CH}_3\text{C}_6\text{H}_2(\text{NO}_2)_3$
Ammonium Nitrate		NH_4NO_3
Antimony Sulfide		Sb_2S_3

TABLE 8-2
CHEMICAL DATA OF ORDNANCE FILLERS

Filler	Synonym(s)	Chemical Formula
Ballistite	(see DB powder)	
Barium Nitrate		Ba(NO ₃) ₂
Black Powder		
74% Potassium Nitrate	Saltpeter; Niter	KNO ₃
11% Sulfur		S
16% Charcoal		C
Charcoal		C
CN	Chloroacetophenone	C ₆ H ₅ CO-CH ₂ Cl
Dibutylphthalate	gelling agent	C ₆ H ₄ (CO ₂ C ₄ H ₉) ₂
Dinitrotoluene	DNT	C ₆ H ₃ CH ₃ (NO ₂) ₂
Diphenylamine	stabilizer DPA	(C ₆ H ₅) ₂ NH
Double-base Powder	Ballistite	
60% Nitrocellulose	Guncotton; Pyroxylin	[C ₆ H ₈ O ₅ (NO ₂) ₃] _n
39% Nitroglycerin		CH ₂ NO ₃ CHNO ₃ CH ₂ NO ₃
0.75% Diphenylamine	Stabilizer DPA	(C ₆ H ₅) ₂ NH
E. C. Blank Powder	(single-based compound)	
80.4% Nitrocellulose	Guncotton; Pyroxylin	[C ₆ H ₈ O ₅ (NO ₂) ₃] _n
8% Potassium Nitrate	Saltpeter	KNO ₃
8% Barium Nitrate		Ba(NO ₃) ₂
3% Starch		
0.6% Diphenylamine	Stabilizer DPA	(C ₆ H ₅) ₂ NH
Explosive D	Ammonium Picrate; Ammonium Carbazate; Ammonium Picronitrate	C ₆ H ₂ (NO ₂) ₃ ONH ₄
FNH Powder, Type II		
Nitrocellulose	Guncotton; Pyroxylin	[C ₆ H ₈ O ₅ (NO ₂) ₃] _n
Dibutylphthalate	Gelling agent	C ₆ H ₄ (CO ₂ C ₄ H ₉) ₂
Dinitrotoluene	DNT	C ₆ H ₃ CH ₃ (NO ₂) ₂
Diphenylamine	Stabilizer DPA	(C ₆ H ₅) ₂ NH
Guncotton	(see nitrocellulose)	
13% nitrogen		N ₂
Hexachlorethane-Zinc	HC	Zn+C ₂ Cl ₆

TABLE 8-2 (continued)
CHEMICAL DATA OF ORDNANCE FILLERS

Filler	Synonym(s)	Chemical Formula
Igniter Compositions *		
I-136 & I-136A		
10%	Calcium Resinate	Ca
90%	Strontium Peroxide	SrO ₂
I-194		
94%	Igniter Composition I-136	
6%	Magnesium Powder	Mg
I-276		
84%	Barium Peroxide	BaO ₂
16%	Magnesium Powder	Mg
I-280		
85%	Igniter Composition I-136A	
15%	Magnesium Powder	Mg
I-508		
79%	Barium Peroxide	BaO ₂
14%	Magnesium Powder	Mg
Incendiary Compositions *		
IM-11		
50%	Barium Nitrate	Ba(NO ₃) ₂
50%	Magnesium Aluminum Alloy	Mg & Al
IM-23		
50%	Potassium Perchlorate	KClO ₄
50%	Magnesium Aluminum Alloy	Mg & Al
IM-28		
40%	Barium Nitrate	Ba(NO ₃) ₂
50%	Magnesium Aluminum Alloy	Mg & Al
10%	Potassium Perchlorate	KClO ₄
Incendiary Compositions (continued)		
IM-68		
24%	Barium Nitrate	Ba(NO ₃) ₂
50%	Magnesium Aluminum Alloy	Mg & Al
25%	Ammonium Nitrate	NH ₄ NO ₃
IM-69		
40%	Barium Nitrate	Ba(NO ₃) ₂
50%	Magnesium Aluminum Alloy	Mg & Al
10%	Iron Oxide, Ferric	Fe ₂ O ₃
IM-136		
49%	Potassium Perchlorate	KClO ₄
49%	Magnesium Aluminum Alloy	Mg & Al
IM-142		
48%	Barium Nitrate	Ba(NO ₃) ₂
46%	Magnesium Aluminum Alloy	Mg & Al

TABLE 8-2 (continued)
CHEMICAL DATA OF ORDNANCE FILLERS

Filler	Synonym(s)	Chemical Formula
IM-144		
50% Barium Nitrate		Ba(NO ₃) ₂
50% Red Phosphorus		P
IM-162		
25% Incendiary Composition		IM-23
75% Zirconium		Zr
IM-163		
50% Incendiary Composition		IM-23
50% Zirconium		Zr
Incendiary Mixture	(see incendiary compositions)	
Lead Azide	Azide	Pb(N ₃) ₂
Mercury Fulminate	Mercuric Cyanate	Hg(CNO) ₂
Nitrocellulose	Guncotton; Pyroxylin Nitrocotton; Cellulose Nitrate	[C ₆ H ₈ O ₅ (NO ₂) ₃] _n
Nitroglycerin		CH ₂ NO ₃ CHNO ₃ CH ₂ NO ₃
Pentolite (50/50)		
TNT	2,4,6-trinitrotoluene	CH ₃ C ₆ H ₂ (NO ₂) ₃
PETN		C(CH ₂ ONO ₂) ₄
PETN	Pentaerythrite Tetranitrate; Pentaerythritol Tetranitrate	C(CH ₂ ONO ₂) ₄
Potassium Chlorate		KClO ₃
Potassium Nitrate	Saltpeter; Niter	KNO ₃
Primer Composition		
FA-90A (for percussion primers)		
25% Lead Thiocyanate		Pb(SCN) ₂
12% Antimony Sulfide		Sb ₂ S ₃
10% PETN		
53% Potassium Chlorate		KClO ₃
FA-70		
25% Lead Thiocyanate		Pb(SCN) ₂
17% Antimony Sulfide		Sb ₂ S ₃
5% TNT		
53% Potassium Chlorate		KClO ₃

TABLE 8-2 (continued)
CHEMICAL DATA OF ORDNANCE FILLERS

Filler	Synonym(s)	Chemical Formula
Primer Mixture *		
Mercury Fulminate	Mercuric Cyanate	Hg(CNO) ₂
Potassium Chlorate		KClO ₃
Antimony Sulfide		Sb ₂ S ₃
Pyrotechnic Composition (for Aircraft Flare)		
75% Barium Nitrate		Ba(NO ₃) ₂
4.5% Sulphur		S
18.5% Aluminum		Al
1.5% Castor Oil		
RDX	Cyclonite, Hexagen	C ₃ H ₆ N ₆ O ₆
Red Phosphorus		P
Smokeless Powder	(see nitrocellulose)	
Flashless-nonhygroscopic (FNH)		
Nonhygroscopic (NH)		
Sodium Nitrate		NaNO ₃
Sodium Oxalate		Na ₂ C ₂ O ₄
Sulfur		S
Tetryl	Trinitrophenyl- methylnitramine	(NO ₂) ₃ C ₆ H ₂ N(NO ₂)CH ₃
Thermate		
Thermite		2Al-3FeO
Barium Nitrate		Ba(NO ₃) ₂
Thermite	TH, TH3, Iron Oxide & Aluminum	2Al-3FeO
TNT	2,4,6-trinitrotoluene; triton; trotyl; trilite; trinol; tritolo	CH ₃ C ₆ H ₂ (NO ₂) ₃

TABLE 8-2 (continued)
CHEMICAL DATA OF ORDNANCE FILLERS

Filler	Synonym(s)	Chemical Formula
Tracer Compositions *		
R-256		
8.3%	Calcium Resinate	
26.7%	Strontium Peroxide	SrO ₂
26.7%	Magnesium Powder	Mg
33.3%	Strontium Nitrate	Sr(NO ₃) ₂
R-284		
17%	Polyvinyl Chloride	
28%	Magnesium Powder	Mg
55%	Strontium Nitrate	Sr(NO ₃) ₂
R-321		
16%	Polyvinyl Chloride	
26%	Magnesium Powder	Mg
52%	Strontium Nitrate	Sr(NO ₃) ₂
White Phosphorus		P
* Most frequently used chemical compositions and their major ingredients		

9. OTHER ENVIRONMENTAL HAZARDS

a. Hazardous, Toxic, and Radiological Waste (HTRW)

The ASR team did observe evidence of possible burial sites throughout the project area. The items contained within the burial pits at this time are unknown. The burial sites are possible HTRW projects.

b. Building Demolition/Debris Removal (BD/DR)

The only permanent structures remaining within the encampment area are a chapel, an altar and a graded contour simulation map depicting the Desert Training Center. Camp Iron Mountain, along with all the structures, have been nominated to the National Register of Historical Places. No BD/DR project is recommended.

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APPENDIX A

REFERENCE SOURCES

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES**FEDERAL AGENCIES****DOD**

(DLOD) Defense Library Disk Pentagon Library, Room 1A518 Washington, DC 20301-6000	Info Data Base/Svc	(703) 697-4658	No Information
(DDESB) Historical Accident Data Base USATCES, SIOAC-ESM Savanna, Il 61074-9639	Computer Search	(815) 273-8730	No Information
(DLSIE) Defense Logistic Studies Information Exchange US Army Logistics Management College, Ft. Lee, VA 23801	Computer Search	(804) 734-4007	No Information
(DTIC) Defense Technical Information Center Cameron Station Alexandria, VA 22304-6145	Computer Search	(202) 274-7633	No Information
U.S. Military History Institute Library Carlisle Barracks, Bldg. 22 Carlisle, PA 17013-5008	Mr. John Slonakern Mr. Dennis Vetock	(717) 245-3611	General Information
Center of Military History Attn: DAMH-RAS 1099 14th St. NW Washington, DC 20536	Contractor	(202) 504-5416	See Appendix B Section II Parts A & B

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES**FEDERAL AGENCIES****DOD**

U.S. Military History Institute Photo Archives Carlisle Barracks, Bldg. Carlisle, PA 17013	Mr. Mike Winey	(717) 245-3434	No Information
U.S. Military History Institute Textual Archives Carlisle Barracks, Bldg. Carlisle, PA 17013	Mr. Richard Sommers	(717) 245-3601	General Information
DMACSC, Philadelphia Depot 5801 Tabor Ave. Philadelphia, PA 19120-5095	Staff	(800) 826-0342 (301) 227-2495	Aeronautical Charts
U.S. AIR FORCE Environmental Technical Applications Center 151 Patton Ave, Rm 210 Ashville, NC 28801	Ms. Janet Wall	(704) 271-4404	Climatological Data
U.S. ARMY Army Safety Management Information System Ft. Rucker, AL 36322	Computer Search	(205) 255-6485	No Information
AMCCOM Historical Office AMSIO-EAH, Bldg. 390 Rock Island Arsenal, R.I., IL	Mr. Tom Slattery	(309) 794-1450	No Information

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES

FEDERAL AGENCIES

DOD

U.S. ARMY

Explosive Ordnance Disposal 259th EOD Fort Irwin Barstow, CA	SPC Knoelesard CPT Tooller	(619) 380-4092	UXO Information
--	-------------------------------	----------------	-----------------

Rock Island Arsenal Museum Rock Island Arsenal Rock Island, IL	Mr. Chris Leinicke	(309) 794-3518	Technical Manuals
--	--------------------	----------------	-------------------

Pattons Museum of Calvary and Armor P.O. Box 208, 4554 Fayette Ft. Knox, KY 40121-0208	Ms. Katie Talbot	(502) 624-3812	Information
---	------------------	----------------	-------------

Publications	FUDS Reference Library	(815) 273-8867	
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U.S. Army Technical Center for Explosive Safety ATTN: SIOAC-ESM Savanna, IL 61074	Ms. Judy Skupien	(815) 273-8772	Reference Sources
--	------------------	----------------	-------------------

U.S. Army Chemical and Biological Defense Command Aberdeen Proving Ground, MD	Ms. Kathleen Ciolfi	(410) 679-4430	No Information
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USACE, Los Angeles District 300 North Los Angeles St. Room 6003 Los Angeles, CA 90024	Ms. Bebrah Castens	(213) 894-2865/2866	Information
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REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES

FEDERAL AGENCIES

DOD

ARMY

USACE, Los Angeles District 300 North Los Angeles St. Los Angeles, CA 90024	Mr. Greg Boghossian	(213) 894-3760	POC for this site
USACE, Los Angeles District 360 East 2nd St. RM 501 Los Angeles, CA 90012	Mr. Richard Nagle	(213) 894-2951	Real Estate Drawings
USACE, Los Angeles District Real Estate Division 360 East 2nd St. Rm 508 Los Angeles, CA 90012	Mr. Delores Henderson	(213) 793-1450	Real Estate Document
USACE, Office of History 7701 Telegraph Road Alexandria, VA 22310-3865	Contractor	(703) 355-3558	See App B, Section II Parts A and B
USACE, Sacramento District 1325 J Street Sacramento, CA 95814-2922	Mr. Marvin Fisher Mr. Dan Fodrini	(916) 557-6800 (916) 557-6857	No Information
USACE, St. Louis District ATTN: CELMS-PD 1222 Spruce St. St. Louis, MO 63103	Mr. Jim Lubbert	(714) 331-8840	Historical Documents

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES

FEDERAL AGENCIES

DOD

NAVY/MARINE CORPS

Naval Construction BN Center NAVFAC Historian 621 Pleasant Valley Road Port Hueneme, CA 93043	Dr. Vincent Transano	(805) 982-5913	Information
Navy Historical Center Bldg. 57 Washington Naval Yd Washington, DC 20374	Contractor	(202) 433-3171	See App. B Section II, Parts A and B
Marine Corps Historical Center, Bldg. 58 Washington Naval Yard Washington, DC 20374	Contractor	(202) 433-3483	See App. B Section II, Parts A and B
Explosive Ordnance Disposal EOD Unit MCA GCC 29 Palms, CA	GYSGT Wheeler	(619) 830-7215	No information

FEDERAL AGENCIES

DEPARTMENT OF AGRICULTURE

Natural Resources Conservation Service 200 East Murphy St. Blythe, CA 92226	Mr. Raul Alvarado	(619) 922-3446	No Information
Natural Resources Conservation Service 2121 C 2nd St. Davis, CA 95616	Mr. Donald Storm	(916) 757-8270	No Information

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES

FEDERAL AGENCIES

DEPARTMENT OF AGRICULTURE

Natural Resources
Conservation Service
P.O. Box 788115
Twenty-Nine Palms, CA 92278

Mr. John Rule

(619) 830-7011

No Information

Aerial Photo Field Office
P.O. Box 30010
Salt Lake City, UT

Ms. Sherrie Holyoak

(801) 975-3503

Source Aerial Photos

Natural Resources
Conservation Service
18484 HWY 18, Suite 195
Apple Valley, CA 92307

Ms. Jackie Lindgren

(619) 242-2906

Soil Survey

Natural Resources
Conservation Service
25809-B Business Center Drive
Redland, CA 92374

Mr. Jim Earson

(909) 799-7407

No Information

DEPARTMENT OF INTERIOR

Bureau of Land Management
101 West Spikes Road
Needles, CA 92363

Mr. Bill Wiley

(619) 326-3896

See Interview I-1

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES

FEDERAL

DEPARTMENT OF INTERIOR

Bureau of Land Management CA Desert District 6221 Box Springs Blvd. Riverside, CA 92507-0714	Mr. Larry Foreman Mr. Manuela Johnson Ms. Rolla Queen Mr. John Keyes	(909) 697-5221 (909) 697-5220 (909) 697-5386 (909) 697-5383	Endangered Species Maps Archeological Info. Information
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Bureau of Land Management 620 North Sola P.O. Box 716 Blythe, CA 92226	Mr. Fred Delcamp	(619) 922-4519	Interview I-6
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US Geological Survey Branch of Distribution Box 25286, Bldg 810 Denver Federal Center Denver, Co. 8022	Customer Service	(303) 203-4700	Topographical Maps
--	------------------	----------------	--------------------

U.S. Fish and Wildlife 2493 Portola Road Ventura, CA 93003	Mr. Kirk Waln	(805) 644-1766	Endangered Plants & Animals
--	---------------	----------------	--------------------------------

U.S. Fish and Wildlife 2730 Loker Ave. West Carlsbad, CA 92008	Mr. John Hanlon	(619) 431-9440	Endangered Plants & Animals
--	-----------------	----------------	--------------------------------

DEPARTMENT OF COMMERCE

NOAA National Climatic Data Cntr. Federal Bldg. Ashville, NC 28801	Ms. Yolanda Goosch Mr. Sam McCowan	(704) 271-4272	Climatological Data
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REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES**FEDERAL****FEDERAL AGENCIES**

National Personnel Records Center, 9700 Page Ave. St. Louis, MO	Mr. Bill Siebert	(314) 538-4085	See Appendix B Section III, Parts A and B
Library of Congress Washington, DC 20536	Contractor	(202) 707-5522	See Appendix B Section II, Parts A and B
Smithsonian Institution Historical Research Division Washington, DC 20560	Contractor	(202) 357-3133	See Appendix B Section II, Parts A and B

NATIONAL ARCHIVES**RECORDS ADMINISTRATION**

Archives II (Motion Picture Branch) 8601 Adelphi Road College Park, Md 20740	Contractor	(301) 713-7060	See Appendix B Section II Parts A&B
Archives II (Still Picture Branch) 8601 Adelphi Road College Park, Md 20740	Contractor	(301) 713-6660	See Appendix B Section II Parts A&B
Archives II (Textual Branch) 8601 Adelphi Road College Park, Md 20740	Contractor	(301) 713-7250	See Appendix B Section II Parts A&B

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES**FEDERAL****NATIONAL ARCHIVES****RECORDS ADMINISTRATION**

Archives I (Old Military) Pennsylvania Ave & 7th Washington, DC 20408	Contractor	(202) 501-5390	See Appendix B Section II Parts A&B
Suitland Branch (Civil/Military) 4205 Suitland Road Suitland, Md 20409	Contractor	(301) 457-7190	See Appendix B Section II Parts A & B
Archives I (Modern Military) Pennsylvania Ave & 7th Washington, DC 20408	Contractor	(202) 501-5385	See Appendix B Section II Parts A&B
Archives I (Navy) Pennsylvania Ave & 7th Washington, DC 20408	Contractor	(202) 501-5671	See Appendix B Section II Parts A&B
Archives II (Cartographic/Architectural) 8601 Adelphi Road College Park, Md 20740	Contractor	(301) 713-7040	See Appendix B Section II Parts A&B
Archives II (Civil Reference Branch) 8601 Adelphi Road College Park, Md 20740	Contractor	(301) 713-7250	See Appendix B Section II Parts A&B

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES

NARA REGIONAL

NARA, Federal Records Center 1000 Commodore Drive San Bruno, CA 94066	Ms. Barbara Bepler	(415) 876-9001	See App. B, Section III, Parts A & B
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NARA, Federal Records Center 2400 Alvia Road Laguna Niguel, CA 92607	Mr. Greg Pearman	(714) 643-4220	See App. B, Section III, Parts A & B
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NARA, Pacific Sierra Region 1000 Commodore Drive San Bruno, CA 94066	Ms. Lisa Miller	(415) 876-9009	See App. B, Section III, Parts A & B
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NARA, Pacific Southwest Region 2400 Alvia Road Laguna Niguel, CA 92656	Ms. Suzanne Dewberry	(714) 643-4241	See App. B, Section III, Parts A & B
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STATE AGENCIES

SHPO, San Bernardino Archeological Info Center 2024 Orange Tree Lane Redland, CA 92374	Ms. Robin Laska	(909) 792-1497	Archeological Info.
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University of California Riverside Library 900 University Drive Riverside, CA 92521 Parker Dam, CA 92267	Ms. Gladys Murphy	(909) 792-3221	Reference Leads
--	-------------------	----------------	-----------------

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES

STATE AGENCIES

San Bernardino County Museum 2024 Orange Tree Lane Redlands, CA 92374	Ms. Robin Laska Ms. Noella Benvenuti	(909) 798-8570	General Information
San Bernardino County Recorder 222 W Hospitality Lane San Bernardino, CA 92415	Staff	(909) 387-8306	Owners
San Bernardino County Sheriff's Department Colorado River Station 1111 Bailey Ave. Needles, CA 92363	Mr. Robert Lyons	(619) 326-9200	See Interview I-2
Riverside County Sheriff Office 260 North Spring Street Blythe, CA 92225	Det. Jim Dellis	(619) 921-7900	See Interview I-9
Riverside City and County Public Library 3581 Mission Inn Avenue Riverside, CA 925017	Staff	(909) 387-5718	General Information
Riverside County Historical Commission Library P.O. Box 3507 Riverside, CA 92519	Staff	(909) 275-4310	General Information

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

GOVERNMENT SOURCES**STATE AGENCIES**

Riverside County Recorder 4080 Lemon Street Riverside, CA 92510	Staff	(909) 274-1900	Owners
Palo Verde Historical Museum 150 North Broadway Blythe, CA 92225	Staff	(619) 922-8770	General Information
Palo Verde Valley District Library 125 West Chanslorway Blythe, CA 92225	Phyllis Zamora	(619) 922-5371	No information

NON-GOVERNMENT SOURCES**OTHER SOURCES**

Knight-Ridder Information Inc. (DIALOG) 2440 El Camino Real Mountain View, CA 94040	Computer Search	(800) 334-2564	No Information
SIRSI Corporation 689 Discovery Dr. Huntsville, Al 35806	Computer Search	(205) 922-9820	No Information
Council on America's Past 518 Why Worry Lane Phoenix, AZ 85021	Heliogram Publication	(800) 396-4693	Information

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

NON-GOVERNMENT SOURCES

OTHER SOURCES

On-line Computer Library Center 6565 Franz Road Dublin, Oh 43017-3395	Computer Search	(800) 848-5873	No Information
Needles Public Library 111 Bailey Needles, CA 92363	Ms. Barbara Guhin	(619) 326-9255	Information/photos
Patton Museum No. 2 Chiriaco Summit, CA 92201	Mr. John Hoffman	(619) 227-3483	Information/photos
3rd Armored Division University Archives, Rm 19 1408 West Gregory Drive Urbana, IL 61081	Mr. Chris Pron	(217) 333-0798	No Information
6th Armored Division P.O. Box 5011 Louisville, KY 40205			No Response at this time
SITE RELATED PERSONNEL			
Arda Hanszal 809 Standish Way Redlands, CA 92373	Local Historian	(909) 798-0550	No Information
Dennis G. Casebier P.O. Box 7 Exxex, CA 92332-0007	Author/Historian	(619) 733-4482	See Interview I-5

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

NON-GOVERNMENT SOURCES**SITE RELATED****PERSONNEL**

Francis Blaker 658 Lemon Hill Terrace Fullerton, CA 92632	Historian	(714) 871-7738	No response at this time
Fred Croziern 250 Paseo De Granda Redondo Beach, CA 90277	Historian	(310) 378-8875	No Information
Gary Holcomb 1450 St. John Ct. Yuba City, CA 95993	Father stationed at DTC	(916) 673-5185	No Information
Herb Bender 1609 Washington Street Needles, CA 92363	Local Resident	(619) 326-3129	Passed Away Dec. 95
John Lynch 518 Why Worry Lane Phoenix, AZ 85012	Historian/Author	(602) 249-3974	See Interview I-7
Justin Ruhge P.O. Box 2216 Goleta, CA 93118	Author/Historian	(805) 737-9536	No Information
Benton Loucks Phoenix, AZ 85023	Military Historian	(602) 938-4637	See Interview I-8
4th Armored Division Ass. Inc Rt. 2 Box 418-A Lithia, FL 33547			Letter Returned Undeliverable

REFERENCE SOURCES

The following organizations and personnel are acknowledged for their support

NON-GOVERNMENT SOURCES

**SITE RELATED
PERSONNEL**

Walter Scott 361 North Willow Blythe, CA	Local Farmer	(619) 922-4335	See Interview I-11
Bill Claypool Needles, CA	Hardware Store owner	(619) 326-2109	See Interview I-3
Butch Gates Idaho Falls, ID	Former Search/Rescue San Bernardino Co. Sheriff	(208) 529-5313	See Interview I-4
Dennis Casebier Goffs, CA	Retired/Local Historian	(619) 733-4482	See Interview I-5

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APPENDIX B

REFERENCES AND ABSTRACTS

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REFERENCES AND ABSTRACTS

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Part A: Positive Reports.

Part B: Negative Reports.

Section III: Regional National Archives Search.

Part A: Positive Reports.

Part B: Negative Reports.

APPENDIX B

REFERENCES AND ABSTRACTS

SECTION I

B-1. DERP-FUDS INPR (Site No. J09CA028401), U.S. Army Corps of Engineers, Los Angeles District, October, 1994 (E-1).

B-2. U.S. Army Corps of Engineers, Rock Island District, Site Safety Plan, 25 June 1992, with Appendix A-121, 4 October 1995.

B-3. CEHND 1105-3-9, QEW Management Plan, U.S. Army Corps of Engineers, Huntsville Division, 10 August 1992.

B-4. CENCR, QEW Management Plan, U.S. Army Corps Of Engineers, Rock Island District, 10 March 1995.

B-5. Department of Army, Environmental Protection and Enhancement, AR-200-1, 23 April 1990.

B-6. Department of Commerce, 1982 Local Climatological Data Annual Summary California, National Oceanic and Atmospheric Administration.

B-7. Mueller, Robert, Air Force Bases, Office of Air Force History, United States Air Force, Washington, D.C., Volume I, September 1982.

B-8. Letter, Department of The Interior, U.S. Fish and Wildlife Service, subject: Endangered Species, 14 November 1995.

B-9. Letter, Archaeological Information Center, San Bernardino County Museum, subject: Historical/Archaeological Sites, 5 October 1995.

B-10. Department of the Army, "Military Pyrotechnics", TM 9-1370-203-12, March 1973.

B-11. Department of the Army, "Grenades, Hand and Rifle", TM 9-1330-200, September 1971.

- B-12. Department of the Army, "Ammunition, General", TM 9-1300-200, October 1969.
- B-13. Department of the Navy, "Fourth Consolidated Report of BW/CW Study (U)", NAVORD REPORT 6954 (First Revision), March 1961.
- B-14. Department of the Army, "Artillery Ammunition Gun, Howitzer, Mortars, Recoilless Rifles, Grenade Launchers, and Artillery Fuzes", TM 43-0001-28, April 1977.
- B-15. Department of the Army, "Military Pyrotechnics", TM 43-0001-37, January 1994.
- B-16. Blumension, Martin, The Patton Papers, 1940-1945, Volume II, Boston: Houghton Mifflin, 1974.
- B-17. Gillie, Mildred Hanson, Forgoing the Thunderbolt: A History of the Development of the Armored Force, Harrisburg, PA: Mil Srv Pub, 1947, pp. 226-27.
- B-18. Hoeg, Leo A., and Doyle, Howard J., Timberwolf Tracks: The History of the 104th Infantry Division, 1942-1945, Washigton, DC: Inf Jrnl, 1946, pp. 23-28 (H-7).
- B-19. Patton, George S., Jr., "The Desert Training Corps", Cavalry Journal 51, September 1942, pp. 2-5.
- B-20. Meller, Sidney L., The Desert Training Center and CAMA, Study No 15, History Section, Army Ground Forces, 1946.
- B-21. 77th Division Assoc., Ours to Hold it High: The History of the 77th Infantry Division in World War II, Washington, DC, Inf Jrnl, 1947, pp. 29-35 (H-8).
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Posts, Camps, and Stations - WWII, Vol. VI (H-K)
Data Sheet, Camp Iron Mountain, 1943

Historical Data Card - Post, Camp, Station, or Airfield
California - Arizona Maneuver Area, Desert Training Center

228.01 HRC 331, Posts - Desert Training Center
Background Data and Map, Desert Training Center, California - Arizona
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Catalog Cards, Films, "Desert Training Center, IX Corps Maneuvers"

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Entry 427: World War II Operations Reports

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Training Operations, 4th Armored Division, Camp Iron Mountain, California-
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HQ Heliogram, Council on Abandoned Military Posts, No. 166, Nov-Dec 1984

Article

California - Arizona Maneuver Area, 1984

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I-10A-8

Newspaper Articles, Desert Training Center - California - Arizona Maneuver
Area, 1984-1985

I-10A-8

Bureau of Land Management Interpretive Plan, Including Site History, for the
Former Desert Training Center - California - Arizona Maneuver Area, 1985

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Bureau of Land Management Interpretive Plan, Including Site History, of the
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Catalog Cards, Films, "Desert Training Center, IX Corps Maneuvers"

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Bureau of Land Management Interpretive Plan, Including Site History, for the Former Desert Training Center - California - Arizona Maneuver Area, 1985

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Memorandum Relative to Access Road Construction, Camp Granite, California - Arizona Maneuver Area, 2 June 1943

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Entry 158: Special Assistant for Construction - MJ Madigan, General Correspondence, 1940-1945

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Entry 139: Readjustment Division, Central Decimal Files, 1943-1946
- RG 165 (Records of War Department General and Special Staffs)
Entry 258: Installations Branch, Reports and Correspondence Relating to Construction, Utilization, and Disposal of Army Installations, 1944-1947
Entry 484D: Federal Works Agency Project Files, 1940-1946
- RG 168 (Records of the Bureau of the National Guard)
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- RG 175 (Records of the Chemical Warfare Service)
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- RG 291 (Records of the Federal Property Resources Service)
Entry 5: Real Property Disposal Case Files, 1962
- RG 319 (Records of the Army Staff)
Entry 47: Army Intelligence Project Decimal File, 1941-1945

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Entry 1890AA: Formerly Classified General Correspondence (Subject Files), 1936-1954

Entry 1892: Classified Geographic File, 1936-1945

Entry 1892A: General Correspondence (Geographic File), 1936-1945

RG 107 (Records of the Office of the Secretary of War)

Entry 102: Office, Administrative Assistant to the Secretary of War, Project Decimal File, 1943-January 1947

Entry 158: Special Assistant for Construction - MJ Madigan, General Correspondence, 1940-1945

Entry 159: Special Assistant for Construction - MJ Madigan, Projects, 1940-1945

RG 111 (Records of the Office of the Chief Signal Officer)

Entry: Unclassified Central Decimal Files, 1941-1957

RG 112 (Records of the Office of the Surgeon General)

Entry 31: Geographic Series, 1938-1946

Entry 32: Geographic Series (Formerly Security Classified), 1938-1946

- RG 160 (Records of the Army Service Forces)
Entry 27: Mobilization Division, Command Installation Branch, Correspondence File, 1942-1946
Entry 138: Readjustment Division, Central Decimal Files, 1943-1944
Entry 139: Readjustment Division, Central Decimal Files, 1943-1946
- RG 165 (Records of War Department General and Special Staffs)
Entry 258: Installations Branch, Reports and Correspondence Relating to Construction, Utilization, and Disposal of Army Installations, 1944-1947
Entry 484D: Federal Works Agency Project Files, 1940-1946
- RG 168 (Records of the Bureau of the National Guard)
Entry 344: State Decimal Files, 1941-1947
Entry 348: State Guard State Files, 1941-1949
- RG 175 (Records of the Chemical Warfare Service)
Entry 2A: General Correspondence (Subject Series), 1942-1945
Entry 2B: Correspondence with the War Department and Other Government Agencies, Army Commands and Units, and Schools (Miscellaneous Series), 1942-1945
- RG 207 (Records of the Housing and Home Finance Agency)
Entry 24: General National Housing Records, War Housing Program, 1942-1947
- RG 218 (Records of the U.S. Joint Chiefs of Staff)
Entry: Series, 1942-1959, Geographic File
- RG 269 (Records of the General Services Administration)
Entry 62: Real Property Disposal Case Files Transferred from the Farm Credit Administration, 1945-1953
- RG 270 (Records of the War Assets Administration)
Entry 3: Office of Information, Subject Files, 1946-1959
- RG 291 (Records of the Federal Property Resources Service)
Entry 5: Real Property Disposal Case Files, 1962
- RG 319 (Records of the Army Staff)
Entry 47: Army Intelligence Project Decimal File, 1941-1945

***NARA - SUITLAND REFERENCE BRANCH
SUITLAND, MD***

RG 77 (Records of the Office of the Chief of Engineers)
Entry 391: Construction Completion Reports, 1917-1943
Entry 393: Historical Records of Buildings at Active Army Posts, 1905-1942

RG 156 (Records of the Office of the Chief of Ordnance)
Entry 36: General Correspondence, 1917-1941
Entry 39: Confidential Correspondence, 1917-1940

RG 175 (Records of the Chemical Warfare Service)
Entry 4: Secret & Confidential Central Correspondence, 1918-1942

RG 336 (Records of the Office of the Chief of Transportation)
Entry: Historical Program Files, 1940-1950

RG 338 (Records of U.S. Army Commands, 1942-)
Entry: Records of Posts, Camps and Stations
9th Service Command
Western Defense Command

RG 394 (Records of U.S. Army Continental Commands, 1920-1942)
Entry 296: General Correspondence of the Construction Division, 1916-1945
Entry 298: Historical Reports Relating to Post Planning, 1899-1945

RG 407 (Records of the Adjutant General's Office, 1917-)
Entry 427: WWII Operations Reports

***SMITHSONIAN NATIONAL AIR AND SPACE MUSEUM
WASHINGTON, DC***

Collections Specified in Project Work Plan

***WASHINGTON NATIONAL RECORD CENTER
SUITLAND, MD***

RG 77 (Records of the Office of the Chief of Engineers)
Accession A52-117
Accession A52-259
Accession 68A-1932

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

CAMP IRON MOUNTAIN

***NARA, PACIFIC SOUTHWEST REGION
LAGUNA NIGUEL, CA***

RG 49, Records of the Bureau of Land Management
Box #1029

Memo, Subj: Contamination of Land by the Defense Agencies,
Apr 27 1962

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART A
POSITIVE FINDINGS

CAMP GRANITE

***NARA, PACIFIC SOUTHWEST REGION
LAGUNA NIGUEL, CA***

RG 49, Records of the Bureau of Land Management

Box #1029

Memo, Subj: Contamination of Land by the Defense Agencies,
Apr 27 1962

Plat Map Files by Township and Range

Plat Maps

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART B
NEGATIVE FINDINGS

CAMP IRON MOUNTAIN

NARA, PACIFIC SOUTHWEST REGION
LAGUNA NIGUEL, CA

RG 30, Records of the Bureau of Public Roads
All Entries
Nothing Found

RG 77, Records of the Office of the Chief of Engineers
All Entries
Nothing Found

RG 92, Records of the Quartermaster General
All Entries
Nothing Found

RG 111, Records of the Office of the Chief Signal Officer
Box #1
Nothing of Value to this ASR Found

RG 156, Records of the Chief of Ordnance
All Entries
Nothing Found

RG 270, Records of the War Assets Administration
All Entries
Nothing Found

RG 338, Records of U.S. Army Commands
All Entries
Nothing Found

**NARA, NATIONAL PERSONNEL RECORDS CENTER
ST LOUIS, MO**

All Accessions
Nothing Found

**NARA, FEDERAL RECORDS CENTER
SAN BRUNO, CA**

RG 77, Records of the Office of The Chief of Engineers
Accession #077-76L1483
Boxes #115-121,123-125,127-130,137-145
Nothing of Value to this ASR Found

RG 121, Records of the Public Building Service
Accession #121-77-0003
Boxes #1,3-8,10-17,1A-5A
Nothing of Value to this ASR Found

RG 269, General Records of the General Services Administration
All Entries
Nothing Found

RG 291, Records of the Federal Property Resources Service
All Entries
Nothing Found

**NARA, PACIFIC SIERRA REGION
SAN BRUNO, CA**

RG 30, Records of the Bureau of Public Roads
All Entries
Nothing Found

RG 49, Records of the Bureau of Land Management
Series #98
Box #1015
Nothing of Value to this ASR Found

Series #98A
Boxes #1098G-1098J (5 Boxes)
Nothing of Value to this ASR Found

RG 77, Records of the Office of the Chief of Engineers
- All Entries
Nothing Found

RG 92, Records of the Office of the Quartermaster General
All Entries
Nothing Found

RG 121, Records of the Public Buildings Service
Accession #9NSS-121-85-009
Box #13
Nothing of Value to this ASR Found

RG 156, Records of the Office of the Chief of Ordnance
All Entries
Nothing Found

RG 219, Records of the Office of Defense Transportation
All Entries
Nothing Found

RG 269, General Records of the General Services Administration
All Entries
Nothing Found

RG 270, Records of the War Assets Administration
All Entries
Nothing Found

RG 291, Records of the Federal Property Resources Service
All Entries
Nothing Found

RG 338, Records of U.S. Army Commands
All Entries
Nothing Found

RG 406, Records of the Federal Highway Administration
Accession #72A1388
Box #9
Nothing of Value to this ASR Found

California FAP Route Reports 1920-1969
Boxes #3-6
Nothing of Value to this ASR Found

SECTION III
REGIONAL NATIONAL ARCHIVES FINDINGS
PART B
NEGATIVE FINDINGS

CAMP GRANITE

NARA, PACIFIC SOUTHWEST REGION
LAGUNA NIGUEL, CA

RG 30, Records of the Bureau of Public Roads
All Entries
Nothing Found

RG 49, Records of the Bureau of Land Management
General Correspondence 1933-1964
Box #1
Nothing of Value to this ASR Found

Records Relating to Misc. Withdrawals and Restorations
1885-1964
Box #1
Nothing of Value to this ASR Found

RG 77, Records of the Office of the Chief of Engineers
All Entries
Nothing Found

RG 92, Records of the Quartermaster General
All Entries
Nothing Found

RG 111, Records of the Office of the Chief Signal Officer
Box #1
Nothing of Value to this ASR Found

RG 121, Records of the Public Building Service
All Entries
Nothing Found

RG 156, Records of the Chief of Ordnance
All Entries
Nothing Found

RG 219, Records of the Office of Defense Transportation
All Entries
Nothing Found

RG 270, Records of the War Assets Administration
Boxes #41,42
Nothing of Value to this ASR Found

RG 338, Records of U.S. Army Commands
All Entries
Nothing Found

**NARA, FEDERAL RECORDS CENTER
LAGUNA NIGUEL, CA**

RG 77, Records of the Office of the Chief of Engineers
All Entries
Nothing Found

**NARA, NATIONAL PERSONNEL RECORDS CENTER
ST LOUIS, MO**

All Accessions
Nothing Found

**NARA, FEDERAL RECORDS CENTER
SAN BRUNO, CA**

RG 77, Records of the Office of The Chief of Engineers
Accession #077-76L1483
Boxes #115-121,123-125,127-130,137-145
Nothing of Value to this ASR Found

RG 121, Records of the Public Building Service
Accession #121-77-0003
Boxes #1,3-8,10-17,1A-5A
Nothing of Value to this ASR Found

RG 269, General Records of the General Services Administration
All Entries
Nothing Found

RG 291, Records of the Federal Property Resources Service
All Entries
Nothing Found

NARA, PACIFIC SIERRA REGION
SAN BRUNO, CA

RG 30, Records of the Bureau of Public Roads
All Entries
Nothing Found

RG 49, Records of the Bureau of Land Management
Series #98
Box #1015
Nothing of Value to this ASR Found

Series #98A
Boxes #1098G-1098J (5 Boxes)
Nothing of Value to this ASR Found

RG 77, Records of the Office of the Chief of Engineers
All Entries
Nothing Found

RG 92, Records of the Office of the Quartermaster General
All Entries
Nothing Found

RG 121, Records of the Public Buildings Service
Accession #9NSS-121-85-009
Box #13
Nothing of Value to this ASR Found

RG 156, Records of the Office of the Chief of Ordnance
All Entries
Nothing Found

RG 219, Records of the Office of Defense Transportation
All Entries
Nothing Found

RG 269, General Records of the General Services Administration
All Entries
Nothing Found

RG 270, Records of the War Assets Administration
All Entries
Nothing Found

RG 291, Records of the Federal Property Resources Service
All Entries
Nothing Found

RG 338, Records of U.S. Army Commands
All Entries
Nothing Found

RG 406, Records of the Federal Highway Administration
Accession #72A1388
Box #9
Nothing of Value to this ASR Found

California FAP Route Reports 1920-1969
Boxes #3-6
Nothing of Value to this ASR Found

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX C

GLOSSARY

APPENDIX C

Glossary

AFB	Air Force Base
AR	Army Regulation
ASR	Archives Search Report
BD/DR	Building Demolition/Debris Removal
BLM	Bureau of Land Management
CAMA	California-Arizona Maneuver Area
CEHNC	U.S. Army Corps of Engineer, Engineering and Support Center, Huntsville
CENCD	U.S. Army Engineer, North Central Division
CENCR	U.S. Army Engineer, Rock Island District
CESPL	U.S. Army Engineer, Los Angeles District
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWM	Chemical Warfare Material
DA	Department of Army
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DNT	Dinitrotoluene
DTC	Desert Training Center
ECM	Earth Covered Magazines
EOD	Explosive Ordnance Disposal
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
FDE	Findings and Determination of Eligibility
FS	Feasibility Study
ft	Feet/Foot
FUDS	Formerly Used Defense Site(s)
GSA	General Services Administration
HE	High Explosive
HTRW	Hazardous, Toxic and Radiological Waste
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program
MOU	Memorandum of Understanding
OE	Ordnance and Explosives
PA	Preliminary Assessment
PLO	Public Land Order

PRP	Potentially Responsible Party
R	Range
RA	Remedial Action
RAC	Risk Assessment Code
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
Ref	Reference
RFC	Reconstruction Finance Corporation
RG	Record Group
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SEC	Section
SHPO	State Historical Preservation Office
SI	Site Investigation or Site Inspection
T	Township
TM	Technical Manual
USA	U.S. Army
USACE	U.S. Army Corps of Engineers
USADACS	U.S. Army Defense Ammunition Center and School
USATCES	U.S. Army Technical Center for Explosives Safety
USAF	U.S. Air Force
UXO	Unexploded Ordnance
WAA	War Assets Administration
WWII	World War II

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX D

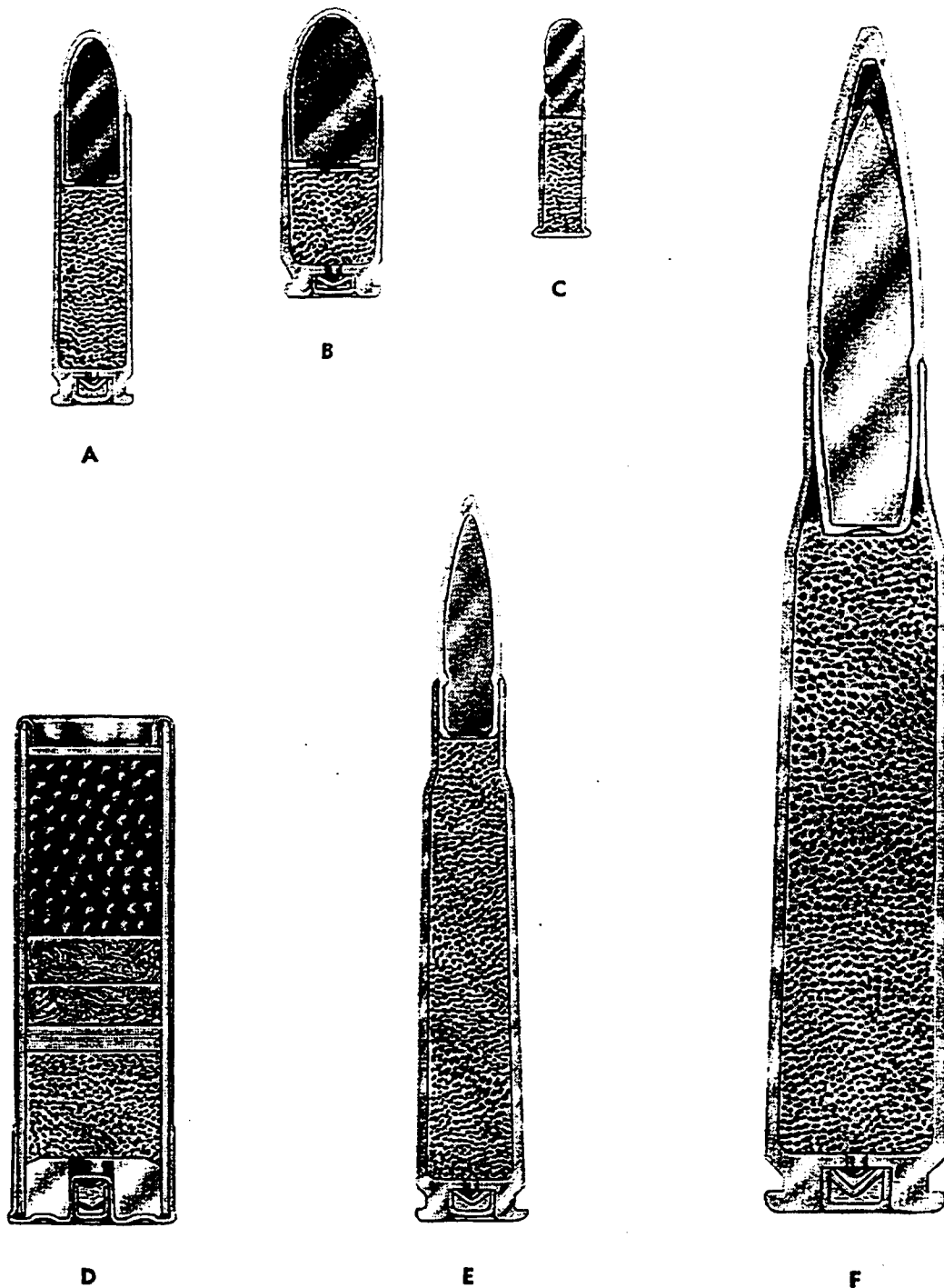
TEXTS/MANUALS

APPENDIX D
TEXTS / MANUALS

Table of Contents

- D-1. Small Arms Ammunition (B-27).
- D-2. 37mm Ammunition (B-28).
- D-3. 57mm Ammunition (B-28).
- D-4. 60mm Mortar Ammunition (B-28).
- D-5. 81mm Mortar Ammunition (B-28).
- D-6. 75mm Ammunition (B-28).
- D-7. 76mm Ammunition (B-28).
- D-8. 90mm Ammunition (B-28).
- D-9. 105mm Ammunition (B-28).
- D-10. 155mm Ammunition (B-28).
- D-11. 2.36-inch Rocket (B-28).
- D-12. Grenades, Hand/Rifle/Smoke/WP/HC (B-28).
- D-13. Mines, Antipersonnel/Antitank (B-28).
- D-14. Flares (B-28).
- D-15. Signals (B-28)
- D-16. Smoke Pots (B-29).
- D-17. Bombs, Aircraft (B-28).

Classes of Ammunition

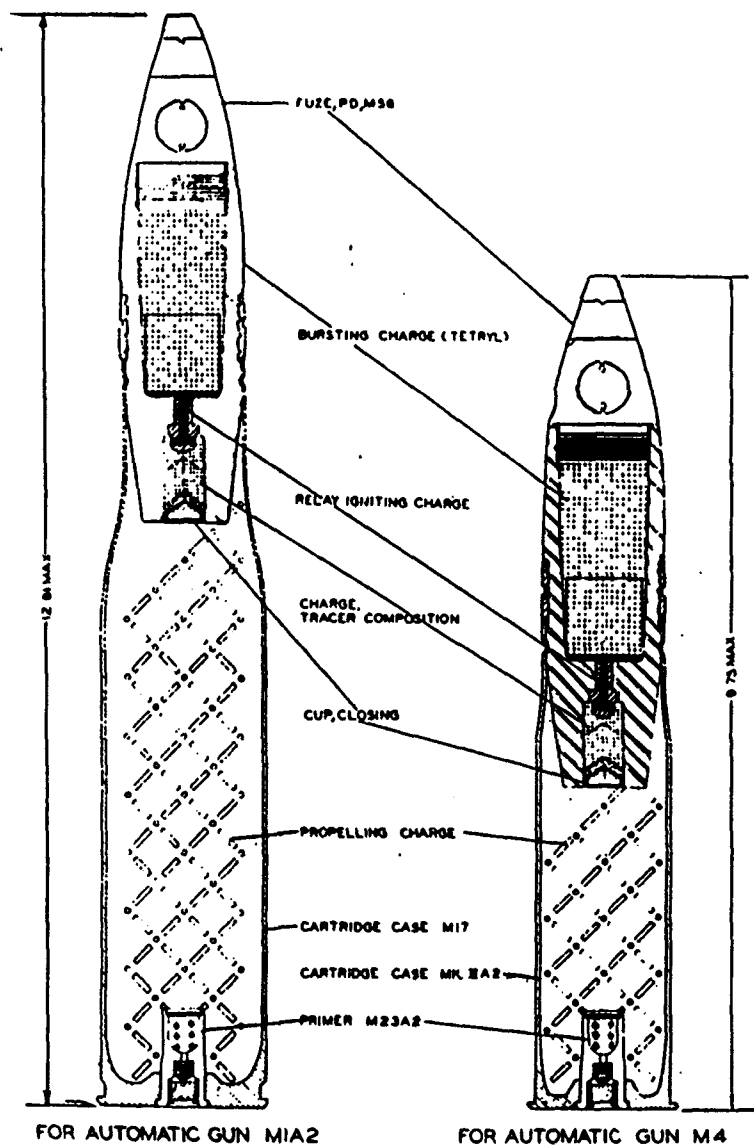


- A - CAL. .30 CARBINE BALL CARTRIDGE, M1
- B - CAL. .45 BALL CARTRIDGE, M1911
- C - CAL. .22 LONG RIFLE BALL CARTRIDGE
- D - 12-GAGE SHOTGUN SHELL
- E - CAL. .30 BALL CARTRIDGE, M2
- F - CAL. .50 BALL CARTRIDGE, M2

RA PD 89561A

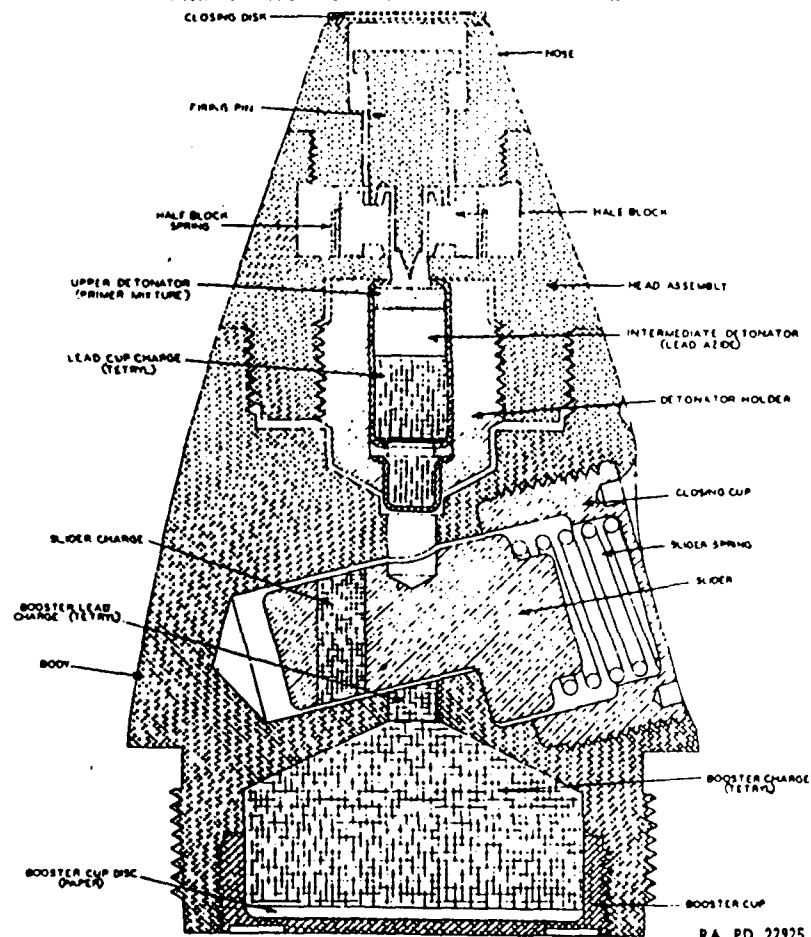
Fig. e 26 - Types of Small-arms Ammunition - Cross Section

TM 9-1904



RA PD 22924

AMMUNITION INSPECTION GUIDE

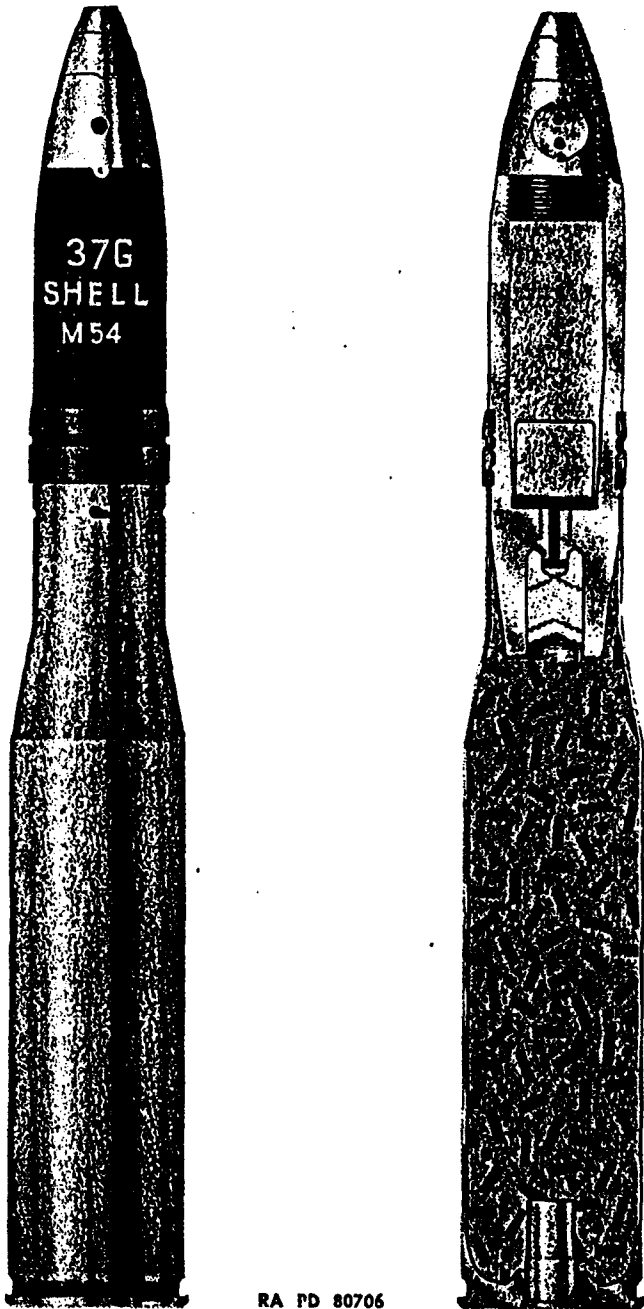


RA PD 22925

Figure 139 — FUZE, P.D., M56

Figure 138 — SHELL, H.E., M54, for 37-mm Guns M1A2 and M4

ARTILLERY AMMUNITION



RA PD 80706

Figure 33 — SHELL, Fixed, H.E., M54, w/TRACER, SD, and FUZE, P.D., M56, 37-mm Auto. Guns, M1A2 and AN-M9

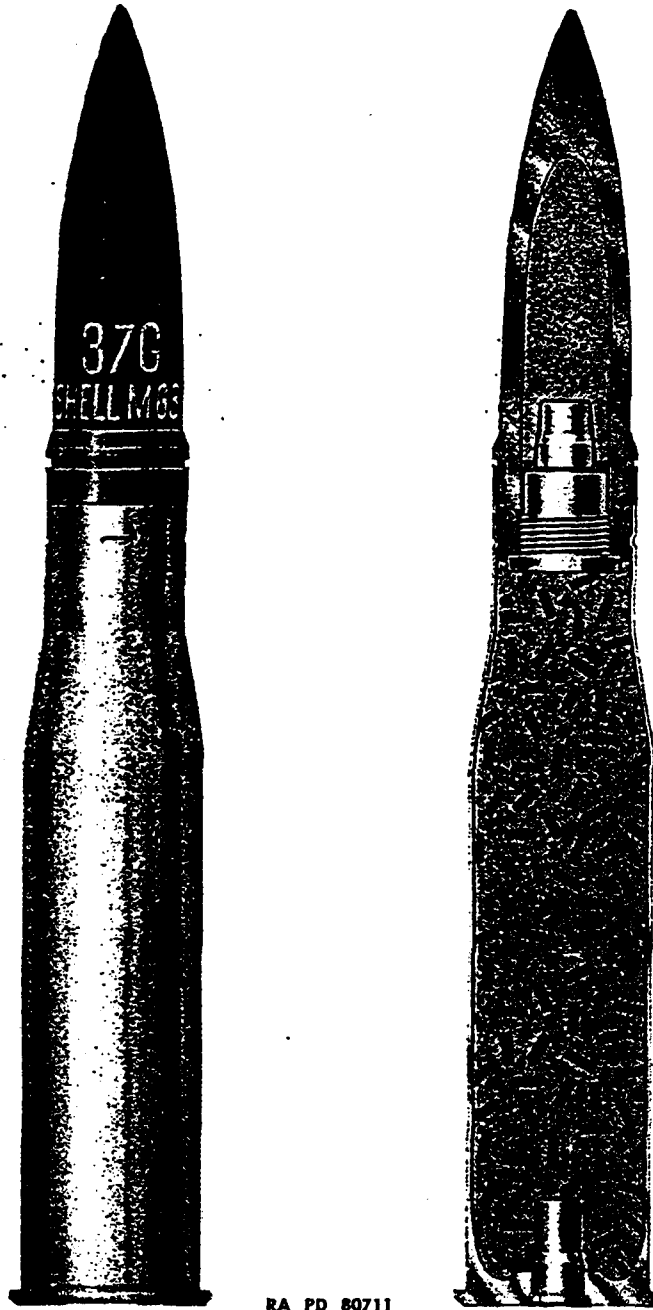
ARTILLERY AMMUNITION



RA PD 80707

Figure 35 — SHOT, Fixed, A.P.C., M59, w/TRACER, 37-mm Auto. Gun, M1A2

ARTILLERY AMMUNITION



RA PD 80711

Figure 38 — SHELL, Fixed, H.E., M63, w/FUZE, B.D., M58, 37-mm
Guns, M3, M3A1, M5, M5A1, and M6

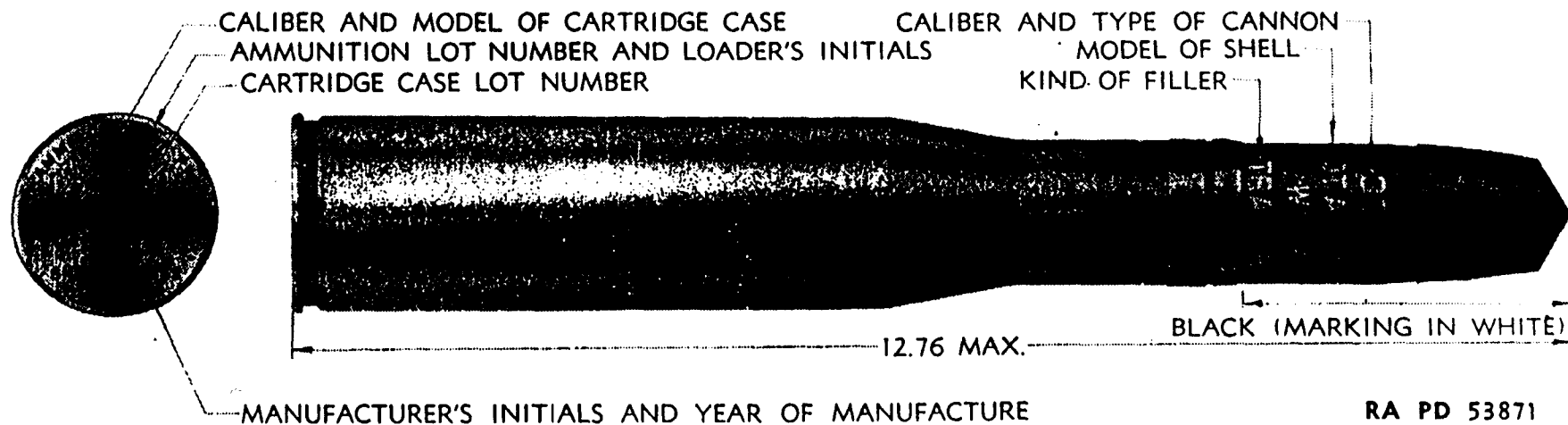


Figure 168 – SHOT, Fixed, A.P.C., M59, W/TRACER, 37-mm Auto. Gun, M1A2 (Antiaircraft)

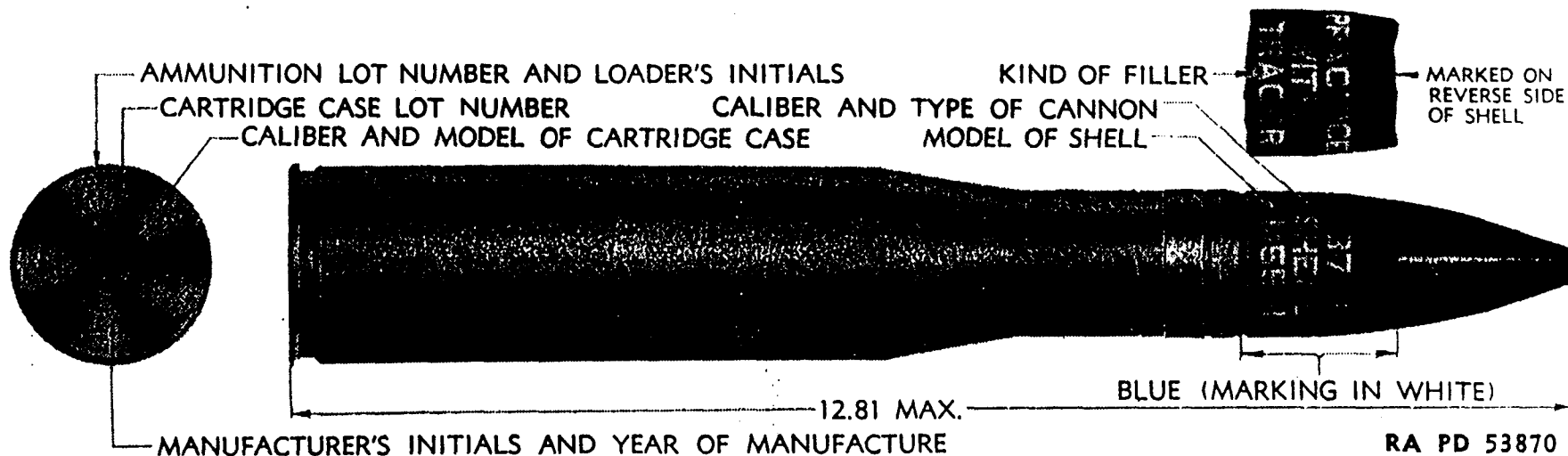


Figure 169 – SHELL, Fixed, Practice, M55A1, W/TRACER, and FUZE, Dummy, M50 37-mm Auto. Guns, M1A2 and M9

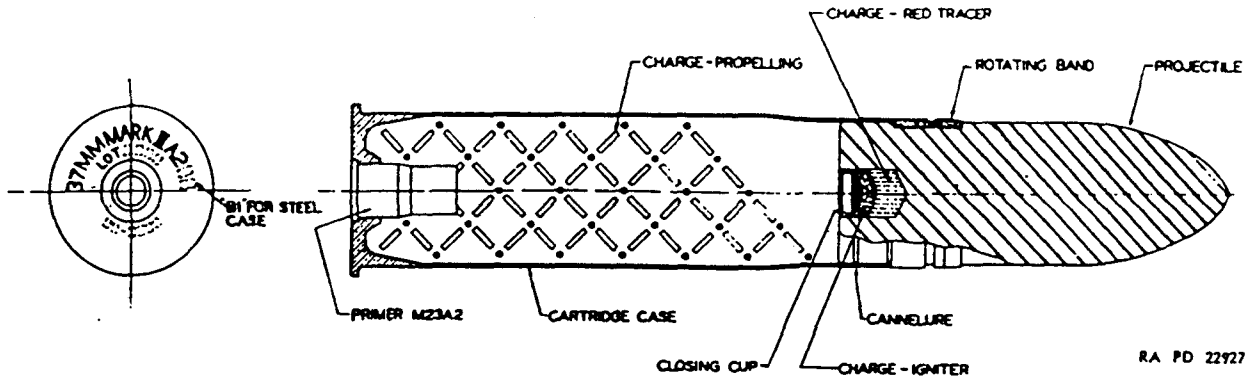


Figure 141 — SHOT, AP, M80, for 37-mm Gun M4

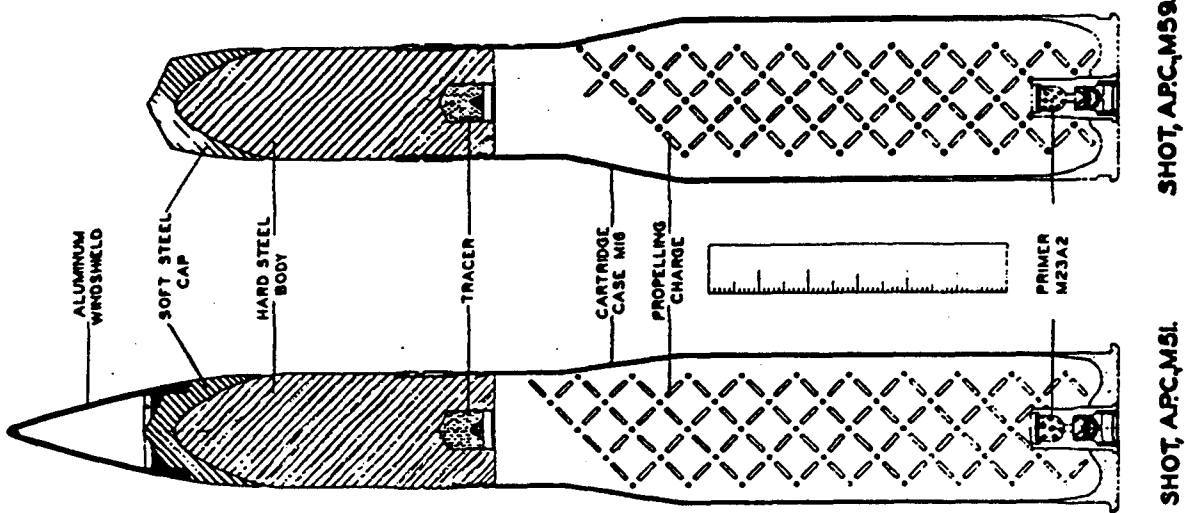


Figure 136 — SHOT, APC, M51 (M1A2 Guns), and SHOT, APC, M59 (M3, M3A1, M5, and M6 Guns)

ARTILLERY AMMUNITION

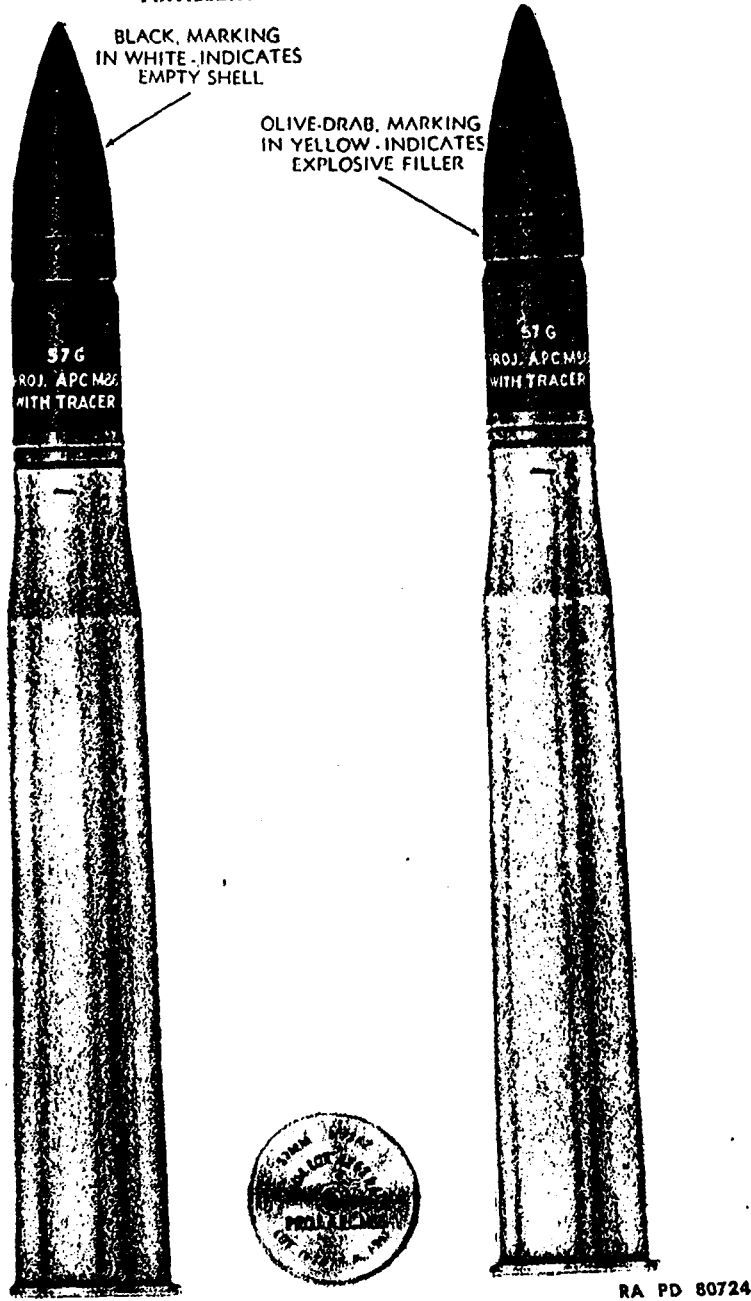


Figure 55 — Complete Rounds of 57-mm Armor-piercing-capped Ammunition

FIXED AND SEMIFIXED ROUNDS AND SEPARATE-LOADING PROJECTILES

73. CARTRIDGE, APC-T, M86, W/FUZE, B.D., M72, 57-MM GUNS, M1 AND 6 PR. 7 CWT. (BRITISH) (fig. 55), is provided for use against armor-protected targets. The complete round consists of the standard (or alternative steel) cartridge case, primer and propelling charge, assembled to a loaded armor-piercing-capped projectile. Construction of the projectile is similar to that of corresponding armor-piercing-capped projectiles in other calibers. The body is of hardened steel, and has a square base and an ogival nose. A face-hardened softer steel cap is sweated to the nose to increase the effectiveness against face-hardened plate. For better ballistics, a light-weight ogival ballistic cap or windshield is secured to the cap by crimping or by means of a threaded adapter. An M72 Base-detonating Fuze is fitted to the base to explode the small high-explosive charge of explosive D. The fuze has incorporated in it the M17 Detonator Assembly which detonates the explosive D and tetryl pellet bursting charge. The fuze functions with delay action and has a tracer in its base which operates independently of the fuze mechanism. The tracer burns for approximately 4.5 seconds after being ignited by the propelling charge, providing a visible trace for observation purposes over a range of about 3,000 yards.

DATA

Weight of complete round.....	13.88 lb	Muzzle velocity	2,700 ft per sec*
Length of complete round	26.72 in.	Maximum range	13,555 yd
Length of projectile		Penetration (in. at 0-deg	
(capped)	10.31 in.	obliquity of face-hardened	
Length of cartridge case.....	17.40 in.	plate at 1,000 yd).....	3.7
Width of rotating band.....	0.79 in.	Penetration (in. at 0-deg	
Type of base.....	Square	obliquity of homogeneous	
Radius of ogive.....	7.21 cal.	plate at 1,000 yd).....	3.6

*—Muzzle velocity in the British 6 Pr. Mk. III Gun is 2,580 feet per second.

74. CARTRIDGE, APC-T, M86, 57-MM GUNS, M1 AND 6 PR. 7 CWT. (BRITISH) (fig. 55), is assembled with an earlier type of M86 Projectile which has been superseded for manufacture by the loaded and fuzed projectile. In this projectile, the bursting charge cavity is left empty, hence there is no blast effect at the target. The base hole is closed by a steel plug which contains a tracer similar to that in the fuze of the standard projectile.

DATA

Weight of complete round.....	12.99 lb	Width of rotating band.....	0.79 in.
Length of complete round	26.72 in.	Type of base.....	Square
Length of projectile.....	10.31 in.	Radius of ogive.....	7.21 cal.
Length of cartridge case.....	17.40 in.	Muzzle velocity	2,700 ft per sec*
		Maximum range	13,555 yd

*—Muzzle velocity in the British 6 Pr. Mk. III Gun is 2,580 feet per second.

Classes of Ammunition



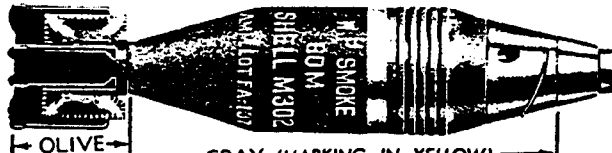
OLIVE DRAB
(MARKING IN YELLOW)

HE SHELL, M49A2, W. PD FUZE, M52



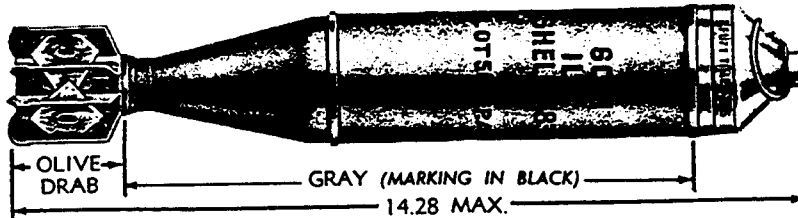
OLIVE DRAB
BLUE
(MARKING IN WHITE)

PRACTICE SHELL, M50A2, W. PD FUZE, M52



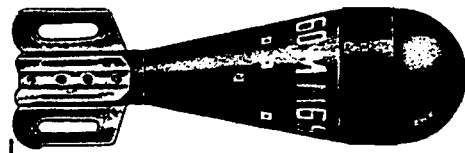
OLIVE DRAB
GRAY (MARKING IN YELLOW)

WP SMOKE SHELL, M302, W. PD FUZE, M82



OLIVE DRAB
GRAY (MARKING IN BLACK)
14.28 MAX.

ILLUMINATING SHELL, M83A1, W. TIME FUZE, M65



BLACK (MARKING IN WHITE)

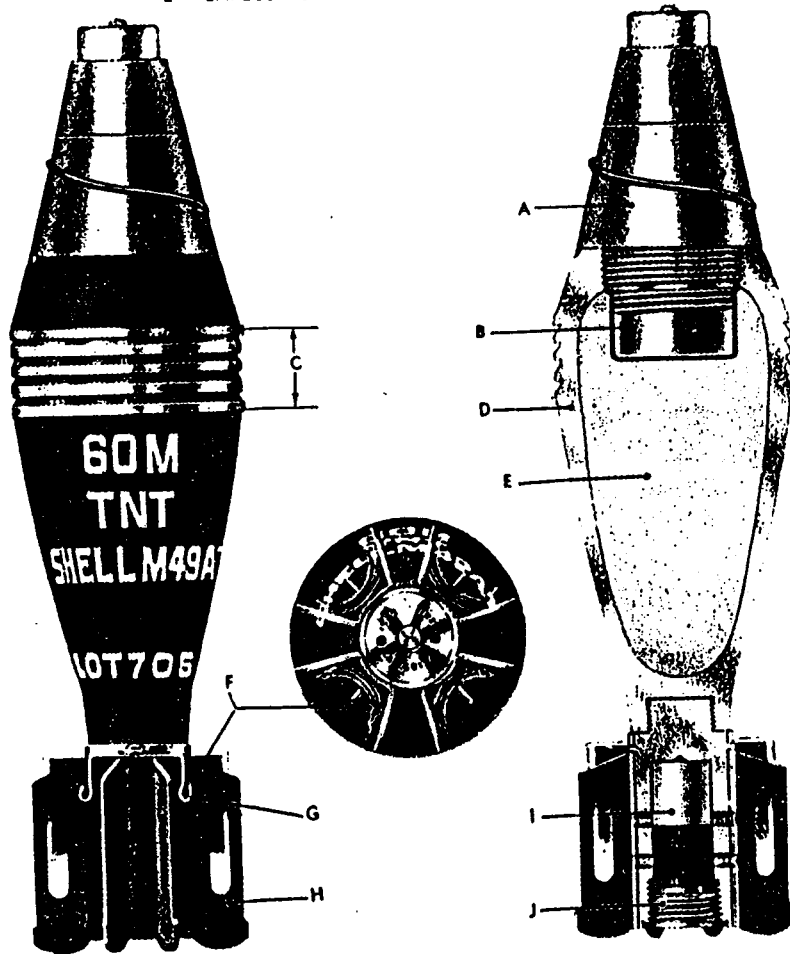
TRAINING SHELL, M69

RA PD 64448B

Figure 50 — 60-mm Mortar Ammunition

ARTILLERY AMMUNITION

- A — FUZE
- B — BOOSTER
- C — GAS CHECK BAND
- D — SHELL BODY
- E — EXPLOSIVE FILLER
- F — PROPELLENT INCREMENT
- G — INCREMENT HOLDER
- H — FIN ASSEMBLY
- I — IGNITION CARTRIDGE
- J — PERCUSSION PRIMER



D-4

RA PD 80729

Figure 57 — SHELL, H.E., M49A2, w/FUZE, P.D., M52, 60-mm Mortars, M1 and M2, Complete Round

FIXED AND SEMIFIXED ROUNDS AND SEPARATE-LOADING PROJECTILES

79. SHELL, H.E., M49A2, W/FUZE, P.D., M52, 60-MM MORTARS, M1 AND M2, COMPLETE ROUND (fig. 57), is the only high-explosive round provided for the 60-mm mortars. A complete round consists of six components—the M49A2 High-explosive Shell, an M52 Fuze, a fin assembly, an M3 or M3A1 (4-increment) Propelling Charge, an M5A1 Ignition Cartridge, and an M32 Primer. All are issued and shipped assembled in a complete round which is ready for firing except for adjustment of the propelling charge. The shell body consists of a thin-walled cast or forged steel casing formed in a pear or tear-drop shape and threaded at both ends, at the narrow base end to hold the fin assembly and at the nose end to hold the M52 Fuze with its booster. The TNT shell filler is shaped at the forward end to provide a suitable well for the booster. The fin assembly consists of a 2½-inch long steel cylinder to which is welded four double-bladed fins. The hollow shaft is threaded externally at the fore end to screw into the shell base, where it is staked in position. The rear is threaded internally to hold the M32 Primer. This primer, which consists of a threaded head containing the percussion element and a short housing holding the primer mixture, is screwed into the shaft after insertion of the ignition cartridge. The M5A1 Ignition Cartridge is a cartridge paper tube approximately 5/8 inch in diameter, closed at both ends by a chipboard disk, and holding 40 grains of propelling powder. This charge provides the propelling charge for the short ranges. For the longer ranges, the increments of the M3 or M3A1 (cellophane-wrapped), Propelling Charge are provided in addition to the ignition cartridge. As shipped, each increment is inserted in one of the four spaces within the fins and held in position there by the spring clip of the increment holder. Any or all of the increments may be removed as required.

DATA

	With M52 or M52B2 Fuze	With M52B1 (Plastic) Fuze
Weight of complete round	2.96 lb	2.80 lb
Length of complete round	9.54 in.	9.54 in.
Muzzle velocity	518 ft per sec*	535 ft per sec*
Maximum range (at 45 deg).....	1,984 yd*	2,017 yd*

*—For charge 4 (cartridge plus 4 increments). Corresponding data for other charges are:

Charge 0 (Ignition Cartridge M5A1 only)	Muzzle Velocity		Maximum Range	
	w/M52 or M52B2	w/M52B1	w/M52 or M52B2	w/M52B1
.....	189	195	332	373
Charge 1 (Cartridge and 1 increment).....	292	301	784	816
Charge 2 (Cartridge plus 2 increments).....	377	389	1,204	1,244
Charge 3 (Cartridge plus 3 increments).....	449	463	1,594	1,670

ARTILLERY AMMUNITION

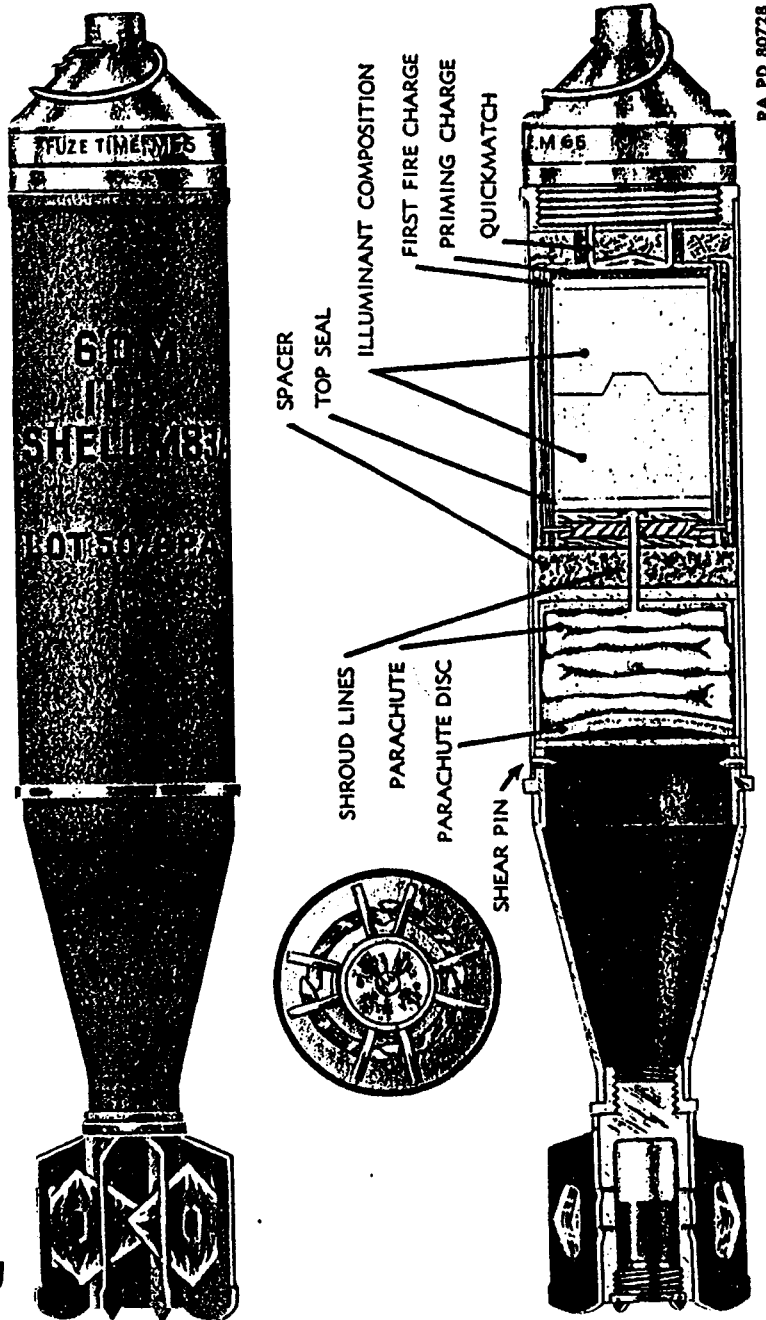


Figure 58 — SHELL, Illuminating, M83A1, w/FUZE, Time (Fixed), M65, 60-mm Mortars, M1 and M2, Complete Round

FIXED AND SEMIFIXED ROUNDS AND SEPARATE-LOADING PROJECTILES

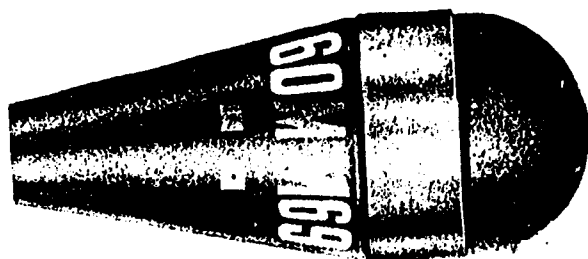
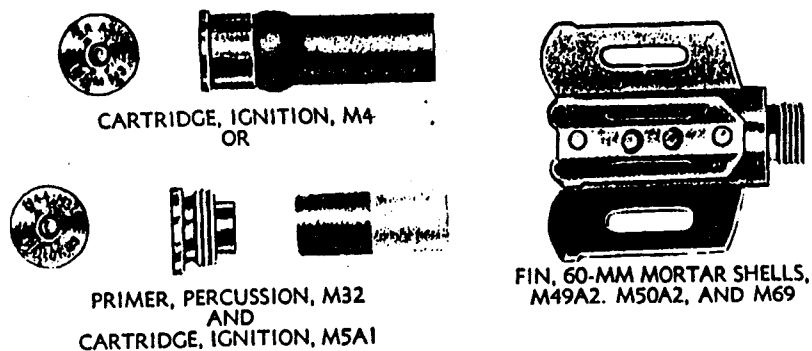
80. SHELL, ILLUMINATING, M83A1, W/FUZE, TIME (FIXED), M65, 60-MM MORTARS, M1 AND M2, COMPLETE ROUND (fig. 58), is intended for use in night missions requiring illumination for purposes of observation. The complete round consists of six components—the M83A1 Shell, an M65 Time Fuze, a fin assembly, an M3 or M3A1 (cellophane-wrapped) Propelling Charge, an M5A1 Ignition Cartridge, and an M32 Primer. These components are assembled into the complete round, before shipment, in the same manner as the M49A2 High-explosive Round. The fin assembly, primer, and ignition cartridge are the same, and function alike, in both types of round. The M83A1 Shell supersedes the M83 which was used with the M4 Propelling Charge the increments of which consisted of 28 grains of powder each, as compared with the M3 increments which weigh 35 grains each. The M83A1 Shell is made up of four major parts: a body tube assembly, illuminant assembly, a parachute assembly, and a tail assembly. The body assembly is a thin-walled steel tubing to the front end of which is welded a steel adapter or collar threaded internally to seat the fuze. The base end is closed by the tail assembly. The tail assembly is a light-weight metal cone fitted at the front end with a coupling or collar which is inserted in the body tube and held in position there by four equally spaced shear pins. The base end of the cone is fitted with an adapter which holds the fins, ignition cartridge, and primer. The illuminant assembly consists of a quick match, a black powder priming or expelling charge, a first-fire composition, and the main charge of illuminant composition held in a boxboard casing. This casing is attached to the parachute by a suspension wire 18 inches long. In functioning, the fuze ignites the quick match (after approx 15 sec), the quick match in turn igniting the black powder charge. This charge expels the parachute and illuminant charge assemblies from the shell, at the same time igniting the illuminant charge. The illuminant composition burns for at least 25 seconds, with a minimum candlepower of 145,000 candles when the standard composition is used, and of 110,000 candles when the substitute composition is used. It drops at the rate of 10 feet per second.

DATA

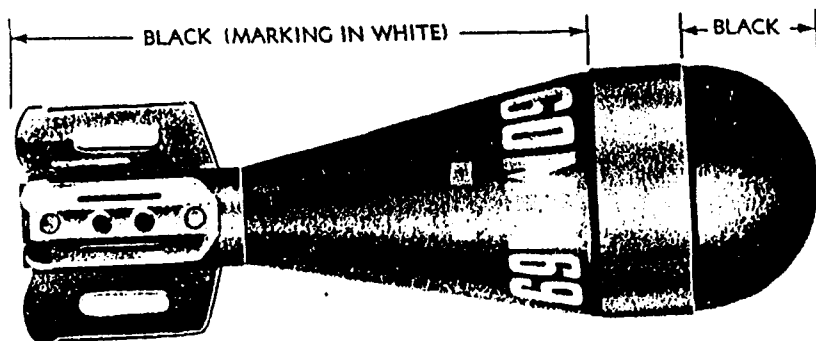
Weight of complete round	3.77 lb	Maximum range (at 45 deg):
Length of complete round....	14.28 in.	Horizontal
Length of projectile, w/fin....	14.28 in.	Height of burst
		153 yd*

*—For charge 4 (ignition cartridge plus 4 increments).

ARTILLERY AMMUNITION



SHELL, TRAINING, M69, 60-MM MORTARS, M1 AND M2, W/O FINS, IGNITION CARTRIDGE AND PRIMER
A — COMPONENTS



B — ASSEMBLED

RA PD 26817

D-4

Figure 4 SHELL, Training, M69, 60-mm Mortars, M1 and M2

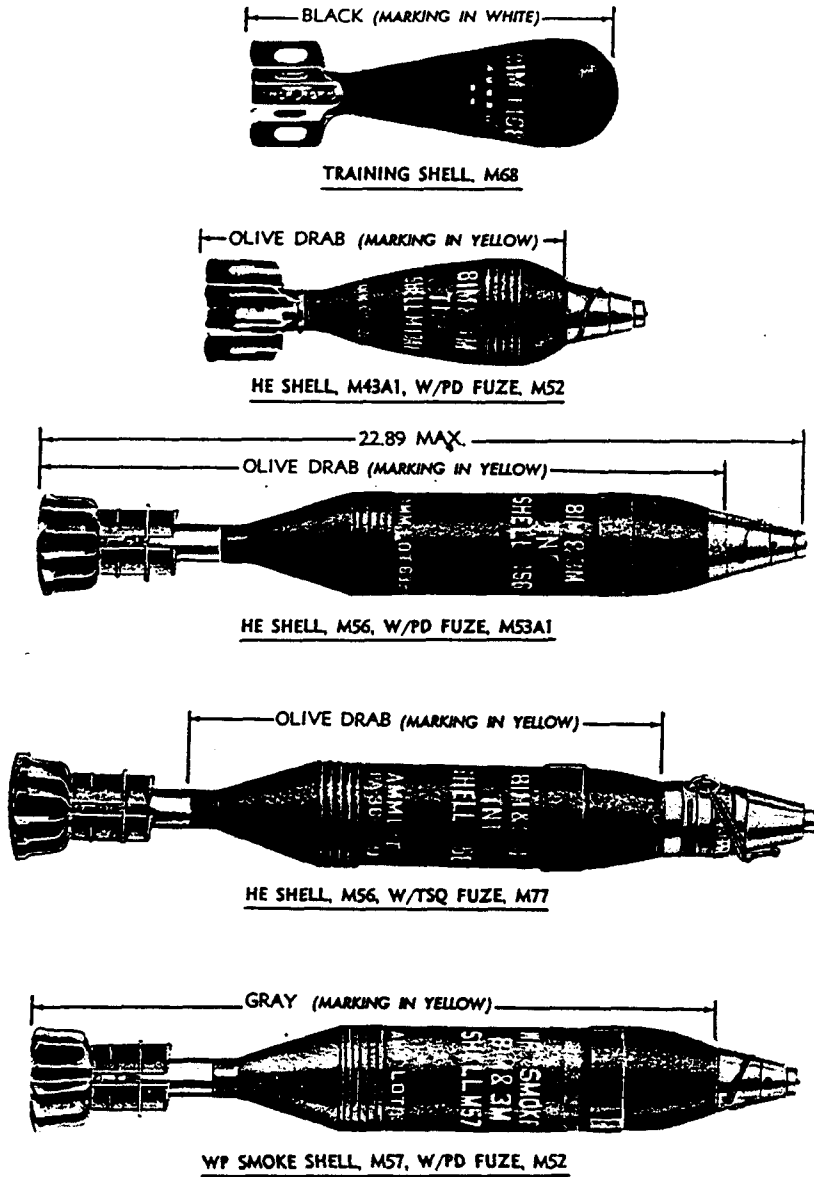
FIXED AND SEMIFIXED ROUNDS AND SEPARATE-LOADING PROJECTILES

83. SHELL, TRAINING, M69, 60-MM MORTARS, W/O FIN, IGNITION CARTRIDGE, AND PRIMER (fig. 60), is a training round provided for drill in loading and firing the mortar. The projectile differs from that in the practice ammunition in that it is completely inert and has no fuze. It consists of a solid cast-iron body of pear or tear-drop shape, drilled at the base end to hold a service-type fin assembly. No propelling charge increments are provided for the round, but the M4 Ignition Cartridge, or if not available the combination of the M5A1 Ignition Cartridge and M32 Percussion Primer is issued for use in firing the projectile. Unlike the other ammunition for the mortar, the three components are issued and shipped separately, to facilitate replacement of damaged or worn out parts and the procurement of additional ignition cartridges. Ten training shells and accessories are packed in an equipment training kit for field use.

DATA

Weight of complete round.....	4.53 lb.	Length of shell, w/o fin.....	5.54
Weight of shell, w/o fin.....	4.07	Muzzle velocity	152.5 ft per sec
Length of complete round....	7.70 in.	Maximum range (at 45 deg)....	235 yd

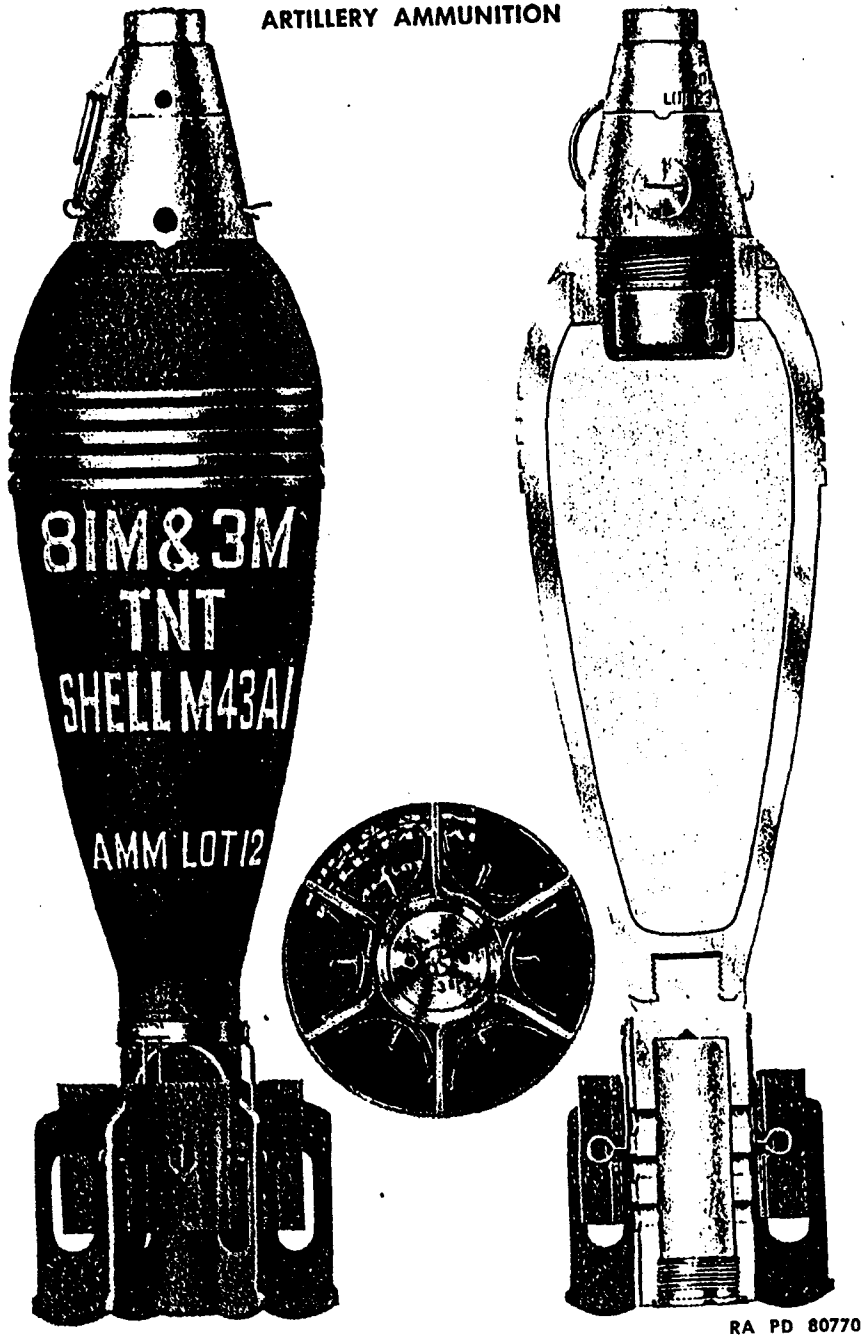
Classes of Ammunition



RA PD 64449A

Figure 51 – 81-mm Mortar Ammunition

ARTILLERY AMMUNITION



FIXED AND SEMIFIXED ROUNDS AND SEPARATE-LOADING PROJECTILES

180. SHELL, H.E., M43A1, W/FUZE, P.D., M52, 81-MM MORTAR, COMPLETE ROUND (fig. 99), is a light-weight round provided for fragmentation and blast effect. The complete round is made up of six components: the M43A1 Shell, an M52 Superquick Fuze, a fin assembly, an M1 Propellant Charge, an M6 Ignition Cartridge, and an M33 Percussion Primer. The shell consists of a thin-walled egg-shaped steel casing holding a 1.23-pound high-explosive charge. The shell casing is cut and threaded at the nose end to fit an adapter into which the M52 Fuze with its booster is screwed after the shell is loaded, the bursting charge being shaped at the free end to provide a suitable well for the booster. The base of the shell is drilled and threaded to hold the fin assembly. The fin assembly consists of three double-bladed fins welded to a cylindrical shaft. The shaft is drilled and threaded internally at the rear to hold the igniter cartridge and the primer, the latter holding the cartridge in position. The shaft is threaded at the front end to screw into the base of the shell. Vents in the shaft provide for transmission of the cartridge flash to the propellant increments and facilitate burning and disintegration of the cartridge and case. The propellant increments are pushed into the spaces between the fin blades and held there by a spring clip arrangement which permits easy removal as desired. The M43A1 Round may be adapted for the 3-inch trench mortar by reducing the outer zone propelling charge from six to four increments. With the M52 Fuze, the shell functions with superquick action and before any appreciable penetration of the target.

DATA

Weight of complete round.....	7.10 lb	Length of projectile, w/fin....	13.27 in.
Length of complete round.....	13.27 in.	Muzzle velocity	700 ft per sec*
		Maximum range	3,290 yd*

*—For six increments (full charge). Corresponding data for other charges are:

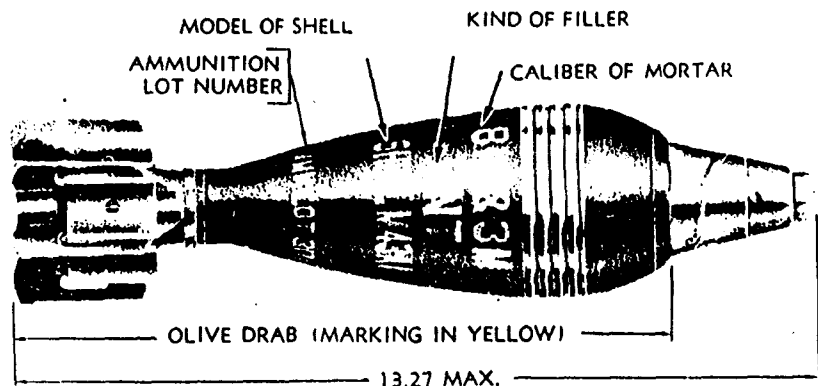
	Muzzle Velocity (ft per sec)	Maximum Range (yd)
Charge 0 (ignition cartridge only)	235	541
Charge 1 (ignition cartridge plus one increment).....	332	1,020
Charge 2 (ignition cartridge plus two increments).....	419	1,502
Charge 3 (ignition cartridge plus three increments).....	449	2,042
Charge 4 (ignition cartridge plus four increments).....	572	2,517
Charge 5 (ignition cartridge plus five increments).....	638	2,963

Figure 99 — SHELL, H.E., M43A1, w/FUZE, P.D., M52, 81-mm Mortar, Complete Round

SHELL, H.E., M43A1. This shell was designed to replace SHELL, H.E., M43, standard for issue and manufacture (S & M), whereas the SHELL, H.E., M43, is standard for issue (S).

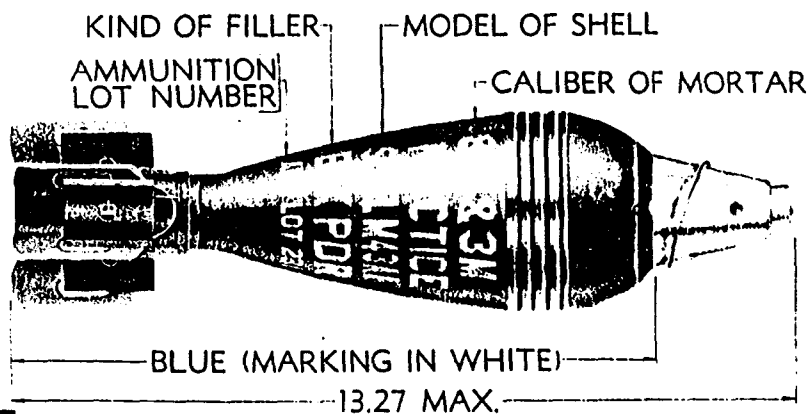
Shell body. The body, filler, adapter, and bakelite fuze well cup are exactly the same as in the M43. The fuze used is the Point-detonating Fuze M52, which has a superquick action. Due to the light weight and blunt nose of this shell, very little penetration can be obtained. This shell, as the M43, is designed, therefore, to produce fragments as its primary function against personnel in the open and against barbed wire entanglements. Fragments to be effective must be above ground. The use of a superquick fuze to burst the shell above ground is therefore mandatory. For details in the functioning of the M52 P.D. Fuze, see page 298 to 300.

Fin assembly. The fin assembly is similar to that previously described. It differs in that the flanges on the fins for holding the propellant increments are omitted, as they are not necessary with the newer type increments. Later models, without any change in designation, have the hollow end threaded in the inside so as to receive the new percussion primer.



RA PD 72328

Figure 110a — SHELL, H.E., M43A1, 81-mm Mortar



RA PD 7235A

Figure 110b — SHELL, Practice, M43A1, 81-mm Mortar

SMALL ARMS AND TRENCH WARFARE

Ignition cartridge. The Ignition Cartridge M6, red, consists of a cardboard container having approximately 120 grains of double base powder. It supersedes the M3 red and differs from it in that the percussion primer is no longer part of the ignition cartridge but a separate component.

The percussion primer. The Percussion Primer M33 is a relatively new component. The percussion primer is contained in an aluminum head and is threaded so as to screw into the end of the cartridge container after the ignition cartridge has been inserted. The advantage of this type of percussion primer and ignition cartridge is that the whole assembly will leave the mortar with the shell whereas the older type ignition cartridge would, due to the force of setback, at times leave its brass head in the trench mortar weapon, fouling the firing pin and possibly causing a misfire in subsequent rounds.

Propellant increments. The Propellant Increment M1 consists of square strips of double base powder sewn together to form increments. Passing thru these increments will be found holes to increase the burning surface. These sheets are thin and flexible and will not crumple or break as did the old celluloid containers of double base powder used with the M43 Shell. Each increment has 117 grains of double base powder. Occasionally one corner edge of an increment will be cut away (notched) so as to bring the charge to the desired weight and specification. The increments are held in the stabilizer assembly by being placed diagonally in the holes of the fins.

The percussion primer, ignition cartridge and six increments make up the full propelling charge of a total of 822 grains of powder. The increments may be removed to adjust the propelling charge.

Zone of fire and range. This shell has the same number of zones of fire and approximately the same range as described for SHELL, H.E., M43.

Marking and packing. The shell body is painted olive drab with yellow stencil. It is packed one per individual fiber container, six fiber containers per bundle, one bundle per wooden chocolate-stained crate for overseas shipment. The rounds are completely assembled, ready to fire.

SHELL, Practice, M43A1. SHELL, practice, M43A1, is similar to SHELL, H.E., M43A1. The shell body, components used, and packing are identical to the shell previously described. It differs in that the filler consists of 0.16 pound of black powder to act as a spotting charge, and 1.06 pounds of inert filler such as wax, talcum, or rosin which will not crack up in handling. The body is painted blue with white stencil to indicate a practice shell.

ARTILLERY AMMUNITION



RA PD 80772

Figure 101 — SHELL, Smoke, Phosphorus, WP, M57, w/FUZE, P.D., M52, 81-mm Mortar, Complete Round

FIXED AND SEMIFIXED ROUNDS AND SEPARATE-LOADING PROJECTILES

182. SHELL, SMOKE, PHOSPHORUS, WP, M57, W/FUZE, P.D., M52, 81-MM MORTAR, COMPLETE ROUND (fig. 101), is assembled from the same components as are used with the M56 High-explosive Round (par. 181) but is loaded with a phosphorus filler for screening purposes. To adapt the M57 Shell for this filler, the nose of the shell casing is fitted with a special adapter. This serves to provide the tight seal necessary with chemical loading and also acts as the seat for the burster assembly. The burster consists of a thin-walled tubing filled with a small charge of tetryl. This assembly extends from the nose longitudinally through the chemical filler for about three-quarters the length of the cavity. Its function is to burst the shell casing and scatter the chemical contents. The superquick type of fuze is fitted to the shell to provide for burst before penetration. White phosphorus burns with a dense smoke and has an incendiary effect. For firing the 3-inch trench mortar, the maximum charge is reduced from four to three increments.

DATA

Weight of complete round.....	11.61 lb*	Length of projectile, w/fin....	22.89 in.
Length of complete round.....	22.89 in.	Muzzle velocity	560 ft per sec
		Maximum range.....	2,466 yd†

*—Weight with M52B2 Fuze (plastic head) is 11.57 pounds.
†—For four increments (full charge). Corresponding data for other charges are:

	Muzzle Velocity (ft per sec)	Maximum Range (yd)
Charge 1	297	833
Charge 2	399	1,409
Charge 3	484	1,952

183. SHELL, SMOKE, FS, M57, W/FUZE, P.D., M52, 81-MM MORTAR, COMPLETE ROUND, is assembled from the same components as are used with the M56 High-explosive Round (par. 181), but is loaded with FS, a liquid smoke-producer which functions very much like white phosphorus, but lacks the incendiary effect. It differs from that described in paragraph 182 only with respect to the kind of chemical filler.

DATA

Weight of complete round.....	12.11 lb*	Length of projectile, w/fin....	22.89 in.
Length of complete round.....	22.89 in.	Muzzle velocity	544 ft per sec†
		Maximum range	2,431 yd†

*—Weight with M52B2 Fuze (plastic head) is 12.07 pounds.
†—For four increments (full charge). Corresponding data for other charges are:

	Muzzle Velocity (ft per sec)	Maximum Range (yd)
Charge 1	291	808
C ¹ 2	390	1,374
C ¹ 3	472	1,916

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SHELL, Chemical, M57. This shell is used for the placing of smoke screens and gas clouds with a secondary incendiary effect when WP is used as its chemical filler.

Shell body. In general construction, this shell body has the same outer characteristics as the High-explosive Shell M56. The nose of the shell is threaded to receive the type of adapter peculiar to chemical shell. The adapter is threaded internally to receive the Point-detonating Fuze M52 which has a superquick action. All chemical shell to produce efficient dispersion of filler must burst above ground. A superquick action fuze is therefore used to produce such action. For details, in function of the M52 P.D., see pages 298 to 300.

The chemical filler is loaded into the shell body, and then the burster casing is pressed in place. The head of the Burster Casing M2 is wider than the body of the burster casing and has a slight taper; when pressed into place in the adapter sleeve it forms a gas-tight seal and acts as a seat for the burster charge. A recess is machined in the base of the shell body internally so as to receive the end of the casing, preventing it from becoming loose due to the shock and jars incident to shipment. During the loading of the chemical filler and the pressing of the burster casing in place, there is no explosive charge present in the casing.

The Burster Charge M1 consists of tetryl pellets or tetrytol in a thin aluminum or cardboard cylinder. It is placed in the burster casing prior to the assembly of the fuze to the shell. This construction burster as compared to the old booster found in the 3-inch smoke shell is much more efficient. The explosive charge runs through the entire length of the shell and splits the shell from nose to tail upon function of the fuze, allowing for the dispersion of all the chemical filler in the shell. The old booster charge found in 3-inch smoke shell split the shell near the nose where the booster charge was located, and allowed a good deal of the chemical filler to remain in the base of the shell.

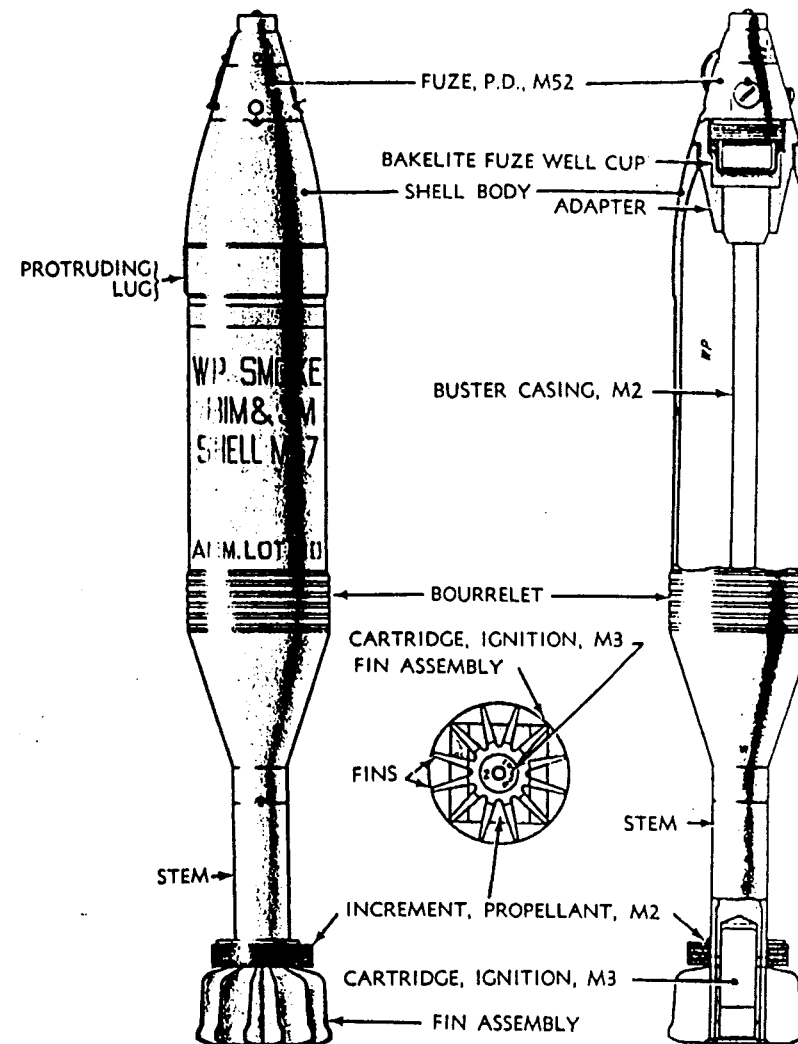
The fin assembly, ignition cartridge, propellant increments, and percussion primer are identical to those used with the High-explosive Shell M56.

The total length of the shell with the fuze assembled is 22.89 inches.

Marking and packing. Shell loaded with WP and FS are painted a blue-gray base color with yellow stencil and one yellow band to indicate a nonpersistent screening smoke filler. Shell loaded with H are painted a blue-gray base color with green stencil and two green bands indicate a persistent toxic filler.

Packing is the same as for M56 High-explosive Shell.

SMALL ARMS AND TRENCH WARFARE



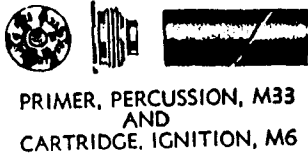
RA PD 22902

Figure 114 — SHELL, Chemical, M57, 81-mm Mortar

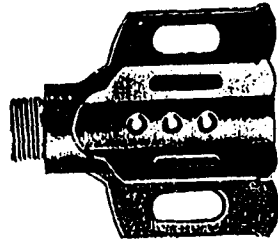
ARTILLERY AMMUNITION



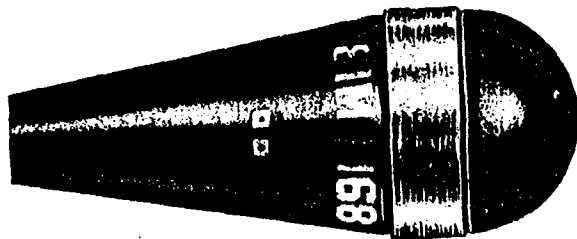
CARTRIDGE, IGNITION, M3
OR



PRIMER, PERCUSSION, M33
AND
CARTRIDGE, IGNITION, M6

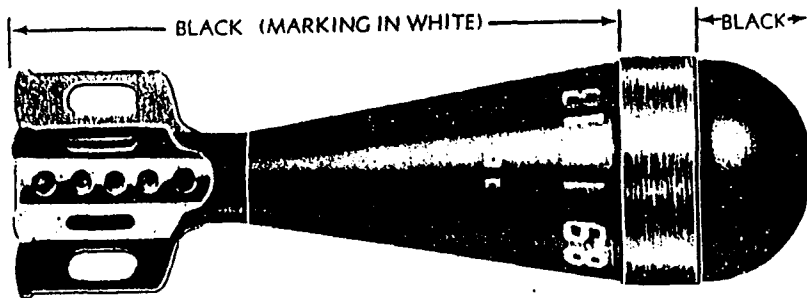


FIN, 81-MM MORTAR SHELLS
M43A1 AND M68



SHELL, TRAINING, M68, 81-MM MORTAR W/O FIN,
IGNITION CARTRIDGE AND PRIMER

A — COMPONENTS



B — ASSEMBLED

RA PD 26816

Fig. 105 — SHELL, Training, M68, 81-mm Mortar

189. SHELL, TRAINING, M68, 81-MM MORTAR, W/O FIN, IGNITION CARTRIDGE, AND PRIMER (fig. 105), is provided for drill in loading and firing the mortar. The projectile is completely inert and has no fuze, consisting of a cast-iron body shaped to a pear or tear-drop contour, and drilled at the narrow base to hold a service-type fin assembly similar to that on the M43A1 Projectiles. No propellant increments are issued or used, but the M3 Ignition Cartridge, or if this is not available the combination of the M33 Ignition Cartridge and M6 Percussion Primer, is issued for use in firing the projectile. The four components are issued separately to facilitate replacement of damaged or worn-out parts and the procurement of extra ignition cartridges. A training kit used in the field holds 10 training shell and accessories, including a ground hook used in the recovery of fired training shell.

DATA

Weight of complete round.....	10.82 lb	Length of projectile	7.92 in.
Length of complete round.....	11.08 in.	Muzzle velocity	172.8 ft per sec
Weight of projectile	9.8 lb	Maximum range	306 yd

SHELL, Training, M68. The shell is designed to give the mortar crew training in loading the weapons and practice in firing under conditions which will not permit firing in more than the first zone.

Shell body. The body of the shell is cast iron. It is similar in shape to the light H.E. 81-mm shell which is tear-drop with a blunt nose and tapered tail. It has a bourrelet on the body near the nose to act as a forward bearing surface and gas check. At the tail end is a recess which is threaded to receive a stabilizer assembly. The nose end is closed and rounded with no provisions made to receive a fuze. Its weight varies depending on its weight zone. Nine weight zones are used with a minimum of 9.50 pounds for weight zone one, and a maximum of 10.10 pounds for weight zone nine, weighed without fin assembly and ignition cartridge.

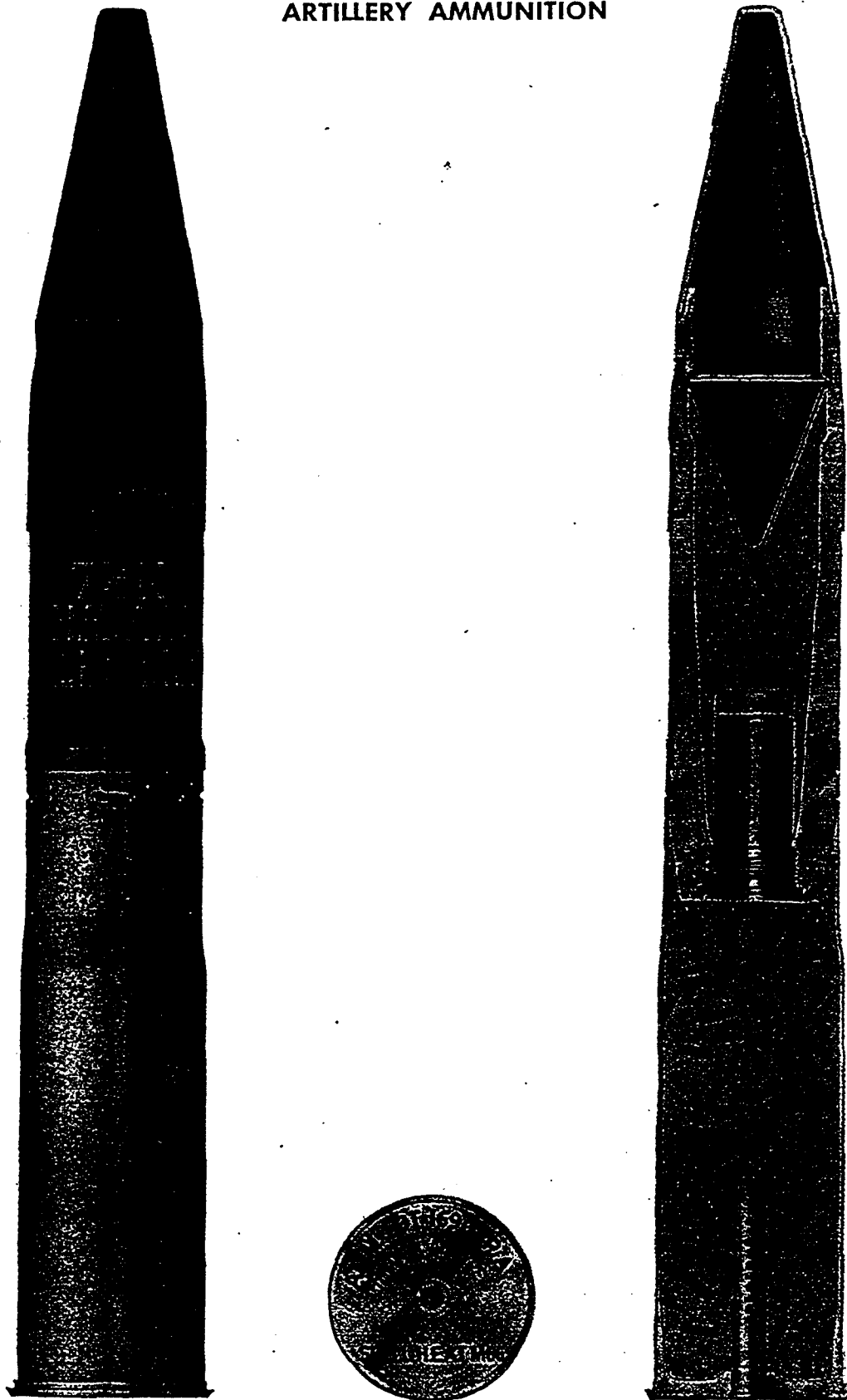
The fin assembly and propelling charge. The fin assembly is of the same construction and shape as previously described. It receives the Ignition Cartridge M3. Several ignition cartridges are provided with each round so that the shell can be fired more than one time. There are no propellant increments used because the shell is designed to be fired in the first zone only. The maximum range is 350 yards.

Marking and packing. The shell is painted black with white stencil. On the shell body may be found a number of white squares (one to nine) with a prick punch mark in the center of each to indicate the zone weight.

Information as to the packing of the shell is not available at the present time. However the complete round comes in separate units consisting of shell body, ignition cartridge, and fin assembly.

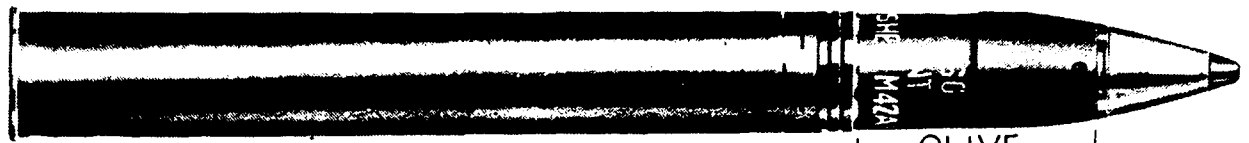
LD-5

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RA PD 80743

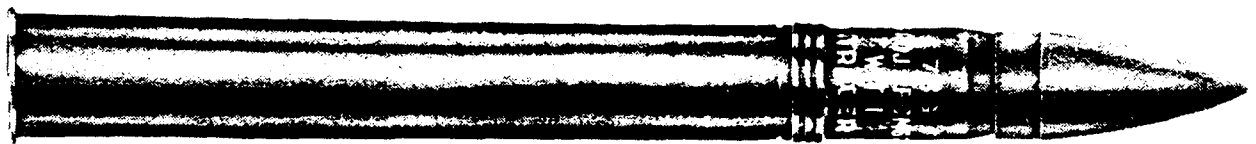
Figure 76 — SHELL, Fixed, H.E., A.T., M66, w/FUZE, B.D., M62 or M62A1, 75-mm How., M1, M1A1, M2, and M3



OLIVE
DRAB
(MARKING IN YELLOW)

RA PD 80751

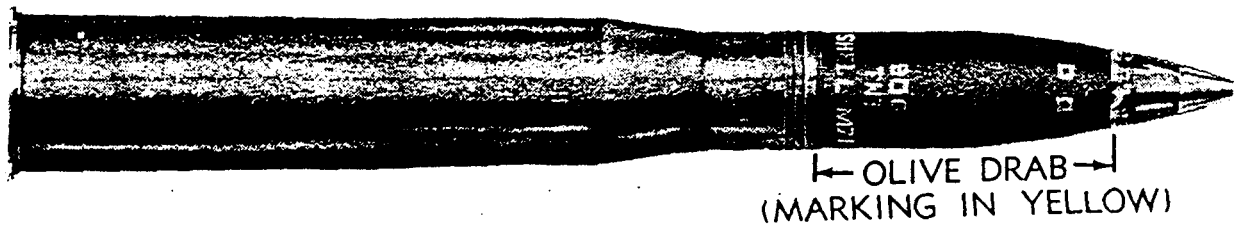
Figure 83 — SHELL, Fixed, H.E., M42A1, w/FUZE, P.D., M48A2, SQ & 0.05-sec. Delay, 76-mm Guns, M1, M1A1, and M1A2



OLIVE DRAB
(MARKING IN YELLOW)

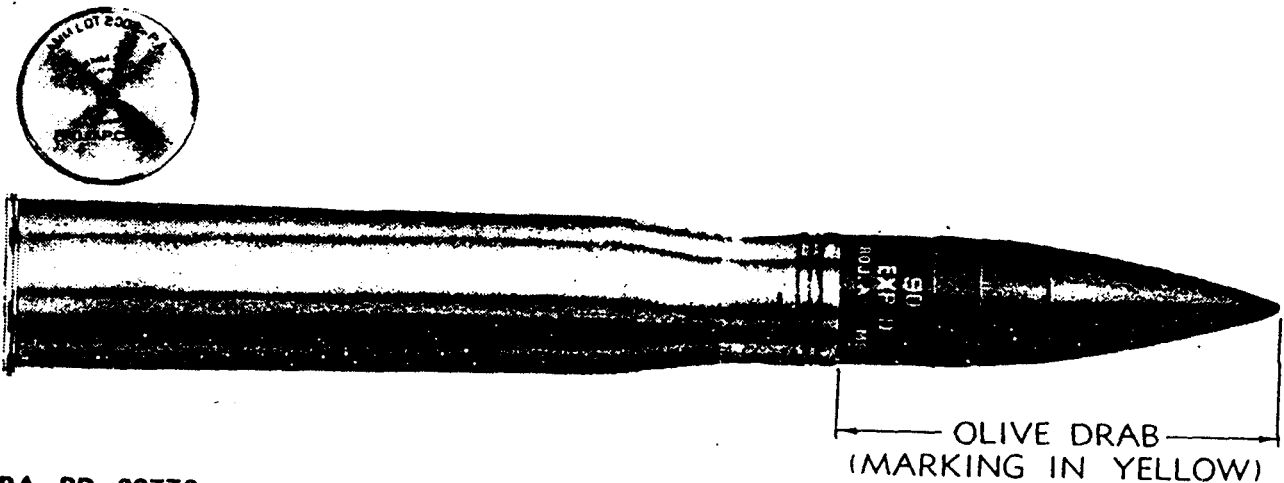
RA PD 80749

Figure 80 — PROJECTILE, Fixed, A.P.C., M62A1, w/FUZE, B.D., M66A1, and TRACER, 76-mm Guns, M1, M1A1, and M1A2



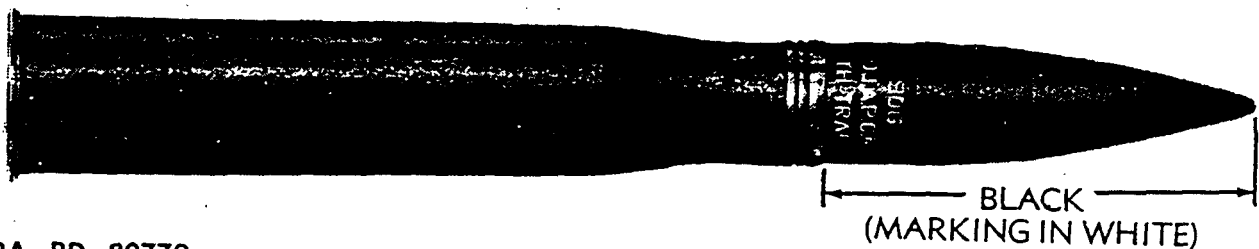
RA PD 80781

Figure 109 — SHELL, Fixed, H.E., M71, w/FUZE, Time, Mechanical, M43 (All Modifications), 90-mm Guns



RA PD 80778

Figure 106 — PROJECTILE, Fixed, A.P.C., M82, NH, w/FUZE, B.D., M68, and TRACER, 90-mm Guns



RA PD 80779

Figure 107 — PROJECTILE, Fixed, A.P.C., M82, NH, w/TRACER, 90-mm Guns

FIXED AND SEMIFIXED ROUNDS AND SEPARATE-LOADING PROJECTILES

50-50 amatol is loaded in the cavity, a booster surround consisting of a small amount of TNT is used. BOOSTER, M20A1, is a standard manufacturing component of the M1 Shell, being inserted after



RA PD 80787

Figure 113 — SHELL, Semifixed, H.E., M1, w/FUZE, P.D., M48A2, SQ & 0.15-sec. Delay, 105-mm How., M2, M2A1, and M4

the shell is loaded and secured permanently in position by a set screw. As fuzed with FUZE, P.D., M48A2 (or M48A1 in the case of rounds of earlier manufacture), giving selective superquick or delay (0.15-sec) setting, the shell is adapted for firing for fragmentation and blast effect with surface burst, or after penetration or on ricochet.

DATA

Weight of complete round.....	42.07 lb	Type of base	Boat-tailed
Length of complete round.....	31.07 in.	Degree of taper	9 deg 15 min
Length of fuzed projectile.....	19.63 in.	Radius of ogive	6.02 cal.
Length of cartridge case.....	14.64 in.	Muzzle velocity	1,550 ft per sec*†
Width of rotating band.....	0.81 in.	Maximum range	
		(at 44 deg)	12,205 yd*†

*—When fired in the M2, M2A1, and M4 Howitzers. For muzzle velocity and range data when this round is fired in the M3 Howitzer, see paragraph 202 f.

†—With full charge (charge 7); corresponding data for other charges are:

	Muzzle Velocity	Maximum Range
Charge 1	650 ft per sec	3,825 yd (at 48°38')
Charge 2	710 ft per sec	4,475 yd (at 43°38')
Charge 3	780 ft per sec	5,280 yd (at 43°24')
Charge 4	875 ft per sec	6,430 yd (at 43°24')
Charge 5	1,020 ft per sec	8,295 yd (at 43°14')
Charge 6	1,235 ft per sec	10,150 yd (at 43°17')

206. SHELL, SEMIFIXED, H.E., M1, W/FUZE, P.D., M48, 105-MM HOW., M2, M2A1, AND M4, is the same as the round with M48A1 or M48A2 Fuze described in paragraph 205, except that FUZE, P.D., M48 has an 0.05-second delay element incorporated in its delay action train.

207. SHELL, SEMIFIXED, H.E., M1, W/FUZE, TSQ, M54, 105-MM HOW., M2 AND M2A1, differs from those described in paragraph 205 only with respect to the fuze. FUZE, TSQ, M54, provides alternative setting for superquick action or over any time up to 25 seconds after firing the round. The superquick action is always operative, providing for detonation of the shell bursting charge should prior action not be caused by the time train. This fuze adapts the shell for time fire or high-burst ranging.

SHELL, Semifixed, H.E., M1.

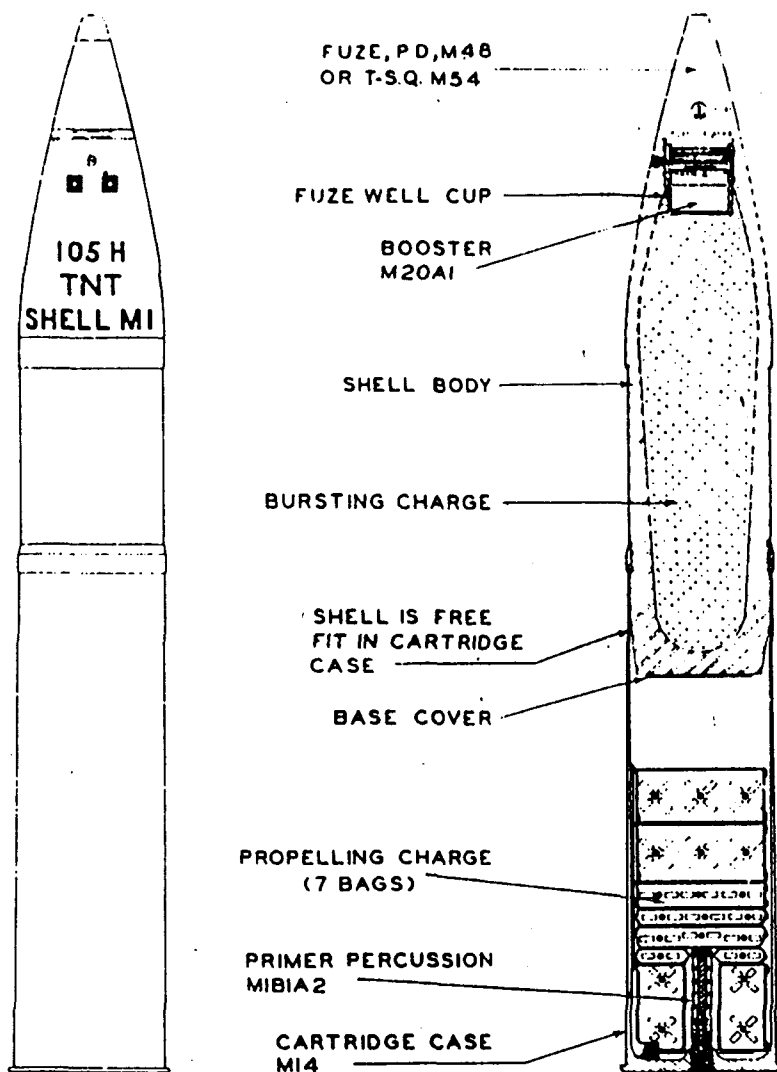
General. The H.E. Shell M1 is issued to the using arms as a fuzed complete round, weighing 42.07 pounds.

Projectile. The M1 Projectile is of forged steel construction, streamlined in shape with a boat-tail base, and is adapted for a fuze that continues the contour. It has a steel base plate and a 0.81-inch rotating band of gilding metal. Provision is made for a 4.8-pound H.E. filler.

Components. A complete round of M1 H.E. Ammunition consists of a loaded and fuzed (M48 or M54 Fuze) projectile loosely attached to the M14 Cartridge Case with its 3-pound bag of propelling charge (7 zones) of FNH powder and an M1B1A2 Primer. If fired in the M3 Airborne Weapon, the reduced propelling charge will consist of a base and four increments.

205. SHELL, SEMIFIXED, H.E., M1, W/FUZE, P.D., M48A2, SQ & 0.15-SEC. DELAY, 105-MM HOW., M2, M2A1, AND M4 (fig. 113), consists of the M14 or M14B1 Cartridge Case fitted with the standard primer and an FNH propelling charge (seven increments), assembled with free fit to the fuzed M1 Projectile. The M1 Projectile is similar to other standard high-explosive shell of modern design. The body is a relatively thin-walled steel shell with boat-tailed base and a nose formed to a long ogive and threaded to hold a point fuze. The fuze contour continues the long sweep of the shell nose, maintaining the streamlined effect throughout the assembly. The bursting charge is TNT—or the alternative 50-50 amatol—formed at the front end to provide a well for the booster. When

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RA PD 23971

SHELL, Fixed, H.E., M38.

General. The M38 Round is at this time standard for issue only. This is due to the fact that it uses the older M2 Mechanical Time Fuze and an adapter rather than the M43 Fuze series. The M2 Fuze requires a nose opening of 2.2 inches, and has a booster embodied in its make-up.

Projectile. The M38 Projectile is streamlined in shape and is of forged steel construction. It is adapted to take a fuze that continues this streamline effect. The rotating band on the shell is 1.42 inches wide. A base plate of steel is found welded on the base. A cavity large enough to hold 4 pounds of TNT as a bursting charge is also provided.

Components. A complete round of H.E. M38 consists of a loaded and fuzed (M.T. M2 Fuze) projectile firmly attached to the M6 Cartridge Case with its propellant of NH or FNH powder, a distance wad, an igniter, and an M28A2 Percussion Primer.

Guns. The 105-mm AA Gun M3 on the Mount M1, fires this round of ammunition.

SHELL, Fixed, H.E., M38A1.

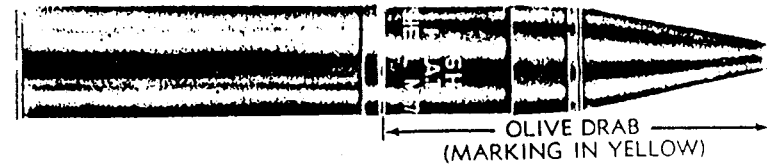
General. This high-explosive round is the same in every respect as the H.E. Round M38 discussed above, with one exception: The nose of the Projectile M38A1 is modified to receive an M43-series Mechanical Time Fuze in conjunction with the M20 Booster, while the M38 used the M2 M.T. Fuze.

The M38A1 Round may be found with an ammanol filler.

SHELL, Fixed, Practice, M38 and M38A1.

General. These two practice rounds differ from the high-explosive rounds in regard to filler only. The filler consists of 3.09 pounds of an inert filler made of lead oxide, paraffin, and barium carbonate accompanied by a black powder charge. This black powder charge is 8 ounces in the M38A1 Round, while it is only 5 ounces in the M38 Round. The components are the same as those in the high-explosive rounds.

Figure 188 — SHELL, H.E., 105-mm, M1



RA PD 80786

Figure 116 — SHELL, Semifixed, H.E., A.T., M67, w/FUZE, B.D., M62 or M62A1, 105-mm How., M2, M2A1, and M4

SHELL, Semifixed. H.E., A.T., M67.

General. The H.E., AT Shell M67 is the exact counterpart of the 75-mm Shell M66. It is identical to the M66 in all respects except size and resembles other 105-mm howitzer ammunition in length and weight. This round of ammunition is designed for use against either face-hardened or homogeneous armor plate.

Projectile. The M67 Shell body is made of a steel forging and the base is fitted with a Base-detonating Fuze M62. The body is fitted with the same width and type of rotating band as other projectiles for these weapons. For details, note SHELL, H.E., A.T., M66, in the chapter dealing with 75-mm howitzer ammunition.

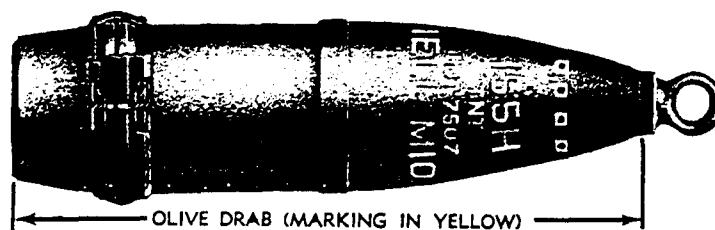
Components. A complete round of M67, H.E., A.T. Ammunition consists of a loaded and fuzed projectile assembled loosely to an M14 Cartridge Case with its propelling charge of approximately 3 pounds in one bag, and an M1B1A2 Primer. Originally, the round was designed as a fixed round, with a loose propelling charge of smokeless powder in an M14, Type II, Cartridge Case. The change back to semifixed class is to facilitate packing and shipping in accordance with existing standards. This round is adapted for firing from the M3 Airborne Howitzer.

213. SHELL, SEMIFIXED, H.E., A.T., M67, W/FUZE, B.D., M62, OR M62A1, 105-MM HOW., M2, M2A1, AND M4 (fig. 116), is similar in all respects except size to the H.E., A.T. round for the 75-mm howitzers. Like that round, it provides an effective ammunition for the howitzers against tanks. The effect of the projectile is produced by the force of detonation of the high-explosive filler rather than by striking velocity. The construction of the shell differs materially from standard armor-piercing types. The shell body is a relatively thin-walled casing containing a shaped high-explosive filler and closed off at the forward end by a ballistic cap in the form of a thin steel cone. The ballistic cap is attached to an ogive and union assembly which provides sufficient "stand-off" from the target after the ballistic cap crushes on impact with the target. The base is boat-tailed and fitted with a base-detonating fuze which functions with nondelay action. A standard cartridge case and the M28A2 300-grain Primer are used with the projectile. However, the propelling charge consists of 1.60 pounds of flashless powder (little more than half the full charge used with semifixed rounds) in a cloth bag, and is not intended to be adjustable, the cartridge case being a loose fit on the projectile only for shipping and storage purposes.

DATA

Weight of complete round.....	36.85 lb	Type of base	Boat-tailed
Length of complete round.....	31.05 in.	Degree of taper	9 deg 15 min
Length of fuzed projectile.....	19.43 in.	Degree of nose taper.....	21 deg 30 min
Length of cartridge case.....	14.64 in.	Muzzle velocity	1,250 ft per sec
Width of rotating band.....	0.81 in.	Maximum range	8,590 yd
		Penetration (at any range)	4.0 in.

247. SHELL, H.E., M107, UNFUZED, 155-MM HOW., M1 (fig. 124), is similar to other standard high-explosive shell of modern design. The body is a relatively thin-walled steel shell with a nose formed to a long ogive and threaded to hold a point fuze. The bursting charge is TNT or amatol, formed at the front end to provide a well for the booster. When amatol is loaded in the cavity, a booster surround consisting of 0.2 pound of cast TNT is used. The projectile has a single rotating band located about 3.5 inches in front of the base. A steel base plate welded to the base end of the projectile prevents gas from the propelling charge from reaching the bursting charge of the projectile through possible flaws in the base.



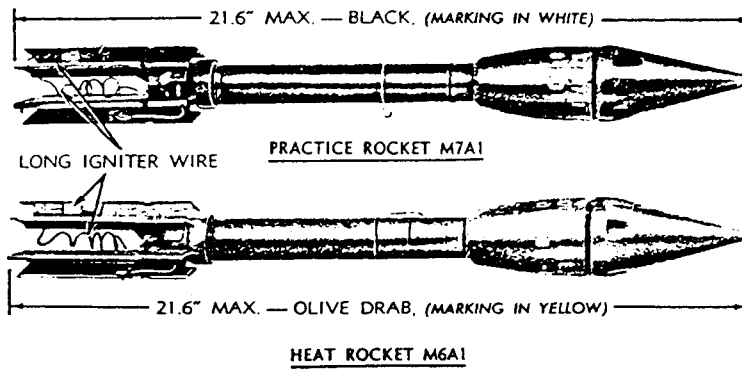
RA PD 80797

Figure 124 — SHELL, H.E., M107, Unfuzed, 155-mm How., M1 (Early Type Grommet Fastening Shown)

DATA

Length of projectile*.....	26.82 in.	Radius of ogive (conical end)	10.75 cal.
Width of rotating band.....	1.02 in.	Muzzle velocity (M4 or M4A1 Charge)	1,850 ft per sec
Type of base	Boat-tailed	Maximum range, (at 45-deg 17-min).....	16,355 yd
Degree of taper	8.5 deg		

*—With eyebolt-lifting plug.



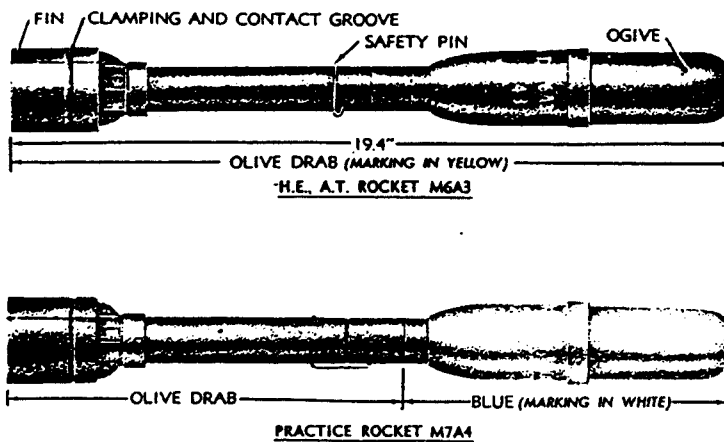
RA PD 104809

Figure 20 — 2.36-inch Rockets: HE, AT, M6A1 and Practice M7A1

Pars. 15-17

TM 9-1950

2.36-inch Rockets

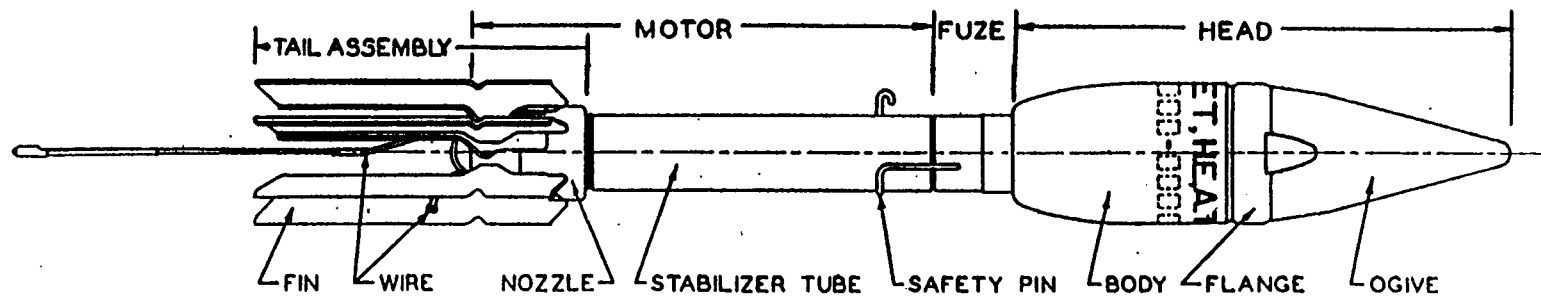


RA PD 104807

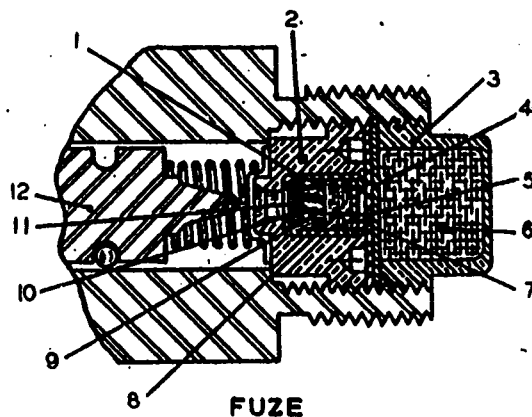
Figure 21 — 2.36-inch Rockets: HE, AT, M6A3 and Practice M7A4

b. Data.

	M6A1	M10 M6A3	M10A1 M6A3D	M10A2 M10A3 M6A3F M6A4 M6A5
Range (max)	600 yd	700 yd	700 yd	700 yd
Dispersion	8.5 mils	6 mils	6 mils	6 mils
Velocity (max)	265 ft per sec	270 ft per sec	270 ft per sec	275 ft per sec
Temperature limits	0 to 120 deg F	0 to 120 deg F	-20 to +120 deg F	-40 to +120 deg F
Burning time	0.08 to 0.03 sec	0.08 to 0.03 sec		
Burn-out point (feet from muzzle)....	(Normally within launcher)			



- 1-DETONATOR CUP
- 2-DETONATOR HOLDER
- 3-BOOSTER CUP
- 4-DISK
- 5 - DETONATOR-HOLDER RETAINING DISK
- 6 - BOOSTER CHARGE



- 7-COLORED DETONATOR CLOSING DISK
- 8-DETONATOR PELLET
- 9-INTERMEDIATE DETONATOR CHARGE
- 10-UPPER DETONATOR CHARGE
- 11-DETONATOR DISK
- 12-FIRING PIN

ROCKET, H.E., AT, M6A1
LOT 0000-0000.0-00

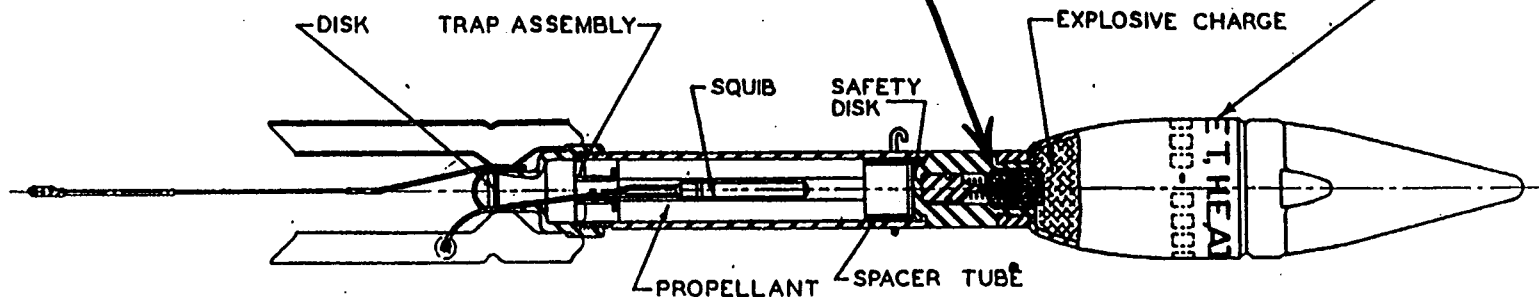


FIGURE 6. - ROCKET, H.E., AT, 2.36", M6A1

M6A3
ROCKET

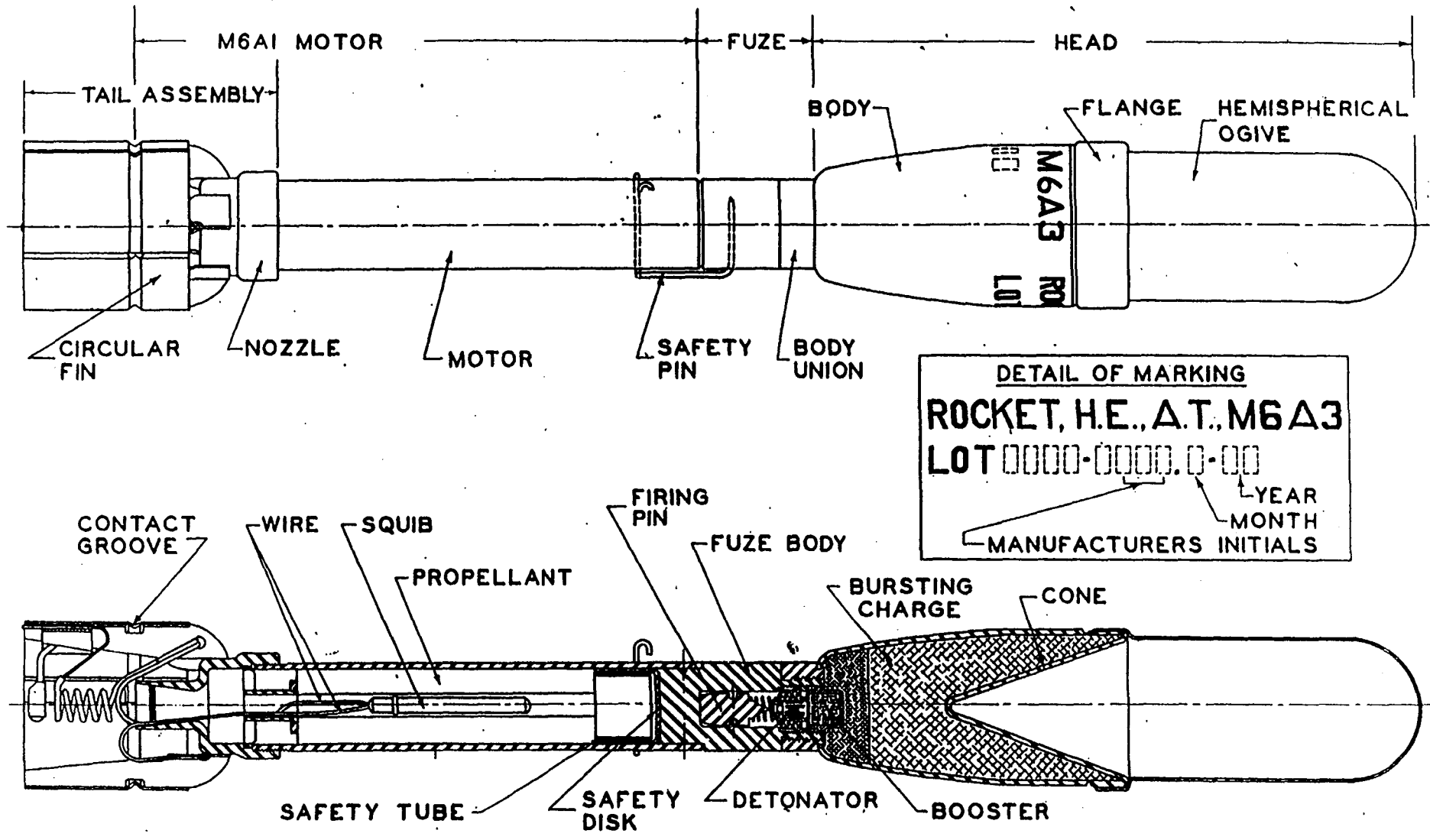
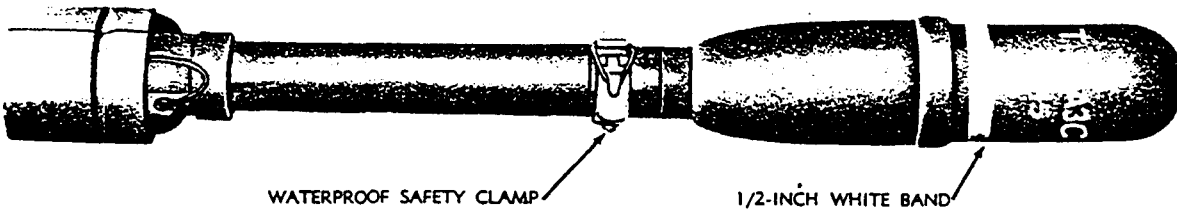
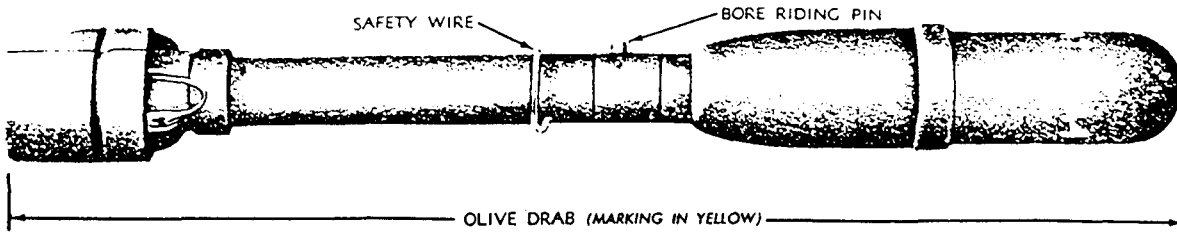


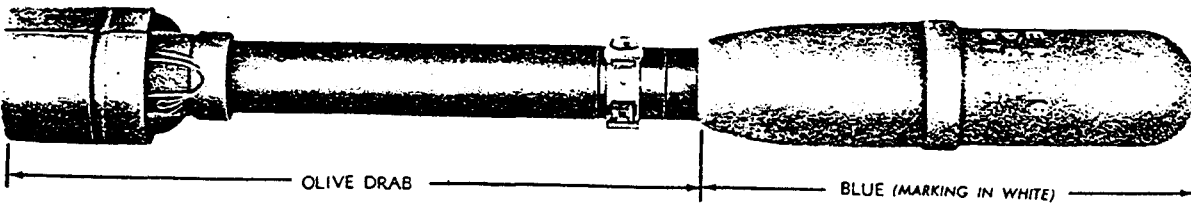
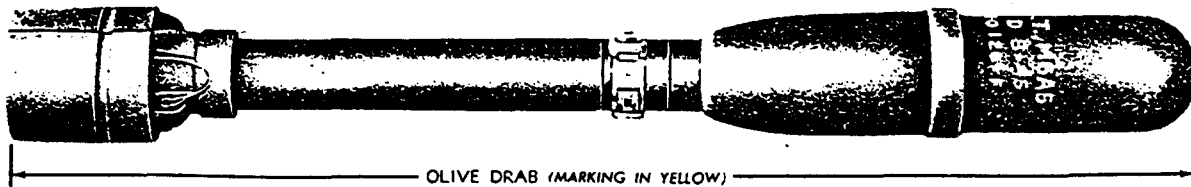
FIGURE 19. - ROCKET, H.E., AT, 2.36", M6A3



RA PD 103497

Figure 22 - 2.36-inch Rockets: HE, AT M6A4 and M6A3C

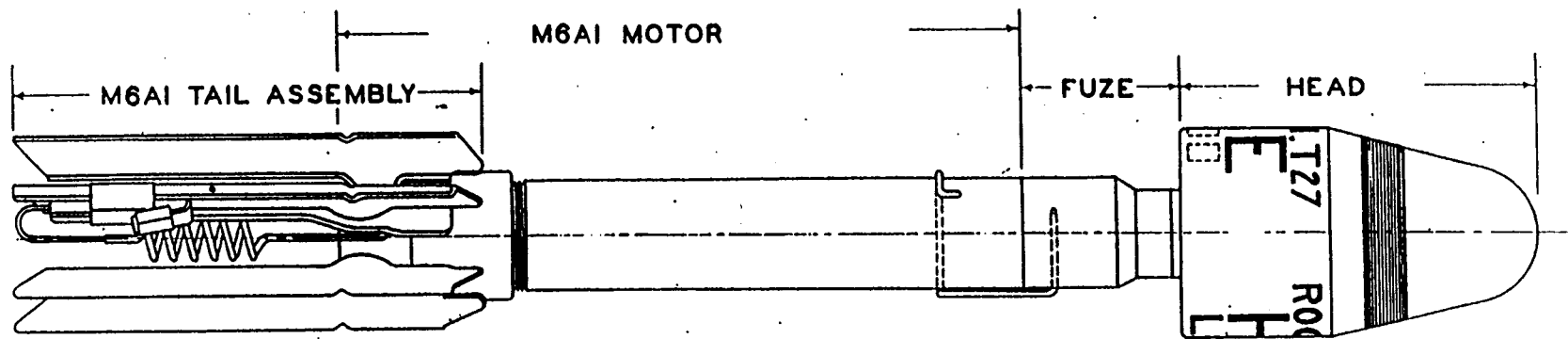
Par. 19
2.36-inch Rockets
TM 9-1950



RA PD 97772

Figure 23 - 2.36-inch Rockets: HE, AT M6A5 and Practice M7A6

Par. 22
2.36-inch Rockets
TM 9-1950



DETAIL OF MARKING
 ROCKET, 2.36 INCH, T27
HC-SMOKE
 LOT 0000-0.0-00

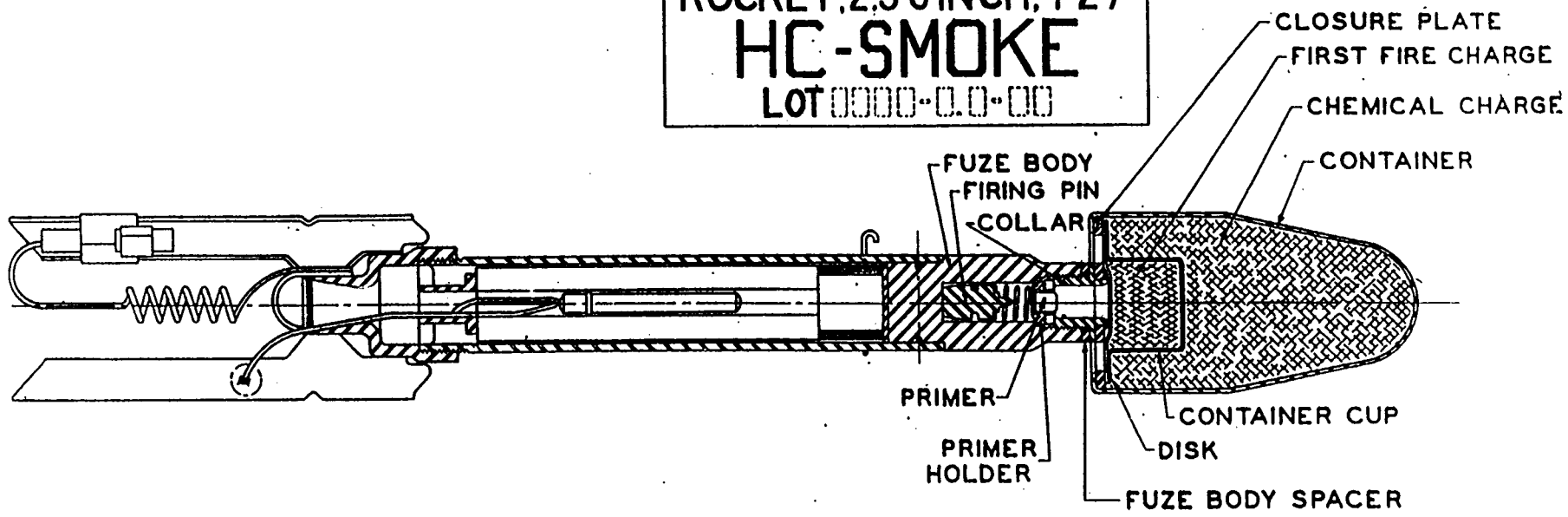


FIGURE 30. - ROCKET, SMOKE, HC, 2.36", T27

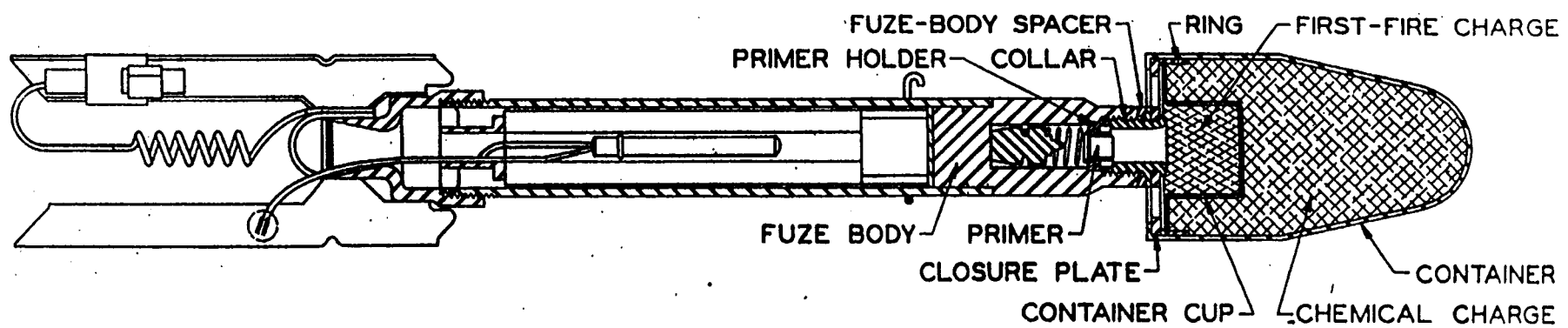
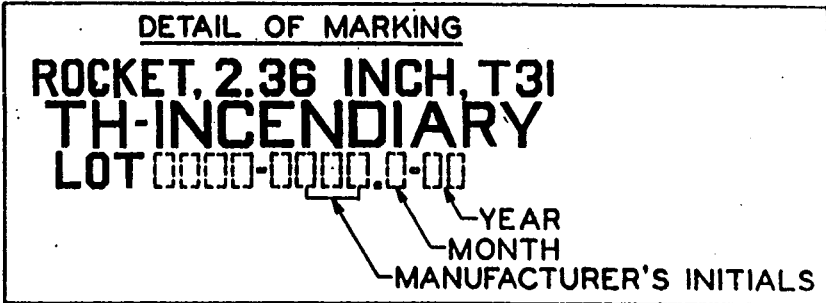
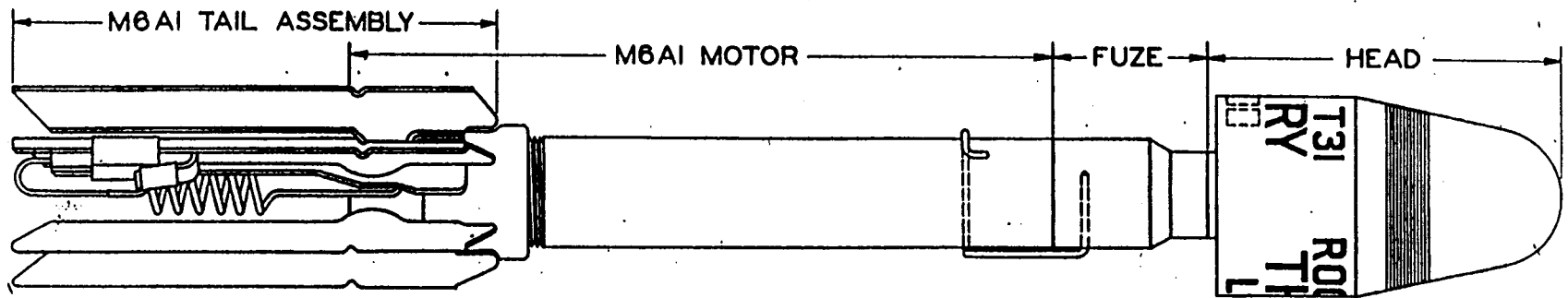


FIGURE 33. - ROCKET, INCENDIARY, 2.36", T31

Classes of Ammunition

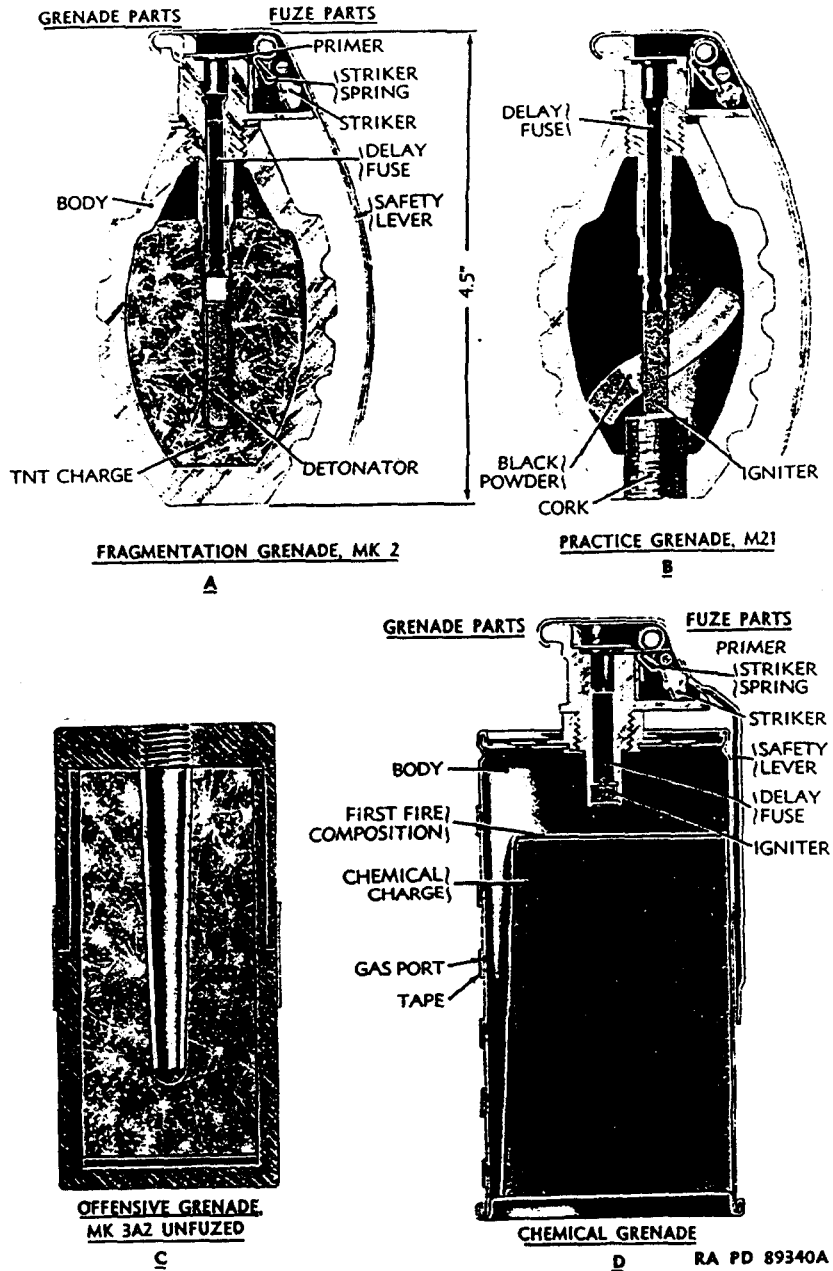
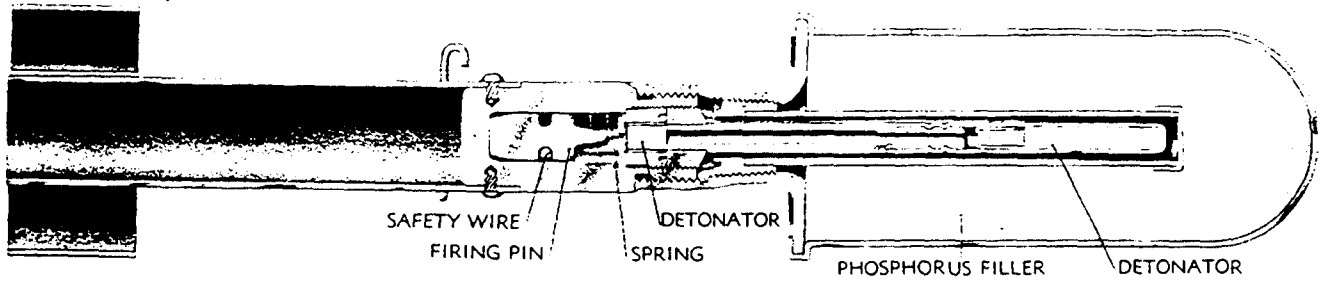
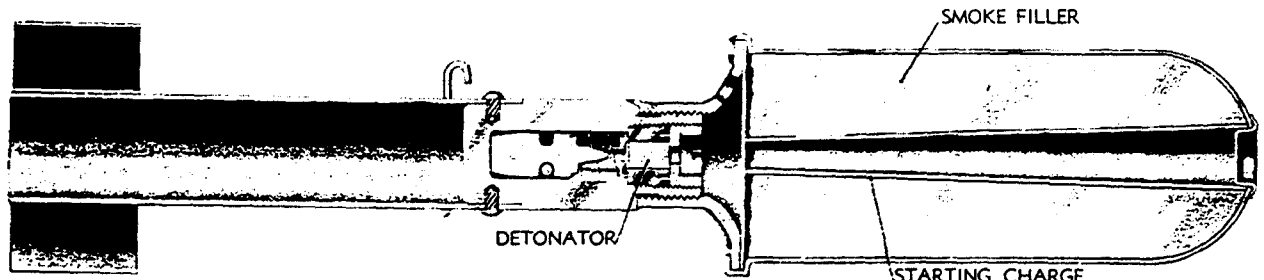


Figure 44 - Hand Grenades - Cross Section



WP SMOKE RIFLE GRENADE, M19



COLORED SMOKE RIFLE GRENADE, M22

RA PD 89342A

Figure 45 - Smoke Rifle Grenades - Cross Section

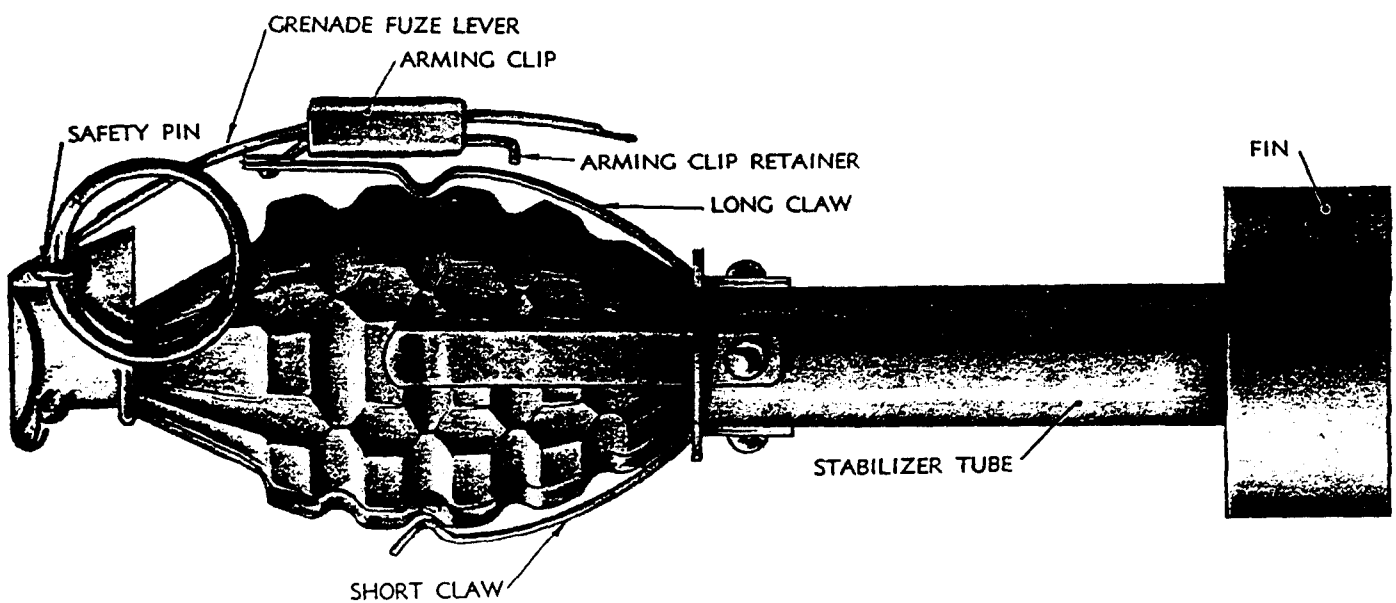


Figure 46 - Fragmentation Grenade Projection Adapter M1

RA PD 68355

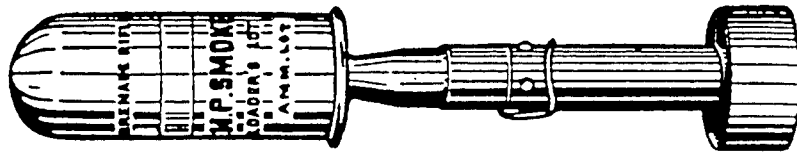


Figure 30. Smoke rifle grenade (WP) M19.

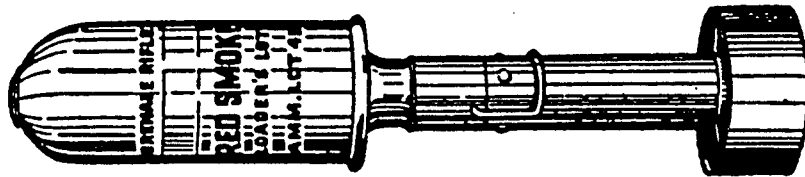


Figure 32. Colored smoke rifle grenade.

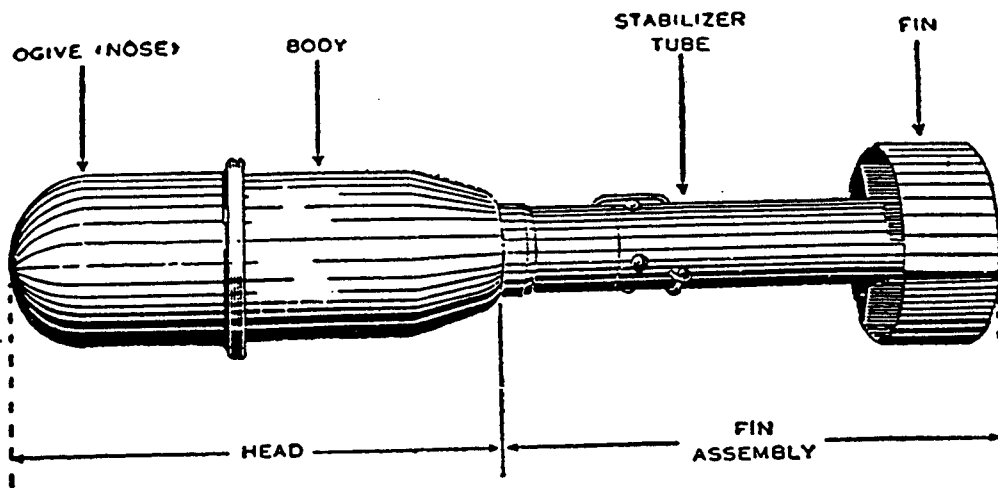


Figure 33. Nomenclature of HE-AT rifle grenade.

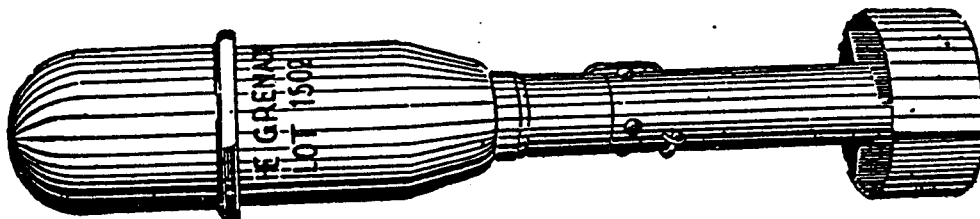
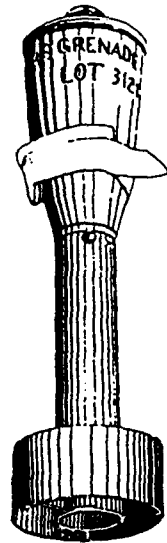


Figure 35. Antitank rifle grenade (M9A1).

SMALL ARMS AND TRENCH WARFARE



GRENADE, AT, M9.



CARTRIDGE,
AT, GRENADE, M3



GRENADE, AT, M9A1.

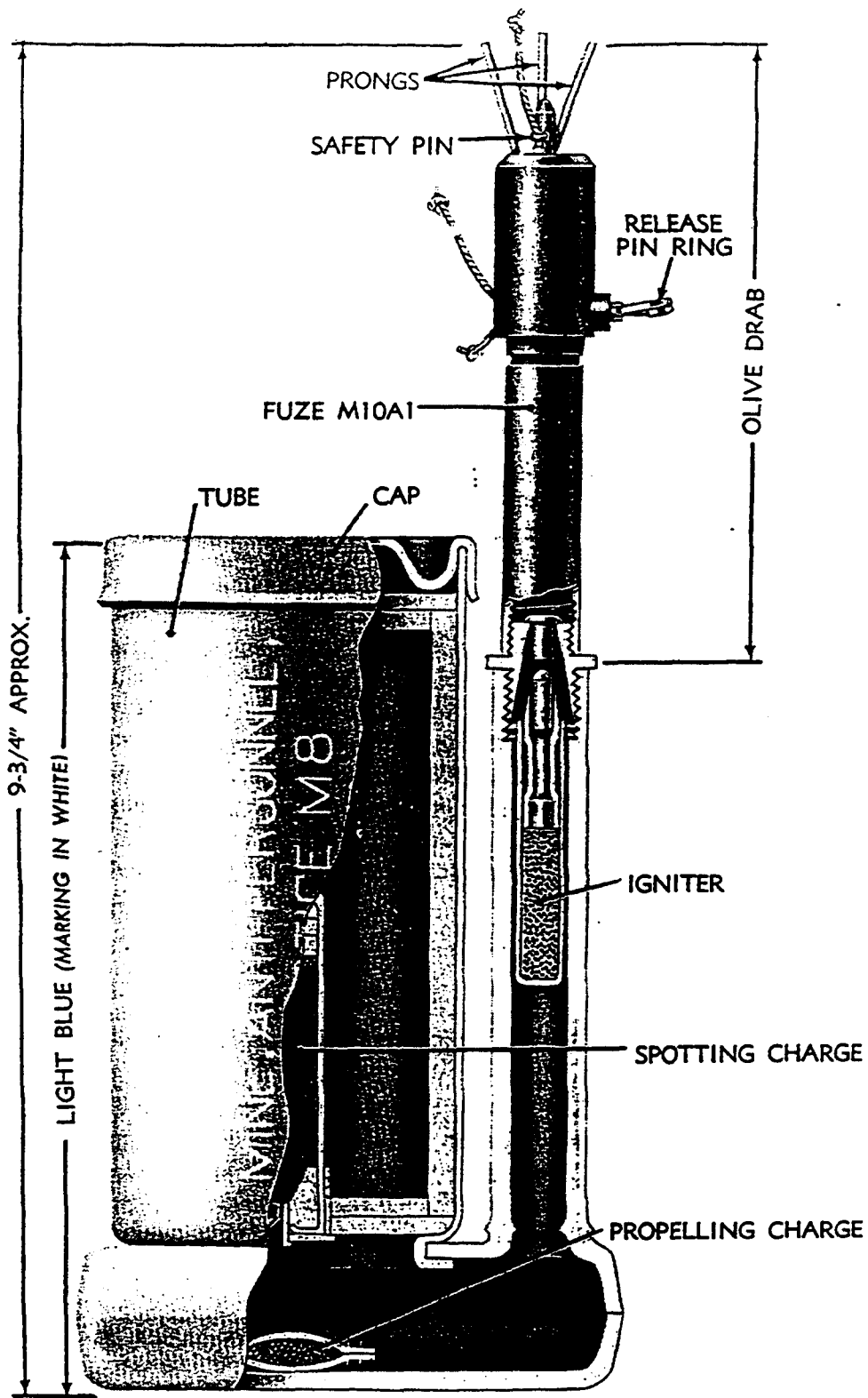


LAUNCHER, GRENADE, M1.

RA PD 15196

Figure 99 — Rifle Grenades and Launcher

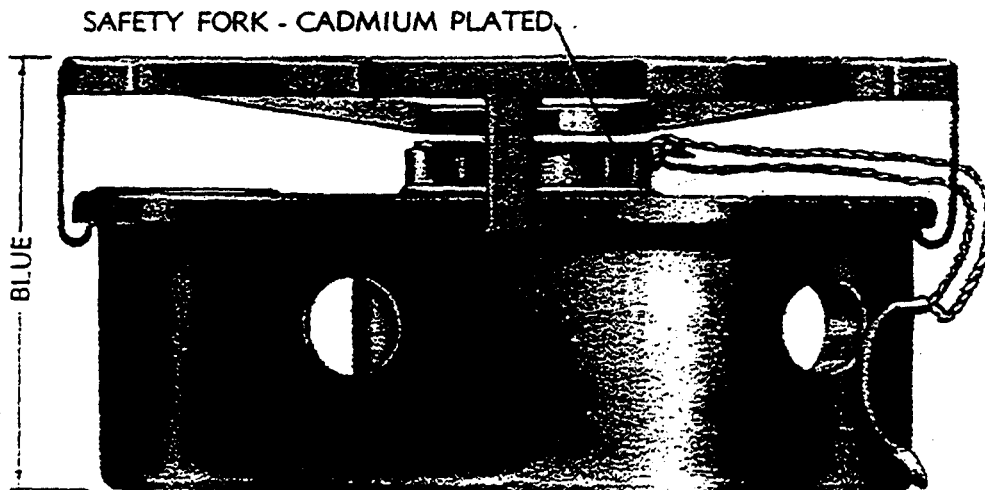
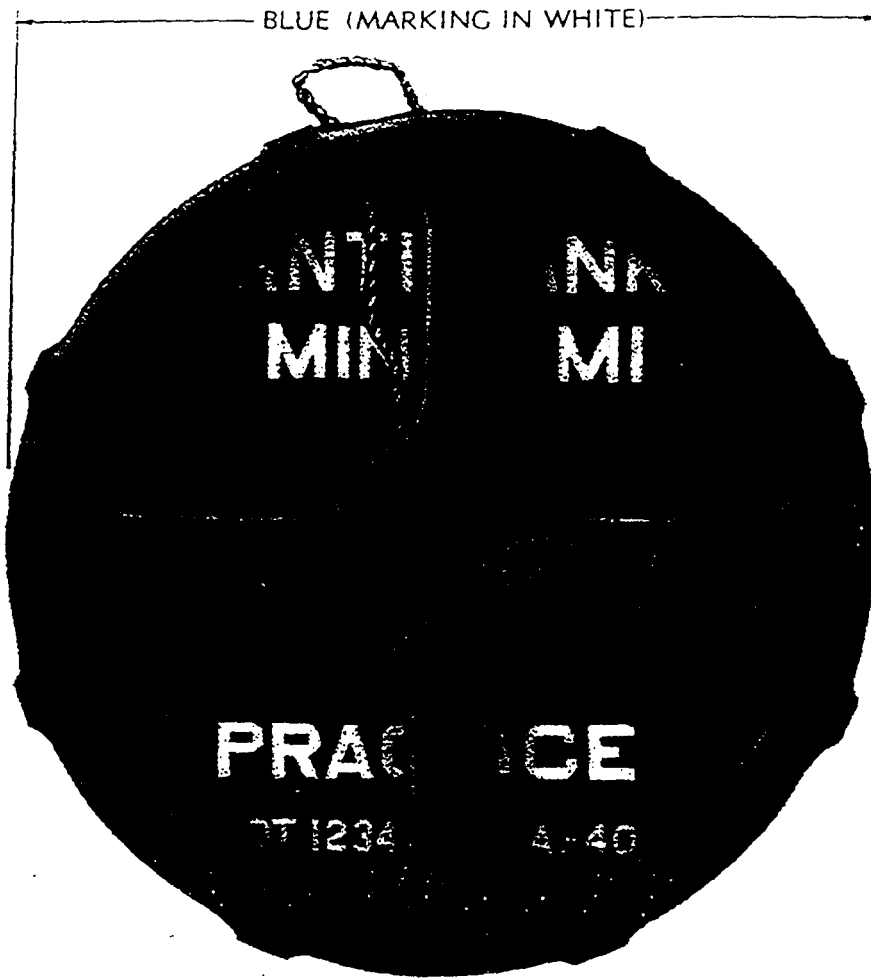
Classes of Ammunition



RA PD 89372

Figure 143 — Practice Antipersonnel Mine M8, With M10A1 Fuze

AMMUNITION INSPECTION GUIDE



RA PD 53884A

Figure 105 — MINE, Antitank, Practice, M1

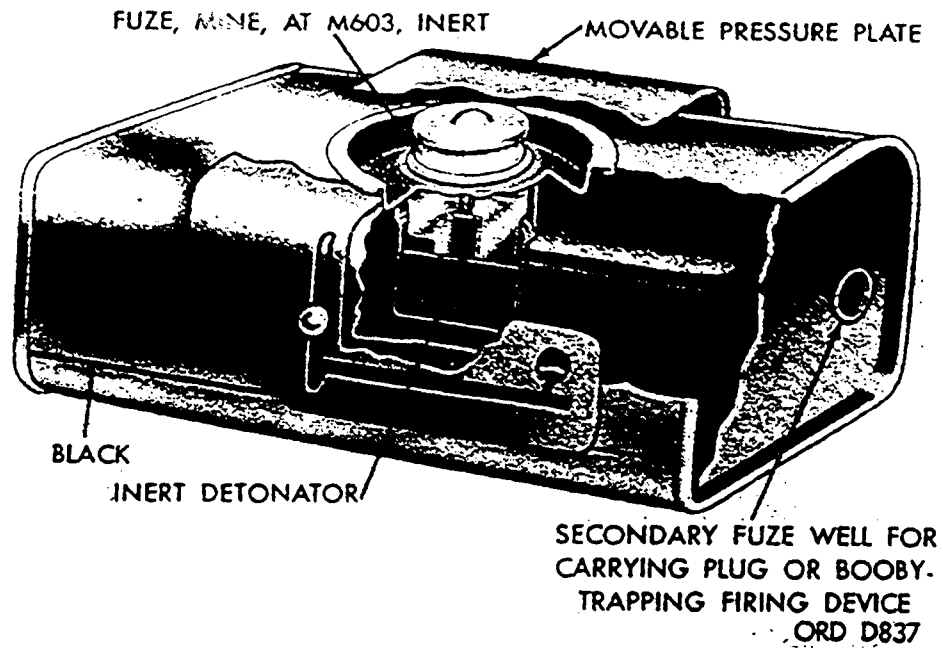


Figure 66. Mine, antitank, light, M7A2, inert and fuze, mine, antitank, M603 inert.

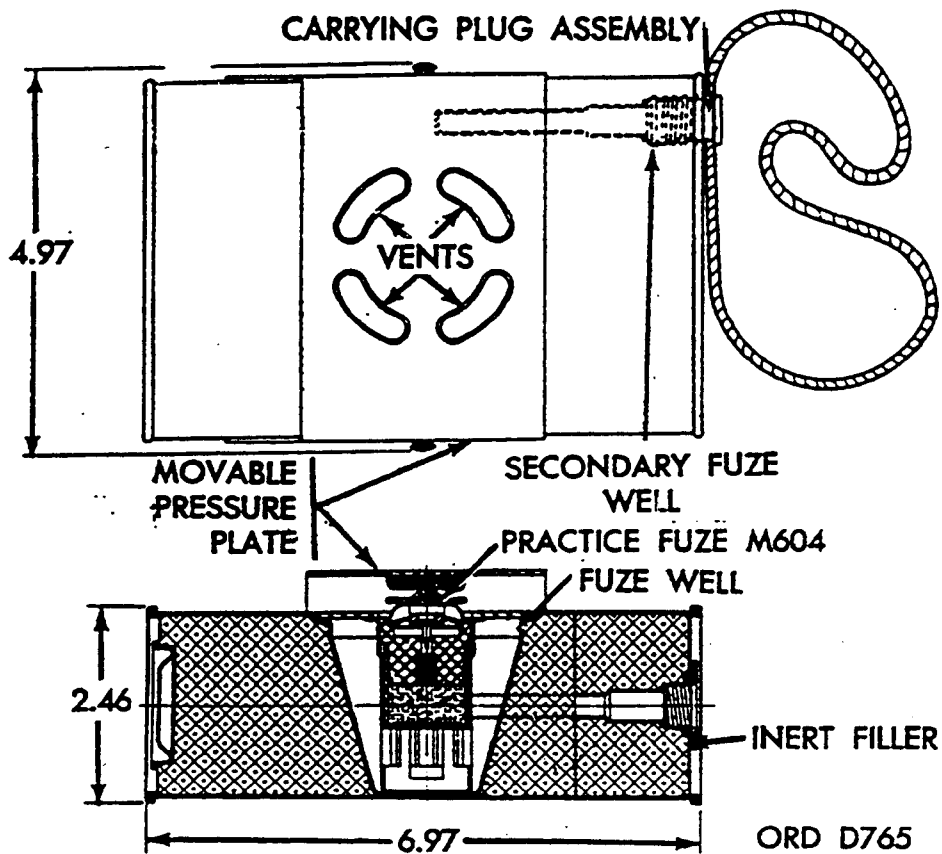
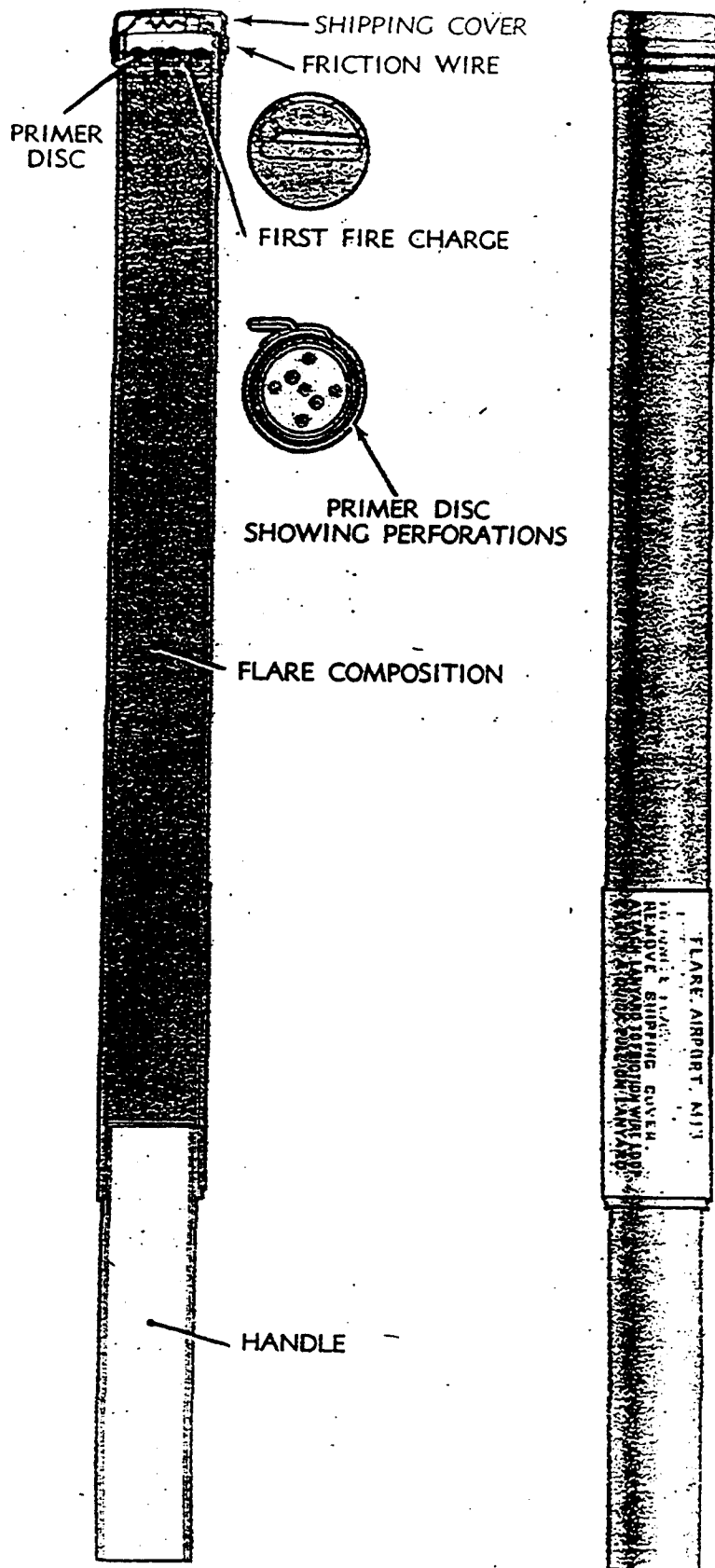


Figure 67. Mine, antitank, light, practice, M10 and fuze mine, antitank, practice, M604.

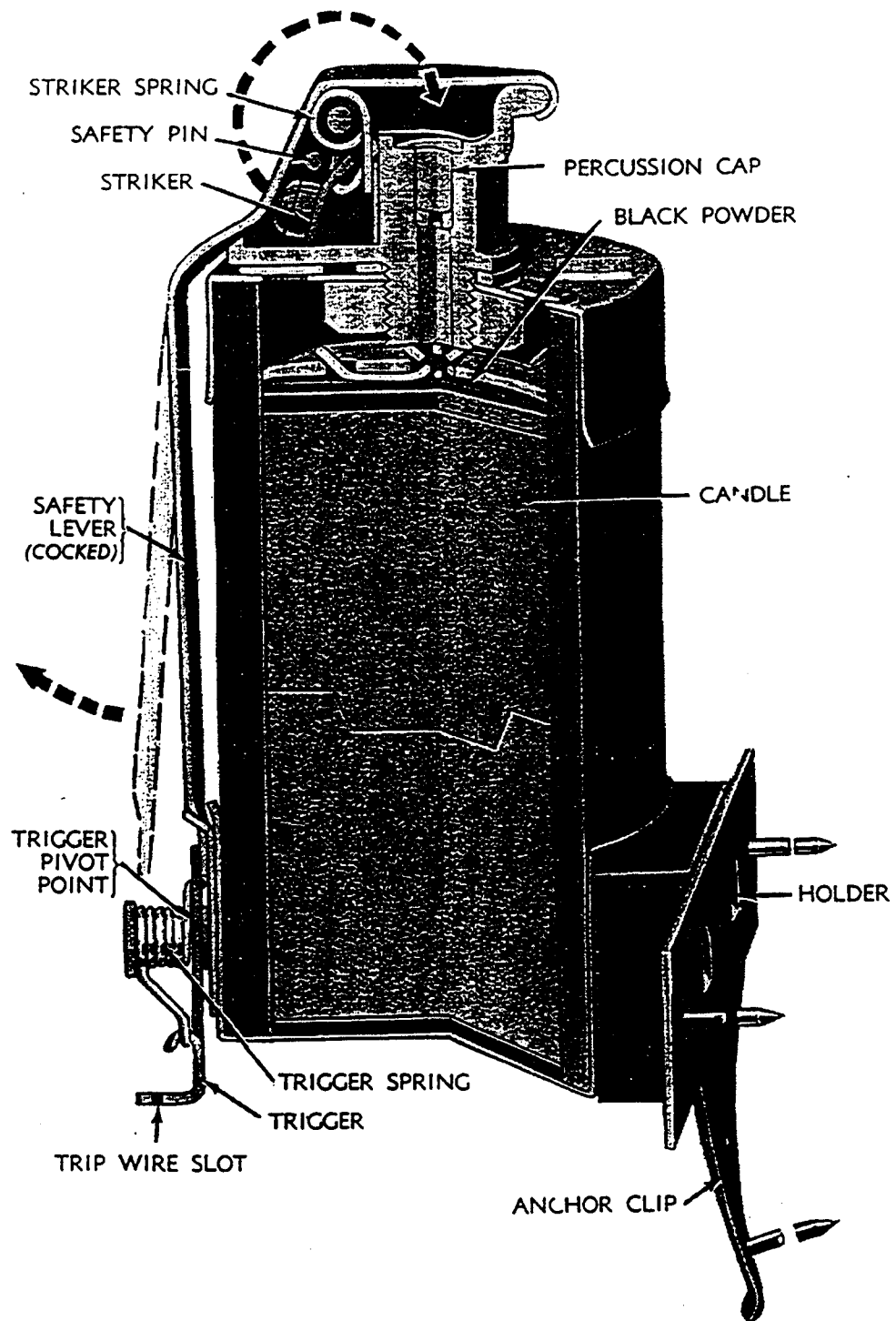
MILITARY PYROTECHNICS



RA PD 23028

Figure 282 — FLARE, Airport, M13

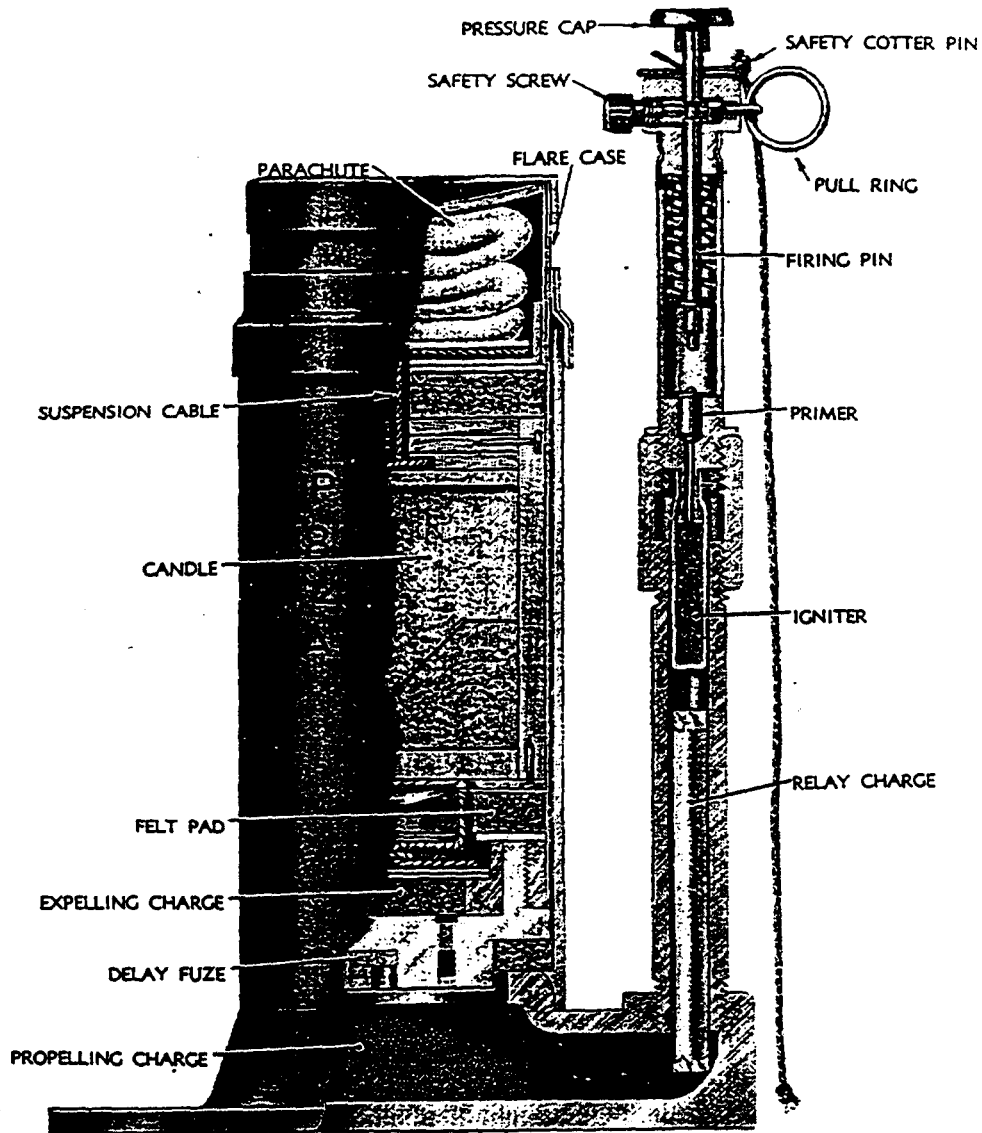
Classes of Ammunition



RA PD 89353

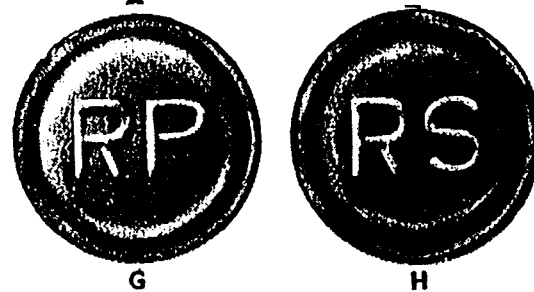
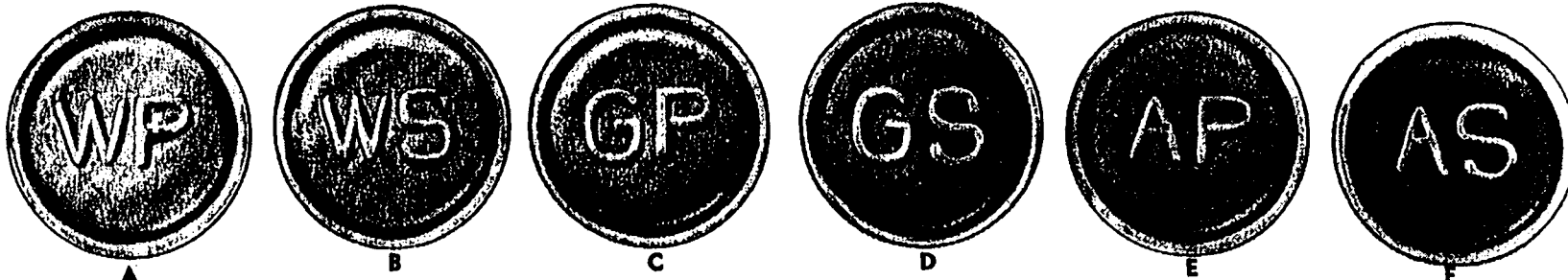
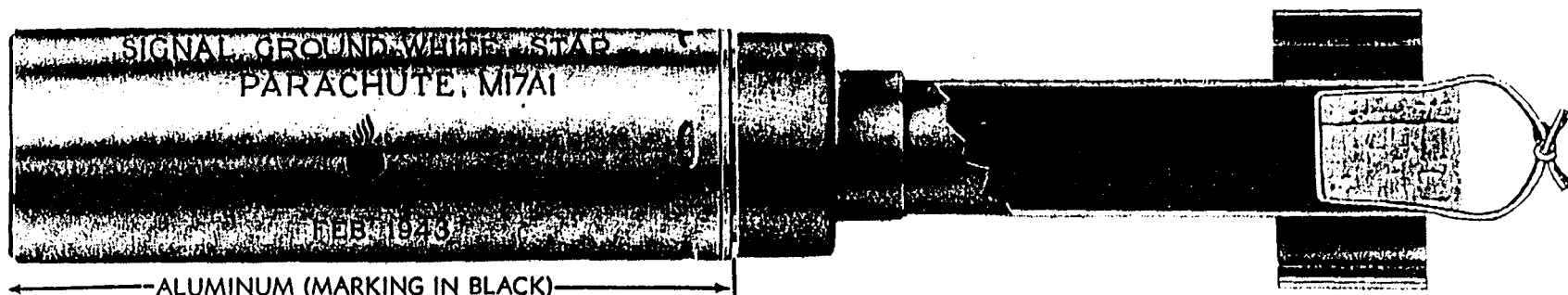
Figure 117 - Trip Flare M49

Classes of Ammunition



RA PD 69071

Figure 116 — Parachute Trip Flare M48



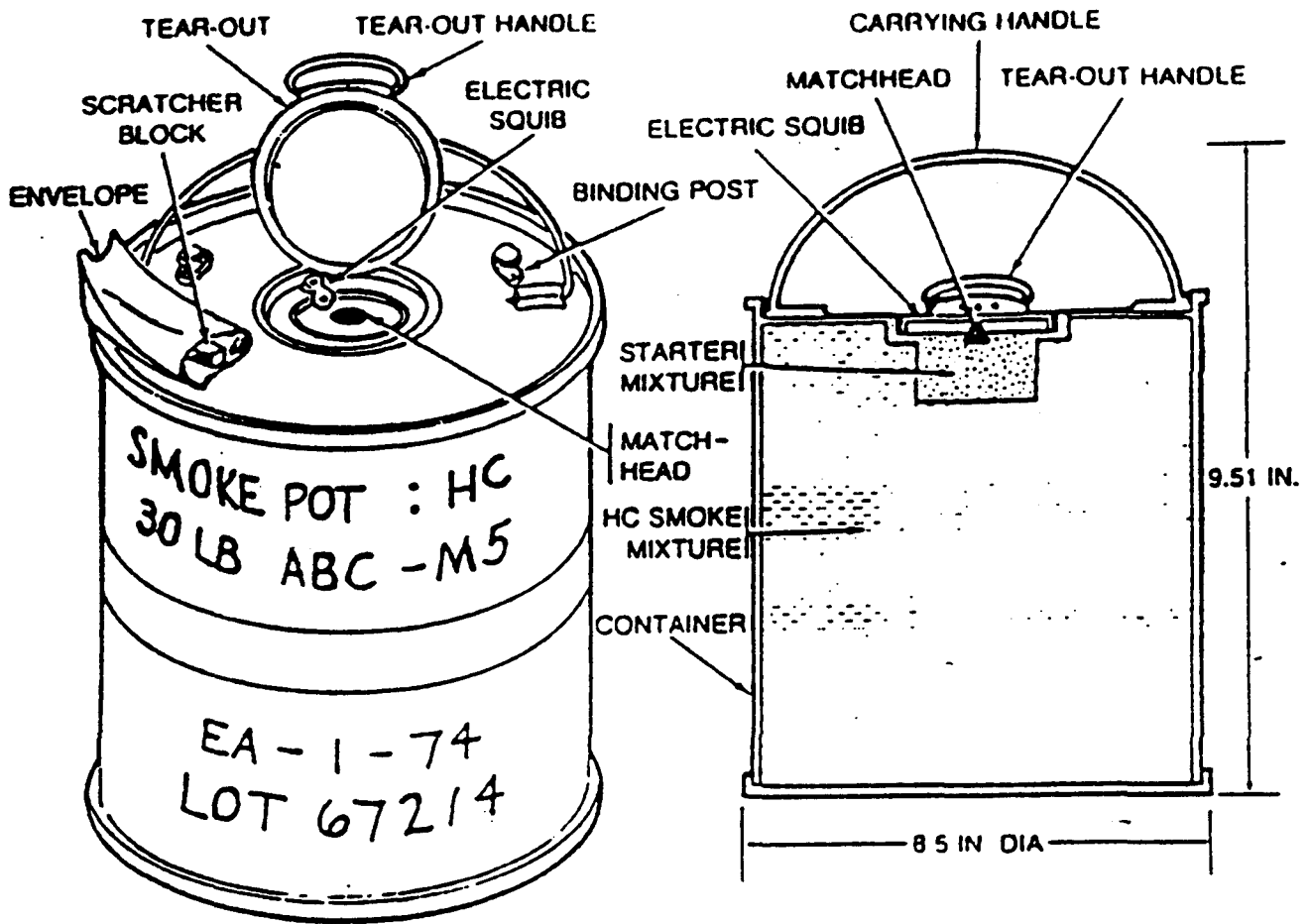
IDENTIFICATION TOP FOR:		COLOR	IDENTIFICATION TOP FOR:		COLOR
A	SIGNAL, GROUND, WHITE STAR, PARACHUTE, M17A1 -	WHITE	E	SIGNAL, GROUND, AMBER STAR, PARACHUTE, M21A1 -	YELLOW
B	SIGNAL, GROUND, WHITE STAR, CLUSTER, M18A1 -	WHITE	F	SIGNAL, GROUND, AMBER STAR, CLUSTER, M22A1 -	YELLOW
C	SIGNAL, GROUND, GREEN STAR, PARACHUTE, M19A1 -	WHITE	G	SIGNAL, GROUND, RED STAR, PARACHUTE, M51A1 -	RED
D	SIGNAL, GROUND, GREEN STAR, CLUSTER, M20A1 -	GREEN	H	SIGNAL, GROUND, RED STAR, CLUSTER, M52A1 -	RED

RA PD 69038B

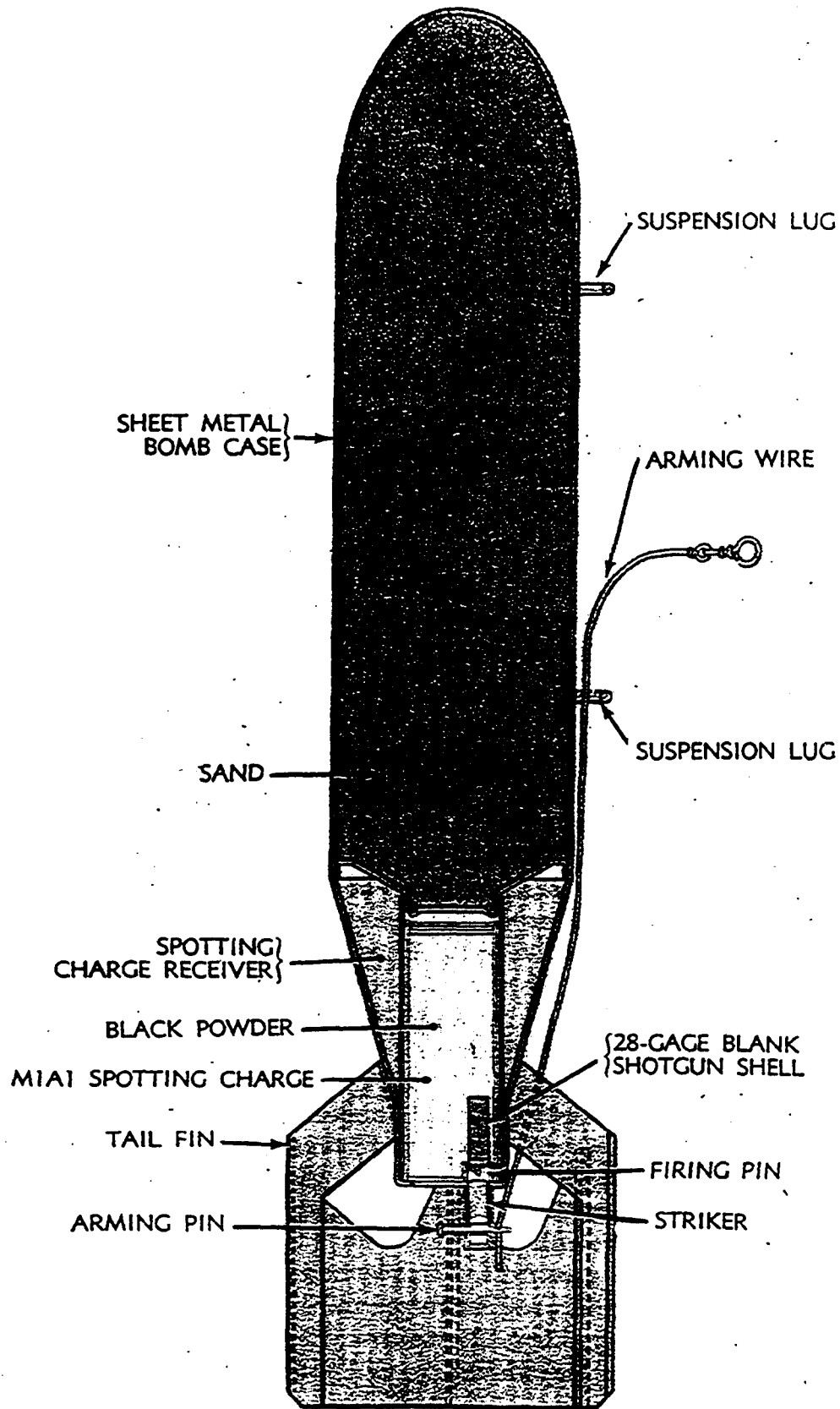
Figure 118 - Ground Signals - Launcher Type

173

Fig. 7-13 (Smoke Pot ABC-M5)

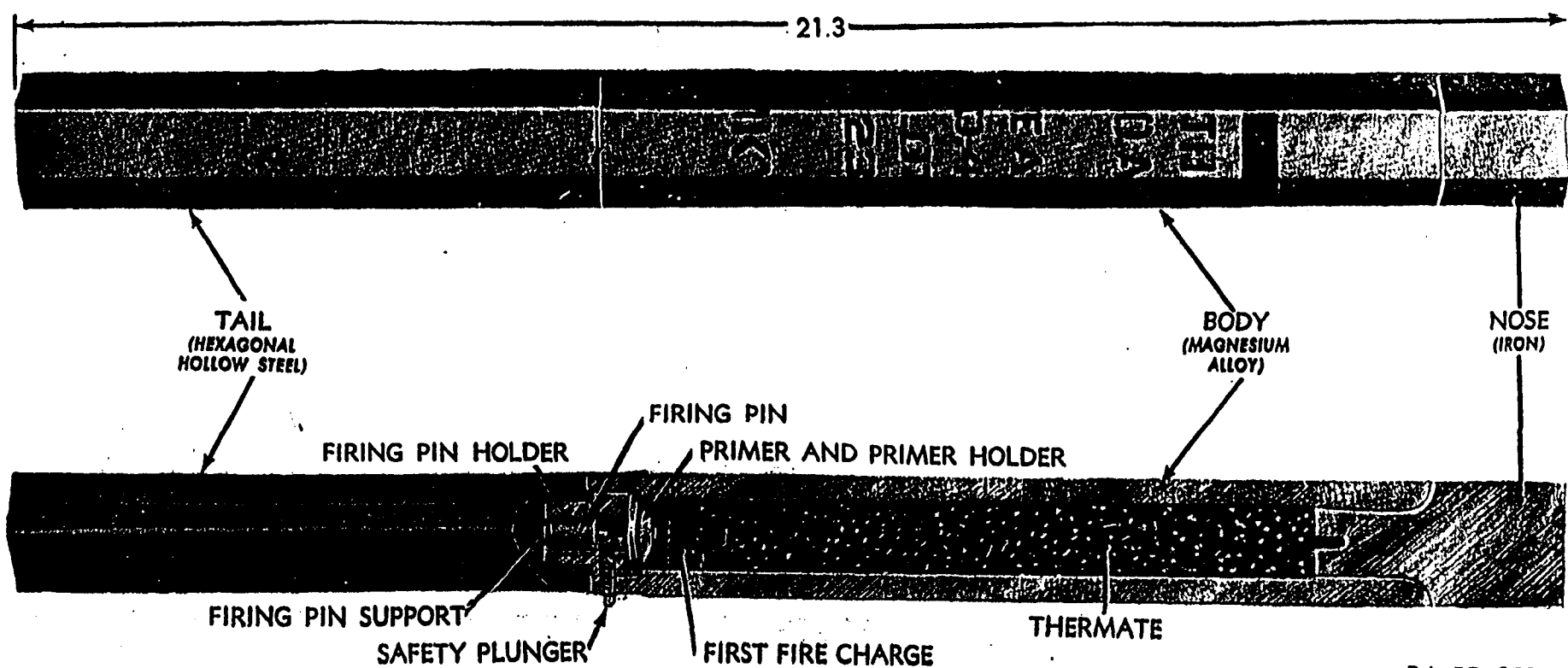


AMMUNITION INSPECTION GUIDE



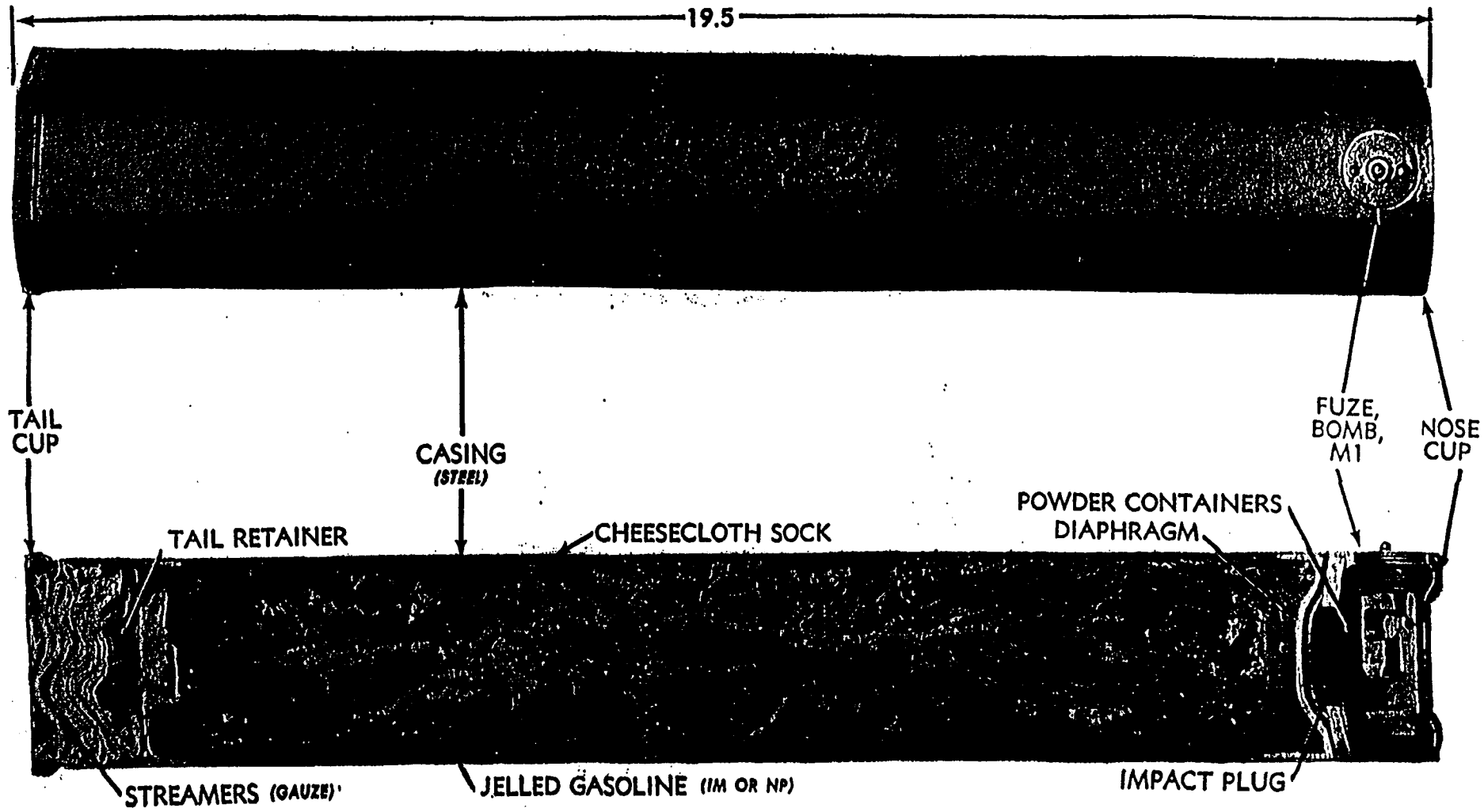
RA PD 23024

Figure 275 — BOMB, Practice, 100-pound, M38A2—Sectioned



RA PD 15065

Figure 107. BOMB, incendiary, 4-lb., AN-M50A2.



RA PD 15069

Figure 109. BOMB, incendiary, oil, 6-lb., AN-M69.

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX E

REPORTS/STUDIES

APPENDIX E
REPORTS / STUDIES

Table of Contents

- E-1. INPR Excerpt For Camps Iron Mountain and Granite (B-1 and B-88).
- E-2. Desert Training Center & CAMA Study #15 Excerpts (B-34).
- E-3. BLM 1984 Iron Mountain Divisional Camp Resource Management Plan Excerpts (B-43).

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. J09CA028400
CAMP IRON MOUNTAIN
11 FEBRUARY 1994

SITE NAME: Camp Iron Mountain

LOCATION: The Camp Iron Mountain site is located in an undeveloped region of San Bernardino and Riverside counties, California, approximately 14 miles west of Rice, California and 55 miles east of Twenty-Nine Palms. Camp Iron Mountain is located within T1S, R17E Sections 1, 2, 6, 7, 11-14, 18-33, T1S, R18E Sections 1-15, 17-35, T2S R18E Sections 1-12 and T1N R18E Sections 1-36.

SITE HISTORY: In January 1942, the success of the German Army in North Africa led the U.S. War Department to focus the U.S. Army's training in areas with a desert terrain and environment. On 5 February 1942, the Chief of Staff, General Headquarters, approved the establishment of the Desert Training Center (DTC) and designated General George S. Patton as the Center's Commanding General. The total maneuver area encompassed 12 million acres in Southern California and Western Arizona, making it the largest training area in the U.S. Close to one million troops trained in this area between 1942 and 1944.

Within the organization of the Desert Training Center, the Iron Mountain site was established as one of the several divisional camps. Therefore, on 24 April 1942, the Department of the Interior transferred 34,706.55 acres to the War Department. A Public Land Order, dated 20 June 1942, transferred another 33,200 acres. The Metropolitan Water District (MWD) of Southern California leased three parcels to the War Department totalling .954 acres in the midst of these public lands. Hence, a total of 67,907.504 acres was acquired for Camp Iron Mountain.

The camp was initially established during the Spring of 1942, occupied by the 2nd Armored Division of the U.S. Army under the command of General George S. Patton. Throughout the two years of operations at Iron Mountain Divisional Camp, five armored divisions and a number of other units were located at the camp.

Temporary improvements consisted of 15 showers, 26 latrines, 113 tent frames, an amphitheater, one 4,000 gallon elevated metal water storage tank, two 3,000 gallon elevated metal water storage tank, and four centrifugal water pumps. The only permanent improvements were a chapel, an altar, and a graded contour simulation map which depicted the Desert Training Center area. At least six firing ranges were located near the camp. However, only one portion of the range is within the former boundaries of the camp.

Camp Granite is located on the southern side of State Route 62. This was another divisional camp which was part of the Desert Training Center. This camp provided additional firing ranges and maneuver areas. Camp Granite is located on the site acquired for Camp Iron Mountain but is considered as a separate DERP-FUDS site, J09CA101400.

By March 1943, the North Africa Campaign was in its final stages and the primary mission of the DTC changed. By the middle of 1943, the troops who originally came for desert training maneuvers, were now deployed worldwide. Therefore, to reflect that change in mission, the name of the Center was changed to the California-Arizona Maneuver Area (CAMA). The CAMA was to serve as a Theater of Operations to train combat troops, service units and staffs under conditions similar to those which might be encountered overseas.

The CAMA was enlarged to include both a Communications Zone and Combat Zone, approximately 350 miles wide and 250 miles long. Thousands of soldiers and equipment arrived by train at the Freda railroad siding as maneuvers continued at Camp Iron Mountain.

Toward the end of 1943, the need for service units for overseas duty increased dramatically, leaving little or no support for the CAMA. Without adequate service unit support, commanders made the decision in January of 1944 to suspend operation of the CAMA. The entire CAMA was declared surplus on 30 March 1944 and the Army formally announced that the CAMA was to be closed by 1 May 1944.

The Camp Iron Mountain site was declared surplus on 16 March 1944. The leases with the Metropolitan Water District for .954 acres had already been terminated on 31 October 1942. The public land owned by the U.S. Department of the Interior, totalling 67,906.55 acres, was retransferred to the Department of the Interior between 1947 and 1949. Activities on the CAMA nominally continued until the 1950s while equipment and materials were collected and shipped and decontamination squads searched out and destroyed unexploded ordnance.

Currently the entire encampment area is surrounded by a four-foot-high fence with turnstiles added to permit pedestrian access. The original roadway network has deteriorated a great deal due to the scouring of erosion and the emergence of natural vegetation. Some portions of this roadway network are now impassable, and vehicular access to the network is now prohibited.

The chapel and altar at Camp Iron Mountain remain in good condition. Maintenance has been routinely done to stabilize the

outer edges of these structures. The 200 x 125 foot contour map has deteriorated appreciably. A wooden bridge and walkway, built to permit viewing of this map, has collapsed. Only several wooden supports and some lumber remains. Most of the wooden signs which identified camps and significant features of the center are no longer legible. The concrete protective surface used to hold the topographic features in shape has been broken. As a result, erosion has taken its toll on the map surface. A ten-foot-high fence currently surrounds the map and no access is permitted.

Other remnants of the camp include many rock designs of military insignia and acres of stone work lining the camp roads and walkways. Throughout the camp, many artifacts of camp life can be found including communication wire, batteries, eating utensils, ration cans and bottles.

The Bureau of Land Management (BLM) placed warning signs on the project site. However, the signs were removed several years ago. No incident reports have actually been handled on the Camp Iron Mountain site. On 15 March 1980, however, an anti-tank mine was discovered approximately five miles to the northwest of the 67,907 acre site. Site preservation and protection are primary concerns of the BLM; they do not want any surface disturbance at the encampment area site. Unless there is a clear and present danger, the BLM does not desire any restoration activities on this encampment area. The BLM requested that they be notified of any contemplated activity in this area.

According to a BLM report, six firing range areas are located near Camp Iron Mountain. However, only one small portion of one firing range is within the boundaries of the camp. One of the firing ranges is located in the Cadiz Valley area west of the Iron Mountains. The southeast portion of this firing range extends into the northwestern boundary of Camp Iron Mountain. Another firing range is located near Palen Pass in the Palen Mountains south of the project site; a third is located in the Kilbec Hills west of Fishel; a fourth is located on the east side of the Iron Mountains and west of Danby Dry Lake; a fifth is located in the Ward Valley area by the Old Woman Mountains north of Milligan; a sixth is located to the northeast of Danby Dry Lake and east of Saltmarsh and Sablon, California.

A majority of the project site property is comprised of scrub-covered foothills currently owned by the U.S. Department of the Interior under the control of the Bureau of Land Management. A portion of the site near the Iron Mountain Pumping Plant is owned by the Metropolitan Water District of Southern California.

SITE NO. J09CA028400

SITE VISIT: The site was visited on 20 October 1993 by Ron Kepford and David Eckstein of Ebasco Environmental, Santa Ana, California. Since military facilities appear to have been removed from the site, and the site returned to an undeveloped condition, no on-site point of contact was established.

CATEGORY OF HAZARD: OEW.

PROJECT DESCRIPTION: Recommend that the MCX for OEW at Huntsville Division make a final OEW determination if further action is appropriate.

AVAILABLE STUDIES AND REPORTS: A real estate file was found at the Real Estate Division, Los Angeles District, U.S. Army Corps of Engineers. Real estate documents, aerial photographs, and other information was obtained at the Needles Branch of San Bernardino County Public Library. Extensive personal interviews were conducted with Mr. John Lynch of the Council on America's Military Past. Other reports includes "Iron Mountain Divisional Camp, Resource Management Plan" by the U.S. Department of the Interior, Bureau of Land Management, 1984; "Desert Training Center, California-Arizona Maneuver Area, Interpretive Plan", by U.S. Department of the Interior, Bureau of Land Management, 1986; "Patton's Desert Training Center" by Lynch, Kennedy and Wooley, Council on America's Military Past, 1982; and "The Desert Training Center and CAMA, Study No. 15", by Sgt. Sidney L. Meller, Historical Section--Army Ground Forces, 1946.

DISTRICT POC: Jatin Desai, Los Angeles District, (213) 894-6266

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FORMERLY USED DEFENSE SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY

CAMP IRON MOUNTAIN
RICE, CALIFORNIA
SITE NO. J09CA028400

FINDINGS OF FACT

1. On 24 April 1942, the Department of the Interior transferred by means of a use permit 34,706.55 acres to the War Department. Public Land Order No. 1, dated 20 June 1942, transferred another 33,200 acres to the War Department. The Metropolitan Water District of Southern California (MWD) leased three parcels to the War Department totalling .954 acres in the midst of these public lands. Hence, the War Department acquired by Public Land Order, use permit, and leased a total of 67,907.504 acres for Camp Iron Mountain.

2. Within the organization of the Desert Training Center, the Iron Mountain site was established as one of several divisional camps dedicated to the training and conditioning of troops and testing military equipment. It appears that the camp was initially established during the Spring of 1942, occupied by the 2nd Armored Division of the U.S. Army and under the command of General George S. Patton. Throughout the two years of operations at Iron Mountain Divisional Camp, five armored divisions and a number of other units were located at the camp. Temporary improvements consisted of 15 showers, 26 latrines, 113 tent frames, an amphitheater, one 4,000 gallon elevated metal water storage tank, two 3,000 gallon elevated metal water storage tank, and four centrifugal water pumps. The only permanent improvements were a chapel, an altar, and a graded contour map simulation depicting the Desert Training Center area. At least six firing ranges were located near the camp. However, only a portion of one range is within the former boundaries of the camp.

3. The three leases with the Metropolitan Water District (MWD) for .954 acres were terminated on 31 October 1942. Camp Iron Mountain was declared surplus on 16 March 1944. Public Land Order (PLO) No. 342 thereby transferred 33,200 acres to the U.S. Department of the Interior. A letter, dated 30 June 1949, retransferred 34,706.55 acres to the Department of the Interior. Neither the public land orders nor the special use permit contain recaptive clauses or restoration provisions. The lease agreements with MWD could not be located. The chapel and the altar are the only remaining structures on the site. The contour map is severely deteriorated as well as the original camp roadway network. Most of the site is owned by the Department of the Interior under the jurisdiction of the Bureau of Land Management. A small portion of the former site near the Iron Mountain Pumping

SITE NO. J09CA028400

Plant is owned by the Metropolitan Water District of Southern California.

DETERMINATION

Based on the foregoing Findings of Fact, it has been determined that this site was formerly used by the Department of Defense (DOD). It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites, established under 10 USC 2701 et seq.

DATE

12 Sep 94

for DEP/ST COL
MILTON HUNTER
Brigadier General, US Army
Commanding

PROJECT SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT NO. J09CA028401
CAMP IRON MOUNTAIN
SITE NO. J09CA028400
11 FEBRUARY 1994

PROJECT DESCRIPTION: Camp Iron Mountain was established by the Army for use as one of several divisional camps dedicated to the training and conditioning of troops and testing of military equipment. The camp was established during the Spring of 1942 and subsequently occupied by five armored divisions. At least six firing ranges were established near the site. Ordnance used consisted of medium and large caliber munitions, landmines, grenades, rockets, artillery shells, and small arms.

Five firing ranges were not located within the boundaries of the project site and one firing range extended into Camp Iron Mountain. This firing range is located in the Cadiz Valley area west of the Iron Mountains. The southeast portion of this firing range extends into the northwestern boundary of Camp Iron Mountain. Another firing range is located near Palen Pass in the Palen Mountains south of the project site; a third is located in the Kilbec Hills west of Fishel; a fourth is located on the east side of the Iron Mountains and west of Danby Dry Lake; a fifth is located in the Ward Valley area by the Old Woman Mountains north of Milligan; and the sixth is located to the northeast of Danby Dry Lake and east of Saltmarsh and Sablon, California.

PROJECT ELIGIBILITY: The property was formerly owned and used by the U.S. Army.

POLICY CONSIDERATIONS: No policy considerations are known to exist which would affect the proposal of this project.

PROPOSED PROJECT: Recommend the Corps' Mandatory Center of Expertise (MCX) for OEW at the Huntsville Division make a determination if further action is appropriate.

RAC FORM: Attached.

DISTRICT POC: Request CEHND inform Mr. Jatin Desai, Los Angeles District, at (213) 894-6266 when a determination is made regarding project status.

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FORMERLY USED DEFENSE SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY

CAMP GRANITE
RIVERSIDE COUNTY, CALIFORNIA
SITE NO. J09CA704300

FINDINGS OF FACT

1. The War Department (Army) acquired land from the Department of the Interior by Public Land Order No. 1, dated 30 June 1942, within the following sections of Riverside County, California: Section 25, T1S,R17E; Sections 29, 30, 31, and 32, T1S,R18E (San Bernardino Meridian). Total acreage acquired based on the above sections is 3200 acres.
2. The site was used as a training camp during World War II as a part of the California-Arizona Maneuver Area (CAMA). A tent camp and access roads were the only improvements noted.
3. All acreage acquired for the majority of camps and bases in the California-Arizona Maneuver Area was declared surplus by the War Department on March 16, 1944. The land acquired for the Camp Granite site was relinquished to the Department of Interior on January 13, 1947 by Public Land Order No. 342. The site is currently maintained by the Department of the Interior Bureau of Land Management as part of the California Desert Conservation Area. Total disposal was 3200 acres.

DETERMINATION

Based on the foregoing Findings of Fact, the site has been determined to be formerly used by the Department of Defense. It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 USC 2701 et seq.

30 Aug 94
DATE

for D & P Hunter
MILTON HUNTER
Brigadier General, U.S. Army
Commanding

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. J09CA704300
CAMP GRANITE
6 AUGUST 1993

SITE NAME: Camp Granite.

LOCATION: The site is located approximately 45 miles west of the Colorado River in Riverside County, California. A monument marks the site 0.3 miles west of the San Bernardino-Riverside county line on California Highway 62. The Colorado River Aqueduct is located approximately one mile from the northwest corner of the former camp.

SITE HISTORY: One of the Desert Training Maneuver Area camps established in 1942-43 during World War II, Camp Granite was located about 45 miles west of the Colorado River. In June 1943, the 76th Field Artillery Brigade was at Camp Granite although the permanent camp had not yet been completed. The camp was later used by the 90th Infantry Division upon completion of the permanent camp. The entire Desert Training Center was in operation for nearly two years and was closed in early 1944 when the last military units were shipped overseas for combat.

The east-west running, temporary tent camp was roughly three miles long and approximately one mile wide. Camp Granite was located on the northern plain formed at the bottom of the Granite Mountains opposite from Camp Iron Mountain. According to information from the United States Department of the Interior, Bureau of Land Management, California Desert District, two camps were built in this area. The original camp was built closer to the current California state highway 62, but was moved to higher and dryer ground following problems generated by runoff from the Granite Mountains. Information contained in the Army Corps of Engineers project file for the Needles Resource Area indicated that Camp Granite utilized two artillery ranges, A and B, during its operation. A map of the former camp suggests that these artillery ranges were located on the southern part of the camp near the Granite Mountains. According to the Bureau of Land Management, ordnance has been reported in the area.

Army Corps of Engineers maps outline the areas surveyed for ordnance by the Corps after World War II in the California-Arizona Maneuver Area. These maps show that some portions of the former site area have been cleared for all uses, while other areas have been restricted to surface use only (mostly the regions closer to the Granite Mountains). After military occupation, the subject lands were returned to the Department of the Interior. The lands returned by the military were later declared part of the Department of the Interior's Desert Conservation Area on October 21, 1976. The site is currently maintained by the Department of the Interior Bureau of Land Management as part of the California Desert Conservation Area.

SITE VISIT: A site visit was conducted on June 14, 1993 by Jeffrey Kozel and Tor Benestad of Dynamac Corporation. Dynamac obtained some background information on Camp Granite, including general location, while conducting research at the General Patton Memorial Museum in Chiriaco Summit, California. No evidence of toxic or hazardous waste, unsafe debris or ordnance that would signify use of the area by the Department of Defense was observed. 916-363-1695

CATEGORY OF HAZARD: OEW

PROJECT DESCRIPTION:

a) OEW: Recommend the MCX for OEW at Huntsville Division make a determination regarding further investigation at this site.

AVAILABLE STUDIES AND REPORTS: Desert Training Center California-Arizona Maneuver Area Interpretive Plan, United States Department of the Interior, Bureau of Land Management, California Desert District, 1986.

DISTRICT POC: Mr. Jatin Desai, Los Angeles District at (213) 894-6266.

PROJECT SUMMARY SHEET
FOR
DERP-FUDS OEW PROJECT NO. J09CA704301
CAMP GRANITE
SITE NO. J09CA704300
6 AUGUST 1993

PROJECT DESCRIPTION: Unexploded ordnance has been found at the Granite Camp site, as reported by the Bureau of Land Management.

PROJECT ELIGIBILITY: The property was formerly owned by DOD (Army).

POLICY CONSIDERATION: There are no policies which prevent proposal of this project.

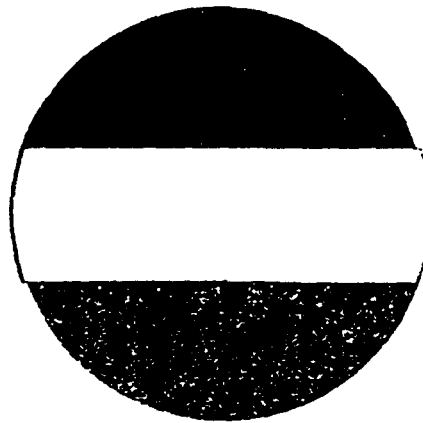
PROPOSED PROJECT: Recommend the Corps' Mandatory Center of Expertise (MCX) for OEW at the Huntsville Division make a determination if further action is appropriate.

RAC FORM: Attached.

DISTRICT POC: Request CEHND inform Mr. Jatin Desai at (213) 894-6266 when a determination is made regarding project status.

THE DESERT TRAINING CENTER AND C - A M A

Study No. 15



Historical Section . Army Ground Forces

1946

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The Army Ground Forces

THE DESERT TRAINING CENTER AND C-AMA
Study No. 15

By
Sgt. Sidney L. Meller

Historical Section - Army Ground Forces
1946

CHAPTER III

TRAINING

"Our Best Training Agency"

Even as he recommended the closing of the California-Arizona Maneuver Area, General McNair called it "our best training agency for both combat and service units."

What were its special attributes?

The value for its commanding general and staff was incalculable. With little or no time to observe complex machinery of the DTC-CAMA, they had to take it over and make it run, and top-grade officers were required to keep the wheels running smoothly. General Anderson declared that he could think of no experience more valuable in welding his staff together and fitting it for its function overseas.¹ Officers from the Army Ground Forces observed how the command functioned and judged its caliber. The Army Ground Forces considered this so important that it devoted its principal effort to the evaluation of the quality of command being exercised by theater commanders and their subordinate commanders.² Of the seven commanding generals of the DTC-CAMA, two were later assigned the command of armies and four of corps in the European Theater -- General Patton commanding the Third Army, General Patch the Seventh, General Gillem the XIII Corps, General Walker the XX Corps, General Haislip the XV Corps, General Anderson the III Corps. General White, who, as noted, was regarded as less successful by the Army Ground Forces in carrying out its mission for the Desert Training Center, was assigned command of the Infantry Replacement Training Center at Camp Joseph T. Robinson, Arkansas.³

General Walker, returning from his experience in Germany as Commander of the XX Corps, stated that higher commanders and their staffs and all officers and troops had benefited from their training in the Center, but that the top command had benefited most, gaining confidence and perspective from the direction of large operations in the desert. He had found no doubt in the minds of those who had been through the Center, generals or privates, that their training there was the best they had received, and that the desert was the best place ever found for the training of the Army. He had once heard General Patton say that his experience in the desert was, with the exception of his combat experience in the First World War, the most valuable he had ever had as a commander. General Walker, for himself, would not except even his previous war experience.⁴

A second great advantage of the DTC-CAMA was its continuity. Though a shift occurred in the theater command, training and supply and administration went on without interruption. When the IV Corps left while maneuvers were in progress, the maneuvers continued under its successor, the I Corps. Likewise, units in their pre-maneuver training went on with their schedule.

Continuity saved time. Thus the first maneuvers did not begin until approximately five months after the opening of the Center, the second almost half a year later, the third after another four months. The last three maneuvers began respectively on 22 November 1943, and 10 January and 13 February 1944. This indicates more than maneuvers alone because after 1942 units underwent a training schedule before the maneuvers.

Continuity permitted improvement in administration, the system of supply, realism and training. The rapid alternation of exercises in the maneuvers under



Command Post installation, taking full advantage of ironwood tree. (From files of Engineer Board, Yuma Test Branch)

the II Armored Corps, which inhibited the use of reconnaissance, did not permit a testing of the ability of a unit to keep supplied, and to keep its vehicles rolling. To take better advantage of the situation, the number of exercises was cut to three in the three-week maneuvers under the IV Armored Corps, and General Walker recommended lengthening exercises even further to permit a more realistic play of supply and maintenance as well as to test the endurance of troops and equipment.⁵ In April 1943 the schedule was altered and the number of exercises reduced to two in the three-week maneuvers.⁶ Continuity also permitted improvements of the training area. Thus, a defensive position was built up at Palen Pass successively by units passing through the DTC-CAMA.

Since this installation was going at all times, whenever overseas-experienced officers came to this country they could stop off and watch and perhaps offer suggestions which could be tested at once. During the period of the XV Corps, Lt. General Bucker and Maj. General Bonesteel spent several days at the Center. Brig. F. A. B. Copland-Griffiths of the British Army delivered an instructive talk to the Commanding General and the staff of the Center on his experiences as an armored brigade commander in North Africa. Lt. Col. MacAlpin Blackwatch, a leader in British Commando training and operations, strongly impressed by the training being conducted in the desert, was liberal with comments and suggestions.⁷

A concomitant benefit existed in always having on hand troops, operating under theater conditions, to test materiel. At a period when only a small proportion of our troops were committed to actual combat, this testing was of vital importance.

A third attribute of the DTC-CAMA was its spacious and varied terrain. The size of the area and the lack of civilian population permitted exercises to be conducted on wide expanses. At the beginning of Exercise "A" of the maneuvers under the IV Armored

Corps, the main forces of Blue and Red were 175 miles apart. Commanders had to move their units over such distances as they had later to cover in the campaign of France and beyond the Rhine.⁸ The breadth of the area permitted some units to be going through maneuvers while other units undertook pre- or post-maneuver training in other areas. Antiaircraft artillery units and units equipped with antiaircraft weapons could fire at towed targets, restricted only by the limited number of tow-target missions that were provided. Signal units erected telephone lines. Flame throwers were used against pillboxes. The varied terrain permitted varied training, and almost no obstacles interfered with freedom of maneuvers. Maneuvers in Tennessee and Louisiana were subject to artificial restrictions. The DTC-CAMA was not in the neighborhood of a large city, was not in a region of farms; units went freely cross-country, climbed and defenced and attacked positions in mountains. Firing could be carried on without fear of interlopers being harmed. Highways were placed off limits for tactical movements, except as defiles. Blackout driving was practiced at night.⁹ Commanders faced all the logistical responsibilities they would encounter in actual warfare.¹⁰

A fourth major advantage of the DTC-CAMA was in permitting the imposition on it of an organization simulating that of an active theater. Its spaces permitted locating installations in approximately the positions they would occupy in a theater. Again, since realism made it necessary for the troops to live the Spartan life, they became hardened. Numerous observers attested to this. For example, Lt. Gen. Ben Lear, watching an attack by an infantry company of the 8th Infantry Division in the desert, commented on the splendid physical condition of the men.¹¹ AGF and AAF officers praised the physical condition of men in the 79th Infantry Division.¹² General Anderson wrote that the accomplishments of the Center "in hardening the individual and acclimating the individual and the unit to honest field operations, more than justified the natural hardship upon materiel and equipment incident to the character of the operations therein."¹³ General Walker, on his return from the war in Germany in 1945, believed that the experience had given the men who had it an invaluable confidence in finding they could conquer and survive the hardships imposed by nature which remained their great foe even in a war with a human foe.¹⁴ By merely going through one's duties in the DTC-CAMA an officer or enlisted man was being trained to function as he would function overseas in an active theater. That was the supreme contribution to training made by theater framework and the imposition of realistic conditions.

A fifth benefit was the varied training that could be carried on. Some notion of the variety has already been given. The subjects for training of units listed in the AGF directive of 6 April 1943 will indicate this in more detail:

Movement across country; navigation

Reconnaissance, combat intelligence, counterintelligence and liaison

Exercises which were to be realistic and complete in all details

Dispersion of vehicles during the march, halts and in bivouac

Aggressive action by dismounted individuals and small units against armored vehicles.

Laying and removal of mine fields

Antiaircraft defenses with both organic and task weapons and units. Each vehicle authorized an antiaircraft gun was to carry it or a dummy machine gun, mounted and ready for action during the daylight hours of each tactical exercise. A gunner or antiaircraft sentry was to be on the alert at gun at all times. Other vehicles, carrying more than two soldiers, including the driver,

were to have an antiaircraft sentry on the alert. Planes were to make simulated attacks to test antiaircraft personnel. Fire of all available and suitable weapons was to be delivered against hostile planes when concealment was not essential or obviously did not exist.

Rapid close-in air support of ground units, on call

Artillery observation by liaison planes

Camouflage

Night operations

Use of identification panels

Adherence to tables of equipment

Battlefield recovery and evacuation of armored vehicles and other heavy equipment

Day-by-day maintenance of motor vehicles

Driver training with emphasis on night driving and driver maintenance; aggressive supervision of driving and maintenance by all command echelons

Realistic supply of all classes, including ammunition, with actual tonnage, especially at night

Special features of hygiene, sanitation, and first aid peculiar to desert

Cooking by individuals and small groups

Supply by air¹⁵

"Tough and Realistic Conditions"

Realism was not an isolated compartment in the DTC-CAMA, like a gas chamber, into which personnel from a unit were introduced for a lecture and a spray. Realism was an atmosphere in which troops ate and worked and slept for at least three months and usually longer. It pervaded all departments of the DTC-CAMA. Men learned not only how to fight other men but nature also. As soon as they had defeated nature a few times -- as by enduring some thirst, getting lost and finding themselves, fixing up a car that had broken down on a desert trail -- they gained confidence in themselves, and that spirit remained with them.¹⁸

It was not a simple process. General Walker and Colonel Sweet set the theater going in the spirit desired by Headquarters, Army Ground Forces. When officers from Headquarters, Army Ground Forces, observed lapses in realism, these were brought to the attention of the Commanding General of the Center.

General White and the IX Corps took over and because they concentrated on administration, the emphasis on realism decreased. An officer of Headquarters, Army Ground Forces, reported that the camp of the 76th Field Artillery Brigade showed devotion to cleanliness and order; stones flanked gravel foot paths and rock borders protected bushes. On the other hand, the field exercises of the Brigade had been reduced to those which could be accomplished within a four-day period, including movement to the maneuver area and return to the base camp. Too many men were being authorized a

three-day pass weekly.¹⁷ After General McNair and other AGF officers observed the maneuvers under the IX Corps, a critical letter was sent to Headquarters, Desert Training Center: Many units were not hardened physically. Group cooking was not being practiced even in units such as the reconnaissance battalion of the 7th Armored Division. Mines laid on top of the ground by the division defending Palen Pass contributed practically no obstacle to the enemy. At the 8th Division headquarters, umbrellas shielded military policemen from the sun. From 11:30 until mid-afternoon of each day infantrymen on the defensive position pitched shelter tents to afford themselves shade, and the tents were visible for a considerable distance. No infantry work progressed during this period; men slept. The letter from Army Ground Forces, signed by General McNair, concluded with this paragraph:

There has been a noticeable tendency at the Center as a whole to drift away from the original and proper conception of tough and realistic conditions toward the luxurious and artificial conditions of other camps and posts throughout the United States. Training at the Center is enormously expensive, due to railroad transportation. Operation of such an establishment is justified only when the training is conducted on a Spartan basis which will result in superior physical condition and a more realistic setting than any obtainable elsewhere. Some officers and enlisted men have reached the wishful conclusion that the termination of the African campaign has rendered desert training unnecessary. Desert Training is merely an incident; the main objective is tough, realistic general training. Troops must be made to understand the above objectives.¹⁸

General White defended his course. He maintained, for example, that group cooking was done in the maneuvers by groups as occasion demanded. The only addition to construction had been to screen kitchens and latrines, recommended by the DTC Surgeon and justified by the almost complete disappearance of dysentery from the Center, a disease which had been of high incidence in 1942.¹⁹

General McNair sketched his policies towards the Center, and his notes were circulated among members of his staff at Headquarters, Army Ground Forces, in preparation for a conference to be concerned with the formulation of a new directive. He mainly concerned himself with the problems of administration as with the lack of realism in having the combat zone completely inclosed within the communications zone. He wanted all construction and equipment restricted to what could be expected reasonably in an active theater. At the conference it was decided that, unless the Ground Surgeon could show cause for their retention, perishables would be dropped from the menu and ice boxes and screened kitchens would be eliminated.

The Ground Surgeon did not object to the use of the "B" ration, considering the vitamin content adequate if the ration was fully utilized. He warned of the need to plan menus carefully in order to forestall monotony; spam or sardines should not grace every meal. The fly menace was variable and seasonable in the Center. Studies by the medical laboratory had afforded proof that flies were responsible for a near epidemic of dysentery. If kitchens in the base camp were to be patronized only a few days out of the entire time a unit spent in the Center, screening was not necessary. Many units, particularly service units, had to remain in certain areas for long periods; for them screening was advised because of the potential danger of fly-borne disease.²⁰

The AGF directive issued on 16 July 1943 brought back the emphasis on realism and toughening of personnel. Many of its provisions concerned the application of realism to matters of administration and supply and will be considered in appropriate sections. The ration was changed. Except for patients in the station and the general hospitals, the ration to be supplied and units in the Center would contain no perishable items requiring refrigeration or ice. The above policy would become effective not later than

15 August 1943. Existing screening of kitchens would not be removed, but it was not to be maintained or renewed.²¹

A week after this directive was issued, General Haiglip and the XV Corps took over the Center and carried out the provisions of the directive. The 25th Division, previously authorized screening for kitchens, did not secure the screening.²² The Engineer of the 81st Division, who was considering installing concrete floors for the shower units, was assured by the Engineer Office at the Center that the request would be disapproved.²³ As of 2400 (midnight) of 14 August 1943 delivery of ice was stopped and the Center went on "B" rations.²⁴ Units were not permitted to become permanently attached to a base camp, and Headquarters, Army Ground Forces, considered this commendable; much of the prescribed training could be conducted profitably with units divorced from a base camp, particularly at that time of the year.²⁵

From this time until the end of the year Headquarters, Army Ground Forces, was content merely to point out minor departures from realism and the process of toughening personnel. When General McNair visited the CAMA in December of 1943, he observed that Post Exchanges and the Officers' Club at Camp Young were serving fresh milk and sandwiches.²⁶ Headquarters, Army Ground Forces, ordered that steps be taken without delay to insure that all troops in the CAMA subsist on field ration "B," exception being made for patients in station and general hospitals, later broadened to include patients in evacuation hospitals.²⁷ This was soon modified so that in no case would any personnel be kept on the "B" ration for periods in excess of two months without a break of several days in which the "A" ration was fed.²⁸ The entire policy was shortly dropped, since the CAMA was in the process of being closed, and all units in the CAMA were fed the "A" ration.²⁹

The emphasis on realism and toughening of personnel led to some questioning both within and without the Army. It was by War Department direction that the policy regarding field rations was relaxed. Much earlier, in June 1943, Lt. Gen. Ben Lear protested that cover for adequate eating space should be provided for divisional, regimental and smaller unit base camps within the Center. Such cover had generally been provided for organizations at Camp Young, but not for the organizations in the vicinity of Yuma or Camp Laguna. General Lear believed the maneuvers should provide ample opportunity for hardening the men under realistic combat conditions and that certain comforts should be provided the men while at base camps.³⁰

The "B" ration aroused some dissatisfaction among the men. Since only ten different menus were used in the Center, whenever substitution became necessary the food soon lacked variety and provoked numerous complaints about its monotony.³¹ An enlisted man who purported to speak for his battery charged that officers still secured ice.³²

There was some public protest over conditions existing generally in the Center. Mr. James H. Gordon, in charge of the Weather Bureau at Yuma, Arizona, asserted that "training has passed beyond constructive into destructive stage. Reported deaths and prostrations staggering." Dr. E. Payne Palmer, head of the Southwest Clinic, Phoenix, Arizona, whom Senator Carl Hayden in a letter to the Surgeon General characterized as one of the most noted physicians and surgeons in western and southwestern United States, called attention to an incident when three men died, and he hoped for an investigation of methods.³³

In that incident the errors in judgment by those in command were not of a nature to have brought a conviction if the officers had been tried for negligence. The carrying out of a field problem caused a change in the route of an infantry platoon. No time being available for a detailed reconnaissance, the platoon was assigned a route not previously used. When the vehicles became stuck on a ledge the platoon continued on its march, inasmuch as the umpire had on a prior occasion instructed the platoon

In the first maneuvers under the theater of operations organization, 15 February - 6 March 1943, the IV Air Support Command exercised command over all air units and acted as Air Director Headquarters. Air support parties were furnished to all divisions and in some instances down to and including combat commands and combat teams. But there was not enough air. Available aviation included one observation group and one dive bombardment group, both at reduced strength.

That more training in air support was needed and could have greatly helped units is obvious from the report of the Chief Umpire for the maneuvers. In the first of the three exercises air-grounded cooperation was not satisfactory; it was better in the second exercise; in the third it showed marked improvement. In the first exercise full use was not made of air potentialities until the later phases of the exercise. Air bombardment requested by Blue resulted in the bombing of Blue troops. In the third exercise, on the other hand, Red obtained superior results. Planes were in the air the maximum number of hours available.

General Walker recommended that during large-scale maneuvers air units normally assigned to the Center should be reinforced by air force units to approximately the amount of aviation that should be available for similar operations in battle, in order to produce a more realistic situation.⁵⁴ The Army Ground Forces concurred and sent the recommendation on to Headquarters, Army Air Forces. The Army Air Forces agreed that reinforcement was desirable, but stated that commitments and operational training requirements made it impracticable.⁵⁵

Headquarters, Army Ground Forces, went on trying to improve airground training.⁵⁶ Its letter of 6 April 1943 directed group troops to designate targets to planes in the air during maneuvers. Air units and the Air Service Command, under the IV Air Support Command, were to conduct operations from improvised bases, airdromes, and landing fields, rapidly evacuate and move ground echelons between bases, camouflage ground installations and aircraft, and defend bases, airdromes and landing fields from hostile attacks by parachute, airborne, armored and mechanized forces, and by ground troops.⁵⁷

For the maneuvers under the IX Corps, the IV Air Support Command could contribute only one dive bombardment group and one reconnaissance group, both considerably under-strength in ships and pilots. These did their utmost. The 22 liaison-type planes and 70 combat-type planes flew a total of 2,600 hours on 460 tactical missions. But only 92 planes were supporting more than 100,000 troops.⁵⁸

The report of Headquarters, IV Air Support Command, indicated lack of progress in air-ground cooperation. During the maneuvers, for example, Blue in the main used air reconnaissance quite satisfactorily, but certain ground commanders insisted on too detailed information. In other words, ground commanders needed more experience in order to learn the capabilities and limitations of air. Attack aviation was employed more as an air force in a theater of operations than primarily in close support of ground troops. This training helped air, not ground, and did not advance close air-ground cooperation. Again, since an underlying purpose of the maneuvers was to test sustained supply difficulties, many attack missions were ordered against railheads, supply dumps and columns. But aviation being limited, its employment against such targets and attempts to knock out enemy airdromes prevented at times the acceptance of air party requests from divisions for combat support. Again, throughout the maneuvers a lack of adequate airground identification procedure was apparent. The outlining of forward positions by panel display was not well coordinated, even when specifically arranged.⁵⁹

Such problems could have been solved by giving ground and air more practice together. For this, more aircraft would have been required, and more aircraft were not

forthcoming. In the IV Corps maneuvers all tactical aviation was made available to either Red or Blue as requested, depending upon the priority of the request and the suitability of targets. All aircraft were considered hostile to troops on the ground. This was considered desirable because of the impetus given to camouflage and concealment. But the same desirable result could have been obtained realistically if more planes had been available, and their presence would have also provided practice in recognizing types of airplanes.

Officers from the Air Support Branch of G-3, Headquarters, Army Ground Forces, observing the maneuvers under the IV Corps, were not satisfied. They felt that while the colonel commanding the III Tactical Air Division (which had replaced the IV Air Support Command)⁶⁰ was cooperative and commanded participating air units in an excellent manner, the CAMA offered great possibilities for air training which were not being realized. They recommended an increase of air units which should be commanded by a brigadier general of the air corps.⁶¹

Of the approximate total strength of 160,000 in the CAMA in late 1943, only about 4,000 were from the Army Air Forces.⁶² The future held no promise of improvement. As the Army Air Forces approached its authorized strength in units, the training of replacement crews was to receive greater emphasis, and fewer units would be in training or available for combined air-ground training. The War Department advised pooling these units to permit the participation of large air force elements in the combined training of ground force units and maneuvers in the priorities established by the Commanding General of the Army Ground Forces.

At midnight 30 November - 1 December 1943, through the efforts of the Army Air Forces, air force units and installations in the CAMA reverted to the control of the Commanding General of the Army Air Forces.⁶³ The III Tactical Air Division, including supporting service units and airdromes, was assigned to the Third Air Force, whose Commanding General was made responsible for providing the necessary air force units to accomplish the required air-ground training in the CAMA.⁶⁴ The situation did not improve. In the last maneuvers held in the CAMA, Brig. Gen. Leo Donovan, G-3, AGF, commented that air support was practically non-existent.⁶⁵

In general, Headquarters, Army Air Forces, did not by its acts indicate any great interest in the air-ground training being conducted at the DTC-CAMA. The scarcity of planes and air force personnel has been pointed out. But indifference was manifested in other ways. The situation of the Air Supply Officer is a case in point. When the Commanding General of the Air Service Command at the Thermal Air Base was no longer designated as the channel for Air Force Supply, the Signal Officer of the CAMA had to act as Air Supply Officer. With a strength in the CAMA on 15 October 1943 of 174,277 he could not satisfactorily carry out his dual function. Headquarters, Army Ground Forces, in October 1943, requested that one AAF officer and one AAF non-commissioned officer, familiar with the supply of AAF equipment, be assigned to the control of the Commanding General of the CAMA for the purpose of establishing an adequate Air Supply office at the earliest practicable date. Not until 15 March 1944 were orders issued by Headquarters, Army Air Forces, transferring one officer and three sergeants for this duty. By that time, because of the break-up of the CAMA, the AAF personnel were no longer required.⁶⁶

It is a commentary on air-ground support training in general that despite its inadequacy in the DTC-CAMA, G-3 of the Army Ground Forces declared that from the standpoint of the Army Ground Forces the air-ground training being given in CAMA was by far the most satisfactory training being received by AGF units in the United States.⁶⁷

The War Department, early in 1943, had pointed out the crux of the matter. "Combined air-ground training is...necessarily a joint responsibility of the Commanding General, Army Air Forces, and the Commanding General, Army Ground Forces, which requires close coordination and cooperation."⁶⁸

The difference between the Army Air Forces and the Army Ground Forces concerning air-ground cooperation in the CAMA represented a difference of emphasis and direction. General McNair was intent on thorough all-around training of his troops before they entered combat. The eyes of the Army Air Forces, on the other hand, were fixed on "strategic" air war and its immediate potentialities. The Air Forces, in 1943 and early 1944, were still carrying the burden of the offensive against Germans and, to some extent, the Japanese. General Arnold declared that the Air Forces found it increasingly difficult to justify to theater commanders, to the public, and even to themselves, the great number of airplanes in this country in comparison with the number in theaters. Airplanes earmarked for test and development work had to be used to the maximum, loaded down with numerous devices being tested or developed. General Arnold put it this way in his letter to the Commanding General of the I Troop Carrier Command: "Every airplane in the United States which can be made capable of combat operations must pay its way."⁶⁹

The 13-Week Training Cycle.*

The DFC-CAMA training cycle began with four weeks of individual and small unit training, special attention being devoted to junior leadership and battle conditioning. Individual training was of an advanced type. Individual weapons were used, but under combat conditions. The war having showed the necessity for units to operate under all conditions of terrain and weather at night, night operations were made habitual for infantry. Mines were laid by all personnel of combat branches, and all personnel engaged in detection and removal of mines. Exact performance was demanded in duties affecting the security of the command. Men were instructed to dig in, even if stopped momentarily. Individual and field sanitation were carried on and food was prepared by individual and group cooking.

In order to toughen officers and men mentally and physically and to imbue them with the desire to close with the enemy and to destroy him, training included rough-and-tumble fighting, games and exercises involving physical combat, normal exertion over long periods, extreme exertion over short periods, battle conditioning exercises to accustom the men to the sound of bursting shells in their immediate vicinity and to the crack of small arms bullets passing near them.

Not only during the first four weeks but also throughout the entire training cycle, as might be feasible, effort was directed to teaching junior leaders to accept responsibility, to be self-reliant and to operate effectively "on their own." It was attempted to have every non-commissioned officer able successfully to lead a patrol over extended distances, unknown terrain, at night, and to infiltrate into the hostile positions and return with specific information. Night patrol problems were conducted over difficult terrain, with groups pitted against one another. Each platoon participated in a platoon leadership course.

The utmost realism was introduced. In at least one 24-hour exercise personnel were given no opportunity to snatch any sleep, had only limited quantities of food and water, and operated over difficult terrain at night. Measures such as these helped

* Except where otherwise noted, this section is based on the AGF letter 320.2/46(Desert)GNGCT, 6 Apr 43, subject: "Organization and Training." In 320.2/50(CAMA).

weed out officers and men who could not stand the pace. From 25 July until the middle of September, Headquarters, Desert Training Center, processed seventy-one new cases of officers found to be unsatisfactory. As General Haislip phrased it, "There is no doubt that the desert soon separates the men from the boys."⁷⁰

The free spaces in the DTC-CAMA made certain precautions necessary. Thus, instructions were issued by the 90th Infantry Division headquarters that platoon leaders were to be instructed to halt their platoon in place when it became apparent that they were lost. During daylight hours, red and yellow panels were to be displayed to form a cross in order to identify the unit to searching aircraft. During darkness, ground signals would be fired.⁷¹

AAF officers watched the training of various organizations at the Center. Some of their observations were relayed to Headquarters, Desert Training Center, for whatever use it desired to make of them. Headquarters, Desert Training Center, brought these observations to the attention of the organizations concerned. To paraphrase some of these observations contained in one AGF letter:

79th Infantry Division:

1st Battalion of the 315th Infantry conducted carbine transition firing - excellent results; there was some confusion on the firing line.

The instruction given to Company "K" of the 315th Infantry on weapon emplacements (previously prepared) would have been more effective if actual weapons had been installed in the emplacements.

5th Tank Destroyer Group:

Reconnaissance Company of the 643d Tank Destroyer Battalion was conducting field training in a method of dead reckoning utilizing sketches to scale and the speedometers of the vehicles - the men appeared to know how to prepare and use the sketches; the company commander could not account for all of his men.

81st Infantry Division:

The training of Company "B" of the 323d Infantry in scouting and patrolling -- although ample training facilities appeared available, the training was conducted in an area in and adjacent to the camp; this restricted area caused the distances and intervals between members of the patrols to be too close and was causing patrols to interfere with each other.

During the fifth week attention shifted to the battalion. Combat firing exercises were held, in at least one of which the complete battalion with all weapons participated with coordinated fire. Targets represented the enemy as realistically as possible. The problems were conducted so as to require action by reconnaissance and intelligence agencies to locate the targets.

The firing exercise of Company "I" of the 315th Infantry, 79th Infantry Division, observed by officers of the Army Ground Forces, illustrates this phase of training. The enemy was represented by soldiers on the objective who exposed targets and shot blanks from deep foxholes; this provided realism for the attacking company and superb battle indoctrination for the soldiers occupying the foxholes. The only control exercised over the company was that imposed by the battalion order, orders of the company commander and enemy action. The progress of the attack was slowed down to battlefield speed by enemy action. The initial orders for the attack by the company commander were

voluminous and covered unessential details, and left insufficient time for subordinate commanders to issue orders. By energetic leadership the company managed to be only four minutes late in jumping off to the attack. The use of cover, effectiveness and control of fire, and fire and movement throughout the exercise were excellent. Orders for the forward displacement of heavy machine guns in support of the attack were late. Officers from the Army Ground Forces did not notice any provision for contact with adjacent units.⁷³

In the sixth week battalion combat firing was carried on, and units supporting or attached to the battalion were now included.

The seventh week raised training to the level of the combat team or command. The combat team together with supporting combat and service units engaged in a field exercise lasting about four days and three nights.

During the eighth week one exercise was held against a represented or complete hostile force. In June 1943, for example, Combat Command "B" of the 7th Armored Division engaged in the combat command firing exercises. The command was composed of its headquarters, an armored regiment (which included a reconnaissance company), an armored field artillery battalion, a battalion of armored infantry regiment, an armored reconnaissance battalion, an engineer company, a medical company, a maintenance company and detachment trains as required. The trains were subject to mechanized attacks which they drove off with organic antitank guns. Twelve dive bombers and one reconnaissance plane provided air support.

The reconnaissance battalion and the reconnaissance company aggressively developed the hostile position by probing and reconnaissance by fire. Many of the vehicles made excellent use of cover and defilade, and in general they withdrew satisfactorily.

Infantry and engineers, under cover of air attack, artillery fire, and smoke, breached the mine fields. A "snake" was pushed forward by a tank and successfully breached a gap. Otherwise tanks remained out of range of light field artillery fire. The commanding general of the combat command directed that two passages be opened through the mine field, although in North Africa it was the practice to provide a minimum of three per battalion front. Tanks moved through these gaps in the mine field, supported by air attack, artillery fire, and smoke. The infantry followed.⁷⁴

During the ninth week the division received attention. A field exercise of about four days and three nights was held by the division for the purpose of perfecting performance, step by step, of both combat and service functions, and developing standard operating procedure.

During the tenth week the division held a field exercise of about four days and three nights during which it engaged in a retirement that involved a defense in depth on a narrow front; a defense on a broad front, with combat teams abreast; a defense by the division across open, flat terrain; a defense through parallel corridors and defiles by semi-independent columns retiring on a common objective. Here full use was made of the desert's varied terrain.

Maneuvers

In the eleventh and twelfth and thirteenth weeks the cycle of training culminated in maneuvers. In the first of the two exercises composing the maneuvers a defending force, usually a reinforced division, selected and organized a position in detail for the purpose of protecting a vital area or installation. The fortifications included tank ditches and traps, road blocks and demolitions, mine fields and other obstacles.

CHAPTER VII

THE CLOSE

Decision

When shipments of service units overseas were increasing towards the end of 1943, conditions in the California-Arizona Maneuver Area became correspondingly worse with no promise of improvement. In December 1943, the need for service units was such that Operations and Planning Division considered the possibility of detaching them from divisions in training in the United States for immediate shipment overseas. General McNair therefore recommended to the War Department that the CAMA be closed. The 80th Division, the last of four divisions to complete its training in CAMA, would have done so by approximately the first of April 1944. Allowing for the necessary delay in movements, General McNair believed it possible to close the theater on or about 1 May 1944.¹

The War Department was receptive to the proposal for additional reasons also. The number of divisions remaining in the United States would progressively decline. Moreover, the anticipated commitment of tactical aviation would leave at a maximum only enough to support air-ground training in two maneuver areas concurrently. Of the two maneuver areas, one might possibly be a training theater of operations. The War Department called for a representative of the Commanding General of the Army Ground Forces, the Army Service Forces, and the Army Air Forces to confer on 12 January 1944 and to agree on the controlling elements of a general plan.²

The conference accepted the recommendation of Headquarters, Army Ground Forces. The CAMA was to be closed as rapidly as possible after 15 April 1944, and no theater of operations training area would be maintained thereafter. The Tennessee Maneuver Area would be discontinued as a maneuver area after March 1944. The West Virginia Maneuver Area would be discontinued after June 1944, except for one training assignment. The Louisiana Maneuver Area was to be continued, and the Carolina Maneuver Area was to be used in airborne training.³

The War Department formally announced to the Commanding General of the Army Ground Forces, the Army Air Forces, and the Army Service Forces that the CAMA was to be discontinued as a maneuver area on 15 April 1944 and was to cease internal operations as a training theater as of 1 May 1944. A relatively small number of troops was to be maintained in the CAMA to preserve its status as an army training area pending later decision as to its future utilization or disposition.⁴

Execution

In the latter part of January 1944, Headquarters, Army Ground Forces, communicated the decision of the War Department to the Commanding General of the CAMA.⁵ Conferences were held between officers from the Army Ground Forces and the Army Service Forces, and AGF officers attended conferences at the CAMA.⁶ What should be done, for example, about vehicles? About 27,000 vehicles were scattered throughout the area on 17 January 1944.⁷ Brig. Gen. J. W. Barnett of the War Department estimated about 13,000 of these to be in pools. About half of the pooled vehicles needed only first and second echelon maintenance; of the remaining 6,000, about 600 were beyond economical repair. So approximately 5,400 would require third or higher echelon maintenance. The limited space at the Pomona Ordnance Base permitted the storage of only about 5,500 vehicles, and about 4,500 vehicles were already there.⁸

The Commanding General of the Army Ground Forces was made responsible for the rehabilitation and evacuation of equipment in the CAMA. For fear of too greatly

restricting the Commanding General of the CAMA, Headquarters, Army Ground Forces, instructed him only in general terms to repair, overhaul, and evacuate equipment in excess of that required. The Pomona Ordnance Base Depot and the Base General Depot would be turned over to the Commanding General of the Army Service Forces with such personnel as was stationed there and such stocks as might be on hand at the time agreed upon by the Commanding Generals of the Army Ground Forces and the Army Service Forces.⁹

The War Department's indecision over the possible future utilization of the desert area hampered Headquarters, CAMA. On 23 February, General Anderson asked the Chief of Staff of the Army Ground Forces for instructions as to the utilities he should take out of the camps being abandoned. General Walker, G-4, ACF, informed General Christiansen that the Commanding General of the Army Service Forces had stated he favored cleaning out the CAMA lock, stock and barrel. By tearing down buildings, except those at hospitals and at bases such as Pomona and Base General Depot, General Somervell estimated that the Army Service Forces would be able to retrieve approximately 35,000,000 feet of lumber needed for the boxing and crating of equipment going overseas. But the Army Service Forces could do nothing until the War Department reached a decision.¹⁰

Early in March 1944, G-3, War Department, expressed himself to be willing to have no camp sites retained. The closing was to be coordinated with the Army Service Forces, without whose advice General Anderson was to do nothing. This decision by the War Department permitted General Anderson, who was in touch with the Army Service Forces, to proceed more effectively.¹¹

He took steps and secured coordination with the Army Air Forces. Four army air fields were located within the CAMA, at Thermal, Rice, Shavers Summit, and Desert Center. Abandoning of AAF activities at these fields was not contemplated in the near future, and utility service to those fields was to be continued. Liaison was maintained with agents of the Army Air Forces until full control of the area was returned to the Army Service Forces.¹²

Headquarters, CAMA, drew up a plan which involved the following:

Personnel. Combat troops were to move from the area on completion of the 13-week training cycle. Service troops not on an alert status or more urgently required elsewhere were to remain in the area until no longer required. Units in an alert status were to be processed in the area and moved to a port until 1 April. Those with later dates were to be moved domestically after 1 March and were to be processed elsewhere. Details of the transfer of units and personnel to the Army Service Forces were to be coordinated with the Army Service Forces.

Materiel. As the troop strength diminished, depots in the combat zone were to be closed and stocks shipped to Base General Depot, Pomona Ordnance Base, or out of the area.

Installations. Camps were to be closed, tentage, stoves, and similarly movable items being shipped to the base depot. No steps were to be taken to dismantle permanent structures but camps were to be policed and placed in condition for subsequent occupation if the need arose. Pole lines were to be removed.

General Police. The entire area was to be policed for the purpose of recovery and disposition of any abandoned equipment and supplies, and for general clean-up purposes. This procedure was to devolve principally upon combat troops.

Location and Disposal of Unexploded Shells. Consideration was to be given to the location and disposal of unexploded shells. It was recognized that practically the entire maneuver area had been used for firing during a period of approximately one-and-a-half years. In a majority of cases no record were available detailing areas in which firing had actually been conducted. The training requirements and preparations for movement of troops prevented any extensive use of troops to search for duds. Headquarters and Headquarters Battery of the X Corps Artillery was to police the Iron Mountain Range.

Fortified Area, Palen Pass. The task of restoring this area to its original condition exceeded the capabilities of the troops available, so it was to be left as it was and marked by appropriate signs. Materials of various types which had not been incorporated into the position were to be collected and disposed of.

A high priority was given to the sorting and classification of material in the base depots, and service troops were made available for this work. They were aided between 4 February and 14 March by approximately thirteen hundred Italian Prisoners of War.¹³

By 7 March 1944, General Anderson was able to inform General McNair that everything was running according to schedule with the single exception of getting troops out of the area.¹⁴ Heavy demands on the Southern Pacific, which carried the bulk of traffic from the desert, limited the movement to about three trains daily. The fact that units moved with full, and sometimes extra, equipment created a considerable demand for cars.¹⁵

By the beginning of April the number of troops in the area had been reduced to approximately 35,000. All divisions had departed from the area except the 80th Infantry Division, and it cleared on 5 April. Seven principal camps, two general hospitals, and three principal supply installations were evacuated. Plans for disposition of personnel not in tabular units had been put into effect, and approximately 250 men were being processed weekly through the replacement training depot which checked to see if they were qualified for overseas duty. Conferences with local government representatives were held for the purpose of discussing road damage and measures to be taken. Investigations were conducted on reports of alleged destruction or misappropriation of government property, the majority of which were proved to be groundless.

By 15 April, all camps and installations were evacuated except Camp Young, headquarters of the communication zone, the Base General Depot and the Pomona Ordnance Base.¹⁶

Lt. Col. Rolf Dallmer of the Fourth Army had previously been directed by the Commanding General, Army Ground Forces, to survey the Army fixed-wire plant in the CAMA. His report, written in January 1944, was intended to indicate possible economies in the wire plant, but instead served as an aid in its dismantling.¹⁷ The Army open-wire plant in the CAMA consisted of 659.35 line miles of a total of 6655.1 wire miles. At the request of the Commanding General, Ninth Service Command, 827.4 wire miles were left in place to serve installations to be operated by the personnel of the Service Command after the closing of the simulated theater. The remainder, a total of 5827.7 wire miles, was removed and the salvaged equipment shipped in accordance with instructions received through representatives of the Army Service Forces. All commercial contracts were terminated except those required for operation by the Ninth Service Command.¹⁸

The Headquarters and Headquarters Detachments, Special Troops, were inactivated, except the 4th, which was transferred to Fort Riley and assigned to the Second Army.¹⁹ Records of the Headquarters of Special Troops were turned over to headquarters of the communication zone.

Base General Depot and Pomona Ordnance Base retained records pertaining to their respective headquarters. Records pertaining to Headquarters, CAMA, and headquarters, communications zone, were turned over intact in their file cabinets to the Ninth Service Command Liaison Detachment, CAMA, at San Bernardino, California. Records pertaining to the various staff sections, such as Signal, Engineer, Finance, were turned over to the corresponding staff officers of the Liaison Detachment. Records of the CAMA Post Exchange were turned over to the Ninth Service Command Liaison Exchange representative.²⁰

Authority was obtained to ship surplus maps, plates, and negatives to the Army Map Service, San Antonio, Texas. Over 400,000 copies of maps were finally shipped.²¹

Some concept of the magnitude of the task may be grasped from a few figures:

Between 17 January and 15 April 1945, the following ordnance materiel had been turned in to the zone of interior:

1,239	pieces of artillery
43,708	small-arms weapons
6,110	tons of serviceable parts (automotive and weapons)
3,830	tons of reclaimable parts
989	tons of scrap
13,604	vehicles 22

Of the 27,000 vehicles in the CAMA on 17 January, all were evacuated from the CAMA except 1,238 which were turned over to the Ninth Service Command. Of these, 300 were in the hands of troops, 536 were on Memorandum Receipts, and 402 were pooled. All of the pooled vehicles had been given technical inspections and 266 were ready for issue.²³

Within the capabilities of the troops available, work on the location and destruction of duds was carried out in the Iron Mountain impact area. Two hundred eight duds were located and destroyed. In the records a map was included of the known impact areas throughout the CAMA for the information and guidance of the Army Service Forces.

By the end of April all camps east of San Geronio Pass, that is, in the entire combat zone and a portion of the communications zone, had been evacuated of personnel, supplies, and readily removable property. At the request of the Ninth Service Command and by agreement with the District Engineer, Pacific Division, six division camps were released through the Commanding General, Ninth Service Command, to the District Engineer for disposal. Two temporary nondivisional camps were completely dismantled by CAMA troops. The remaining installations and camps, including those not declared surplus, were turned over under guard to the Ninth Service Command on 30 April 1944.²⁴

The certificates of audit for Class I, II, and IV Quartermaster Section accounts at Base General Depot indicated many errors and discrepancies. The discrepancies were adjusted prior to the completion of the audit.²⁵

Four hundred fourteen units, with a total strength of approximately 130,000, were moved from the area, turned over to the Army Service Forces, or disbanded.

Equipment processed at Base General Depot included among much else approximately 100,000 tents, 400,000 cots, and 300,000 gasoline cans; among other shipments from the depot were included about 45 tons of scrap rubber, 90 tons of rags, 90 tons of tin cans, and 100 tons of assorted metal.

The status of all personnel remaining in the area had been established and the necessary records transmitted to the service command.²⁶

Officers from Headquarters, Army Ground Forces, inspected the CAMA during the final period and found the general appearance of the entire area to be excellent. All highways, tracks, and trails had been policed to a condition probably better than had existed before Army use of the area. The officers from Army Ground Forces declared the performance of Major General Anderson, Colonel Edmunds, and their respective staffs to be superior. Since the results could have been serious if the evacuation had not been carried out as efficiently, they recommended the Distinguished Service Medal for General Anderson, the Legion of Merit Medal for Col. James B. Edmunds (Colonel Hughes of Army Ground Forces not concurring), and three other officers. Headquarters, Army Ground Forces, made formal recommendation but The Adjutant General did not consider their duties to have been such as to warrant the awards.²⁷

When Maj. Gen. D. McCoach, Commanding General, Ninth Service Command, had first seen the extent of work that would be necessary to clear material from the maneuver area, he had not believed that the evacuation could be as nearly completed as it was toward the end of April. He stated that finishing the job would be an easy task and he expressed his appreciation for what General Anderson had accomplished.²⁸

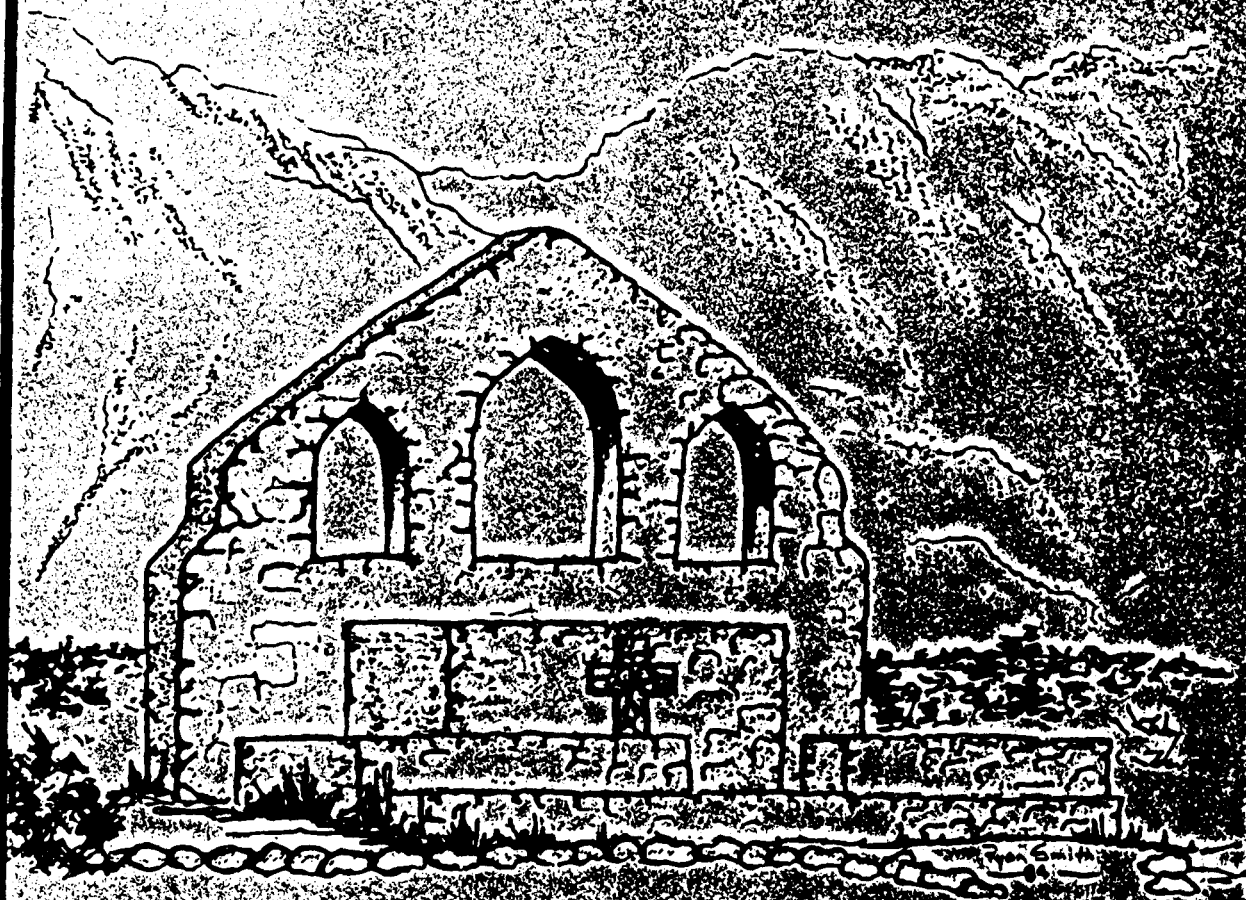
At midnight of 30 April - 1 May 1944, General Anderson relinquished command and turned over responsibility for the CAMA to the Commanding General, Ninth Service Command, the representative of the Commanding General, Army Service Forces.²⁹ The allotment of personnel by Headquarters, Army Ground Forces, to the CAMA personnel were transferred to the control of the Commanding General, Ninth Service Command, for a short period.³⁰

The first simulated theater of operations in the United States was at an end.

* * * *

IRON MOUNTAIN DIVISIONAL CAMP

Resource Management Plan



1984

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
CALIFORNIA DESERT DISTRICT



IRON MOUNTAIN DIVISIONAL CAMP

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)
(CA-06-ACEC-52)

RESOURCE MANAGEMENT PLAN

Department of the Interior
Bureau of Land Management
California Desert District
Needles Resource Area

Prepared by: *Debra S. Taylor* 1-4-85
Visitor Information Specialist, Date
Needles Resource Area

Recommended by: *Emmett J. Hayes* 1-8-85
Area Manager, Needles Resource Area Date

Approved by: *Carroll E. Fein* 1/16/85
District Manager, Date
California Desert District

In the first months of the DTC, from April to October 1942, the first wave of trainees were prepared, and with General Patton, left for North Africa. Here it must be noted that as you read the official historical accounts and the experiences of the men who served in the area, General Patton may have been present for only a short period of time, but his imprint on the training methods and the conducts of maneuvers remained throughout the existence of the training center. (Kennedy, CAMA Medical and NonMedical Notes).

General Alvan Gillem Jr. and General Walton H. Walker later took command of the DTC and both the area and the program were expanded. By March 1943, the North Africa Campaign was in its final stages and the primary mission of the DTC to train troops in desert survival and tactics did not apply to troops who were now coming to the maneuvers and who were to be deployed worldwide. Therefore, the name of the Center was changed to the California-Arizona Maneuver Area (CAMA). The CAMA was to serve as a Theater of Operations to train combat troops, service units and staffs under conditions similar to those which might be encountered overseas. (Lynch, Kennedy, Wooley, Patton's Desert Training Center).

The CAMA was enlarged to include both a Communications Zone and Combat Zone, approximately 350 miles wide extending from Pomona, California, eastward almost to Phoenix, Arizona, and 250 miles from Yuma, Arizona north to Boulder City, Nevada. Thousands of soldiers and equipment poured out of trains at the Freda railroad siding as maneuvers continued. (See Figure 3).

Toward the end of 1943, shipments of service units overseas were increasing, leaving little or no support for the CAMA. The War Department formally announced that the CAMA was to be closed by May 1, 1944. The Center nominally continued until the 1950's while equipment and materials were collected and shipped and decontamination squads searched out and destroyed unexploded ordnances.

By its closing in 1944, 20 of the 87 divisions of all types and an estimated one million men had trained at the Desert Training Center, California-Arizona Maneuver Area.

b. Iron Mountain Divisional Camp

Within the organization of the Desert Training Center, the Iron Mountain site was established as a Divisional Camp. It appears that the camp was initially set up during the spring of 1942 and occupied by the 2nd Armored Division under the command of General Patton. By July 1942, the 3rd Armored Division was assigned to the Desert Training Center, and portions of that Division moved in behind the 2nd Armored Division at Iron Mountain where they remained until November 1942. (John J. Cragg, 3rd A.D., 32nd Armored Regiment).

The following excerpts from "Spear-Head in the West", the 3rd Armored Division History, give accounts of conditions and activities at the Iron Mountain site and throughout the maneuver area:

The Mojave Desert was no vacation-land, but men who trained over its sandy expanse, through the dry salt lake beds

and around the well-remembered Turtle and Old Woman mountains, grew to have a certain affection for the waste-land they had entered.

Troops worked through the day and sought the shelter of their tents during a short siesta period at noon. A great deal of water was consumed at first, but later a small amount was found to suffice. Salt tablets were issued and eaten by the dozens. Burlap water bags, which looked rugged, actually yielded a delightfully cool drink.

William L. Widmayer, assigned to Camp Iron Mountain by the Signal Corps Photo Center from June to August of 1942, recounts: "It was unbearably hot at the camp . . . When I first arrived there, we were all required to do all our morning calisthenics, marching, etc. with our fatigues completely buttoned - on personal orders of General Patton. This lasted until Washington got word of it. . and we were then stripped to the waist and allowed to become acclimatized to the desert."

Desert maneuvers of 1942 probably did more to toughen the 3rd and prepare it for ultimate combat than had all previous training. Stripped of essentials, the tankers and supporting arms took to the wide open spaces in mock battle. (Spearhead in the West).

During maneuvers, the location of the Director Headquarters and Advisor's Camp was shifted as the exercises were carried on in different parts of the desert. From August 29 until September 13, 1942 the location was at Iron Mountain (Study No. 15, App. K). These maneuvers involved the 3rd Armored Division, 7th Motorized Division, 5th Armored Division, 75th Field Artillery Brigade and VII Corps. (Study No. 15).

Throughout the two years of operation at Iron Mountain Divisional Camp, various units were located at the camp. The following dates, outfits and accounts of experiences at Iron Mountain are those we have received, to date, from some of the men who were trained at Iron Mountain:

<u>June 1942 to November 1942</u>	<u>3rd Armored Division</u>
(John J. Cragg)	32nd Armored Regiment, Maintenance Co.
(William Hilburn)	33rd Armored Regiment, Co. B
<u>Arrived July 20, 1942</u>	269th Ordnance M.M. Co.
(Harold Swender)	

"In back of our living area of tents and rock paths, high on the mountain was our unit number painted in bright red letters, by a unit member with a slight discipline problem.. Food was plentiful, but you sure had to get used to it. Powdered eggs, spam, canned hash and not much fruit.. Shop area had to be saturated with diesel fuel to keep out scorpions and rattlesnakes but it did little good. After Patton left for Africa, we kept training until we were shipped to the Pacific."

August 1942 to November 1942

5th Armored Division

(LCOL Jackson C. Fish)

"General Patton was already involved with the African invasion involving the 1st and 2nd Armored Divisions. General Gillem was commander of the DTC. At that time, the 3rd and 5th Armored Divisions were the first completely equipped armored divisions to maneuver in the desert area. Each Armored Division consisted of about 15,000 men and approximately 400 tanks to each division. The maneuver period was 3 to 4 days, then a rest to regroup, maintain equipment and resupply ..".

August 1942

27th Quartermaster Truck
Battalion

(Harry Smiley)

941st Field Artillery Battalion'
181st Field Artillery Regiment
with the 191st Field Artillery
Regiment as part of the 75th
Brigade

October 1942 to March 1943

6th Armored Division

(Colonel R.J. Bennett, USA Ret'd)

November 1942 to February 1943

4th Armored Division

The following are excerpts from "Fourth Armored Division-From the Beach to Bavaria", by former Captain Kenneth Koyen, Public Relations Officer, 4th Armored Division, February 1946:

After a month of simulated combat in Tennessee maneuvers in October 1942, the division was ready for another long trip. During mid-November 1942, the 4th Armored moved across the continent to the vast California Desert Training Center, the greatest maneuver area ever devised for the U. S. Army.

The pyramidal tents of the division camp stretched in endless rows on the Mojave desert near Freda, California. About them were the purple masses of Iron and Granite Mountains, the line of the Parker Dam-Desert Center Highway and an ocean of sand and rock dotted with sword-like clumps of yucca and greasewood.

Fourth Armored men, most of them Easterners, learned with surprise the chill of the clear desert nights and the numbing rawness of the winter rains. The sand, too, was everywhere. It sifted into bedrolls, boots, messkits and motors. Flicked by the wind, it

pelted the flapping tent sides and stung the sunburned faces of tank commanders. Tank tracks and scout car tires churned it into choking clouds visible for miles in the thin western air.

The sand made Christmas in the desert a memorable event. Swearing mess sergeants tried to hold down their tents and serve turkey at the same time as a heavy gale howled across the flats. Fourth Armored men leaned into the sandstorm and tried to swallow the turkey before it was coated with grit. Finally they gave up and huddled about cases of beer from the PX while kerosene lanterns flickered out and uprooted tents flew through the air. Lighter interludes in the rugged desert training were provided by passes to Los Angeles and weekends at Palm Springs and Las Vegas, Nevada. ... Nature could have made, or forgotten to finish, no better place for an armored division to learn its weapons. . .

November 1942 to February 1943 (cont'.)

4th Armored Division

(Samuel Schenker)

(National Headquarters, 4th Armored Division)

"The 4th relieved the 3rd Armored Division in most areas and also established new ones.. Daily activities consisted of exercise, drill, firing range, obstacle course.. Out of the sun from 10 to 2 whenever possible. .. Airfield was used to bring in ranking officers and for piper cubs to train as artillery observers.."

(Francis L. Walski)

51st Armored Infantry Regiment

(Francis Pascucillo)

Co. D, 51st Armored Infantry Bn.

191st Field Artillery Bn.

(Wilmer W. Moyer)

94th Armored Field Artillery Bn.

"Our division was first at Iron Mountain and then at Ibis.. Picked up supplies at Freda railroad depot.. the aqueduct supplied the 4th with cold drinking water and showers.. on furloughs we took trips to Las Vegas, Los Angeles, Hoover Dam and the Grand Canyon.."

(Walter Bechtel)

"We had breaks from before noon until 2.. On maneuvers we learned "range estimation", to guess the range of various objects, and compass course.. I remember the scorpions, tarantulas and sidewinders. .".

March 1943 to January 1944

(Leonard L. Cowles)

269th Ordnance

March 1943 to August 1943

(David Greilick)

7th Armored Division

HQ. Co. 87th RCN Cavalry
Squadron Mechanized

Arrived August 1943

(Donald Chamberlin)

"B" Battery, 172nd
Field Artillery

"The 172nd had a contest to determine the best looking battery. "B" Battery, 172nd FA, had the best." January 1944. (See Figure 9).

August 1943

(Uriah S. Pringle)

72nd Field Artillery
Brigade

(Historian for the 72nd Field
Artillery Brigade).

177th and 943rd Field
Artillery Battalions

"These units trained at Camp Iron Mountain, were a part of the XXth Ghost Corps... The desert, with its animals, sand storms, cacti, and blistering heat served to condition not only fighting men, but also equipment and material. This training produced an aggressive fighting unit with the greatest degree of discipline and morale. We were constantly on regular field exercises with long over land trips, night work under black out conditions and food and water rationing was in effect. General Patton knew what he was looking for when he had this camp built. Here he had developed a very hard, sharp fine honed core of fighting men and equipment."

The layout and location of features established at Iron Mountain Divisional Camp are shown in Figure 4.

Temporary structures installed at the camp were:

SHOWER BUILDINGS:

- (1) Battalion Enlisted Men, shower buildings, total 10.
- (2) Battalion Officers shower buildings, total 5.

LATRINE BUILDINGS, Total 26.

WOOD TENT FRAMES, PYRAMIDAL:

(located between Kitchen and Latrine Roads)

- (1) Single, total 88.
- (2) Double, total 23.
- (3) Triple, total 2.

OTHER STRUCTURES:

Amphitheater.

WATER SUPPLY INSTALLATIONS:

- (1) Source: Metropolitan Water District Aqueduct.
- (2) Storage facilities: 1 - 4,000 gal. metal elevated storage tank; 1 - 20,000 gal. metal elevated storage tank; 2 - 3,000 gal. metal elevated storage tanks.
- (3) Equipment: 2 - centrifugal pumps with engines (water point #1)
2 - centrifugal pumps with engines (water point #2)

Firing Ranges for the Iron Mountain Camp are shown in Figure 5.

Two permanent structures were built by various units which cycled through the camp:

Located at the southwest end of the camp at Headquarters and "B" Street was a Chapel and altar area used for outdoor religious services. Constructed out of native rock and mortar, the altar was platformed about a foot above the desert floor. Behind the altar, the stone was arched to a point where a wooden cross stood. In the front of the altar was a cross inlaid with white stones. When military chaplains faced the altar, they could look through the windows of the arch to see the mountains in the background. In front of the altar, rocks outlined the "sanctuary". An aisle bordered by cacti led to the face of the altar. Smoketree were planted on both sides of the chapel. (Refer to Figure 6).

A second altar was constructed at Headquarters and 8th Street, northeast of the flag circle. This was the 183 Field Artillery Group Chapel and Altar Area. Made of native gneiss, granite and quartz rock and held together by mortar, this altar had greater depth but a lower profile. The sanctuary area was bordered by rocks and a network of paths leading to it. (Refer to Figure 7).

The troops also lined other paths and roads throughout the camp with rocks. They placed rock borders around tents, compounds, supply areas, latrines and mess halls. Rocks also encircled almost every creosote bush, mesquite, cactus and smoketree naturally growing or planted in the camp. The troops also depicted their company symbols with rocks and created special designs such as the seal of the United States, and the caduceus, symbol of the medical profession. (See Figures 8 and 9).

The most unique feature built at the camp was a huge relief map built into the desert floor. It was apparently constructed by Patton's first troops. Measuring approximately 200' x 175' on the ground, the map represented the entire Desert Training Center area. Constructed almost entirely with local materials, the map reproduced, in natural color, mountain ranges, valleys, rivers, highways, railroads, water

supplies and other features. Small wooden signs identified geographical locations. A type of concrete was used by the U. S. Army Corps of Engineers to hold the features in shape. The map was so extensive that in order to view it, an arched bridge was built to span its width and an elevated walkway bordered the outside edge. From these points, orientation classes were held to illustrate maneuver plans (Refer to Figures 10, 11, 12, and 13).

2. Management History

Following the closing of the Desert Training Center, the Iron Mountain Divisional Camp remained as public land to be administered by the Bureau of Land Management.

In April 1973, the Bureau of Land Management's Riverside District prepared an Environmental Assessment for the "Proposed Protection of a C-AMA Campsite (Patton's Camp), Iron Mountains, San Bernardino County." The proposed action was to fence a portion of the Iron Mountain Divisional Camp to protect the site from further deterioration and destruction. Through the years, resources at the site had been damaged or removed by vehicles, hobby collecting and natural erosion. The fencing effort was to provide immediate protection of the site from vehicular use while further research could be conducted to determine the extent of resource values present and long-range management plans.

In January 1976, an Environmental Analysis Record was prepared and approved to build a protective fence around the relief map and erect an interpretive sign. The Bureau constructed a 6-foot chain link fence with an angled barbed-wire overhang. This fence, which lies within the fenced area around the camp, prohibits walking on the map but does not cut off visual access to the features protected. An interpretive sign was installed in 1981 and has been removed through vandalism.

The chain-link fence protected the map from damage due to visitors walking on the surface but did not prevent erosion due to sheetwashing. In 1979, the Iron Mountain Pumping Plant of the Metropolitan Water District assisted the Bureau by volunteering their manpower and equipment to grade a berm on the uphill side of the map outside of the fenced area. This berm diverted the wash which was destroying a portion of the map.

In December 1977, the Iron Mountain Divisional Camp was nominated to the National Register of Historic Places. The proposed nomination had been certified by the California State Historic Preservation Officer. Even though the site is relatively recent (WWII), it met the criteria for eligibility to the National Register by its unique resources and its association with a famous personage, specifically, General Patton. The nomination was again submitted in February 1980 and was then returned by the National Register for more detailed information as to the relationship of Iron Mountain Divisional Camp to other Desert Training Center camps and specific acreage and boundaries of the site. The requested information has not yet been returned to the National Register. The site is considered to be eligible and designation is still pending.

The General Plan for San Bernardino County designates the area for "Rural Conservation Use".

Relationship to the California Desert Plan

In 1976, Congress passed the Federal Land Policy and Management Act (FLPMA) establishing the California Desert Conservation Area, of which Iron Mountain Divisional Camp was a part. The California Desert Plan was then developed to guide the management of these public lands.

The historic values of the Iron Mountain Divisional Camp were recognized by the California Desert Plan and the site was designated an Area of Critical Environmental Concern (Patton's Iron Mountain Divisional Camp ACEC #52).

The Federal Land Policy and Management Act, in Section 103(a), defines an Area of Critical Environmental Concern as an area "... within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." (California Desert Plan, USDE, BLM, 1980).

The ACEC designation is more than a recognition program; it is a process for determining special management actions required for important resources and makes a commitment to provide that management. During the development of the California Desert Plan, specific management actions were prescribed for each ACEC.

The California Desert Plan recognized the resource values of the Iron Mountain Divisional Camp as an historic military camp and prescribed the following management actions:

1. Control and sign user/vehicle access
2. Increase field presence
3. Conduct intensive resource inventory
4. Stabilize/rehabilitate/salvage features
5. Develop cooperative agreement
6. Develop and implement interpretive program

(California Desert Plan, USDI, BLM, 1980, pg. 126).

These management prescriptions specify actions which supplement the Multiple Use Class (MUC) guidelines developed for the area in the California Desert Plan. The Iron Mountain Divisional Camp ACEC is contained within MUC "L" (limited Use). Although located in a Class "L" area (approved routes of travel), the ACEC was designated as closed to motorized vehicles to protect its significant historic resources. (CDCA Plan, Appendix II, pp. 405-407).

During the scoping and research phase of this Resource Management Plan, detailed records and photos were located which specified the exact boundaries of the camp itself. This specific information had not been researched during the development of the California Desert Plan and the ACEC boundaries included a large area outside of the camp (which was also outside of the fenced area).

The ACEC covers 3,606 acres. The camp itself covers approximately 1600 acres of the northwest and central portion of the ACEC (See Figure 15).

The exception to Class "L" designating the ACEC "Closed" to motorized vehicles was intended to close the fenced area only (approximately 1600 acres), not the entire ACEC (3,606 acres). A 1985 Plan Amendment has been proposed to return the ACEC to its original designation as Class "L" (approved routes of travel). This plan will recommend specific routes of travel to be approved that will allow adequate public access to the camp. These recommended routes of travel will then be subject to the desert-wide route designation process currently underway.

In terms of public use, the California Desert Plan recognized the ACEC as a highly-rated interpretive and educational site. (CDCA Plan, Appendix II, pg. 406).

B. PURPOSE

This Resource Management Plan, as the activity plan for the Iron Mountain Divisional Camp ACEC, will establish a coordinated implementation program for management actions prescribed for the site. The two major objectives of the management actions prescribed are: 1) to protect the historic resources of the site; and, 2) to interpret the historic value of the site for the public.

Management actions have already been implemented to initially protect the resources of the site (i.e. fencing the camp, fencing the map, and diverting the wash from the relief map). This plan will identify additional actions to further protect and stabilize the historic resources of the site. This plan will also identify management actions which will enhance and develop the interpretive and educational value of the site for the public.

C. LOCATION AND SETTING

1. Location

The Iron Mountain Divisional Camp ACEC is a 3,606 acre area of public land in southeastern San Bernardino County, California. The area is approximately 55 miles east of Twentynine Palms, California and Joshua Tree National Monument; 55 miles west of Parker, Arizona and the Colorado River; and, 220 miles from the Los Angeles metropolitan area. (Refer to Figure 14).

The ACEC is a triangular-shaped area bounded on the south by the San Bernardino-Riverside County line, on the northwest by a powerline road, and on the northeast-east by patented lands and the Colorado River Aqueduct owned by the Los Angeles Metropolitan Water District. The ACEC is located within all, or portions of:

(San Bernardino Meridian)	T1N	R17E	Section 36, SE $\frac{1}{2}$
	T1N	R18E	Section 31, SW $\frac{1}{2}$
	T1S	R17E	Sections 1, 11, 12, 13, 14, 15
	T1S	R18E	Sections 6, 7, 18

(Refer to Figure 15).

2. Access

Two-wheel drive public access to the management area is from Highway 62 to Iron Mountain Road to the powerline road; or, from near the junction of Highway 62 and Highway 177 by the powerline road. Both of these public access routes are maintained by the Metropolitan Water District (MWD) from Iron Mountain Pumping Plant. The powerline road located on a right-of-way across public land, is usually suitable for two-wheel drive vehicles but is subject to severe sheetwashing. Access to the site by this route is entirely dependent on constant maintenance by MWD. The Iron Mountain Road is located on private land owned by MWD. Traditionally, most visitors to the site use this road which ends at the pumping plant. The exact route to the camp from this point is somewhat confusing, so most visitors stop at the pumping plant office or residences to ask directions. With relatively low visitation, MWD personnel at the pumping plant are agreeable to providing information and assistance.

3. Description

The average annual temperature for the area is 72^oF. Summer daytime temperatures often exceed 110^oF. Average annual precipitation is 3 to 4 inches, most of which occurs between the months of November and March. The area also receives rainfall from localized summer thunderstorms usually of short duration but of high intensity which causes severe runoff.

The management area is comprised of barren, rock and scrub-covered foothills located on the southeast side of the Iron Mountains sloping easterly toward Ward Valley. Elevations range from approximately 1000 to 1200 feet above sea level. The area generally consists of a gently sloping alluvium deposit dissected by an active drainage system. The entire area is subject to severe sheet erosion. Parent soil material is mostly granitic, having coarse sandy soils very low in silts and clay.

Vegetation in the management area is characteristic of creosote-bush scrub habitat of the lower Mojave desert. Common species include brittlebush, creosote bush, cheesebush, bursage, mormon tea, and sand verbena. There are no known rare and endangered species or unique plant assemblages in the management area.

Common wildlife species in the area consists of lizards, various species of snakes, rodents and other small mammals. Larger mammals such as the coyote and bobcat move through the area and desert tortoise may be found.

There are no known prehistoric or paleontological resources in the management area.

4. Developments

Remnants from the WWII period and facilities developed to protect those remnants are the only known man-made structures within the ACEC. Man-made structures surrounding the ACEC include the power transmission line, and MWD structures such as the Colorado River Aqueduct, levee, landing field and Iron Mountain Pumping Plant. Located 1½ miles north-east of the ACEC, the pumping plant has approximately 30 residences surrounded by extensive vegetation.

D. RESOURCES IN THE MANAGEMENT AREA

The significant historic resources within the ACEC are all located at the site of the camp. Remnants from WWII activities within the ACEC but outside of the camp are the camp dump and maneuver area.

Resources remaining within the camp are acres of stone work lining the camp roads and walkways. Many rock designs of company symbols remain as well as special insignias such as: the seal of the United States made of small pieces of white quartz; the medical profession symbol (caduceus) made of small pieces of reddish-purple and white stone; and stones outlining the shape of an ambulance.

Many individual perennial plants are still ringed at their base with rocks. Other vegetation not common to the area, such as ocotillo and barrel cactus, which were planted by the soldiers, still remain along roads and walkways.

Most of the rock alignments and insignias are found in the central portion of the camp between 9th and C Streets and Headquarters and Motor Pool Roads. Much of the rock work throughout the remainder of the camp, particularly in the north and northeastern sections, has been scattered by erosion.

Throughout the camp, many remnants from day-to-day camp life can be found such as communication wire, batteries, eating and cooking utensils, bottles, buckles and coins. Many of these types of remnants have been removed from the site by hobby collecting activity.

The altar northeast of the flag circle remains in fair condition. The cross and insignias have been removed as well as some rocks from the surface of the altar. Maintenance has been done to stabilize loose rocks on the outer edges of the altar. (Refer to Figure 16).

The chapel southwest of the flag circle remains in good condition. The cross, insignias and some rocks from the altar surface have also been removed from this structure. Minor maintenance work has also been done on this chapel to stabilize the outer edges of the altar. (Refer to Figure 16).

The relief map has remained in fair condition. Features are still recognizable, making this resource one of the most unique remnants from the DTC. Prior to the fence and water diversions, vandalism and erosion destroyed much of the detail of the map. The wooden bridge spanning the map is gone with only several wooden support posts and some lumber remaining. Most of the wooden signs labeling the mountains, towns and railroad sidings remain although they are no longer readable. Some of the wire delineating communication and power lines, railroads and roads still lies in or near its original position. Most of the relief is intact but some of the protective surface has broken through making the relief even more susceptible to erosion. Time and weathering has taken its toll on the surface of the map and much of the western portion of the map is still being eroded without regular maintenance of the diversion berm and road. (Refer to Figure 16).

The camp roads have captured the natural drainage pattern of the land and have become washes. Sheet erosion is now channeled down the camp roads, making these roads the major drainages. Crossroads have essentially remained unchanged.

E. RECREATION USE IN THE MANAGEMENT AREA

Since the closing of the Desert Training Center, the public has discovered and explored the abandoned camps. Iron Mountain Divisional Camp has long been recognized as significant and of special interest. Many newspaper and magazine articles dated since the 1950's have highlighted the camp as a definite point of interest to visit. The Needles Resource Area Guide-South Half (BLM) also locates and describes the camp as a point of interest.

The management area is partially bounded by Highway 62, a popular route for recreationists between Los Angeles and the Colorado River. Features of the camp cannot be seen from the highway but the area can be accessed from this route.

Based on aerial recreation-use counts, average visitation is estimated at 1000 visits per year. Recreational activities in the area revolve entirely around visiting and exploring the camp. Activities include sightseeing, photography, camping and hobby collecting.

Many visitors to the site are from California and Arizona and are familiar with the DTC through magazine and newspaper articles and local information. "Treasure-hunting" groups and individuals have visited and collected remnants from the camps for years. Many other visitors are from the general public who are interested in history, particularly the WWII era. A unique aspect of the DTC is that it represents an historic period that played an important part in peoples' lives who are now about age 60 and above. These individuals, their friends and relatives, who have a very special interest in the DTC, now have more leisure time to visit this area.

From the interest expressed by individuals, historians, other government agencies, veterans groups and military organizations during the scoping phase of this plan, it seems that public use of this camp and other DTC camps will increase.

F. MAJOR ISSUES

Major issues affecting the planning and management of the site identified in the scoping phase of this plan are:

1. Deterioration of the relief map due to erosion from major drainages and weathering of the map surface.
2. Deterioration of rock alignments and insignias from erosion.
3. Loss of historic resources by collecting activities at the site.
4. Need for adequate two-wheel drive public access to the site.
5. Need to provide interpretive developments and materials for users at the site.
6. Need to document site history while first-hand information is still available.
7. Need to record historic resources present before further deterioration occurs.
8. Need to protect historic resources from potential future use conflicts.

II. MANAGEMENT OBJECTIVES AND CONSTRAINTS

The Iron Mountain Divisional Camp will be managed in accordance with the overall management objectives established for the Desert Training Center complex throughout the California Desert Conservation Area.

A. RESOURCE MANAGEMENT OBJECTIVES

1. To stabilize, protect and maintain the historic resources of Iron Mountain Divisional Camp ACEC in the condition of "arrested decay".
2. To provide adequate public access to the site.
3. To provide complete recordation of historic resources at the site and collect additional information on the history of the site through written records and personal interviews.
4. To provide a quality experience for the visiting public through an effective information and interpretation program.

Management actions required to accomplish Objectives #1, 2, and 3 are specific to the conditions of this site. Management actions required to accomplish Objective #4 will be coordinated with the overall interpretive plan developed for the Desert Training Center throughout the California Desert Conservation Area.

B. CONSTRAINTS

Management constraints placed on users within the ACEC are Multiple Use Class guidelines for Class "L" as identified in the California Desert Plan.

III. SUMMARY OF PLANNED ACTIONS

Actions recommended by this plan are summarized below. Each is discussed in detail in Section IV, THE MANAGEMENT PROGRAM.

1. Stabilize and maintain the topographical relief map site and map surface.
2. Stabilize rock alignments and insignias in the center portion of the camp.
3. Extend the vehicle enclosure fence to protect historic resources the entire length of the camp.
4. Prohibit collecting of historic resources at the site.
5. Withdraw the site from mining location and mineral entry.
6. Complete procedures to nominate the site to the National Register of Historic Places.
7. Provide regularly scheduled field patrols to monitor visitor use, improvements and resource condition.
8. Provide adequate maintenance of improvements.
9. Recommend designation of approved routes of travel within the ACEC boundaries.
10. Acquire easement to develop and maintain a primary access route to the site entrance suitable for two-wheel drive vehicles.
11. Inventory and record all rock alignments, insignias, structures and other historic and archaeological resources through low-level aerial photographs and detailed field survey and mapping.
12. Continue to document the history and original content site and its relationship to the Desert Training Center through further research of written materials, maps, photographs and personal contact with individuals who trained at the site during World War II.
13. Design and install site-identification and directional signs.
14. Collect and curate vulnerable artifacts in an appropriate repository.

IV. THE MANAGEMENT PROGRAM

(See Figure 17 for a summary of management actions to be implemented to accomplish management objectives). Each management action is discussed in detail under the following categories:

A. INVENTORY AND RESEARCH

Actions: -- Low-level (1:1000) aerial photographs will be taken of the entire camp to photo-document the camp layout, location and condition of historic resources.

-- Intensive field survey will be conducted by qualified archaeologists to record all historic resources on-the-ground.

Discussion: Complete and detailed documentation is needed of

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX F

LETTERS/MEMORANDUMS/MISCELLANEOUS ITEMS

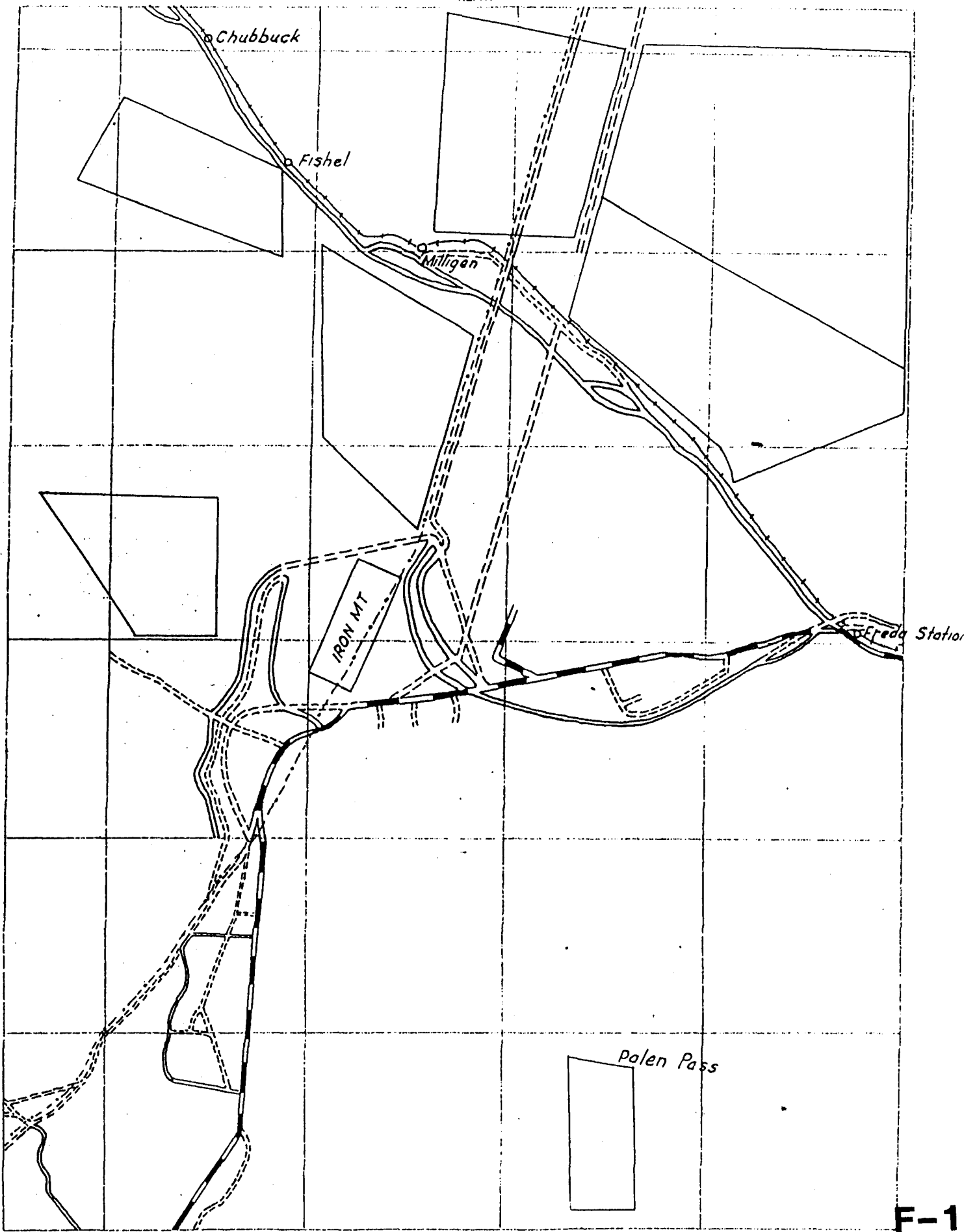
APPENDIX F

LETTERS/MEMORANDUMS/MISCELLANEOUS ITEMS

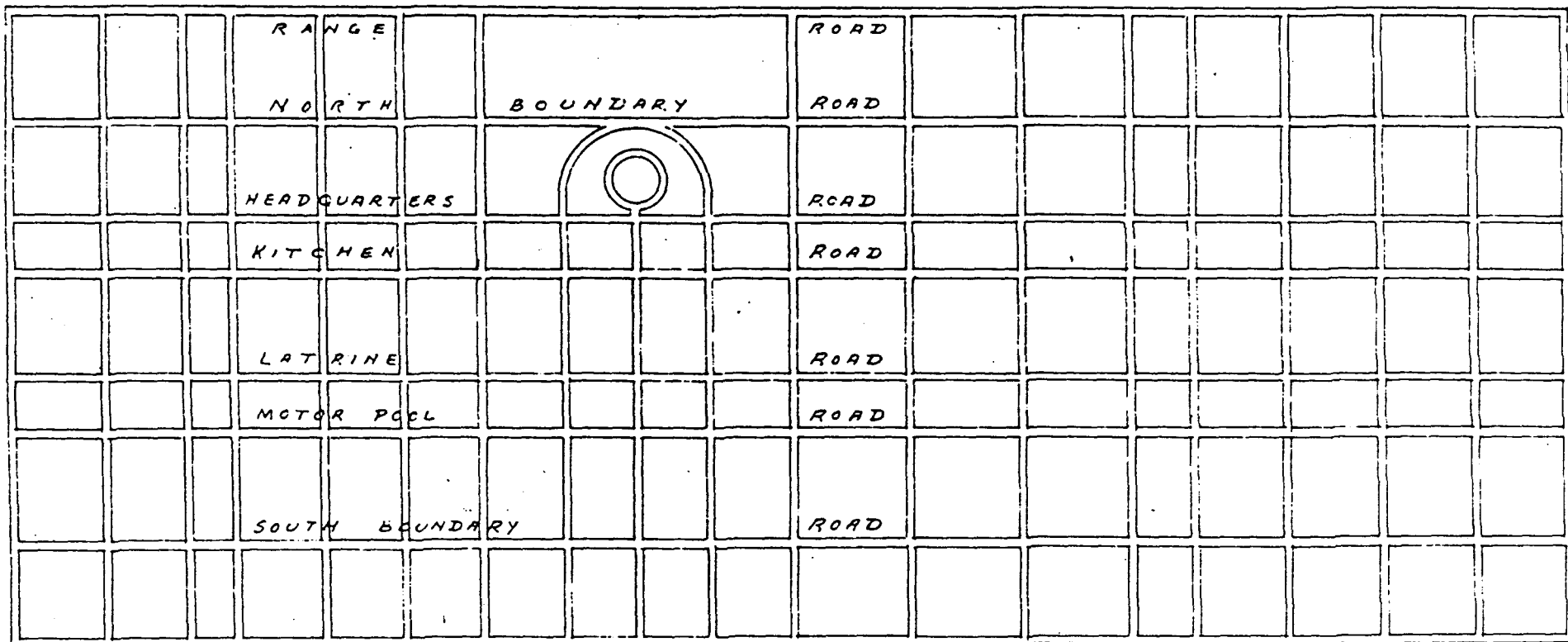
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C ST. B ST. A ST. 1ST ST. 2ND ST. 3RD ST. 4TH ST. 5TH ST. 1/4 BLVD. 6TH ST. 7TH ST. 8TH ST. 9TH ST. 10TH ST. 11TH ST. 12TH ST. 13TH ST. 14TH ST. 15TH ST.



REPRODUCED AT THE NATIONAL ARCHIVES

○ WATER POINT

PARKER DAM HIGHWAY

DESERT CENTER 36 MI.

CAMPSITE - IRON MOUNTAIN CALIF.

SECTION 5: IRON MOUNTAIN

Location by map coordinates
C-AMA map 1/500,000 (700 - 1120)

1. INSTALLATIONS: (See diagramatic camp layout)

a. SHOWER BUILDINGS:

- (1) Battalion Enlisted Mens shower buildings, total 10.
(see typical photo exhibits N, O, H.)
- (2) Battalion Officers shower buildings, total 5.
(See typical photo exhibits F, I.)

**b. LATRINE BUILDINGS, Total 26.
(See typical photo exhibit D.)**

**c. WOOD TENT FRAMES, PYRAMIDAL:
(See typical photo exhibits A & B.)**

- (1) Single, total 55.
- (2) Double, total 23.
- (3) Triple, total 2.

d. OTHER STRUCTURES:

Amphitheater. (See photo exhibit P.)

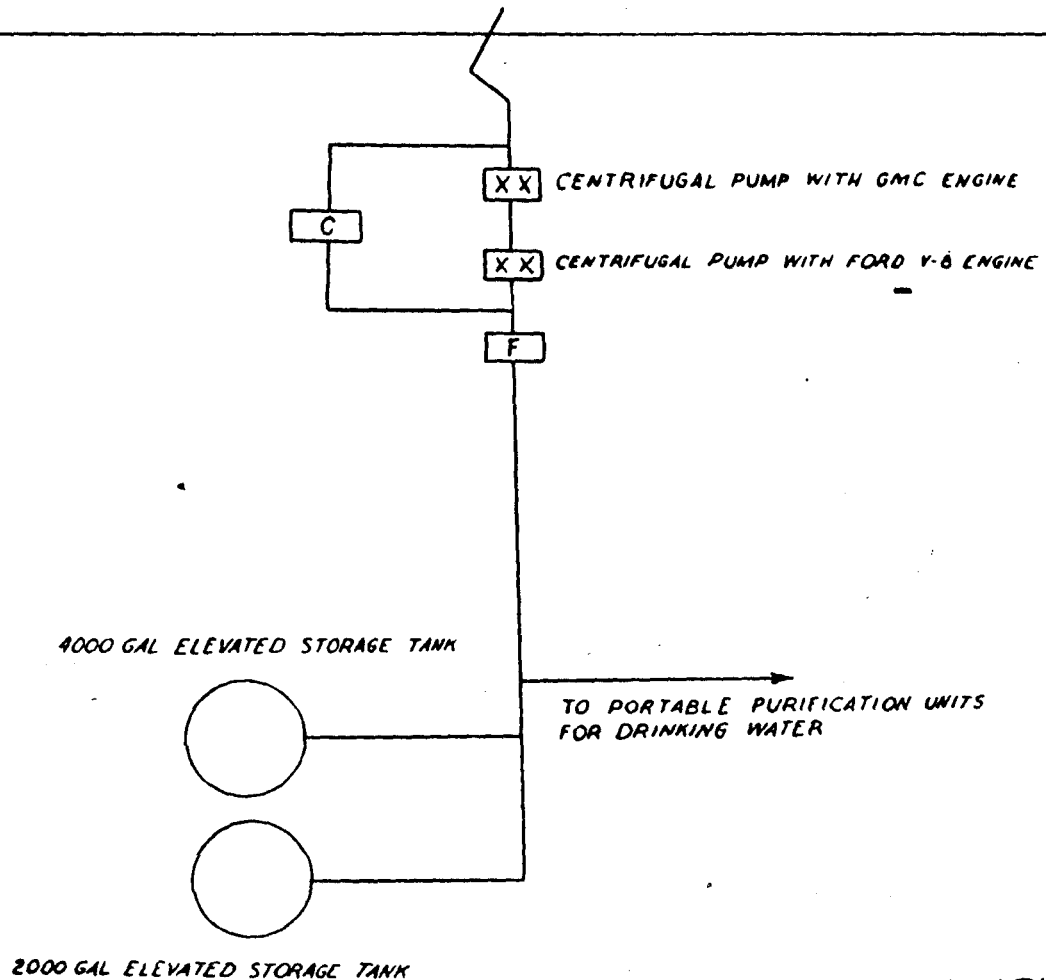
e. WATER SUPPLY INSTALLATIONS: (See diagramatic water system layout)

- (1) Source; Metropolitan Water District Aqueduct.
- (2) Storage facilities; 1 - 4,000 gal. metal elevated storage tank; 1 - 20,000 gal. metal elevated storage tank; 2 - 3,000 gal. metal elevated storage tanks.
- (3) Equipment; 2 - centrifugal pumps with engines (water point #1)
2 - centrifugal pumps with engines (water point #2)

f. RANGES: (See Diagramatic range layout.)

DIAGRAMMATIC LAYOUT OF IRON MOUNTAIN WATER SYSTEM

METROPOLITAN WATER DISTRICT AQUEDUCT (SOURCE UNLIMITED)



PIPE SUMMARY
5,9388' OF 6" PIPE

LEGEND

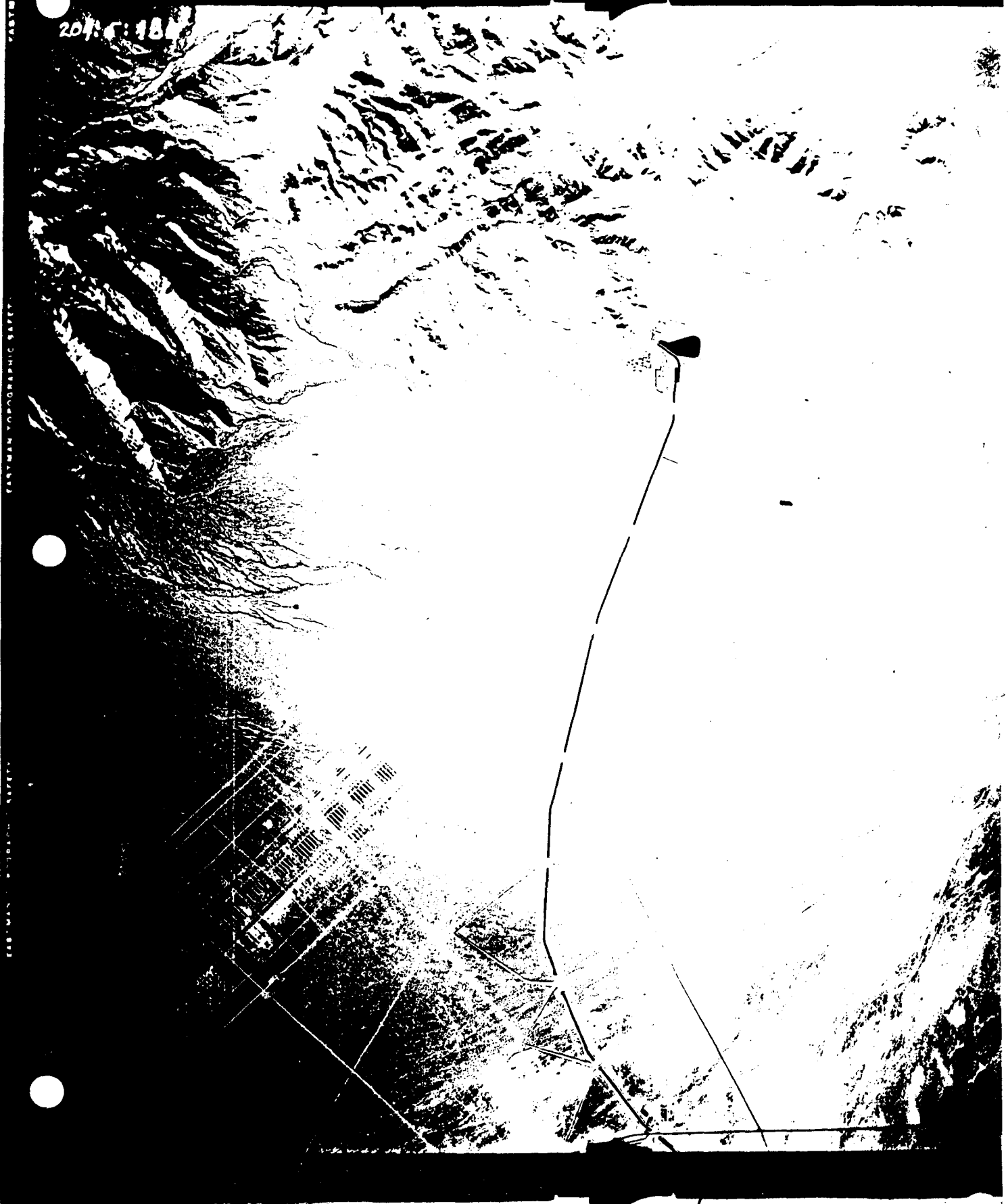
- XX CENTRIFUGAL PUMP WITH ENGINE
- F FLOW METER
- ELEVATED STORAGE TANK
- C CHLORINATOR

48c



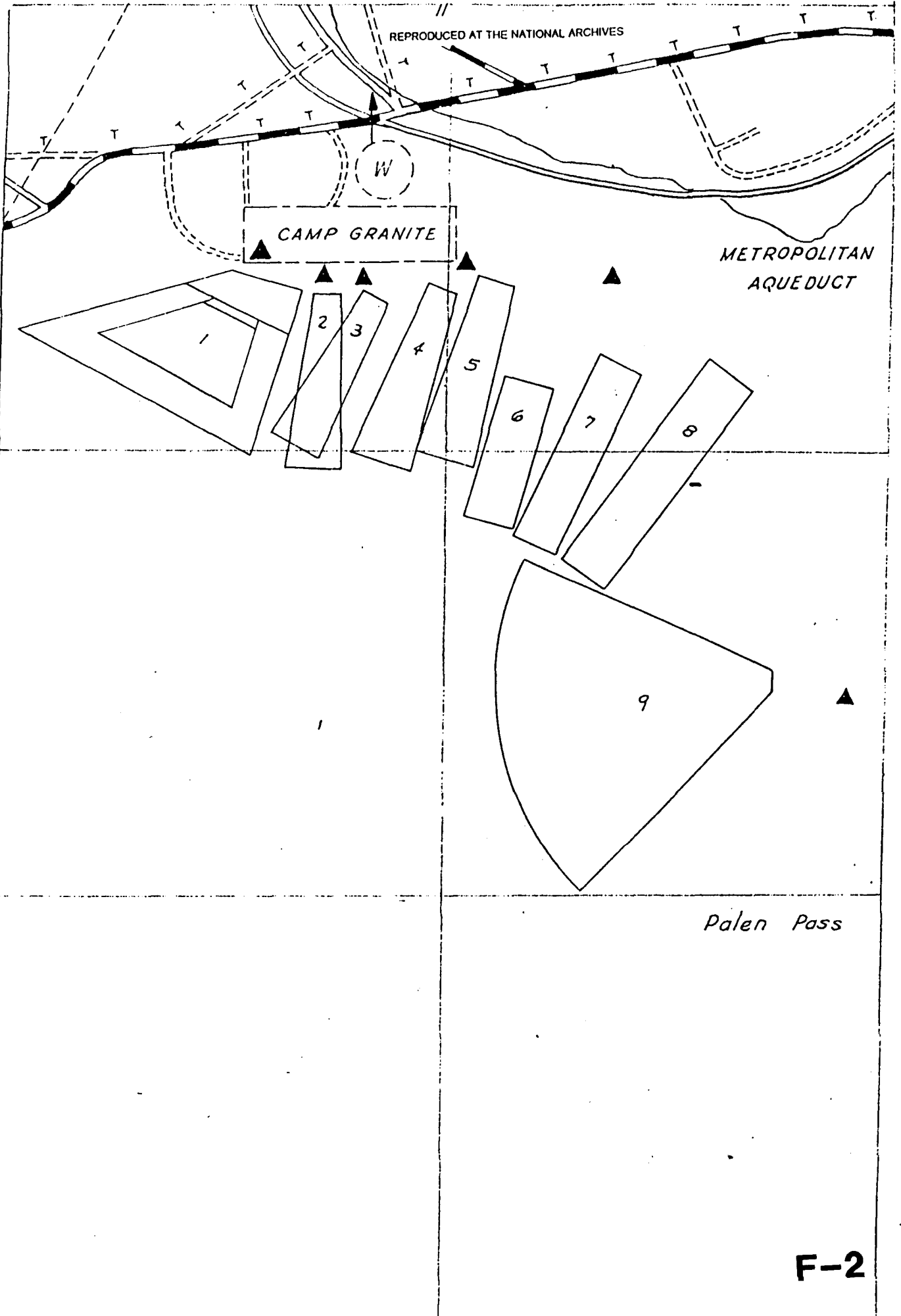
EASTMAN KODAK SAFETY EASTMAN KODAK SAFETY

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203:5:186

REPRODUCED AT THE NATIONAL ARCHIVES



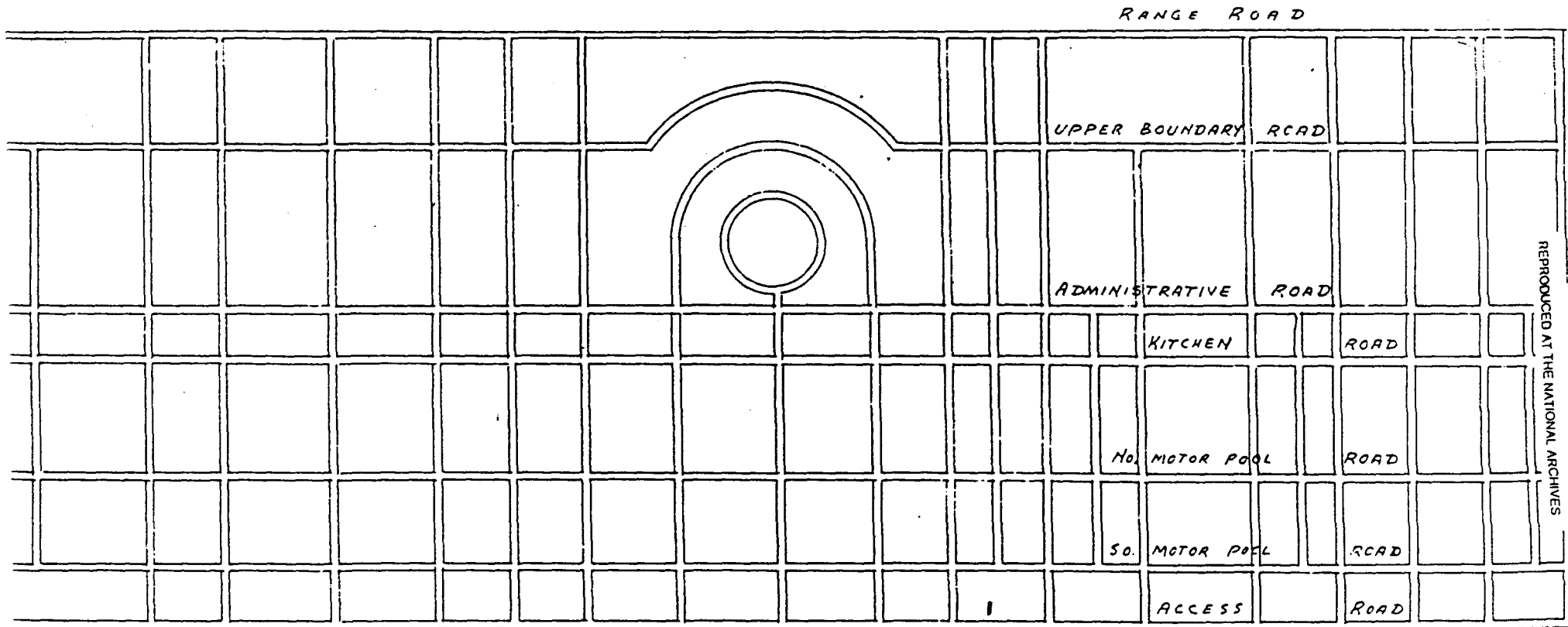
METROPOLITAN
AQUEDUCT

CAMP GRANITE

Palen Pass

GRANITE RANGE

RANGE	DESCRIPTION
No. 1	ARTILLERY - Sub Cal. .37mm.
No. 2	REGIMENTAL A. Known Distance - .30 Cal. B. Transition - .30 Cal. Carbine C. Transition - .30 Cal. rifle D. Pistol - .45 Cal. E. Mortar - 60mm and 81mm.
No. 3	TRANSITION.
No. 4	REGIMENTAL.
No. 5	REGIMENTAL.
No. 6	FIELD FIRE - .30 Cal. machine gun.
No. 7	TOWED TARGET - .105mm.
No. 8	TOWED TARGET - .57mm.
No. 9	ANTI-AIRCRAFT - .30 and .50 Cal.



HEADQUARTERS DESERT TRAINING CENTER
Camp Young, California

471 - 0

May 23, 1942

SUBJECT: Ammunition for Test Purposes - Desert Warfare Board

TO : Commanding General, Army Ground Forces, Army War College,
Washington, D. C.

Attention: Colonel Robert W. Daniels, Ordnance Officer

1. Reference letter Headquarters Army Ground Forces, Army War College, Washington, D. C., dated May 9, 1942, subject: Ammunition for Test Purposes - Desert Warfare Board, 471/2 (Desert Tr. Cen.) - GNSPL (5/9/42) it is requested that the following ammunition be furnished this Headquarters for test purposes for the month of June:

- a. 15000 rounds Cal. .30 Ball
- b. 3000 rounds Cal. .30 Tracer
- c. 10000 rounds Cal. .45 Ball
- d. 2000 rounds Cal. .45 Tracer
- e. 8000 rounds Cart. Cal. .50 Ball
- f. 2000 rounds Cart. Cal. .50 Tracer
- g. 150 rounds Shell 37mm H.E. M63
- h. 150 rounds Shot, TP, M51, 37mm
- i. 200 rounds Shell 75mm w/fuze M48
- j. 200 rounds Shell 75mm w/fuze M54
- kg. 100 rounds Shell 75mm Smoke
- l. 100 rounds Shell 105mm w/fuze M48
- m. 100 rounds Shell 105mm w/fuze M54
- n. 100 rounds Shell 105mm Smoke

2. The ammunition referred to in paragraph one above is to be used on tests that have been approved and tests that are to be developed for the month of June, 1942. The tests referred to cover such items as the blast effect with artillery weapons in sandy areas and the suitability of various types of fuses for 37mm and larger caliber projectiles to be fired for impact at 100, 200 and 300 yards on the various types of soil existing in the desert such as sand, detrided igneous rock, dry lakes, etc.

For the Commanding General:

D. W. JONES,
Lieut. Colonel, A. G. D.,
Asst. Adjutant General.

471/6
Desert

OK

HEADQUARTERS
 ARMY GROUND FORCES
 Army War College
 Washington, D. C.

May 30, 1962

May 30, 1962
 LHH/js 356

ATMA (Adjutant Trg Cen.) - GRSPL
 (3-30-62)

To: **Commanding General, Board Training Center, Indio, California.**
 Subject: **Allocation of Training Ammunition for June.**

Re: **Commanding General, Board Training Center, Indio, California.**
 (1) **Request for Allocation of Training Ammunition for June.**

The Chief of Ordnance has been requested to issue credits to
 for the following quantities of ammunition for the month of June:

Cart., ball, cal. .22	100,000 rounds
Cart., ball, cal. .30	100,000 "
Cart., tracer, cal. .30	40,000 "
Cart., ball, cal. .45	15,000 "
Cart., tracer, cal. .45	2,000 "
Cart., ball, cal. .50	20,000 "
Cart., tracer, cal. .50	2,000 "
Shot, 1/2", 75mm M1	800 "
Shell, 155mm M106	300 "
Shell, 81mm, 60mm Mortar	50 "
Shell, 81mm, 81mm Mortar	60 "
Shell, 81mm, 75mm Gun (R.C.)	139 "
Shell, Smoke, 81mm Mortar	20 "
Shell, 81mm, 75mm Mortar	15 "
Shell, 81mm, 105mm Mortar	110 "
Grenade, M7	88 each
Signals, ground, assorted	5 "

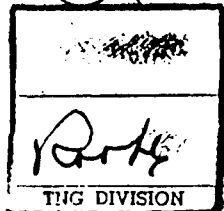
WAC
A
F

2. It is requested that this headquarters be furnished with copies
 of sub-allocations made under these credits.

By command of LT. GEN. McMAHON:

L. W. EVSEY
 Major General, A.G.D.,
 Assistant Adjutant General

Sent
MAY 30 1962
Spe 4-15



AIR MAIL

(Handwritten initials)
4
10

UNITED STATES DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C.

APR 11 1954
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356

HEAD QUARTERS ARMY GROUND FORCES
UNITED STATES OF AMERICA
ARMY AND SOLIDIER
WASHINGTON, D.C.

1942 AUG 6 PM 2 17

August 4, 1942.

AUG 6 6 S

MEMORANDUM FOR Field Service Division, Office, Chief of Chemical Warfare Service, War Department, Washington, D. C. (Attn: Colonel Sillett).

Subject: Chemical Ammunition for Desert Training Center.

1. The Commanding General, Army Ground Forces has authorized the issue of the following listed chemical ammunition to the Desert Training Center, Indio, California:

Pot, smoke, HC, M1	400
Pot, tear gas, CN	500
Mine, land, chemical, empty, w/burster	100
Gas, tear solution, CMB, gallons	200

AK-1919

Figures increased at request of Col. Ford to be improved by 1.1.42

2. The above munitions are to be charged to the allowances of the Commanding General, Army Ground Forces. It is requested that the undersigned be informed when the shipment of these munitions has been effected.

Thomas G. Ford
THOMAS G. FORD,
Colonel, C.W.S.,
Ground Chemical Officer.

66-076
FILED
AUG 29 1942
22

MEMO FOR RECORD:

Paragraph 67, AR 775-10 which is now in the process of publication, authorizes the following chemical munitions for the Commanding General, Army Ground Forces:

Mine, land, chemical, empty, w/burster	15000
Pot, smoke, HC, M1	15000
Pot, tear gas, CN, M1	5000
Gas, tear solution, CMB, gallons	10000

*AK-1919
8-11-42
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2*

DEFENSE AGAINST CHEMICAL ATTACK

LEARN this chart, KNOW how to protect yourself, KEEP your head, and you are SAFE.

Technical Classification	Physiological Classification	NAME	U S A Symbol	Odor in Field	Color and State	Persistence	First Symptoms	Protection	FIRST AID
CASUALTY GASES	BLISTER GAS	Mustard	H	Garlic Horse-radish Mustard	Liquid slowly evaporates	Open—1 day woods—1 week to all winter			Not off excess. Use protective ointment M4. Wash with soap and water. Irrigate eyes with water from canteen. For Lewisite and ED in eyes use eye ointment SAL.
		Lewisite	L	Garbanus	Liquid slowly evaporates	Open—1 day woods—1 week	Irritates eyes, burns skin, lungs, nasal passages and throat	Gas mask, protective clothing, protective covers, eye shields	
		Ethyl-dichlorarsine	ED	Biting Stinging	Liquid evaporates like water	1 to 12 hours			
		Nitrogen Mustards	HN	Faint Fishy Odor	Liquid evaporates at slow rate	2 hours to days			
	CHOKING GAS	Phosgene	CG	Musty Hay Green Corn Ensilage	Colorless Gas	10 min.	Coughing, choking, eye water	Gas mask	Rest, lie down, warmth (use coat or blanket)
	BLOOD AND NERVE POISONS	Hydrocyanic Acid	AC	Bitter Almonds	Colorless Gas	1-5 min.	Dizziness, headaches	Gas mask	Remove to pure air, artificial respiration until medical aid arrives.
	Arsine	SA	Garlic	Colorless Gas	1-10 min.	Lacrinate, headache, weakness, vomiting	Gas mask	Remove to pure air, evacuate or a liter case.	
HARASSING GASES	TEAR GAS	Chloropicrin	FS	Plypaper Licorice	Liquid evaporates like water	1 hour to 1 week	Coughing, crying, vomiting	Gas mask	If necessary wash eyes with water from canteen. Wash skin with soap and water.
		Chloroacetophenone Solution	CNS	Plypaper	Cloud of particles, droplets	1 hour to 1 week	Eye, skin irritation, vomiting, crying		
		Chloroacetophenone Training Soln.	CNE	Sweet Benzine Odor	Cloud of particles, droplets	Not determined			
		Chloroacetophenone	CN	Apple Blossom	Cloud of small solid particles	10 min. to weeks	Eye, skin irritation, crying		
		Brombenzylcyanide	EBC	Sour Fruit	Liquid slowly evaporates	Days to weeks			
	VOMITING GAS	Adamsite	DM	No Odor Irritating	Yellow smoke	10 min.	Headache, vomiting, sneezing, sick, depressed feeling	Gas mask	Loosen clothing. Lie in shade. Salt chlorine from bleach.
SCREENING SMOGLES		HC Mixture	HC	Acrid	White to grey smoke	While burning	Harmless	Mask in high concentration	None needed.
		Sulphur Trioxide in Chlorosulfonic Acid	FS	Acrid Choking	Dense white smoke	5-10 min.	Irritates skin	Gas mask	Wash skin with soap and water.
		Titanium Tetrachloride	FM	Acrid	White smoke	10 min.	Harmless	None needed	Wash skin with soap and water.
		White Phosphorus	WP	No Appreciable Odor	Burns to white smoke in air	10 min.	Burns, pieces adhere to skin and clothing	None	Put under water or keep wet. Pick out particles. Do not apply grease or salve.
INCENDIARIES		Magnesium Bomb	TH	None	Burns brilliant white light		Burns	None	Flood with water. Cover with clean dressing.
		Thermate	TH	None	White-hot metal				

CWS Evacuation

The following is submitted as plan for CWS evacuation:

It is recommended that:

1. Army Cml Depots #1 and #2 ship excesses to Chemical Depot, B. G. D., San Bernardino, each day by motor transport or other available means.
2. Combat units draw chemical shortages by requisition on Chemical Depot #1 and Chemical Depot #2 and turn in all salvage and repair before 15 Mar 1944 so that they can be replaced immediately.
3. The Army Chemical Depot #1 will evacuate all stocks on hand at closing to Chemical Section, Coachella Depot (operated by Communication Zone). The Army Chemical Depot #2 (Needles) will evacuate all stocks on hand at closing to the Chemical Section, B.G.D., San Bernardino, (also operated by Communication Zone).
4. Chemical Depot #1 at Yuma close 15 March 44. Chemical Depot #2 at Needles also close 15 March 44.
5. On 1 April 1944, Chemical Section, Coachella Calif, close and evacuate stock to B. G. D., San Bernardino.
6. Upon closing of the various forward depots, units remaining in C-AMA area will be served by direct application of requisitions upon the Chemical Section, B. G. D., San Bernardino, Calif.
7. The 191st Cml Depot Co be immediately removed from C-AMA. If this removal occurs prior to 15 March 1944, one platoon of the 194th Cml Depot Co is to be sent to operate Army Cml Depot #1, at Yuma.
8. Transportation for evacuation of depots to be furnished by motor transportation service.
9. One platoon 194th Cml. Depot Co be immediately removed to B. G. D. to assist in the operation of Chemical Section, B. G. D. and Coachella Depot. Also, if the 191st Cml Depot Co leaves Yuma, Ariz, prior to 15 March 1944, one platoon of the 194th Cml Depot Co be sent from Needles to Yuma to conduct Army Cml Depot #1. Upon closing Army Cml Depot #1 this platoon would move to B. G. D.
10. At the close of Army Cml. Depot #2, the portion of the 194th Cml. Depot Co, present rejoin balance of company at B. G. D., San Bernardino. The 194th Cml Dep Co can be released for movement of C-AMA, 1-15 April 1944.
11. In addition to the 191st and 194th Cml Cos., the disposition of other Chemical Warfare units is

DECLASSIFIED
 NNID 730029
 By P. Moore NARS, Date 1-94-94

April 19, 1943.

*Camp Young
 Wash D.C.*

SUBJECT: Engineer Troops Desert Training Center.

TO : Commanding General Desert Training Center.

1. The following study sets forth the minimum requirements in trained or partially trained Engineer troops for the efficient operation of the Desert Training Center.

2. The ideal situation with regard to Engineer units would be to send no troops into the Desert Training Center that had not completed basic and unit training or its equivalent. Recognizing the difficulty of providing the Desert Training Center with fully trained Engineer units, due to extreme shortage and demand for these units, provisions can, and will if necessary, be made for completing the training of partially trained units in the Desert.

3. It should be realized that the great demand for Engineer work within the Desert Training Center frequently requires that the training of partially trained units be interrupted for protracted periods of time. These frequent interruptions tend to kill the continuity of the training which is essential to attaining the highest state of training. For this reason it is imperative that no Engineer units be ordered into the Desert Training Center until these units have completed their Basic Training including all marksmanship training required of the units. If this policy is adhered to, those partially trained units received, can be handled with a minimum of interference with the operation of the Desert Training Center.

4. Should it become necessary to send Engineer units into the Desert Training Center prior to the completion of basic training, these units should not be used for operations, except for projects conforming strictly to their training schedules, until these units have completed a total of 12 weeks basic training including all marksmanship required of these units, and have successfully passed such tests as the Commanding General of the Desert Training Center may prescribe.

5. Partially trained units that have completed basic training, should devote at least one third (1/3) of the time for the first 12 weeks in the Desert to purely military subjects. The remaining two-thirds (2/3) should be spent on productive work, care being taken to see that Engineer construction projects assigned these partially trained units will be such that these projects round out the training. This may require that trained troops carry an additional burden. This applies particularly to troops in the Communication Zone, as these units are primarily ASF units.

6. The tables below give the requirements for the Communication Zone and the Combat Zone separately. In the case of the Communication Zone two plans are considered. Plan 1 shows the minimum requirements in trained or partially trained troops for the operation of one (1) Communication Zone. Plan 2 covers

PART II WEIGHT* OF TBA LOADS - COMBAT VEHICLES

* Includes proportionate % of weight of packing. 312466

Vehicle	Type	Amount	Wt.	Total Wt.
Car Armored Recn.	37mm	100 rds	500	<u>922.5</u>
	Cal. 30 M.G.	5000 rds	390	
	Cal. 45	600 rds	32.5	
	Grenade Hd.	.	.	
	Off. M6	2 ea.	.	
	Grenade	.	.	
	Frag. MK II	2 ea.	4	
	H.C. M8	4 ea.	.	
CH, DM, M6	2 ea.	.	.	
Car Scout, M3A1	Cal. 30 M.G.	8000 rds	646	<u>936.5</u>
	Cal. 50 M.G.	750 rds	258	
	Cal. 45, SMG	600 rds	32.5	
	Grenade Hand	.	.	
	MK III	2 ea.	.	
	Grenade Frag.	.	.	
	MK II.	2 ea.	4	
	H.C. M8	4 ea.	.	
CH, DM, M6	2 ea.	.	.	
Car, Half-Track, M2	Cal. 30 M.G.	8000 rds	646	<u>936.5</u>
	Cal. 50 M.G.	750 rds	258	
	Cal. 45 SMG	600 rds	32.5	
	Grenade Hand	.	.	
	MK III, Offense	2 ea.	.	
	Grenade Frag.	.	.	
	MK II	2 ea.	4	
	HC, M8	2 ea.	.	
	Mines, H.E.	14 ea.	188	
AT - M1.	.	.	.	
Car, Half-Track, M3	Cal. 30 M.G.	4000 rds	323	<u>355.5</u>
	Cal. 45 SMG	600 rds	32.5	
	Grenade Hand	.	.	
	Offensive Mk	.	.	
	III	10 ea.	.	
	Grenade Frag.	.	.	
	Mk II.	2 ea.	4	
	Grenade, Irrit.	.	.	
	CH, DM, M6	4 ea.	.	
	HC, M8 (Smk)	2 ea.	.	
Mines, HE	.	.		
AT M1	26 ea.	.	.	

LIST OF PROJECTS TESTED BY DESERT WARFARE BOARD

Air Filters	Carriage M1
Precleaner and Oil Bath Cleaner	Clutch Dust Covers
Anti-Aircraft Material	Clutch Assemblies
Air Conditioned Ambulance	75mm Gun Motor Carriage, Half-Track, Special Springs For
Refrigerated Ambulance	75 MK Gun Motor Carriage T-70
Field Ambulance	155mm Gun Motor Carriage T-6
Ammunition	Special Two Plate Clutch
Airborne Ammunition Containers	Detergent, Synthetic Neutronys
Air Tank Bombing	Detector Set, A/T Mine
Air-Borne Supply	V Type Road Drag
Anti-Dust Measures	Duck, Coated Canvas
Automotive Equipment(Accessories)	Armored Force Vehicles
Marker, Beacon	Chemical Warfare Equipment
Desert, Warfare Boots	Engineer Equipment
Boots, Parachutest	Watchbox, Compass Type
Boots, Field M1943	Insect Repellant
Boots, Cavalry	Photographic Equipment
Boots, Commercial	Tire Patching Equipment
Level Bubbles	Visual Equipment
Steel Treadway Bridges	Polaroid Eyeshades
Tire Chains	Jettison Fuel Tanks and Trailers
Coveralls	Clare Filters for Tank Telescopes and Periscopes
Gasoline Cans	Smoke Generators
Canteens, 2-1/2 Gallon	Sun Glasses
Null Compasses	Gasoline
Compasses	Goggles Ski Type
Cots, Canvas Folding	Gas Warfare
Armored Car T-17 (British)	Gun T10 & Gun Carriage T1, 3"
Armored Utility Car M20	Half Track Personnel Carriers M3
Carriage, MG, Cal. 50	Hose Tops
87mm Gun M3A1	Modified Half Tracks, M2 & M3
Heaters, Circulated Fuel Oil Burner	Half Track Shutter Brackets
Havelocks	Blackout Headlights
Scout Car M3A1	Special Springs for Half Tracks
Half Track Car, M2E6	
Special Springs for 75 MK Gun Motor Carriage.	Interphone Equipment
Ventilating Insoles	Lubricants
Kits, Medical, Jungle	Liners, Helmet
Trouble Lamps	Lipsticks and Creams
Leather	Medical Supply Units
Lubrication, Artillery	Muzzle Cover
Muzzle Cover	Motor Carriage Gun Mount M8
Mount, 105 Howitzer, M7	Oil, Can, Replaceable Caps for
Navigation Sets	Paint
Oil	Puttees, Khaki, Woolen
Public Address Systems	Prime Covers
Panel Set AP 50	Ground Projector M4
Paok Boards	Radio Set SCR 506
Radio Carrier T17	

LIST OF PROJECT LISTED BY DESERT WARFARE BOARD (Cont'd)

Ration Boxes	Rations
Motors	Restrictor Rings, Tires
Rucksacks	Refrigerated Chamber
AC Spark Plug Pump	High Speed Road Pioneering
Spring Loaded Idler Assembly	Air Ground Signalling
Shell, Illuminating, 60 mm	Gasoline Stoves
Impregnite Shoe M1	Shirts, Convertible Collar
Shirts	Socks, Ski
Socks, Cool Cushion Sole	Hardwater Soap
Spring Fatigue in 1/4 Ton Truck	Steering Stabilizers for Half
Double Coil Springs for Spring	Trucks and Scout Cars
Loaded Idler Assembly	Snubbers for Scout Cars
Station Wagons	Steel Shell Cases
Signal, Ground M21	Taps, Phosphorescent
Steel Tent Frame	Towels
Synthetic Tracks for Tanks	Amphibian Trucks
Tire Tubes	Gas Tankers
Ordnance Shop Trucks	12 volt Electrical System for
Dodge Truck 1-1/2 Ton	1/4 Ton Trucks
Trucks, 1/2 Ton	1/4 Ton Welding and Crane Truck
Tractors	Armored Cargo Trailer, M8
Trailers for Light Tanks	Trailers
Water Trailer	Trailers for Medium Tanks
Ten Ton Tractors D7	Caterpillar Tractor M4
High Speed Tractors	Traction Devices
Goodrich Company Tubeless Combat	Heavy Tractor T16
Tires	Galanot Watson Iyr Tracs
Special Tires	Desert Tires for Motorcycles
Aircraft Tires	Tank Destroyers M10 and M10A1
Lt Tank M3 with Low Turret	Bogie Suspension for Medium Tank M3
Tank M4A1E1	Medium Tank M4A2
Medium Tank M4A3	Medium Tank M4A4
Medium Tank M3	Steel Tank Tracks T36E2 and E6
Air Cleaners for Medium Tank M3	Vortex Air Cleaners for Light Tank M3
Photographs	Motor Transport Vehicles
Medical Vehicles	Command Post Vehicles
Marking of Vehicles	Vapor Locks
Wire	Water
Storage Batteries	Tank Recovery Vehicle, T2
Desert Clothing	Cars, Armored, Reconnaissance, M8
Cargo Carriers, T15, T16 & T24	2 1/2-Ton, Cross Country Carrier
Camouflage	(Swamp Buggy)
40mm Gun Carriage, M2 and T2	Overall Zipper Covers
Thornton Locking Differentials	Multiple Gun Motor Carriage, T29
Eye Shields, Anti-gas	Radio Direction Finding Equipment
Lubricants and Fuels	Lights
Antitank Mines, Mine Sweepers, and	Luminous Markers
Detectors	AA Mounts for Tanks
Recording Odograph	Radio Set SCR-504 & 274
Dust Respirators	Smoke Munitions
Telescopes	Truck-Tractors & Semi-Trailers
Tank Transporters	Heavy Freckers

HEADQUARTERS DESERT TRAINING CENTER
Camp Young, Indio, California

March 20, 1943

SUBJECT; Final Report D.T.C. Maneuvers

TO : Commanding General, A.G.F., Army War
College, Washington, D.C.

1. Transmitted herewith is a final report for the Desert Training Center Maneuvers, conducted during the period February 15, to March 6, 1943.

2. These maneuvers were conducted under the new D.T.C. Training Theater of Operations organization. A short description of the Organization and Functioning of this training theater is included in Section I of the report.

/s/ WALTON H. WALKER
/t/ WALTON H. WALKER
Major General
Commanding

DECLASSIFIED

Authority NND 770072
BY ERC DATE 4/26/84

ORGANIZATION OF DESERT TRAINING CENTER

The desert Training Center is a Training Theater of Operations. It comprises a rough oval approximately 350 miles wide and 250 miles deep extending from Pomona, California to Phoenix, Arizona and from Yuma, Arizona to Boulder City, Colorado. It is divided into a combat zone and a Communications Zone. The combat zone occupies the central portion of the oval and is divided by the Colorado River. The communications Zone surrounds the combat zone.

The terrain of the combat zone varies from the muck of dry lakes, which are occasionally covered with shallow water, to sand dunes and sandy or rocky terrain of varying degrees of roughness to include high mountains. The entire area is a series of dry lakes, wide and narrow sandy valleys and rock mountain ranges. To the casual observer there appears to be little vegetation suitable for camouflage but there are areas filled with trees averaging 15 to 20 feet high, particularly in the numerous dry stream beds and washes. Coloring and background is of such a nature, that vehicles and other objects blend into the terrain. Two railroad lines, the Los Angeles Metropolitan Aqueduct and the Indian Reservation along the Colorado River are the only man made major obstacles to free maneuver.

Within this area every effort has been made to develop as realistically as possible an actual Theater of Operation. From depots and other facilities located near the outer edge of the communications zone supplies are delivered to units through Advance Army Depots at Yuma, Needles and Coachella and other localities on the edge of the combat zone. Simulation of actual service conditions is not confined to maneuver periods. Supply and evacuation operates in this manner at all times. Class I trains arrive daily at advance depots and distribution is made at night. Casualties are evacuated from units to field hospitals located near the advance depots and if necessary to the base hospitals in the communications zone. Evacuation by air is employed when necessary.

Base tent camps for each division and attachments have been established at Ibis, Coxcomb Mountain Area and Laguna. Construction in these camps consists of latrines, showers and graded roads. At Camp Young where Headquarters Desert Training Center and various small units are located, hospitals, mess and office buildings and tent floors have also been constructed. Within the combat zone construction other than the above has been avoided and all other construction previously completely has been removed. During maneuvers or other exercises units construct desert roads as they advance and make every effort to destroy them as they withdraw. A railhead company arriving at a new railhead finds a siding and sand, when they depart there remains only the siding and sand.

During the entire three week period of maneuvers units lived in the field under combat conditions. During the remainder of the training period troops average from three to five days a week under the same conditions.

SECTION II

DESCRIPTIVE SUMMARY OF THE D.T.C. MANEUVERS

The D.T.C. Maneuvers directed by letter Headquarters Army Ground Forces Subject: "Organization and training Desert Training Center", November 18, 1942, conducted between February 14 and March 6, 1943, had as their primary object the attainment as nearly as possible of actual battle conditions. They were intended to force troops to live, move and fight under the same conditions which they would encounter in combat.

The exercises were designed to extend personnel and equipment to the limit of their capabilities so that from this experience units and individuals would develop complete confidence in their ability to extend themselves to that limit in battle.

Paved roads were off limits to participating troops, and certain restrictions in crossing railroads and the aqueduct were obligatory, but in all other respects, maneuver was free and controlled only by the tactical situation.

There were no assumed demolitions or obstacles; restrictions were not placed upon their execution and the effect was real. Demolitions were executed in several instances to destroy passes through mountains and block other defiles, causing advancing units to remove many obstacles. Roads were built by units to facilitate their advance and destroyed to hinder the opposing forces.

Tear gas was sprayed from the air and otherwise used as opposing commanders directed to the extent available. Three thousand smoke pots were used for screening operations and marking artillery fires. Land mines were extensively used and it was demonstrated that all units had been trained in the laying of mine fields and in their removal. More than 20,000 mines were buried by a division during one exercise.

Available aviation included one observation group and one dive bombardment group, both at reduced strength. In two exercises it was divided equally between the two forces. In exercise "C" the blue force was given all available observation aviation while the red force was supported by the entire bombardment group. The IV Air Support Command exercised command over all air units and acted as Air Director Headquarters. Air support parties were furnished to all divisions and in some instances down to and including combat commands and combat teams. Control was exercised both by the Corps and by allotment to divisions.

Artillery fires were marked by the use of lime bombs and smoke and in some instances by the use of explosives. Lime bombs were also used to indicate gun positions. Fire power was credited in accordance with the umpire manual and gun crews were required to be present and operating their pieces. The play of ammunition supply was carefully checked by umpires and no credit was allowed for fire power where units failed to deliver represented ammunition to the guns.

Two of the three divisions used vehicular or group cooking almost entirely. The C ration was extensively used by small parties and reconnaissance elements.

Long marches, under desert conditions, and the length of supply lines over difficult terrain placed a heavy strain on supply facilities. In one exercise supplies were hauled for sixty miles on roads and trails over which the speed of travel was approximately five miles per hour. Two exercises ended in time to prevent a complete breakdown of the supply system and it is regretted that time did not permit a continuation of the exercise to determine the actual limit of supply under these conditions.

Corps military police were given authority to arrest and hold any person violating certain maneuver regulations. This was effective in enforcing orders in regard to the use of paved roads and blackout discipline.

Throughout all phases there was no compromise, or deviation from a constant effort to obtain as nearly as possible actual combat conditions.

Critiques were held after the conclusion of each exercise.

SECTION III

Exercise "A"

Purpose: Exercise "A" was intended to test and develop the capabilities of elements of the Corps to move long distances, to reconnoiter and maneuver under desert conditions, and to force a realistic play of supply and evacuation in all its phases.

Initial Situation: A (RED) Armored Division with AA and TD attachments was located in the vicinity of Searchlight. A (BLUE) Motorized Division, with similar attachments was just north of Yuma. Two (BROWN) forces, one consisting of an Armored Division with AA and TD attachments, and the other of a TD Group were concealed west of Desert Center. Main bodies of the Red and Blue forces were 175 miles apart. Reconnaissance elements were restricted so that they were 70 miles apart when the exercise opened. Both Red and Blue had Dive Bombardment and Observation Aviation. Both were given aggressive missions which were designed to develop combat.

Action: When the exercise opened the Red force moved south and the Blue force north. Aviation was grounded the first day of the exercise. Ground reconnaissance elements made contact late the first day; the main forces were in contact by dark the second day. At that time the Brown division was committed to a fifty mile march, through rough terrain which would bring it into the area on the Blue side. Limited supply by air was simulated. The TD Gp moved over a similar route to join the Red side. The Red mission was changed from offense to delaying. The exercise ended late the fourth day with Blue forces attacking and Red forces executing a delaying action on their front.

Comments: At the end of the exercise both armored divisions were almost out of gasoline due to lack of sufficient supporting supply vehicles. Supply considerations, particularly gasoline supply, to a large extent govern armored or motorized operations in the desert. The necessity not only for route reconnaissance but intelligent route reconnaissance was emphasized. Armored forces can traverse very rough terrain but their speed is greatly reduced. Once moving in desert formation on open terrain, the power of an armored division appears almost irresistible unless slowed or stopped by obstacles or mine fields. A motorized division is vulnerable to armored attack while moving, but when halted and dug in, behind an obstacle, it can stop strong armored attacks. Deficiencies in liaison, communications, and reconnaissance were noted during this exercise. The capabilities of available aviation were not fully exploited.

SECTION IV

Purpose: Exercise "B" was intended to give defending units practice in actually organizing and constructing a defensive position in detail including tank ditches, mine fields, wire entanglements, and similar obstacles, and to require the attacking units to first rehearse an attack against this position, then attack with artillery and infantry leading, followed by tanks.

Initial Situation: The Blue Motorized Division, assumed to be a part of a larger force, was directed to organize and defend a sector with secure flanks 8000 yards in width. Blue Tank and Tank Destroyer Groups remained in concealed locations and prepared plans to meet probable Red attacks. Two Red armored divisions, which had recently arrived in the area, reinforced an assumed Red force which was in contact with Blue. An attack to penetrate the Blue position was delayed due to non arrival of ammunition.

Action: Pending the arrival of ammunition the Red divisions rehearsed attacks against outlined replicas of the Blue positions. Information of Blue positions was furnished by aerial photograph prepared by Corps Topographic troops in the field and by engineer reconnaissance.

When ammunition supply was assured Red attacked to breach the Blue position and exploit. One armored division reinforced with all the artillery and one third the infantry of the other division breached the enemy position, then the second armored division passed through the first.

The collapse of assumed Blue forces on one flank had forced the motorized division to withdraw to a second position prior to Red's attack. When the exercise ended, Red had developed and was preparing to attack Blue's second position. Blue tanks and tank destroyers units were poised for a counterattack.

Comments: As was realized when this exercise was prepared, an additional Red infantry division, and an artillery brigade would have been required to actually justify Red's attack against Blue's strong position. The greatest value of this exercise was the cooperation and coordination required between Red divisions for the execution of an attack against an organized position, followed by a passage of lines. Blue benefited by the actual construction of an organized defensive position, including type obstacles and demolitions of all kinds. Blue buried and later recovered 20,000 mines. Again deficiencies in liaison and communications were noted in some units. Aviation was much more effectively employed than in the preceding exercise.

SECTION V

Exercise "C"

Purpose: The purpose of Exercise "C" was to test and develop the ability of the IV Armored Corps to maneuver, fight, and supply itself under desert conditions with long lines of supply.

Initial Situation: Headquarters IV Armored Corps which had operated as Director Headquarters during Exercise "A" and "B" took the field as Blue Corps Headquarters in Exercise "C". Umpires exercised the only control used.

The Blue Armored Corps, consisting of two armored divisions (less one combat command), one motorized division, one AA Group (Automatic Weapon) one mechanized cavalry regiment, and an Observation Aviation Group was completing concentration south of highway 60-70. Mechanized cavalry protected the concentration. Aviation operated from Yuma airfields. Supply was through Yuma and Niland.

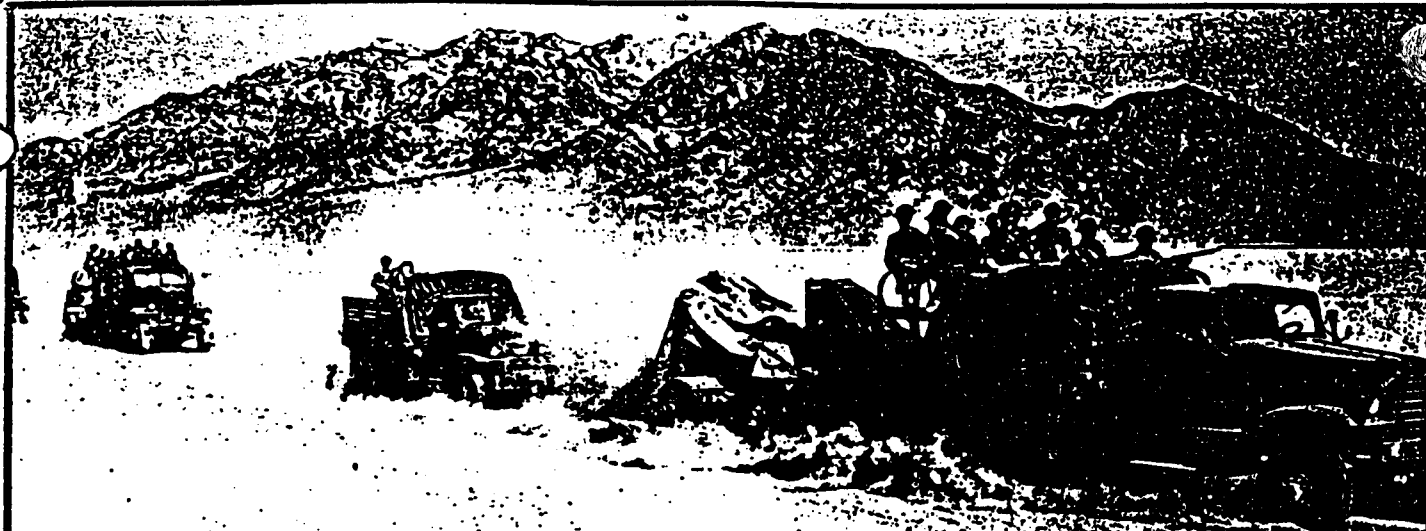
The Red force consisting of a composite force of a combat command from an armored division, a tank group, a tank destroyer group, an engineer detachment was north of Parker Dam Highway. It was supported by a Dive Bombardment Group operating from the Needles airfield. Red forces were not required to observe maneuver restrictions. Umpires acted as Red observation aviation.

Action: The IV Blue Armored Corps received a mission requiring it to move north to destroy a red force concentrating in the vicinity of Searchlight. Red was given the mission of delaying Blue's advance.

Blue moved north in wedge formation, the motorized division leading. The mechanized cavalry reconnoitered in advance of the Corps. The advance was controlled by boundaries and phase lines. It continued until at the end of the second day Red's dispositions and strength had been determined. Blue then initiated an attack to destroy the Red force, to facilitate the advance on Searchlight. The exercise ended at dark the third day, when Red's destruction was assured, and orders for continuation of the advance on Searchlight had been issued.

Comments: At the end of the exercise the fuel supply situation for Blue was critical and continuation of the advance would have resulted in immobilizing the Blue force.

The Corps Command Post was located well in rear of the divisions at the start of the exercise resulting in long lines of communications over difficult terrain. This conditions made the use of wire and messenger communications uncertain and placed a strain on radio communications. This exercise brought out the necessity for Corps command posts being located well forward close behind the divisions. Liaison officers were invaluable, but the long distances they were required to travel, limited their effectiveness.



DESERT TRAINING CENTER

California - Arizona Maneuver Area

PART I - HISTORY

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by
Francis G. Blake
Fullerton, California

Anti-aircraft element of a coast artillery unit on the move. Troops are armed with 1903 Springfield rifles.

U.S. Army SC 131388

Forward

The U.S. Army Desert Training Center, Mojave Desert, California, began in early 1942 with the purpose to train armored and infantry units in desert warfare and to test a variety of equipment for combat. Except for some elements of the 1st Armored Corps, however, none of the seven armored and thirteen infantry divisions that trained here ever campaigned in a desert. All twenty divisions were sent to either Europe or the Pacific including Alaska. Italy is the closest anyone of them got to a desert.

Was this another foul-up? Not really. By the time these divisions were deemed ready for combat, the North African Campaign was nearly at an end. Thus the DTC's purpose and status changed to that of a maneuver area much larger than those in the eastern half of the United States. Wargames similar to a theater of operations were conducted without interference from civilians and damage to private property. In 1943 the name was changed to California - Arizona Maneuver Area to eliminate misunderstandings. Major General George Patton, Jr. established the DTC and although he was there for only a few months, the Center was forever nicknamed "Patton's Training Ground." Under later commanding generals, ten tent camps were constructed; six in California, four in Arizona. Six major maneuvers were carried out from mid 1942 to early 1944, each with "red" and

"blue" teams composed of armor, infantry, cavalry (mechanized), tank destroyer, artillery, air force and support units. By late 1943, a critical shortage of service units supplying and maintaining CAMA led to the recommendations that it be closed. After final maneuvers in early 1944, CAMA ceased operations and was dismantled.

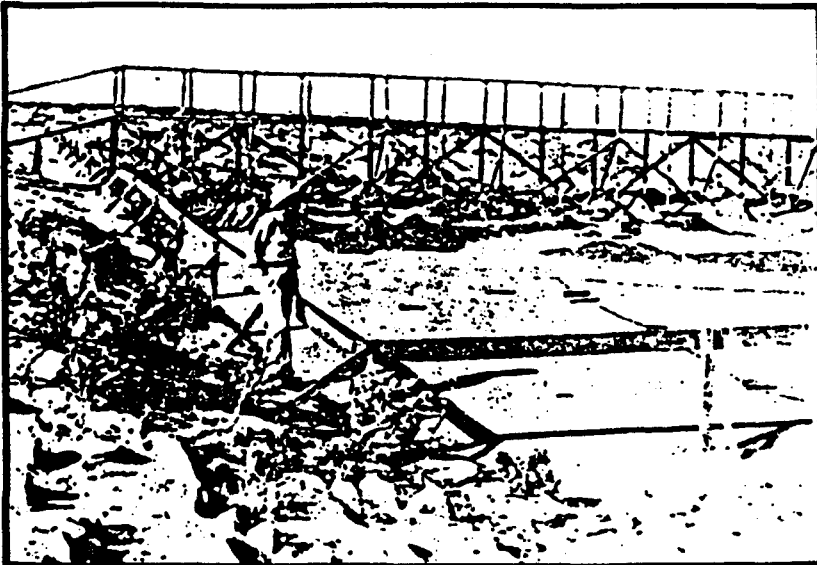
Part 1 herein covers the history of DTC-CAMA; Part 2, in a future *ARMY MOTORS*, will describe the training sites and relics as found today. For the following historical account, I have relied heavily on the official Army history of DTC-CAMA; Study No. 15, 1948 (see bibliography). Where available, for our purposes, excerpts dealing with military vehicles have been emphasized.

History

Early in 1942, the War Plans Division of the War Department General Staff concluded that a campaign in North Africa, like those in other areas with extreme climate and/or terrain, required specially trained and equipped troops. This had already been disastrously proved by Allied armies. In February 1942, an armored combat team was chosen as the initial force to learn desert warfare tactical doctrine and to test equipment. Only the minimum requirements of health, housing, sanitation and safeguarding of government property was to be allowed. Tactical medical units were to perform hospitalization.

Not only were the troops to be trained in desert warfare, but it was necessary to determine how they would be trained. Were the tables of basic allowances adequate for desert warfare? Were changes in the tables of organization needed? Proposed types of training included: "... operations with restricted water supply; sustained operations remote from railheads, in dispersed combat groups, during which constant threat of hostile air and mechanized attack would be simulated; speed in combat supply, particularly in refueling and ammunition supply; supply under cover of darkness; desert navigation for all personnel; laying and removal of mine fields by all units; maintenance and evacuation of motor vehicles; special features of hygiene, sanitation and first aid; and combined training with the Army Air Force."

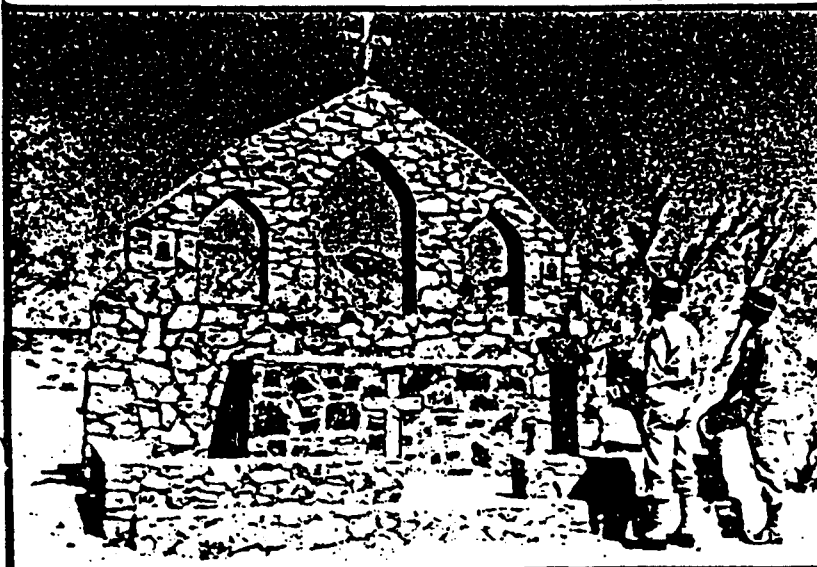
General Headquarters had already assigned the Commanding General of the 1st Armored Corps, Major General George S. Patton, Jr., as the commanding general of the proposed DTC. He was ordered to reconnoiter southeast California and western Arizona for suitable sites, which he did from the air and ground on March 4th through the 7th with several members of his staff. Gen. Patton chose 10,000 square miles in California because of the greater water supply, adequate railroad lines and because nearly 80% of land was already government owned (Dept. of Interior managed). While here, Gen. Patton also



Southwest corner of large relief map near flag circle, Camp Iron Mountain. The map was so large, a bridge was needed to observe it all. A tarry substance was sprayed over the map to keep it in place. Small signs noted geographic features.



Chapel altar northeast of flag circle, Camp Iron Mountain. 163rd FA is the 163rd Field Artillery, a 155mm Idaho National Guard unit. They participated in the 1943 8th Corps maneuvers under command of General Charles White and later campaigned in Europe.



Chapel altar at the southern end of Camp Iron Mountain.

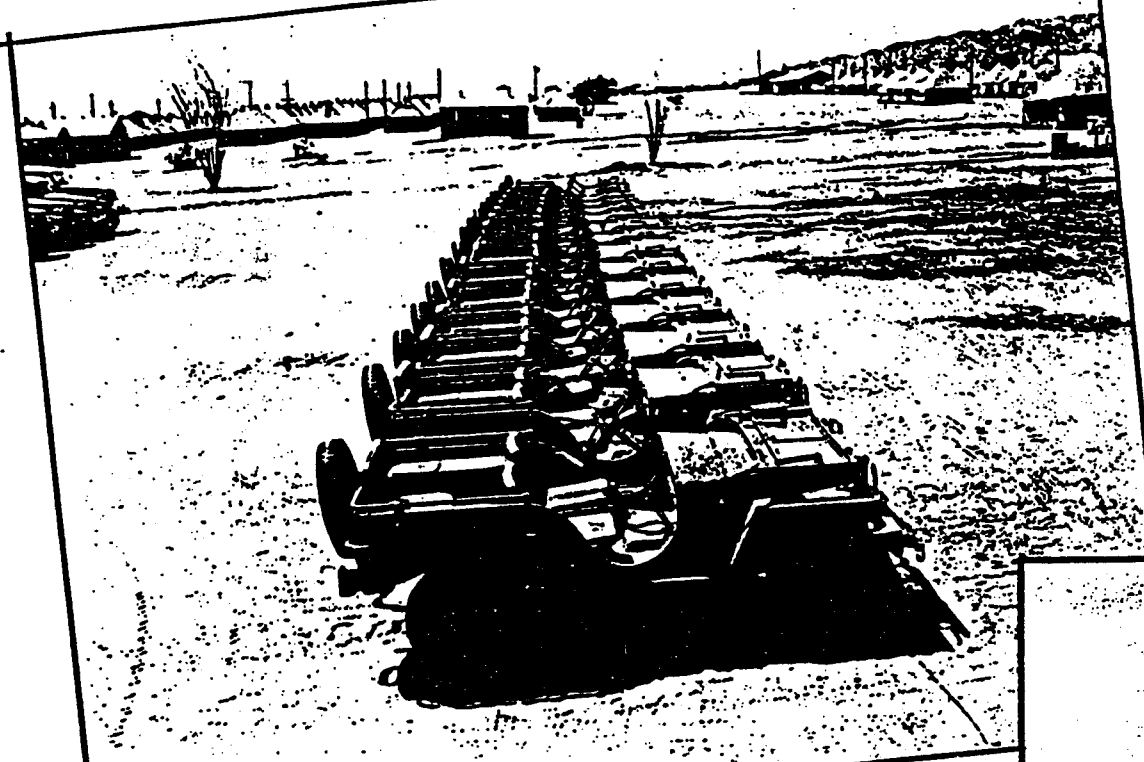
made arrangements with the Metropolitan Water District to supply water from the Colorado F. Aqueduct and electricity, planned railroad facilities with various railroad companies and directed the Ninth Corps Area to furnish Signal Corps, Military Police and Quartermaster personnel for base operation and maintenance.

The area chosen varied from mountains to canyons, dry lake beds to sand dunes. Cactus and bushes, the most common vegetation, provided no shade. Summer temperatures rose to 130° F; winter temperatures plummeted to freezing. Occasional flashfloods swept through the canyons. The nearby towns of Needles, Blythe, Yuma and Indio had 1940 populations of 5,000, 2,340, 5,325 and 1,600 respectively. There were, to be sure, already other Army posts in the desert but these were specialized units such as the Engineer Board Test Section at Yuma.

Peculiar to the DTC, the Army Air Force squadrons assigned to supporting roles during maneuvers came under the direct command of the Army Ground Force commanding general. They were not allowed to act as an independent group typical of their organization. Most aviation units were based at and operated from desert air fields within the DTC, not established military airports.

An advance party of 1st Armored Corps officers arrived at the DTC in March, 1942, and immediately began laying out the first camp, the administrative center, approximately twenty miles east of Indio between the Metropolitan Water District Aqueduct and Highway 60. In April Camp Young, as it named, began receiving 1st Armored Corps troops and equipment. They lived in tents but the camp was still without electricity and piped water. By the end of May, however, those deficiencies had been cured. Wood and tarpaper buildings were constructed for special purposes only. This camp design set the pattern for the divisional camps yet to come.

The 1st Armored Corps training program began April 20th and ended six weeks later. The first of four phases emphasized small unit teamwork. Succeeding exercises involved larger units and the Air Force. Phase four involved less than 10,000 men in a seven day, 300 mile exercise. It was here that the new self-propelled gun (M3 half-tracks with a 75mm gun) was tested. Altogether 225 vehicles took to the field. Units consisted of a reconnaissance troop reinforced by a reconnaissance tank platoon, a tank battalion, a battery of towed 105mm howitzers, two tank destroyer companies, a company of infantry and a detachment of engineers. Observation of vehicle performance revealed these facts: full tracked vehicles had the greatest speed over rough terrain; gasoline mileage was very poor; rapid direction change of a half-track was often fatal; tanks threw tracks on sand dunes if not traversed at right angles; 2 1/2 ton trucks lacked sufficient speed and maneuverability while towing 105mm howitzers; sharp, dead twigs of desert vegetation punctured tires; light tanks (M3 Stuarts) had greater ability than scout cars in crossing the desert; armored infantry should be in half-tracks or in full-track armored vehicles, not trucks; a light observation airplane was invaluable, but vehicles could not be seen unless they were moving; and finally, combat maintenance vehicles should be full-tracked ones so they can catch up after stopping to make repairs (half-tracks were too slow).



Jeeps, trucks, half-ton XA's of Comp Battalion, 3rd Armc during the period west; Iron Mountain Aqueduct are visible tracks. All jeeps will Jeep hood registers Note the variety of directional tread tire

Motor pool jeeps of the Headquarters Company, 1st Signal Battalion, at Camp Young, August, 1942. View to the West. Note all the jeeps are Willys MA's: a very rare vehicle today.



M3 medium Lee tank crew prepare a meal on the hot desert sand.

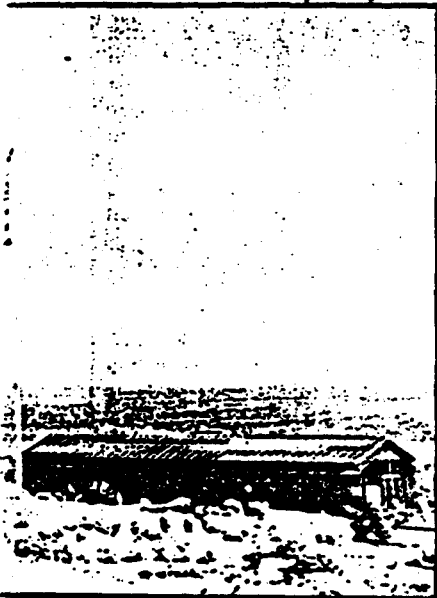
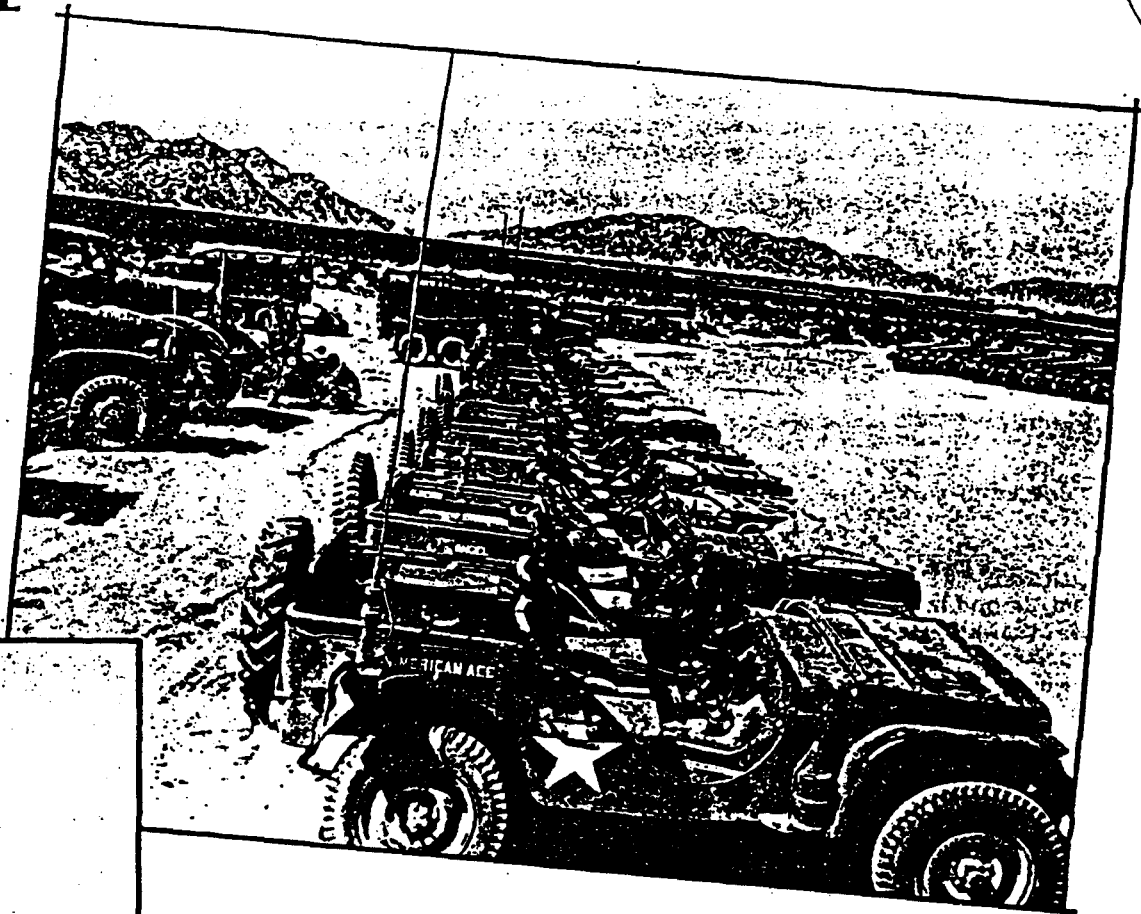


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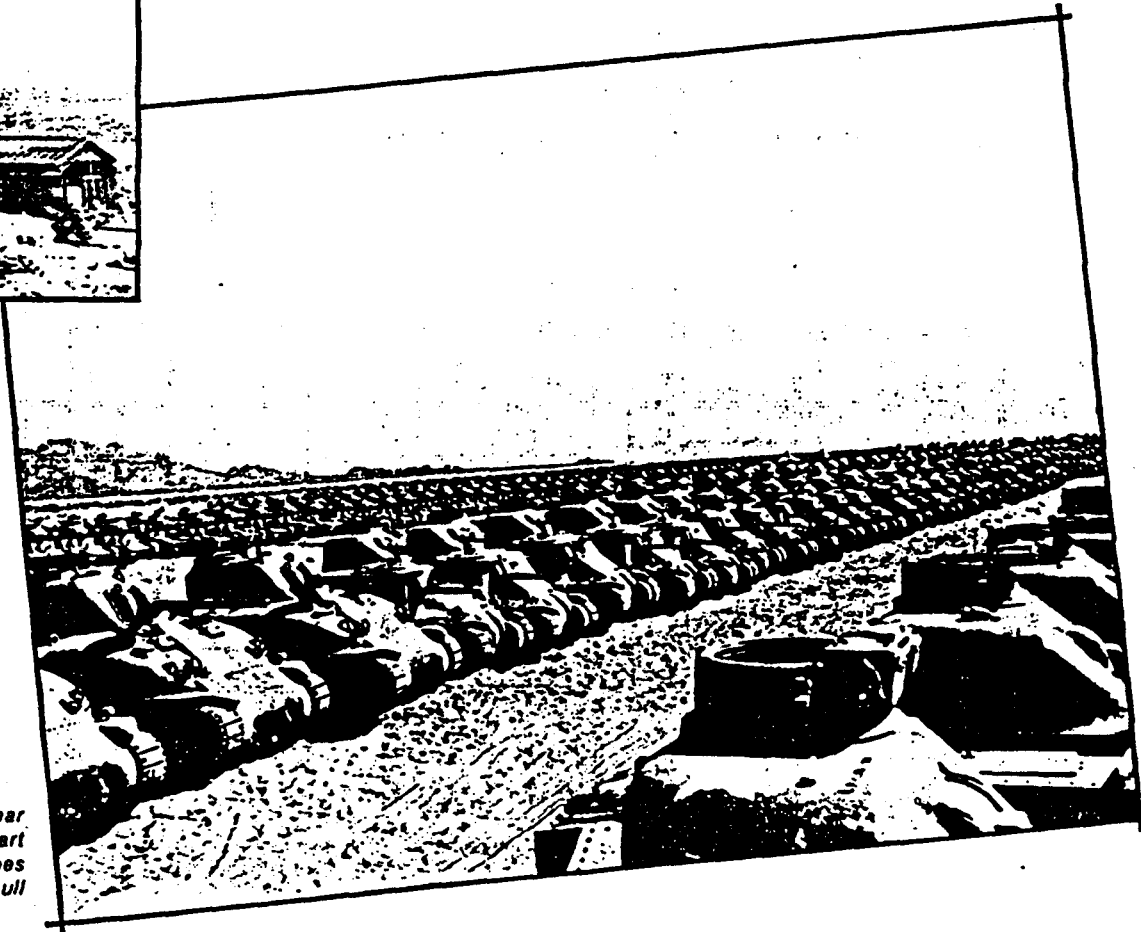
Freda Quarto. Rice. View no tanks form th form the other next to the Sh

FEATURE

motorcycles (Harley-Davidson) and Armored Reconnaissance vehicles, Camp Granite, sometime in 1942. View to north; right background above half-shield covers are Ford GP's. Numbers are in faint blue drab. Red patterns as well as the



Portion of Camp Young.



Depot, Freda railroad siding near
ward Turtle Mountains. M3 Stuart
w; M4A1 Shermans and M3 Lees
le the singular M3A1 with cast hull
Tents are at far right.

All aspects of learned desert warfare were written down by Gen. Patton and printed in brochure form. These became the "bible" of all DTC troops. Gen. Patton set other demanding precedents as well: aggressive spirit, command participation in combat, extended drilling and policing, severe discipline, proper wearing of uniform and minimal housekeeping of the camps.

Large maneuvers involving the 3rd and 5th Armored Divisions were planned for July 13th to September 6th, but due to supply and transportation problems, these were postponed. Gen. Patton, however, did not command these maneuvers. He and the 1st Armored Corps were suddenly ordered to participate in the invasion of North Africa.

By August 2nd, 1942, Major General Alvan Gillem, Jr. and the 2nd Armored Corps took over the DTC. He was a quick replacement for Gen. Patton who would have commanded the first divisional maneuvers. Schedules and plans were knocked askew by the transfer of officers and units destined for North Africa. Some troops especially those in the 5th Armored Division were considered not ready for maneuvers since they had just come from induction centers.

Regardless, the maneuvers were conducted August 31st to October 18th, 1942. All units this time were either armored or motorized. Because of the brevity of the individual exercises, opposing teams could not spread out

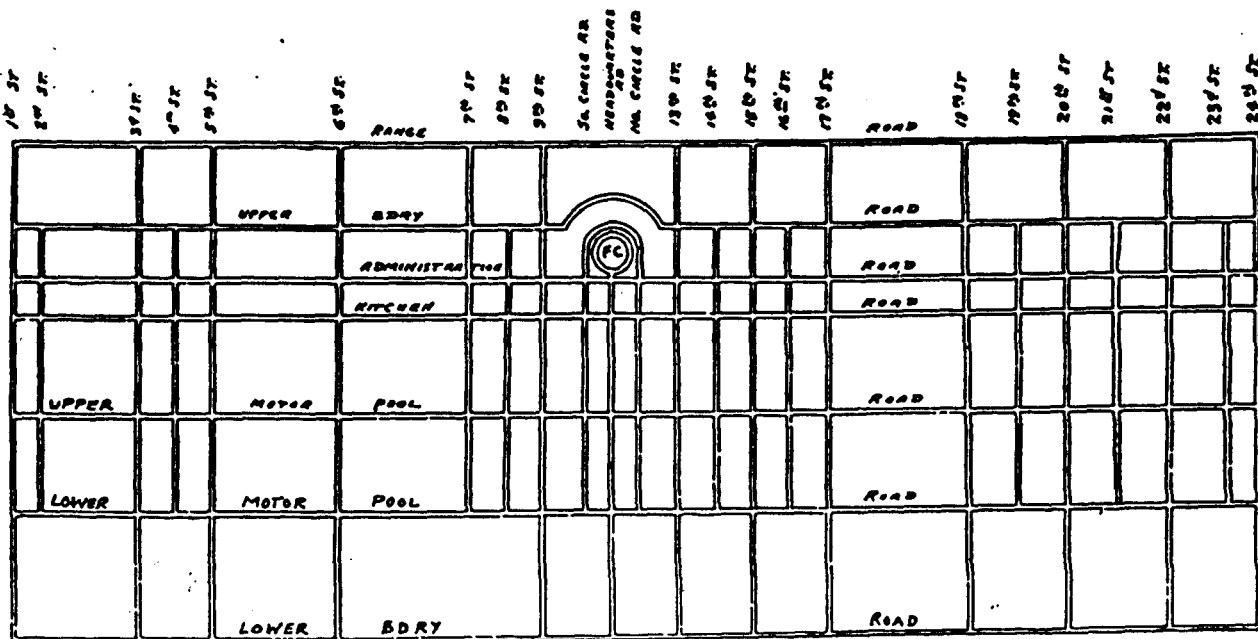
over a large area; they had to be near each other to complete the maneuver on time. Thus the long ranging reconnaissance units had little to do. This and other problems relating to the artificial source of supply (namely the Freda railroad near Rice, which was located in the center of the "battlefield") led to major changes in the DTC.

Three War Department directives issued within the period November 25th, 1942 to January 14th, 1943, redesignated the DTC as a "theatre of operations" for training purposes. As of January 26th, 1943, the DTC was considered a combat zone and run accordingly. The burden of transforming the DTC fell to the next commander, Major General Walton H. Walker, and the 4th Armored Corps who took over on November 8th, 1942, same day as the invasion of North Africa. Supply and maintenance units were assigned to tactical units for advanced support training. Communications, supply bases and divisional camps were concentrated around the DTC perimeter. The divisional camp just east of the Rice Army Airfield was abandoned, but three other camps, Ibis, Laguna (Arizona) and Coxcomb were constructed by engineer troops in training. The population of the DTC rose to 90,000, but this was not stable as units constantly arrived and departed. Maneuvers, commanded by Gen. Walker, occurred February 18th to March 6th, 1943, and involved the 4th and 6th Armored Division, 6th Motorized Division, 3rd Tank Group, 4th Mechanized Cavalry, 606th and 704th Tank Destroyer Battalions and the 440th Coast Artillery Battalion (Anti-aircraft).

On March 29th, 1943, the 9th Corps, under Major General Charles H. White, took over the DTC. During his command, the DTC expanded into Arizona taking in 7,750 additional square miles and increased the population to 190,000. Two divisional camps, Horn and Hyder, were constructed in Arizona by engineers. Railroad congestion became so bad the Office of Defense Transportation requested the Under Secretary of War to decrease the activities of the DTC. Relief was instituted by the delivery of army units being counterbalanced by the removal of similar units; by the cancellation of further expansion and by the exchange of vehicles between incoming and outgoing units. Thereafter, incoming units took over control of the now permanent - and battered - vehicle pool at the DTC.

Maneuvers under General White, held June 27th to July 15th, involved the 7th Armored Division, 8th and 77th Infantry Divisions, 76th Field Artillery Brigade, 114th Coast Artillery (Anti-aircraft), 4th Mechanized Cavalry, 5th and 6th Tank Destroyer Groups, 144th Field Artillery Group, 8th Reconnaissance Squadron and the 6th Tank Group. Gen. White was criticized for lessening the realism of the maneuvers and for paying too much attention to administration.

By July 23rd, General White was removed and the 15th Corps under Major General Wade H. Haislip took over. Understrength service units became a serious problem at this time. Requests for increased personnel were only partially granted or completely denied. It

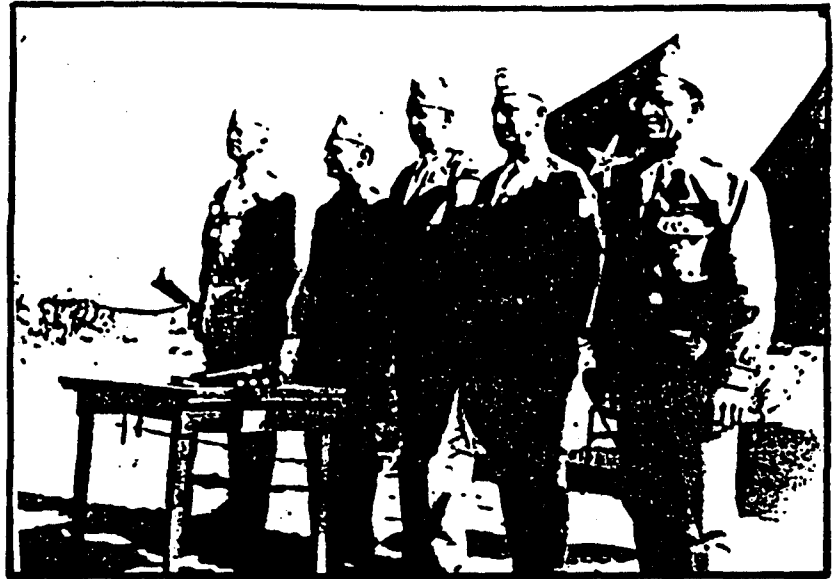


Typical map plan for many DTC-CAMA tent camps. Size of camps were roughly 2 miles by 1 mile. Administrative units were stationed around the flag circle. Mess tents were between Administration Road and Kitchen Road. Enlisted mens' tents were between Kitchen Road and Upper Motor Pool Road. Vehicle parks and maintenance shops were between the two Motor Pool Roads. Chapels and PX stores had various locations.

was then suggested the service troops be attached to tactical units so they too would come and go as a training unit. But this could not be granted because of inadequate service units.

15th Corps maneuvers, October 25th to November 13th, 1943, in the Palen Pass area east of Camp Coxcomb, included the 81st and the 79th Infantry Divisions, 15th Mechanized Cavalry, 182nd and 119th Field Artillery Groups, 3rd Field Artillery Observation Battalion, 185th Tank Destroyer Battalion and 2 anti-aircraft groups.

To avoid continuing questions as to why Army units were training for desert warfare after the North African Campaign had been won by the Allies, the Desert Training Center was renamed by the Army Ground Forces on October 20th, 1943, the California - Arizona Maneuver Area (CAMA). No longer for a specific purpose, the Army desired to keep the area for general training exercises similar to those in the East.

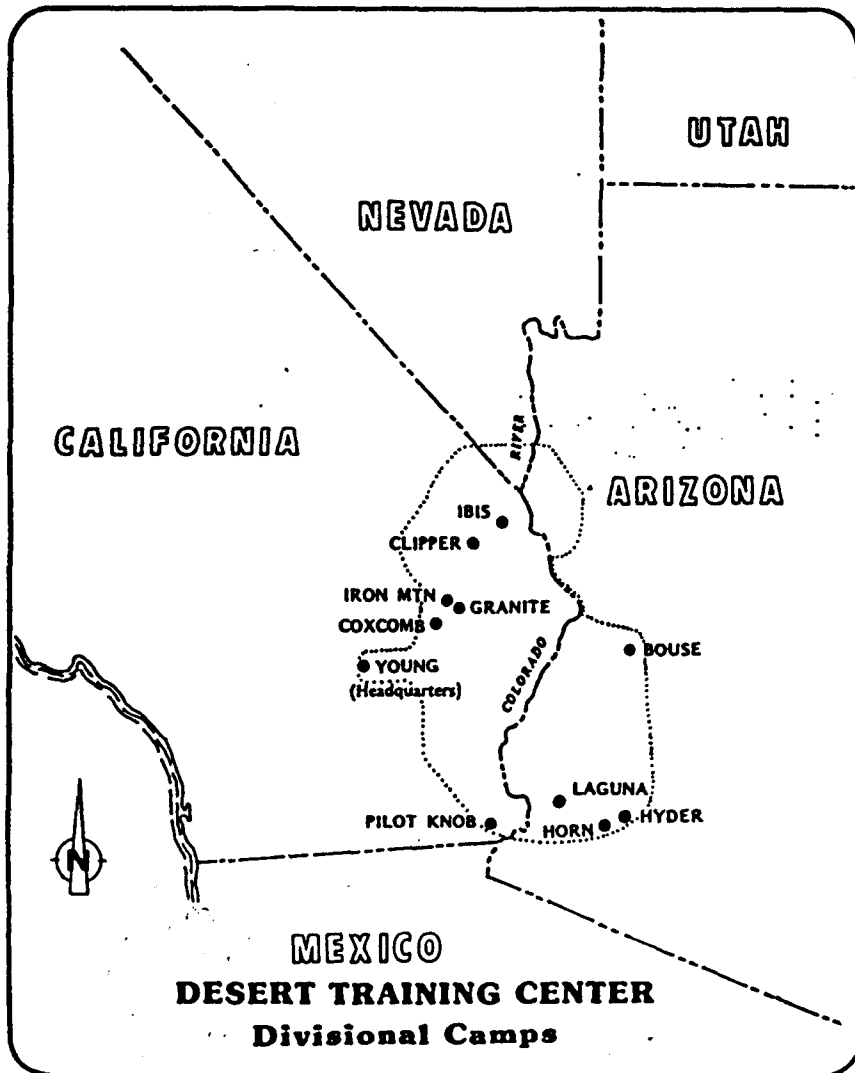


Major General George S. Patton, Jr., (far left) at a 1942 ceremony at Camp Young, D.T.C.

Five days before the next maneuvers, Major General Alexander M. Patch and the 4th Corps took over command of CAMA. These maneuvers, November 20th to December 11th, 1943, involved the 90th and 93rd Infantry Divisions, 11th Cavalry Group, 22nd and 33rd Anti-aircraft Groups, 12th Tank Destroyer Group and the 711th Tank Battalion. Realism of maneuvers was struck a blow during this period when the War Department assigned all CAMA Air Force Units including the airdrome personnel to the Third Air Force. The commanding general of CAMA no longer had direct control of the air tactical support units; air-ground training thus suffered.

The deteriorating service troop situation was becoming hopeless because most service units were being sent overseas. It was then recommended to the War Department by Army Ground Forces that CAMA ought to be closed.

In the midst of the 4th Corps maneuvers involving the 11th Armored and the 104th Infantry Divisions, Major General Jonathan W. Anderson and the 10th Corps took command of CAMA. On January 21st, 1944, Headquarters Army Ground Forces directed that maneuvers were to be discontinued after April 15th, 1944, and that CAMA would cease to exist by May 1st, 1944. The last maneuvers occurred February 15th to March 3rd and involved 80th and 104th Infantry Divisions, 15th Tank Destroyer Group, two tank destroyer battalions and two anti-aircraft artillery battalions. Following these maneuvers, 10th Corps' major concerns for the next two months were the evacuation of troops and the disposition of CAMA equipment. At midnight April 30th, 1944, control of CAMA was turned over to the Ninth Service Command for the salvage and removal of remaining government property.



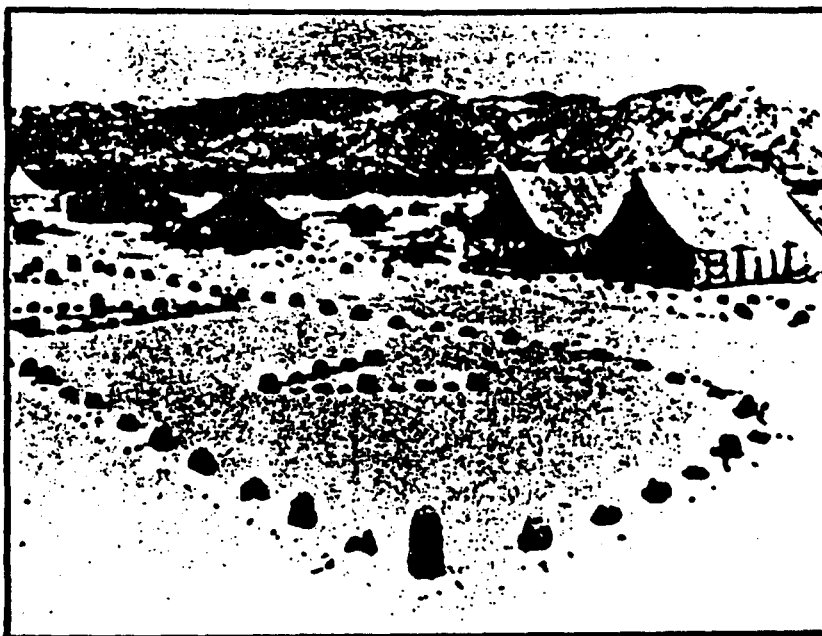
Problems

Besides the oft mentioned scarcity of supplies and service units, the DTC-CAMA also suffered from the hurried "hit or miss" form of management. This was the first, large desert warfare installation not carefully planned. Unacclimated troops were rushed through exercises causing higher than normal casualties.

Major problems with communications and transportation were endless. Of the latter, motor vehicles are of particular interest: chronic shortages of vehicles and spare parts. For example, six 1 1/2 ton Signal Corps trucks were doing the work of a normal 27 truck unit. General Patton requested fifty 750 gallon water tank trucks, but received only ten. At least three tank destroyer battalions had no equipment at all. During 2nd Armored Corps maneuvers, the 5th Armored Division had only 60% of its T, O and E material. Maintenance was done outdoors or in crude shelters. General Patton sought out rough terrain to test all tactical vehicles in a simulated combat zone. Even a five mile test track was laid out to evaluate his experimental vehicles such as tanks with bulldozer blades. To Patton, tactics were of primary importance, maintenance was secondary. When General Patton and his 1st Armored Corps departed from the DTC, 230 armored and 270 general purpose vehicles were on the disabled list.

Not only were some spare parts not available, but even when they were, transportation to deliver the spares was not available. Critical vehicle parts in constant short supply were axle springs, bearings, grease seals, engine accessories and repair kits of all kinds.

Compounding the problem were shortages of Ordnance personnel. Vehicles transferred from a departing unit to an arriving unit often were not inspected and repaired. Thus, the disabled vehicles accumulated to an extent beyond the capacity of units performing 4th and 5th echelon repair. Generally, most vehicles were operated beyond normal usage because of the long wait for repairs. In fact, vehicles often received more severe usage than they would have received under normal conditions in an actual theatre of operations. Of the pool vehicles surviving to 1944 (12,000) many were in a sorry state! For instance, armored vehicles used by the 9th Armored Division were not properly maintained causing the next unit, 11th Armored, to delay its thirteen week training exercises by several weeks. Some maintenance battalions had such a heavy repair load, they could not participate in



5th Armored Division Camp (unnamed) near the Rice Army Air Field, San Bernardino County, CA. Note the "5" inside the armored triangle symbol. Cactus and rocks surround the display and tents.

military exercises. Other maintenance battalions attached to tactical units could not devote all their time to repairs because they were deployed during exercises.

Representatives of the Inspector General observed vehicle maintenance activities during 4th Corps maneuvers. It was noted with alarm that the number of maintenance units was insufficient and the work was unsatisfactory. Vehicles showed abuse and neglect: they were driven too fast and were often overloaded. Thereafter a maintenance inspection team was kept in the field during maneuvers. An investigation revealed several faults, but concluded that, overall, the primary objective of CAMA, "to produce superiority in leadership and in combat efficiency" was being fulfilled and therefore in the best interest of the USA.

Training

The DTC-CAMA had several advantages for training all members of any sized unit: commanding generals and their staffs learned to function as a team with confidence and perspective (Gen. Patton claimed that next to his WWII combat experience, the DTC was the most valuable training he had ever had as a commander); despite the abrupt change of commanders, training exercises, supply and administration went on without interruption; spacious and varied terrain such that many units could train in their particular occupation without disturbing others or civilians; realism of combat maneuvers involving cross

country navigation, reconnaissance, bivouac, cooking, driver training, battlefield recovery, night operations, camouflage, laying mine fields and anti-aircraft defense. For instance, all vehicles authorized to carry an anti-aircraft gun (real or dummy machine gun) had to have it ready during daylight tactical exercises. An anti-aircraft sentry was to be posted and alert for simulated attacks occurring at any time.

However, not all went well. The 9th Corps maneuvers, under Major General Charles H. White, was soundly criticized for its lack of realism. Gen. White, having emphasized administration over tactics, was reassigned to an Arkansas Infantry replacement center. Soldiers were encouraged to take naps during the heat of the day, tents and umbrellas were improperly used for shade during maneuvers and the laying of land mines on top of the ground are but a few of the errors committed during 9th Corps reign. One major result of this, also, was the change of menu. Except for hospital patients, all perishable food was eliminated and B rations were substituted to all troops. No more ice cold beer and ice cream! This aroused both military and civilian complaints such that the order was later modified to include A rations to relieve the monotony of Spam three times daily.

The training period was usually 13 weeks, the first four being for advanced individual and small unit training. Special attention was paid to junior leadership and battle conditioning. Night operations were routine for Infantry units. All

personnel of combat branches learned land mine laying and detection; individual and group cooking. During the fifth and sixth weeks, battalion training consisted of combat firing exercises. By the eighth week, exercises with opposing "red" and "blue" teams complete with all support units including the Air Force were conducted. Divisional exercises occurred during the ninth and tenth weeks to perfect teamwork and the defense of retreatments. The final three weeks contained major field exercises involving large scale maneuvers using built-up fortifications, endurance marches, battlefield supply and recovery.

Despite all the problems, the DTC-CAMA was considered the most realistic training area available to U.S. Ground

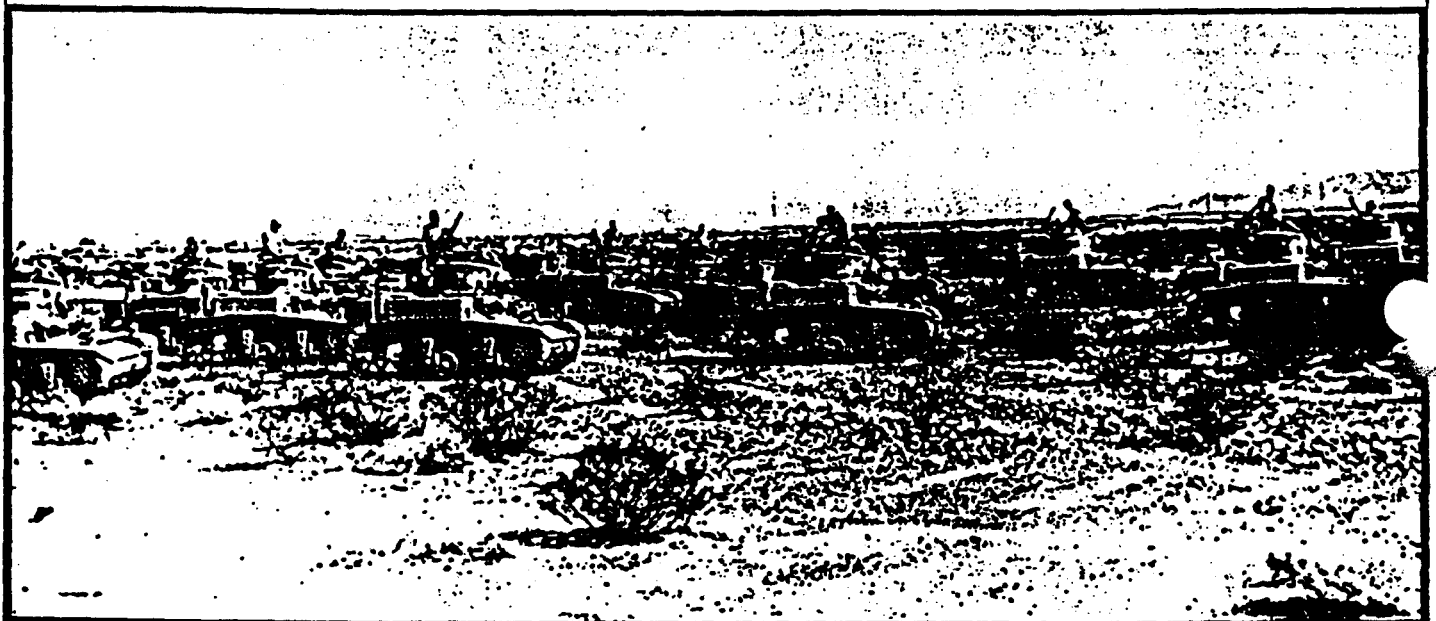
Forces. This was substantiated later by the positive results during actual combat.

The Close

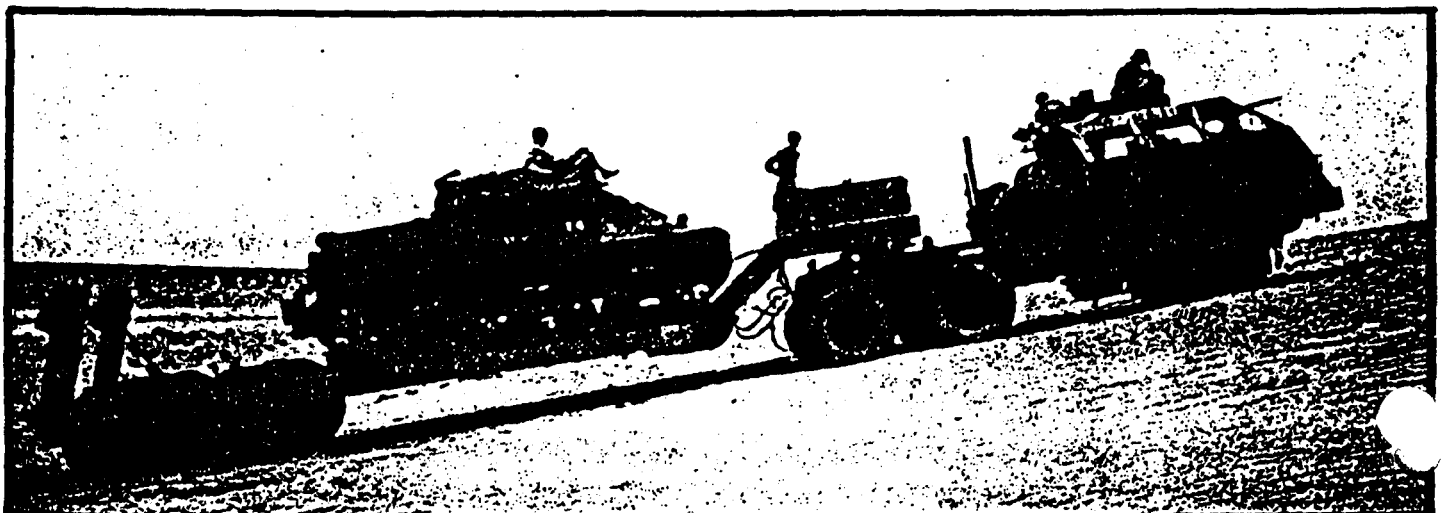
Because of increasing overseas shipments of service, tactical and Air Force units, conditions at CAMA worsened to the point where it became impractical to continue operations. Finally, in January 1944, upon recommendation by the Headquarters Army Ground Forces, the War Department formally announced that CAMA was to be closed by May 1st, 1944. (The announcement also closed the Tennessee and West Virginia maneuver areas leaving only Louisiana for ground forces and Carolina for air-borne forces). Conferences at CAMA

were held to determine disposition government equipment such as 11 27,000 vehicles scattered throughout the area. Of the 12,000 pool vehicles, half only needed first and second echelon maintenance. Six hundred more were beyond economical repair; 5,400 would require high echelon repair.

A directive from the War Department in March, 1944, indicated that all camp sites were to be closed, everything was to be removed and salvaged where possible. Unexploded ordnance was superficially removed, but the lack of sufficient troops prevented extensive searches for duds on firing ranges. The fortified area of Palen Pass was left as it was and marked with signs as a hazardous site.



M3 light tanks, "Stuarts", on maneuvers.



Desert Training Center. Side view of a tank retriever with M3 chassis on carrier showing maximum distance of climb during test made for Desert Warfare Board, Jan. 29, 1943. (M23 tractor truck, armored, "Dragon Wagon", with M15 trailer; total weight: 143,300 pounds including the M3A2 chassis). U.S. Army Photo SC 165211; courtesy of Brad Milne.

Salvage began on February 4th using 1300 volunteer Italian prisoners of war who had been captured in Tunisia in 1943. (They were paid 80¢ per eight hours of labor, ate GI food and wore GI uniforms with a small, green "Italy" shoulder patch.) Dismantling the camps was no small job. For instance, Camp Young had 231 large administration buildings, 93 mess halls, 12 large shops and over 3,000 wooden tent frames to be raised. Recovered equipment included 1,239 pieces of artillery; 43,708 small arms weapons; 100,000 tents; 400,000 cots and 300,000 gasoline cans.

The last division evacuated was the 80th Infantry on April 5th. By the end of April, all the camps were evacuated except for personnel guarding unremoved equipment. At midnight, April 30th, responsibility for CAMA was turned over to the Commanding General, Ninth Service Command. Sometime after the War, most of CAMA was returned to public domain.

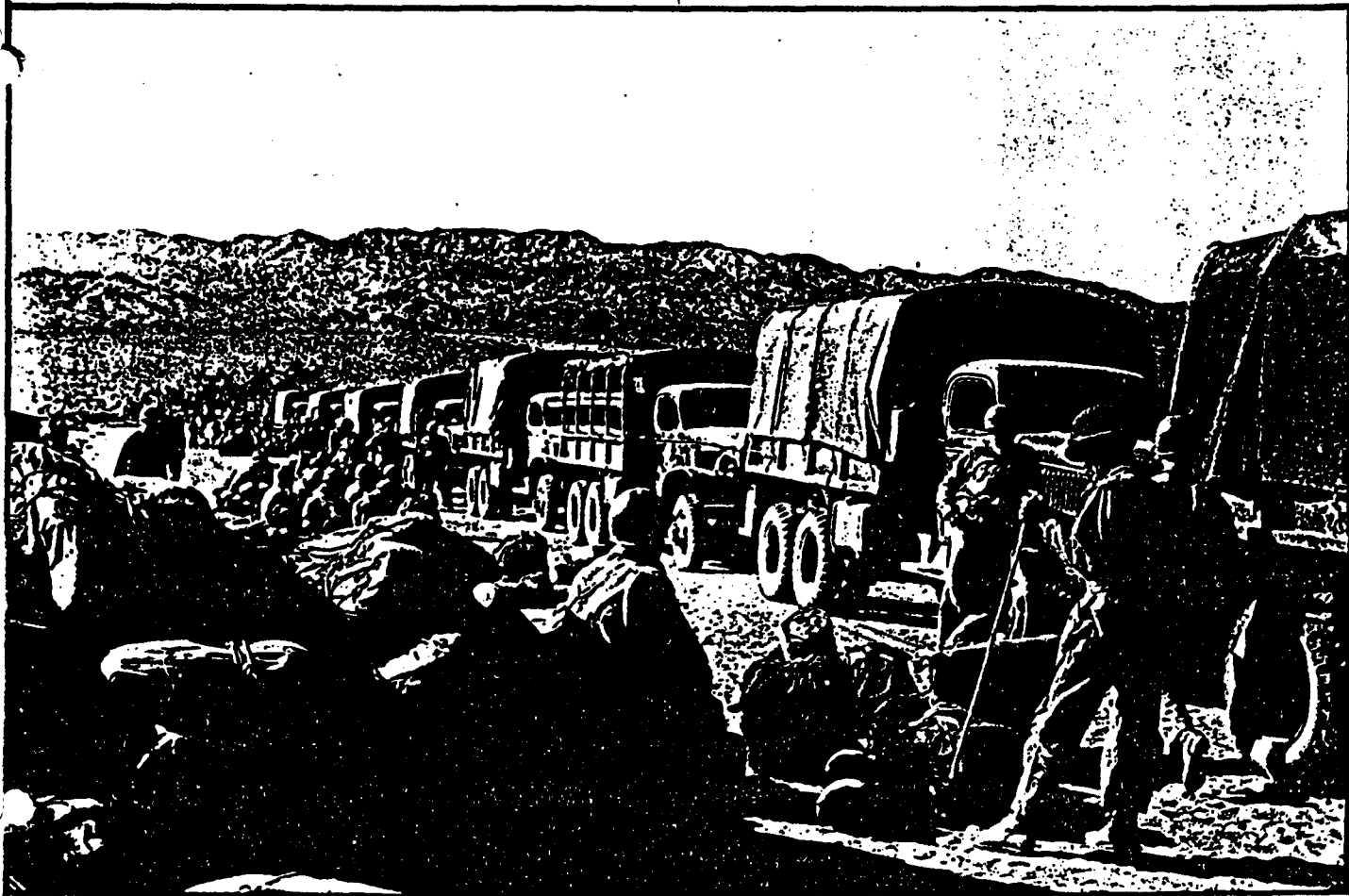
Camp Bouse, Arizona

Constructed within CAMA's boundaries in late 1943, Camp Bouse nevertheless was not part of it. It is not even

mentioned in the official history of CAMA. Three members of the Council on America's Military Past (CAMP), John Kennedy, John Lynch and Robert Woolley, dug out the story on Camp Bouse and published it in a 1982 PERIODICAL. Laid out somewhat similar to the other CAMA camps, but in a very remote area, Camp Bouse was the home base for the 9th Tank Group battalions (Medium) (Special) involved in the very secret "Canal Defense Light Project" (CDL). A pre-war British invention, a powerful armored searchlight was mounted in place of the tank's turret. Used in night operations, the searchlight, which flickered, was supposed to blind the enemy. Various British and American tanks were tested, but the U.S. M3 medium Lee/Grant was found to be the best since the main gun was mounted in the right sponson, not in the turret. This was the only CDL tank able to defend itself. After training at Camp Bouse, all CDL tank battalions were shipped to England prior to the D-Day landings at Normandy. However, except for some river crossings, the CDL tanks were not fully utilized.

Rice and Desert Center Army Air Fields

While most DTC-CAMA camps had a small airstrip nearby, two large airfields with air tactical units were established deep inside the DTC-CAMA to train with the ground tactical units. One airfield each was located near the small communities of Rice in San Bernardino County and Desert Center in Riverside County. While Rice Airfield was a former municipal airport, Desert Center Airfield was constructed in late 1942, then activated January 15th, 1943. Rice was occupied by the Army October 26th, 1942. Eventually, housing for 3,000 men of the tactical air units was provided at Rice. Base "housekeeping" for the most part was done by personnel of the 2nd Airdrome Detachment of the 475th Base Headquarters and Air Base Squadron. Desert Center had the 3rd Airdrome Detachment and both were sub-bases of the Thermal Army Air Field. Airdrome personnel varied in number, but four officers and fifty enlisted men with another fifty attached from Quartermaster, Signal Corps, Medical, Military Police and Communications was the average throughout 1942-1944. Tactical



Trucks and equipment of the 34th Armored Regiment, 5th Armored Division, preparing to move to a new camp area, October 19, 1942.

U.S. Army Photo SC 147943

ARMY MOTORS

units as well as the airrome personnel were directly controlled by the DTC-CAMA ground forces commanding general until December 1st, 1943. On that date, they were transferred to the Third Air Force. Rice Army Air Field ceased operations on August 2nd, 1944. Desert Center Army Air Field, however, continued to operate until November 12th, 1944, when it was placed on stand-by status. Jurisdiction passed to the District Engineer, Los Angeles, on January 24th, 1946. Desert Center is still in operation today as a private airport.

EDITOR'S NOTE: Due to typesetting limitations the military standard designations have been shown in Arabic numerals rather than the standard form of Roman numerals.

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Small relief map at the 5th Armored Camp near Rice Army Air Field. View is looking to the south in both the picture and map. U.S. Army Photo SC 149817



Prison stockade, Camp Young. August, 1942

U.S. Army Photo SC 144960

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DESERT TRAINING CENTER California - Arizona Maneuver Area

PART II - SITES and RELICS

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by
Francis G. Blake
Fullerton, California

Forward

Over 43 years have drifted by since the close of the California - Arizona Maneuver Area. Choking dust no longer swirls around convoys of tanks and half-tracks. The canyons no longer echo the bark of cannon and mortar fire. GI's no longer suffer sweaty summer maneuvers or freezing winter bivouacs. American troops and Italian P.O.W.'s pulled the tent camps down soon after they were abandoned in early 1944. Salvaging everything, they left nothing. Or did they? When the army moved out, civilians moved in: scavengers, treasure hunters, historians, shooters, jeepers and politicians. After four decades of being picked over, could anything remain? Could anything but faded memories survive this long?

Yes, indeed! The camp roads and gravel paths are still there. Unit insignias, relief maps and foxholes are still there. Flying over the maneuver areas reveals miles upon miles of tank track marks. Walking through the campsites reveals numerous artifacts lost or discarded by men who are now of retirement age. Thanks to the climate, even delicate artifacts are found today: pages of a 1943 Los Angeles HERALD EXAMINER newspaper, a utility jacket sleeve with a 93rd Infantry Division shoulder patch, small glass ampuls of Mercurochrome and, the most delicate of all, ashes of a burned Dodge 1/2 ton truck parts book.

If someone were to ask me what is the most common artifact found at all these

places, I would immediately answer "bottle caps". There are thousands at every campsite. Next would be tin cans, razor blades and broken bottles. Among all this junk are the real souvenirs: uniform buttons, coins, dogtags, gun and auto parts, tent pegs and even an occasional whole Coca-Cola bottle. Canvas and webb material survive too. As you will see, administrative sites such as flag circle and battalions' headquarters are discernible by the fancier rockwork, insignias and/or small artifacts like ink pen tips, paperclips and thumb tacks.

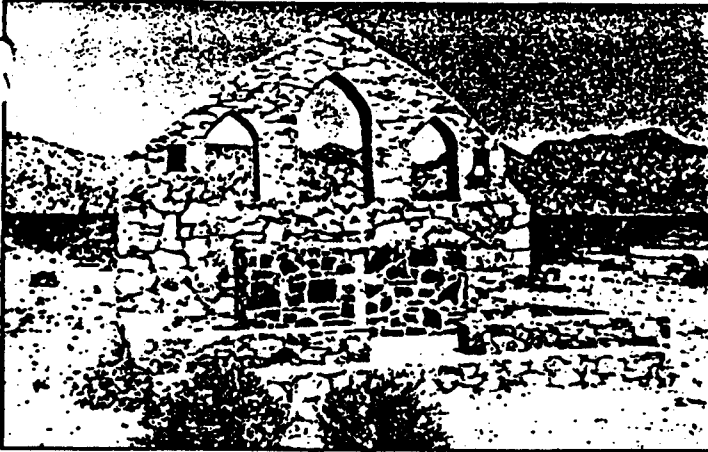
Rumors of buried equipment are rife in the desert. Tanks are the most common victim of these stories, but, except for some battered ones still on old target ranges, none have been found (and publically announced). The WHY of buried equipment has to do with, so it is said, a unit having too many of something on their T O and E list. An old gas station attendant in Needles, California, swears a pal of his took a backhoe to the site of Camp Ibis in the 1960's and dug up a case of Thompson submachine guns.

Unfortunately, all this activity within the old C.A.M.A. has spooked environmentalists. They are pushing the federal government to make C.A.M.A. off limits to the only practical mode of transportation: the 4 wheel drive auto. The Bureau of Land Management, the agency with jurisdiction over most of the desert, is caught between those who want to use the desert and those who want to "save it for future generations." (Which one, we

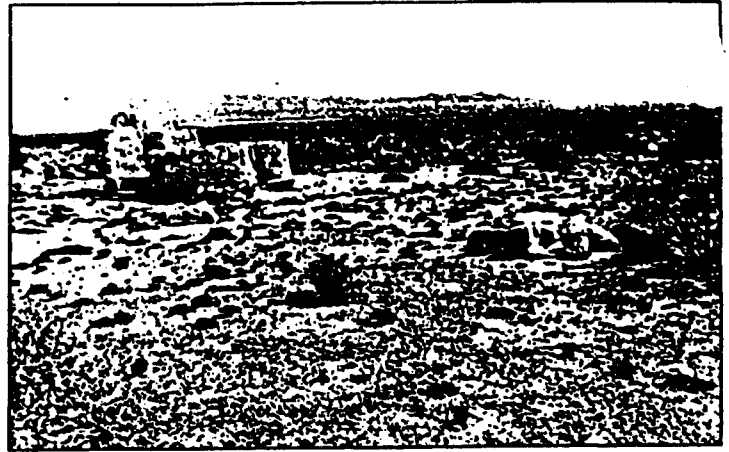
wonder?) Sadly the BLM leans toward the save it side. It is far easier and cheaper to keep everyone out - except themselves of course - than to regulate limited use. If the BLM had the necessary budget, all the old campsites would be fenced off (one campsite already is) and helicopters would patrol the countryside. U.S. Senator Alan Cranston has joined the environmentalists and is trying to make a large chunk of the Eastern Mojave Desert into another national park. (Death Valley and Joshua Tree National Parks already consume much of the desert.) Presently however, the BLM is limited to posting areas as historical places where souvenir collecting is forbidden.

If man had ignored C.A.M.A. since 1944, the desert would have preserved it to nearly 1944 condition. But man has a way of changing nature faster than nature itself. Evidence of all eleven tent camps remain, but today's visitor would find it difficult to explore some of them. The site of Arizona's Camp Horn has been ploughed back into farm land. Camp Pilot Knob, in California near Yuma, has been mutilated almost beyond recognition by private landowners. Camp Young, C.A.M.A. headquarters, was picked squeaky clean by scavengers in the 1950's, badly eroded by flash floods and partially destroyed by a modern Interstate highway. Other camps, thankfully, such as Iron Mountain, have a wealth of interesting relics still in good condition. Most are still accessible too.

F-12



Chapel altar at the south end of Camp Iron Mountain in 1986. Same view as Army photo on page 23 of Army Motors #40. A St. Christopher medal was found here.



Chapel altar Northeast of flag circle, Camp Iron Mountain. Same view as Army photo on page 23 of Army Motors #40. Like the altar at the Southern end, all the crosses and inscriptions are missing.

Near most campsites, especially in canyons, are areas of small unit training sites such as rifle and grenade firing ranges, obstacle and driving courses. At some sites, grenade fragments are so plentiful, they can be shoveled into a bucket. Waste dumps accompany campsites and interesting bits of army life can be found there. Some dumps have been burned by the army, some not. It is disheartening to find a useful instrument gauge or taillamp damaged beyond repair.

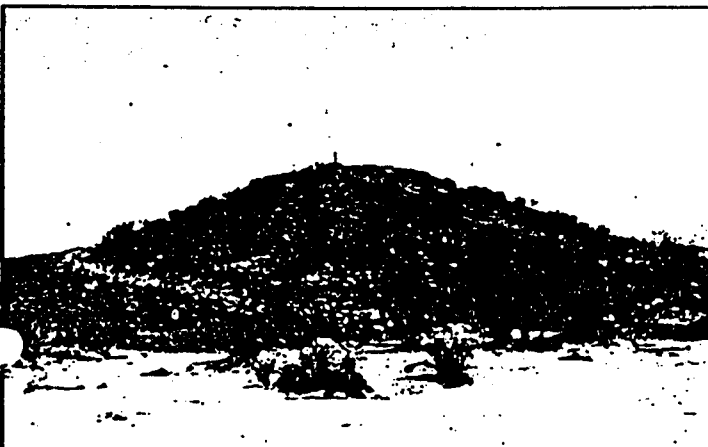
The following text is a description of the camps and nearby points of interest as the author has found them during his explorations with Club members since 1983. Two members have been exceptionally helpful in this regard: Lino Milesi of Riverside and Mack Mitchell of Redlands, California. Photographs have been selected herein to show a characteristic or an unusual feature of each campsite. Some photos can be compared to the 1942-1944 Army photos printed in Part 1, C.A.M.A. history (ARMY MOTORS, issue No. 40, Spring,

1987). Those camps not yet visited are very briefly described in a following section using the words of Kennedy, Lynch and Wooley (see bibliography, Part 1). Finally, the Palen Pass maneuver area, the Freda Quartermaster supply depot and two army airfields are also described in a separate section because of their importance to C.A.M.A.

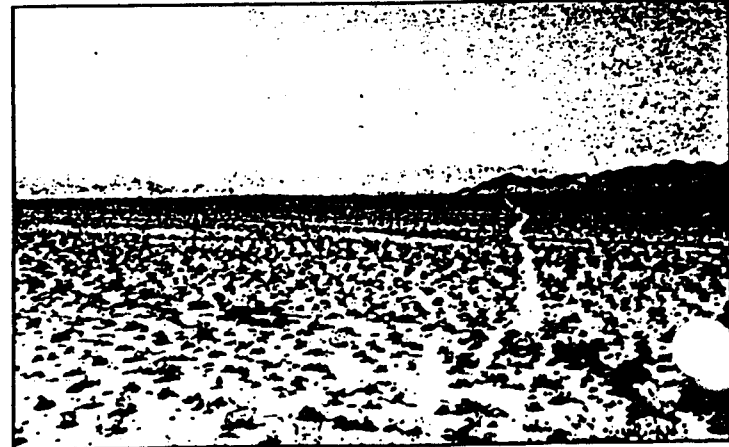
For the reader who is planning to explore C.A.M.A., words of warning are appropriate here: while most camps are not far from paved roads, today's visitor should take the precaution of using a 4 wheel drive auto. A 4x4 is not absolutely necessary, but it is a safe method of exploring the desert. Take a buddy and his 4x4 too. Be wary of BLM patrols. Be sure to carry ample drinking water (1 gallon per person per day at least). If high heat bothers you, stay out of the desert during May to September. One warning cannot be emphasized enough: there is still live ordnance in the desert. Artillery rounds, mortar bombs and live anti-tank land mines have been found in recent years. Leave the ordnance alone!

CAMP YOUNG, CALIFORNIA

Very little evidence remains of the most important camp. It was here Major General George Patton, Jr. commanded the Desert Training Center (later renamed California - Arizona Maneuver Area) in mid-1942 before he was ordered to North Africa. Old Highway 60/70 skirted the southern edge of the camp before then. Now interstate 10 passes through the campsite. Construction of it and gas pipeline destroyed the southern half of Young. Flash flood erosion, funneled by gaps in the Colorado River aqueduct, has partially destroyed the northern half. Some camp roads are still present especially the paved ones, but all are badly eroded with large sections entirely missing. Flag circle, the administrative center of every camp, was found with great difficulty. Only meager rockwork (rock lined paths and roads) is to be found. A few pieces of concrete foundations lie scattered about. Abrupt changes in the density and color of desert vegetation marks the old boundaries of an often used area such as a

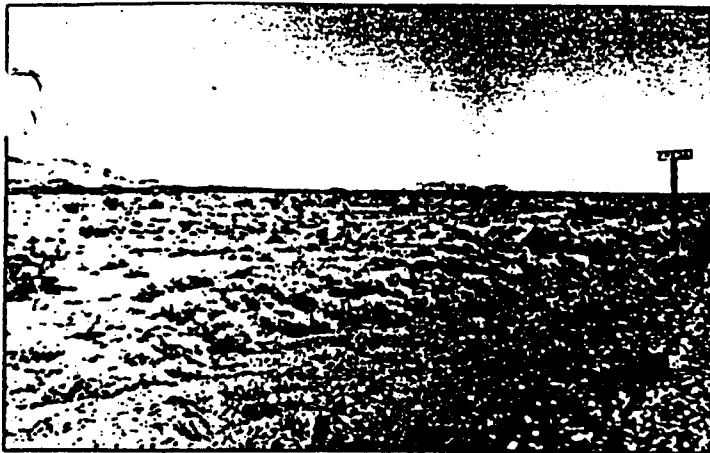


King's Throne, a 100 foot hill used by Major General Patton to observe tank maneuvers in 1942.



View to the North from King's Throne. Camp Young is behind the hills at the left.

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Site of Freda Quartermaster Supply Depot. Same view as Army photo on page 25 of Army Motors #40. Additional railroad sidings were laid for the army in the foreground, then taken up after the war. Depot included area on south side of the tracks (and highway 62) as well. Freda was caught in the middle of early war games until the mock battles were moved to Palen Pass.

motor pool site. Thus large squares of former military occupations tend to stand out from the rest of the desert. No small items so common to other camps were found. Easy access to this camp from Cottowood Springs Road allowed it to be scavenged by people from nearby towns.

East of Camp Young is Chiriaco Summit, formerly called Shavers Summit. It is, and was back then too, a roadside stop for passing travelers. It was also the nearest civilian hangout for Camp Young's GI's. An Ex-army airfield, still in use, parallels the interstate. Having a long runway, B-25's landed here as well as smaller cargo and passenger aircraft. The modern day visitor can also examine at Chiriaco three dummy tank frames. These were pipe and canvas simulated tanks fitted over jeeps (see photo on page 14 of ARMY MOTORS No. 27, winter issue, 1983). Mr. Chiriaco pulled these out of the mountains years ago and reassembled them next to his cafe.

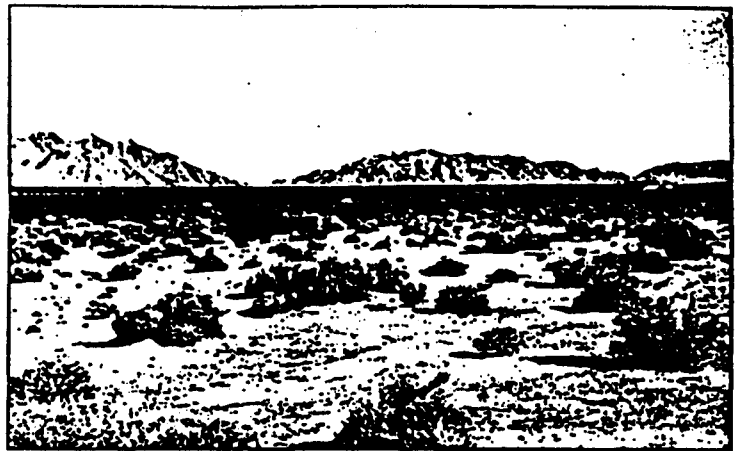
Halfway between Chiriaco Summit and Desert Center to the east, then 10 miles south on a dirt road stands an isolated 100 foot hill nicknamed "King's Throne". Major General Patton used this mound to observe tank maneuvers over a 50 square mile area mainly to the west and north. A road was bulldozed to the top for easy access. Legend says errant tank commanders were vaporized by lightning bolts from the Throne. Despite being a mile north of the Chocolate Mountain aerial target range, modern practise bombs litter this site.

CAMP COXCOMB, CALIFORNIA

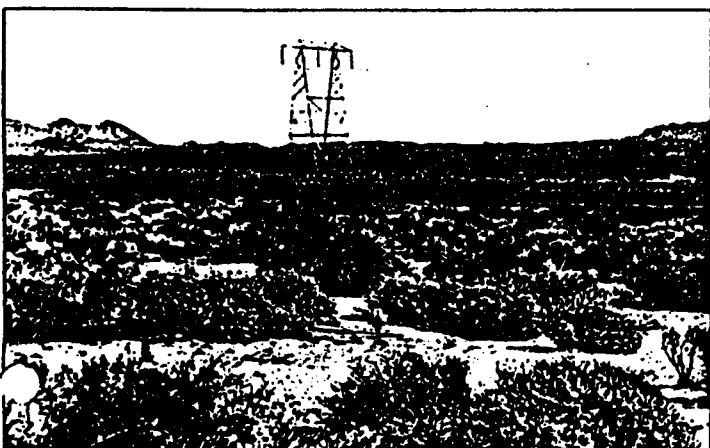
Constructed in 1943, Coxcomb was the base camp for the 7th armored Division, 95th and 93rd Infantry Divisions at different times. Erosion has affected only some camp roads so most are quite passable. The Bureau of Land Management has posted warning signs against artifact collecting. A paved access road from Highway 177 to the Colorado River aqueduct allows easy access to the

southern end of Coxcomb. Unlike Camp Young, Coxcomb's street plan is of the typical pattern illustrated in Part 1. Of special interest here are the chapel altar in the southern half and the small relief map near flag circle. The latter has a BLM fence around it. Also near flag circle are rock insignias including a white medical cross and white stars for the Commanding General. An occasional intact concrete foundation is found and some have a GI's name and the date scratched into the surface. A woodpile consisting of old tent frames and screen door parts covers an acre.

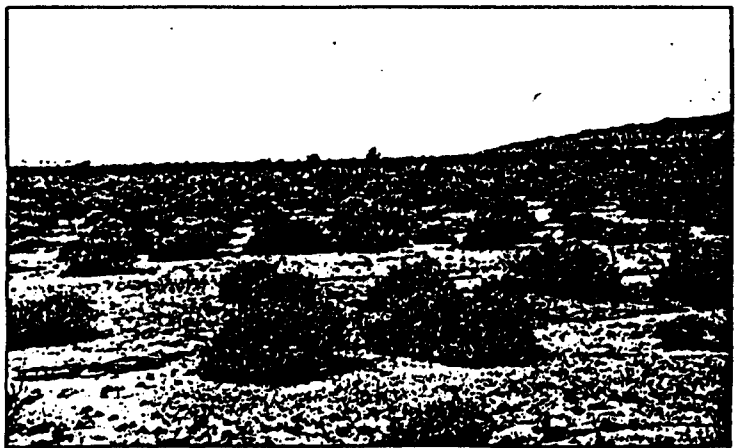
West of camp, beyond the aqueduct, in small canyons are small unit training sites. Rifle and grenade firing ranges are common. One of the best preserved obstacle courses is nearby. Practice anti-tank land mines (with a small smoke charge) have been found very close to camp. An easterly directed dirt road runs 15 miles from camp to Palen Pass, site of large scale maneuvers which will be covered later.



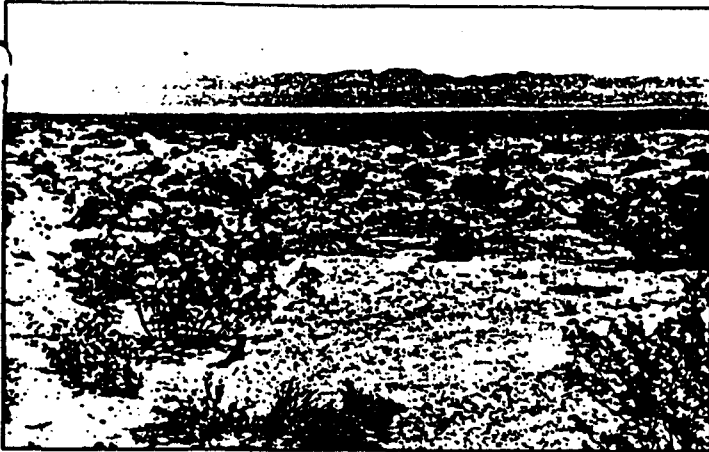
Camp Granite Motor Pool, site of Company A, 83rd Armoured Division. Same view as Army photo on page 25 of Army Motors #40. Besides tools and auto parts, the author also found a wooden sign here that said "Old Latrine". Also noted on the sign was an Army unit: "Co. A, 83rd RCN BN".



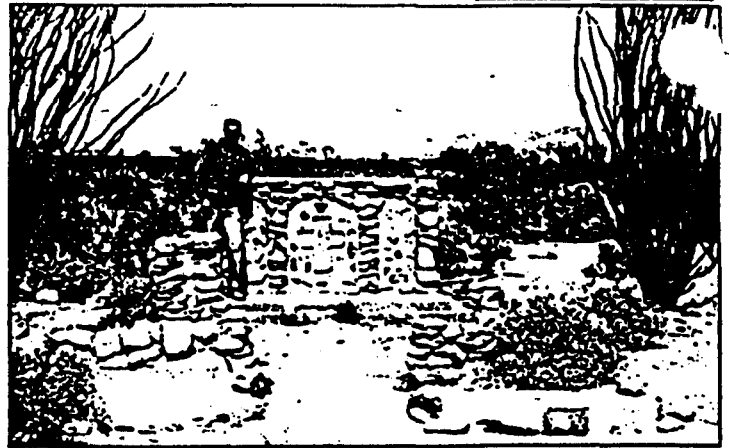
Approximate site of Camp Young administration buildings. Same view as in center photo, pages 24 & 25 of Army Motors # 40 (the hills in old photo are obscured by dust). The powerline is post war.



Approximate location of Headquarters Company, 1st Signals Battalion Motor Pool, Camp Young. Same view as Army photo on page 24 of Army Motors #40. Severe erosion of Camp Young makes location of exact site difficult.



Southwest corner of large relief map near flag circle, Camp Iron Mountain. Same view as Army photo on page 23 of Army Motors #40. Corner fence post seen in the old photo is in the bush in the center foreground. Eroded sediments have filled this corner leaving only 6 inches of the post above ground surface. BLM has fenced off the map.



The author at the Camp Coxcomb chapel altar.

CAMP GRANITE, CALIFORNIA

In terms of preserved condition and relics, Granite is similar to Camp Coxcomb. And like Coxcomb, the flag circle is easy to locate. As usual, the rockwork is most intricate there. Relics are common at the upper, western end since erosion has damaged much of the other end which is lower in the valley. Access from Highway 62 is, in fact, best at the very western edge. A well traveled sand road leads off from the highway near the Riverside - San Bernardino County line. Of particular interest at Granite is the cement and rock baking oven and the rock insignias. The best example of the latter is the detailed shield insignia complete with a Latin motto of the 413th Infantry Regiment. The 413th, which was assigned to the 104th Infantry Division, was at C.A.M.A. from November 1943, to March 1944. They were the last inhabitants of Camp Granite. Earlier occupants included the 90th Infantry Division and portions of the 3rd Armored Division. The motor pool sites offer

numerous small artifacts: broken or worn out tools and auto parts.

Off to the southwest behind some low hills is another wood pile. This one covers several acres and has old cans of O.D. paint and rotting tent canvas too.

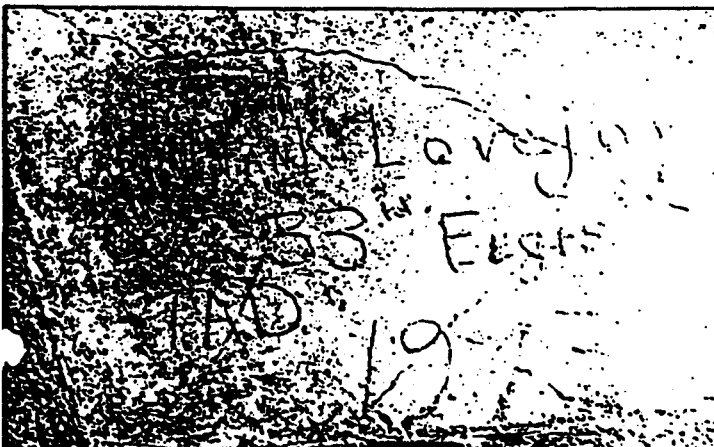
CAMP IRON MOUNTAIN, CALIFORNIA

Across the highway from Camp Granite is the "queen" of the C.A.M.A. camps. Iron Mountain, once the home of the famous 3rd Armored Division, has been fenced off by the BLM. Pedestrian gates allow the modern visitor to walk, not drive, through this camp. Iron Mountain used to have a historical marker, but it quickly disappeared after being erected on a nearby powerline service road. There are two chapel altars, numerous rock insignias and a 200 x 175 foot relief map within the fenced area. Division sized maneuvers were planned here with this map because the depicted area includes all of C.A.M.A. in fairly large scale. The variety of insignias is imagin-

ative: the Presidential Seal, a military ambulance, crossed cannons and the medical caduceus symbol are some examples. Erosion has affected only a little of the camp roads and a portion of the relief map, which is next to the flag circle (and also fenced). Extensive rockwork is found in the southern 2/3's of the fenced area as well as large, circular symbols of unknown meaning to the south outside

Half way between the camp and western mountains is an extensive grenade throwing range. Grenade container end caps litter the ground behind the foxholes where the throwers ducked for cover. Closer still to the mountains and on the bank of a large dry wash is the camp dump. While most of it is rusty Spam cans and broken crockery, an occasional artifact of special interest can be found.

Beyond the hills south of camp, dozens of practice anti-tank land mines have been found. Foxholes and tank hull-down positions are scattered



"Capt. Frank Lovejoy, Co. C, 33rd ENGRS. 1943", 7th Armoured Division. The signature is on a concrete foundation at Camp Coxcomb.



Stuart tank track grousers at Camp Coxcomb.

..... continued next page



Lino Milesi at a Camp Granite baking oven made of cement and rock around a metal box.



413th Infantry Regiment shield insignia with a Latin motto at Camp Granite. The meaning of the letters at the top are unknown.

throughout this area. A short distance to the north of Camp Iron Mountain, is the village of Iron Mountain. It is a pump station for the Metropolitan Water District's Colorado River aqueduct, which was the main source of water for all the camps in this area.

CAMP CLIPPER, CALIFORNIA

Another camp partially destroyed by an interstate, Clipper has been gored through its middle by progress. Flag circle is within a stone's throw of speeding cars. Also known as Camp Essex (for the nearby village named Essex), Clipper was occupied by the 93rd Infantry, a "colored" division that later went to the South Pacific. Rockwork and insignias are only fair here but artifacts abound. Considering its nearness to a civilian town on old Route 66, the quantity of items still remaining is very puzzling. Not only are auto parts common, but also personal gear, gun parts and whole bottles. Due to erosion and fences (interstate and private), camp roads are not

easy to follow. The only remaining permanent structure is an empty 500,000 gallon reservoir set into the ground. Camp access is easy since the southwest corner touches the Mitchell Caverns - Essex paved road.

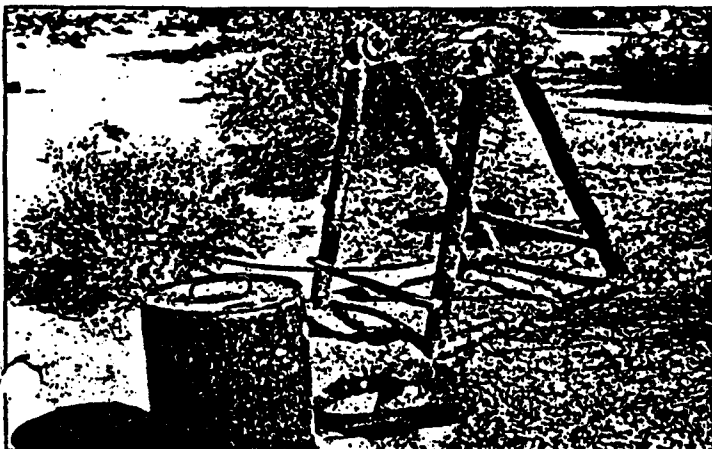
CAMP IBIS, CALIFORNIA

Far to the north lies Ibis in Piute Valley. Named after a nearby railroad siding, Ibis has a campsite on both sides of highway 95. The famous 4th Armored Division called this home from November, 1942 to June, 1943., then followed the 7th and 11th Armored Divisions. Camp roads are well defined but badly eroded by deep gullies. Rockwork and insignias are better than Camp Clipper's but only by a little. The most spectacular white stars are near the flag circle. A few artifacts found have been spectacular too: dogtags, 1943 newspaper and full bottles of beer buried in the ground. (The dogtags belonged to a GI from Minnesota. In contacting the

man's brother, we sadly learned the GI had been accidentally killed at Ibis in 1942.) The camp dump at the north end is probably the most interesting feature. Destruction by fire was incomplete, so useable items can still be retrieved. The flat ground west of Ibis is a mass of criss-crossed tank track marks. Exploring this area will reveal field kitchen and vehicle maintenance sites. Pails of old lube grease and 1942/1943 5 gallon gas cans are occasionally found. A reservoir similar to Camp Granite's is the only remaining structure.

UNNAMED CAMP, CALIFORNIA

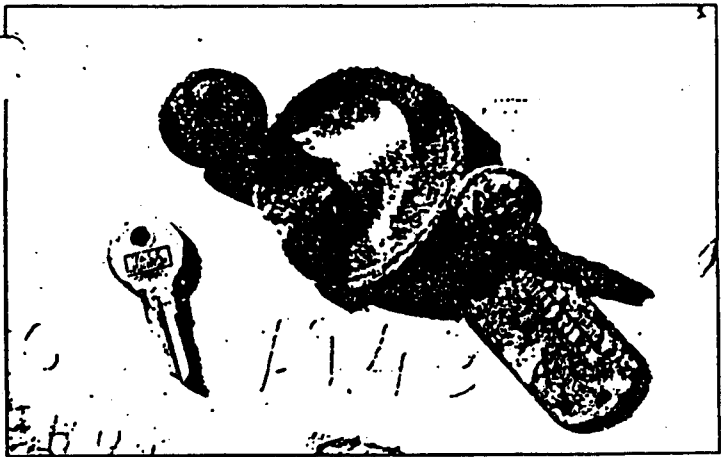
Laid out in typical pattern east of the Rice Army Airfield, this division sized camp was only occupied for a short time by the 5th Armored. After their participation in the August to October, 1942, maneuvers, the 5th Armored moved out, and because of major changes in C.A.M.A. operations, this site was not used again. Except around flag circle, rockwork is scanty and insignias are



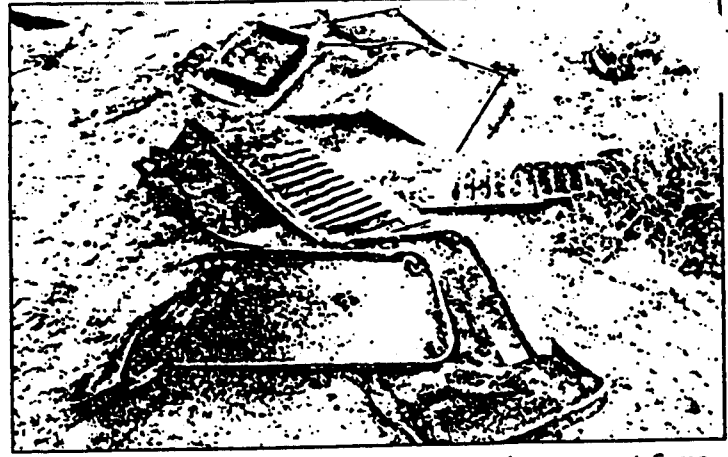
SAE 30 oil can and a mechanics tool (?), Camp Granite.



Foxhole at right; tank trail at left, South of Camp Iron Mountain.



Uniform buttons, key, dogtag and a 93rd Infantry Division shoulder patch on a dated concrete foundation at Camp Clipper. Photo courtesy of Paul Dozois.



Vehicle sheet metal body parts and mechanical creepers at Camp Clipper. Ashes of a Dodge parts book were found under the creepers.

non-existent. Access is very easy since the campsite is bordered on the north by Highway 62. Camp roads are in such good condition that a 2 wheel drive auto can safely use them. Unfortunately, there is not much to see and very little has been found: A mystery could be solved, however, if something were found: a 40 x 50 foot relief map. Normally these are near flag circle, but to date, this one has not been found. Erosion has been minimal at the unnamed camp so the relief map should still be visible. A photo of his map is in Part 1 on page 31. Contact with a few 5th veterans has not revealed the location.

CAMP BOUSE, ARIZONA

As historically described in Part 1, Bouse was not a typical C.A.M.A. camp. Laid out a bit differently on a much smaller scale, Bouse's occupants, the 9th Tank Group, did not participate in ordinary maneuvers along with other divisions and battalions. Isolated in the remote Butler Valley, Bouse is more difficult to reach now since flash floods have destroyed the primary access

roads. Round-a-bout ranch and power-line roads will get the visitor eventually to his goal. Concrete foundations are common to this camp because all the normal support services such as hospitals were here to protect project secrecy. Many foundations have names and late 1943 dates scratched into the surface. This camp even has concrete sidewalks. A 500,000 gallon reservoir similar to Camps Clipper and Ibis is at the west end. Two open air theatres made by bulldozed earth for group instruction remain today. One is shaped like a bowl, the other like a movie theatre with a drive through stage. Several rock insignias are present, but wandering cattle have knocked rocks out of alignment making many words illegible. The best two are a white church cross with the word PEACE below and the other is a unit symbol with the words 738 TB HQ in a triangle (738th Tank Battalion Headquarters). Many small artifacts can be found at Bouse: dogtags, coins, bullets, key, buttons and belt buckles. Typically, the waste dump, though full of goodies, has been burned.

OTHER CAMPS

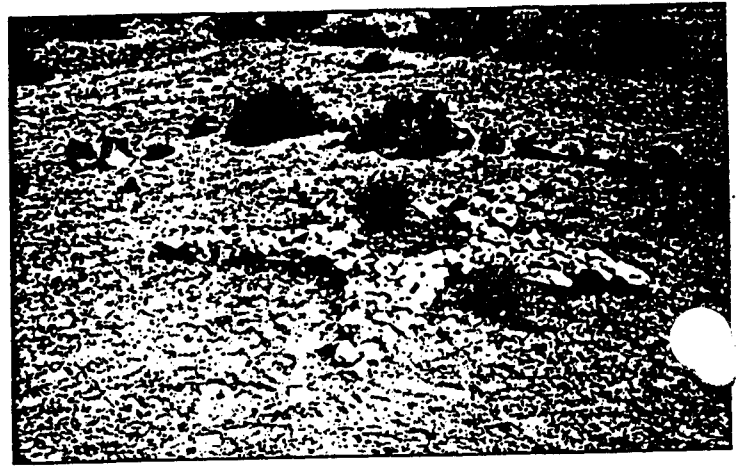
The following camp descriptions are paraphrased from Kennedy, Lynch and Walley, C.A.M.P. PERIODICAL No. 47. This author has not visited these campsites.

CAMP HYDER, ARIZONA. Home of the 77th Infantry Division from April to September, 1943. Hyder's remains consist of the usual rockwork and two str gate posts next to a Southern Pacific railroad. It can be reached on the Aquacalliente road from Interstate 7, west of Gila Bend.

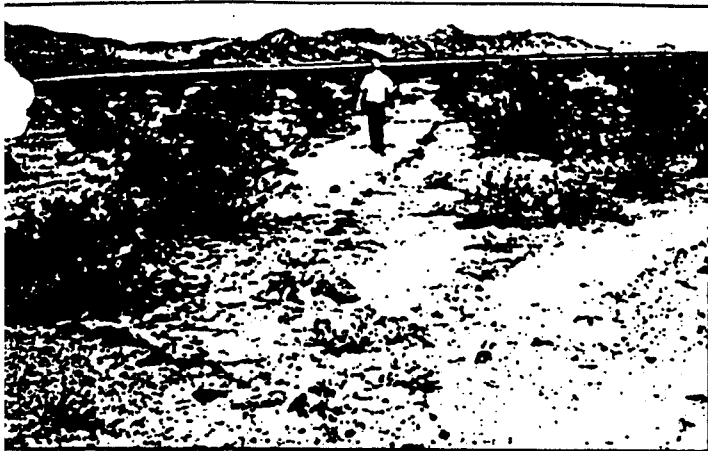
CAMP HORN, ARIZONA. Nothing remains but the southwestern corner. Nearly all of Horn has been ploughed back onto farm land since the War. A large pyramid made of concrete and stone stands at the old entrance. Inscribed on it are the names of seven GI's of the 81st Infantry Division who died during training there. Horn was southwest of Hyder by about 25 miles and alongside the same railroad.



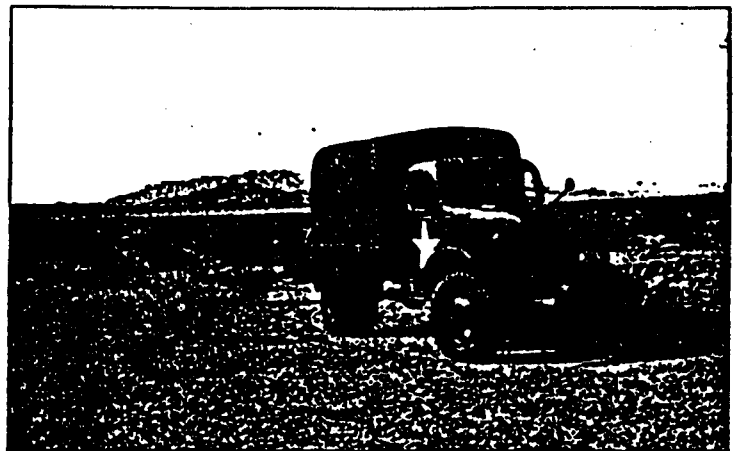
Camp Clipper auto parts. Photo courtesy of Paul Dozois.



The Camp Ibis star near the flag circle.



Leo Gay walks on a 5th Armoured gravel path near the flag circle.



Cliff Heathcoat's Chevrolet 1 1/2 ton at the 5th Armoured campsite.

CAMP LAGUNA, ARIZONA. This campsite is now within the U.S. Army Yuma Proving Ground. It is not accessible. Rumors say that nothing has changed Laguna since the War. It may be the most perfectly preserved C.A.M.A camp of all. The 6th and 9th Armored and the 79th Infantry Divisions trained here.

CAMP PILOT KNOB, CALIFORNIA. Private land ownership of 550 of the camp's 700 acres has destroyed much of Pilot Knob. Easy public access, Side-Under Road, has also contributed to its destruction. Of atypical pattern, Pilot Knob was the training base for the 85th Infantry Division, June to October, 1943, which later went to Italy.

POINTS OF INTEREST

PALEN PASS. Primary battle ground for the largest California war games, Palen Pass and the surrounding area are of special interest. Caution must be observed here as it is also one of the most hazardous. Though it is public land, little has been done to clear out unexploded ordnance.

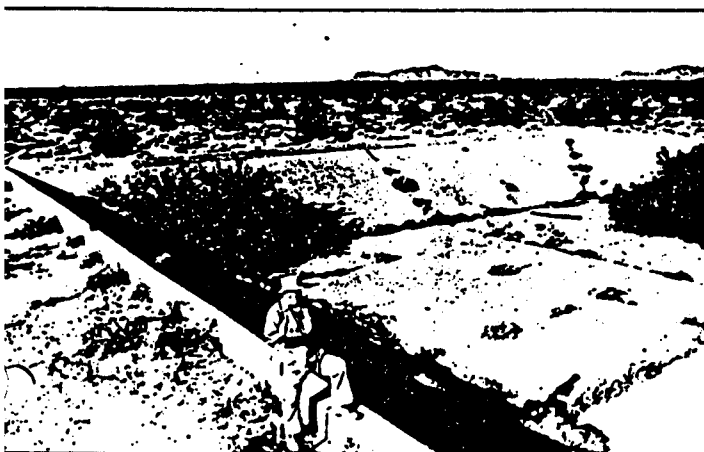
During 1943-1944, fortifications were built up as each war game was conducted resulting in numerous barbed wire entanglements, bunkers, mine fields, gun emplacements and foxholes. East of the pass, a valley bounded by the Little Maria, McCoy, Granite and Palen mountains has the appearance of a 1942 Tunisian battlefield. Craters, cartridges, mines and vehicle parts sprinkle the valley floor. Concertina wire stretches from one side of the valley to the other. Damaged concrete bunkers dot the hillsides. All that's missing is the smoke! Accessible to 4 wheel drive autos, the Palen Pass - Arlington Mine Road passes through the middle of it all.

FREDA QUARTERMASTER DEPOT. A major supply and embarkation center, Freda railroad siding is a short distance west of Rice on Highway 62. Several sidings were laid for the army during the War but only one remains today. Concrete foundations of small warehouses also remain but little else. The only insignia seen at the siding was a group of words made of small pebbles set into

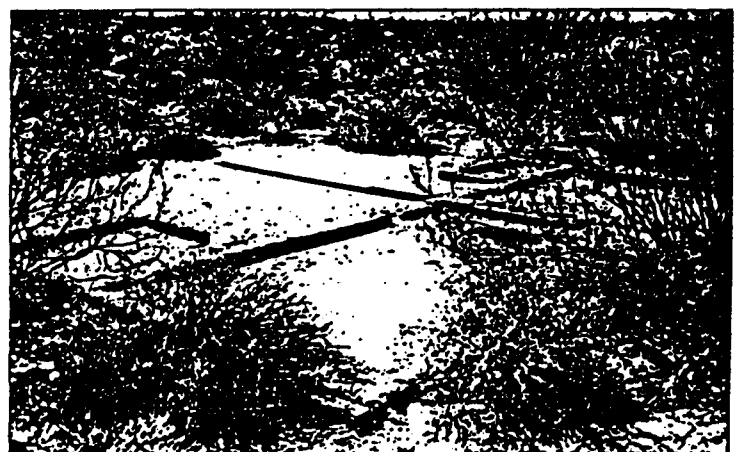
the concrete base of a railroad rail gate post proclaiming the presence of the 378th Engineer Battalion. Rockwork is scanty. South of the siding alongside an aqueduct service road is more rockwork and an insignia denoting the location of the 484th Quartermaster Battalion. As seen in old Army photos, Freda QM Depot covered many acres with supplies, tents and vehicles.

DESERT CENTER and RICE ARMY AIRFIELDS. Although Desert Center airfield is still in operation as a private airport, ex-army relics can be seen there. Numerous concrete foundations line the entrance road and the original runways, laid out in a giant "V", have been maintained for current use. This airfield can be easily reached via Highway 177 a few miles northeast of the town of Desert Center. In between the town and airfield is the site of a field hospital of the 496th Medical Company.

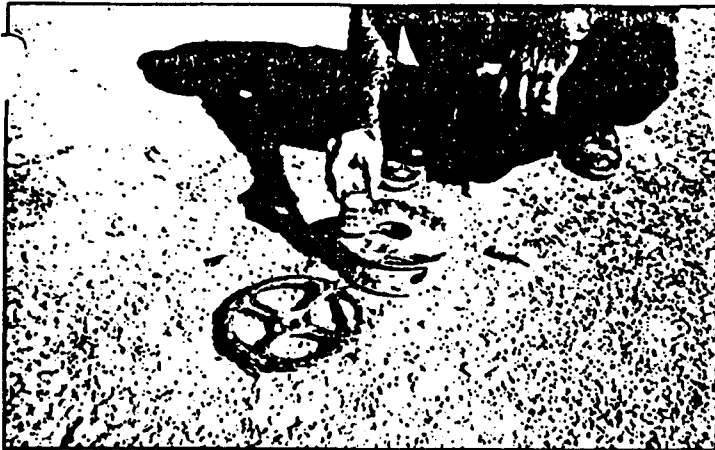
Rice Airfield was completely abandoned and is unuseable today. Sand and gravel cover much of the "V" shaped



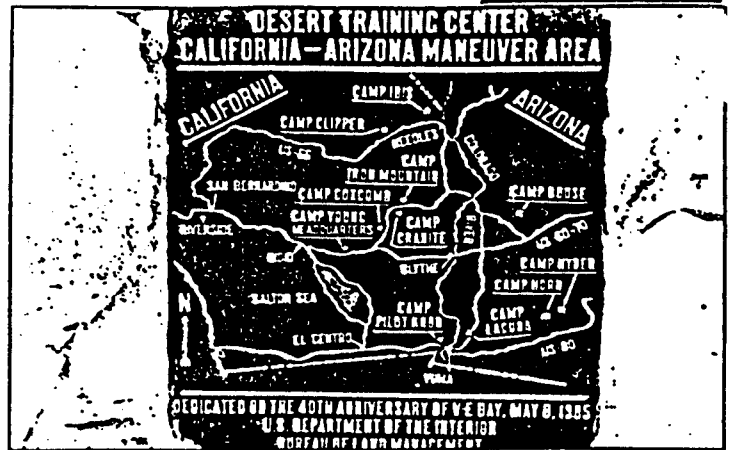
Mack Mitchell at the 500,000 gallon reservoir, Camp Bouze.



One of the many identical concrete foundations at Camp Bouze. Piles of coal stood by each one.



One of the many practice anti-tank land mines found while exploring CAMA. The removed fuse is dated 7-42.



Map of the Desert Training Center CAMA on the side of the General Patton memorial at Chiriaco Summit, California.

runways and taxiways. Most of the hardstands and the apron, however, are fairly clear of debris. The latter is easily accessible to 2 wheel drive autos. Entrance to the airfield is marked by a tree about two miles east of Rice on Highway 62. Near the tree are the remains of the Military Police guard post. Scattered on both sides of the main road down to the apron are concrete foundations, minor roads and on the east, the remains of a railroad spur line. A mystery exists here too. Several deep trenches were bulldozed at various locations near the foundations, then filled with large rocks. Has some equipment been dumped then covered? Small jagged pieces of aircraft have been found indicating unhappy landings. A mound of dirt on a remote hardstand southeast of the apron is believed to have been the backstop for aircraft machine gun test firing.

Associated with Rice Airfield are two aerial target ranges. One is off to the

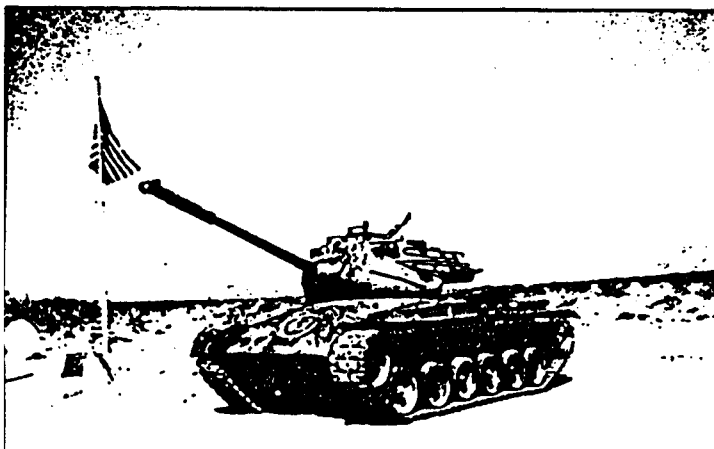
southeast a few miles, the other is to the north near the Turtle Mountains. Several bullet riddled 1920 and 1930's Chevrolet and Ford car bodies lie on the SE range while the north range has only one, a circa 1920 ex-army Dodge. But, also at the north range is a unique rock bulseye: a 15 foot Nazi swastika within a circle. Once painted red, the swastika shows evidence of accurate bombing.

EPILOGUE

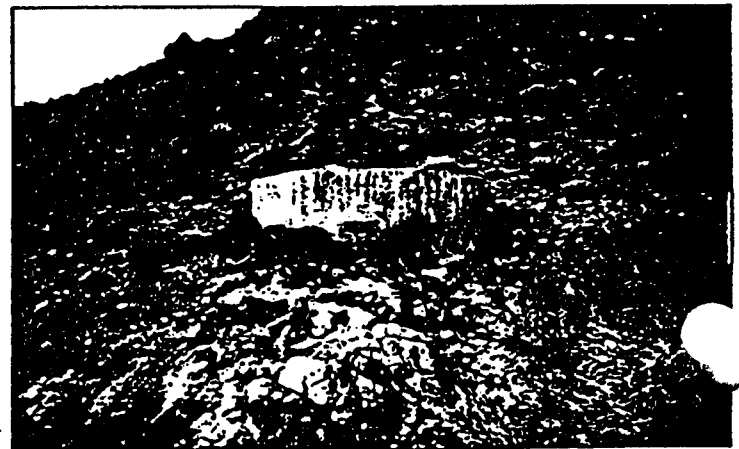
Between the brief descriptions above and the accompanying photographs, the reader should now have a fairly good idea what is to be found at the old "Patton's Training Ground." One of Southern California Chapter's regular events is to explore these sites two or three times a year. Any other MVCC members visiting our area is welcome to attend these trips. A variety of vintage and modern 4-wheel drive vehicles participate so room can always be found for a C.A.M.A. enthusiast.



Clarence Mitchell with Italian POW Camp Ono, California, 1945 (Mack Mitchell's Father). Note the "Italy" shoulder patch as mentioned in Part 1.



M47 tank at General Patton's memorial, Chiriaco Summit, California. Photo courtesy of Lino Milesi.



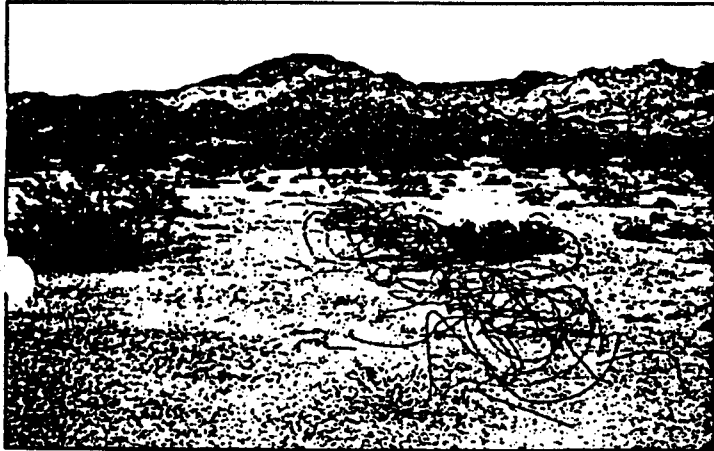
Concrete machine gun bunker near Palen Pass. Rock camouflage has fallen down. Photo courtesy of Lino Milesi.



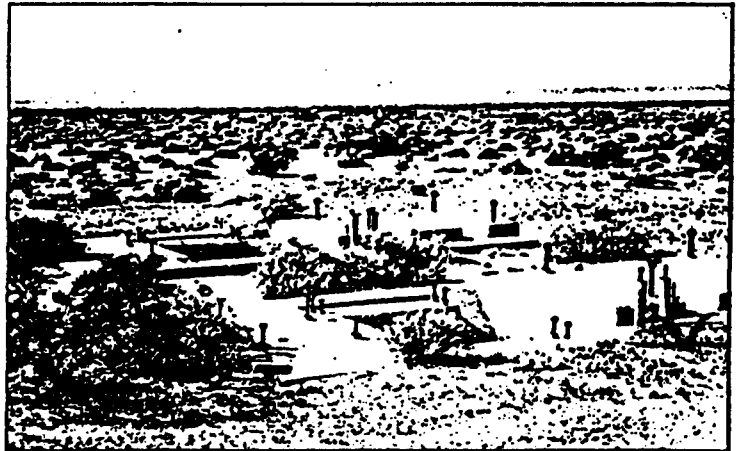
One of a few trucks left behind at Palen Pass. Photo courtesy of Mack Mitchell.



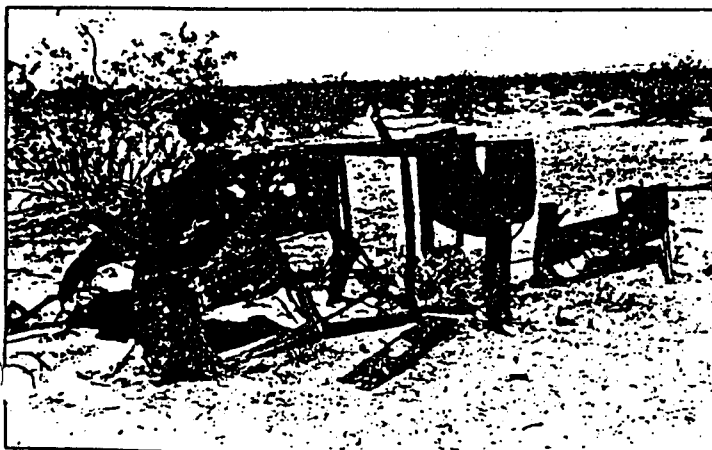
Concrete apron at Rice Army Airfield. View to the West; Camp Iron Mountain and Camp Granite.



Concertina wire near Palen Pass.



One of many concrete foundations at Rice Army Airfield.



Upside down and shot up, this circa 1930 car body is on the target range Southeast of Rice Army Airfield.



Rice Army Airfield's Military Police checkpoint at the entrance.

HEADQUARTERS
ARMY GROUND FORCES
Army War College
Washington, D.C.

Acting Commandant
Executive Officer

320.2/46 (Desert)-GNGCT
(11-18-42)

April 6, 1943.

SUBJECT: Organization and Training, Desert Training Center.

TO: Commanding Generals,
Second and Third Armies,
IV and XIII Corps,
II Armored Corps,
Airborne Command,
Antiaircraft Command,
Desert Training Center,
Mountain Training Center,
Replacement and School Command,
Tank Destroyer Center,
Chief of the Armored Force.

1. Letter, this headquarters, November 18, 1942, 320.2/46 (Desert)-GNGCT (11-18-42), is rescinded and the following instructions substituted.

2. Composition. The Desert Training Center will be composed of Headquarters, Desert Training Center; one or more infantry corps or armored corps headquarters; corps troops; one or more infantry or armored divisions; an appropriate proportion of non-divisional tactical units; a communications zone with necessary service units; a headquarters and headquarters detachment, special troops; necessary additional service units; and the Desert Warfare Board.

3. Organization. a. The Desert Training Center will be operated, internally, as a Theater of Operations for purposes of training. Provisions of regulations and directives pertaining to a theater of operations in the usual sense of the term and the provisions of FM 100-10 pertaining to property accountability in a theater of operations, do not apply to this training center. Terminology pertaining to a theater of operations is authorized for use within the Desert Training Center only.

b. The Desert Training Center will operate under the Commanding General, Army Ground Forces, who will designate the Commanding General thereof and will request the Commanding General, Army Service Forces, to designate the commander who will function as the commander of a communications zone.

c. The Commanding General, Army Service Forces, will provide troop units as may be necessary to support activities in the training center. The size of the staff and installations of that portion of the training center operating as a communications zone will be kept to the minimum, and final approval of such items will rest with the Commanding General, Army Ground Forces, subject to the announced policies of the War Department.

52-115
1 Incl.

ARMY WAR COLLEGE APR 13 1943

d. Supply of the Desert Training Center will be by service units in training. Railhead or truckhead distribution will be used with normal supply distances.

4. Purpose. a. To train, maintain, and supply troops realistically as in a theater of operations.

b. To harden troops physically.

c. To train soldiers mentally for the shock of battle.

d. To conduct firing under realistic battle conditions.

e. To develop tactics, technique, and training methods suitable for desert warfare.

f. To test and develop equipment and supplies.

5. Subjects of Training. Special attention will be given to:

a. Movement across country; navigation. Highways will be placed off-limits, for tactical movements, except at defiles.

b. Reconnaissance, combat intelligence, counterintelligence, and liaison.

c. Exercises which are realistic and complete in all details.

d. Dispersion of vehicles during the march, halts, and in bivouac.

e. Aggressive action by dismounted individuals and small units against armored vehicles (see paragraph 71, FM 7-10).

f. Laying and removal of mine fields.

g. Antiaircraft defense with both organic and task weapons and units.

Each vehicle authorized an antiaircraft machine gun will carry it or a dummy machine gun, mounted and ready for action during the daylight hours of each tactical exercise. A gunner or antiaircraft sentry will be on the alert at the gun at all times. Other vehicles carrying more than two soldiers, including the driver, will have an antiaircraft sentry on the alert similarly. Planes should make simulated attacks frequently to test antiaircraft personnel. Fire of all available and suitable weapons will be delivered against hostile planes when concealment is not essential or obviously does not exist.

h. Rapid close-in air support of ground units, on call.

i. Artillery observation by liaison planes.

j. Camouflage.

k. Night operations.

l. Use of identification panels.

m. Adherence to tables of equipment.

n. Battlefield recovery and evacuation of armored vehicles and other heavy equipment.

o. Day by day maintenance of motor vehicles.

p. Driver training with emphasis on night driving and driver maintenance; aggressive supervision of driving and maintenance by all command echelons.

g. Realistic supply of all classes, including ammunition, with actual tonnage, especially at night.

r. Special features of hygiene, sanitation, and first aid peculiar to the desert.

s. Cooking by individuals, and small groups.

t. Supply by air.

6. Night Training. The present war has emphasized the necessity for all units to operate under all conditions of terrain and weather at night. Night operation will be habitual for infantry in exercises and maneuvers. Such training will include, for:

a. Individuals and small units:

(1) Raids.

(2) Night patrolling - with special emphasis placed on long range patrolling into hostile lines.

(3) Infiltration tactics for the destruction of automatic weapons, combat vehicles, supplies and command posts.

b. Large units:

(1) Long cross country movements.

(2) Shifting of defended bivouacs as a security measure.

(3) Movements to surround hostile defended bivouacs or to assembly area preparatory to attack of a defended area.

(4) Armored attack in late afternoon followed by relief of armored units by infantry during the night. Withdrawal of armored unit to a rear assembly area and movement to second assembly area preparatory to attack in a new direction at dawn.

(5) Night attack by infantry to secure position from which armored unit may attack at dawn.

(6) All-around night defense of armored unit bivouacs by infantry, field artillery, and tank destroyers in preparation for a hostile attack at dawn.

7. Air-ground Training. Such training will include the thorough application and test of the principles and methods set forth in Inclosure 5 to Army Ground Forces letter, file 353/52 (Tng Dir)-GNGCT (10-19-42), with particular emphasis on visual communication and mutual air-ground identifications. Ground-air and air-ground umpiring (paragraph 25g, 27c of FM 105-5 and paragraph 3, Chapter V of FM 105-6), and designation of targets by ground troops to planes in the air will be stressed during maneuvers..

8. Training of Air Units. Supporting air units will:

a. Conduct operations from improvised bases, airdromes, and landing fields as distinguished from permanent, long established bases and airdromes.

b. Rapidly evacuate and move ground echelons between bases, and air echelons between airdromes and landing fields. Movements to and occupation of improvised airdromes and landing strips will include self-sustained operation of advance echelons for 72 hours, and 10 days operation by all units without benefit of base services.

c. Camouflage ground installations and aircraft.

d. Defend bases, airdromes and landing fields from hostile air attacks and attacks by parachute, airborne, armored, and mechanized forces, and by other ground troops.

9. Training Program. a. The program will cover thirteen weeks of special advanced training.

b. Units which have not completed individual and unit training and all prescribed tests before coming to the Desert Training Center, will be given an opportunity to complete such training insofar as practicable.

c. The special advanced training schedule will be generally as follows, although the sequence may be varied by the Commanding General, Desert Training Center:

<u>Week</u>	<u>Sequence</u>
1st)	Individual and small unit training with
2nd)	special emphasis on junior leadership
3rd)	and battle conditioning.
4th)	
5th	Battalion - combat firing.
6th	Reinforced battalion - combat firing.
7th	Combat command or team - field exercise.
8th	Combat command or team - combat firing.
9th	Division - field exercise.
10th	Division - field exercise.
11th	Field maneuver - attack and defense of an organized position.
12th)	Field maneuver - movement to contact,
13th)	and meeting engagement.

10. 1st-4th Weeks. Individual and small unit training with special emphasis on junior leadership and battle conditioning.

a. Individual training will include:

Use of individual weapons under combat conditions.

Scouting and patrolling -- emphasis on night operations.

Laying of mines by all personnel of all combat branches. Detection and removal of mines by all personnel.

Exacting performance of duties affecting the security of the command.

"Digging in" -- even if stopped momentarily.

Individual and field sanitation.

Proper preparation of food by individual and group cooking.

b. Officers and men must be tough, physically and mentally, and imbued with the desire to close with the enemy and destroy him. Training will include:

Rough and tumble fighting (see FM 21-150, Unarmed Defense for the American Soldier).

Games and exercises involving physical combat.

Normal exertion over long periods.

Extreme exertion over short periods.

Battle conditioning exercises to accustom men to the sound of bursting shells in their immediate vicinity and to accustom them to the crack of small arms bullets passing near them.

c. Junior leaders must be trained to accept responsibility, to be self-reliant, and to operate effectively "on their own". Every non-commissioned officer and platoon leader must be able to successfully lead a patrol over extended distances, unknown terrain, at night; to infiltrate into the hostile position and return with specific information.

d. Night patrol problems will be conducted over difficult terrain, with groups pitted against one another, one in a security role and the other as a reconnaissance platoon.

e. Each platoon will participate in a leadership course similar to that outlined in Inclosure 1.

f. The utmost realism will be introduced. At least one 24-hour exercise will be conducted, designed to prevent any sleep whatever; to require action over difficult terrain at night; to drive troops to the limit of endurance; to provide very limited quantities of food and water; to "find out the leaders and men who can't take it".

g. The exercises outlined in paragraphs c and d above may be continued concurrently with other training during the remaining weeks as necessary. Training outlined in paragraphs a and b should run concurrently with other training during the entire desert training period.

11. 5th Week. Battalion - Combat firing, mechanics of mobile operations.

Battalion combat firing exercises, at least one of which will be by the complete battalion with all weapons participating in coordinated fires. Targets will represent the enemy realistically. The problems will be conducted so as to require definite action by reconnaissance and intelligence agencies for the location of the targets. Within ammunition allowances, development of maximum fire power will be stressed. Ammunition supply will be executed realistically.

12. 6th Week. Reinforced Battalion - Combat firing.

Same as 5th week, but including units supporting or attached to the battalion.

13. 7th Week. Combat Team or Command - Field exercise.

A field exercise of about four days and three nights for the combat team or command, together with supporting combat and service units.

The exercise to be executed step-by-step, including tactical and administrative functions, with special attention to perfecting details and developing standing operating procedure.

14. 8th Week. Combat Team or Command - Combat firing.

Same as 5th week. One exercise (maneuver) will be against a represented or complete hostile force. Action on both sides will cease at a prearranged signal, whereupon the enemy will set up certain targets in the places occupied at that moment and then withdraw entirely from the area. The combat team or command will then continue its action, using live ammunition. Infantry combat teams will execute this phase of the exercise as a river crossing.

15. 9th Week. Division - Field exercise.

A field exercise of about four days and three nights for the purpose of perfecting performance, step-by-step, of both combat and service functions, and developing standing operating procedure.

16. 10th Week. Division - Field exercise.

A division field exercise of about four days and three nights. A retirement involving:

Defense in depth on a narrow front.

Defense on a broad front, combat teams abreast.

Defense (by division) across open, flat terrain.

Defense through parallel corridors and defiles by semi-independent columns retiring on a common objective. Terrain will be varied.

17. 11th Week. Division or Corps - Field maneuver.

a. A field maneuver of about four days and three nights between forces as large as a division or corps on each side.

b. The defending force to select and organize a position in detail for the purpose of protecting a vital area or installation. The fortifications should include tank ditches and traps, road blocks and demolitions, wire and obstacles, and mine fields. Since the construction of a complete position by a particular unit is beyond the time available, the position should be built up successively by units as they pass through the Desert Training Center. Each unit involved should construct typical fortifications of the type making up the defensive position as a whole. The operations of the attacker will be complete and detailed, including rehearsal in the rear area of operations against particular portions of the position.

18. 12th-13th Weeks. Division or Corps - Field maneuver.

a. A series of field maneuvers simulating a campaign of approximately eleven days and ten nights.

b. This campaign should be framed and conducted to test the endurance of units and their ability to fight; and to test the capability of administrative echelons to resupply units over great distances and to provide day by day maintenance, battlefield recovery, and evacuation of combat vehicles. Supply will be played in all details.

By command of LT. GEN. McNAIR:



JAMES D. TANNER,
Lt. Col., A.G.D.,

Ass't Ground Adjutant General.

1 Incl.
Tab "A"

DISTRIBUTION
"A" & "H"

FIELD OFFICES: CALIFORNIA-ARIZONA MANEUVER AREA
 FO 183, Los Angeles, California

8 February 1944.

AG 400 GNWLD

SUBJECT: Target Ranges.

TO: See Distribution.

1. Reference is made to Ltr., AG 400 GNWLD, this headquarters, 31 Jan 1944. Subject: Property and Equipment.

2. Commanders of major units are charged with responsibility for closing of target ranges, and removal of salvageable material, supplies and equipment, at each camp or vicinity thereof as follows:

- a. ESSEX: By 827 TD Battalion, before departure about 14 February.
- b. IRON MOUNTAIN: By X Corps Artillery as determined by that unit.
- c. IBIS: By the 15th TD Group before departure for maneuvers about 10 February. To coordinate with the 819th TD Battalion and 711th Tank Battalion which will leave about 25 February and 1 March respectively.
- d. GRANITE: By 1135th Engineer C Group prior to departure of units to Camp Young about 19 March.
- e. COXCOMB: By 95th Division, before departure.
- f. HORN, HYDER: By the 104th Division prior to departure for maneuvers about 10 February.
- g. LAGUNA: By 80th Division before departure.
- h. PILOT KNOB: By 15th TD Group prior to departure about 15 March.
- i. Camp YOUNG: By 1134th Engineer C Group prior to departure about 15 April.

3. Permanent installations will be left in place, and such items (target frames, pulleys, ropes, supplies, etc) as are readily removable or could be easily carried away by trespassers, will be turned in to Area Property Officer, along with tentage, cots, and other PC&S Property.

4. In addition to the above, each unit indicated will show on a copy of the 1:25,000 Photomap where available, and otherwise upon the largest scale map available, the location and description of each major range installation. This is for future records and for further dismantling if later required.

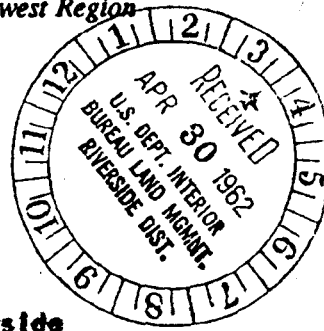
By command of Major General ANDERSON:

D C Blake

D C BLAKE
 Major A. G. D.
 Asst Adj General

DISTRIBUTION

80th Inf Div	5
104th Inf Div	5
X Corps Arty	5
1134 Engr C Gp	5
1135 Engr C Gp	5
95th Inf Div	5
15th TD Gp	5
827th TD Bn	5



LOR

Director
ACTING
Manager, Land Office, Riverside

APR 27 1962

Contamination of Land by Defense Agencies (6.03b)

The following is in answer to your Memorandum, Instruction No. L&R-6:

1. Present withdrawals (some in process of restoration or amendment) are as follows:

<u>Name</u>	<u>Acres</u>
Inyokern	306,555.32
Mojave B and C	174,000.00
Chocolate Mountain	228,319.62
George Air Force Base	7,545.80
Pandleton	80.87
Irwin	645,282.72
El Centro	30,701.50
Twenty Nine Palms	443,000.00
Elliott	2,594.86
Muroc	564.46
Edwards	156,473.13
Carrizo Impact	10,325.24
	<u>2,005,443.52</u>

2. There appear to be no outstanding Special Land Use Permits to the Department of Defense. One Free Use Permit, covering 160 acres, is still operative.

3. Portions of the southeastern part of California were taken over in 1942 by Gen. Patton, as training grounds prior to the North Africa invasion. The precise limits of the area are not known but have been set by approximation. Where explosives are used it is customary to have maps showing impact areas, but as far as we know Gen. Patton kept no record of the impact areas in the southern California area.

By approximation and with the aid of the Army Engineers, figures were set up in the following-listed areas:

Riverside

Reproduced from the holdings of the National Archives
Pacific Southwest Region

<u>Name</u>	<u>Total Area</u>	<u>De-dudded, Clear for all uses</u>	<u>Inspected and/or de-dudded and restricted to surface use only</u>
Midway	92,160	92,160	
Camp Wiley	5,760	5,760	
Camp Granite	46,080		46,080
" "			
Sand Dunes	7,680		7,680
5th Artillery	46,080		46,080
Vidal	2,560	2,560	
Whippie Mts	69,120		69,120
Needles Div.	70,640	11,520	59,120
Ibfs	80,640	11,520	69,120
Plute Artillery	46,080		46,080
Essex	103,680	34,560	69,120
Cadiz	55,040	11,520	43,520
Iron Mt	30,600	23,040	7,560
Sheep Hole Mts	7,680	3,840	3,840
Coxcomb	40,640	26,080	14,560
Desert Center	23,040		23,040
Young	46,080	23,040	23,040
Chuckawalla			
Maneuver	11,520	11,520	
Iron Mt Div	166,480	86,200	80,640
Sand Hills	46,080	*	*
Victorville	1,920	1,920	
Wiley Wells	26,400	26,400	
Gavilan	1,312	1,312	
	<u>1,027,272</u>	<u>372,592</u>	<u>608,600</u>
			* <u>46,080</u>
			654,680

* The extent of contamination is not known.

Note: Contaminated areas are flagged conspicuously at frequent intervals.

cc: State Director
Manager, LO
Manager, Riverside DO ✓
" Bakersfield

Oliver D. Johnson

ADD TO: ENGINEER
LOS ANGELES DISTRICT
ENGINEERS
1850 METRO. STATION
LOS ANGELES 14, CALIFORNIA

CORPS OF ENGINEERS
OFFICE OF THE DISTRICT ENGINEER
LOS ANGELES DISTRICT
751 SOUTH FIGUEROA STREET
LOS ANGELES 14, CALIFORNIA

2 May 1949

REFER TO FILE NO.

CERTIFICATE OF CLEARANCE
IRON MOUNTAIN DIVISION CAMP, CALIFORNIA

All lands within the Iron Mountain Division Camp, located approximately 10 miles west of Rice, California, in the California-Arizona Maneuver Area, have been given a careful visual inspection and have been cleared of all dangerous and/or explosive materials reasonably possible to detect. Due to the fact that the Camp appears to be contaminated with practice anti-tank mines, it is recommended that the entire camp area comprised of the following sections be restricted to surface use only:

T. 1S., R. 17 E., Sections 1, 2, 11, 12, 21 to 28, inclusive

SE $\frac{1}{4}$ Section 29, E $\frac{1}{2}$, E $\frac{1}{2}$ W $\frac{1}{2}$, W $\frac{1}{2}$ SW $\frac{1}{4}$ Section 32, and Section 33

T. 1S., R. 18E., all except sections 16 and 36 which are State school lands

T. 1N., R. 18E., Sections 19, 20, 29 to 32 inclusive, as shown on the inclosed California-Arizona Maneuver Area Map

Warning signs were placed on all roads leading into the camp.

RECEIVED
20014 BY DISTRICT ENGINEER
OFFICE DISTRICT ENGINEER

MAY 11 11 55 AM '49

B. C. Hedrick

B. C. HEDRICK
Engineer, Civil
Los Angeles District

RECEIVED

J. L. H.

F-16

RECEIVED

APR 11 10 00 AM '61

BUREAU OF LAND MANAGEMENT
LOS ANGELES, CALIF.

HEADQUARTERS
EARTH ORDNANCE DETACHMENT
Fort Reservoir
San Diego 6, California

20 April 1960

SUBJECT: Statement of Clearance

All lands noted on sheet number N3400-W11500/15 United States Department of Interior Geological Survey Map Iron Mountain Quadrangle, San Bernadino County, California listed within T2N, Range 17E, Sections 22, 23, 24, 25, 26, 27, and T2N, Range 18E Sections 19, 20, 30, 31, and 32 of the same map, and sheet number N3415-W11500/15 United States Department of Interior Geological Survey Map. Milligan Quadrangle, San Bernadino County, California listed within township T2N, Range 17E Sections 1, 2, and that portion of Section 11 and 12 lying North of railroad, and within township T2N, Range 17E Sections 25, 26, and 36; Sections 14, 15, 22, 23, 30 and 31 of T2N Range 18E located approximately 15 miles North West of Rice, California have been given careful visual inspection. The land has been cleared of all dangerous and/or explosive material reasonably possible to detect. It is recommended that all sections noted above and shown on enclosed reallocate map be used for any purpose for which the land is suited. The final clearance date was 18 April 1960.

William E. DeLong
WILLIAM E. DELONG
Capt., Ord. Corps
Commanding

1:0379
8 5734
8 5735
3111-A (04943)

STATE OFFICE
E-2841 Federal Office Building
2800 Cottage Way
Sacramento, California 95825

MAR 23 1978

District Engineer
Los Angeles District
Corps of Engineers
U. S. Department of the Army
Post Office Box 2711
Los Angeles, California 90053

Dear Sir:

We are writing in regard to lands contaminated by explosives within the California-Arizona Maneuver Area. Two offers to lease have been filed in this office, pursuant to the Act of February 25, 1920 (41 Stat. 437, 30 U.S.C. Sec. 181), as amended, for the following described lands:


San Bernardino Meridian, California

- T. 1 S., R. 18 E.,
- Sec. 1;
- Sec. 2;
- Sec. 10;
- Sec. 11;
- Sec. 12;
- Sec. 13.

According to the information submitted by your office on September 28, 1954, all of the above lands were used by the Department of the Army as an artillery range and bombing area in connection with maneuver training during the period of April 1942 through April 1946. You also advised us that these lands had been visually inspected and cleared of all explosive materials reasonably possible to detect, but because of unexploded mines, bombs, shells and other missiles might still remain, that the lands should be restricted to surface use only.

Before we act upon the offers to lease, we would appreciate knowing if there has been any subsequent inspection of these lands by the Corps of Engineers.

Sincerely yours,


Walter F. Holmes
Chief, Branch of Lands
and Minerals Operations

602 Cadiz Lake Air to Ground Gunnery Range, California ENGLT continued

j. TARGET NO. 7

Sections 32, 33 - T. 2 S., R. 20 E.
Sections 4, 5, - T. 3 S., R. 20 E.

SBB&M - San Bernardino County, California

k. TARGET NO. 8

Sections 17, 18 - T. 1 S., R. 22 E.
SBB&M - Riverside County, California.
Sections 19, 20 - T. 1 S., R. 22 E.

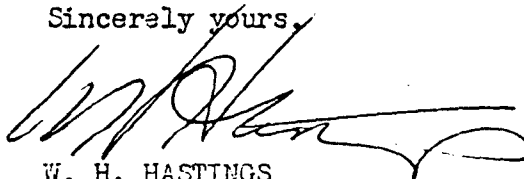
All comprises 55,040 acres, more or less. Range and Targets lie in an area between U.S. Highway 66 on the North and U.S. Highways 60-70 on the South. Colorado River on the East and Sheep Hole Mountains (which are some 60-70 air miles west of Colorado River) on the west.

The lands are no longer required and the use thereof is hereby relinquished. All Government improvements placed on the property have been removed and restoration is not deemed necessary. The lands have been examined and have been cleared of all explosives or explosive elements reasonably possible to detect by visual inspection, and are considered safe for any use for which the land is suited.

Your cooperation in making these lands available is appreciated.

FOR THE CHIEF OF ENGINEERS:

Sincerely yours,



W. H. HASTINGS
Colonel, Corps of Engineers
Assistant Chief of Engineers for Real Estate

RECEIVED
AUG 22 2 20 PM '60
BUREAU OF LAND MANAGEMENT
LOS ANGELES, CALIF.

LA DISTRICT
CAMA FILE (REAL ESTATE)

RECEIVED
LAND OFFICE
LOS ANGELES, CALIF.
DISTRICT ENGINEER
LOS ANGELES DISTRICT
CORPS OF ENGINEERS
P. O. BOX 1710
LOS ANGELES 17, CALIFORNIA

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DISTRICT ENGINEER
LOS ANGELES DISTRICT
751 SOUTH FIGUEROA STREET
LOS ANGELES 17, CALIFORNIA

REFER TO FILE NO.
SPLRM 602 (CAMA - Dedudding)

Route	Initial	Date
1	Palmer	9/24
	Conrad	
2	Wilmer	PBW 10/3
	Buck	
	Winters	
	Gelley	
	Hobbs	
	Andrus	
3	Corbett	

21 September 1956

P 2:41 AM 10:00

RECEIVED
LAND OFFICE
LOS ANGELES, CALIF.

Manager, Land Office
Bureau of Land Management
Department of the Interior
215 W. 7th Street
Los Angeles 14, California

Dear Sir:

Needs Action.....
Information.....
Distns.....

RETURN TO: PALMER

Reference is made to conference held in your office on 19 September 1956 between your Messrs. Palmer and Corbett and Mr. John Houston of this office, at which time the contamination by explosives of certain lands under jurisdiction of the Bureau of Land Management was discussed.

There is inclosed for your use in determining the location of such contaminated land a drawing indicating the following:

a. Lands (shown in red) which have been visually inspected and cleared of all explosive materials reasonably possible to detect, but because of the possibility that there may remain unexploded mines, bombs, shells and other missiles which might possibly constitute a hazard to life and property, their use is restricted to surface use only.

b. Lands (shown in green) which have been given a careful visual inspection and have been cleared of all explosive materials reasonably possible to detect. These lands are recommended for any use for which suited.

c. Uncolored areas within the boundaries of the California-Arizona Maneuver Area have not been inspected for explosive materials as it has been determined from information available that these lands were never used by the Department of the Army as artillery ranges or bombing areas.

If this office can be of further assistance in this matter do not hesitate to call upon us.

FOR THE DISTRICT ENGINEER:

Very truly yours.

F-18

IC *Walters*

LIST OF LANDS IN CALIFORNIA CONTAMINATED
BY EXPLOSIVES - CALIFORNIA-ARIZONA MANEUVER AREA
COMPILED FROM DRAWING NO. 16-13-C1,
CORPS OF ENGINEERS MAP APPROVED OCTOBER 1951

(List Compiled by Status Unit, LALO, 10/12/56)

SEM

T13N R19E
Secs. 34, 35

T12N R19E
Secs. 2, 3, 10, 11, 14

T11N R18E
Secs. 1, 2, 11, 12

T11N R19E
Secs. 2, 3, 10, 11, 12, 13, 14, 23, 24, 25, 26, 27, 28, 29, 32,
33, 34, 35, 36

T11N R20E
Secs. 13 thru 36

T10N R17E
Secs. 8, 9, 10, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27,
28, 29, 32, 33, 34, 35, 36.

T10N R19E
Secs. 1, 2

T10N R20E
Sec. 6

T9N R15E
Secs. 22, 23, 25, 26

T9N R17E

- T9N R20E
Secs. 1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 17, 18

- T9N R21E
Secs. 6, 7, 23, 24, 25, 26, 35, 36

- T9N R22E
Secs. 19, 20, 21, 28, 29, 30, 31, 32, 33

- T8N R14E
Secs. 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 28, 29

- T8N R15E
Secs. 2, 7, 8, 9, 10, 11

- T8N R16E
Secs. 17, 18, 19, 20, 29, 30, 31, 32

- T8N R18E
Secs. 13, 23, 24, 25, 26, 35, 36

- T8N R19E
Secs. 7, 17, 18, 19, 20, 29, 30, 31

- T8N R21E
All of Township

- T6N R22E
Secs. 3, 4, 5, 8, 9, 10, 15, 16, 17, 20, 21, 22, 27, 28, 29

- T7N R11E
Secs. 25, 26, 35, 36

- T7N R12E
Secs. 13, 19, 20, 21, 28, 29, 30, 31, 32, 33

- T7N R13E
Secs. 4, 5, 8, 9, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26,
27, 28, 29, 30, 32, 33, 34

- T7N R15E
Secs. 1, 11, 12, 13, 14, 24, 27, 28, 33, 34

- T7N R16E
Secs. 4, 5, 6, 7, 8, 9, 16, 17, 18, 19

- T7N R18E
Secs. 1, 2, 3, 10, 11, 12, 13, 14, 15, 21, 22, 23, 24, 25,
26, 27, 28, 32, 33, 34, 35, 36

⊕ T7N R19E
Secs. 6, 7, 18, 19, 25, 30, 31, 35, 36

- T7N R20E
Secs. 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, thru 36

+ T7N R21E
Secs. 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 22,
23, 28, 29, 30, 31, 32, 33, 34

+ T6N R16E
Secs. 20, 21, 22, 27, 28, 29, 32, 33, 34

× T6N R18E
Secs. 1, 2, 3, 4

⊕ T6N R19E
Secs. 1, 2, 6, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26,
27, 33, 34, 35, 36

× T6N R20E
All of Township

⊕ T6N R21E
All of Township

T5N R16E

+ T5N R20E
Secs. 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35

no plat. + T4N R20E
Secs. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 16, 17, 18

* T4N R23E
Secs. 25 thru 36

+ T4N R24E
Secs. 19, 20, 21, 28, 29, 30, 31, 32, 33

* T3N R17E
Secs. 25, 35, 36

⊖ T3N R18E
Secs. 14, 15, 22, 23, 30, 31

⊕ T3N R19E
Secs. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19,
20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35

no plat. ✓ T3N R20E
All of Township

no plat. ✓ T3N R24E
Secs. 4, 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31,
32, 33

✓ T2N R17E
Secs. 1, 2, 22, 23, 24, 25, 26, 27

× T2N R18E
Secs. 19, 29, 30, 31, 32

× T2N R19E
Secs. 2, 3

X T2N R23E
Secs. 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16

X T2N R24E
Secs. 4, 5, 6, 7, 8, 9, 16, 17, 18

X T1N R13E
Secs. 13, 24

X T1N R14E
Secs. 18, 19

X T1N R15E
Secs. 13, 24, 25, 36

X T1N R16E
Secs. 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29,
30, 31, 32, 33, 34, 35

X T1N R18E
Secs. ~~2, 3, 10, 11~~, 12, 13, ~~14, 15~~, 22, 23, 24, 25, 26

X T1N R20E
Secs. 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, 33

X T1N R21E
Secs. 34, 35

X T1S R15E
Secs. 1, 12, 13

X T1S R16E
Secs. 1 thru 24

X T1S R17E
Sec. 36

⊕ T1S R21E
Secs. 25, 26, 34, 35, 36

⊗ T1S R22E
Secs. 28, 29, 30, 31, 32, 33

⊖ T1S R23E
Secs. 19, 30, 31

⊕ T2S R17E
Secs. 1, ~~8~~, 9, 13, 14, 15, ~~16~~, ~~17~~, ~~20~~, ~~21~~, ~~22~~, 23, 24, 25,
26, ~~27~~, ~~28~~, ~~29~~, ~~32~~, ~~33~~, ~~34~~, ~~35~~, ~~36~~

× T2S R18E
Secs. 1, 2, 3, 4, 5, ⁶/₈, 9, 10, 11, 12, 13, 14, 15, 16, 23,
24, 25, 26, 30, 31, 32, 36.

⊕ T2S R19E
Secs. 1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17, 18, 19,
20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 35, 36

⊕ T2S R20E
Secs. 30, 31

⊕ T2S R21E
Secs. 1, 2, 3, 4, 10, 11, 12, 13, 14, 24,

⊖ T2S R22E
Secs. 1 thru 30, 32 thru 35

- T3S R16E
Secs. 15, 21, 22, 29, 34, 35

⊖ T3S R17E
Secs. 1, 2, 3, 4, 5, 25, 26, 35, 36

- T3S R18E
Secs. 2, 3, 4, 5, 6, 10, 11, 14, 15, 16, 21, 22, 23, 25, 26, 27, 28,
29, 30, 31, 32, 33, 34, 35

+ T3S R22E
Secs. 3, 4

+ T4S R16E
Sec. 2

+ T4S R17E
Secs. 1, 2, 11, 12, 13, 14

+ T4S R18E
Secs. 1 thru 11, 15, 16, 17, 20

+ T6S R11E
Secs. 24, 25, 36

+ T6S R12E
Secs. 21, 22, 23, 26, 27, 28, 30, 31, 33, 34, 35.



F. J. Corbett
Acting Chief, Status Unit

Additional lands contaminated - per telephone conversation, *John*
Houston, C of E, and Corbett, 10/17/56

+ T2S R16E
Secs. 3, 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22,
27, 28, 29, 32, 33, 34

+ T3S R16E
Secs. 3, 4, 5

+ T6S R11E
Secs. 25 thru 36

- ^{S.}
~~T0S~~ R12E
Sec. 3

WARNING:

THE FOLLOWING SECTION HAS BEEN ABANDONED BY REGULATIONS

ENGLT 602 California-Arizona Maneuver Area, California.
(Iron Mountain Division Camp)

30 June 1949

Relinquishment
TR. B

Director
Bureau of Land Management
Department of Interior
Washington, D.C.

Dear Sir:

Reference is made to letter permit from the Secretary of Interior dated 24 April 1942 authorizing the use of 34,706.55 acres, more or less, of public land in Riverside and San Bernardino Counties, California, in connection with the Iron Mountain Division Camp, California-Arizona Maneuver Area.

The land, more particularly described in the inclosed copy of deduading certificate, is no longer required for military purposes and the use thereof is hereby relinquished. Improvements placed on the land by the using service have been removed and restoration of the premises is deemed unnecessary.

The aforementioned lands have been given a careful visual inspection and have been cleared of all explosives and explosive objects reasonably possible to detect by visual inspection. However since the camp has been contaminated with practice anti-tank mines, it is recommended that the entire camp be restricted to surface use only. Warning signs have been placed on all roads leading into the camp.

Your cooperation in making these lands available is appreciated.

FOR THE CHIEF OF ENGINEERS:

Sincerely yours,

2 Incls.

1. Certificate fm CofE
Los Angeles, Cal. Dist
Engr. 2 May 49 (dup)
2. Map, SPD, Camp Iron Mtn. No. 2291

W.H. HASTINGS
Colonel, Corps of Engineers
Assistant Chief of Engineers for Real Estate

Assistant to the State Supervisor

September 20, 1956

Acting Chief, Status Unit, Los Angeles Land Office

Conference regarding Public Lands Contamination by Explosives -
California-Arizona Maneuver Area - 9:00 to 10:30 September 19, 1956

Present: Mr. E. J. Palmer, Assistant to the State Supervisor
Mr. R. Sporleder, Officer in Charge of Southern Field Group
Mr. F. J. Corbett, Acting Chief, Status Division, LALO
Mr. John Houston, Chief, Management and Disposal Branch,
Real Estate Division, Corps of Engineers, U. S. Army,
Los Angeles

Mr. Houston gave the following brief history:

The southeastern part of Southern California and the southwestern part of Arizona were taken over in 1942 by General Patton as training grounds prior to the North African invasion. The precise limits of the area, designated as the California-Arizona Maneuver Area, are not of record, but the limits have been fixed by approximation. (See Corps of Engineers, USA, Drawing No. 16-13-01 approved October 1951.) Where explosives are used, it is customary to have maps showing the impact areas, but General Patton kept no records of the impact areas in the California-Arizona Maneuver Area. The Corps of Engineers was given the task in 1948 of sending dedudding teams into the field searching the area. Since 1948, it is believed that all of the impact areas have been "pretty well located". No dedudding team is in the field now; and since May of 1954, only twice has a dedudding team been out to search the area. The Corps of Engineers have taken precautionary steps by posting signs along the road which abut contaminated areas; by notifying the owners of private lands, and by filing affidavits in the County Records attesting the areas that have been cleared for all use and those that have been cleared for surface use only. The Corps of Engineers has knowledge of only one fatality and one injury in the contaminated areas. Eight private land owners have filed claims against the Government for a total of \$130,000.00. Seven of the claims were filed by landowners south of the Darby Area and one claim was filed by a landowner west of the town of Frieda. Mr. Houston believes that these claims were filed when the landholders became cognizant that their lands had been contaminated. It is the intent of the Corps of Engineers to search the County Records in order to ascertain the landowners in the maneuver area so as to apprise them of the hazards in the contaminated areas.

Mr. Palmer told Mr. Houston that our concern was for entries on the Public Lands; that 337 townships were involved; and that we were concerned about the allowance of entries in the contaminated areas.

Mr. Houston stated that the known contaminated areas were colored red on his map and that entries in such lands were hazardous.

Mr. Palmer referred to the map and ascertained that all the areas shaded green had been cleared of all explosives, and therefore the land would be suitable for all purposes. Mr. Palmer, thereupon, inquired of the lands within the boundaries of the California-Arizona Maneuver Area that were not shaded or not otherwise shown as contaminated or dedudded.

Mr. Houston stated that no search for explosives had been conducted in such areas or if a search had been made, the search would have consisted of merely walking over the land to see if any unexploded ammunition lay on the ground.

Mr. Sporleder indicated the Chuckawalla Area on the map, and Mr. Houston stated that if the area is thought to be contaminated BLM could request a dedudding team to inspect the area. Mr. Houston stated that the cost of dedudding one acre of land averaged \$15,000.00 and that if shells are in the ground it would not pay to clear the area.

Ordnance experts consider that unexploded projectiles generally are not a menace after 25 years. Fourteen years have passed, so that the danger period can be from the present until 1967, according to Mr. Houston.

Mr. Palmer then asked Mr. Houston if the California-Arizona Maneuver Area had been publicized as dangerous. Mr. Houston replied that at the time of the maneuver there was a little publicity in local newspapers, but none since. However, the Corps of Engineers plans to search the County Records in order to warn the present owners of private lands in the maneuver area.

Mr. Palmer inquired whether the Corps of Engineers had any contact with BLM in Arizona on the contaminated lands within that State. The reply was in negative.

Mr. Palmer put the following questions to Mr. Houston:

1. Can you give us clearance on all areas but those in red on the map?

Answer: No. Clearance can be given only on the areas in green on the map.

2. Can you give us the known contaminated areas by legal description, that is, to the section within the affected townships?

Answer: Yes.

3. Can you give us a letter showing the white areas on the map as not searched; a clearance statement on the green area; a legal description of hazardous areas, giving the hazardous No. 1 priority?

Answer: Yes, I will send a letter to you. Also, I will have a duplicate made up for you.

Q. Can you have an extra map and a similar letter for BLM
State Supervisor in Arizona?

A. Answer: Yes.

Mr. Falmer concluded the conference, and Mr. Houston estimated that he would have the map and letter for us by September 30th.

F. J. CORBETT
Acting Chief, Status Unit

ADDRESS REPLY TO:
DISTRICT ENGINEER
LOS ANGELES DISTRICT
CORPS OF ENGINEERS
P. O. BOX 12277, POST STATION
LOS ANGELES 12, CALIFORNIA

REFER TO FILE NO.
SPLRM-D 602 (CAMA - Dedudding)

RECEIVED
CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DISTRICT ENGINEER, CALIF.
LOS ANGELES DISTRICT
751 SOUTH FIGUEROA STREET
LOS ANGELES 12, CALIFORNIA
1955 AUG 20 10:00
relat...
Mr. Doster
Posted 8/21/56
7A

Manager, Land Office
Bureau of Land Management
Department of the Interior
215 W. 7th Street
Los Angeles 14, California

Dear Sir:

Inclosed for your information is a copy of an affidavit, dated 21 July 1956, which has been recorded in San Bernardino County at the request of this office.

Copies of the two affidavits, dated 2 July 1953 and 13 September 1954, referred to in the inclosed affidavit, were furnished your office on 28 September 1954.

FOR THE DISTRICT ENGINEER:

Very truly yours,



for JOHN HOUSTON
Chief, Management & Disposal Branch
Real Estate Division

1 Incl:
Affidavit

LOS ANGELES, CALIF.

1953 AUG 23 AM 10:00

Recorded 25 July 1956 in
Book 3996, Page 341,
Official Records of San
Bernardino County, California

A F F I D A V I T

STATE OF CALIFORNIA)
) SS
COUNTY OF LOS ANGELES)

I, Charles A. Carroll, Lt. Colonel, C. E., Assistant District Engineer of the Los Angeles District, Corps of Engineers, U. S. Army, being first duly sworn on oath, depose and say:

THAT on 2 July 1953, Lt. Colonel Irvin M. Rice, C. E., then Executive Officer of the Los Angeles District, Corps of Engineers, U. S. Army, executed an affidavit describing certain property located in San Bernardino County, California, which was considered might possibly have been contaminated by unexploded missiles and therefore dangerous to life, limb, and property, said affidavit being recorded in the office of the County Recorder, San Bernardino County on 5 August 1953 in Book 3218, Page 539, of Official Records.

THAT on 13 September 1954, Lt. Colonel Robert N. Swartz, then Executive Officer of the Los Angeles District, Corps of Engineers, U. S. Army, executed a similar affidavit describing certain other property located in San Bernardino County, California, which was also considered might possibly have been contaminated by unexploded missiles and dangerous to life, limb, and property, said affidavit being recorded in the office of the County Recorder, San Bernardino County, on 14 September 1954 in Book 3463, page 117, of Official Records.

THAT subsequent to the filing of the aforementioned affidavits, the following described areas, designated herein as Parcels 1 and 2, previously considered as possibly contaminated, were reinspected and found to be clear of all dangerous and/or explosive materials reasonably possible to detect and no longer considered to be contaminated, as defined in the said affidavits, and usable for any purpose for which suited:

1955 AUG 27 11 19:00

PARCEL 1 (being a portion of Parcel 2 described in aforementioned affidavit dated 2 July 1953):

Clear

*W NW
NW SW
N SW SW*

All of Section 16; (the North $\frac{1}{2}$) the North $\frac{1}{2}$ of the Southeast $\frac{1}{4}$, (the North $\frac{1}{2}$ of the South $\frac{1}{2}$ of the Southeast $\frac{1}{4}$) the North-east $\frac{1}{4}$ of the Southwest $\frac{1}{4}$, the North $\frac{1}{2}$ of the Southeast $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ and the North $\frac{1}{2}$ of the Northwest $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 21; and the West $\frac{1}{2}$ of the Northwest $\frac{1}{4}$, the Northwest $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ and North $\frac{1}{2}$ of the South-west $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 22, all in Township 2 North, Range 17 East.

PARCEL 2 (being a portion of Parcel 17 described in aforementioned affidavit dated 13 September 1954):

*Parted
8/21/54
Clear*

Commencing at the Northwest corner of Section 29, Township 6 North, Range 16 East; thence South 1- $\frac{3}{4}$ miles more or less along that certain course in the Westerly line of Parcel 17 of said affidavit recorded in Book 3463, page 117 of Official Records in the office of the Recorder of San Bernardino County recited as "South along the West line of said Section 29 and continuing in a direct line 5 $\frac{1}{2}$ miles more or less to a point where said line intersects the Danby-Chubbuck Road, said point lying within Section 19, Township 5 North, Range 16 East" to the True Point of Beginning; thence East in a direct line 2 miles more or less to a point in the East line of Section 33, Township 6 North, Range 16 East distant North 1,320 feet from the Southeast corner of said Section 33; thence South 1,320 feet to the Southeast corner of said Section 33; thence East following section lines $\frac{1}{2}$ mile to a point in the north line of Section 3, Township 5 North, Range 16 East 1,320 feet East of the Northwest corner of said section; thence South in a direct line 2 miles to a point in the north line of Section 15 distant East 1,320 feet from the Northwest corner of said Section 15; thence East 1,320 feet to a point in the north line of said Section 15 distant East $\frac{1}{2}$ mile from the Northwest corner of said Section 15; thence South in a direct line 3 miles to a point in the North line of Section 34 distant East $\frac{1}{2}$ mile from the Northwest corner of said Section 34; thence East $\frac{1}{2}$ mile to the Northeast corner of said Section 34; thence South along the East line of said Section 34 one mile to the Southeast corner of said Section 34; thence East $\frac{1}{2}$ mile along the South line of said Section 34 to a point where the North-South centerline of Section 2, Township 4 North, Range 16 East, intersects the North line of said Section 2; thence South one mile along the North-South centerline of Section 2 to the South line of said Section 2; thence West 2 $\frac{1}{2}$ miles, more or less, along the South lines of Sections 2, 3, 4, and 5 to the intersection with the Danby-Chubbuck Road; thence Northwesterly along the east line of the said Danby-Chubbuck Road 3- $\frac{3}{4}$ miles more or less to the intersection with that certain course in the Westerly line of said Parcel 17 hereinbefore described; thence North in a direct line 3- $\frac{3}{4}$ miles more or less to the point of beginning.

THAT subsequent to the filing of the aforementioned affidavits the following described area, designated herein as Parcel 3, also used by the Department of the Army in connection with maneuver training during

"RECEIVED
LAND OFFICE
LOS ANGELES, CALIF."

1953 AUG 23 AM 10:00

Recorded 25 July 1956 in
Book 3996, Page 341,
Official Records of San
Bernardino County, California

A F F I D A V I T

STATE OF CALIFORNIA)
) SS
COUNTY OF LOS ANGELES)

I, Charles A. Carroll, Lt. Colonel, C. E., Assistant District Engineer of the Los Angeles District, Corps of Engineers, U. S. Army, being first duly sworn on oath, depose and say:

THAT on 2 July 1953, Lt. Colonel Irvin M. Rice, C. E., then Executive Officer of the Los Angeles District, Corps of Engineers, U. S. Army, executed an affidavit describing certain property located in San Bernardino County, California, which was considered might possibly have been contaminated by unexploded missiles and therefore dangerous to life, limb, and property, said affidavit being recorded in the office of the County Recorder, San Bernardino County on 5 August 1953 in Book 3218, Page 539, of Official Records.

THAT on 13 September 1954, Lt. Colonel Robert W. Swartz, then Executive Officer of the Los Angeles District, Corps of Engineers, U. S. Army, executed a similar affidavit describing certain other property located in San Bernardino County, California, which was also considered might possibly have been contaminated by unexploded missiles and dangerous to life, limb, and property, said affidavit being recorded in the office of the County Recorder, San Bernardino County, on 14 September 1954 in Book 3463, page 117, of Official Records.

THAT subsequent to the filing of the aforementioned affidavits, the following described areas, designated herein as Parcels 1 and 2, previously considered as possibly contaminated, were reinspected and found to be clear of all dangerous and/or explosive materials reasonably possible to detect and no longer considered to be contaminated, as defined in the said affidavits, and usable for any purpose for which suited:

"RECEIVED
LAND OFFICE
LOS ANGELES, CALIF."

1955 AUG 20 AM 10:00
the period April 1942 to April 1946, and previously inspected and found to be clear of all dangerous and/or explosive materials reasonably possible to detect and not considered to be contaminated, has been reinspected and found to possibly contain unexploded mines, bombs, shells and other missiles which might constitute a hazard to life, limb and property and hence this area is considered to be dangerous for any purpose involving the use of said land below the surface area:

PARCEL 3:

A parcel of land in the County of San Bernardino, State of California, described as follows:

The Southeast $\frac{1}{4}$ of the Southeast $\frac{1}{4}$ and the South $\frac{1}{2}$ of the Northeast $\frac{1}{4}$ of the Southeast $\frac{1}{4}$ of Section 20, Township 2 North, Range 17 East, S.B.M.

THAT the following described area, designated herein as Parcel 4, was also used by the Department of the Army in connection with maneuver training during the period April 1942 to April 1946, and although an attempt has been made to decontaminate and dedud said area, there may remain unexploded mines, bombs, shells and other missiles which might constitute a hazard to life, limb and property, and hence said area is considered to be dangerous for any purpose involving the use of said land below the surface area:

PARCEL 4:

A parcel of land in the County of San Bernardino, State of California, described as follows:

The South $\frac{1}{2}$ and the Northeast $\frac{1}{4}$ of Section 31, and the South $\frac{1}{2}$ and the Northwest $\frac{1}{4}$ of Section 32, all in Township 8 North, Range 16 East, S.B.M.

Also, the Southeast $\frac{1}{4}$ of Section 1, the Southeast $\frac{1}{4}$ of Section 11, all of Sections 12 and 13, the East $\frac{1}{2}$ of Section 14, the North $\frac{1}{2}$ and the Southeast $\frac{1}{4}$ of Section 24, all in Township 7 North, Range 15 East, S.B.M.

Also, the South $\frac{1}{2}$ and the Northwest $\frac{1}{4}$ of Section 4, all of Sections 5, 6, 7, 8 and 18, and those portions of Sections 9, 10, 16, 17, 19, 20 and 30 lying North of U. S. Highway 66, all in Township 7 North, Range 16 East, S.B.M.

Posted
to
Section 122
5/21/52

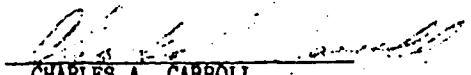
Posted to
Section 31
5/21/52

"RECEIVED
LAND OFFICE
LOS ANGELES, CALIF."

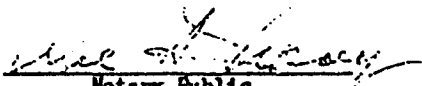
1956 AUG 20 AM 10:00

THAT this affidavit is made for the purpose of cancelling, annulling and rendering as of no effect whatsoever the aforementioned affidavits in so far as they pertain to the areas designated in this affidavit as Parcel 1 and Parcel 2 as hereinabove described, and also to record notice of the contamination and danger possibly existing in the areas designated in this affidavit as Parcel 3 and Parcel 4.

DATED this 27 day of July 1956.


CHARLES A. CARROLL
Lt. Col., Corps of Engineers

SUBSCRIBED AND SWORN TO BEFORE ME this 27 day of July 1956.


Notary Public
in and for said County and State

SEAL

1962-1964

AGREEMENT

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS

I, IRVIN W. RICH, Lt. Colonel, C. E., Executive Officer of the Los Angeles District, Corps of Engineers, U. S. Army, being first duly sworn, depose and say as follows:

THAT the land hereinafter described was a part of the ...

More or less of land situated in the County of Riverside, State of California, more or less as follows:

PARCEL 1

Commencing at the Southeast corner of Section 1, Township 10 N., Range 12 E., Range 12 E., ...

PARCEL 2

Commencing at the ...

PARCEL 3

Section 1, Sections 12 to 17, inclusive, and Section 24, all in Township 10 South, Range 12 East and that portion of ...

PARCEL 4

A more or less of land in Township 10 South, Range 12 East and ...

PARCEL 9

A parcel of land situate in the County of Riverside, State of California, described as follows:

Section 35, Township 3 South, Range 16 East, San Bernardino Meridian; and a strip of land a quarter of a mile wide, more or less, in uncurved Government land, lying South of and adjoining the South line of said Section 35.

THAT said areas of land were used by the Department of the Army as artillery ranges and bombing areas in connection with maneuver training during the period April 1940 to April 1946.

THAT, although an attempt has been made to decontaminate and level said area, there may remain unexploded mines, bombs, shells, and other articles which might constitute a hazard to life, limb and property, and hence said area is considered to be dangerous for any purpose involving the use of said land below the surface area.

DATED this _____ day of _____ 1953.

John M. Liu
Lt. Colonel, Corps of Engineers

DESCRIBED AND SWORN TO BEFORE ME this _____ day of _____ 1953

[Signature]
Notary Public
in and for said County and State
1953

8555

FOR RECORD

7 1953

[Handwritten notes and signatures]
A. ROSS
17
80

PHOTOSTATED
COMPARED
BY *[Signature]*

SEP 30 1954

Recorded in Book 3463, Page 117
Official Records, San Bernardino
County, California

A F F I D A V I T

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES } SS

I, Robert M. Swartz, Lt. Colonel, G. E., Executive Officer of
the Los Angeles District, Corps of Engineers, U. S. Army, being
first duly sworn on oath depose and say as follows:

THAT the land hereinafter described was a part of the California-
Arizona Maneuver Area:

Twenty parcels of land in the County of San Bernardino, State
of California, described as follows:

PARCEL 1:

Sections 34 and 35, Township 13 North, Range 19 East;
Also Sections 2, 3, 10, 11 and 14, Township 12 North,
Range 19 East.

PARCEL 2:

Sections 1, 2, 11 and 12, Township 11 North, Range 18 East.

PARCEL 3:

The South 1/2 of Sections 2 and 3, the Southeast 1/4 of
Section 4; the East 1/2 of Section 9 and Sections 10, 11,
12, 13, 14, 23, 24, 25, 26, 32, 33, 34, 35 and 36, all in
Township 11 North, Range 19 East;

Also Sections 13 to 36 inclusive, in Township 11 North,
Range 20 East;

Also Sections 5, 6, 7 and 8, Township 10 North, Range 20 East;

Also Sections 1, 12 and the East 1/2 of Sections 2 and 11,
Township 10 North, Range 19 East.

PARCEL 4:

Sections 22, 27, 28, 33, 34 and the West 1/2 of Sections 23,
26 and 35, all in Township 11 North, Range 21 East;

Also Sections 4, 5, 8, 9, the East 1/2 of Sections 6 and 7,
the North 1/2 of Sections 16 and 17, and the Northeast 1/4
of Section 18, all in Township 10 North, Range 22 East.

PARCEL 5:

Beginning at the Northeast corner of Section 3, Township 10 North, Range 17 East (said section consisting of approximately 200 acres); thence West following section lines 3 miles to the Northwest corner of Section 5, Township 10 North, Range 17 East (said Section 5 consisting of approximately 257 acres); thence South following section lines 8-1/4 miles more or less to the Southwest corner of Section 17, Township 9 North, Range 17 East; thence East following section lines 5 miles to the Southwest corner of Section 18, Township 10 North, Range 18 East; thence Northeasterly in a direct line to the Northeast corner of said Section 18; thence Northwesterly in a direct line 8 miles more or less to the point of beginning.

PARCEL 6:

Sections 8 and 9, the North 1/2 of Sections 16 and 17, the West 1/2 of Section 10, the Southwest 1/4 and the South 1/2 of the Northwest 1/4 of Section 3; also the South 1/2 and the South 1/2 of the North 1/2 of Sections 4 and 5, all in Township 9 North, Range 20 East.

PARCEL 7:

Sections 1 and 12 of Township 9 North, Range 20 East; also Sections 6 and 7 of Township 9 North, Range 21 East.

PARCEL 8:

Beginning at the Northeast corner of Section 21, Township 9 North, Range 22 East; thence West following section lines 2 miles to the Northwest corner of Section 20, Township 9 North, Range 22 East; thence South 1/2 mile along the West line of said Section 20; thence West in a direct line 3 miles to a point in the West line of Section 23, Township 9 North, Range 21 East, 1/2 mile North of the Southwest corner of said Section 23; thence South following section lines 2-1/2 miles to the Southwest corner of Section 35, Township 9 North, Range 21 East; thence West following section lines 3 miles to the Northwest corner of Section 5, Township 8 North, Range 21 East; thence South following section lines 5-1/2 miles to a point where the East-West centerline of Section 32, Township 8 North, Range 21 East, intersects the West line of said Section 32; thence Southeasterly in a direct line 4 miles more or less to a point where the East-West centerline of Section 15, Township 7 North, Range 21 East intersects the West line of said Section 15; thence South in direct line 1-1/2 miles to the Southwest corner of Section 22, Township 7 North, Range 21 East; thence East following section lines 3 miles to the Southeast corner of Section 24, Township 7 North, Range 21 East; thence North following section lines 10 miles to the Southwest corner of Section 31, Township 9 North, Range 22 East; thence East in a direct line 1 mile to the Northwest corner of Section 5, Township 8 North, Range 22 East; thence South following section lines to the Southwest corner of Section 29, Township 8 North, Range 22 East; thence East following section lines 3 miles to the Southeast corner of Section 27, Township 8 North, Range 22 East; thence North following section lines 5 miles to the

X
Northeast corner of Section 3, Township 8 North, Range 22 East; thence West 1 mile to the Southeast corner of Section 33, Township 9 North, Range 22 East; thence North following section lines 3 miles to the point of beginning.

PARCEL 9:

That area lying on the south side of Granite Mountain Road described as follows:

Beginning at a point on the Granite Mountain Road which is intersected by the East line of Section 2, Township 8 North, Range 15 East; thence Southwesterly along said road for a distance of 10 miles more or less to a point which is intersected by the West line of Section 8, Township 8 North, Range 14 East; thence Southeasterly in a direct line a distance of $4\frac{1}{2}$ miles more or less to a point in the South line of Section 27, Township 8 North, Range 14 East distant 1500 feet West from the Southeast corner of said Section 27; thence Northeasterly in a direct line $2\frac{1}{4}$ miles more or less to the Northeast corner of Section 23, Township 8 North, Range 14 East; thence Northeasterly in a direct line 6 miles more or less to the Southeast corner of Section 11, Township 8 North, Range 15 East; thence North in a direct line $1\frac{1}{2}$ miles more or less to the point of beginning.

PARCEL 10:

Sections 22, 23, 26 and 27, Township 9 North, Range 15 East.

PARCEL 11:

Sections 17, 18, 19, 20, 29 and 30, Township 8 North, Range 16 East.

PARCEL 12:

Sections 25 and 36, Township 7 North, Range 11 East and Sections 28, 29, 30, 31, 32 and 33, Township 7 North, Range 12 East.

PARCEL 13:

X
Beginning at the Northeast corner of Section 8, Township 7 North, Range 13 East; thence Southwesterly in a direct line $3\frac{1}{2}$ miles more or less to a point on the South line of Section 13, Township 7 North, Range 12 East distant $\frac{1}{2}$ mile West from the Southeast corner of said Section 13; thence Southeasterly in a direct line $4\frac{1}{2}$ miles more or less to a point distant South 1500 feet and West 1500 feet from the Northeast corner of Section 4, Township 6 North, Range 13 East; thence Northeasterly in a direct line $3\frac{1}{2}$ miles more or less to the Northeast corner of Section 26, Township 7 North, Range 13 East; thence Northwesterly in a direct line $4\frac{1}{4}$ miles more or less to the point of beginning.

PARCEL 14:

Sections 27, 28, 33 and 34, Township 7 North, Range 15 East.

PARCEL 15:

Beginning at a point on the West line of Section 12, Township 8 North, Range 18 East distant 1320 feet South of the Northwest corner of said Section 12; thence Southwesterly in a direct line $12\frac{1}{2}$ miles more or less to a point on the South line of Section 5, Township 6 North, Range 18 East distant 1320 feet East from the Southwest corner of said Section 5; thence East following section lines $5\frac{3}{4}$ miles to the Southeast corner of Section 6, Township 6 North, Range 19 East; thence Northeasterly in a direct line $11\frac{1}{4}$ miles more or less to a point on the East line of Section 8, Township 8 North, Range 19 East distant 1320 feet North from the Southwest corner of said Section 8; thence Northeasterly in a direct line 3 miles more or less to the point of beginning.

PARCEL 16:

Beginning at the Southwest corner of Section 14, Township 6 North, Range 19 East; thence East following section lines 13 miles to the Southeast corner of Section 34, Township 6 North, Range 21 East; thence North following section lines 6 miles to the Northeast corner of Section 3, Township 6 North, Range 21 East; thence Northeasterly in a direct line 7 miles more or less to a point 1320 feet South and 1320 feet West from the Northeast corner of Section 14, Township 7 North, Range 20 East; thence West in a direct line $2\frac{1}{4}$ miles to a point in the West line of Section 16, Township 7 North, Range 20 East distant 1320 feet South of the Northwest corner of said Section 16; thence Southwesterly in a direct line $5\frac{1}{4}$ miles more or less to a point in the South line of Section 35, Township 7 North, Range 19 East distant $\frac{1}{2}$ mile from the Southeast corner of said Section 35; thence Southwesterly in a direct line $6\frac{1}{2}$ miles more or less to the point of beginning.

PARCEL 17:

Beginning at the Northwest corner of Section 29, Township 6 North, Range 16 East; thence South along the West line of said Section 29 and continuing in a direct line $5\frac{1}{2}$ miles more or less to a point where said line intersects the Danby-Chubbuck Road, said point lying within Section 19, Township 5 North, Range 16 East; thence Southeasterly along the east side of the Danby-Chubbuck Road $\frac{1}{2}$ miles more or less to the Southwest corner of Section 4, Township 4 North, Range 16 East; thence East following section lines 3 miles to the Southeast corner of Section 8, Township 4 North, Range 16 East; thence Northeasterly in a direct line 9 miles more or less to the Northeast corner of Section 27, Township 6 North, Range 16 East; thence West following section lines 3 miles to the point of beginning.

PARCEL 18:

Beginning at the Southeast corner of Section 12, Township 4 North, Range 18 East; thence Southwesterly in a direct line $5\frac{1}{2}$ miles more or less to a point where said line intersects the Danby-Chubbuck Road, said point lying within Section 19, Township 5 North, Range 16 East; thence Southeasterly along the east side of the Danby-Chubbuck Road $\frac{1}{2}$ miles more or less to the Southwest corner of Section 4, Township 4 North, Range 16 East; thence East following section lines 3 miles to the Southeast corner of Section 8, Township 4 North, Range 16 East; thence Northeasterly in a direct line 9 miles more or less to the Northeast corner of Section 27, Township 6 North, Range 16 East; thence West following section lines 3 miles to the point of beginning.

to the East line of said Township and range a distance of 5 miles; thence West in a direct line 5 miles to the Northeast corner of Section 24, Township 5 North, Range 19 East; thence South following section lines 5 miles to the point of beginning.

PARCEL 19:

Beginning at the Northwest corner of Section 30, Township 4 North, Range 23 East; thence South following section lines 9 miles to the Southeast corner of Section 1, Township 2 North, Range 22 East; thence East in a direct line 2 miles into unsurveyed Government land along the Easterly prolongation of the South line of said Section 1; thence South and parallel to the East line of said township and range a distance of 2 miles; thence East and parallel to the North line of said township and range a distance of 7 miles; thence North in a direct line 11 miles to the Northeast corner of Section 26, Township 4 North, Range 24 East; thence West following section lines 9 miles to the point of beginning.

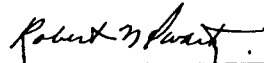
PARCEL 20:

The Northwest 1/4 of Section 19, Township 1 North, Range 22 East.

THAT said parcels of land were used by the Department of the Army as artillery ranges and bombing areas in connection with maneuver training during the period April 1942 through April 1946.

THAT, although an attempt has been made to decontaminate and dedud said areas, there may remain unexploded mines, bombs, shells and other missiles which might constitute a hazard to life, limb and property and hence said areas are considered to be dangerous for any purpose involving the use of said land below the surface area.

DATED this 13th day of September 1954.


ROBERT W. SMART
Lt. Col., Corps of Engineers

SUBSCRIBED AND SWORN TO BEFORE ME this 13th day of September 1954.


Notary Public
in and for said County and State

ADDRESS ONLY TO:
DISTRICT ENGINEER
LOS ANGELES DISTRICT
CORPS OF ENGINEERS
R. M. BOX 15237 - FOX STATION
LOS ANGELES 12, CALIFORNIA

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DISTRICT ENGINEER
LOS ANGELES DISTRICT
751 SOUTH FIGUEROA STREET
LOS ANGELES 17, CALIFORNIA

REFER TO FILE NO. SPLRO 602 (CAMA - Dedidding)

28 September 1954

Land Office
Department of Interior
Federal Building
Los Angeles, California

Gentlemen:

Inclosed for your information are copies of Affidavits which have been recorded in Riverside and San Bernardino Counties at the request of this office.

Your attention is especially invited to the last two paragraphs of these Affidavits.

FOR THE DISTRICT ENGINEER:

Very truly yours,



JOHN HOUSTON
Chief, Management & Disposal Branch
Real Estate Division

4 Incls:

- #1. Affidavit recorded in Book 3218, Page 539
- #2. Affidavit recorded in Book 1490, Page 192
- #3. Affidavit recorded in Book 3463, Page 117
- #4. Affidavit recorded in Book 1632, Page 283

AFFIDAVIT

STATE OF CALIFORNIA)
) SS
 COUNTY OF LOS ANGELES)

I, IRVIN M. RICE, Lt. Colonel, C. E., Executive Officer of
 the Los Angeles District, Corps of Engineers, U. S. Army, being
 first duly sworn, on oath depose and say as follows:

THAT the land hereinafter described was a part of the
 California-Arizona Mopawar Area:

Eight parcels of land in the County of San Bernardino, State
 of California, described as follows:

PARCEL 1:

Beginning at the Northwest corner of Section 18,
 Township 1 North, Range 18 E. 1, S. E. 1/4, thence East
 a distance of approximately 3 miles along section lines
 to the Northwest corner of Section 18, Township 1 North,
 Range 18 East; thence South a distance of approximately
 7 miles following section lines to the South of corner
 of Section 18, Township 1 South, Range 18 East; thence
 West approximately 1 mile following section lines to
 the Northeast corner of Section 20 in East and Township
 and Range; thence South 1 mile to the Southeast corner
 of said Section 20; thence West approximately 1-3/4 miles
 along section lines to the top of the steep slope of the
 Grand Mountain; thence in a general Northwesterly
 direction along said top of slope a distance of approximately
 6 miles through Section 15 of East and Township and Range
 and through Sections 08 and 13 of Township 1 South, Range
 18 East to the West 1/4 of East and Section 13; thence
 North following section lines a distance of approximately
 4-3/4 miles to the place of beginning.

PARCEL 2:

Section 14 and Sections 17 to 27 inclusive in Township
 2 North, Range 17 East.

Also Section 12 and Sections 09 to 20 inclusive in
 Township 0 North, Range 18 East.

PARCEL 3:

Section 4, Township 0 North, Range 18 East; Sections
 09 to 20 inclusive, Township 0 North, Range 18 East; also
 a parcel of land adjoining said Section 4 on the West and
 Northwest described as follows:

3218 540

Beginning at the Southwest corner of Section 6, thence West 5000 feet, thence North 5000 feet, more or less to the North line of Township 2 North, Range 17 East, thence East along said North line to the Northeast corner of said Township, thence South along the East line of said Township to the point of beginning. Also a parcel of land situate in Township 2 North, Range 17 East, described as follows:

Beginning at a point on the South line of said Township distant West 5000 feet from the Southwest corner of said Township, thence North 5000 feet, thence East 5000 feet, more or less, to the East line of said Township, thence South along said East line to the said Southwest corner, thence West along said East line to the point of beginning.

PARCEL 4:

Section 10, 11, 20 and 21 in Township 2 North, Range 17 East.

PARCEL 5:

The West 1/2 of Section 2 North, Range 17 East, and Section 10, 11, 20 and 21, Township 2 North, Range 17 East.

Also a parcel of land situate in said Township 2 North, Range 17 East, described as follows:

Beginning at the Southwest corner of said Section 10, thence North 5000 feet, thence East 5000 feet, more or less, to the East line of said Township, thence South along said East line 10,000 feet, thence West 10,000 feet, more or less, to the Southwest corner of said Section 10, thence North 5000 feet, thence East 5000 feet, more or less, to the point of beginning.

PARCEL 6:

A parcel of land situate in Township 1 North, Range 17 East, described as follows:

Beginning at the Southwest corner of Section 10 in the South 1/2 of Township 1 North, Range 17 East, thence East along said East line to the Southwest corner of Section 10 of said Township, thence South 5000 feet, thence West 5000 feet, more or less, to the South East corner of Section 6, Township 1 North, Range 17 East, thence South along the West line of said Township to the Southwest corner of Section 10 of said Township, thence East, 10,000 feet, thence North 5000 feet, thence West 5000 feet, thence North along a direct line to the point of beginning.

3218 541

PARCEL 7:

A parcel of land situate in Township 1 North, Range 20 East, described as follows:

Beginning at the Southwest corner of Section 10, Township 1 North, Range 19 East; thence East 3 miles; thence South 4 miles, more or less, to a point on the South line of First rail Township; thence West along said South line 3 miles, more or less, to the Southwest corner of said Township; thence North along the West line of said Township to the point of beginning.

PARCEL 8:

A parcel of land situate in the County of San Bernardino, State of California, described as follows:

Section 15, Township 1 North, Range 21 East, San Bernardino Meridian.

Also the square mile of land lying directly West of and adjoining the West line of said Section in unswayed Government land.

THAT said areas of land were used by the Department of the Army as artillery ranges and bombing areas in connection with maneuver training during the period April 1940 to April 1946.

THAT, although an attempt has been made to decontaminate and collect said areas, there may remain uncollected mines, bombs, shells, and other missiles which might constitute a hazard to life, limb and property, and hence said areas is considered to be hazardous for any purpose involving the use of said land below the surface area.

DATED this _____ day of _____, 1953.

John M. Lu
Lt. Colonel, Corps of Engineers

SUBSCRIBED AND SWORN TO BEFORE ME this _____ day of _____, 1953.

SEAL

REQUEST OF

310

MAR 5 3 54 PM '53
3218 539

Notary Public
in and for said County and State

A F F I D A V I T

STATE OF CALIFORNIA)
) SS
COUNTY OF LOS ANGELES)

I, Robert N. Swarts, Lt. Colonel, C. E., Executive Officer of
the Los Angeles District, Corps of Engineers, U. S. Army, being
first duly sworn on oath depose and say as follows:

THAT the land hereinafter described was a part of the California-
Arizona Maneuver Area:

Six parcels of land in the County of Riverside, State of
California, described as follows:

PARCEL 1:

Beginning at the Southeast corner of Township 1 South,
Range 15 East; thence South 7 miles along the prolongation
of the East line of said township and range; thence East
4 miles along a line parallel to the South line of said
township and range; thence North 7 miles along a line
parallel to the first above mentioned line; thence
Westerly in a direct line 4 miles more or less to the
point of beginning. (This entire parcel consists of
unsurveyed Government land.)

PARCEL 2:

Beginning at the Southeast corner of the above described
Parcel 1 and proceeding South in a direct line 1 mile
along the prolongation of the East line of said Parcel 1
to the true point of beginning; thence continuing South
along said line 4 miles; thence West in a direct line
running at right angles to the last above mentioned line
for a distance of 2 miles; thence North in a direct line
running parallel to the first above mentioned line for a
distance of 4 miles; thence East in a direct line 2 miles
more or less to the true point of beginning. (This entire
parcel consists of unsurveyed Government land.)

PARCEL 3:

Sections 2 through 11, inclusive, Sections 15, 17, 18, 20,
21, 28 and 35; also the North 1/2 and Southeast 1/4 of
Section 19, the Northeast 1/4 of Section 30 and the North
1/2 of Section 34, all in Township 5 South, Range 15 East.

Also the North 1/2 and the Southwest 1/4 of Section 24,
Township 5 South, Range 14 East.

PARCEL 4:

Section 29, Township 5 South, Range 14 East, Except Metropolitan Water District Right of Way, Kaiser Railroad Right of Way, Colorado River Aqueduct Right of Way.

Section 31, Township 5 South, Range 14 East, Except South 1/2 of Lot 2 and Metropolitan Water District Right of Way and Kaiser Railroad Right of Way.

Section 33, Township 5 South, Range 14 East, Except State Highway Right of Way.

PARCEL 5:

Sections 21, 22, 23, 26, 27, 29, 33, 34 and 35 all in Township 6 South, Range 12 East; also the North 1/2 of Section 3, Township 7 South, Range 12 East.

PARCEL 6:

Sections 25 through 36, inclusive, Township 6 South, Range 11 East; also Sections 30, 31 and the South 1/2 of Section 19, Township 6 South, Range 12 East.

THAT said parcels of land were used by the Department of the Army as artillery ranges and bombing areas in connection with maneuver training during the period April 1942 through April 1946.

THAT, although an attempt has been made to decontaminate and demolish said areas, there may remain unexploded mines, bombs, shells and other missiles which might constitute a hazard to life, limb and property and hence said areas are considered to be dangerous for any purpose involving the use of said land below the surface area.

DATED this 20th day of September 1954.

Robert H. Schwartz
ROBERT H. SWARTZ
Lt. Col., Corps of Engineers

SUBSCRIBED AND SWORN TO BEFORE ME this 20th day of September 1954.

David M. Estling
Notary Public
in and for said County and State



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
NEEDLES RESOURCE AREA OFFICE
101 WEST SPIKE'S ROAD
P.O. BOX 888
NEEDLES, CALIFORNIA 92363-0888
619/326-3896
NOV 09 1993

IN REPLY REFER TO:

1703
(CA-069.R5)

EBASCO Environmental
3000 West MacArthur Boulevard
Santa Ana, California 92704-6993

Dear Mr. Kepford:

As per your request, enclosed are copies of four Incident Reports that refer to military explosives found in our area.

Additionally, I am aware of one incident that involved military explosives found along US 95 at the Nevada/California state line.

Sincerely,

Richard E. Fagan
Area Manager

Enclosures

United States Department of Interior
 Bureau of Land Management
 California State Office



INCIDENT REPORT

NO. CA-069-80-22
 AREA Cima R.A.

INCIDENT Explosive Ordinance found 45-05-03 60-01-00	DATE-TIME OCCURED 15 March 80
LOCATION Kelbeck Hills	T & R T. 2 N., R. 16 E. Sec. 25
REPORTED BY Jim Wells/Jim Mosses	DATE-TIME REPORTED 16 March 80 1100
ADDRESS Barstow R.A.	PHONE 326-3896
HOW REPORTED Verbal	RECEIVED BY Ranger Heskett

PERSONS INVOLVED	ADDRESS	PHONE	SEX-RACE-DOB
Mosses, Jim	Barstow R.A.	256-3591	
Wells, Jim	A.M.A.		

VEHICLES INVOLVED
 N/A

DETAILS:
 15 March 80 - Mosses and Wells while laying out a motorcycle course near the Iron Moutain area discovered an old Anti Tank Mine. They reported the discovery to Ranger Heskett.

Mine is described as 12" in diameter and 3" thick. Exterior is rusted except for 2" brass primer on top side. Located in a wash in the lower left quarter of Sec. 25, Cadiz Valley Quad.

Photos were taken and mine was marked with Red/White ribbon.

Information will be turned over to Military Explosive Ordinance Disposal Units.

17 March 80 1600 hours - Military E.O.D. Units contacted from 29 Palms Marine Corps Base and Fort Irwin. 29 Palms Marine E.O.D. responding to retrieve military ordinance Seargent Coble in charge.

REPORT BY: Heskett R.I. DATE: 16 Mar. 80 REVIEWED BY: *J. Heskett* DATE: 3/21/80
 Copy To: (1) E.O.D. (2) Dist. Eng. CSO 6260-11 6177

CIA-069-84-00

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CALIFORNIA STATE OFFICE

IN: CODE 26-0223
IN: NO: 1846

HAZARD INVENTORY

Area Identification Number: 69161

Location of Hazard:

SAN BERNARDINO County
NEEDLES Resource Area
_____ Planning Unit

30 Sec. 3N T. 2-3 R. SR Mer.

Distance and direction from nearest service
or town: 12 miles from VIDAL
TECT

Land Status (from Statement of Search):
 Permit Lease Private Lands
 License Easement Withdrawn
 National Resource Lands
 Other Government (describe): MINING

Primary Use of Surrounding Land:
 Occupancy Mining Grazing Forestry Recreation Watershed

Recommended Action (Examiner):

ELIMINATE DELINEATE
 Fill Fall Remove Fence Barricade Post Signs
 Bury Burn
 Other (describe): EOD Other (describe): _____

Recommended Equipment:

Hand Tools (describe) Power Tools (describe) Equipment (describe)
_____ EOD WILL
SUPPLY

Estimated Manhours Required: 5HR

Remarks: WAS REMOVED OF ON BY FORT
TOWN EOD CIV 8-17-84

Date: _____ Examiner: _____

Recommended Action (Area Manager): Jerry Neely - Chief Ranger

Date: _____ Area Manager: _____

Hazard Code: _____ Priority: _____
Hazard Inventory Number: _____
THIS BOX TO BE COMPLETED BY DISTRICT

Description of Hazard: UNEXPLODED
SHELL FROM WWII
PATTON TRAINING

Hazard Rating:
 Extreme High Moderate Minor

Number of Known Accidents at Hazard Site: _____

Access to Hazard:
 Public Road Private Road Trail
 Hard Surface Road Motorcycle
 Gravel Road 2 WD Vehicle
 Foot Only 4 WD Vehicle

2033


25 April 1985

RECEIVED
BUREAU OF LAND MANAGEMENT
1985 MAY -7 AM 8:48
NEEDLES RESOURCE AREA
NEEDLES, CA

1. Inclusive Dates: 17 -24 April 1985.
2. Location: Needles, California.
San Diego, California.
3. Purpose: Perform initial site visits for two potential DERP Projects.
4. Name of Travelers: Robert D. Dempsey
R. Frank Shearer
5. Persons Contacted: Everell G. Hayes, USDDI-BLM Area Manager
Jerry Needy, USDDI-BLM Lead Ranger
Bob Ausmus, Cima General Store, Cima, CA
6. Narrative:
 - a. The USDDI-BLM Needles Resource Area encompasses an area approximately 125 by 150 miles and over 5,000,000 acres in the Mohave Desert. The entire area was used by DOD as a training and maneuver area during the 1942-1944 timeframe. Eight division size Camps and two Army Airfields were set up within the boundaries of this BLM Resource Area. Over 1,000,000 men were trained in these facilities. Training facilities included small arms, anti-aircraft, tank, artillery, air to ground gunnery, air to air gunnery, and bombing ranges. A large part of this area was also used for Operation Desert Strike in 1961-1962.
 - b. Two large scale ordnance disposal and clearing operations have been performed previously. The first of these was conducted using prisoners of war during 1943-1946. The second was conducted between 1947 and 1952 under the supervision of the US Army Corps of Engineers. Exact records of these clearance activities have not been located. A 1951 USACE Map of the area indicates large areas that were deduded and cleared but which should still be restricted from future subsurface development or operations.
 - c. Reports of findings of ordnance items occur one to four times per year at random sites throughout the resource area. In 1980 erosion uncovered approximately 80 tons of ordnance items that most likely were the buried remains of one of the early ordnance clearing operations. This ordnance had previously been burned or exploded and the remains buried. This material was transported to an abandoned mine shaft and buried once again on 16 Sep 80.
 - d. The BLM request for a DERP Project in this area indicated that a public visitor had found near the West Riverside Mountains a sign that stated that poison gas had been buried at that location. Ranger R. Frank Shearer, and Bob Ausmus performed a working search of the entire area where the sign had been reported. The sign could not be located and there was no

details of this site visit. Within this Division, Mr. Robert D. Dempsey will be responsible for coordination of this visit. He may be reached by telephone at (205) 895-5785 or FTS 873-5785.

Sincerely,



M. M. Dembo

Acting Chief, Engineering Division

Copies Furnished:

Commander, U. S. Army Engineer Division, South Pacific, ATTN:
SPDCO-E (Mr. A. Mei), 630 Sansome Street, San Francisco,
California 94111

Commander, U. S. Army Engineer District, Los Angeles, ATTN: SPLED
(Mr. L. Jauman), PO Box 2711, Los Angeles, California 90053

Commander, U. S. US Army Engineer District, Los Angeles, Arizona
Real Estate Office, 2721 N. Central Avenue, Suite 1010, Phoenix,
Arizona 85005

Commander, U. S. Army Corps of Engineers, ATTN: DAEN-ECE-B, 20
Massachusetts Avenue, N. W., Washington, D. C. 20314-1000

United States Department of Interior
 Bureau of Land Management
 California State Office



INCIDENT REPORT

NO. CA-069-80-48
 AREA Cima R.A.

INCIDENT Assist Military, Weapons (46-10-05)	DATE-TIME OCCURED 9-15-80, 0830 hours
LOCATION Goffs Butte (69355)	T & R T. 9 N., R. 18 E., Sec. 10
REPORTED BY Needles Search and Rescue Team	DATE-TIME REPORTED 4-8-80, 0800 hours
ADDRESS Needles, CA	PHONE 326-4515
HOW REPORTED E.O.D. Fort Irwin	RECEIVED BY Ranger K. Freeman

PERSONS INVOLVED	ADDRESS	PHONE	SEX-RACE-DOB
N/A			

VEHICLES INVOLVED
 N/A

DETAILS: On 4-28-80, I was contacted by Ft. Irwin's E.O.D. team concerning a report they had received from Needles Search and Rescue Team of a 1943-1945 military explosives dumpsite located near Goffs Butte. Note attached form DA 3265-R. Sgt. Redman of E.O.D. and Art Hayes of BLM, met me at the site a few days later and determined the project was too immense to begin without additional equipment and would have to be re-scheduled.

After a considerable amount of planning, two E.O.D. Tech's from Ft. Irwin, Art Hayes, 1 backhoe and 2 dump trucks with operators from Phillips Construction Co. of Needles, and myself, met at the dumpsite location on 9-15-80 to begin the project of determining the explosives degree of danger and removing them to a safer location. Approximately 80 tons of ordnances including rockets, gernades, and land mines were uncovered from a 30' X 30' X 6' area with most of them found to be safe. The explosives were then transported to an abandoned excavation (T. 10 N., R. 20 E. Sec. 34) and buried.

REPORT BY: *Kenn Freeman* DATE: *9-17-80* REVIEWED BY: DATE:

United States Department of Interior
Bureau of Land Management
California State Office
SUPPLEMENTAL
INCIDENT REPORT



NO. CA-069-80-48
AREA Cima R.A.

INCIDENT	Assist Military, Weapons	DATE-TIME OCCURED	9-15-80, 0830 hours
LOCATION	Goffs Butte	T & R	T. 9 N., R. 18 E., Sec. 10

The project was completed in 2 days leaving the original dumpsite free of ordnances and well-graded to enhance the landscape. A clean-up of the excavation area was conducted the following day.

A reporter from Needles Desert Star, Mike Perry occompanied me to the site on 9-16-80 to obtain photographs and a story for a future article. BLM photographs were obtained.

Cleared 9-17-80

SECTION A: INITIAL INFORMATION

5. DATE/TIME REPORTED	9. INCIDENT LOCATION San Bernardino S.D., Needles, CA	11. ITEM(S) REPORTED 40EA M1 LAND MINES 40EA Rifle Grenades 30EA 2.36 Rockets
6. REPORTED BY Capt B. Lutes	10. WHO TO CONTACT Dep. Dave Bland Dep. Buck Lutes	
7. PHONE NUMBER		
8. ADDRESS S.B. Co. 50 Needles CA		

SECTION B: ACTION BY EOD

12. PERSONNEL DISPATCHED Sp5 Davis Sp4 Switzer	13. DATE/TIME 28 APR 0530 hrs 80	14. TRAVEL DATA	15. MAN-HOURS 27
	A. DEPT 0530	A. AIR-FLYING TIME	A. TRAVEL 21
	B. ARR 0800	B. VEH-MILEAGE 300	B. INCIDENT 16
16. CONFIRMED IDENTIFICATION 43EA; 2.36" Rockets, Practice, expended 5LEA; M19 type Rifle Grenades 67EA; M1 Practice D-P Land Mines, <u>EMPTY</u>		17. DISPOSITION Disposal at S.D. Selected Site	

18. INCIDENT NARRATIVE (INCLUDE ALL SIGNIFICANT DETAILS AND PROBLEMS)

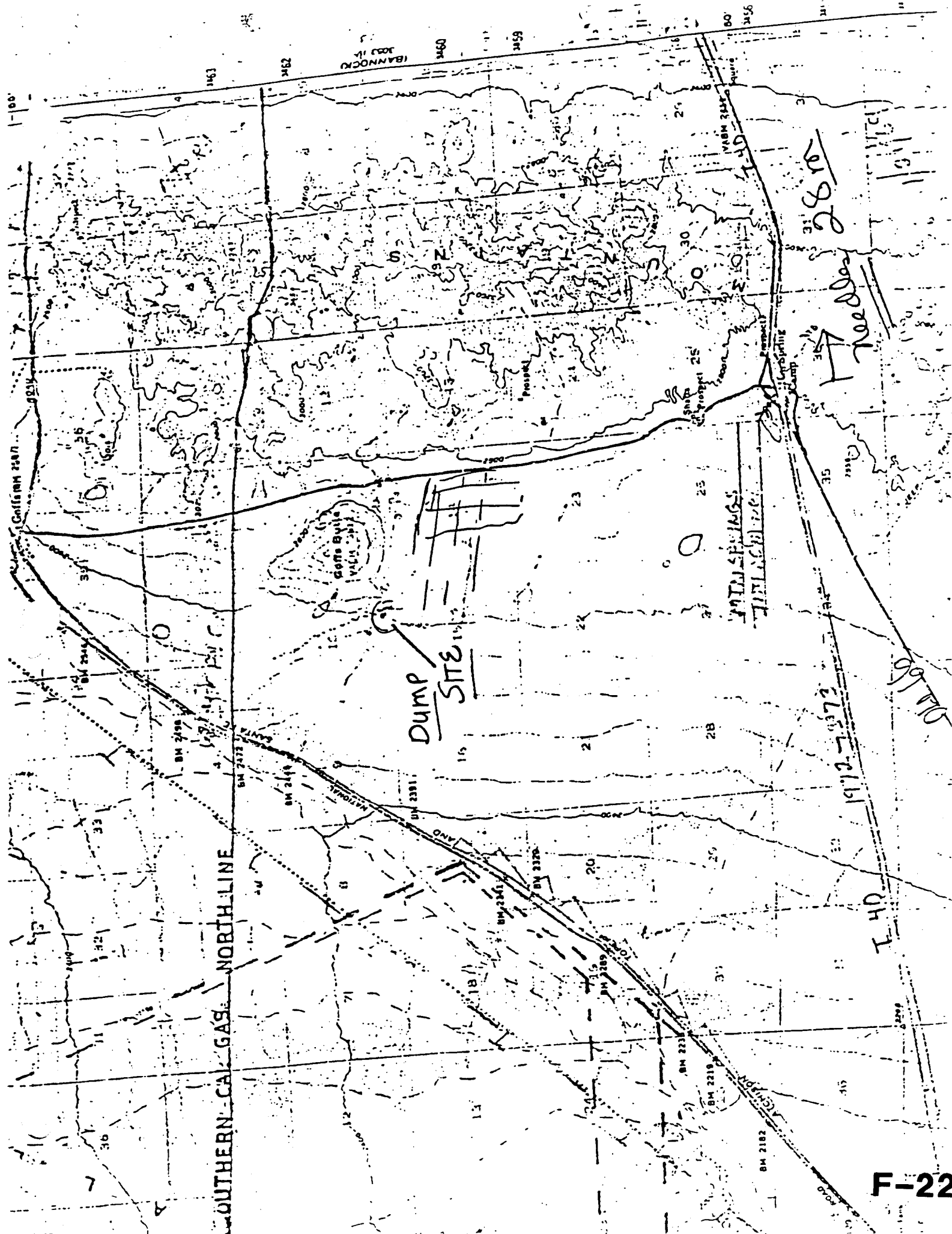
Above listed items were recovered by Sheriff S:R team from BLM property near Holt, Calif. A survey of that site by this team disclosed about 200+ ordnance items above surface and unknown quantity below surface. The area was a former wartime Army camp that was reported clear by POW's between 1943-45 by Army Corps of Engineers and certified for Public use. (as noted by eff. mins DoE DTD ^{APPROX} 1951)

It appears this armis burial ground was selected at the foot of a mountain in a wash area that eventually uncovered the ordnance. Recommend the ordnance be recovered by the Govt or re-buried to prevent public circulation. This area is popular desert RV use area.

See attached map

19. AUTHENTICATION

A. TYPED NAME, GRADE OF UNIT COMMANDER	B. TELEPHONE NO.	C. DATE



SOUTHERN CAL GAS NORTH LINE

DUMP SITE

GOLF BULL VALLEY

MADISON SPRINGS
MADISON

1912-1973

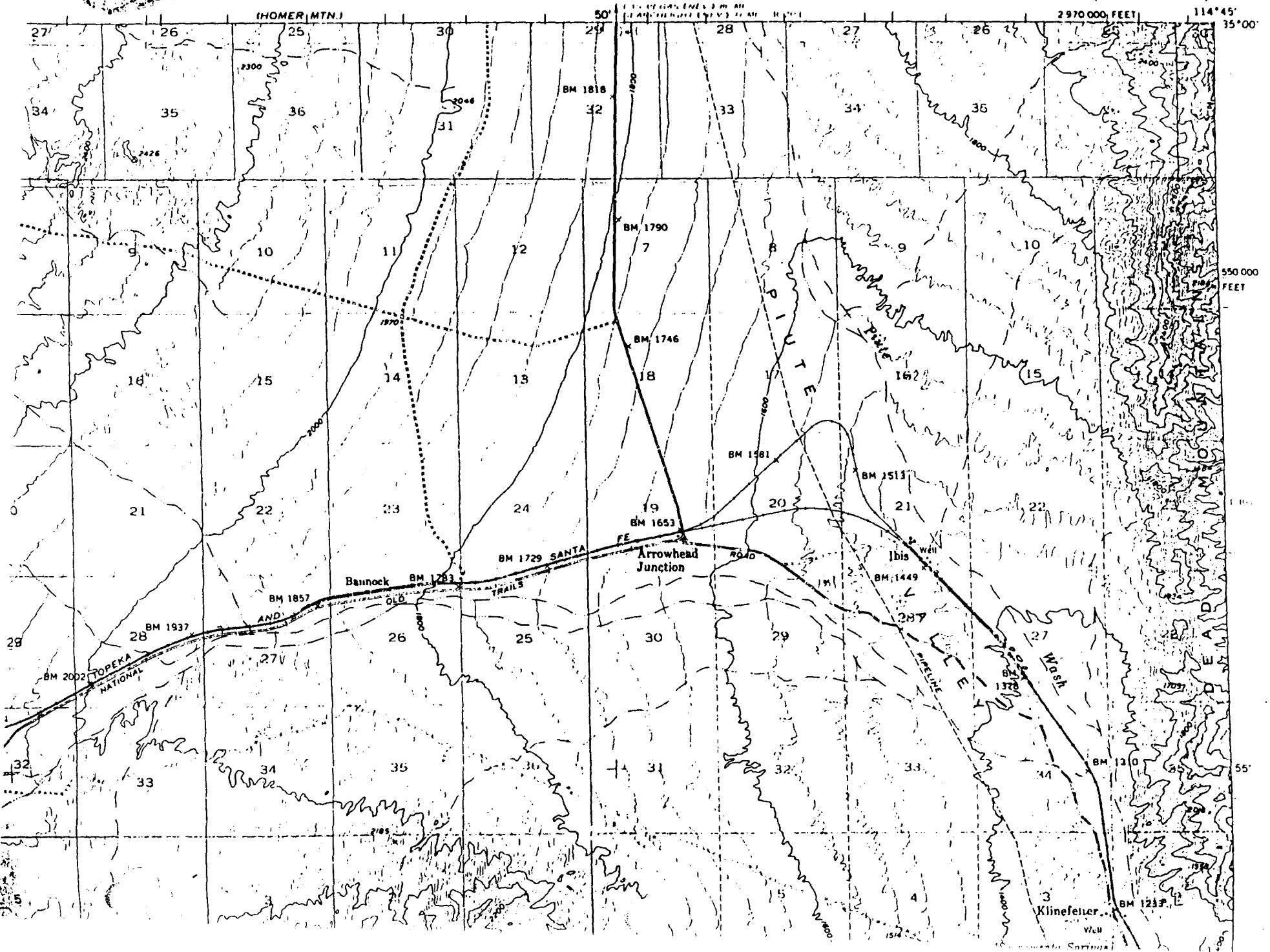
Needle

288

T.H.D.

STATE OF CALIFORNIA
REPRESENTED BY THE
DIRECTOR OF WATER RESOURCES

BANNOCK QUADRANGLE
CALIFORNIA-SAN BERNARDINO CO.
15 MINUTE SERIES (TOPOGRAPHIC)

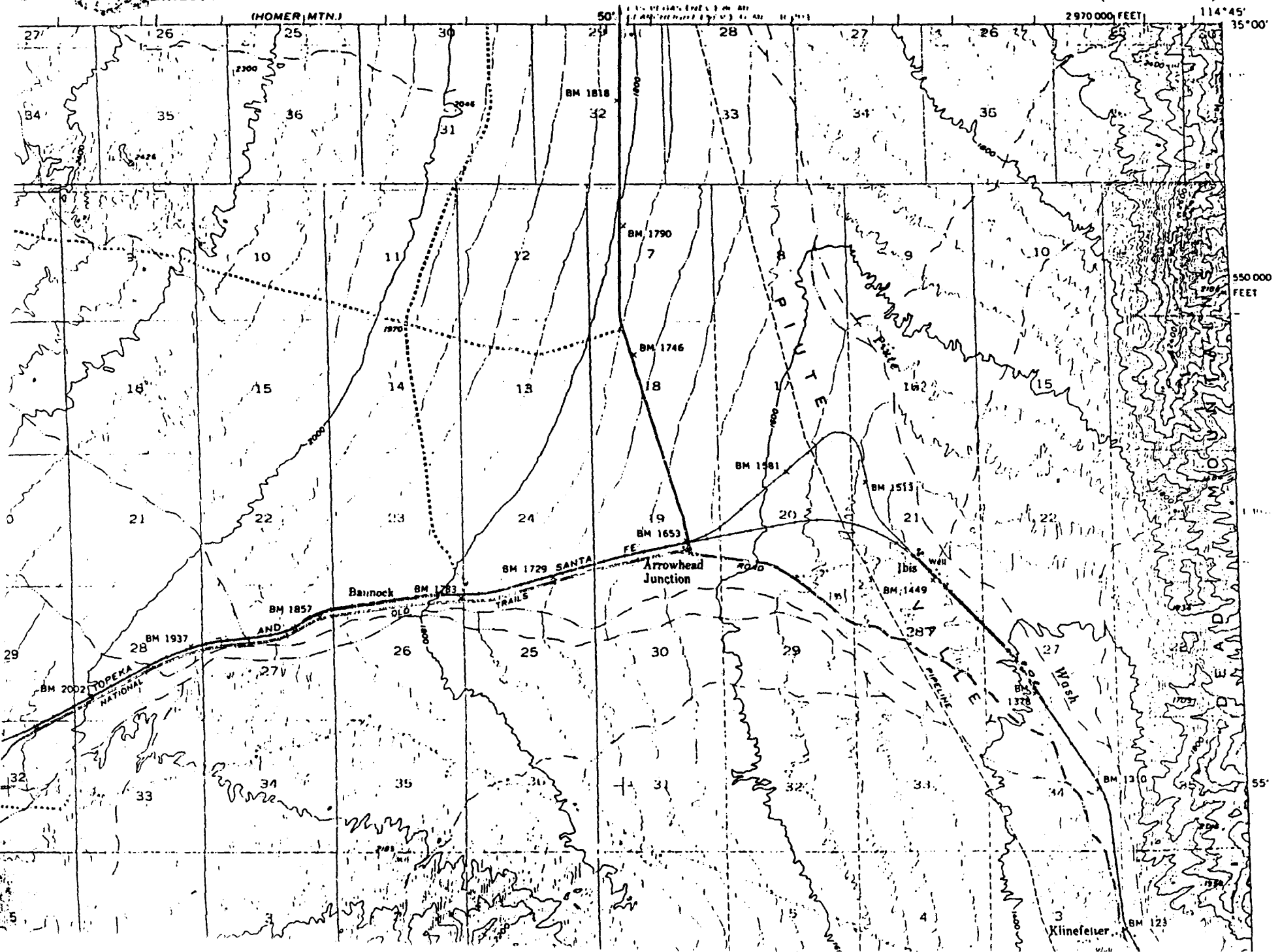


STATE OF CALIFORNIA
REPRESENTED BY THE
DIRECTOR OF WATER RESOURCES

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CALIFORNIA-SAN BERNARDINO CO.
15 MINUTE SERIES (TOPOGRAPHIC)

DAVIS L

F-22



A History of Large Scale Army Maneuver
in the United States, 1935-1964
By JEAN R. MOENK Dec. 1969

Exercise DESERT STRIKE

Exercise DESERT STRIKE was an unfunded, unprogramed, joint training exercise conducted by the U.S. Strike Command during the period, 17 to 30 May 1964, to satisfy a requirement developed by the Joint Chiefs of Staff. At the time the JCS approved the concept for DESERT STRIKE, all exercises remaining in the U.S. Strike Command's FY 1964 joint exercise program had been cancelled, with the exception of a brigade level CPX/FTX. Exercise DESERT STRIKE was to be a 2-sided, semi-controlled joint Army-Air Force field training exercise which would permit the forces of the U.S. Strike Command to become familiar with the concepts and doctrines associated with the large-scale employment of nuclear weapons. Its major purpose was to train the major combat organizations, as well as combat support and combat service support units, of USARSTRIKE and USAFSTRIKE in the conduct of joint operations employing tactical nuclear as well as conventional weapons. The exercise also would train Army and Air Force troop units and individuals in passive and active Electronic Counter Measures and Electronic Counter Counter Measures; stress joint and unilateral intelligence operations in support of joint conventional and nuclear warfare; and evaluate appropriate concepts, operations, and procedures having a joint interest.⁵⁶

Exercise DESERT STRIKE was conducted in the desert maneuver area used in World War II which was located in western Arizona, southern California, and the southern tip of Nevada. This vast area was used to depict two fictitious world powers, CALONIA on the west and NEZONA on the east, whose common border extended from Mexico on the south (played as a neutral country) along the Colorado River to Las Vegas in the north (Map 20). Armed conflict resulted from a dispute over water rights, with CALONIA's armed forces represented by Joint Task Force MOJAVE and NEZONA's by Joint Task Force PHOENIX. An important innovation of this exercise was the creation of an official War Cabinet for each country. In view of the importance of nuclear play in the conduct of the exercise and the necessity for testing a means to limit escalation, the physical presence of a War Cabinet as a decision maker lent realism to political direction as well as to judgment as to when nuclear or chemical weapons should be used.⁵⁷

56

(1) Ltr, CINCSRIKE to CINAFSTRIKE, 19 Aug 64, subj: Final Report of USSTRICOM Joint Exercise DESERT STRIKE. In ODCSOPS Ops Div files. (2) USCONARC Stf Study, 1 Dec 64, subj: DESERT STRIKE. (3) Semiannual Hist Rept, ODCSUTR Ops Div Mvr Br, Jan - Jun 64, pp. 18 - 19.

57

U. S. Army Military History Institute

HEADQUARTERS SIXTH UNITED STATES ARMY
PRESIDIO OF SAN FRANCISCO, CALIFORNIA 94129

IN REPLY REFER TO:
AMEDS

23 July 1964


SUBJECT: Final Report, Joint Exercise DESERT STRIKE (RCS ATUIR-368)

TO: Commanding General
United States Continental Army Command
Fort Monroe, Virginia
ATTN: ATUIR-P&O (Maneuvers Branch)

Attached final report of ARSTRIKE Action Agent, Joint Exercise DESERT STRIKE, is forwarded in accordance with paragraph 2, Appendix XI to Annex L, USCONARC Training Directive, dated 17 February 1964.

FOR THE COMMANDER:

1 Incl
as

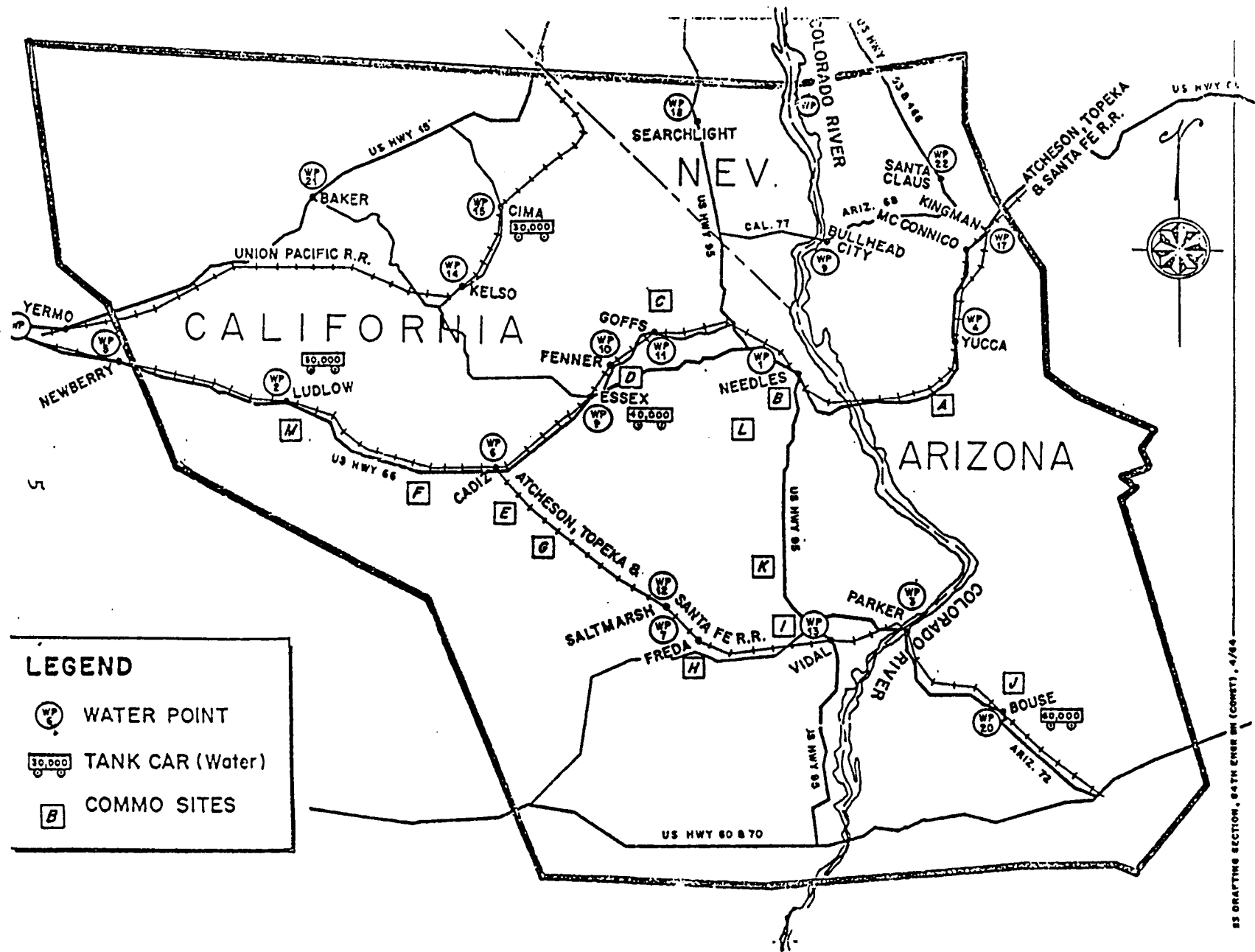

P. J. BROWN
Colonel, AGC
Adjutant General

DISTRIBUTION:

A, C, D(2.1), E, J(6,7) 2 ea
Addressees listed in Appendix XVI,
Annex L to USCONARC Training
Directive, 17 February 1964

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US ARMY WAR COLLEGE
CARLISLE BARRACKS, PA.

F-24



25 DRAFTING SECTION, 84TH ENGINE BN (COMM), 4/64

F-24

FINAL REPORT
JOINT EXERCISE DESERT STRIKE

SUPPORT UNITS

<u>UNIT</u>	<u>STRENGTH</u>	<u>SUPPORT FURNISHED</u>
<u>AVIATION-AVN MAINT</u>		
4th Avn Bn*	241	Avn supt for Dir Hq, Ump/Cont, NF
Co E, 704th Maint Bn	50	2d & lmtd 3d ech acft maint supt, 4th Avn Bn
217th TC Bn (Acft Maint)(ARNG)	557	Backup 3d & 4th ech acft maint, all exer units
SUB TOTAL	<u>848</u>	
<u>ENGINEER</u>		
30th Eng Det(WP)	4	Operate NF water supply points
35th Eng Bn(C)	622	Initially augment 84th Eng Bn; asgd JTF during exer; post-exer damage repair
84th Eng Bn(Const)*	795	Build tent city; operate NF water sup pts; pre-exer survey; damage repair
506th Eng Det(Util)*	27	Maintain util at NF FSPs & Needles
582d Eng Det(FFG)	18	Fire protection at 2 NF FSPs
593d Eng Gp HHC (S&M)*	37	Staff office of Dir, S&M, Hq NF & NF FSPs
593d Eng Det(FFG)*	18	Fire protection at Needles & Ludlow
SUB-TOTAL	<u>1,521</u>	
<u>ORDNANCE</u> ←		
1st Ord Co(GAS)	189	Backup 3d & 4th ech auto maint, Dir Hq, CSE, Ump/Cont, NF USAR equip pool
19th Ord Co(DAS)	119	Operate DX facility; 3d ech maint for Dir Hq, CSE, Ump/Cont, NF, USAR equip pool
63d Ord Bn HHD (Maint Supt)	35	
133d Ord Det(ED)	7	Fire atomic simulators; explosive ← disposal
170th Ord Det(ED)	7	Fire atomic simulators; explosive ← disposal
SUB-TOTAL	<u>357</u>	
<u>QUARTERMASTER</u>		
16th QM Bn	274	Operate 3 NF FSPs (Class I & III resupply; field maint, salvage
* Unit hq personnel also utilized as members of NF staff		

FINAL REPORT
JOINT EXERCISE DESERT STRIKE

SECTION III - OPERATIONS

1. Land Acquisition: ←

a. CG Sixth US Army, as personal representative of CG USCONARC for land acquisition matters, briefed governors, mayors, civic leaders, etc., during the period 13-18 November. Information presented included:

(1) Purpose and scope of the exercise.

(2) Facilities, such as house, barn, corral, plowed or planted fields, etc., which exercise troops would not be permitted to use.

(3) Damage control measures.

(4) Claims procedures.

b. The Los Angeles District Engineer, charged with primary responsibility for land acquisition, effected the initial public news release (prepared by USSTRICOM) on 18 November 1963. Dispatch of letters to the 4,373 land owners involved was initiated on the same date. Final results of the land acquisition program are summarized as follows:

(1) Of the estimated 12,500,000 acres for which maneuver permits were requested, signed agreements were received granting permission to use 12,204,481 acres (98%).

(2) Only 24 of the 4,373 land owners contacted ($\frac{1}{2}$ of one percent) specifically refused use of their property for exercise purposes.

c. Upon conclusion of the exercise, letters were dispatched by CG Sixth US Army to all land owners, expressing appreciation for their cooperation and contribution to the success of the exercise.

2. Deployment/Redeployment.

a. Deployment of Neutral Force units was accomplished in accordance with movement schedules developed by Hq Sixth US Army and approved by Hq USCONARC. Deployment of player units was accomplished in accordance with letter, Hq, USCONARC, subject: Transportation Movement Data - Joint Exercise DESERT STRIKE, dated 17 March 1964,

unprogrammed items as gas cylinders, construction materials, generators and tentage. Some requirements were not made known until the units arrived in the exercise area. A request for 3,000 water cans was not received until 7 days prior to the start of the exercise.

(9) 46% of the 17,808 Class II and IV requisitions received by the Neutral Force Consolidated Supply were filled during the exercise. A total of 4,753 short tons of II and IV supplies were received by Neutral Force.

d. Class V: ←

Requirements for Ordnance and Chemical Class V ammunition were developed by the player forces and requisitioned by Hq Sixth US Army and/or Neutral Force; approximately 850 short tons of Class V supplies were received.

e. Supply Liaison Representatives:

(1) Several supply agencies, namely DSA, GSA, AMC, SMC, OTAC and USAVSCOM, assigned supply liaison representatives on TDY to Hq, Neutral Force to assist in identifying sources of supply and to expedite exercise requisitions as much as possible.

(2) The assistance rendered by these liaison representatives was of incalculable value to the Neutral Force supply operation.

(3) Technical representatives of Gruman Aircraft, Bell Helicopter, Sikorsky Helicopter, De Havilland Aircraft, Lycoming Engine and Hamilton Standard Propeller were also present in the exercise area and provided invaluable assistance to Neutral Force.

6. Maintenance

a. Player force maintenance capabilities were self-sufficient except for aircraft. Neutral Force provided maintenance assistance during the pre-exercise and post-exercise periods.

b. The 217th Transportation Battalion (California National Guard), assigned to Neutral Force, provided direct third echelon support for 110 aircraft in non-divisional player forces, and direct fourth echelon and back-up third echelon support for all participating Army aircraft (approximately 400).

c. The national short supply of certain repair parts restricted maintenance capabilities, particularly parts required for the M 38A1 $\frac{1}{4}$ ton truck.

d. The second echelon maintenance capability of USAR and National Guard units was virtually non-existent, since these units did

AIRDROMES AND LANDING STRIPS
In the Desert Training Center Area

Landing Strips (Sand or Gravel) Cont.

	<u>NAME</u>	<u>RUNWAYS</u>	<u>ELEVATION</u>
*21.	Calipatria	2000' sq	-182 ft
22.	Chocolate Mts. (east end)	1000'x100'	1350 ft
x23.	Chuckwalla Mts.		
24.	Connor	2-2000'	900 ft
25.	Coxcomb Camp	2500'x150'	700 ft
x*26.	Datelan	2000'x100'	900 ft
27.	Desert Center Auxillary	2-4000'x150'	855 ft
x28.	Ford Well	1000'x150'	600 ft
29.	Freda Station	2-1500'x150'	875 ft
30.	Goffs	1500'x150'	2650 ft
**31.	Harveys	3500'	565 ft
**32.	Heron	2-3600'x150'	365 ft
33.	Hopkins Well	1500'x150'	500 ft
34.	Hyder	3-3000' (tri)	500 ft
35.	Ibis	2500'x150'	2000 ft
*36.	Imperial County Airport	2500'sq	-69 ft
37.	Iron Mountain	1500'x150'	900 ft
38.	Laguna	2500'x150'	350 ft
39.	Little Chuckwalla Mts	1500'x150'	850 ft
40.	McCoy Springs	1000'x500'	700 ft
41.	Milpitas Wash	2000'x300'	500 ft
42.	Palo Verde	3000'	350 ft

AIRDROMES AND LANDING STRIPS
In the Desert Training Center Area

Landing Strips (Sand or Gravel) Cont.

<u>NAME</u>	<u>RUNWAYS</u>	<u>ELEVATION</u>
43. Parker	2-3500'x150'	430 ft
x44. Picacho Drain	1500'x150'	500 ft
45. Plute Mts.	1500'x150'	1850 ft
**46. Plosser	2000'	490 ft
47. Salome	2-3000'x100'	1876 ft
48. Searchlight	3000'	2536 ft
*49. Smiley	3000' sq	700 ft
*50. Wellton	4000'x500'	600 ft
51. Grande Mts		1300 ft

* Not in Desert Training Area.

** Not under control, of IV Air Support Command, but in the Desert Training Area.

x Not recommended for use, unless improvements are made.

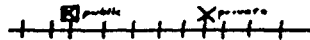
NOTE: Sequence of listing, name of field, number of runways or strips, length of strip or runway, width of strip or runway, and elevation.

RESTRICTIONS

DESERT TRAINING CENTER

RAILROADS

Will be crossed only at established crossings shown thus



Guards will be posted see paragraph 34
DTC Memorandum No. 70, 1943

METROPOLITAN AQUEDUCT

Will be crossed only at established crossings shown thus



see paragraph 32 DTC Memorandum No. 70, 1943

FIRING

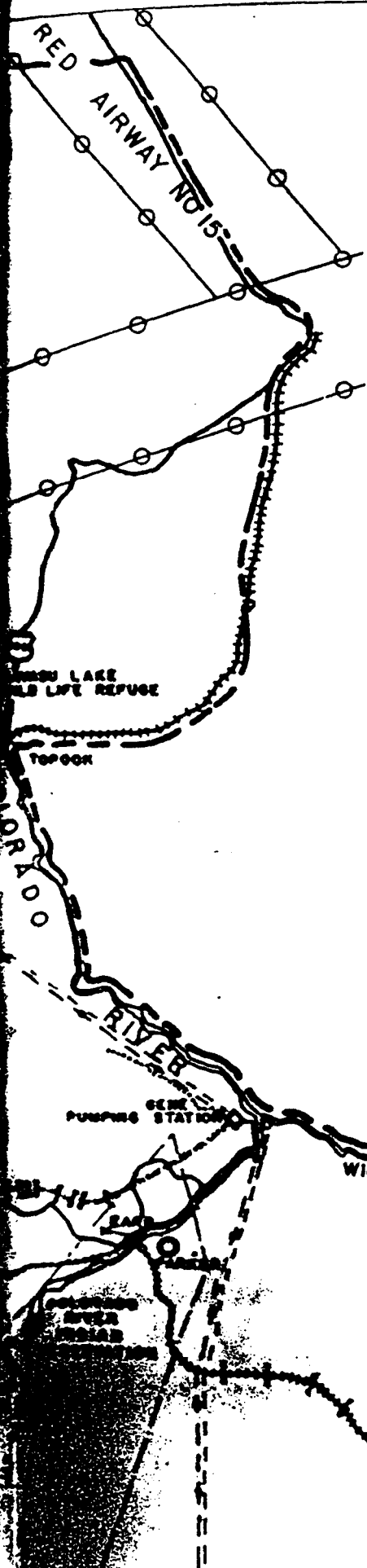
No firing permitted within airways except small arms firing on ground targets

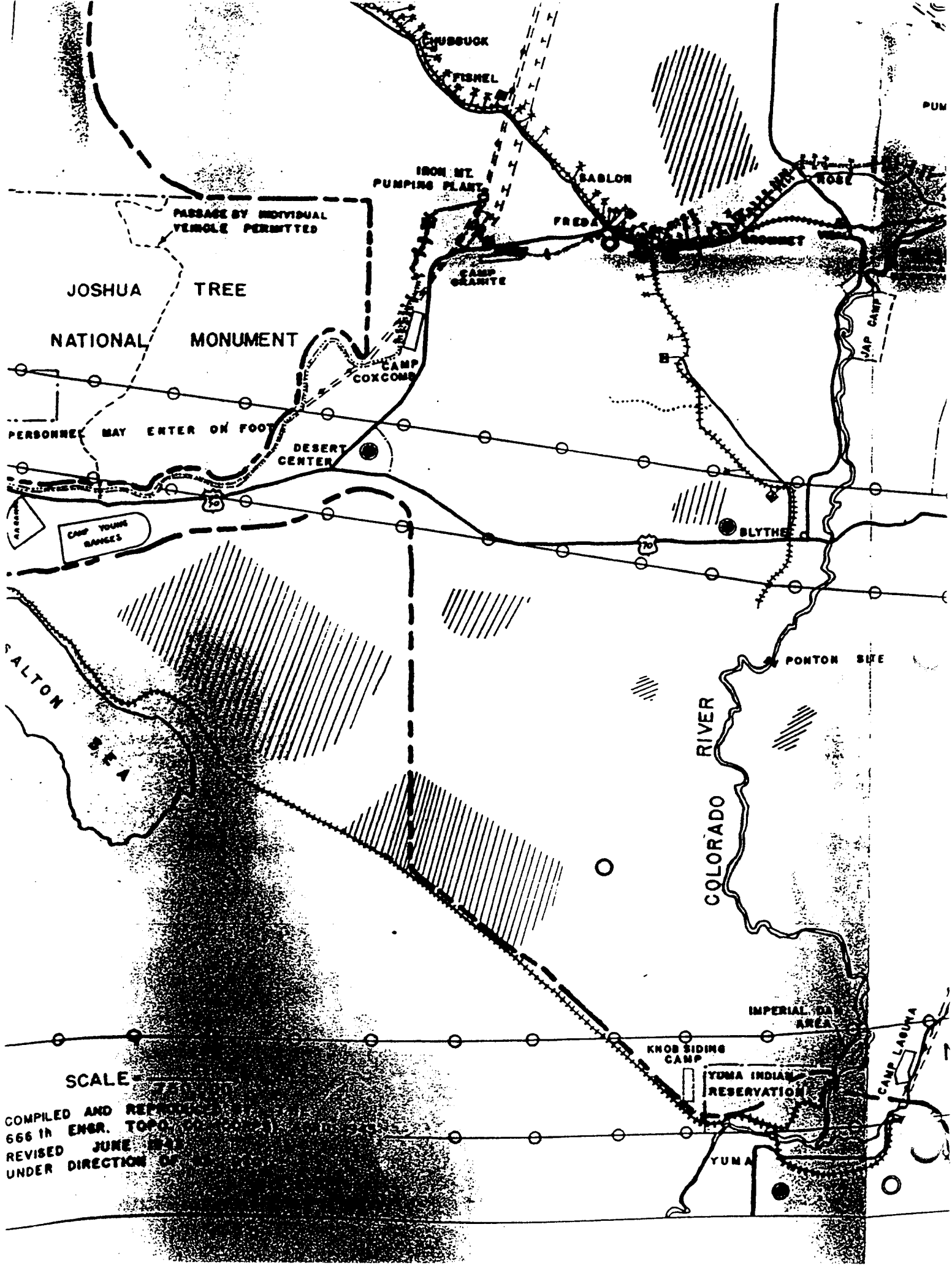
AIR GUARDS will be posted at all times during firing in DTC and firing will cease upon approach of aircraft

INFORMATION on training and firing areas may be obtained from G3 DTC

LEGEND

Metropolitan Aqueduct	-----
Off Limits Boundary Areas	-----
Airway Boundary	-----○-----
1 Army Air Base	●
25. A. A. Aux. Field	⊙
3 Army Air Strip	⊕
4 Air Force & Marine Firing & Bombing Ranges	////
5 Poor Road	-----
6 Roads Off Limits But May Be Crossed
7 Temporary Camp	-----
8 Permanent Camp	-----





SCALE - 1:50,000

COMPILED AND REVISIONED BY
 666 IN ENGR. TOPO. DIVISION
 REVISED JUNE 1954
 UNDER DIRECTION OF

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX H

NEWSPAPERS/JOURNALS

APPENDIX H

NEWSPAPERS/JOURNALS

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- H-1. NewsBeat, Patton's Desert Training Center (B-74).
- H-2. BLM proposes Patton park for desert area (B-75).
- H-3. General Patton's Tank Corps a Dramatic Imprint on Desert (B-76).
- H-4. Desert warfare (B-77).
- H-5. Patton's Desert Training Center (B-78).
- H-6. Desert Memorial for Patton's Army (B-79).
- H-7. Timberwolf Tracks (B-18).
- H-8. Ours To Hold It High (B-21).
- H-9. Patton Country (B-86).

NEWSBEAT

JUNE 1985



Courtesy: Roland Carter, Olean, New York



Photo from BLM Photo Library

(Top)
"C Battery. Convoy taken on a problem. June 1943."

(Bottom)
A permanent monument was unveiled during the May 8 VE-Day ceremonies at the training center (see story on page 5).

Patton's Desert Training Center

By Sonya Cox and Jim Woodworth, CSO

Hellishly hot days followed by chilly nights, endless sand, and storms of dust greeted the hundreds of thousands of armored division troops sent to the California Desert for military training in desert warfare at the General George S. Patton Desert Training Center in the early 1940's.

While Nazi Germany ruled Europe from Norway southward into the North African Desert, American troops were being trained to endure the incredible temperature variations and harshness of life in the desert at the seven California and four Arizona desert camps comprising the Desert Training Center.

At California's Camp Iron Mountain, a huge relief map of the entire 18,000-square-mile training center helped the soldiers to visualize what they would face in their gun sights as they practiced training maneuvers throughout the desert. Their daily battle with the elements gave them a familiarity with rough terrain, sand, dust storms, lack of vegetation and water, and tested the vigor of both man and machine.

In this issue...

Patton's Camp	pages 1, 4, 5, 6
Whitewater Fun!	pages 2, 3
Pipeline to Texas	page 3
Land for Sale	page 6

(Cont'd on page 4) **H-1**

Patton's Camp (Cont'd from page 1)

General Patton himself was a dominant figure over his troops. "Old Blood and Guts," as he was called by his men, put every item of military hardware, and every man in his command, through the test of the desert. He left nothing to chance, wanting to know how well men and equipment - including sunglasses, can openers, sunscreens, tanks, and armaments - could withstand the rigors of desert combat. It was this preparation that gave his troops the ability to fight effectively against the Axis machine.

Today, more than 40 years after the Desert Training Center closed, some of the tracks of Patton's Tank Corps are still visible in the desert. Many veterans of that training have returned to the site to renew memories and relive, if only for a few moments, the strenuous training they underwent.

Hundreds of ex-soldiers who trained at the camps have written to BLM to relate their experiences for posterity before personal memories are lost forever. These letters, photos, and essays will someday become a permanent part of continuing displays at interpretive locations.

Preservation of personal and official accounts of this area is an important project which BLM has undertaken. As help comes in from the public to make this project a reality, BLM will embark on restoration of important buildings and construction of information kiosks to relate and preserve this incredible piece of history. □

WWII (top to bottom)

Viewing platform at relief map in back of the "dust bowl."

Good morning! 1101 Engineering combat group enjoying a.m. callsthenics.

B Battery Street, 915th Field Artillery Battalion, 90th Infantry Division. "All the other areas were the same."

Chow at the desert dining facilities.

Water tower at Camp Granite

GI putting spark arrester on personnel tent, September 1943.



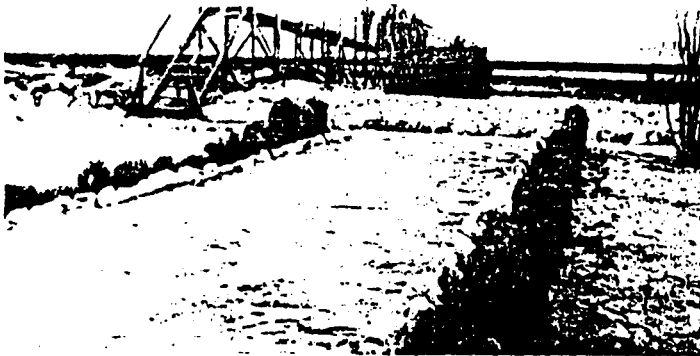
GEORGE S. PATTON, JR.

General George S. Patton, Jr., was born in California in 1885. After graduation from West Point, he became General John J. Pershing's aide-de-camp in the 1916 Mexican campaign; the following year, he accompanied General Pershing overseas, during World War I.

He was the first man assigned to the Tanks Corps, and he formed and headed the Tank School. In World War II, he successfully served in many campaigns and eventually was chosen to command the Third Army in the Normandy beachhead landings.

Patton was made a full (4-Star) general in 1945, and died later that same year in a jeep accident. □

Courtesy, W.F. Coar-Pender, Doynne, Louisiana



Courtesy, Moritt Wiener, Detroit, New York



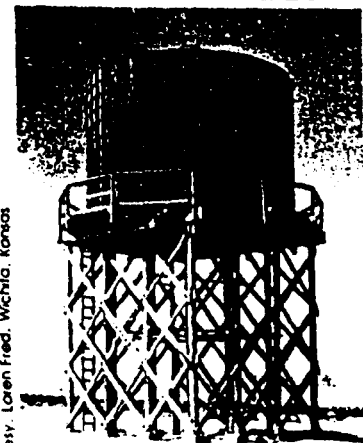
Courtesy, Loren Fred, Wichita, Kansas



Courtesy, James D. Bryant, Wagoner, Oklahoma



Courtesy, Loren Fred, Wichita, Kansas



Courtesy, Edwin Calvin, Raytown, Missouri



(Cont'd on page 6)

BLM SPONSORS STATE'S VE DAY CEREMONIES

Victory-in-Europe (VE) Day in California was commemorated on May 8 in BLM's California Desert District on lands used by troops under the command of General George S. Patton, Jr., as the Desert Training Center during the early 1940's. The date coincided with the 40th anniversary of the day on which the surrender of Germany was announced, thus ending the European phase of World War II.

Over the years, many of the veterans of the training at the desert camps have returned to the site to remember the war-torn years. Many of these men came to the May 8 ceremony held at the Desert Training Center's former headquarters camp at Camp Young, 30 miles east of Indio near Chiriaco Summit.

The ceremony was planned by the Bureau of Land Management, which has jurisdiction over most of the training center sites, to emphasize that steps should be taken to prevent further deterioration of this historic area and to stop vandalism.

A permanent monument and plaques honoring the Center and the trainees were unveiled, and there were performances by the Drum and Bugle Corps from the Marine Corps Air/Ground Combat Center at Twentynine Palms, and by the U.S. Army Color Guard Unit from the present National Training Center at Fort Irwin.

The ceremony, sponsored by BLM's California Desert District, was attended by about 450 California World War II veterans, and by BLM and other government officials. A message conveying the congratulations and best wishes of Governor George Deukmejian was shared with those attending. The Governor praised all of the "brave, loyal men who so selflessly defended the honor and security of our beloved nation."

BLM-California State Director Ed Hastey unveiled the monument to honor the million men who were taught to fight and survive in the desert under General Patton's command.

BLM Desert District Manager Gerald E. Hillier was master of ceremonies for the program. Veterans from units that trained in the desert or were associated with those who trained there were present. Represented, among others, were the 3rd, 4th, 6th, and 7th Armored Divisions; the 4th, 33rd, and 95th Infantry Divisions; several independent units that included Field Artillery, Engineers, Tank Destroyers, and Cavalry. Also present was a soldier from the German 8th Panzer Regiment who was captured in North Africa and attended the ceremony to become reacquainted with American GI's he had fought against.

Attendees also included the BLM State Director from Arizona, three BLM Area Managers, crews from all three television networks as well as two independent local stations, and several newspaper reporters.

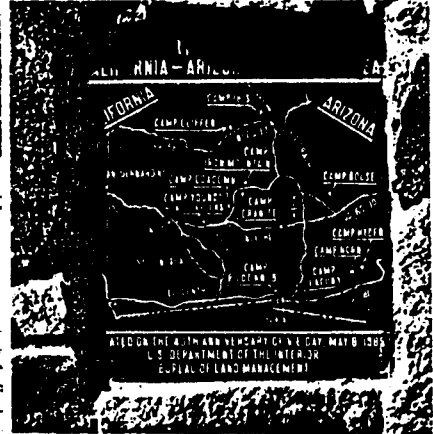
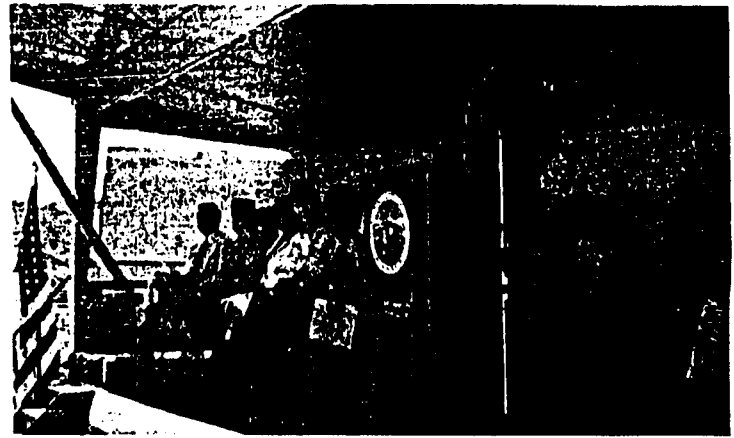


Photo from BLM Photo Library

1985 (top to bottom)

Desert District Manager Gerald Hillier was Master of Ceremonies for the May 8 event.

40 YEARS LATER: Not all returning GIs were able to "step lightly" again across the sands in the shadow of the Cottonwood Mountains where they once trained.

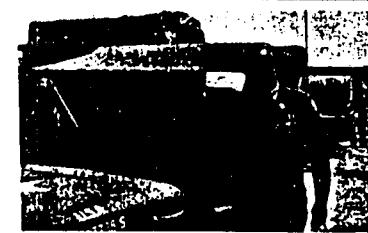
Plaque on monument dedicated at 40th Anniversary ceremony.

The flag of the 3rd Armored Division waved side by side with the flag of our country and the flags of other company battalions that were represented at the ceremony.

After training in the California Desert in late 1942 and early 1943, these men fought their way across Western Europe into Germany. Veterans of the Army's 6th Armored Division pose for a group photo at the ceremony.

Ex-GI Ralph Delgado from Ontario, CA, inspects a restored 1944 Army jeep on display at the dedication ceremony.

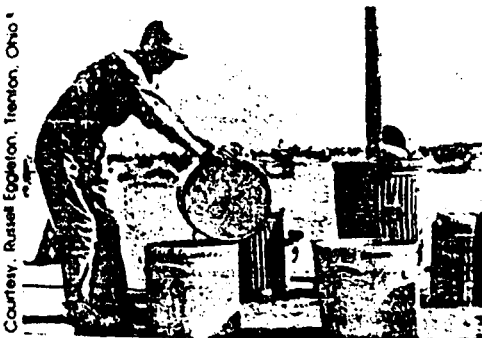
WWII vets Charles Jeglinski (American 6th Armored Division) and Harry Kies (German 8th Panzer Regiment) trade stories of 40 years ago at monument dedication.



Patton's Camp (Cont'd from page 4)

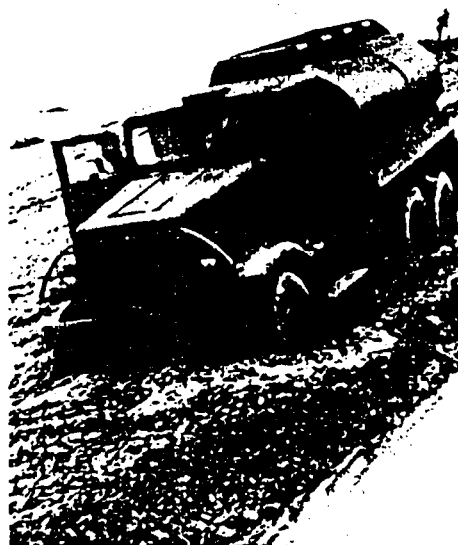
Courtesy, L.L. Cowles, Summitville, Indiana

Courtesy, Norman Rowe, Beaverton, Oregon



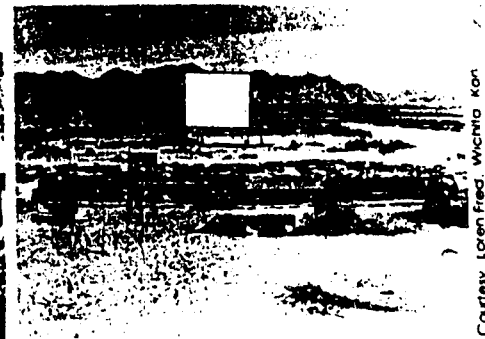
In the "tank park," Company A, 752nd Tank Battalion

It wasn't all fun: Russ Eggleton on K.P., 1942

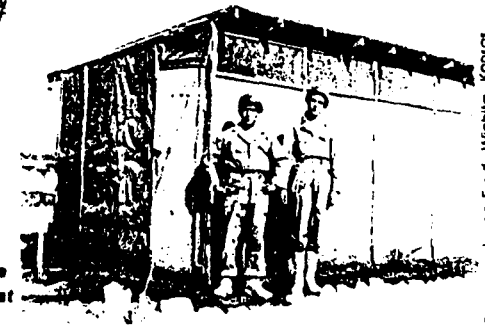


In the dunes at desert test command, 1942

"Camp Granite Theater No. 1 — and only. The seats were blocks used to hold vehicles on flat cars. Movies were shown."



Courtesy, Loren Fred, Wichita, Kan



Courtesy, Loren Fred, Wichita, Kansas

"Shower house for Camp Granite. Sometimes men washed their fatigues in the shower and wore them out. They were dry in a short time."

On these pages are just a few of the many photos that BLM has received for display at the Patton camps. Our thanks to the many who contributed toward the preservation of memories of this fascinating piece of history.

BLM Land Sales and Exchanges

Hundreds of thousands of acres of scattered public lands have been studied over the years to determine their best use. Many acreages have been exchanged with either government agencies or private individuals to create a more cohesive land pattern and to improve management of inaccessible or scattered land parcels. The government has sold other parcels to allow the public to take over areas that are financially unfeasible for government management. Federal lands cannot be sold for less than appraised fair market value.

One recent land exchange in San Diego County assisted in acquiring recreation lands on the Sacramento River, and Bighorn sheep habitat in McCain Valley. Portions of California's majestic "Lost Coast" in Humboldt and Mendocino Counties contain a mix of both government and private land; acquisition of 20,500 acres of land through exchanges in the King Range National Conservation Area have improved protection of this 60,000-acre landscape of high mountainous ridges and coastal beach.

On June 25, BLM's Redding Area Office will offer for sale 15 parcels totaling 750 acres in Siskiyou County. Sealed bids must be received by BLM's Redding Resource

Area Office prior to the sale date, and must be accompanied by a certified or cashier's check or money order for at least 20 percent of the amount bid. This sale will be held in the headquarters office of the Klamath National Forest in Yreka.

BLM's Desert District will soon exchange 80 acres of fairly inaccessible land in San Diego County for 440 acres of privately owned land. The proposed acquisition abuts an area in the Otay Mountains designated both as a Wilderness Study Area and as the Otay National Wildlife Cooperative Area.

The Southern California Metropolitan Project Area in the Desert District will hold a land sale for 3,900 acres on August 14. Ninety-six parcels have been studied in Los Angeles, San Bernardino, San Diego, and Riverside Counties, and most will be offered for sale. Sealed bids containing 20 percent of the price bid must be submitted to the Desert District by August 13.

The Barstow Resource Area Office in southern California holds a public land sale the first week of every month. The public can call the office at (619) 256-3591 at any time for a current brochure describing available public lands in that area. □

CAMP

BLM proposes Patton park for desert area

The immense maze of rock-lined footpaths and dirt roads forms an eerie pattern on the hot desert floor amid the cacti and creosote shrubs, near Iron Mountain, Calif., reported Charles Hillinger of the Los Angeles Times Service.

Bands of 3- to 6-inch-deep World War II tank tracks crisscross the arid landscape as far as anyone can see.

They are the reminders that here, at the center of a 16,200-square-mile desert tract that stretches from Indio into Arizona and Nevada, Gen. George S. Patton Jr. prepared his troops for a clash in North Africa with the armored legions of German Field Marshal Erwin Rommel, the "Desert Fox."

It was here that Patton told his troops he would like to challenge Rommel to one-on-one tank combat.

"The two armies could watch. I'd be in one tank, Rommel in another, I'd shoot at him. He'd shoot at me. If I killed him I would be champ. If he killed me . . . well, he won't," mused Patton.

Sixty thousand tankers, infantry and artillerymen trained in the Southern California desert from March until October 1942. Then Patton broke camp. On Nov. 8, 1942, the general and his men landed in North Africa.

Etched on the desert to this day is the dramatic imprint of Patton and his 1st Armored Corps, the incredible rock work created by soldiers laboring under scorching sun in one of the loneliest spots in America.

Rock patterns form company insignias and emblems. Millions of rock outline the

location of tent cities, parking lots, hospitals, mess halls, compounds, supply areas, chapels, paths and roads.

Every desert plant within the camp in 1942 and still thriving today is ringed with rocks, for when the troops were between maneuvers, Patton put them to work gathering rocks, then bordering everything in sight with stones.

A gigantic relief map the size of a football field also has weathered the passage of time. It was used to plot maneuvers and includes mountains, valleys, the Colorado River and the Salton Sea.

Now, the U.S. Bureau of Land Management is planning to create a Patton memorial park at the Iron Mountain camp site, about 200 miles from Los Angeles.

"Seven years ago the Bureau constructed a 2.5-mile-long fence around the Iron Mountain camp to prevent vehicles from damaging and destroying the amazing rock work," said Everett Hayes, 35, manager of the Bureau's Needles Resources Area, during a visit to the remote campsite.

"We want to build an access road enabling the public to visit Iron Mountain camp. We plan to establish a self-guided trail through the camp with interpretive displays explaining what transpired here."

"We hope men who were stationed here during World War II will write to the U.S. Bureau of Land Management and describe what daily living conditions were like, including anecdotes," said Debbie Paxton, 28, an information specialist working on the project.

Everell said 300,000 troops trained at



DEBBIE PAXTON is collecting information about Gen. George Patton. *Times Service.*

the base from March 1942 until May 1944. There were 14 camps on the sprawling reservation: 10 in California and 4 in Arizona. The Bureau's immediate plans call for a park only at Iron Mountain.

Similar rock work is intact at each camp after all these years. With the popularity of off-road vehicles in recent years have come treasure hunters, scouring the area with metal detectors searching for World War II souvenirs.

"Deep holes have been dug at all of the campsites by people looking for buried tanks and Jeeps. Rumor has it the heavy equipment was buried when the Army closed the camps and pulled out on short notice," Everell said. "But studies of old records prove that wasn't the case. The Army left nothing behind."

The drive to establish the park coincides with the 100th anniversary of Patton's birth, Nov. 11, 1885. The general died Dec. 21, 1945, from injuries received in an automobile accident in Germany. He is buried in a U.S. military cemetery in Luxembourg with many of his troops who lost their lives fighting in Europe.

Search is WWII de

The government is looking for World War II veterans who trained with George S. Patton in the Colorado deserts.

Officials want to complete Patton's yearlong stay at the site, where soldiers trained against Nazi forces led by Erwin Rommel.

Patton used the center to see how well his troops shipped over long distances. He was concerned about how much water was needed for survival in the desert, and about tents and other equipment.

Between 1942 and 1944, 300,000 soldiers participated in infantry maneuvers over

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CIRCULAR NO. 4

Report on the Barracks and Hospitals of the United States Army

JOHN S. BILLINGS, Assistant Surgeon, United States Army Government Printing Office, Washington, D.C. 1870

together with the section "Arrow Wounds"

of CIRCULAR NO. 3 Report on Surgical Cases Treated In the Army of the United States

'Patriots' band be

Ft. McHenry, Md., defined the spirit of a nation when its unstruck colors inspired Francis Scott Key to write "The Star Spangled Banner," but some fear the once-invincible fort is being conquered by the ravages of time and tourism, writes Frank Perley in the *Washington Times*.

The historic fort, which sits on a grassy

mid-September with a new superintendent Juin A. C. administers the facility Park Service. H-2

The greatest threat to the fort was built has not been water, but water, said during a recent tour

Patton Desert area

of tent cities, parking lots, hospi-
tess halls, compounds, supply areas,
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Search is on for veterans WWII desert training camps

The government is looking for World
War II veterans who trained under Gen.
George S. Patton in the Mojave and
Colorado deserts.

Officials want to compile a history of
Patton's yearlong stay at what later be-
came known as the Desert Training Cen-
ter, where soldiers trained for action
against Nazi forces led by Field Marshal
Erwin Rommel.

Patton used the center to prepare
troops, to see how well supplies could be
shipped over long distances, to determine
how much water was needed for human
survival in the desert, and to test clothing,
tents, and other equipment.

Between 1942 and 1945, an estimated
300,000 soldiers participated in tank and
infantry maneuvers over more than 20,000

square miles in San Bernardino and
Riverside counties, sometimes venturing
into western Arizona and southern
Nevada.

The Bureau of Land Management,
which looks after the desert, may place
historical markers at some of the sites of
the many training camps if enough infor-
mation can be acquired. A museum or
monument in Patton's name also is being
considered.

Everett Hayes, the Needles, Calif., Re-
source Area manager for the bureau, said
the bureau is trying to preserve remnants
of camps and other traces of the desert
maneuvers. The sites were abandoned
after the war and CAMP published a
monograph on it which is still available at
\$5 including postage.

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'Patriots' band behind McHenry

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a nation when its unstruck colors inspired
Francis Scott Key to write "The Star
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once-invincible fort is being conquered by
the ravages of time and tourism, writes
Frank Perley in the Washington Times.

The historic fort, which sits on a grassy
promontory overlooking the entrance to
Baltimore harbor, suffers from deterio-
rating walls and water damage.

mid-September with a reception for fort
superintendent Juin A. Cross-Barnes, who
administers the facility for the National
Park Service.

The greatest threat to the fort since it
was built has not been enemy bombard-
ment, but water, said Ms. Cross-Barnes
during a recent tour to assess water
damage of the fort's outer walls.

"The moisture is tremendous here," she

estimated at more than \$2 million.

Engineers think that much
moisture problem is caused
original design of the fort. The five-sided,
star-shaped structure followed a French
design and was literally sunk into the
ground for protection when built. The
10-foot bastion walls that encircle the old
Army headquarters and barracks are
backed with earthen banks, as are the



Gen. Patton

Training Center for 60,000
Before N. Africa Campaign

Gen. Patton's Tank Corps Left a Dramatic Imprint on Desert

By CHARLES HILLINGER,
Times Staff Writer

IRON MOUNTAIN, Calif.—The immense maze of rock-lined footpaths and dirt roads forms an eerie pattern on the hot desert floor amid the cacti and creosote shrubs.

Bands of 3- to 6-inch-deep World War II tank tracks crisscross the arid landscape as far as the eye can see.

They are the reminders that here, at the center of a 16,200-square-mile desert tract that stretches from Indio into Arizona and Nevada, Gen. George S. Patton Jr. prepared his troops for a clash in North Africa with the armored legions of German Field Marshal Erwin Rommel, the "Desert Fox."

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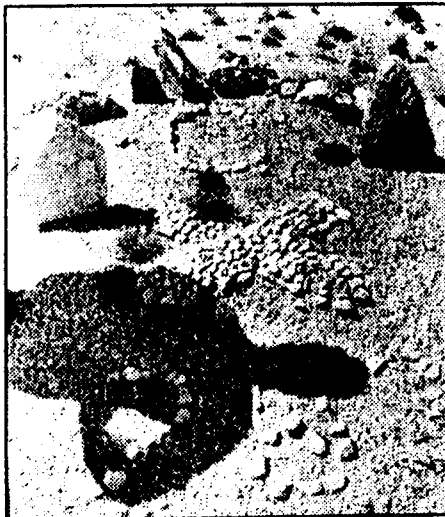
Confident of Victory

"The two armies could watch. I'd be in one tank, Rommel in another. I'd shoot at him. He'd shoot at me. If I killed him I would be champ. If he killed me . . . well, he won't," mused Patton.

Sixty thousand tankers, infantry and artillerymen trained in the Southern California desert from March until October, 1942. Then Patton broke camp. On Nov. 8, 1942, the general and his men landed in North Africa.

Etched on the desert here to this day is the dramatic imprint of Patton and his 1st Armored Corps, the incredible rock work created by soldiers laboring under scorching sun in one of the loneliest spots in America.

Rock patterns form company insignias and emblems. Millions of rocks outline the locations of tent cities, parking lots,



A company insignia from 1942 outlined in rocks on the desert.

hospitals, mess halls, compounds, supply areas, chapels, paths and roads.

Every desert plant within the camp in 1942 and still thriving today is ringed with rocks, for when the troops were between maneuvers, Patton put them to work gathering rocks in the desert and mountains, then bordering everything in sight with stones.

Huge Relief Map

A gigantic relief map the size of a football field also has weathered the passage of time. It was used to plot maneuvers and includes mountains, valleys, the Colorado River and the Salton Sea.

The only structures that remain are the outdoor sanctuaries where troops held religious services, in each case a single rock wall with Gothic arch framing a

rock-hewn altar and glistening white granite cross.

Now, the U.S. Bureau of Land Management is planning to create a Patton memorial park at the Iron Mountain camp site, about 200 miles from Los Angeles.

"Seven years ago the bureau constructed a 2½-mile-long fence around the Iron Mountain camp to prevent vehicles from damaging and destroying the amazing rock work," said Everell G. Hayes, 35, manager of the bureau's Needles Resources Area, during a visit to the remote campsite.

"We want to build an access road enabling the public to visit Iron Mountain camp. We plan to establish a self-guided trail through the camp with interpretive displays explaining what transpired here."

The bureau is asking World War II soldiers who trained with Patton and the thousands of others who were stationed at the desert outpost after the 1st Armored Division left for Africa to send it information about their experiences.

Descriptions Wanted

"We hope men who were stationed here during World War II will write to the U.S. Bureau of Land Management, 901 3rd Street, Needles, CA, 92363, and describe what daily living conditions were like, including anecdotes," said Debbie Paxton, 28, bureau visitor information specialist working on the project.

"We are seeking photographs of the period and ask that the pictures be identified: what they show, when and where they were taken. We will copy the photos and return them."

The material will be used for displays

Please see PATTON, Page 27

ALTARS

Continued from Page Five.

included three or four battalions camped throughout an area of four or five square miles.

One altar stands in the southeastern portion of the old camp.

Constructed out of native rock and mortar, it was platformed about a foot above the desert floor. Behind the altar, the stone was arched to a point where a wooden cross once stood.

The second altar is off what had been the same camp street, but about three miles to the northeast. The sign is gone, but concrete inlays into the front of the altar still have the faint traces of two unit numbers—"183rd FA Bn" and "951st FA Bn."

Made of native gneiss, granite and quartz rock held together by mortar, this altar has greater depth, but a lower profile. Like its brother to the south, it, too, has lost the wooden cross which marked it as a religious structure.

As can best be determined, the relief map delineates the entire region where Patton's armored units and artillerymen maneuvered—as far east as Twenty Nine Palms, south as the Coachella Valley, as far as the mountains near Kingman, Ariz., and as far north as Hoover Dam.

The map designates the contour slopes of every mountain chain, river valley and

plain, plus highways, railroad tracks and the then newly completed 242-mile Colorado River Aqueduct of the Metropolitan Water District.

When it was new, the map was traversed by a wooden bridge so that Patton's staff, or visiting dignitaries, could look down and read the wooden signs which gave geographical identifications.

Today, the bridge is gone, but some of the signs remain, though wind, sand and time have obliterated their lettering. Some photographs dating back to 1945 show what the relief map looked like when unscathed by wind-blown sand or vandalism of any sort.

One man who vividly recalls his first

meeting with Patton was Lawrence Green, retired superintendent of aqueduct maintenance for the District.

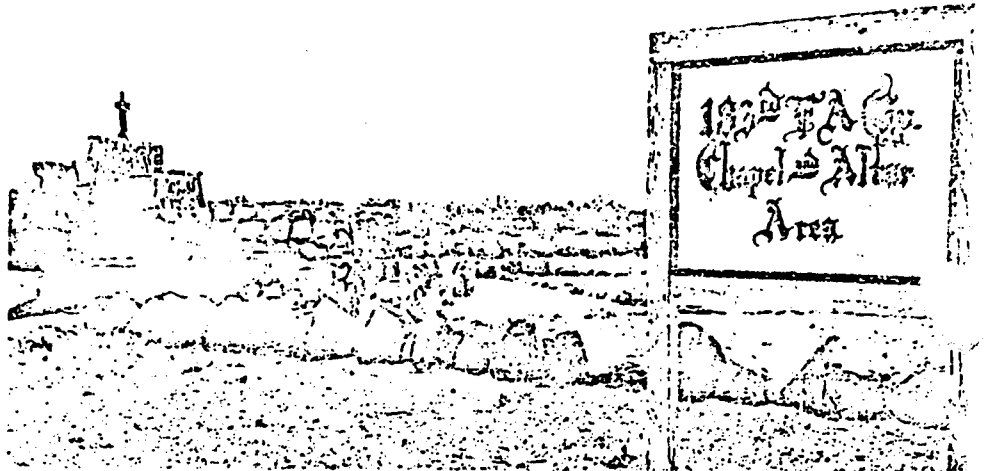
Green recalls:

"I saw a command car pull up in front of my office one day, followed by two or three other cars. He got out . . . and I recognized him immediately because his picture had been in "Time" magazine the week before.

"So, I said, 'How are ya, General Patton' and he said, 'Oh, so you know me, huh?'"

Some of the troops who served under Patton would have disagreed, but Green remembers him as "a wonderful guy."

The general had come to the MWD facility because he wanted to furnish water



Erosion and vandalism have taken their toll on this low-profile altar and the nearby relief map built by troops under the command of General George S. Patton. These photographs taken in 1945, however, show the features in near-perfect condition a year after the desert training center was abandoned—and may provide important detail for future restoration work at the site.

to all the troops training in the area.

Fifteen water spaces were established where the troops could siphon water from the aqueduct.

"At one place," Green said, "the troops constructed a huge shower that could accommodate 500 soldiers at one time."

During the peak of troop training in September, 1943, the District was delivering more than 1.5 million gallons of water a day to the Army along 110 miles of main aqueduct.

Patton considered the Southwest desert ideal for his medium and light tanks, his reconnaissance cars, troop carriers, artillery pieces, jeeps and trucks.

One of the most famous quotes attributed to the legendary general came from his days in the desert and concerned his reported desire to meet the armored legions of German Field Marshal Erwin Rommel:

"The two armies could watch. 'I'd be in



... tank, Rommel in another. I'd shoot at
... He'd shoot at me. If I killed him, I'd
... champ. If he killed me—well, he won't."

Patton had come to the desert in April
of 1942. Along with his original trainees,
he left in October of the next year to pre-
pare for the invasion of North Africa—and
his first encounter with Rommel.

The First Armored Corps training area,
however, remained active until well into
1944, much of the time under the command
of General Walton H. "Johnny" Walker.

Today, the Patton memorials and the
surrounding desert have a quiet, romantic
dignity.

One recent visitor summarized his nos-
talgic emotions as follows:

'Unfamiliar Objects' make deadly reminders of desert war games

Deadly reminders of the war games
that were held still lie throughout much
of the Southwest desert.

Signs abound in the former maneuver
area of General George Patton's troops
which warn visitors that they should not
disturb unfamiliar objects protruding from
the sand—and to report them immediately
to the U.S. Army Corps of Engineers.

"The area will never really be clean
of the live shells, hand grenades, mines,



Robert Gough, then member of an Army
bomb disposal team, sets charge to blow up
artillery shell found in old training area.



Sign warns travelers in the desert to beware of unexploded ammunition and to report any that
is found to Los Angeles office of the U.S. Army Corps of Engineers.

"It's almost as though the wind carries
... on's curses, and the air is cold because
... the presence of the spirits of the hundreds
of thousands of men who trained here."

And one can't help thinking of the tens
of thousands of young men who left here
for Africa and Europe 30 years ago—but
never came back

bombs and rockets that were used in the
training," says Robert A. Gough, Metro-
politan Water District personnel manager.

Gough was a corporal on a nine-mem-
ber Army bomb disposal team during
1951-54. His team was sent to the old
training grounds to find and destroy or
deactivate weaponry.

"Even though we had maps of the sup-
posed impact zone of artillery and bombs,
it was just too large a maneuver area,"
Gough said.

"We found everything imaginable—and
the region had been cleaned four times
before by German and Italian prisoners
during the war and, later, by other U.S.
Army teams," Gough said.

"We were sent in," he said, "after a
youngster was killed playing with a live
rocket he found near Parker Dam on the
Colorado River."

Gough and other members of his bomb
disposal team would stake out a specific
area to be searched on Monday and then
spend three or four days walking through
and marking the "unfamiliar objects."

Most every Friday was like Fourth of
July as the team set off charges to blow
up the various finds.

"We placed an advertisement in the
Needles newspaper asking people to con-
tact us if they had any shells or other ex-
plosives," Gough said.

"I'll never forget," he added, "one
man drove up in his pick-up truck with a
75 mm shell bouncing back and forth in
the bed of the truck. He asked if it was
dangerous."

It was—marked H-E for "high explo-
sive."

Outdoors

Desert warfare



The U.S. Army's tanks are long gone, but their tread marks still can be seen on the desert (left). The site of an army chapel (right) has a cross and the

word "PEACE" laid out in stones. On (inset left) warning of unexploded a

Patton is dead, but the Arizona desert still be

CAMP BOUSE — YOU CAN still see tracks of Gen. George S. Patton's tanks in this World War II training center.

Although abandoned for 36 years, the area still contains white graveled company streets, miles of stone bordered graveled sidewalks, various armored battalion emblems neatly laid out in stone and the outlines of hundreds of squad tents.

Camp Bouse, located in the broad, nearly waterless expanses of the Butler Valley between the Buckskin and Harcuvar Mountains, northwest of Phoenix, was one of several desert training centers that Patton's troops spent hellish months preparing for desert warfare, training they would use in the Sahara Desert fighting Axis troops led by German General Erwin Rommel, nicknamed "The Desert Fox."

Six divisions were trained in the deserts of western Arizona and on the California side of the Colorado River in 1942 and 1943.

The area then, like today, is thinly populated and isolated from nearly everything.

So rigorous was the training and so vastly different was the environment to the mostly urban troops, that the experience caused 1,130 "neuropsychiatric" casualties.

Doctors found the best cure was simply exposure once more to green grass and running water.

The tracks of tanks, half tracks and armored personnel carriers are found throughout the area, deeply impressed in the desert soil.

While three decades have passed, the tread marks are still visible despite flash floods and the growth of desert vegetation. Intermingled with some of the tread tracks are the tire tracks of four-wheel drive vehicles.

Bits of shrapnel and .30-caliber and .50-caliber machine gun casings litter the gunnery range, a nearly mile-long embankment set up inside a curve of



Bob Thomas
Outdoor Editor

the Buckskin Mountains north of the camp.

While the range has the remains wooden sockets for targets and the deep pit for the men who raised and lowered the bull's-eyes, there was no sign of fixed firing positions for small-arms practice.

However, from the tank tracks that littered the area, the range appears to have been used for 30 and .50-caliber machine gun practice by tank crews.



Joseph Chiriaco stands beside his own personal monument to the Patton legacy. These metal frames were covered with tank-shaped shrouds of canvas to simulate light tanks as targets for aerial bombs and machine guns. Chiriaco Summit, on Interstate 10 east of Indio, California, is near Patton's headquarters at Camp Young.

are several long lines of once white-painted rocks that bordered entrance and service roads. Several tons of coal are scattered around what once was the headquarters laundry and power house. Eight miles to the east, along the Hay-

field aqueduct pumping station road north of I-10, a Desert reader recently found 51 World War II-vintage Army dogtags, perhaps dating to Patton days. Hayfield, which takes its name from the distinctive seasonal grass that grows on

the dry lake or playa after wet winters, is just east of Chiriaco Summit, one of two freeway oases in the area that date to Patton's time. The other is the Ragsdale family's Desert Center, 19 miles to the east.

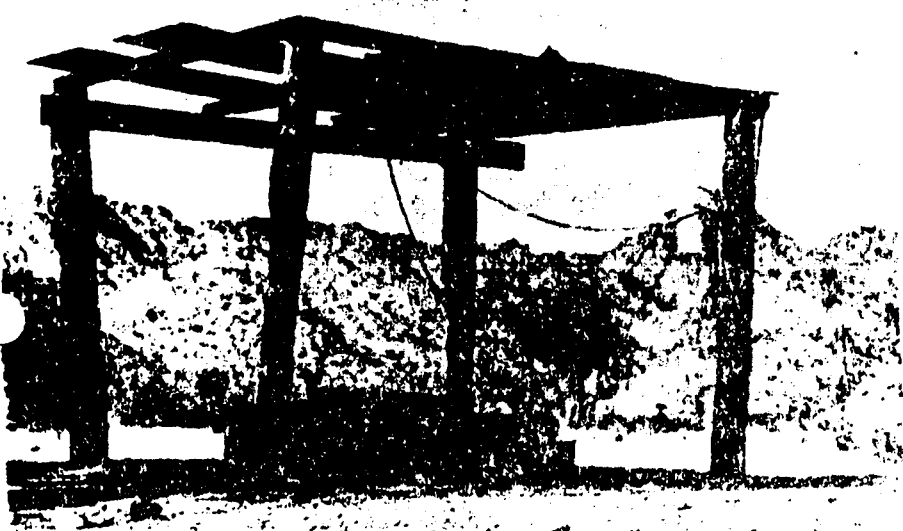
Joe Chiriaco has operated his auto and driver refreshment stop since 1933. He has his own memorial to Patton, whom he remembers somewhat fondly. Two white-painted metal frameworks near the front door are identified as "skeletons of Camp Young, in honor of General George S. Patton and the men who trained in the desert during World War II."

These were the frames of canvas-covered targets, in the shape of light tanks that were used by low-flying aircraft and tank gunners. They are among the few tangible remnants of those exciting days.

The mile-long Shavers Summit Airport east of Chiriaco's is now maintained by Riverside County but was one of several strips used by Patton's staff for speedy transportation to outlying training sites. Others are near Freda, Rice, Blythe and near Wiley Well to the southeast.

Most of the central area of Patton Country is classified for careful use under the BLM Desert Plan. You must stay on marked routes in the national monument to the northwest and in two "special-design" sectors that straddle or adjoin the old Desert Center-Rice Road. It is officially State Route 177-62 all the way from I-10 to Earp, on the Colorado River just west of Parker, Arizona.

There is one closed area, well-marked,



Historic Beal's Well in the Chocolate Mountains, east of the Salton Sea, formerly was a traveler's lifesaver on the old Niland-Blythe road, now closed. Chocolates were heavily used by Patton's forces and even today by Navai aviators as a bombing, rocket and aerial gunnery range.

Patton's Desert Training Center

BY JOHN W. KENNEDY, JOHN S. LYNCH, ROBERT L. WOOLEY

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General George C. Marshall in his *Biennial Report of the Chief of Staff of the United States Army, July 1, 1941 to June 30, 1943 to the Secretary of War* reported that the enlisted strength of the Army has been "increased by 5,000,000 men" and "the officer corps has grown from 93,000 to 521,000." The gains included 182,000 officers and nearly 2 million enlisted men in the Air Force. Unprecedented growth included a 3,500 percent increase in the Air Force proper, 4,000 percent in the Corps of Engineers and 12,000 percent in the service personnel of the Air Force.'

In 1943, the Joint Chiefs of Staff, after prolonged debate, were to receive Presidential approval for an armed force over-all total of 11,264,000 to be reached by the end of 1944. Of this the Army and Air Force were allotted 7.7 million. The number of divisions was set at 90. By 1945 the Army and Air Force were to total 8½ million.'

In 1942 the Army knew it must prepare for a variety of special operations under extreme conditions of climate, as exemplified in Norway, Libya and Malaysia, and operations by special means of assault such as amphibious and airborne. Lieutenant General Leslie J. McNair, later Commanding General of Army Ground Forces, wanted the Army to concentrate on the production of standard units and to give special training only to units that had completed their standard training, and only when operations requiring specialized training could be foreseen. Theatre training would be more realistic if and when specialized training was required.'

However, in the six months from March to September, 1942, the Army Ground Forces activated four special installations: the Airborne Command (later "Center"), the Amphibious Training Command (later "Center"), the Mountain Training Center and the Desert Training Center (DTC)'.

The Desert Training Center was to remain active for 13 months and then was closed due to the inability of the Army Service Forces to properly support it during the War. General Marshall lamented closing of the post-graduate course for his infantry and armored units but with most of the Army overseas and the few remaining divisions enroute to ports of embarkation, the value of continued operation of the Desert Training Center (subsequently the California-Arizona Maneuver Area) was questionable.

Sixty-four infantry divisions were to be trained in the United States but only 13 were to train in the desert. Of the 26 divisions activated after July, 1942 only one would come to the desert. A total of 20 of the 87 divisions of all



Desert Training Center at height of its use shown in this panoramic shot with tent cities in background.

types were to train in the DTC, California-Arizona Maneuver Area (CAMA) and these were the 6th, 7th, 8th, 33rd, 77th, 79th, 89th, 81st, 85th, 90th, 93rd, 95th and 104th Infantry Divisions. Armored Divisions assigned were the 3rd, 4th, 5th, 6th, 7th, 9th and 11th.⁴

One of CAMP's objectives is to ". . . memorialize military installations and units that no longer serve the role for which they were created . . ." The World War II Desert Training Center (CAMA) and its abandoned military installations and units fit this objective precisely.

FOOTNOTES

1. Forest C. Pogue, *George C. Marshall, Organizer of Victory, 1943-1945*, New York, Viking Press, 1973, 280.
2. *Ibid*, 354.
3. Department of the Army, *U.S. Army in World War II, The Army Ground Forces: The Organization of Ground Combat Troops*, Washington, Government Printing Office, 339-340.
4. Department of the Army, *ibid*, *The Procurement and Training of Ground Combat Troops*, 470n.

The California-Arizona Maneuver Area, World War II

To set the stage, France was defeated, the attempt of the British to hold the Balkans and Greece had failed, and General Archibald Wavell was holding Egypt with a depleted force. On February 12, 1941, General Erwin Rommel arrived with his staff in Tripoli to join his Italian ally against whom he had formerly fought with distinction in World War I.¹

Soon afterward, General George S. Patton received a new assignment. To a friend at the War Department, he wrote:

I have been detailed to organize and command a Desert Training Area



Photo courtesy Charles E. Keller, sergeant, 773rd Tank Destroyer Battalion.

. . . I should deeply appreciate your sending to me . . . any and all information, pamphlets, and what-not, you may have on the minutia of desert fighting, to the end that I may duplicate, so far as is practicable, the situation which exists in the desert of North Africa . . .

Pardon me for writing you such a dry letter. We will try to correct the dryness when we see each other.²

In January, 1942, Patton announced, "The war in Europe is over for us. England will probably fall this year. It is going to be a long war. Our first chance to get at the enemy will be in North Africa. We can not train troops to fight in the desert of North Africa by training in the swamps of Georgia. I sent a report to Washington requesting a desert training center in California. The California desert can kill quicker than the enemy. We will lose a lot of men from heat, but training will save hundreds of lives when we get into combat. I want every officer and section to start planning on moving all of our troops by rail to California."³

He added that "In less than sixty days every 1 Armored Corps Unit was enroute to Indio, California. Our final destination was a point in the middle of the desert near the town of Desert Center which in 1942 had a population of nineteen people. We were two commands, 1 Armored Corps and the Desert Training Center."⁴

March 4, 1942, Patton flew to March Field, Riverside, California, then chose for his base camp a site 20 miles east of Indio. He selected locations near Desert Center, Iron Mountain and Needles for Division Cantonements where troops began to arrive April 11, 1942.⁴

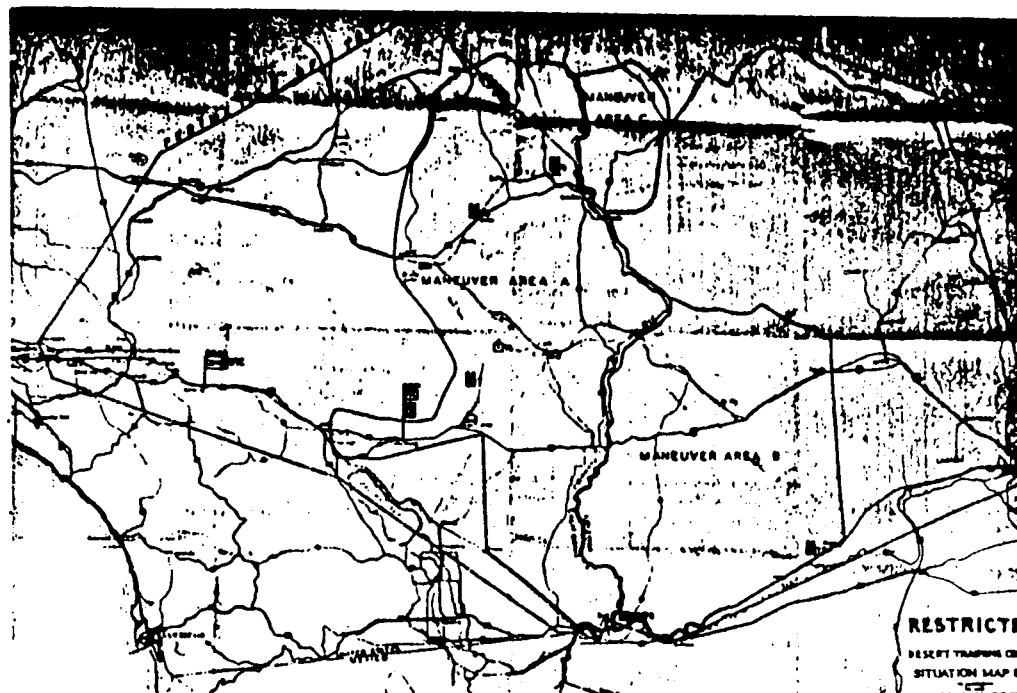
It is not clear just when the War Plans Division of the War Department General Staff foresaw that our Army might have to fight in the deserts of North Africa. It may well be that Patton's prodding was the decisive factor. The fact that the General became the first Commanding General of the Desert Training Command established the austerity, discipline and high standards of unit and division training throughout the time at which the area was used. Pat-

ton's tenure. After short but his influence was established.

On February 5, 1942, McNair as Army Ground Forces Commander concurred in the recommended plan that a Desert Training Center be established. Patton was ordered to reconnoiter the area, which he did between the fourth and seventh of March, 1942. The site was unlike any with which the Army was familiar, either in training or previous combat. The desert was hot, temperatures climbed to 120 degrees in the shade, vegetation was sparse, and rainfall averaged 3 inches a year. Perhaps as important as any terrain feature was the fact that it was sparsely populated area and therefore would make it much easier to acquire for Army purposes. There were some units already in the area: a Field Artillery training area south of Indio, an Ordnance Section at Camp Seeley, an Engineer Board Desert Test Section at Yuma, Arizona, an Air Corps Depot at San Bernardino, Camp Haan at Riverdale, and an Army Air Base at Las Vegas, Nevada.

As the North African Campaign wound down in 1943, Rommel had given the Americans their first severe drubbing at Kasserine Pass and Gafsa. Patton had long since departed from the Desert Maneuver Area, leaving in October 1942 for the North African Theatre. The Morocco landing was successful but the near collapse of the American front in Tunisia forced General Dwight Eisenhower to relieve Major General Lloyd R. Fredenall and replace him with Patton. By March, 1943 the North African campaign was in its final stages with Field Marshall Bernard Montgomery grinding in from the east and a revitalized and already veteran American force, now well beyond the nadair of Kasserine and Gafsa, coming from the west.

So the primary mission of the Desert Maneuver Area to train the troops in desert survival and tactics did not apply to troops who were now coming to the maneuvers and who were to be deployed worldwide. Therefore the name of the Center was changed by War Department directive to The California-Arizona Maneuver Area (CAMA). The first directive by the War Department November 25, 1942 gave notice that the Army Ground Forces were in command, with a skeletal structure of the Center as the theatre of operations. This later was amplified to restrict the use of the terms "Theatre and Operations" to employment within the DTC only. A second directive related to the Air Arm of the Center. Army Ground Forces control of ground and service units had been delineated in the original directive. The additional one stated that the Air Support Command — including combat and service units — and facilities for its use, which included Desert Center Airfield, Rice Army Airfield and Shavers Summit Airfield were to be under the Commanding General of the Desert Center. (Can't you just see the combined bristle of all air personnel at such a suggestion these days!) The third directive, of January 14, 1943, "enlarged the center to include SOS installations existing or under construction, at or near Needles, Camp Young, Indio, Pamona, San Bernardino all in California and Yuma, Arizona." It declared that the primary purpose of assimilating the Center into a Theatre of Operations was to afford maximum training of combat troops, service units and staffs under conditions similar to



Situation Map for the Desert Training Center, showing the three principal Maneuver Areas, A, B and C.

those which might be encountered overseas."

As it turned out the designated combat zone was encircled by the designated zone of communications. This was something less than ideal for simulating true combat conditions. In the simulated desert area if you ran through the opposing forces you found you were back in your own zone of communications.

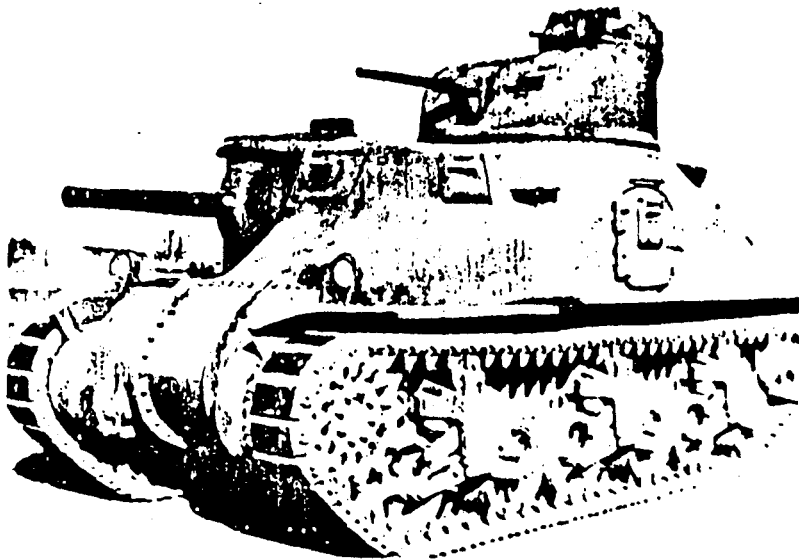
By November, 1943 the California-Arizona Maneuver Area had been enlarged and the IV Corps was in command. "This area, a barren stretch of wasteland, sand, rock and cactus, was roughly oval shaped and considering both the Communications Zone and the Combat Zone, was approximately 350 miles wide from Pomona, California, eastward almost to Phoenix, Arizona, and 250 miles deep from Yuma, Arizona, northward to Boulder City, Nevada. This area included at the time of IV Corps Command, Camp Young, Camp Coxcomb, Camp Iron Mountain, Camp Granite, Camp Essex, Camp Ibis, Camp Hyder, Camp Horn, Camp Laguna, Camp Pilot Knob and Camp Bouse. These were all temporary tent camps with a division being located at some of these, and at others armored cavalry, anti-aircraft and field artillery units. The Corps Headquarters, California-Arizona Maneuver Area, was located at Camp Young along with station hospitals that served the outlying camps."

The Desert Training Center

The base camp received its name designation on May 12, 1942, deriving its name from Lieutenant General S.B.M. Young, an Indian fighter who had operated in the region and was the first Army Chief of Staff.* (During the Indian wars it was very common for camps or stations to be named after the officer who established them or the Commanding General of the district. Young had to wait a long time for his name to be thus enshrined; he had long since departed from the area and his terrestrial stay.) On May 26 electric power lines from Parker Dam were in place.

One of the original units to be transferred to the DTC was the 773rd Tank Destroyer Battalion commanded by Lieutenant Colonel F.G. Spiess. It had previously taken part in the Louisiana and North Carolina maneuvers and was said to have traveled some 9,500 miles through seven states over a period of four months, but the men were to find a new experience at Camp Young where they arrived shortly after April 5, 1942. Their official history relates that, "Camp Young was the world's largest Army Post and the greatest training maneuver area in U.S. military history. Eighteen thousand square miles of nothing, in a desert designed for Hell." One soldier who had endured it reported that clothes, equipment such as water bags, radios, vehicles, armored vehicles of all types and weapons were to be severely tested in this desert area. "Water in the Lister bags sometimes reached 90 degrees. After you have been

U.S. Grant M3 tank



inside the tanks for a while, water even at 90 degrees seemed cool. The tank destroyers were even hotter because they had the open top turrets. Sometimes the heat registered at 152 degrees. Inspection of tools and equipment was made early in the mornings or late in the evenings as any equipment or tools laid out on tarps by the individual vehicles, in the desert sun, could not be picked up as they would burn the hands."

Not all of the recollections of those who spent time on the desert were unpleasant. Another member of the 773rd. Tank Destroyer Battalion recorded that "My greatest experience for the desert was observing the beauties of nature, both on the desert and also the nearby mountains. My worst experience was being stranded for two days in Pahlen Dry Lake in a disabled half track with four crewmen during which time we had one can of sardines, one can of corn, and one and one-half canteens of water."

Before the first mass maneuver, and to add to initial confusion, an epidemic of yellow jaundice (hepatitis) swept the camps in July. This filled all of the hospitals in the California area. Convalescence of the patients was slow and this further delayed training. As we now know this was due to the contamination of the yellow fever vaccine given to the troops with a then undiscovered virus which caused hepatitis and jaundice. The yellow fever vaccine had been stabilized with human blood serum. The serum had been derived from volunteer medical students. This blood had been drawn from at least one student who had suffered from hepatitis previously. Thus, this widespread Army epidemic of hepatitis was iatrogenic in origin and it was devastating. Hundreds who received the yellow fever vaccine were thus inadvertently inoculated with another disease, hepatitis.

All accounts related that, as the first commanding general, Patton certainly stamped his brand on the training center. The hill from which he could observe a wide area was called "The King's Throne." It was a lone elevation between the Crocopia and the Chuckwalla Mountains and separated them both. The General used to sit or stand up there scrutinizing critically the line of march of tanks and motorized units below him. Detecting a mistake or way to improve, he would shout instructions into his radio. Something ought to be said about Patton's radio. The official Army history of the Desert Training Center simply states the above but Porter B. Williamson in *Patton's Principles* gives a detailed and delightful account of Patton's communication system. This is how he describes the situation at the I Armored Corps Headquarters: "Our headquarters was approximately sixty miles east of Indio, California. Radio reception in our tents was poor due to the long distance between our portable radios and the broadcasting stations in Palm Springs and Los Angeles. General Patton's first concern was always the welfare of the troops, so he purchased radio broadcasting equipment. The initial investment was his own money! Our Signal Corps troops installed the radio broadcasting equipment. The station broadcast only news and music. It was a quick method of communication with the troops. General Patton wanted to talk to the troops as often as possible. At a staff meeting he said, 'This new station could save

several weeks. It was raining. We can reach the troops, every one of them, as often as we need. In an emergency, we could reach every man in seconds." "

Williamson continued, "Our desert radio broadcasting station had one unusual feature. There was a microphone in General Patton's office and a second microphone by his bed in his tent. Day and night General Patton would cut off all broadcasting and announce a special message or order from his personal mike. When the music would click off we knew we would hear "This is General Patton." He would use it to commend the special efforts by the troops. He would announce, "found a damn good soldier today!" He would continue giving the name of the man and the organization. This officer encouraged every man and officer to give his best effort at all times. Often his harsh words for an officer would provoke laughter from others. For example, one time General Patton ordered, "Col. Blank, you are removed from command! If you know what is good for you, you will stay away from me for a week."

The Commanding General was "uncompromising." Firstly, he was not easy on his men. When they did not drill they policed. He was a driver and a disciplinarian. Secondly, he was uncompromising with himself as well. He demanded that his men appear in uniform. Despite the heat and sand he himself wore his uniform in a military manner. He did not live in Indio but in a tent at Camp Young. In fact, one of the first things he did when he reported to the desert area was empty out the hotel at Indio. Only one officer was left behind and it was said that he was sick and could not be moved. In the third place, he wanted housekeeping arrangements to be minimal and tactical and technical instruction to be at the maximum.

It was initially planned that there would be a maneuver of troops in the area on July 15, but due to the logistics snarl, and the late arrival of troops, it was postponed until October 18. Gen. Patton prepared for the first DTC maneuvers but he was not to command them. He was relieved and his I Armored Corps was needed for action in North Africa. As one reviews various facets of the development of this maneuver area, it seems almost incredible that within a period of six to eight months, in spite of the fact that it was never fully operable under Patton, he left his lasting imprint. His technique of training continued until the maneuver area was closed.

The Desert Training Center was a war baby and it was a thorn to the spirit with its isolation, evasive dust and extreme shifts in temperature. Men had to be acclimated. The 3rd Armored Division suffered many casualties from heat prostration. Other units did too, but there is very little in the official reports on this subject. The surgeon under General Patton warned the command that danger lurked in reaching for an object on the ground unless you were sure that a rattlesnake wasn't coiled around it. He advised that liquids be drunk slowly and in small amounts, but with an eventual increased intake over a 24 hour period and to avoid over-exposure in the sun. Three 10-grain salt tablets were to be taken daily.

Problems with the civilian population in the area were not particularly

unique. These camps which sprang up all over the zone of interior in the States created a great deal of stress on adjacent communities, many of which were small. There was a flood of wives and families trying to follow their loved ones as they trained, discovering that housing, food, the whole bit was very difficult. The official history relates that "the situation in Indio was deplorable."

Initially the train transportation was snarled and deficient, which delayed proper distribution of food, water and other supplies; however, in time this was corrected. Water supplies were increased after wells were completed. Generally rations were the modified "B" ration with fresh milk and frozen beef added at a later date. The latter must have been the exception for the majority of those interviewed recall that two of the camps on the Arizona side were forbidden to have ice for long periods and they were not permitted fresh fruit or vegetables. The beer ration, when available, was served warm.

Equipment was in very short supply during the major portion of the maneuver area activation. The 5th Armored Division which had been activated a year earlier, still lacked 40 percent of its equipment at the time it maneuvered in the desert. Service units were in very short supply and all vehicles were used to their limits without proper maintenance. The original concept was for units not to bring new equipment, other than personal, into the maneuver area. Instead an outgoing division was to leave its trucks, tanks, signal equipment and all of that type of field materiel properly serviced so as to be used by an incoming division. Major General George Ruhlen, now retired remembers, "the 4th Armored Division's unit issue of tanks, trucks and the like being in horrible condition and it was in even worse shape when the 4th Armored Division left Camp Ibis. The idea of leaving equipment for the following unit at least relieved the strain on the supply and rail services.

The Desert Training Center severely taxed civilians as well as the military. It doesn't make much difference if one is talking about Indio, Yuma, Blythe or the larger towns such as Phoenix, the civilians learned that when the troops were on leave, especially weekends, the civilians were not going to get into restaurants, movie theaters, trains and busses. The increased demand sometimes deprived the local civilian population of certain foods. In Yuma, after the 6th Armored Division spent a weekend, eggs and beef were in very short supply.

Corps Maneuvers

While the maneuver area was active, the following Corps commanders and their staffs cycled through one after the other:

I Armored Corps, Major General George S. Patton, Jr., April, 1942 to August 1, 1942.

II Armored Corps, Major General Alvan Gillem, Jr., August 2, 1942 to October, 1942.

IV Armored Corps, Major General William W. Walker, November 9, 1942 to March 29, 1943. IX Corps, Major General Charles H. White, March 29, 1943 to July 26, 1943. XV Corps, Major General Wade H. Haislip, July

23, 1943 to November 13, 1943. IV Corps, Major General Alexander M. Patch, Jr., November 13, 1943 to January 17, 1944. X Corps, Major General Jonathon W. Anderson, January 17, 1944 to April, 1944.

IX CORPS (29 MARCH-23 JULY 1943)

Under General White the area of the Center was enlarged (See Areas "B" and "C" on map) into the rough oval of its final shape. Its military population soared to almost 190,000, the elements of which were scattered through an area exceeding in size the state of Pennsylvania.

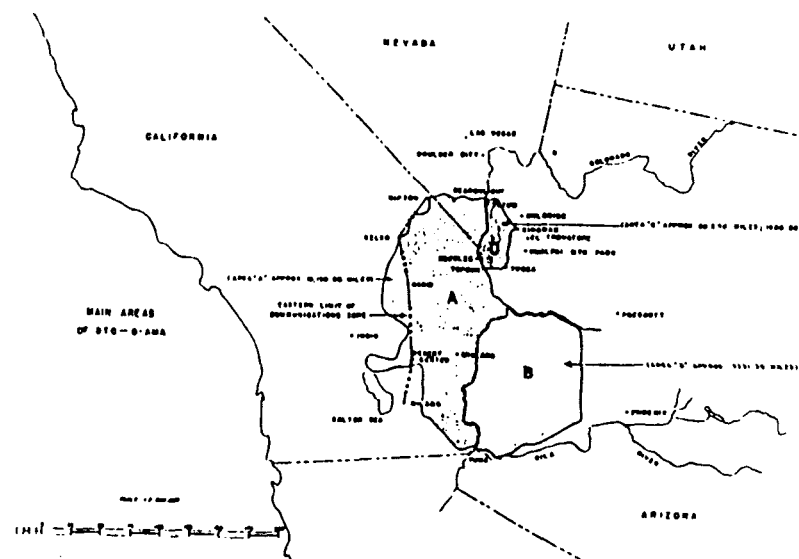
Much construction was necessary. Roads were always being built or repaired. Hospitals were badly needed. In June, 1943, although but 90 percent complete, the general hospital at Spadra, California, was occupied by more than 1,000 patients. After engineer troops had completed projects of higher priority such as hospitals, they built open-air theaters of simple design at Base General Depot and Pomona.

Movement in and out of the Center by large numbers of units and the load the railroads were forced to bear in supplying them led Joseph B. Eastman, director of the Office of Defense Transportation to request the Under Secretary of War to have activities in the Center decreased. The greatest rail congestion in the country existed in this western region. The War Department wished the western railroads to improve and increase their facilities in preparation for the war effort in the Pacific, but it believed that the point had been reached, especially on the Santa Fe, when an interval for recovery must be allowed.

Since curtailment of the Center must be counterbalanced by acquisition of equal facilities in another locality, the Army Ground Forces met the problem in three ways. In the first place, the Center was not further expanded. Secondly, movement of large units was arranged so as to cause the least possible interference with other activities of the railroads. Wherever possible rolling stock bringing in a unit was used to carry a similar unit from the Center. Finally, equipment was exchanged. With the exception of the armored division which left the Center in August, exchange of equipment was made in all cases. A vehicle pool was introduced. In general, after a unit arrived at the Center it borrowed equipment and vehicles from pools in the Center; before it left, it returned equipment and vehicles to the pools.

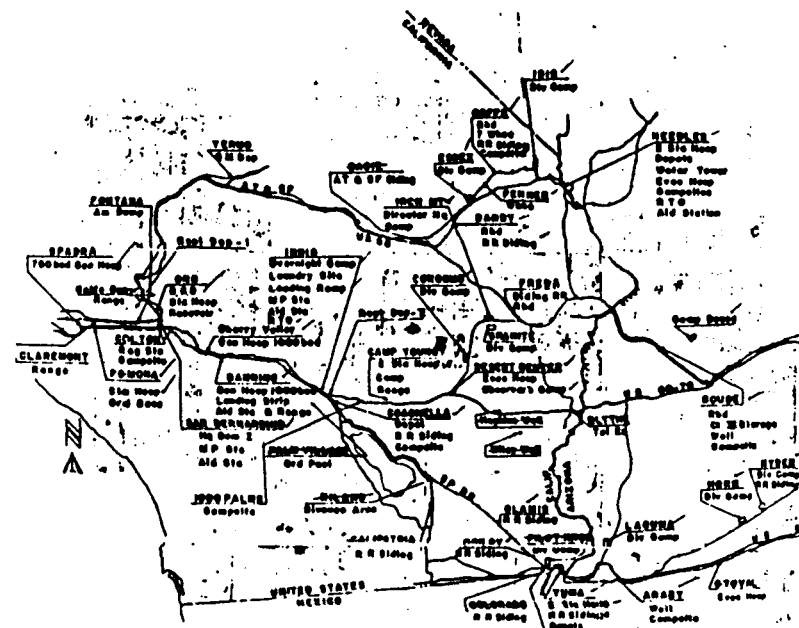
The major units involved in the maneuvers under the IX Corps, from 27 June until July 15, 1943, were the 7th Armored Division, the 8th and 77th Infantry Divisions and the 76th Field Artillery Brigade. In the maneuvers also were the 114th Coast Artillery (Antiaircraft), the 4th Mechanized Cavalry, the 5th and 6th Tank Destroyer Groups, the 144th Field Artillery Group, the 8th Reconnaissance Squadron, and the 6th Tank Group composed of its headquarters and the 742d Tank Battalion (Light) and the 743d Tank Battalion (Medium).

An Army Ground Forces directive of July 16, 1943 did not seek to revolutionize but to refine the structure of the Center. The system of administering



Map of main areas of Desert Training Center.

CAMA installations.



the communications zone which had originated with General Walker was incorporated into the directive. Large changes came about not as an alteration in the purpose or plan of the Center, but rather as a better means of fulfillment of that plan. Thus the communications zone was given a boundary, and no longer surrounded the combat zone.

XV CORPS (23 JULY-13 NOVEMBER 1943)

On July 23, 1943, one week after the AGF directive was issued, General Haislip, commanding the XV Corps, assumed command of the Center. To him and his staff fell the responsibility for realizing the provisions of the directive. Administration was simplified for Headquarters and realism was enhanced, attention again focused on training.

Haislip inherited vexing problems. One was the allotment of personnel for overhead. A request had been submitted for an increased allotment for Headquarters, the Communications Zone, and for the Base General Depot. A lesser increase than asked for was granted by Headquarters, Army Ground Forces.

Another problem was the lack of service units. A staff study made under direction of the G-4, DTC was sent by Haislip to Headquarters, Army Ground Forces, for reorganizing certain phases of the Center. Its major element was a listing of the number and types of service units needed for operation of the Center and which were thereafter to be assigned to it. This feature was not approved by Headquarters, Army Ground Forces, which was itself considering the problem. General McNair felt strongly that an effort had to be made to stabilize the service units at the Center and other maneuver areas. He believed that the "ideal system would be one where the necessary *operating* service units would be established as an element of the troops basis — in the same manner as school troops." Then the service units destined for overseas could flow through the Center without affecting operations. But the overall requirements of the Army here and abroad did not permit the assignment of an adequate number of service units to the Desert Training Center-California-Arizona Maneuver Area.

The maneuvers under the XV Corps were held from October 25 until November 13, 1943. The major units involved were the 81st and 79th Infantry Divisions, the 15th Cavalry (Mechanized), and 182d and 119th Field Artillery Groups, each group including 52 155 mm howitzer battalions and one 155-mm gun battalion, the 3d Field Artillery Observation Battalion, the 185th Tank Destroyer Battalion and two antiaircraft groups, one with two battalions and one with three.

During this period, September 22, 1943 Colonel James B. Edmunds became commander of the communications zone.

IV CORPS (13 NOVEMBER 1943-17 JANUARY 1944)

On November 13, 1943, five days before the maneuvers, General Patch and the IV Corps took command of the California-Arizona Maneuver Area. The maneuvers, from November 20, 1943 until December 11, 1943, involved

the 90th and 93d Infantry Divisions, the 11th Cavalry Group, the 22d and 33d Antiaircraft Groups, the 12th Tank Destroyer Group and the 711th Tank Battalion.

The process towards greater realism continued except in one particular, and that was air. The unity of command with the CAMA was broken when the War Department assigned the III Tactical Air Division (previously the IV Air Support Command), including supporting service units and airdromes, to the Third Air Force. The Commanding General of the Third Air Force was made responsible for providing the units required for airground training in the CAMA.

More serious was the deteriorating situation involving service units. Towards the end of 1943 shipments of service units overseas were increasing, and the situation for CAMA looked hopeless. General McNair therefore recommended to the War Department that the CAMA be closed.

X CORPS (17 JANUARY-30 APRIL 1944)

On January 17, 1944, amid maneuvers between the 11th Armored Division and the 104th Infantry Division, General Jonathan W. Andersen and the X Corps took command of the CAMA. On January 21, Headquarters, Army Ground Forces, phoned that the CAMA would be discontinued as soon as practicable after April 15, 1944. The message was later elaborated: the CAMA was to be discontinued as a maneuver area as of April 15, 1944, to cease internal operations as a training theatre as of May 1, 1944."

The X Corps directed the last maneuvers held at CAMA. The major participating units were the 9th and 104th Infantry Divisions and the 15th Tank Destroyer Group. At midnight April 30-May 1, 1944, Andersen turned over the installations and a modicum of personnel in the Ninth Service Command, representing the Army Ground Forces and the Desert Training Center California-Arizona Maneuver Area was at an end.

All senior officers who participated in this maneuver area training agreed that the experience was extremely valuable for them later in combat. General Patton stated that except for his World War I combat experience this was the most valuable training that he undertook.

With deactivation of CAMA there remained a concentrated effort to police up the area, close the camps, collect, salvage and ship to outside depots thousands of pieces of equipment and tons of material. The location and disposal of any unexploded shells presented a problem and in some instances these fields simply had to be marked with warning signs and left for future disposition. The fortified area at Palen Pass presented such a problem that any hope of restoring it to its pre-maneuver condition was abandoned. By April 15 only Camp Young, Headquarters of the Communication Zone, the Base General Hospital Depot and the Pomona Ordinance base remained open with service troops. A partial list of the materials which had been turned in by April 15, 1945 is as follows:

1,239 pieces of artillery
43,708 small arms weapons

6,110 tons of servicable parts (automotive and weapons).

The list goes on and on, including six Division Camps and two temporary non-Divisional Camps. Four hundred and fourteen organizational units, with a total strength of approximately 130,000 were moved from the area and released to the Army Service Forces or disbanded.

Now, with the departure of the Generals, their headquarters, the combat tankers and infantrymen and their various support units for other scenes of action, the desert has slowly reclaimed a great deal of the area. It is only from the air that the outline of the camps in the extensive maneuver area can be fully appreciated in 1982.

During General Patton's tenure as commanding general at the DTC, all unit buglers sounded taps at the appointed hour. As this melody rang across the desert camps it was an impressive if not eerie experience.

Now at twilight some 40 years later, in the canyons, desert waste and mountains — one-time site of the California-Arizona Maneuver Area — it is said that faint notes of Patton's long departed buglers can be faintly discerned, and they are answered by coyote calls from desolate desert lairs.

FOOTNOTES

1. Churchill, Winston. *The Grand Alliance, 1950*, 198.
2. Blumenson, Martin. *The Patton Papers, 1940-1945*, II. Boston, Houghton Mifflin Company, 1974, 57.
3. Williamson, Porter B. *Patton's Principles*. Tucson, Arizona, Managements and Systems Consultants, privately printed, 1979.
4. Blumenson, *The Patton Papers 1940-45*, 58.
5. *History of the IV Corps 1941-45*, Military History, Department of the Army.
6. *The Desert Training Center*. Army Ground Forces Historical Center, Study 15, 1946. Most of the technical information that follows derives from this work.
7. Personal Communication in 1980 from T/Sgt Charles E. Keller, 773rd Tank Destroyer Battalion.
8. Personal Communication in 1980 from Edward McClelland, 773rd Tank Destroyer Battalion.
9. *The Desert Training Center*, *op. cit.*
10. *Ibid.*
11. *Ibid.*

The Story of Three Camps

It is impossible to tell the complete story of every unit that trained in the desert. Each was unique and it would be beyond our capabilities at this time to relate them all.

However, Camps Horn, Hyder and Bouse were among the major training camps at CAMA in 1943 and 1944. Each was located in a remote part of the Arizona desert where the troops could receive rigorous training under austere conditions as combat training for World War II. The 81st Infantry Division trained at Camp Horn; the 77th Infantry was stationed at Camp Hyder, and the 9th Tank Group was shrouded in secrecy at Camp Bouse with a "... weapons system that would change the course of the war . . .," or so it was promised.

Desert Memorial for Patton's Army ...

Rapidly taking its place in the annals of Southern California desert history is that busy period during the early days of World War II when General George S. Patton trained and developed his fast-striking armored corps there. This is the story of efforts made in recent years to set aside a small portion of this terrain in lasting memory to this daring army leader and the men who served under him.

By ELIZABETH WARD

ON THE southwestern slope of Southern California's Iron Mountain in the rugged desert country here General George S. Patton's famous tank corps fought its war games. is the site of a proposed War Memorial Park. Contained within this 50 acre area are two imposing stone altars built by the troops and a huge relief map constructed by Army Engineers.

In this peaceful desert region today there is little sign of the teeming war time activity, although more than a half million troops were trained during World War II, in this wide expanse from the Nevada line to the Mexican border. Their various camps were widespread, but few scars remain on the desert's face except a few rutted roads and dim airfields. Gone are the extensive buildings, equipment and materials.

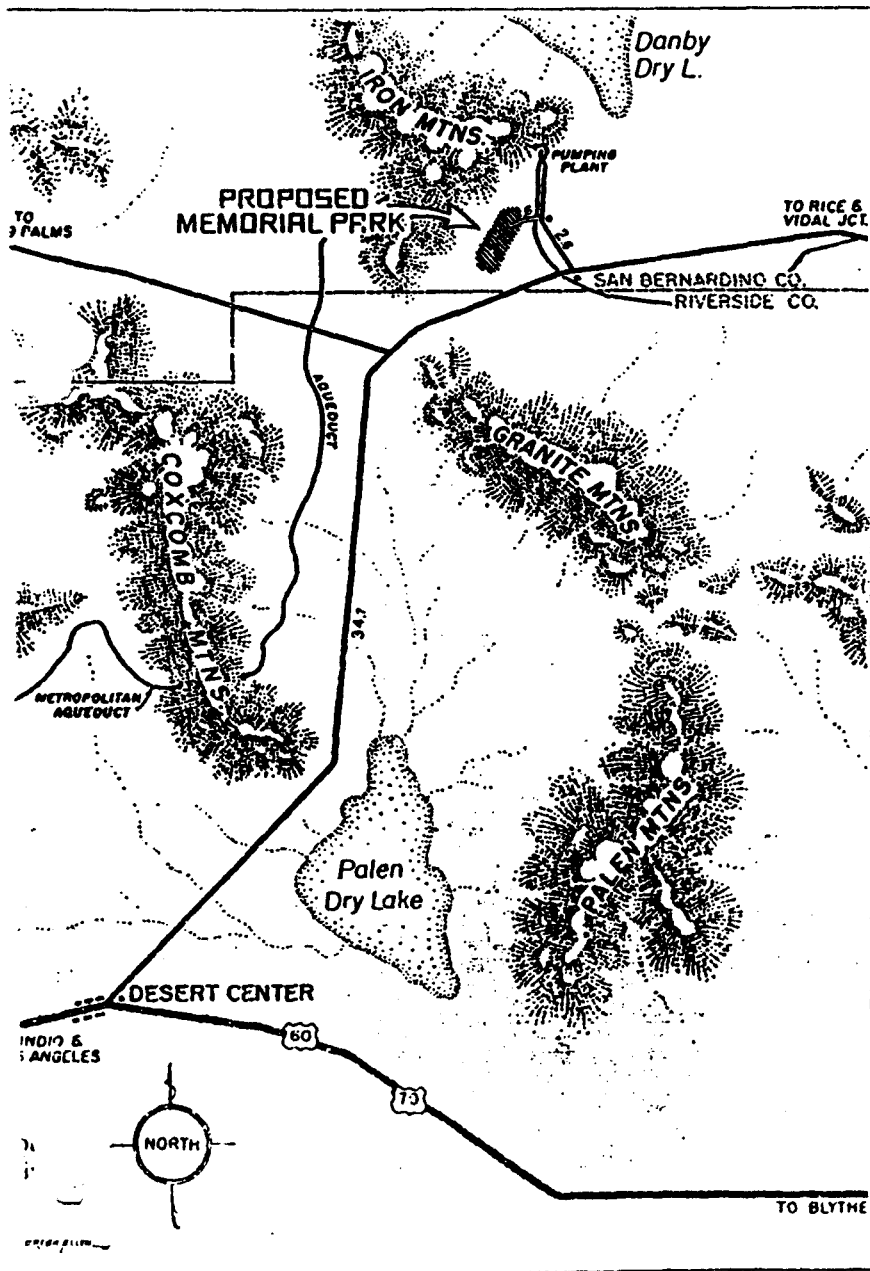
The heat waves shimmering over the tan desert floor emphasize the stark background for the enduring rock shrines, triumphs in beautiful masonry. One altar is heavily squared, built of rough sandstone boulders. Six hundred yards away, the other is classic in its design, with the cross outlined in lighter stones. Back of the granite chancel, Gothic windows frame inspiring views of colorful Iron Mountain. A curiously still, elusive spell seems to pervade the area, as if in mute testimony of the desert's healing of even the pangs of war.

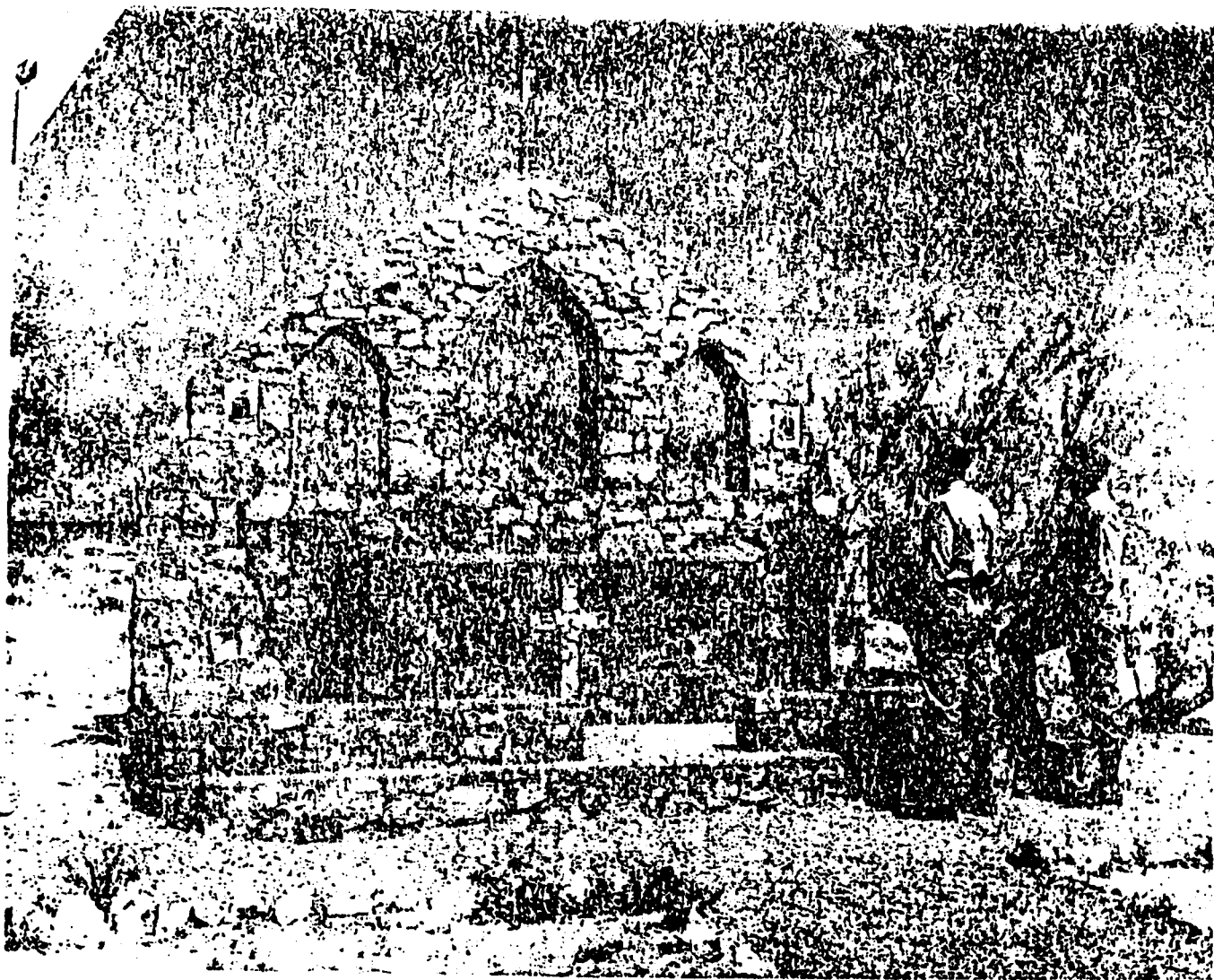
Flaming ocotillo, pungent yellow greasewood, dry yucca and blistering sun are typical of this vast area where free-wheeling maneuvers on a grand scale, representing great enemy numbers as well as our own, were held.

The character of desert training—the varied terrain, sparse vegetation, rugged mountains, steep defiles and rolling dunes, were particularly valuable in conditioning a soldier for actual combat experience. His mind was necessarily always on the alert—he knew he could die of sunstroke, thirst or starvation unless he learned the judicious use of water and supplies. The desert taught the soldier to be self-sustaining, as it had prospectors and pioneers before.

The scattered units of the Desert Theater of Operations, as the combined camps were known, were enlarged until even the desert was crowded. When the training was over and these divisions of troops, tank destroyers, artillery, signal corps and others were deployed to their various contingents, the officers in charge were justifiably proud of their men. They had the ability to take it. The desert climate and isolation took its toll of morale, but it developed leaders as well as fighting men.

Soldiers like General Walton Walker, later killed in Korea; and Major Generals Robert Crow, and P. W. Wood became the most dynamic





*Soldiers' altar in the open desert country near Iron Mountain. Many miles from civilian churches, the troops regularly attended services under the desert sky.
Photo courtesy Metropolitan Water District of Southern California.*

armored leaders in the war—the reputation of the Armored Divisions grew as legends.

But, of them all, the name of General George S. Patton, “Old Blood and Guts” to his men, stands out brilliantly. In the desert he labored mightily to turn green recruits into efficient soldiers, and succeeded well as their official records show.

It was at Patton’s headquarters camp that the two enduring rock shrines were constructed, in contrast with the total lack of the usual civilian facilities. Here they still stand, giving the visitor insight into the creative beauty of men who had little of beauty in lives that were dedicated to destruction.

The huge relief map at the camp, windblown and almost obliterated by

shifting sand, is a reminder of a grim and busy time. It reproduces in natural color the panorama from Yuma to Needles, from Salton Sea to the Arizona mountains. It was constructed of concrete to exact scale, showing roads, waterholes and mountains, and proved invaluable. Over the now sagging ramp, orientation classes were held and desert points and plans of maneuvers were illustrated. Mechanical warfare was new and terrifying. General Patton had a job to do and an over-all picture of the desert gave him a psychological advantage.

The shrines served a far different purpose. Before the rough rock altars, religious services were held regularly and attendance mounted steadily. Men who were on their way, division after division, received their final briefing at headquarters camp before sailing

overseas to capture Tunisia, storm Sicily or plunge ashore at the Normandy beach. The outdoor church under the desert sky smiled a benediction, and toughened combat veterans did not forget.

From far places they sent back news of their buddies—often tragic news—and the epitaphs of these men who had trained on the desert were engraved in the granite for perpetuity. Some may have found final resting places on foreign soil, but their memorial is on the desert.

Many hope these altars will stand as long as does Iron Mountain towering behind them, and it is here, where the Colorado River Aqueduct winds through the mountain bringing life to Southern California, the American Legion proposed a memorial park be established on approximately two sec-



This huge relief map was built a few miles west of the Iron Mountain pumping plant by Army Engineers with Patton's forces in 1942-43. The map measures 130 x 160 feet and represents an area of 32,000 square miles of Southern California desert country. Photo courtesy Metropolitan Water District of Southern California.

tions of government land in honor of the doughty general and his men.

The Metropolitan Water District now patrols the proposed site, doing what it can to keep the shrines in good repair. Officials of the company have expressed their continued interest in the project and Mrs. George S. Patton has given consent that the general's name might be used, but expressed hope that the boys would be remembered, too.

The Legion brought the case to the attention of the state senate interim committee on public lands, which responded favorably. Public interest mounted and when the veterans' organization requested his consideration of the area as a National Monument, Senator Wm. F. Knowland made a special trip to the desert shrine. Considering it worthy of higher notice, Senator Knowland took up the matter with the Department of Defense and received from it endorsement of the project. Encouraged, he introduced a bill to authorize the monument.

Congressman Harry Sheppard submitted a similar bill but both were blocked by the War Department which felt that too many war memorials were being rushed through and suggested action on the state level. So the proposition was whipsawed back to Sacramento and here it rests today. There

have been more obstacles and delays due mainly to the involved financial aspects of the project.

Since the end of the war, many soldiers have returned to the shrines to kneel in thanksgiving and in reverence to the memory of those not returning. The boys who trained here came from all corners of the nation and on vacation trips to the west coast some take the off-trail road from Desert Center or the new cut-off from Twentynine Palms. They show their families, with more than a little pride, the rugged terrain in which they learned the bitter art of fighting a desert war.

To reach the shrine drive 34.7 miles north of Desert Center on the paved Rice road to the Pumping Plant turn-off and then proceed 2.6 miles up this road. A narrow graded road leads from this point to the first of the altars about three-quarters of a mile distant. There is no entrance fee.

A route seasoned desert travelers like is the new county road leading east from Twentynine Palms. Forty-six miles from that lovely desert city, past Dale dry lake, Sheep Hole Mountains and Cadiz Valley, the new route joins the Desert Center-Rice highway eight miles below the Pumping Plant turn-off.

Many of the returning veterans and

other visitors have added their pleas to those of the Legion and other service clubs, notably the Native Sons of the Golden West, in urging the desert memorial.

Actor Leo Carrillo, descendant of a pioneer California family as was Patton, enthusiastically supports the memorial. Declaring that the state has been lax in preparing a suitable memorial to one of her most famous native sons, Carrillo pointed out that an appropriate memorial rightly could be erected in this San Bernardino County location for the general's grandfather, Don Benito Wilson, was a county pioneer.

Don Benito owned a ranch near Colton and discovered and named Big Bear Lake after leaving Los Angeles where he had served as the old pueblo's first city clerk.

While efforts to have the domain set aside as a state park have been fruitless so far, the granite boulders still stand, carved with fading sentiments attesting to the valor of soldiers who fell in the field of battle.

Whether there ever is official recognition or not, the symmetrical altars, built by the hands of desert fighters, speak for the men who will not assemble again. The people for whom the war was fought will not forget - the desert shrines will remain

Timberwolf Tracks

The History of The 104th Infantry Division

1942 - 1945



By
LEO A. HOEGH
and
HOWARD J. DOYLE

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preparations for the next problem, and even after it had been covered we continued to linger, reluctant to bid farewell to an old friend.

M-6: The 104th organized and occupied positions to defend Horse Ridge and Bear Creek Butte. M-7: Timberwolves forced a crossing over the Deschutte River and attacked Kline Butte. The days had grown chilly and the nights cold on the great Oregon desert when the final problem ended 1700 on 30 October. Our memories of the Oregon maneuvers were many. Tasty venison supplementing GI chow. The painful positions and long hours on Camp Adair's marksmanship courses had paid off well for each chow line. The howling coyotes, the traveling PX's, the sawmill swimming hole, bathing in the Deschutte, off-limits Sisters, Alkali Lake, and many other items made up our memoirs.

MAJOR GENERAL TERRY ALLEN ASSUMES COMMAND

On 15 October 1943 Major General Terry de la M. Allen, already a seasoned veteran of World War II, after service in the African and the European Theaters as commander of the Fighting 1st Division, assumed command of the Timberwolves. Major General Gilbert R. Cook was dropped from the roster of the 104th on 19 October when he took command of the XII Corps. The sound basic training received under the able leadership of Major General Cook was reflected later on the battlefield.

Upon taking command General Allen paid the following tribute to the men of the 104th Division: "This is as completely fine a potential combat unit as I have ever seen. I have not seen better spirit or a more thorough response to training."

For a successful combat division, General Allen pointed out that discipline, technique, physical toughness and a belief in your units are essential.

On 7 November the Division moved by train from Bend, Oregon, to Camp Hyder in the California-Arizona maneuver area. Camp was set up near Hyder, Arizona, located in the desert on the Southern Pacific Railroad between Yuma and Phoenix. On 29 November the Division moved to Camp Horn, six miles to the west of Hyder, and there the 104th began its thirteen-week desert training program. General Allen opened the period by outlining to all commissioned and noncommissioned officers the accomplishments and work he expected. Night operations, weapon proficiency, reconnaissance, rapid maneuver, combat exercises and battle drill were especially emphasized. "GET SMART AND GET TOUGH" was the motto of our training and the Timber-



On Camp Carson Lake, 329th Engineers blow up large underwater obstacle as part of invasion maneuvers

wolves soon acquired a confident belief in themselves and their units. The principle of "Find 'em, fix 'em and fight 'em" was firmly inculcated in our combat units.

On 6 January the Legion of Merit was presented by General Patch, Commander of IV Corps, to General Allen for outstanding service in commanding the 1st Infantry Division in Sicily.

While on the desert the Division adopted for its motto, "NOTHING IN HELL CAN STOP THE TIMBERWOLVES," and likewise the Division song was written by Lieutenant Colonel Robert C. Ingalls, S-3 Division Artillery, and Captain Oates A. Pynes, 387th Field Artillery Battalion:

"RALLY THE PACK"

(To the melody of "Rambling Wreck from Georgia Tech")

From way up north in Oregon to Southlands far away
We've moved across the desert sands a-fightin' all the way
We'll climb the highest mountain in any state or land
We'll swing along by combat-team a-fightin' hand to hand.

CHORUS:

Oh, this is our night to howl boys, just follow us with will
The Timberwolves are on the prowl, we're closing in to kill
We're a hellava gang to fight with, just follow us and see
Hey, The 104th will lead the way from hell to victory.

We'll find the foe and fix him there with fire from shot and shell
Then move around on every flank and give him bloody hell
Oh rally the pack to counter-attack we fight with might and main
Hey, The Infantry, Artillery, and Cavalry all the same.

CHORUS: Repeat

Oh the Engineers and Signal Corps, the Quartermaster too
The Special Troops and Medics they will fight along with you
The Ordnance keeps 'em rollin', the MP's all in line
You'll find our gang is sluggin' on, and never markin' time.

CHORUS: Repeat

Tales of maneuvers don't bring many enthusiastic stories, but to Staff Sergeant John Ferraro, Company M, 413th Infantry, it was the most miserable time of his life. In his opinion the Army could do nothing right—and from his commentary on the Oregon maneuvers, we get the average doughboy's feeling for all those dry-runs which, at the time, seemed ridiculous.

Around the middle of July, a new phase of Army life came to us—maneuvers. Although at that time it was only rumor, a GI sense of intuition told us that something was up. The commonplace Army bitching followed. I heard a lot about maneuvers, how rough it was, so naturally I didn't look forward to it. We watched the latter part of July turn those ugly rumors into fact. Oh, how that hurt! Finally, they told us we would maneuver around Bend, Oregon and we first bivouacked in a beautiful forest. This was the life! Yes—for the first day or so. Then came orders to move out.

I was gunner with the 81mm mortars. We moved out for a few miles with the guns on carriers. It was interesting to see how well our vehicles were spaced out and how our boys maneuvered those jeeps and trucks on the twisting roads. Calling them roads was a masterpiece of overstatement, and the dust was four inches thick. When the order came to halt and go on from there off carriers, we all became part of that dust. My nostrils thrived on it; my eyes were constantly at half mast, and it was about an inch thick on my face. I thought—oh those lucky fellows on trucks, but when I saw them they were no different—but, all in all, so far it was fun . . . it says here. We were very green as yet and we didn't mind it. Our training in garrison surely taught us plenty. My first experience, and a well learned one, was one I will never forget because it almost cost me my back. We had just moved out of a forest into the open and we were pretty well bunched up. Just as our sergeant told us to scatter, an enemy plane dove on us. We had plenty of ground to disperse over, and as I ran, the bipod I was carrying dug into my shoulder with each step, and when I hit the ground flat on my stomach, I forgot to throw it away from me. It felt as though a 250-pounder had jumped on me with both feet. I was really mad at my own carelessness and stupidity. I got up bitching and spitting Oregon soil. We had our umpire with us and just as we crossed the opening to move into another forest, we were told an artillery concentration was falling on us. We all hit the dirt and were supposed to dig in. I forgot because I was gabbing with my buddy and laughing about it. The next thing I knew, both of us were dead—technically! Well, if you remember those maneuvers, we didn't have it easy for those next few days while we were supposed to be dead. Between KP and latrine digging, I started looking for the smallest hill to go over. Finally, we rejoined our outfit and took mental harassment for our stupidity.

We attacked our objective a few hours later and completed taking it. A slight downpour for an hour or so got things a little muddy. We dug in and were told to hold our objective for the night. By now C rations were a steady diet. We had them for breakfast and dinner, but the poop had us getting a hot supper. It never came. Then more rain. We were to stay on the alert all night because our planes spotted the enemy making preparations for an attack. It was miserable; no supper, wet to the skin, and up to our ankles in mud and water. To me, it seemed foolish, for I figured half our men would come down with pneumonia, but surprisingly none did. The next morning, with the dawn, came a counter-attack. We couldn't hold. We were to retreat to an alternate defensive position—way back. No sleep and still wet, I was ready to call it quits. Finally reaching our defensive position we dug in. I dug and dug and dug, and soon—blisters. Boy was I tired! I asked my officer if this was what we went through in combat and he said it was as far as he knew, if not worse. I was really learning to be rough and tough and the more we went on the more I became accustomed to digging, hitting the dirt, camouflaging and carrying my

bipod. Never will I forget my first gun position; I thought I had a beauty. I lay back and relaxed, waiting for compliments. My officer walked up and started enumerating my mistakes. When he got through it seemed as though I just had a hole in the ground and that's all. But now I was beginning to learn what the maneuvers were for—to enable you to make your mistakes now and get you rough and tough for combat operations.

One night, I was picked for a patrol into the enemy lines. We removed our helmets and leggins, wore wool knit caps, tied our pants legs down, and blackened our faces. We moved out around midnight. The enemy wasn't very much on the alert, so we infiltrated through their lines without any trouble. We got our information and were on the way back when all hell broke loose. I was captured and from then until our first rest period I dug latrines, did KP and marched until I thought my feet would fall off. By this time I was thoroughly disgusted with maneuvers and the Army. I was mad at the Army while actually what was burning me up was my own stupidity.

What was the use of digging holes, marching and learning how to do things quietly when we didn't have to? I could do all that when the time came. I never really thought I would be going overseas—naive character that I was. What really got me down was the eating; especially when the enemy cut us off from our kitchen. I was so hungry I figured I couldn't go very much farther—but I did, and plenty. When our K and C rations finally came, they tasted like filet de mignon.

What seemed really crazy was learning to fight at night. Who ever heard of fighting at night? How the hell could we tell where we were going, where the enemy was, or what we were walking into? I figured the man that was sitting and waiting for you could see you but you wouldn't see him . . . need I say more? These crazy officers; any sensible man could see it wouldn't work. But all the bitching I did was futile. We were to learn how to fight at night—damning the maneuvers. How many nights I was wet and cold to the skin, I can't remember. And the mud—hell, that was part of me. I used to think and pray: "Isn't this ever going to end?" When I had to shave in cold water, I really blew my top, then someone would say, "Okay, wash them dirty clothes." What the hell! Can't they even get our clothes washed? But we were really getting tough . . . that I mustn't forget.

Another thing: I don't believe we ever went around any hills. Boy, I used to curse those hills when I got about half way up. That damned bipod seemed as though it was pulling me down. One incident I will never forget. We had moved out across a plain to attack a hill; rather a mountain, because it was really tall. There wasn't any firing going on—seemed funny to me. Maybe a trap. We got almost to the top and one of these affable umpires turned and said to our commanding officer, "No one is here, this must be the wrong hill." That did it! What a man—he could have told us at the bottom of the hill but waited until we were on the top. I could have gleefully knocked hell out of him for that. That's the Army for you, always doing it the wrong way. I'd sooner be overseas—I thought.

Something else that got me down was the size of the shovel they issued us. I remember one day when we were in a hurry to dig in because of imminent enemy attack. I was digging with my shovel, large size M-1—when my sergeant walked up and started chewing because I was so slow. It annoyed me so I asked him why he didn't get me a spoon, I could dig much faster. He did. We stayed

there that night. About two in the morning, when I was doing okay in dream-land I was awakened by a lot of yelling and a not too gentle boot placed in a tender spot. It was our sergeant yelling, "Come on, let's go, we have to move out." Say, wasn't that nice; get out of a nice warm bed into the cold and run your fanny off. Leaving in a hurry, I forgot my blankets but not that heavy M-1. That came first, at the risk of freezing. I guess they figured I could take it. Then came the dry runs; aren't they ever going to give us any ammo? If I fired one round, I fired a million—all dry. I was even dry running in my sleep I guess.

My only consolation was a hot meal and my mail, that is, when I received it. Worse than that I was losing my money during rest periods. Oh, those dice. I recall the night we went to see a movie. We all sat on a little hill looking down at the makeshift screen. There I was, all excited and anxious to see my first movie in months. Time came for the movie and surely something had to go wrong. On came the picture but no sound. At this point, I realized that such things didn't seem to bother me like they used to . . . I must be getting indoctrinated. I was bitching when I crawled in the bed. Oh, a beautiful bed. You can't imagine the luxury; a blanket spread on the nice soft ground with the little boulders for your pillow. What a life! Does this go on forever? I wondered if they were accepting transfers to the Air Corps.

One joyful thing on maneuvers I won't forget is the time they attached our section of mortars to a company occupying a hill to the left of a road used by the enemy. We were told to strike at the convoy, capture what we could and move back to our hill. It was really fun. It started raining pretty hard that day and we had made shelters for ourselves to keep dry. The enemy had attacked the rest of our unit and pushed them back some eight or nine miles. The enemy didn't know our position. That evening the moon came out and we could see the road very plain. It made a dip in front of our lines and the rain turned it into a quagmire. The enemy convoy was to use that road to move forward. We watched their first few trucks try, but they bogged down and had to stay there. The other vehicles turned around and went out another way. In the morning, to the enemy's surprise, we attacked them and much to our surprise and joy, we had a kitchen truck. For two days, we had hot meals three times a day and snacks in between. That was my type of maneuvers. But I changed my mind a few hours later. The enemy found us, chased us back, and we lost two of the vehicles in the same mud. That meant carrying our guns, and once again our bedding equipment stayed with the enemy. The best part of eating at night was you didn't see what you were eating. Everything went into one; dessert, meat, potatoes and anything else you had; even dirt sometimes if you weren't careful. Finally, we heard maneuvers were over. Was I happy! Rumors flying all over, all kinds. I figured, good old garrison. Then officially we were told we were going to Arizona. What for? Yes, you guessed it, maneuvers again. Arizona maneuvers. Won't I ever get away from these damned maneuvers?

The arduous training in the Horn area was completed on 9 February and the Division moved northwest of Yuma for Corps maneuvers. We left behind us the wide open wastelands of Horn, the pyramidal tent homes, sand and dust storms, and memories of the pleasant weekend visits to Yuma and Phoenix. The Division had no sooner closed in sunny California northwest of Yuma than the rains came. All Califor-



Seagull Boxing Team, Division Champions

nians went into mourning. During the next two weeks the Division was engaged in maneuvers with the 80th Division. On 18 February, the Timberwolves commenced their attack against the fortified positions at Palen Pass, the formidable obstacle which had never been "captured." Taking advantage of its night operations and its physical toughness training, the Timberwolves scaled the high ridges and fighting by night accomplished its mission of seizing Palen Pass. The maneuvers ended with the next problem, during which the Division fought a delaying action for four days. On 4 March the Division moved to Camp Granite, California. Our new home did not differ greatly from Hyder or Horn except that the wind blew more severely. Timberwolves were seen in Idaho, Palm Springs and even Los Angeles. Movement rumors began to rumble—Fort Dix, Camp Devens, San Luis Obispo, and Fort Lewis. No mention was made of Camp Carson, Colorado, but on 15 March the Timberwolves were on their way to Colorado Springs.

Many changes had been made in the staff of the Division during the eighteen months following its activation. Major General Cook had been succeeded by General Allen on 15 October; Brigadier General Kramer, Assistant Division Commander, was succeeded by Brigadier General Moore on 6 February. Brigadier General William C. Dunkel, Division Artillery Commander, left the Division and Brigadier General William Woodward on 29 December assumed command. Colonel Harold Mandel, Chief of Staff, was succeeded by Lieutenant Colonel B. R. DeGraff on 2 October. Lieutenant Colonel Burwell B. Wilkes, AC of S, G-1, was succeeded by Major William J. Boydston on 24 April 1943. Major



Infantry Day—1944

Boydston was succeeded by Major Basil E. Williams on 14 October 1943. Major Williams gave way to Lieutenant Colonel Scott T. Rex on 13 December 1943.

Other changes transferred Lieutenant Colonel Charles T. Senay, AC of S, G-2, who was succeeded by Lieutenant Colonel Howard E. Pearson on 4 November 1942. Lieutenant Colonel James E. Bowen, Jr., AC of S, G-3, was succeeded by Major Leo A. Hoegh on 25 November 1943. Lieutenant Colonel Herbert B. Enderton left and Lieutenant Colonel DeGraff became AC of S, G-4, on 11 November 1942. Major Clyde L. Pennington on 2 October 1943 took over this position from Colonel DeGraff.

Camp Carson, lying in the evening shadows of Pike's Peak, was surrounded by renowned scenic and historic spots, Wacs, and mules. Here, to the ranks of the Division, came thousands of the ASTP and Air Corps who embarked on a five-weeks training program covering eleven basic infantry subjects. Under Lieutenant Colonel Floyd, the training regiment was established to carry on the program. On 7 May, the training regiment was dissolved and the new Timberwolves carried on with training in their parent organizations. Outstanding in the Carson training were numerous night attacks, amphibious training, malaria training,

U. S. Army Military History Institute

Ours To Hold It High

The History of the 77th Infantry Division in World War II

U.S. Army, 77th Infantry Division



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MEN WHO WERE THERE

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CHAPTER 3

The Sands of Hyder

THE Division Advance Party reached Hyder, Arizona, on 1 April 1943. To the men who stared disgustedly at the landscape it was truly April Fool's Day, and they were convinced that the joke, such as it was, was on them. The little yellow railroad station, the siding shimmering in the sun, the five or six squat, dusty buildings, and the low water tanks—those were Hyder. That flat expanse of brush-covered, dusty, desolate desert; that pile of folded tents, those few survey stakes would be Camp Hyder after they built it. The raw, sun-blackened, naked mountain just behind the little settlement was Hyder Mountain: they would come to know it well but not affectionately.

As the advance party started to lay out the camp, troop trains were en route from Louisiana. On those trains the rumors were heartening. The 77th would stay only twelve weeks at a good camp in the desert; would do two weeks of maneuvers and then ship for overseas. It was a pleasant trip in comfortable, clean, Pullman cars. The good food, clean sheets, and time for loafing were welcome after maneuver life. On one of the trains of the 305th Infantry were photographers from *Life Magazine*, and the pictorial record of a troop movement by rail appeared, without identifying the organization, beginning on page 77 of the issue of 28 June 1943.

One by one the trains slowed to a halt at Hyder, and one by one the soldiers had the shock of looking out upon an arid, barren waste which, as scenery, might have some beauty in its own way, but was certainly not like Brooklyn to live in. The Division Band met most of the trains and welcomed the troops with such well chosen tunes as "This is the Army" and "There'll Be a Hot Time." Each successive company slogged through the powdery, ankle-deep dust to its new camp site, and went to work.

As usual, the 302d Engineers bore the brunt of the construction, although all units were busy. The nearest water was six miles away at Agua Caliente and it was, as the name indicated, hot water. The roads soon disappeared in powdered silt. The Engineers sprinkled and finally paved them with rock blasted from the mountain. They drilled a deep well near camp where the Southern Pacific Railroad had repeatedly found no water, and struck a flow of 120,000 gallons a day. They established there a water point and built a huge shower facility.

Camp Hyder became a city of tents extending two miles across the dusty desert. Each company had a double row of pyramidal tents and in each tent were six cots, six straw ticks, twelve barracks bags, and

several lizards and scorpions. Division Headquarters was a semicircular row of pyramidal tents. But Camp Hyder eventually did obtain one building when the officers of the 306th Infantry built an adobe club. Later the 305th Infantry also went into the mud-brick business and erected a larger club. All units had an equal share of dust, heat, snakes, cacti, ground squirrels and lizards.

Training got underway slowly because it was necessary for the men to become acclimated. A firing range and an infiltration course were started. However, it was found necessary to police the firing line each morning to remove the rattlesnakes. Columns made practice marches across the greasewood flats and discovered that deep arroyos cut across the desert with irritating frequency, adding to the difficulties of travel.

To develop leadership in junior officers each infantry platoon was sent out alone on a six-day exercise which called for compass marches by day and by night in the desert mountains. Platoons would pick up caches of water and rations at points designated on the map, if they read their maps and compasses correctly. Several narrow escapes and instances of real hardship developed from these treks, but no lives were lost.

Previously, several armored divisions had trained in the American desert, but the 77th was the first infantry division to maneuver in that oppressive place. Still serving as a "guinea pig" outfit it was called on to test desert formation wherein the entire Division would maneuver on a broad front as do ships at sea. For several days the desert was churned to clouds of rolling dust as 13,000 men and hundreds of vehicles advanced and wheeled and halted, guiding on colored captive balloon markers. The arroyos hindered and diverted though they did not stop the movement of troops.

At the same time the Division was testing drinking water requirements of foot soldiers in the desert. The infantry proved the hard way what any old desert prospector could have told them—that with searing temperatures of a hundred and twenty degrees in non-existent shade one quart of drinking water per man per day was far below their body losses. The men quickly learned, however, how to make shade by tossing a shelter half atop a greasewood brush or a sparse palo verde tree, how to put a wet sock around their canteens and how to use sweating desert bags to keep water cool. A very few even began to like the desert, but their comrades attributed this attitude to a touch of the sun.

On 22 May General Woodruff was suddenly ordered to assume command of the VII Corps. On the 27th Major General A. D. Bruce

assumed command of the Division. General Bruce had served with distinction in the 2d Division in World War I, rising in combat from lieutenant to lieutenant colonel. He received high decorations from both the United States and French Governments, including the American Distinguished Service Cross and the French Legion of Honor. During the years between the two wars he had graduated from The Infantry School, the Field Artillery School, the Command and General Staff School, the Army War College, and the Naval War College. During World War II, prior to joining the 77th, General Bruce had served on the War Department General Staff and had organized, built, and commanded the Tank Destroyer Center at Camp Hood, Texas. With characteristic aggressiveness he set out to continue the training of the Division and to ready it for whatever combat duties might be in store.

At about the same time Brigadier General Griner was called away to assume command of another Division. A little later his place as Assistant Division Commander was taken by Brigadier General Edwin H. Randle who had served in France in World War I with the 5th Division. In World War II as a Colonel he had commanded a regimental combat team of the 9th Infantry Division which made an assault landing and captured Safi, French Morocco on 8 November 1942. His combat team fought at El Guettar where General Randle was awarded the Distinguished Service Cross, and captured Bizerte, Tunisia, in May 1943 at the close of the African campaign. He was then promoted and assigned to the 77th Division.

Later in June the Division moved by motor convoy along sweltering, dusty desert roads to an assembly area near Palo Verde, California. Here, among the mesquite trees at the edge of the California desert it prepared for an advance to the north. The maneuvers were under the direction and control of the IX Corps. The 77th's teammates were the 7th Armored Division, the 4th Cavalry, and several Tank Destroyer Battalions. The "enemy," the 8th Motorized Division, heavily reinforced, was on the defensive somewhere to the north.

In the first phase, the Blue forces moved north, found the "enemy" in Palen Pass, slowly pushed him out of his positions and started in pursuit. Then the Blue force was ordered south to Ogilby, California for a brief rest. In Phase Two the maneuver was repeated, but this time the Blues moved eighty miles in a single hectic night to surprise the "enemy" at Palen Pass. This time the pursuit continued north over the sun-baked desert and white-crusted salt flats almost to Needles. Just as the Blue forces had the retreating "enemy" almost trapped, the maneuver terminated.

This was a maneuver of supply and movement. The emphasis was

on ammunition, water, gasoline, and rations. For the troops it meant only scorching, dusty, endless, miles of marching or riding: it meant temperatures of 130 degrees and no shade, and never quite enough water. There was nothing new in that, or in cutting barbed-wire entanglements, dodging simulated land mines, or operating observation posts atop those barren, heat-baked ridges. But the officers and men responsible for supply learned how to function without roads from supply bases fifty to one hundred miles distant.

Another group which received valuable training was the second string unit commanders. All commanding officers of regiments, battalions, and companies were deliberately placed on umpire duty with the "enemy," and the seconds-in-command carried the ball. Although this sometimes resulted in less efficient performances it helped many of the officers who later had to take over in the midst of combat.

The 77th Division established some records and proved that infantry could move fast and far, even in the desert in July; but it was not a pleasant task and when, late in the month, after a twenty-four hour motor movement the rows of tents appeared over the horizon, even Camp Hyder looked somewhat inviting.

Another bitter disappointment was in store for officers and men. They had expected to leave the desert immediately after the maneuvers. Now they found they were to remain another two months. This, combined with a feeling of having gone stale, a rather drastic shakeup among the officer personnel, the discomforts of the terrific heat and primitive living conditions, and the almost total absence of recreational facilities noticeably lowered the morale and effectiveness of the Division.

Nevertheless, training and a great deal of work in making the camp more livable were carried on. General Bruce brought Lieutenant Colonel Gordon F. Kimbrell, a graduate of British Commando training, to establish near the camp his "Bull Dog School." There, under the most realistic conditions possible, with lavish use of service ammunition and demolitions, all company and battery officers, and many non-commissioned officers of the Division practiced small unit tactics, hand to hand fighting, firing small arms and light machine guns from the hip, infiltration under rifle and machine gun fire, and village fighting. A week at this school of hard knocks was guaranteed to sweat pounds from any man and to add to his skill, alertness and self-confidence. He had to crawl across open ground swept by the fire of expert riflemen who placed warning shots close if he made errors. He took part in patrols and small unit attacks against "enemy" who fired live ammunition. He manufactured and used demolition charges and booby traps

until he came to consider TNT a commonplace commodity. He fired all infantry weapons under all conditions. He lived hard and dangerously, for despite precautions, men were hurt and one officer was killed. He finished the course with a much better idea of what was ahead, and a confidence in his own ability to take it.

Such rugged, dangerous training made, by comparison, the life of a garrison prisoner in the stockade seem relatively pleasant. So, for those offenders, there was established at a place even more remote, a Training Company where life was even more rigorous than at the Bull Dog School. There were, however, relatively few members of this company. Any incipient plans for absence without leave were discouraged by the tragic fate of one who tried it: his buzzard-torn remains and empty canteen were found covered with alkali dust in a waterless arroyo.

During the last week of maneuvers, Colonel Alexander Adair had been transferred from the division. His place as commanding officer of the 306th Infantry was filled, temporarily, by Lieutenant Colonel Cecil Nist, then by Lieutenant Aubrey D. Smith. Shortly thereafter, Colonel William McChesney Chapman was assigned to the 77th and given command of the 306th Infantry.

At Camp Hyder, despite a Desert Training Center prescription which put salt in the lukewarm drinking water, greasy C rations and powdered eggs on the menu, life did have a few brighter spots. A limited amount of beer and soft drinks and even an inadequate amount of ice to cool them found their way into the Post Exchanges. There were nightly movies and a few courageous Hollywood troupes toured the cactus circuit, although the performers always departed with a touch of heat exhaustion and remarks about foreign service pay. Athletic programs got under way and baseball and boxing teams represented the organizations in competition. The Engineers found time to rebuild the swimming pool at Agua Caliente and many men spent pleasant hours at this one place where water seemed abundant though hot.

Those few queer characters who grew to like the desert found opportunities to study the strange plant and animal life of this forgotten, sun-baked land. They learned to find bitter yellow water in "tanks" in the mountains, sampled the edible fruits of the cacti and explored old mining claims.

Best of all were the visits to Phoenix. This city, one hundred miles to the east, was a recreation spot for the dehydrated soldiers, and its hospitality was appreciated. In its modern hotels and homes they scrubbed off desert dust and drank cool liquids. Its parks contained green grass and trees. Here in the city the wives of the 77th found

houses, apartments, and cabins. Some footloose individuals obtained passes to travel further, even to Palm Springs, the Grand Canyon, and Los Angeles.

The Division newspaper reappeared 26 August after a lapse in publication since Fort Jackson days under sponsorship of the Division Special Service Office. Both the name, "The Liberty Torch" and the sub-title "Ours to Hold it High" had been suggested by the anything but sentimental soldiers.

In August a great and surprising natural phenomenon took place. It rained. Not only once but several times. But a great deal of wind and terrific dust clouds always presaged the rain drops. In two or three storms, on successive nights, whole rows of tents were ripped and flattened, and sudden floods washed away parts of the camp. During these August days clerks learned to put heavy rocks on every loose paper, otherwise they were likely to be snatched away by a whirlwind and filed in a greasewood bush.

Lieutenant General Lesley J. McNair, who had visited the 77th during both the Louisiana and Desert Maneuvers, came again on 27 August to inspect the Division. He found the regimental combat teams engaged in strenuous six-day exercises in the mountainous terrain east of Hyder. These involved long marches, night motor movements along narrow, winding mountain roads, and camouflage training under difficult conditions. Reconnaissance and intelligence personnel were undergoing practical tests which included dangerous and extended patrol missions over strange terrain.

Following the six-day problems the regiments received air-ground training and were given tests which included aircraft recognition, air-ground communication and close air-support coordination. It was on 15 September, at the conclusion of an air-support demonstration witnessed by most of the men of the Division, that General Bruce announced that the 77th would soon entrain for Indiantown Gap Military Reservation in Pennsylvania. The news was received with cheers.

With a small advance party General Bruce left at once for the east. In New York he had the pleasure of addressing the 77th Division Association on 26 September. General McMahan, Division Artillery Commander, also departed, but for a new assignment. As the troop trains were loaded, confusion developed concerning their destination. Several new orders were received. The A. P. Hill Military Reservation in Virginia was named, and then Camp Pickett, Virginia. No one knew where the movement would end but at least all of the suggested destinations were near the east coast, and they were bound to be more desirable than Camp Hyder. So, each day, train loads of men shook

from themselves the dust of Hyder and departed eastward with rumors flying.

The Division spent six months in the desert. It lost some men there, a few actual casualties and many who could not endure the combination of climate and rugged training. It had been in fighting trim when it arrived: it came out leaner, tougher, and a little bitter, ready to cause trouble for someone, as the Japanese found to their distress several months later. But the men were still able to laugh in that dry way in which experienced soldiers laugh, mostly at themselves. It was this sort of humor which conceived the Hyder Campaign Medal, which will probably never be recognized by the War Department. In the words of one junior officer who lost thirty pounds during the desert summer, "The Hyder ribbon is a strip of sandpaper on which is mounted a broken thermometer. If you fought at Palen Pass you can wear on it one salt tablet, and if you climbed Fourth of July Butte you are eligible to wear on it a small bronze cactus lobe."

PATTON COUNTRY

HIS MEMORY has not dimmed for thousands of desert residents, yet the physical signs of General George S. Patton's World War II "invasion" of the Colorado and Mojave deserts are gradually fading away—as old soldiers are reputed to.

In January, 1942, the famed cavalryman and U.S. Olympics equestrian, one of the modern Army's first armor specialists, established the largest training center in the history of the nation's military forces—encompassing most of the arid parts of California south of Death Valley, from Las Vegas, Nevada, and Kingman, Arizona on the east to the escarpment of the San Bernardino, San Jacinto and Santa Rosa Mountains on the west.

Patton himself spent only a few months at Camp Young, as the headquarters nucleus itself was called, before leaving for North Africa and his textbook success against the Germans there, in Sicily and across France and Germany.

He died, just after the war ended in Europe, the result of a car-truck crash.

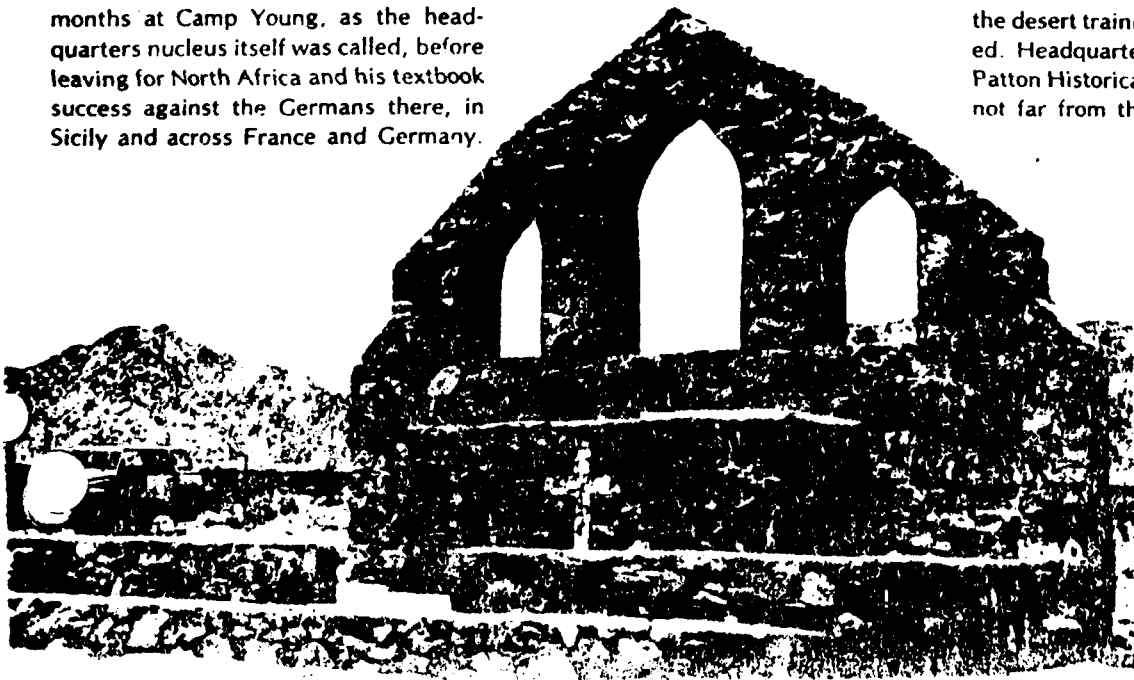
Patton came to the desert from Ft. Benning, Georgia, establishing his original headquarters at the old red-brick Hotel Indio. Advance units of his new First Armored Corps moved via troop train to Indio and Freda siding, 45 miles northwest of Blythe, initially in April, 1942.

The huge base, covering more than 16,000 square miles, expanded under succeeding commanders, becoming the Desert Training Center. The second major headquarters area was established near Freda. The late General Walton H. Walker formed the XX Corps after his mentor, Patton, departed. Known as the "Ghost Corps" by the Germans due to

his elusive attack and disappear tactics, Walker's force was second only to Patton in its exploits.

The Patton mystique has grown in recent years, particularly since the hit biographical movie starring George C. Scott. Patton was the grandson of Don Benito (Benjamin) Wilson, one of the first Anglo-Saxons to reach Spanish-Mexican California before the Gold Rush. The general was born at San Gabriel in 1885, graduated from West Point and was a mainstay of the U.S. Olympic team in 1912, although he did not win a medal. He fought in Mexico with Pershing and distinguished himself in France during World War I.

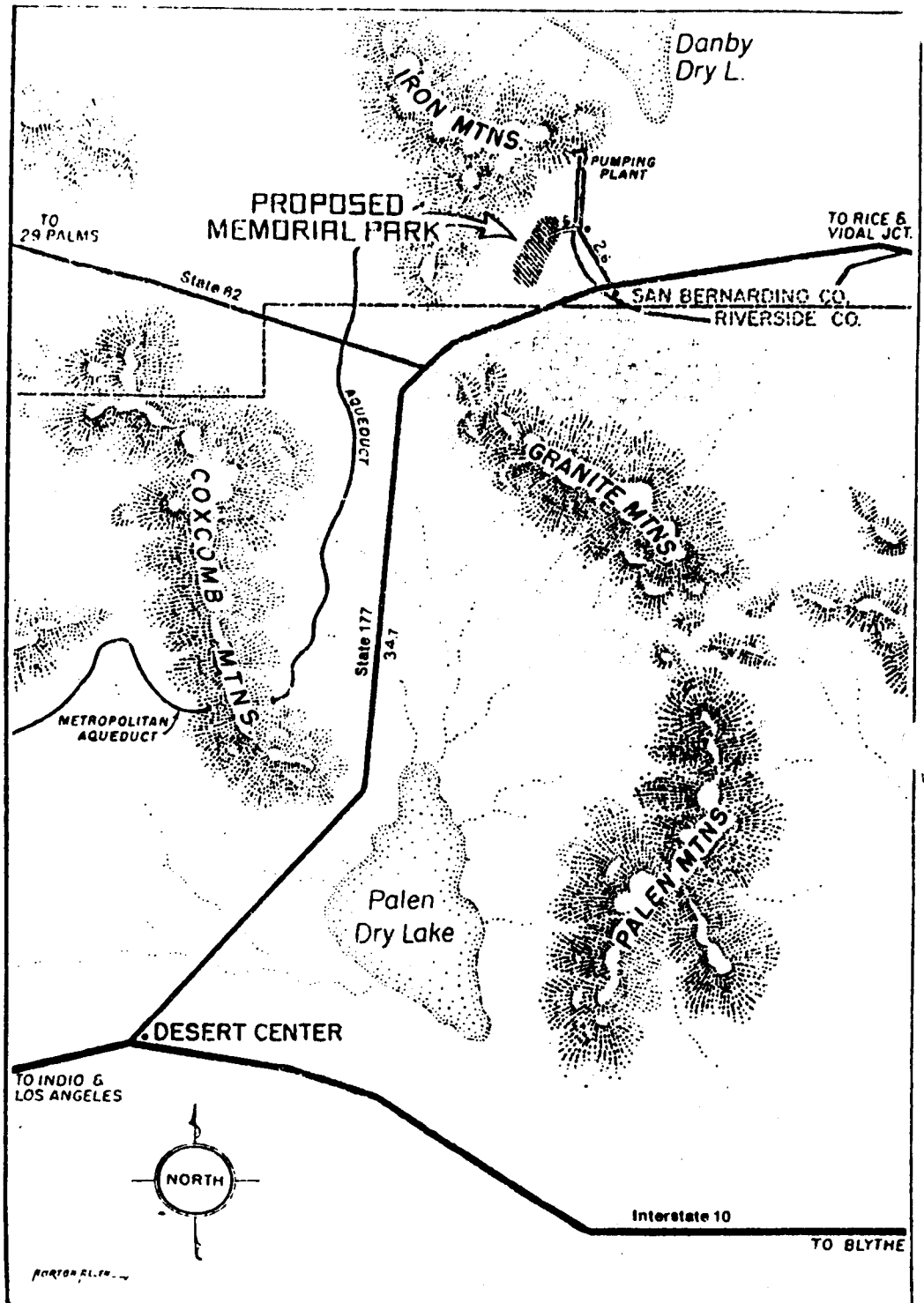
Such is the Patton legend today that a new commemorative group has recently formed to honor both the Californian and the desert training complex he established. Headquarters of the Camp Young-Patton Historical Society are in Whittier, not far from the general's birthplace.



Larger of the two altars at the almost-forgotten Iron Mountain training site for World War II tank and artillery gunners shows little effects of repeated flooding and rodent holes under its footings.

by BILL JENNINGS

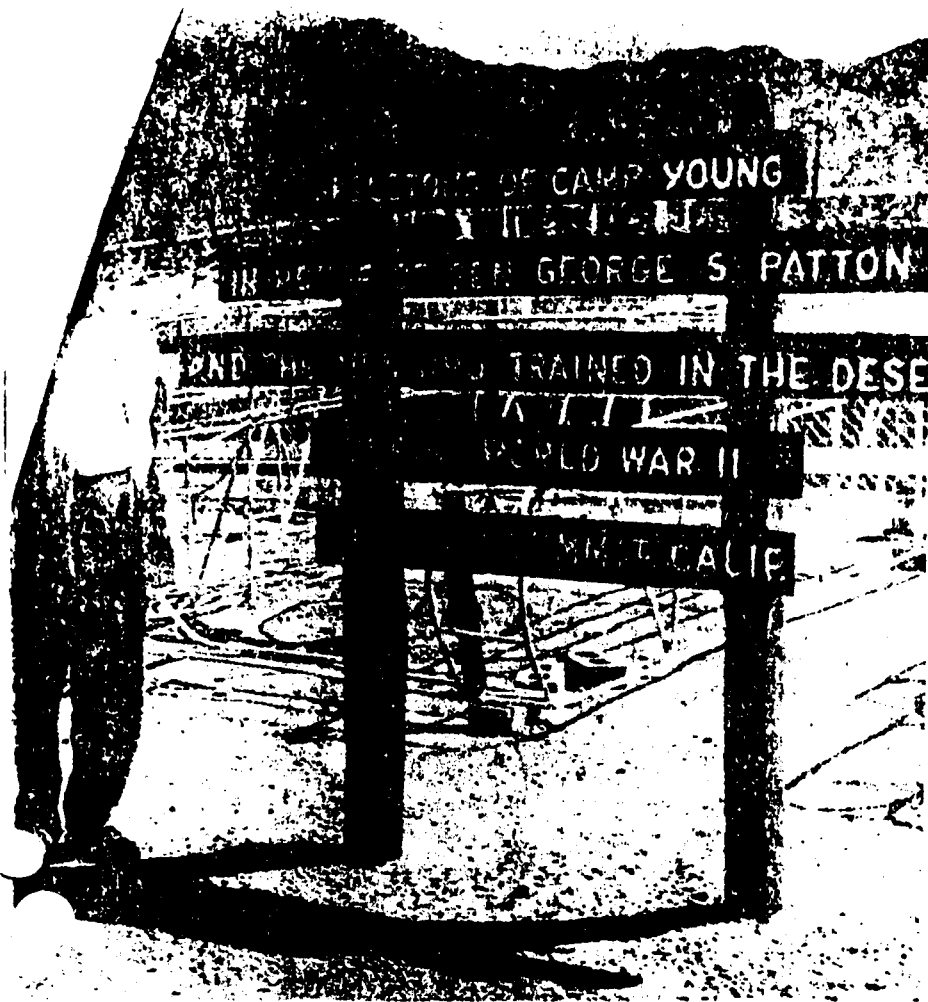
This revised map is from the original 1957 article wherein a Desert Memorial Park was planned to honor all the men who trained in the desert in the early stages of World War II. This map covers but a small portion of the 16,000-square-mile Desert Training Center.



The mark he left behind is more symbolic than actual—many of the scars remaining in the perimeters of his maneuver area actually date to 1964, when the Army again used much of the Patton Country to stage Desert Strike, the largest desert training exercise since World War II. Most impact around Twentynine Palms is due to current Marine Corps training, and Naval aerial gunnery and rocketry have marked the

Chocolate Mountains northeast of Niland more than Patton ever did. Because of the huge size of the Desert Training Center, nee Camp Young, this story will concentrate on only a small part of the region, a roughly rectangular area bounded on the west by the Coachella Valley, on the north by Metropolitan Water District's Colorado River Aqueduct, on the east by the river itself, and on the south by the Riverside-Imper-

ial counties boundary. Even that arbitrary division encompasses more than two million acres, most of it administered in 1977 by the U.S. Bureau of Land Management. Patton's field headquarters were located a mile north of present-day Interstate 10, a half-mile east of the Cottonwood Springs Road which leads to Twentynine Palms through Joshua Tree National Monument. All that's left today



Joseph Chiriaco stands beside his own personal monument to the Patton legacy. These metal frames were covered with tank-shaped shrouds of canvas to simulate light tanks as targets for aerial bombs and machine guns. Chiriaco Summit, on Interstate 10 east of Indio, California, is near Patton's headquarters at Camp Young.

are several long lines of once white-painted rocks that bordered entrance and service roads. Several tons of coal are scattered around what once was the headquarters laundry and power house. Eight miles to the east, along the Hay-

field aqueduct pumping station road north of I-10, a *Desert* reader recently found 51 World War II-vintage Army dogtags, perhaps dating to Patton days. Hayfield, which takes its name from the distinctive seasonal grass that grows on

the dry lake or playa after wet winters, is just east of Chiriaco Summit, one of two freeway oases in the area that date to Patton's time. The other is the Ragsdale family's Desert Center, 19 miles to the east.

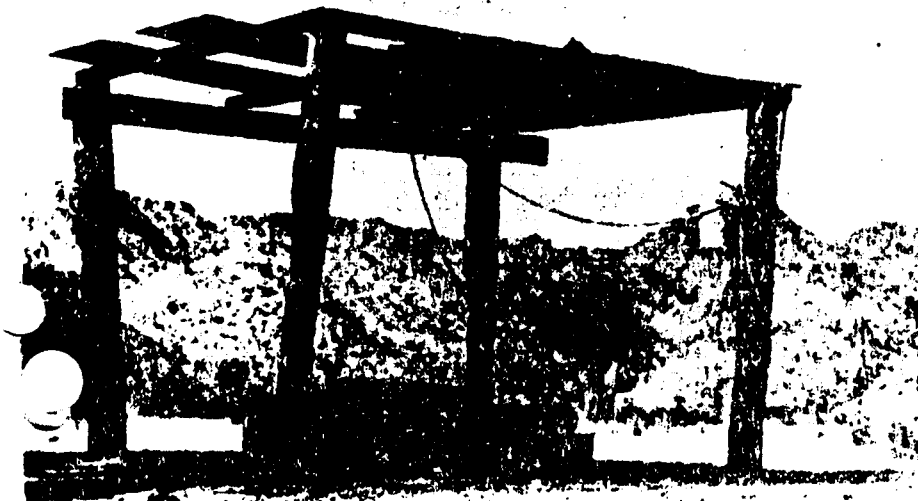
Joe Chiriaco has operated his auto and driver refreshment stop since 1933. He has his own memorial to Patton, whom he remembers somewhat fondly. Two white-painted metal frameworks near the front door are identified as "skeletons of Camp Young, in honor of General George S. Patton and the men who trained in the desert during World War II."

These were the frames of canvas-covered targets, in the shape of light tanks that were used by low-flying aircraft and tank gunners. They are among the few tangible remnants of those exciting days.

The mile-long Shavers Summit Airport east of Chiriaco's is now maintained by Riverside County but was one of several strips used by Patton's staff for speedy transportation to outlying training sites. Others are near Freda, Rice, Blythe and near Wiley Well to the southeast.

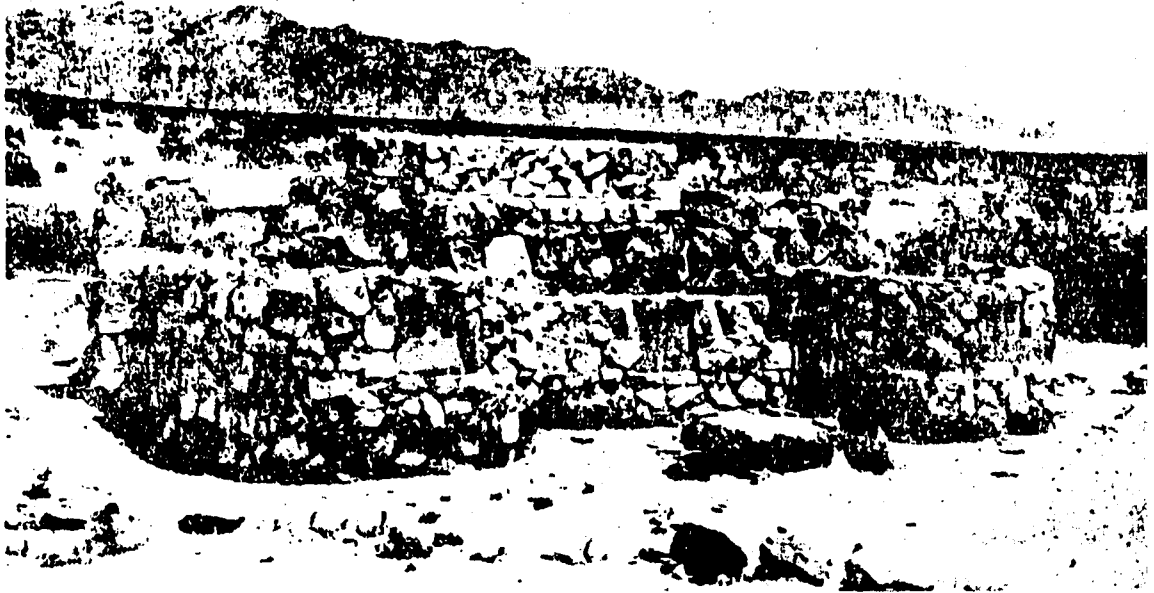
Most of the central area of Patton Country is classified for careful use under the BLM Desert Plan. You must stay on marked routes in the national monument to the northwest and in two "special-design" sectors that straddle or adjoin the old Desert Center-Rice Road. It is officially State Route 177-62 all the way from I-10 to Earp, on the Colorado River just west of Parker, Arizona.

There is one closed area, well-marked,



Historic Beal's Well in the Chocolate Mountains, east of the Salton Sea, formerly was a traveler's lifesaver on the old Niland-Blythe road, now closed. Choclates were heavily used by Patton's forces and even today by Naval aviators as a bombing, rocket and aerial gunnery range.

Lower of the two altars at the Desert Training Center headquarters camp near Iron Mountain shows the ravages of time, and is beginning to merge back into the desert alluvial fan from which it was formed in 1942. Site is protected by fencing and lack of directional signs. Site was used by tank-artillery trainees.



at the BLM's Desert Lily preserve, six miles northeast of Desert Center on State 177. Another restricted area surrounds Palen Dry Lake, which includes some private land, a zone of unexploded artillery and aerial bombs and shells, some chartered archeological sites. You are urged to stick to existing trails, of which there are literally hundreds in Patton Country.

Ford Dry Lake, opposite the Corn Spring-Graham Pass offramp on I-10, 25 miles east of Desert Center, is the jumping off place for one of the few unre-

stricted travel areas under the BLM plan. You can drive north into the Palen Pass country or northeast across the McCoy Mountains to the Arlington Mine and the almost deserted company town of Midland, on the Santa Fe Railway's Rice-Blythe branch. Midland was abandoned when gypsum quarries in the Little Maria Mountains were closed a dozen years ago. Many of these mines, in the Little Marias, the McCoy's and the Palens are still active claims so heed the no-trespass signs.

The only major paved roads in this

part of Patton Country are the state-federal routes, I-10, SR 177 and 62, and the portion of the Blythe-Rice road to Midland, maintained by Riverside County. State Highway 95, paralleling the Colorado River to the east, marks the perimeter of Patton Country here.

The Bradshaw Trail, described in *Desert* two months ago, is the main access to the southern perimeter of Patton Country, and is generally in good, slightly washboard condition, except after those rare cloudburst storms when it is likely to be impassable.



Historic Hotel Indio, one of the oldest resort buildings in the lower Coachella Valley, gained fame of another sort in 1942 when it became headquarters for General George S. Patton's desert armored training center to the east. Indio was the main supply point for the huge camp that sprang out of the cactus 35 miles away.

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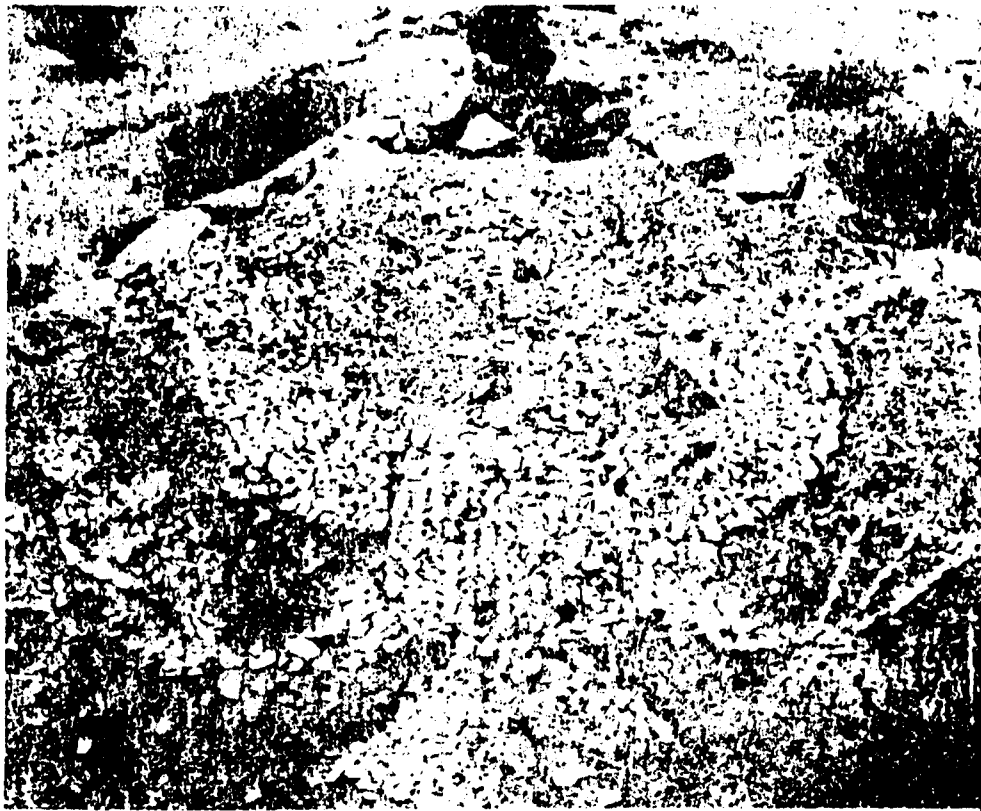
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Quartz chips mark a lasting replica of the U.S. Seal at the old artillery headquarters area of the Desert Training Center near Iron Mountain Pumping Station. The World War II souvenir, still intact, is about five feet in diameter.

Off these major routes are countless desert tracks, some of them frustrating deadends, others good secondary through routes.

Accurate maps for Patton Country are hard to come by. The U.S. Geologic Survey 15-minute series topographic maps, generally the best overall for these monthly trips, are not totally satisfactory in this case, because of their age. Some of the area has not been surveyed or mapped in more than 25 years and roads shown on them may not be passable—or exist at all! This is particularly true of the Ford Dry Lake-Palen and Chuckwalla Valley area east of Desert Center.

Part of the problem stems from construction of Interstate 10, which does not follow the old 60-70 route. Some of the secondary roads can be reached from the old highway which is a frontage road with overpasses for the Corn Spring, Graham Pass-Chuckwalla Spring and Wiley Well routes to the south. Some of the old tracks to the north of the freeway can be reached from these offramps, or cross country from the Desert Center-Rice highway.

Camping is generally permitted

throughout the Patton region but the only organized campgrounds are the BLM enclosures at Wiley Well, Corn Spring and Coon Hollow. There is no safe water other than at the campgrounds and perhaps Chuckwalla Spring—which has been refurbished since the big storm of September, 1976.

The only off-roaders route across the rugged middle of Patton Country from east to west is the old Palen Pass-Arlington Mine road. It leaves SR 177 (Desert Center-Rice road) 10 miles south of its junction with SR 62, near Iron Mountain Pumping Station. It emerges on the east on the Blythe-Rice road near Inca siding 19 miles northwest of Blythe. In between, it traverses the Palen-Granite and McCoy Mountains over some little-traveled but highly scenic and historic mining country.

Watch for the fading paint on some prominent signboards near the Palens and Granite Mountains denoting unexploded ammunition, mostly artillery shells and practice aerial bombs. These signs frequently end up as campfire wood for unprepared groups, which is a bizarre form of Russian roulette for those

... tank, Rommel in another. I'd shoot at
 He'd shoot at me. If I killed him, I'd
 champ. If he killed me—well, he won't."
 Patton had come to the desert in April
 of 1942. Along with his original trainees,
 he left in October of the next year to pre-
 pare for the invasion of North Africa—and
 his first encounter with Rommel.

The First Armored Corps training area,
 however, remained active until well into
 1944, much of the time under the command
 of General Walton H. "Johnny" Walker.

Today, the Patton memorials and the
 surrounding desert have a quiet, romantic
 dignity.

One recent visitor summarized his nos-
 talgic emotions as follows:



Sign warns travelers in the desert to beware of unexploded ammunition and to report any that is found to Los Angeles office of the U.S. Army Corps of Engineers.

"It's almost as though the wind carries
 on's curses, and the air is cold because
 the presence of the spirits of the hundreds
 of thousands of men who trained here."

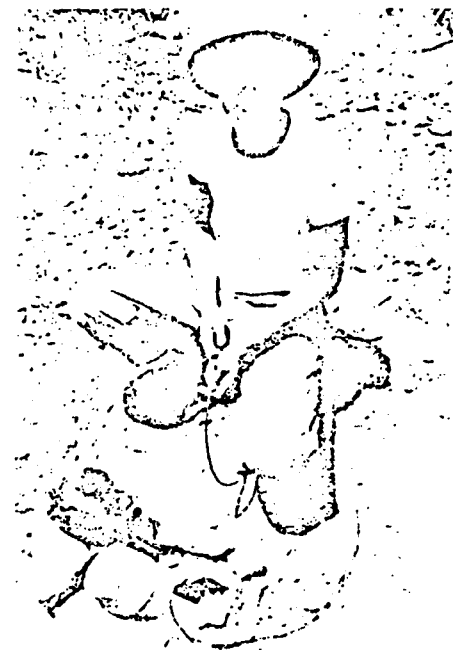
And one can't help thinking of the tens
 of thousands of young men who left here
 for Africa and Europe 30 years ago—but
 never came back.

'Unfamiliar Objects' make deadly reminders of desert war games

Deadly reminders of the war games
 that were held still lie throughout much
 of the Southwest desert.

Signs abound in the former maneuver
 area of General George Patton's troops
 which warn visitors that they should not
 disturb unfamiliar objects protruding from
 the sand—and to report them immediately
 to the U.S. Army Corps of Engineers.

"The area will never really be clean
 of the live shells, hand grenades, mines,



Robert Gough, then member of an Army
 bomb disposal team, sets charge to blow up
 artillery shell found in old training area.

"Even though we had maps of the sup-
 posed impact zone of artillery and bombs,
 it was just too large a maneuver area,"
 Gough said.

"We found everything imaginable—and
 the region had been cleaned four times
 before by German and Italian prisoners
 during the war and, later, by other U.S.
 Army teams," Gough said.

"We were sent in," he said, "after a
 youngster was killed playing with a live
 rocket he found near Parker Dam on the
 Colorado River."

Gough and other members of his bomb
 disposal team would stake out a specific
 area to be searched on Monday and then
 spend three or four days walking through
 and marking the "unfamiliar objects."

Most every Friday was like Fourth of
 July as the team set off charges to blow
 up the various finds.

"We placed an advertisement in the
 Needles newspaper asking people to con-
 tact us if they had any shells or other ex-
 plosives," Gough said.

"I'll never forget," he added, "one
 man drove up in his pick-up truck with a
 75 mm shell bouncing back and forth in
 the bed of the truck. He asked if it was
 dangerous."

It was—marked H-E for "high explo-
 sive."

bombs and rockets that were used in the
 training," says Robert A. Gough, Metro-
 politan Water District personnel manager.

Gough was a corporal on a nine-mem-
 ber Army bomb disposal team during
 1951-54. His team was sent to the old
 training grounds to find and destroy or
 deactivate weaponry.

ALTARS

Continued from Page Five.

included three or four battalions camped throughout an area of four or five square miles.

One altar stands in the southeastern portion of the old camp.

Constructed out of native rock and mortar, it was platformed about a foot above the desert floor. Behind the altar, the stone was arched to a point where a wooden cross once stood.

The second altar is off what had been the same camp street, but about three miles to the northeast. The sign is gone, but concrete inlays into the front of the altar still have the faint traces of two unit numbers—"183rd FA Bn" and "951st FA Bn."

Made of native gneiss, granite and quartz rock held together by mortar, this altar has greater depth, but a lower profile. Like its brother to the south, it, too, has lost the wooden cross which marked it as a religious structure.

As can best be determined, the relief map neates the entire region where Patton's armored units and artillerymen maneuvered—as far east as Twenty Nine Palms, south as the Coachella Valley, as far as the mountains near Kingman, Ariz., and as far north as Hoover Dam.

The map designates the contour slopes of every mountain chain, river valley and

plain, plus highways, railroad tracks and the then newly completed 242-mile Colorado River Aqueduct of the Metropolitan Water District.

When it was new, the map was traversed by a wooden bridge so that Patton's staff, or visiting dignitaries, could look down and read the wooden signs which gave geographical identifications.

Today, the bridge is gone, but some of the signs remain, though wind, sand and time have obliterated their lettering. Some photographs dating back to 1945 show what the relief map looked like when unscathed by wind-blown sand or vandalism of any sort.

One man who vividly recalls his first

meeting with Patton was Lawrence Green, retired superintendent of aqueduct maintenance for the District.

Green recalls:

"I saw a command car pull up in front of my office one day, followed by two or three other cars. He got out . . . and I recognized him immediately because his picture had been in "Time" magazine the week before.

"So, I said, 'How are ya, General Patton' and he said, 'Oh, so you know me, huh?'"

Some of the troops who served under Patton would have disagreed, but Green remembers him as "a wonderful guy."

The general had come to the MWD facility because he wanted to furnish water



Erosion and vandalism have taken their toll on this low-profile altar and the nearby relief map built by troops under the command of General George S. Patton. These photographs taken in 1945, however, show the features in near-perfect condition a year after the desert training center was abandoned—and may provide important detail for future restoration work at the site.

to all the troops training in the area.

Fifteen water spaces were established where the troops could siphon water from the aqueduct.

"At one place," Green said, "the troops constructed a huge shower that could accommodate 500 soldiers at one time."

During the peak of troop training in September, 1943, the District was delivering more than 1.5 million gallons of water a day to the Army along 110 miles of main aqueduct.

Patton considered the Southwest desert ideal for his medium and light tanks, his reconnaissance cars, troop carriers, artillery pieces, jeeps and trucks.

One of the most famous quotes attributed to the legendary general came from his days in the desert and concerned his reported desire to meet the armored legions of German Field Marshal Erwin Rommel:

"The two armies could watch. "I'd be in



ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
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FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX I

INTERVIEWS

APPENDIX I

INTERVIEWS

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- I-6. Interview with Ranger Fred Delcamp.
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- I-9. Telephone conversation with Mr. Jim Dellis.
- I-10. Telephone conversation with Mr. Allen Preston.
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CONVERSATION RECORD	TIME	DATE January 1996
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TYPE

VISIT CONFERENCE

TELEPHONE
 INCOMING
 OUTGOING

NAME OF PERSON CONTACTED: Mr. William Wiley	ORGANIZATION: Bureau of Land Management	TELEPHONE NO. (619) 326-3896
---	--	--

SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:

Mr. William Wiley is employed with the Bureau of Land Management (BLM) and has been stationed at the Needles office for the past ten years. Prior to this assignment Mr. Wiley was with the Corps of Engineers in Portland, Oregon.

Mr. Wiley could not recall any ordnance or explosives having been discovered in this area within the past ten years. He, along with many others, stated that this area has been picked over pretty cleanly by scavengers and souvenir hunters over the past fifty years. He stated that many articles are probably located in the basements and garages of Los Angeles.

Mr. Wiley provided a local map of the region that showed areas of dumps and OE contamination. He then referred the team to Mr. John Key who is the Hazardous Materials Program Coordinator/Environmental Protection Specialist for the California Desert District based in Riverside, California. Mr. Wiley also referred the team to Mr. Fred Delcamp who is the BLM ranger for the area around Blythe.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE January 1996
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TYPE		
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		<input type="checkbox"/> INCOMING
		<input type="checkbox"/> OUTGOING

NAME OF PERSON CONTACTED: Mr. Robert Lyons	ORGANIZATION: San Bernardino Co. Sheriff's Office	TELEPHONE NO. (619) 326-9200
--	--	--

SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:
 Mr. Robert Lyons is a deputy with the San Bernardino County Sheriff's Office. Mr. Lyons has been employed in this position for the past twelve years and is involved in their search and rescue mission. Mr. Lyons is a life long resident of this area and his father was also a member of this same office for over thirty seven years.

Mr. Lyons was well aware of stories of military training being performed throughout the area during the 1940's, but knew of no specific instances of ordnance being found in the either camp areas. He stated that ordnance has been found throughout the desert area over these past fifty years but could not relay any real specifics. Mr. Lyons referred the team to a former member of the department, Mr. Butch Gates, referred to by most as "the map man", due to his knowledge of this desert area.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE January 1996
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TYPE		
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		<input type="checkbox"/> INCOMING
		<input type="checkbox"/> OUTGOING

NAME OF PERSON CONTACTED: Mr. William Claypool	ORGANIZATION: Claypool Hardware	TELEPHONE NO. (619) 326-2109
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SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:
Mr. William Claypool is the owner and operator of the local hardware store in Needles, California. Mr. Claypool has lived in this community for over 73 years.

Mr. Claypool stated that he has no direct knowledge of any ordnance or explosives having been found in subject areas. He has heard only of ordnance being discovered in the project areas. Again most are aware of people looking for souvenirs in this area over the past fifty years.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE January 1996
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TYPE		
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		<input type="checkbox"/> INCOMING
		<input checked="" type="checkbox"/> OUTGOING

NAME OF PERSON CONTACTED: Mr. Butch Gates	ORGANIZATION: San Bernardino Co. Sheriff's Office	TELEPHONE NO. (208) 529-5313
---	--	--

SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:

Mr. Butch Gates is described as the "local expert" when it comes to discussing areas of the California/Arizona Maneuver Area (CAMA). Many refer to Mr. Gates as the "map man" due to his documentation of this land over the years.


Mr. Gates has worked with the San Bernardino County Sheriff's office since 1972. Only recently has he retired to the Idaho Falls, Idaho area.

Throughout his years with the Search and Rescue Team, Mr. Gates has compiled maps, photos, and very valuable first hand knowledge of ordnance areas throughout the CAMA.

Mr. Gates stated that throughout Ward Valley and Palen Pass area, the Army conducted live fire training exercises. He has personally discovered practice training items within these areas.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE 	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE January 1996
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TYPE

VISIT CONFERENCE

TELEPHONE
 INCOMING
 OUTGOING

NAME OF PERSON CONTACTED: Mr. Dennis Casebier	ORGANIZATION: Retired/Local Historian	TELEPHONE NO. (619)733-4482
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SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:

Mr. Dennis Casebier is a retired government employee who currently lives in the Goffs, California area. Mr. Casebier is a writer and historian and has written many books on this desert area. He has traveled these lands extensively and is well aware of the history surrounding this entire area.

Mr. Casebier is familiar with the stories of buried ordnance and the such, but was unable to add any specific information which could add to verifying the existence or location of any ordnance or explosives. Mr. Casebier stated that he has no first hand knowledge of anyone discovering any live ordnance or explosives in the area of the Camp Iron Mountain or Camp Granite.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE January 1996
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TYPE		
<input checked="" type="checkbox"/> VISIT	<input type="checkbox"/> CONFERENCE	<input type="checkbox"/> TELEPHONE
		<input type="checkbox"/> INCOMING
		<input type="checkbox"/> OUTGOING

NAME OF PERSON CONTACTED: Ranger Fred Delcamp	ORGANIZATION: BLM Rangers Office Blythe, California	TELEPHONE NO. (619) 922-4519
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SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:
Ranger Fred Delcamp is stationed at the Blythe office of the BLM ranger stations. Mr. Delcamp has held this position for most of the past ten years. In his time at Blythe, he stated that he had heard stories of ordnance or explosives having been found in the subject area.

Ranger Delcamp told of a couple of girls who found two practice land mines approximately two years ago. The exact location of this find could not be determined, as the girls transported them to a campground on the Colorado River. One of these mines was accidentally detonated and the other was reportedly destroyed by an EOD unit from Ft. Irwin. Ranger Delcamp knew of no other instances involving ordnance or explosives in this area. He again reiterated the fact that many souvenir hunters have combed the area over these past fifty years.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE January 1996
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TYPE		
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		<input type="checkbox"/> INCOMING
		<input type="checkbox"/> OUTGOING

NAME OF PERSON CONTACTED: Mr. John Lynch	ORGANIZATION: military historian	TELEPHONE NO. (602)249-3974
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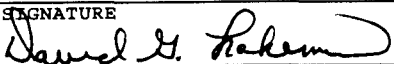
SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:
While accompanying the site inspection team on the site visit, Mr. Lynch showed the location of various DTC camps, including Camp Iron Mountain and Camp Granite. He provided maps and photographs showing the location of each camp and some of their associated firing/maneuver areas. He explained several of the training methods of the timeframe and speculated how they occurred at Camp Iron Mountain and Camp Granite.

Mr. Lynch has no direct knowledge of any ordnance or explosives having been found in the subject areas.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE 	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE January 1996
----------------------------	-------------	-----------------------------

TYPE

VISIT CONFERENCE

X	TELEPHONE
	INCOMING
X	OUTGOING

NAME OF PERSON CONTACTED: Mr. Jim Dellis	ORGANIZATION: Riverside County Sheriff's Office	TELEPHONE NO. (619) 921-7900
--	--	--

SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:

Mr. Dellis is employed as a detective with the Riverside County, California, Sheriff's Office. Mr. Dellis is very knowledgeable about the subject area and he has hunted deer in this same area.

Mr. Dellis stated that as far as he knew, nothing in regards to ordnance or explosives has been found in the recent past. He stated that if something were to be found they would in turn contact the 70th ordnance Disposal Unit.

Efforts to meet on site with Mr. Dellis were not to be successful at the time of the site visit, due to Mr. Dellis' busy schedule.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE
		January 1996

TYPE		
<input type="checkbox"/> VISIT	<input type="checkbox"/> CONFERENCE	<input checked="" type="checkbox"/> TELEPHONE
		INCOMING
		OUTGOING

NAME OF PERSON CONTACTED: Mr. Allen Preston	ORGANIZATION: Metropolitan Water District employee	TELEPHONE NO. (619) 663-3521
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SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:

Mr. Allen Preston is an employee at Metropolitan Water District of Southern California. Mr. Preston was the person referred to as the point of contact for handling OE matters. Mr. Preston stated that he heard of stories of ordnance items being discovered in the area, however, he had no direct knowledge of any ordnance or explosives having been found in the subject area.

Mr. Preston stated that his information, maps, and drawings on the DTC and the subject areas were similar to that at the Patton Museum and the BLM Office at Palm Springs.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

CONVERSATION RECORD	TIME	DATE
		January 1996

TYPE

VISIT

 CONFERENCE

<input checked="" type="checkbox"/>	TELEPHONE
	INCOMING
	OUTGOING

NAME OF PERSON CONTACTED: Mr. Walter Scott	ORGANIZATION: local resident	TELEPHONE NO. (619) 922-4335
--	--	--

SUBJECT: Camp Iron Mountain, San Bernardino and Riverside Counties, California

SUMMARY:

Mr. Walter Scott is a long time local resident and farmer. Mr. Scott was very knowledgeable of the area having traveled numerous times across the desert valley herding his sheep. He stated that ammunition has been found out in the desert and remnants remain all over the place. He stated that as far as he knew, nothing in regards to ordnance or explosives has been found in the recent past. He stated that if something was found, they would in turn contact Yuma.

ACTION REQUIRED:

ACTION TAKEN:

NAME OF PERSON DOCUMENTING CONVERSATION David G. Lakeman	ORGANIZATION CENCR-ED-DO	TELEPHONE NUMBER 309-794-6127
SIGNATURE <i>David G. Lakeman</i>	TITLE QASAS	DATE

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APPENDIX J

PRESENT SITE PHOTOGRAPHS

APPENDIX J

PRESENT SITE PHOTOGRAPHS

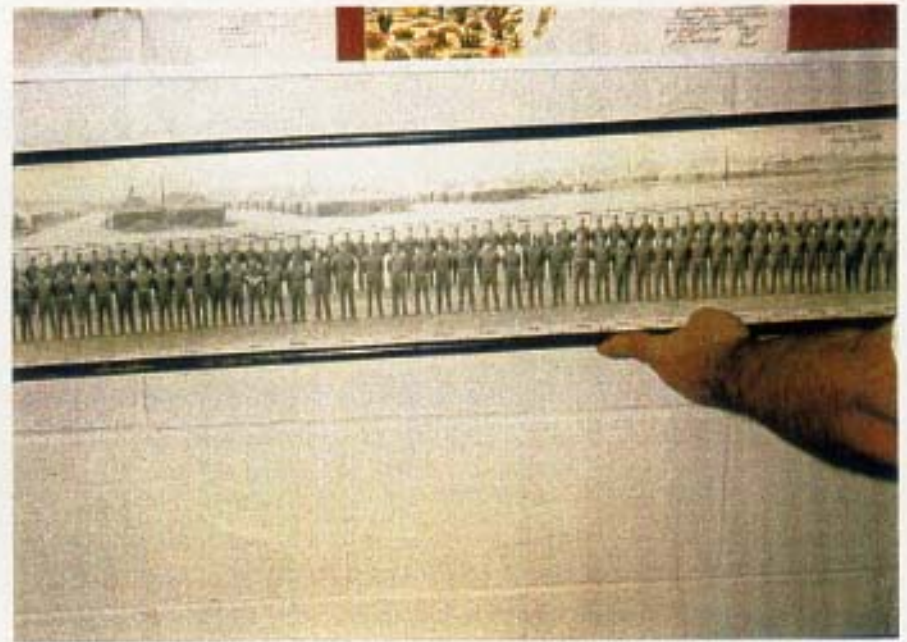
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- J-2. Pictorial of Camp Life from Needles Library.
- J-3. Photo of Camp Iron Mountain's Chapel.
- J-4. Photo of Camp Iron Mountain's Altar.
- J-5. Photo of Camp Iron Mountain's Relief Map.
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- J-13. Camp Granite Historical Plaque.
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- J-29. View of training area north of Camp Iron Mountain.
- J-30. View of area with multiple trenches and berms north of Camp Iron Mountain.
- J-31. View of tank tracks and training area northwest of Camp Iron Mountain.
- J-32. View of 37mm AP projectile and .30 cal bullets found northwest of Camp Iron Mountain.



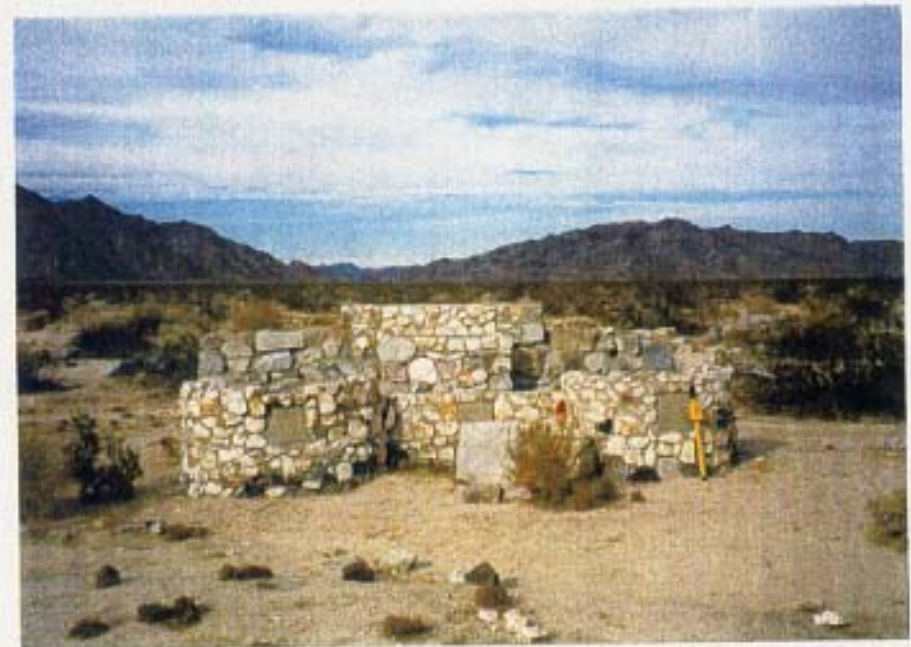
J-1. Camp Iron Mountain Historical Plaque.



J-2. Pictorial of Camp Life from Needles Library.



J-3 Photo of Camp Iron Mountain's Chapel.



J-4. Photo of Camp Iron Mountain's Altar.



J-5. Photo of Camp Iron Mountain's Relief Map.



J-6. View of entrance to Camp Iron Mountain



J-7. A stone arrangement representing a troop's unit number.



J-8. View of the stonelined walkways within the encampment area.



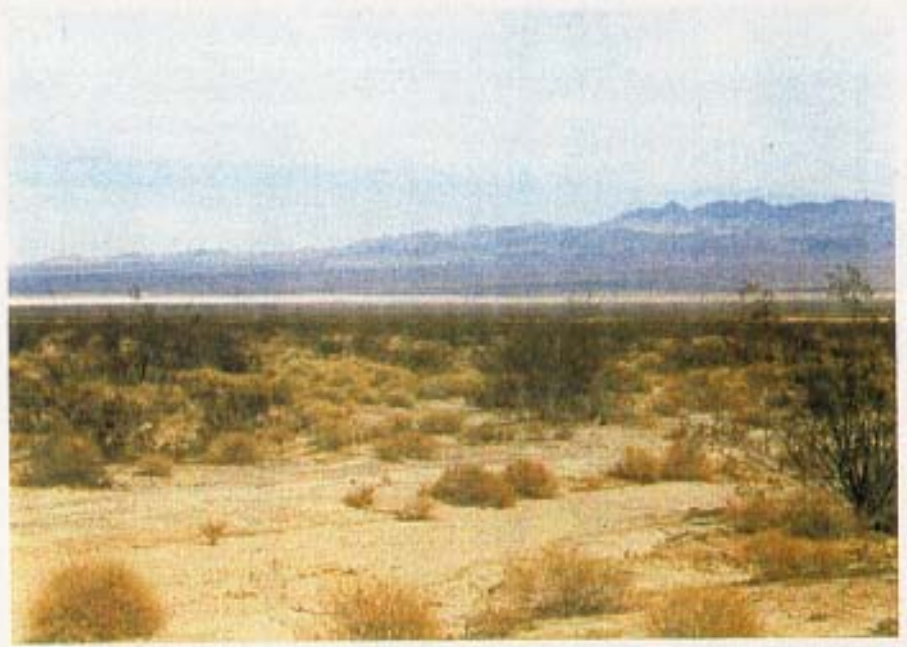
J-9. View of the encampment area.



J-10. View of a burial site disturbed by treasure hunters.



J-11. View north towards the water pumping station.



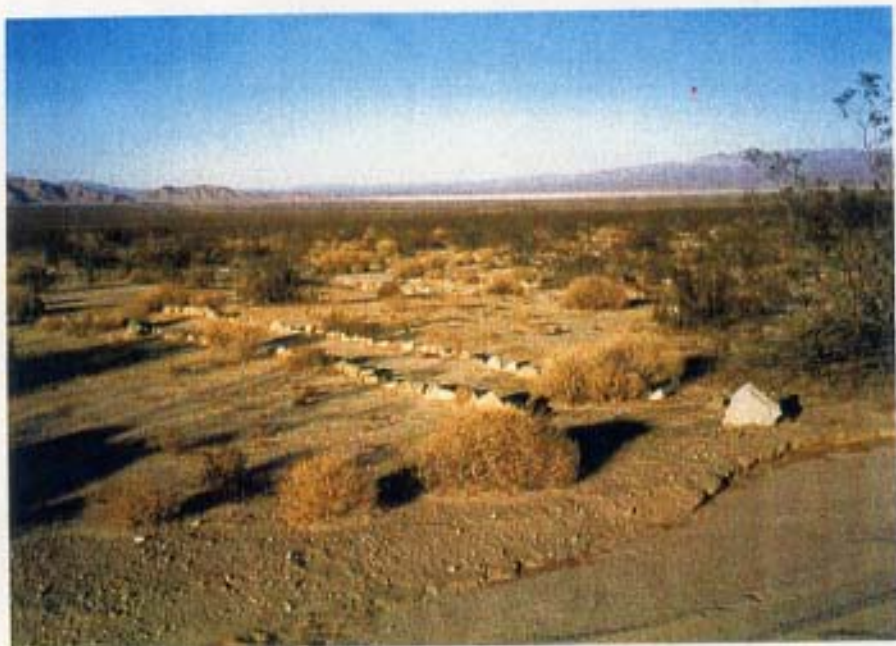
J-12. View east towards the landing strip & Danby Dry Lake area.



J-13. Camp Granite Historical Plaque.



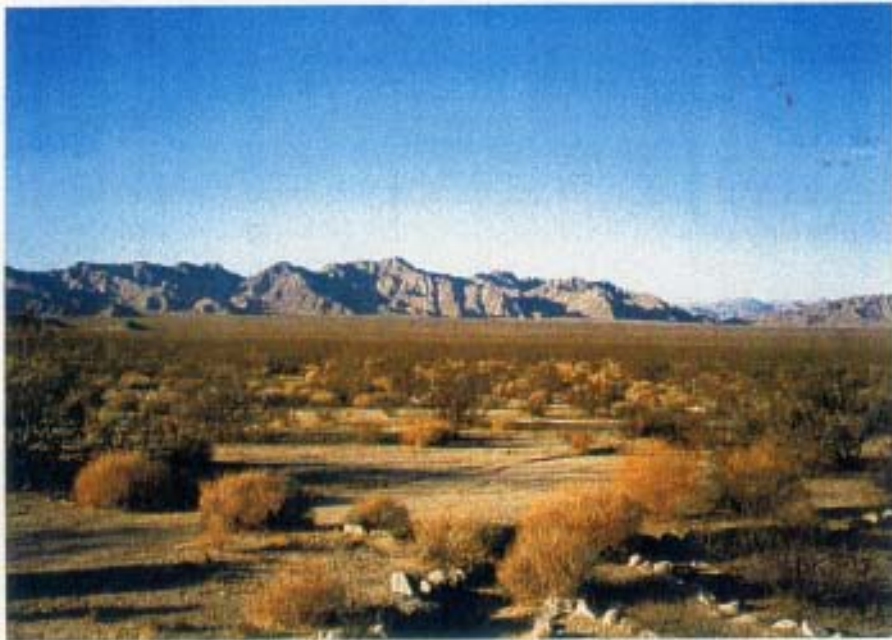
J-14. View south looking at Camp Granite encampment area.



J-15. View of Camp Granite's encampment area.



J-16. View south looking towards Camp Granite's firing area.



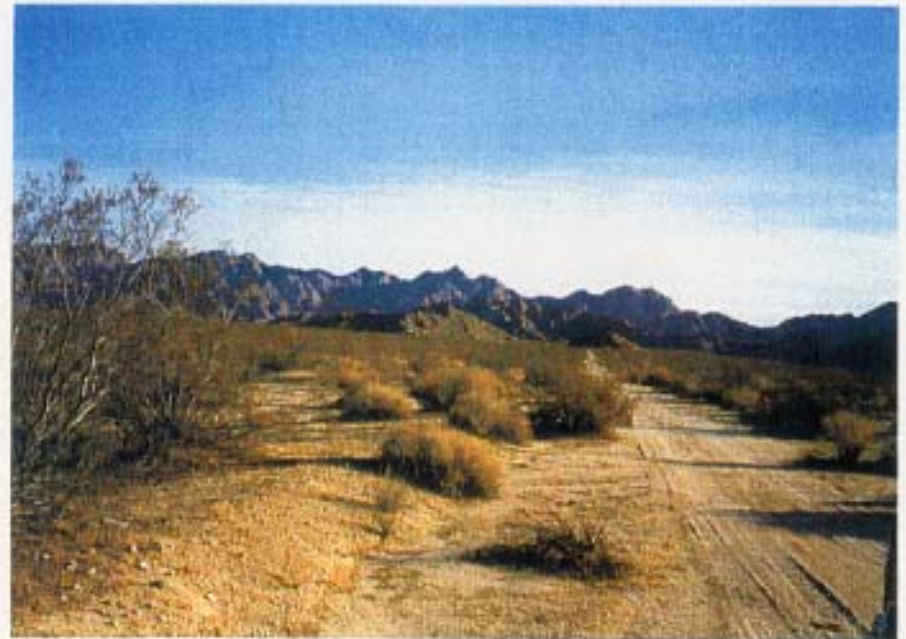
J-17. View north looking towards Camp Iron Mountain.



J-18. View of a burial site disturbed by treasure hunters.



J-19. Close-up view of items within burial pit (photo J-18).



J-20. View of Camp Granite's western boundary.



J-21. View of Palo Verde Historical Muesum's display case of items discovered from DTC located at Blythe.



J-22. View of 75mm H.E. projectile from photo J-21.



J-23. View of practice hand grenade and 2.36" rocket from photo J-21



J-24. View of Patton's Muesum's display of items discovered from DTC located at Ciriaco Summit.



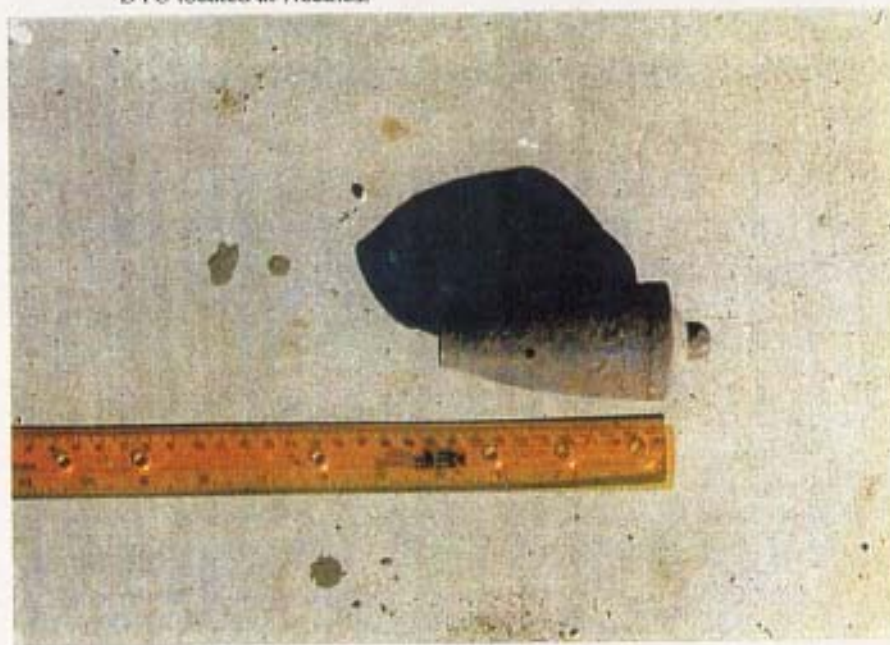
J-25. View of Patton's Muesum's display of items discovered from DTC located at Ciriaco Summit.



J-26. View of Needles Library display of items discovered from DTC located at Needles.



J-27. M9A1 rifle grenade found in Ward Valley



J-28. Inert M9 AT rifle grenade found in Ward Valley



J-29. Training area north of Camp Iron Mountain



J-30. Multiple trenches and berms north of Camp Iron Mountain



J-31. Tank tracks and training area northwest of Camp Iron Mountain



J-32. 37mm AP projectile and .30 cal bullets found northwest of Camp Iron Mountain

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APPENDIX K

HISTORICAL PHOTOGRAPHS

Appendix K

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- K-4. Aerial Photo of Camp Iron Mountain's Altar (B-81).
- K-5. Aerial Photo of Camp Granite with Camp Iron Mountain in the Background (B-82).
- K-6. Aerial Photo of Camp Granite Western Boundary (B-82).
- K-7. Aerial Photo of Camp Granite Center of Camp (B-82).
- K-8. Aerial Photo of Rock Face Down Range of Camp Granite's Firing Ranges (B-82).
- K-9. Aerial Photo of Pill Box on East Slope Palen Pass (B-84).
- K-10. Aerial Photo of Trenches and Tank Tracks on East Slope Palen Pass (B-84).
- K-11. Aerial Photo of Camp Iron Mountain Circa 1943 (B-83).
- K-12. Aerial Photo of Camp Granite Circa 1943 (B-84).



K-1. Camp Iron Mountain



K-2. Camp Iron Mountain's Relief Map



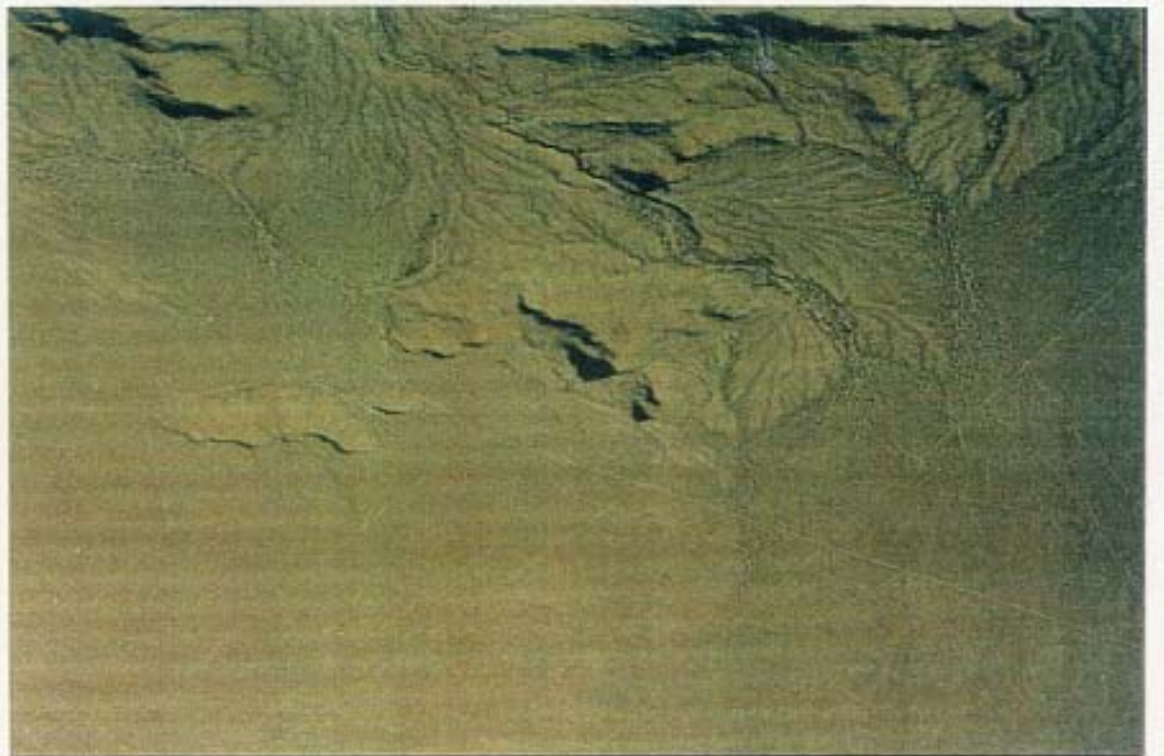
K-3. Camp Iron Mountain's Chapel Site



K-4. Camp Iron Mountain's Altar



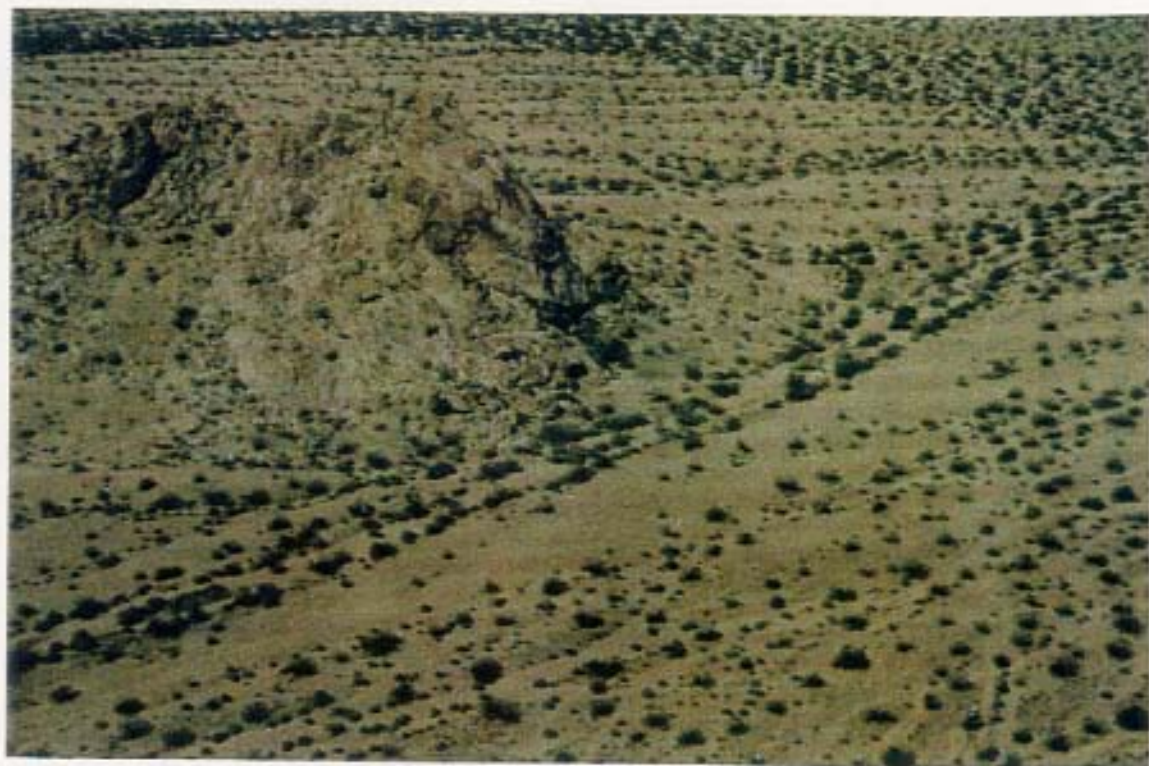
K-5. Camp Granite with Camp Iron Mountain in the Background



K-6. Camp Granite Western Boundary



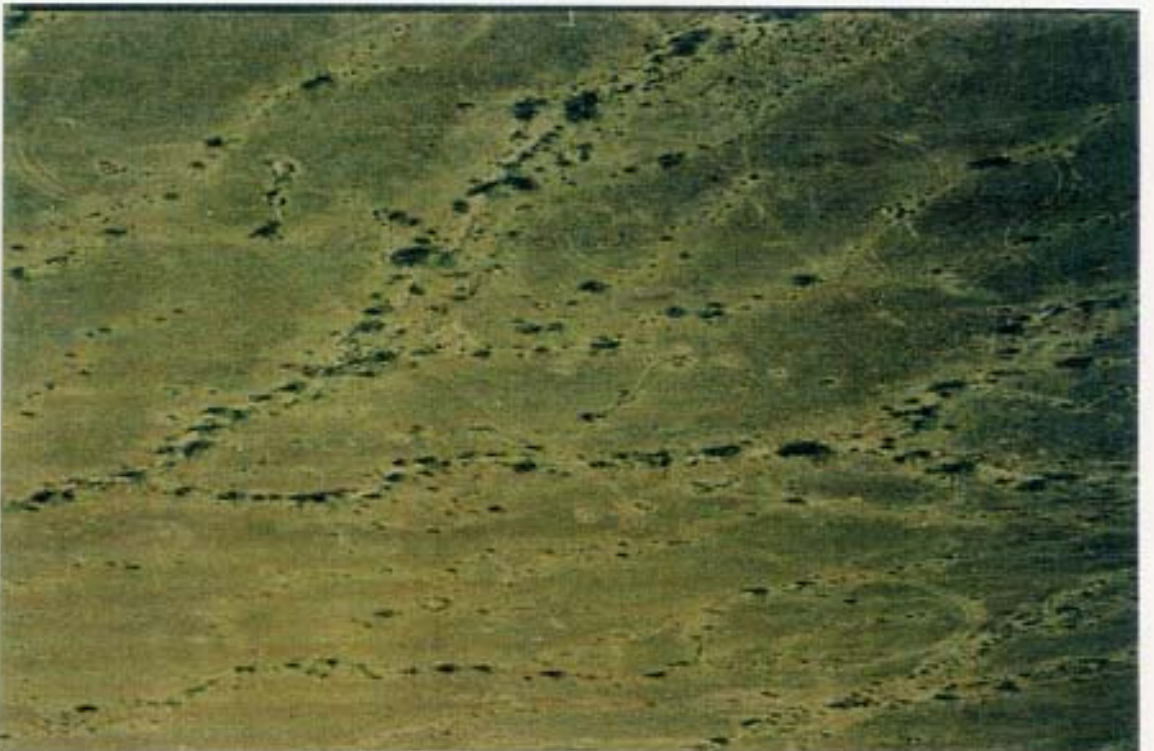
K-7. Center of Camp Granite



K-8. Down Range from Camp Granite's Firing Ranges



K-9. Pill Box on East Slope Palen Pass



K-10. Trenches and Tank Tracks on East Slope Palen Pass

03:5:486

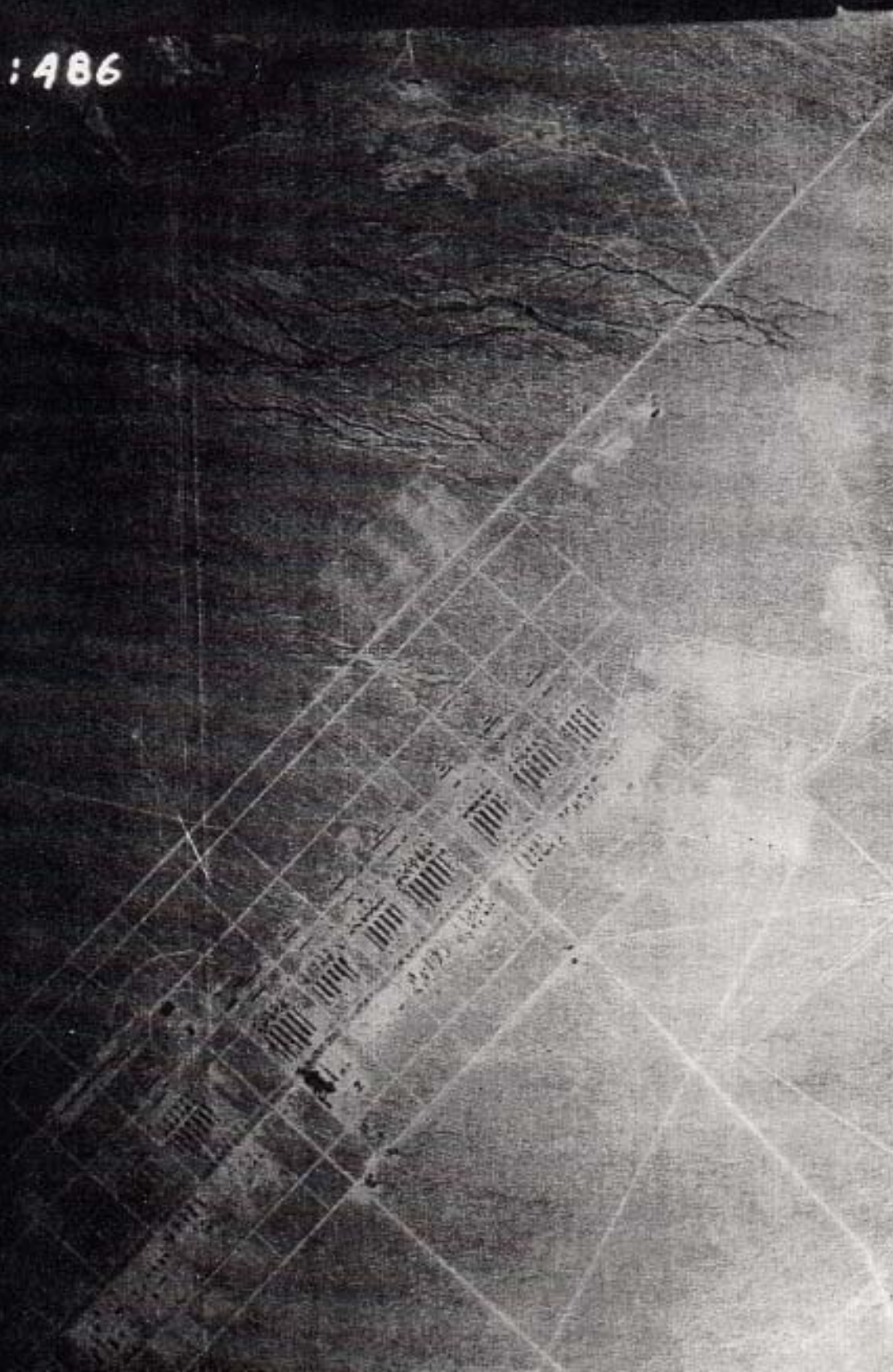


K-11. Camp Iron Mountain Circa 1943

203:5:486

EASTMAN KODAK SAFETY

EASTMAN KODAK SAFETY



K-11. Camp Iron Mountain Circa 1943



K-12. Camp Granite Circa 1943



K-12. Camp Granite Circa 1943

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APPENDIX L

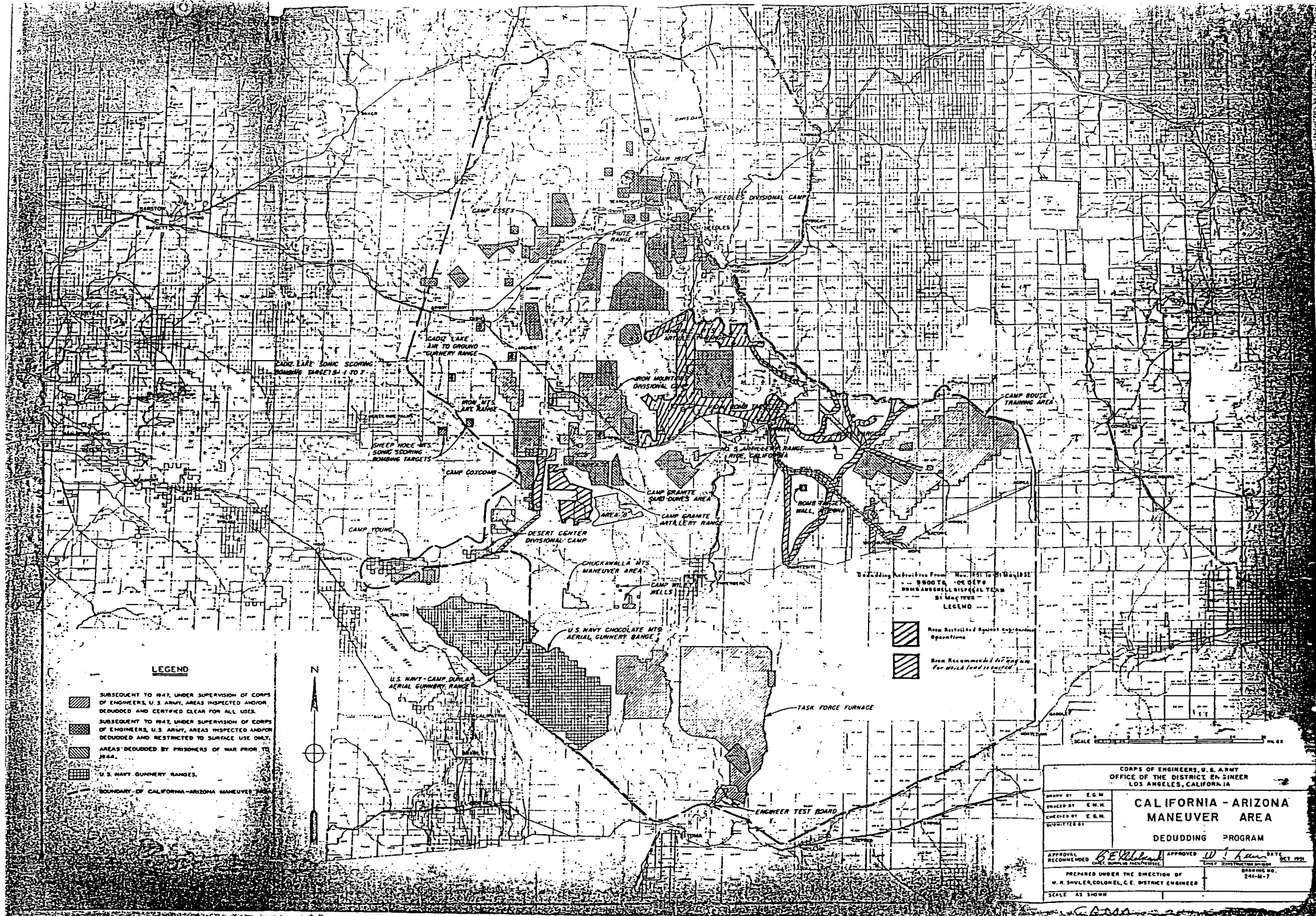
REFERENCE MAPS/DRAWINGS

APPENDIX L






REFERENCE MAPS/DRAWINGS



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- L-1. Map, Desert Training Center CIRCA 1941 (B-60).
- L-2. Map, Real Estate Camp Iron Mountain CIRCA 1948 (B-57).
- L-3. Map, CAMA Dedudding Program CIRCA 1951 (B-59).
- L-4. MAP, CAMA CIRCA 1943 (B-87).



LEGEND

 SUBSEQUENT TO 1941, UNDER SUPERVISION OF CORPS OF ENGINEERS, U.S. ARMY, AREAS INSPECTED AND/OR DEDUDED AND CERTIFIED CLEAR FOR ALL USES.
 SUBSEQUENT TO 1941, UNDER SUPERVISION OF CORPS OF ENGINEERS, U.S. ARMY, AREAS INSPECTED AND/OR DEDUDED AND RESTRICTED TO SURFACE USE ONLY.
 AREAS DEDUDED BY PRISONERS OF WAR PRIOR TO 1944.
 U.S. NAVY GUNNERY RANGES.
 BOUNDARY OF CALIFORNIA-ARIZONA MANEUVER AREA.

Building Activities From Nov. 1951 to 31 Dec. 1952
 5000 Yds. or more
 5000 Yds. or less
 5000 Yds. or less
 5000 Yds. or less
LEGEND
 From Restricted Against Submarine Operations.
 From Recommended for Program For which land is required.

CORPS OF ENGINEERS, U.S. ARMY
 OFFICE OF THE DISTRICT ENGINEER
 LOS ANGELES, CALIFORNIA

**CALIFORNIA - ARIZONA
 MANEUVER AREA**

DEDUDDING PROGRAM

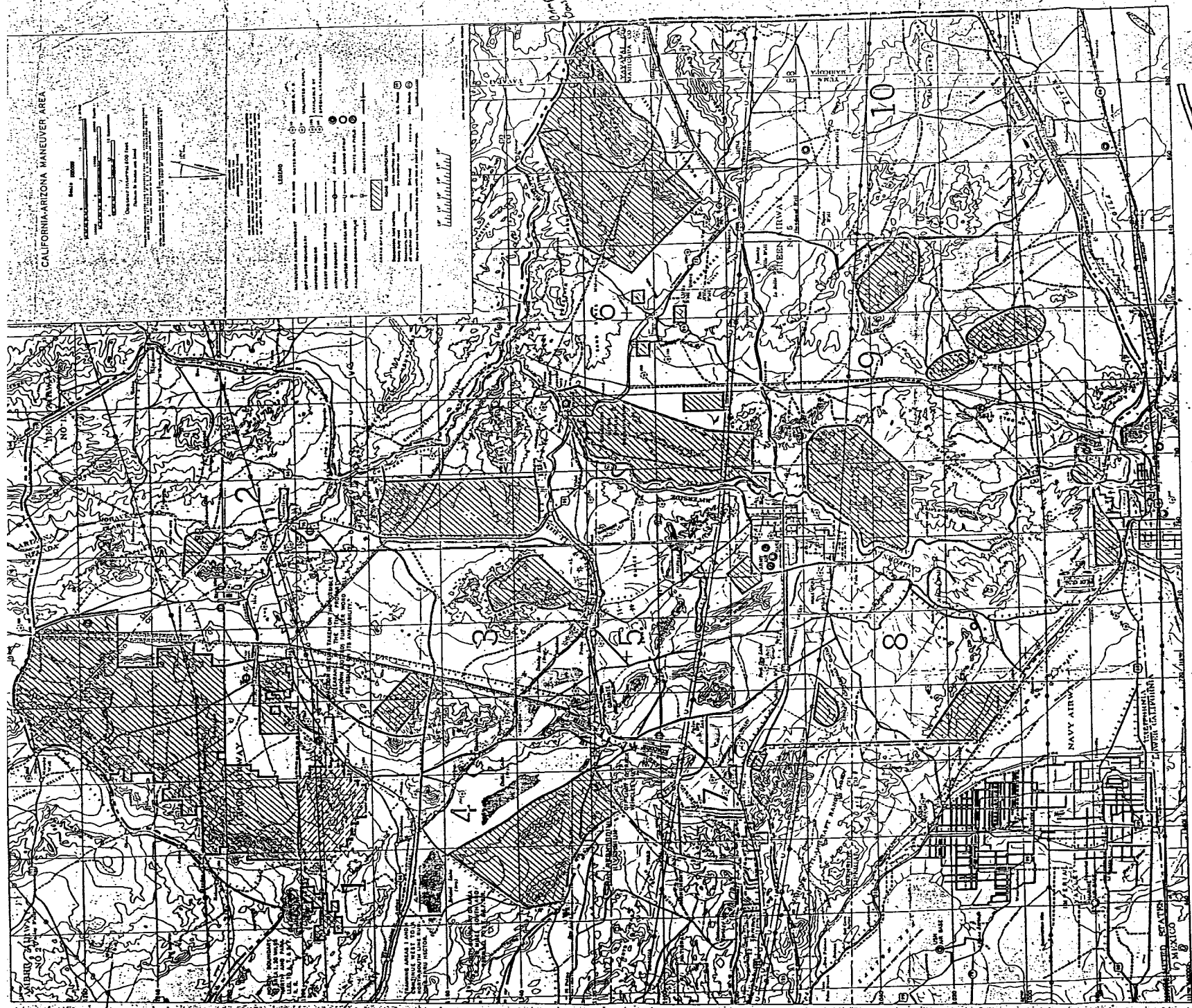
DRAWN BY: E.G.M.
 TRACED BY: E.M.H.
 CHECKED BY: E.G.M.
 SUBMITTED BY:

APPROVAL: *B. E. ...* DATE: OCT 1951
 RECOMMENDED: *W. J. ...* DATE: OCT 1951

PREPARED UNDER THE DIRECTION OF
 W. R. SHULER, COLONEL, C.E. DISTRICT ENGINEER

DRAWING NO. 241-44-7
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ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX M

ARCHIVES SEARCH REPORT CORRESPONDENCE

(Not Used at This Time)

ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX N
REPORT DISTRIBUTION LIST

ORDNANCE AND EXPLOSIVES
 ARCHIVES SEARCH REPORT
 FOR
 FORMER CAMPS IRON MOUNTAIN AND GRANITE
 RICE, CA
 PROJECT NUMBERS J09CA028401 & J09CA704301

APPENDIX N

REPORT DISTRIBUTION LIST

<u>EXTERNAL</u>	No. Copies		
	I	II	III
Commander, U.S. Army Corps of Engineers Engineering and Support Center, Huntsville ATTN: CEHNC-OE-AI (Mardis) P.O. Box 1600 Huntsville, AL 35807-4301	2	-	-
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Commander, U.S. Army Engineer District Los Angeles ATTN: CESPL-ED-MI (Boghossain) 911 Willshire Boulevard P.O. Box 2711 Los Angeles, CA 90012-3375	2	-	-
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- I - Final Report
- II - Findings Report
- III - Routed Final Report

INTERNAL

CENCR-ED	-	-	1
-ED-D	-	-	1
-ED-DO	3	-	-
ED-G	-	-	1
-ED-H	-	-	1
-SO	-	-	1
-PD	-	-	1
-RE	-	-	1




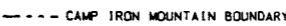



- I - Final Report
- II - Findings Report
- III - Routed Final Report

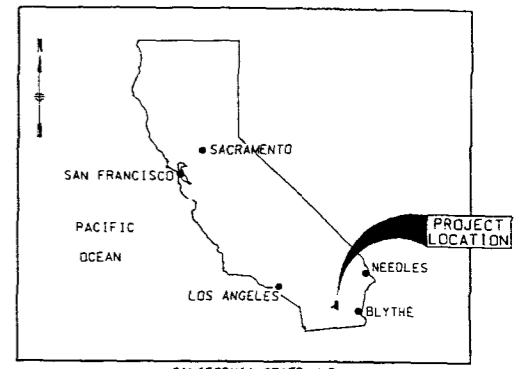
ORDNANCE AND EXPLOSIVES
ARCHIVES SEARCH REPORT
FOR
FORMER CAMPS IRON MOUNTAIN AND GRANITE
RICE, CA
PROJECT NUMBERS J09CA028401 & J09CA704301

REPORT PLATES

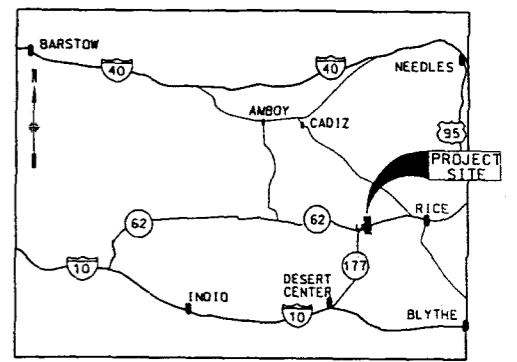


LEGEND:

-  INTERSTATE
-  U.S. HIGHWAY
-  STATE HIGHWAY
-  CAMP IRON MOUNTAIN BOUNDARY
-  CAMP GRANITE BOUNDARY
-  COUNTY BOUNDARY
-  RAIL ROAD




CALIFORNIA STATE MAP



VICINITY MAP

NOTES:

1. STATE PLANE COORDINATES 272044N, 2896630E LOCATED AT THE NORTH EAST CORNER OF THE IRON MOUNTAIN BOUNDARY.
2. STATE PLANE COORDINATES 210640N, 2842021E LOCATED AT THE INTERSECTION OF HIGHWAYS 62 AND 177.

 U.S. Army Corps of Engineers Rock Island District		
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS ROCK ISLAND, ILLINOIS	Designed By: D. LAKEMAN	Date:
	Drawn By: J. WILKENING	Scale: AS SHOWN
	Checked By: M.J. CIVIS	Drawing Code: XXXXX
	Reviewed By: D.J. HOLMES	Solicitation Number: DASHES-02-0-XXXX
CAMPS IRON MOUNTAIN/GRANITE RICE, CALIFORNIA. PROJECT NUMBER: J09CA028401/J09CAT04301		Sheet Reference Number: PLATE 1 Sheet 1 of 6
SITE MAP		






FIRING/MANEUVER RANGES		
RANGE	DESCRIPTION	TYPE OF ORDNANCE
NO. 1	ARTILLERY	SUB CAL. 37mm
NO. 2	REGIMENTAL	UNKNOWN
NO. 3	TRANSITIONAL	UNKNOWN
NO. 4	REGIMENTAL	UNKNOWN
NO. 5	REGIMENTAL	UNKNOWN
NO. 6	FIELD FIRE	30 CAL.
NO. 7	TOWED TARGET	105mm
NO. 8	TOWED TARGET	57mm
NO. 9	ANTI-AIRCRAFT	.30 AND .50 CAL.

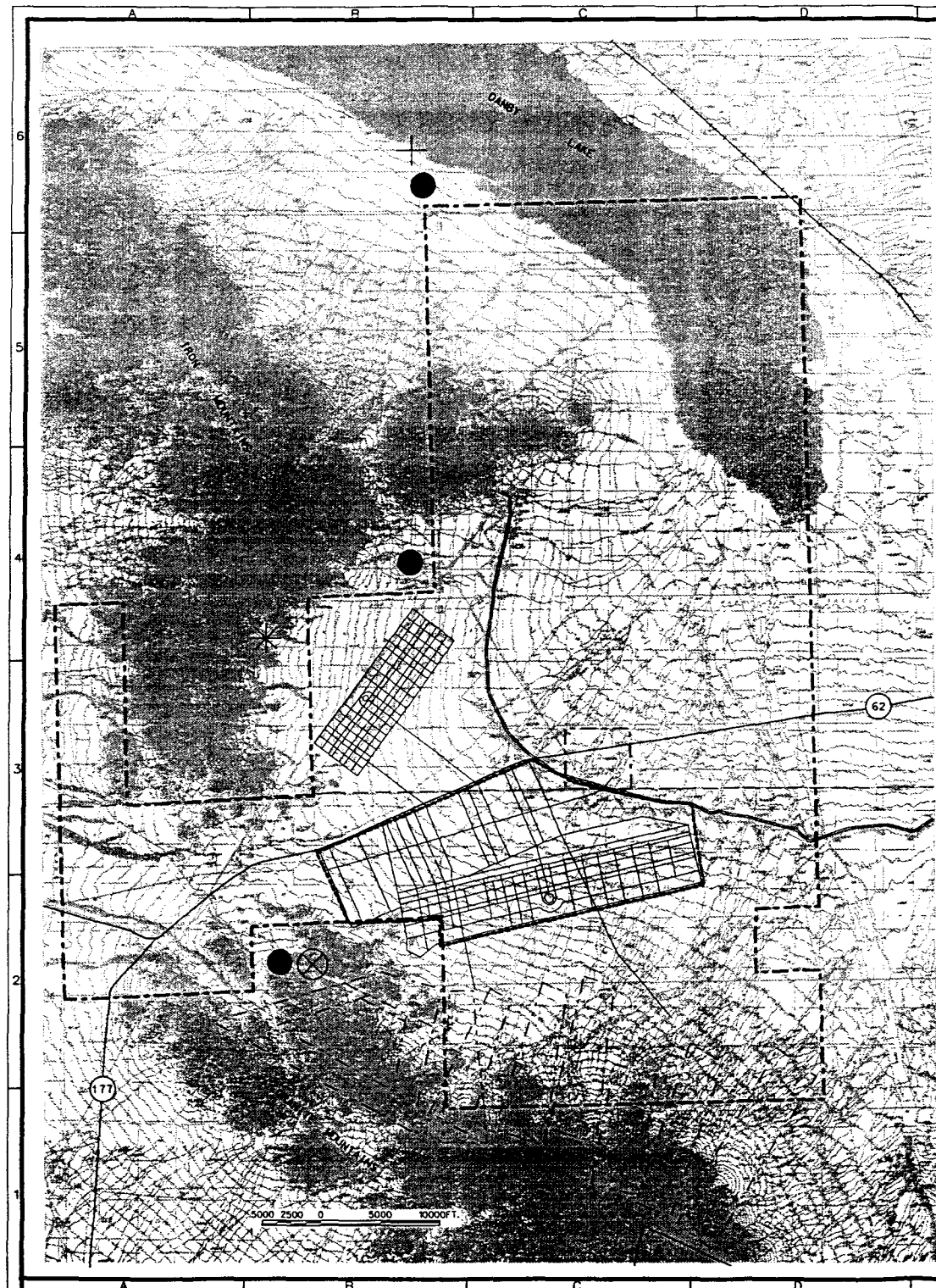
LEGEND:

- HIGHWAY
- ROADS
- - - COUNTY LINE
- - - - CAMP IRON MOUNTAIN BOUNDARY
- - - - - CAMP GRANITE BOUNDARY
- ⊢ RAIL ROAD
- CAMP GRANITE FIRING RANGES
- AQUEDUCT













NOTES:

- INFORMATION ABSTRACTED FROM DOCUMENTS F-1, F-2, L-1, AND L-2.
- THE ENTIRE AREA OF THE PLATE FALLS WITHIN DESERT TRAINING CENTER'S UNLIMITED FIRING AREA BOUNDARY.

 U.S. Army Corps of Engineers Rock Island District		
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS ROCK ISLAND, ILLINOIS	Designed By: D. LAKEMAN Drawn By: J. WILKENING Checked By: M. J. CIVIS Examined By: D. J. HOLMES	Date: Scale: AS SHOWN Drawing Code: XXXXX Solicitation Number: DACW25-52-8-1233
CAMPS IRON MOUNTAIN/GRAHITE RICE, CALIFORNIA PROJECT NUMBER: J09CA028401/J09CA704301		Sheet Reference Number: PLATE 2 Sheet 2 of 6




LEGEND:

-  HIGHWAY
-  ROADS
-  COUNTY LINE
-  CAMP IRON MOUNTAIN BOUNDARY
-  CAMP GRANITE BOUNDARY
-  RAIL ROAD
-  AQUEDUCT
-  CAMP GRANITE FIRING RANGES
-  SUSPECTED BURIAL SITES (REF I-1)
-  REPORTED 66MM PROJECTILE DISCOVERED
-  1980 PRACTICE ANTI-TANK LANDMINE INCIDENT (REF F-22)
-  EXPENDED SMALL ARMS AND 37MM PROJECTILE DISCOVERED

NOTES

INFORMATION ABSTRACTED FROM DOCUMENTS F-1, F-2, AND L-2.

 U.S. Army Corps of Engineers Rock Island District		
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS ROCK ISLAND, ILLINOIS	Designed By: D. LAKEMAN Drawn By: J. WILKENING Checked By: M. J. CIVIS Reviewed By: D. J. HOLMES	Date: Scale: AS SHOWN Drawing Code: XXXXX Solicitation Number: DAH25-82-8-XXXX
CAMPS IRON MOUNTAIN/GRANITE RICE, CALIFORNIA. PROJECT NUMBER: J09CA028401/J09CA704301		Sheet Reference Number: PLATE 3 Sheet 3 of 6
OE EVALUATION		



POTENTIAL AREAS	
	DESERT STRIKE CONTAMINATION AREAS (1964)
	CAMP IRON MOUNTAIN MANEUVER AREAS (124,140 ACRES) (W.W. II)
	SONIC BOMBING TARGETS (3398 ACRES) (W.W. II)
	SUSPECTED BURIAL SITES (W.W. II)

LEGEND:

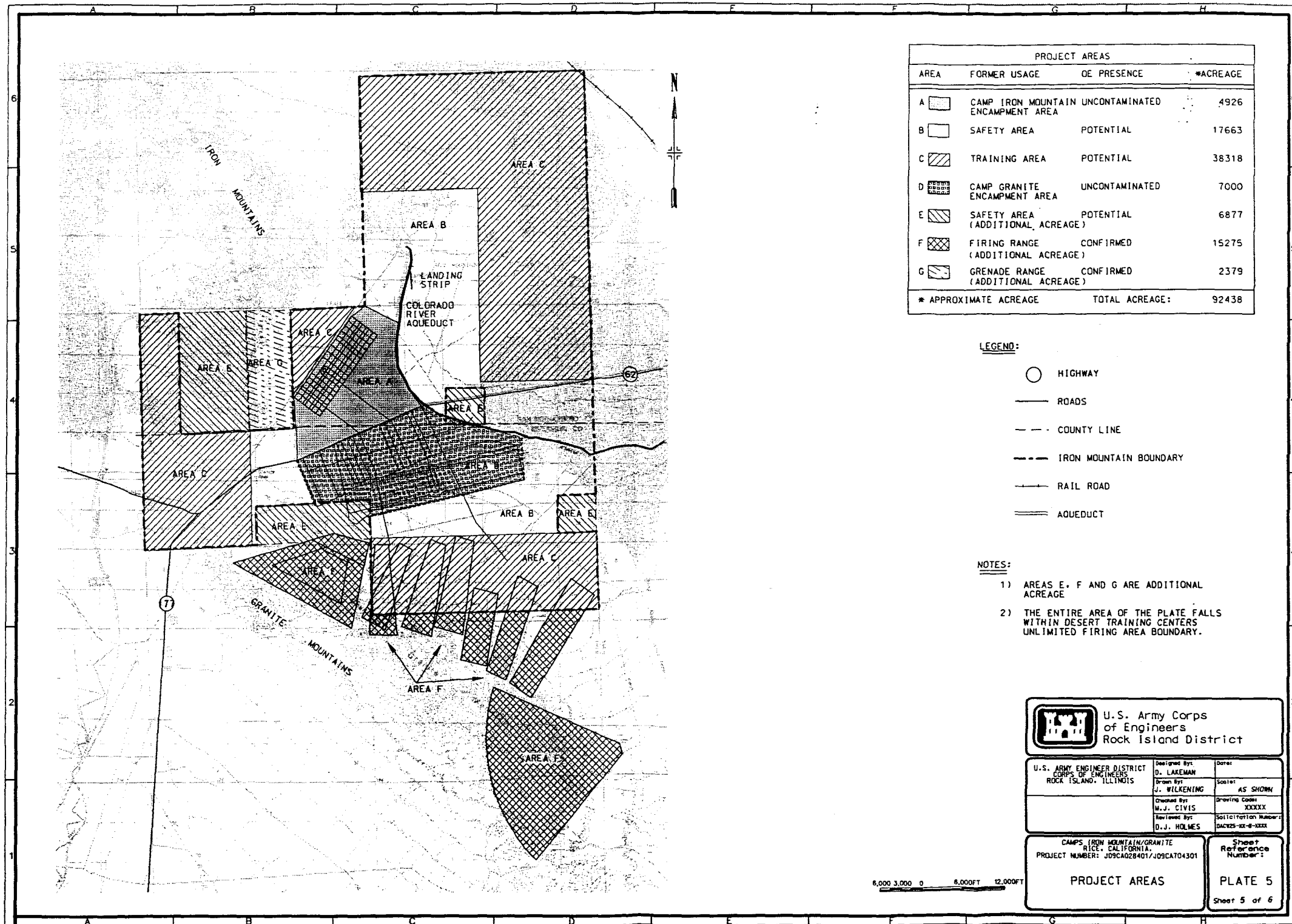
- HIGHWAY
- ROADS
- COUNTY LINE
- CAMP IRON MOUNTAIN BOUNDARY
- RAIL ROAD
- AQUEDUCT

NOTES:

INFORMATION ABSTRACTED FROM DOCUMENTS F-1, F-2 AND INTERVIEWS I-1 AND I-4.

U.S. Army Corps of Engineers Rock Island District		
U.S. ARMY ENGINEER DISTRICT ROCK ISLAND, ILLINOIS	Designed By: D. LAKEMAN Drawn By: J. WILKENING Checked By: M. J. CIVIS Reviewed By: D. J. HOLMES	Date: Scale: AS SHOWN Drawing Code: XXXXX Solicitation Number: DAC75-AE-8-XXXX
CAMPS IRON MOUNTAIN/GRANITE RICE, CALIFORNIA PROJECT NUMBER: JD9CA028401/JD9CA704301		Sheet Reference Number: PLATE 4 Sheet 4 of 6
POTENTIAL FUDS SITES		





PROJECT AREAS			
AREA	FORMER USAGE	OE PRESENCE	*ACREAGE
A	CAMP IRON MOUNTAIN UNCONTAMINATED ENCAMPMENT AREA		4926
B	SAFETY AREA	POTENTIAL	17663
C	TRAINING AREA	POTENTIAL	38318
D	CAMP GRANITE ENCAMPMENT AREA	UNCONTAMINATED	7000
E	SAFETY AREA (ADDITIONAL ACREAGE)	POTENTIAL	6877
F	FIRING RANGE (ADDITIONAL ACREAGE)	CONFIRMED	15275
G	GRENADE RANGE (ADDITIONAL ACREAGE)	CONFIRMED	2379
* APPROXIMATE ACREAGE		TOTAL ACREAGE:	92438

LEGEND:

- HIGHWAY
- ROADS
- - - COUNTY LINE
- - - IRON MOUNTAIN BOUNDARY
- RAIL ROAD
- AQUEDUCT

NOTES:

- 1) AREAS E, F AND G ARE ADDITIONAL ACREAGE
- 2) THE ENTIRE AREA OF THE PLATE FALLS WITHIN DESERT TRAINING CENTERS UNLIMITED FIRING AREA BOUNDARY.

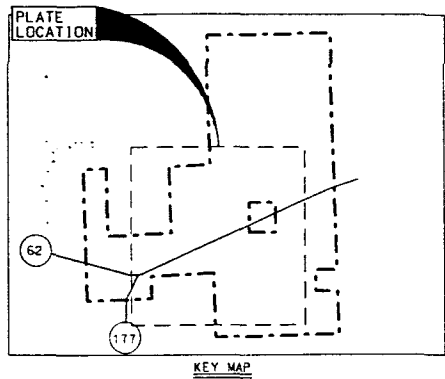
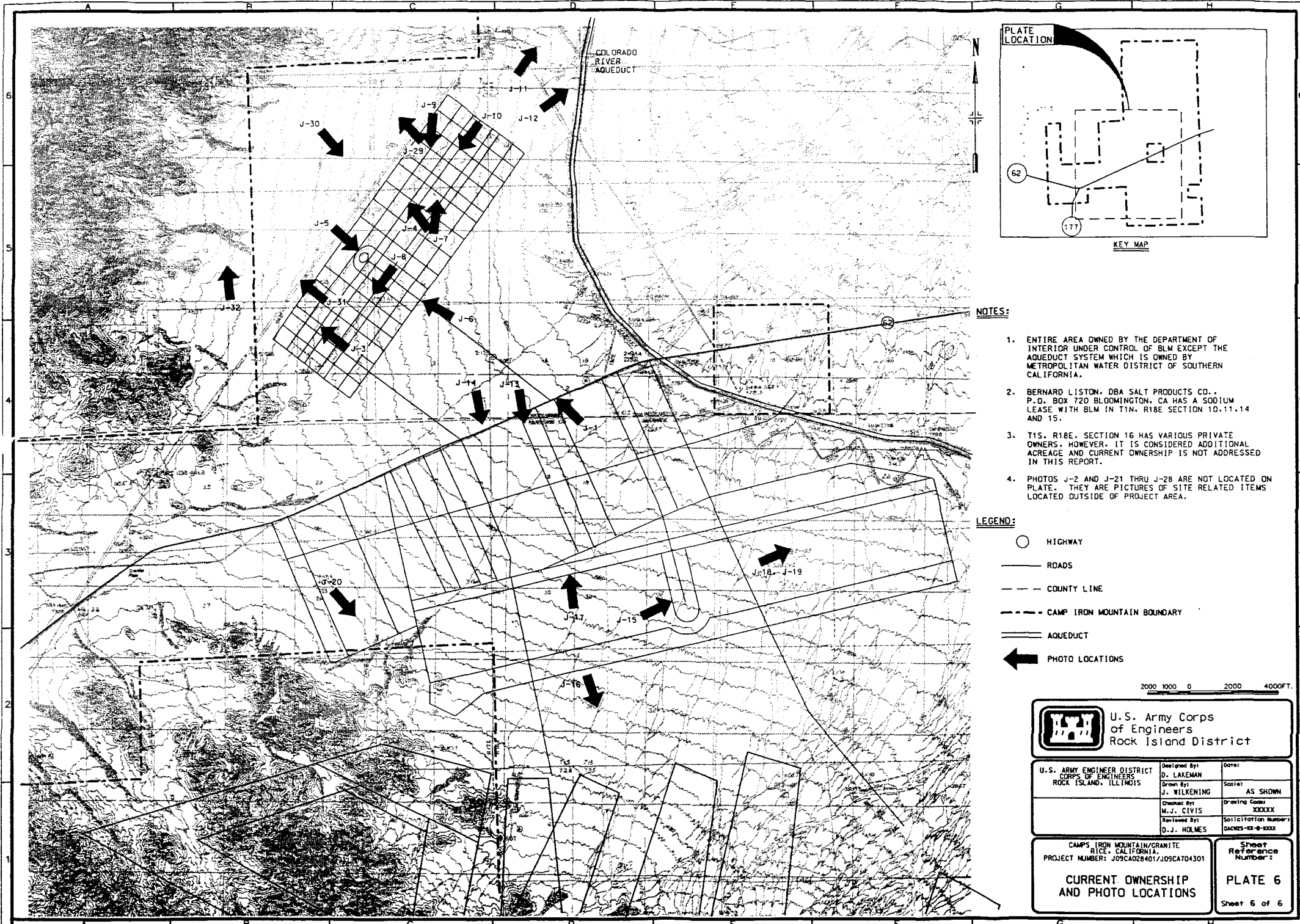
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Rock Island District**

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	Reviewed By: D.J. HOLMES	Solicitation Number: DAC25-82-6-3332

CAMP IRON MOUNTAIN/GRANITE
RICE, CALIFORNIA
PROJECT NUMBER: J09CA028401/J09CA704301

Sheet Reference Number:
PLATE 5
Sheet 5 of 6

6,000 3,000 0 6,000FT 12,000FT




NOTES:

1. ENTIRE AREA OWNED BY THE DEPARTMENT OF INTERIOR UNDER CONTROL OF BLM EXCEPT THE AQUEDUCT SYSTEM WHICH IS OWNED BY METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA.
2. BERNARD LISTON, DBA SALT PRODUCTS CO., P.O. BOX 720 BLOOMINGTON, CA HAS A SODIUM LEASE WITH BLM IN T1N, R18E SECTION 10, 11, 14 AND 15.
3. T1S, R18E, SECTION 16 HAS VARIOUS PRIVATE OWNERS, HOWEVER, IT IS CONSIDERED ADDITIONAL ACREAGE AND CURRENT OWNERSHIP IS NOT ADDRESSED IN THIS REPORT.
4. PHOTOS J-2 AND J-21 THRU J-28 ARE NOT LOCATED ON PLATE. THEY ARE PICTURES OF SITE RELATED ITEMS LOCATED OUTSIDE OF PROJECT AREA.

LEGEND:

- HIGHWAY
- ROADS
- - - COUNTY LINE
- - - - CAMP IRON MOUNTAIN BOUNDARY
- == AQUEDUCT
- ← PHOTO LOCATIONS

2000 1000 0 2000 4000FT.

 U.S. Army Corps of Engineers Rock Island District		
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS ROCK ISLAND, ILLINOIS	Designed By: D. LAKEMAN Drawn By: J. WILKENING Checked By: M.J. CIVIS Reviewed By: D.J. HOLMES	Date: Scale: AS SHOWN Drawing Code: XXXXX Soil/Topon Number: DACW25-82-0-XXXX
CAMPS IRON MOUNTAIN/GRANITE RICE, CALIFORNIA PROJECT NUMBER: J09CA028401/J09CAT04301		Sheet Reference Number: PLATE 6 Sheet 6 of 6
CURRENT OWNERSHIP AND PHOTO LOCATIONS		